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Forest  
Service

**Southern  
Region**

February, 2014



# 2012 Monitoring and Evaluation Report

## Kisatchie National Forest

*Claiborne, Webster, Grant, Rapides, Natchitoches, Vernon and Winn Parish*



**Stuart Lake on the Catahoula Ranger District Kistatchie NF (USDA 2013)**

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# List of Acronyms

<b>Acronym</b>	<b>Word or Phrase</b>
APD	Application for Permit To Drill
APHIS	Animal and Plant Health Inspection Service
ASC	Albuquerque Service Center
BLM	Bureau of Land Management
BMP	Best Management Practice(s)
CCF	100 Cubic Feet
CER	Comprehensive Evaluation Report
COR	Contracting Officer Representative
CWKV	Cooperative Work, Knutson-Vandenberg
CWN	Call When Needed
FY	Fiscal Year
INFRA	Forest Service database used to manage information on resources including buildings, trails, roads, wilderness areas and water systems.
<i>Ips</i>	Southern Pine Engraver Beetle
IWEB	USDA grants and agreements database
Kisatchie NF	Kisatchie National Forest
KNF LRMP	Kisatchie National Forest Revised Land and Resource Management Plan
HMA	Habitat Management Areas for red-cockaded woodpecker
LA SHPO	Louisiana State Historic Preservation Office(r)
LDEQ	Louisiana Department of Environmental Quality
LDWF	Louisiana Department of Wildlife and Fisheries
LPM	Louisiana Pearlshell Mussel
LSU	Louisiana State University
LWCF	Land and Water Conservation Fund
LWF	Louisiana Wildlife Federation
MEL	Maximum Efficiency Analysis
MIS	Management Indicator Species
MMBF	Million board feet of timber
MMCF	Million cubic feet
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
NAAQS	National Ambient Air Quality Standards
NBCI Plan	National Bobwhite Conservation Initiative
NEPA	National Environmental Policy Act
NFS	National Forest System

<b>Acronym</b>	<b>Word or Phrase</b>
NGO	Non-Governmental Organizations
NHPA	National Historic Preservation Act
NNFH	Natchitoches National Fish Hatchery
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NFVW	Vegetation and Watershed Management
NVUM	National Visitor Use Monitoring
NWMP	National Wildlife Management Preserve
NWTF	National Wild Turkey Foundation
ORVs	Off-Road Vehicles
PA	Programmatic Agreement
PIT	Passport In Time
PPH	Poults Per Hen
RCW	Red-cockaded woodpecker
ROS	Recreation Opportunity Spectrum
SPB	Southern Pine Beetle
SHPZ	Streamside Habitat Protection Zone
SIA	Special Interest Area(s)
SIO	Scenic Integrity Objective
SMS	Scenery Management System
TESC	Threatened, Endangered, Sensitive and Candidate Species
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
WMA	Wildlife Management Area

# Introduction

The Kisatchie National Forest (Kisatchie NF) annually monitors and evaluates programs and projects to determine whether they comply with management direction in the Revised Land and Resource Management Plan (hereafter referred to as “forest plan” or “KNF Revised LRMP”).

Monitoring and evaluation has been an ongoing process since the forest plan became effective in 1999. It is designed to insure that forest plan goals and objectives (KNF Revised LRMP, page 2-1 to page 2-7) are being achieved; standards and guidelines are being properly implemented; and environmental effects are occurring as predicted. It also indicates whether the application of management area prescriptions is responding to public issues as well as management concerns; and if the costs of implementing the forest plan are on target. The evaluation of monitoring results allows the forest supervisor to initiate action to improve compliance with management direction where needed, improve cost effectiveness, and determine if any amendments to the plan are needed to improve resource management.

Monitoring is conducted by field reviews of projects and by inventory and survey work conducted by Forest Service resource specialists, Forest Service research scientists, universities, State resource agencies, and other cooperators.

This monitoring and evaluation report is structured to correspond to the monitoring items listed in Chapter 5, Monitoring and Evaluation, of the forest plan. These items were developed based on desired future conditions, goals and objectives, and standards and guidelines. Each monitoring item considered in this report references the corresponding monitoring item from Table 5-1 in the forest plan.

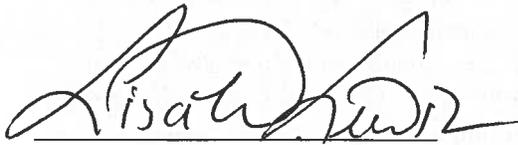
This report includes the implementation status of the previous fiscal year’s monitoring recommendations in addition to the detailed results and action plan for this year’s report. The next page contains a certification statement from the forest supervisor indicating that he has evaluated the findings and recommended actions, and directs that the action plans developed to respond to the recommendations be implemented.

## Opportunity for comment

If you have questions or comments regarding the accomplishments for fiscal year 2012, please contact us in writing at Kisatchie National Forest, 2500 Shreveport Highway, Pineville, LA 71360 or contact Paula Cote’ at (318) 473-7154. You can also send us an electronic comment by using this hyperlink to the Forest’s website: <http://www.fs.usda.gov/contactus/kisatchie/about-forest/contactus>.

## **Certification**

I have evaluated the monitoring results and recommended actions in this report. The action plan will be implemented according to the timeframes indicated unless new information or changed resource conditions warrant otherwise. I have considered funding requirements in the budget necessary to implement these actions. I find the management direction in the forest plan is sufficient to guide the Kisatchie NF in 2013 unless ongoing monitoring and evaluation efforts identify further need for change.

A handwritten signature in black ink, appearing to read "Lisa W. Lewis". The signature is fluid and cursive, with a large loop at the beginning and a long tail extending to the right.

LISA W. LEWIS  
Acting Forest Supervisor

## II. Summary of Monitoring and Evaluation Results and Report Findings

### A. Ecosystem Condition, Health, and Sustainability

There has been increased emphasis on treatments that improve forest health and wildlife. The Forest's prescribed burning program is restoring and maintaining an open understory and the native ground cover diversity:

The Forest meets or exceeds forest plan goals (first 10 years) of acreage provided in each landscape community except the mixed hardwood-loblolly pine early stages, which are insufficient. Priorities for planting continue to be the restoration of native longleaf pine in order to create future red-cockaded woodpecker (RCW) habitat.

The Forest has approximately 126,000 acres in the longleaf pine plant community, compared to the forest plan's target of 263,000 acres. In 2012, approximately 490 acres of longleaf pine (that had been cleared for final harvest) was restored through planting. Approximately 64 acres of shortleaf pine was planted. In 2012, NEPA decisions "cleared" 342 acres of artificial regeneration for future longleaf pine restoration. This is partially due to the amount of time (5 years) needed before longleaf pine can be planted<sup>1</sup>.

In terms of meeting forest plan successional stage goals, older stands of pine and hardwood have increased the most since 1999 when the forest plan was signed. On forest-wide basis, analysis of change in successional classes indicates since 1999 indicates vegetation in the:

- 0-10 year successional class has decreased from 8 to 1 percent
- 11-30 year successional class has decreased from 18 to 16 percent
- 31 to 80 year successional class has decreased from 63 to 56 percent
- 81+ year successional class has increased from 10 to 26 percent.

The forest plan directs the designation of 13 percent of the forested vegetation cover types for old growth community development within allocated old growth emphasis areas (USDA 1999, Appendix E). The 2006 Comprehensive Evaluation Report noted, "Although these are considered long-term objectives, restoration of old growth areas is occurring at a slower pace than originally expected. This has been partially due to less emphasis than expected, since restoring upland longleaf for HMA improvement was typically the priority in project proposals and decisions.

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<sup>1</sup> Converting a loblolly stand or plantation to a longleaf pine stand requires different treatments. In some cases, there are existing stands of longleaf pine that are understocked and need to be replanted with longleaf. In other cases, there is a need to convert a loblolly stand to longleaf pine. This requires several steps (following an environmental analysis and decision) including clearcutting (via a timber contract that typically lasts 3 years) and site preparation. Site preparation (typically conducted in year 4 following the timber contract) includes using mechanical and chemicals/handtools followed by prescribed burning. Completing the treatments required prior to planting can take up to 5 years.

Another factor appeared to be a reluctance to improve old-growth characteristics due to uncertainties on how to effectively create or maintain old growth communities at the site level” (USDA 2007).

A recent evaluation of stand data indicates there is minimal to no intact stands of existing old growth due to past practices (prior to the lands being managed as National Forest) which removed old (and large) trees. Riparian bottomlands, the Kisatchie Wilderness and remnant (random) stringers of old trees may currently meet old growth criteria. Since 1999, progress has been made on moving developing old growth (trees that may meet some but not all criteria) towards forest plan desired conditions through active vegetation management. The purpose of most vegetation and prescribed fire projects has been to improve the vegetation structure of red-cockaded woodpecker (RCW) habitat. Treatments have been designed to restore species diversity and composition by increasing acres of native longleaf pine ecosystem. Treatments are designed to promote the growth of trees into the larger, older age class to sustain RCW nesting and roosting habitat. Treatments have been designed to move towards the historic disturbance regime and return fire in regular intervals to the fire-dependent landscape. There is an opportunity to improve tracking old growth allocations at the project and landscape scale. In 2013, there will be renewed emphasis on tracking and reporting old growth allocations at the project and landscape scale (see Appendix G).

The forest plan does not allocate allowable sale quantity (ASQ) by first or second decade and the ASQ is for the “life” of the plan (KNF Revised LRMP, Objective 3-2, page 2-5). There are 308,889 acres of lands classified as suitable for timber production and 268,271 acres of lands classified as unsuitable for timber production (KNF Revised LRMP, Table B-2 and Table 8-3). The forest plan (Objective 3-2) directs the Forest to offer an average of 9.69 MMCF of suitable timber sale volume on an annual basis. The allowable ASQ from the category “all lands” that is included in the timber commodity Outputs and Sale Schedule (KNF Revised LRMP, Table A-3) is 13.16 MMCF:

- In FY 2012, vegetation treatments on suitable lands yielded 9.29 MMCF (92,973 CCF) and approximately 7,091 acres was treated.
- In 2012, vegetation treatments on unsuitable lands (including RCW habitat and lands utilized by the military via special use authorization) yielded approximately 3.5 MMCF (35,237 CCF) and approximately 1,711 acres were treated.

When compared to FY 2011, FY 2012 reflects an increase of approximately 6 CCF. Analysis (Appendix E) indicates that the average annual output from 1998 to 2012 is approximately 6.65 MMCF annually (Morgan 2013). The average includes data from 1998, prior to the forest plan being in place.

Prescribed fire, which contributes to resource management objectives, was applied to approximately 135,508 acres in FY 2012. Of this, 96,436 were dormant season burns and 39,072 acres of prescribed burning was conducted during the growing season. This acreage would appear to exceed the forest plan projection by about 30,000 acres (KNF Revised LRMP, Objective 6-2, page 2-6). However, the Plan provides flexibility in terms of acres and frequency of prescribed fire. For example, forest plan guideline FW-068 indicates more or less frequency in the four major landscapes may be required in certain plant communities as prescribed by management are (MA) and sub management area (SMA) direction or by site-specific environmental analysis (KNF

Revised LRMP, page 2-13). Site-specific environmental analysis has been conducted on all acres where prescribed fire was utilized. There is a need to conduct a consistency review utilizing site-specific fire analyses, MA and SMA direction and assumptions in the forest plan FEIS. It is likely that during preparation of the Plan in the mid-to-late 1990s it was not foreseen that the Forest could implement more than a minimal amount of prescribed burning. Movement towards restoration forest plan desired future conditions is dependent on the use of fire and is likely to continue exceeding the projections in the Plan. The scope and scale of prescribed burning that is needed to move towards restored landscape conditions will be addressed during forest plan revision. See Appendix F for annual prescribed fire acres from 1988 to 2012.

Planning efforts that will support out-year implementation include: (1) seven National Environmental Policy Act (NEPA) decisions that will result in 17,680 acres of commercial thinning, 342 acres of artificial regeneration for longleaf pine restoration, and (2) stand examinations on 31,822 acres (5.3 percent) of the Forest.

Data for terrestrial wildlife species exists from 1998 to 2012. Management indicator species (MIS) populations of Prairie Warblers, Eastern Wood-Pewees, Summer Tanagers, Hooded Warblers, Yellow-Billed Cuckoos, Acadian Flycatchers, Northern Parulas, and Worm-Eating Warblers appear to be below their 1998-1999 population levels but somewhat stable in years since that time. The Kentucky Warbler population appears to be above its 1998-1999 population level. Quail populations have been steadily declining on a statewide scale. Data for 2012 (LDWF 2012) indicates that a slight upward trend occurred on the Forest. The remaining terrestrial management indicator species' population levels appear to be stable or to increasing in comparison to their 1998-1999 population levels (see Table 4 and Table 5).

Aquatic MIS include brown madtom, redbfin darter, Louisiana pearlshell mussel, pirate perch, blackspotted minnow, largemouth bass and sunfish. Although numbers of largemouth bass and sunfish on the Forest are not indicative of eutrophic systems, viable populations do exist for a sustainable sport fishery. Forest-wide trends of largemouth bass and sunfish may appear to fluctuate, but this is due to natural variability. Surveys in 2012 conducted in Rapides Parish for the Louisiana pearlshell mussel (federally threatened) indicate a downward (population) trend from increasing to stable, likely due to extended periods of drought and depredation. In comparison, the survey conducted in 2009 (Grant Parish population) indicated an increasing trend. An aquatic MIS population and habitat trends report was published in 2005 (Appendix H). Since 2005, habitat and population data has been continuously collected. New data will be likely be summarized in either 2014 or 2015. However, based on historical site specific forest data, our management actions are unlikely to affect aquatic MIS due to mitigation measures as specified in our forest plan and revised land and resource management plan. Approximately 16,000 acres of botanical surveys occurred in 2012. However, no specific surveys for botanical MIS has occurred since 2002. How population and habitat trends may have changed over time is unknown. A strategy for updating botanical MIS population and habitat trends will be addressed in 2014 or 2015.

Red-cockaded woodpecker (endangered) populations have an increasing trend. Surveys (2012) for Louisiana pearlshell mussel (endangered) indicate a downward (population) trend possibly due to extended periods of drought and depredation. In comparison, the survey conducted in 2009 indicated an increasing (population) trend. Water samples taken on mussel streams indicated good water quality and met the standards set by Louisiana Department of Environmental Quality (LDEQ).

No known occurrences of threatened or endangered plant species exist on the Forest. The prescribed burning program is the most important practice used for restoration of pre-settlement habitats, which is effectively protecting, improving and maintaining threatened, endangered, sensitive and candidate (TESC) species habitat. On a small scale, some prairies and 9 acres of bogs were managed for the benefit of sensitive and conservation species by clearing of encroaching shrubs and trees - a result of fire suppression over decades. The treatment of non-native invasive species continues to improve habitat for TESC species. In FY 2012, approximately 65 acres were treated to remove non-native invasive species (NNIS). There is a need to ensure that all vegetation/restoration projects include treatments for NNIS.

Monitoring for compliance with timber removal standard and guidelines was conducted on the Winn, Catahoula, Calcasieu, and Kisatchie Ranger Districts. The Winn and Kisatchie districts were in full compliance. The Calcasieu District had a “minor departure” in one category concerning stream crossings and corrective actions were taken.

Monitoring of prescribed burning activities for compliance with soil and water standards and guidelines was conducted on the Catahoula and Winn Ranger Districts. Overall there were two minor departures in one category concerning waterbars and in one category concerning a fireline. Recommendations for 2013 were made in the monitoring evaluations.

All monitored streams meet state water quality standards and water quality standards for protection of public health and safety were commonly met at the Stuart and Kincaid Lake swim beaches. Population trends of MIS suggest that best management practices (including the use of streamside protection zones) are adequately protecting the integrity and quality of watersheds within the Forest.

Water quality was within acceptable norms (LDEQ), and population trends of MIS suggest that best management practices (BMPs) and streamside habitat protection zones (SHPZ) are adequately protecting the integrity and quality of watersheds within the Forest.

Predator/prey populations across the Forest are sufficient for a sustainable recreational fishery. Young-of-year and recruitment of all age classes is evidence that sediment has not inhibited reproduction of fishes or altered habitat beyond natural conditions.

Overall, watershed improvement work is ongoing and 530 acres were improved/restored in FY2012. Projects included restoration of user created trails, streambank restoration, and hog removal. All targets for watershed improvement work were accomplished.”

All areas of the Forest are in attainment of the National Ambient Air Quality Standards (NAAQS), including those for ozone. Field reviews of prescribed burning activities were conducted on the Catahoula and Winn Ranger Districts. Forest plan standards and guidelines were implemented and smoke management was rated as “full compliance” for all burns reviewed.

## **B. Sustainable Multiple Forest and Range Benefits**

Management practices that include vegetation (9,800 acres) and prescribed fire (135,508 acres) treatments improved habitat. Treatments that moved towards restored native species composition benefited deer, turkey, quail and rabbits. However, on a statewide-scale, deer populations are and have been considerably below the habitats' carrying capacity and herd densities are too low to

provide adequate aesthetic enjoyment for non-consumptive users. Long-term (19-year) declines have also been occurring in turkey populations in four of five habitat regions.

LDWF 2012 upland survey data was used to evaluate population trends in quail. The 2012 regional indices (calls per stop) remain below the long-term averages. The report concludes that on the Forest, burning is still common and maintains favorable plant species composition across a large area. This Forest has been identified in the Department's NBCI 2.0 plan as most likely to benefit from quail specific habitat management (Duguay and Stafford 2012).

In 2012, no specific management activities that would remove aquatic weeds from the Corney, Fullerton and Valentine Lakes were conducted. Weed treatment is scheduled for 2013. Approximately nine acres of bog habitat was improved in 2012.

Management activities maintained landscapes with high scenic diversity and no scenic integrity objective (SIO) or recreation opportunity class (ROS) was degraded. However, a forest-wide evaluation of the potential change in scenery integrity (as a result of management activities) has not been conducted due to staffing limitations.

Special Interest Areas (SIAs) were managed to the required minimum standard. Management within designated wilderness and wild and scenic rivers moved towards implementing the strategy developed by the Forest. The strategy seeks to manage these areas to a standard above the minimum.

In 2012, no archaeological resources were reported to have been harmed either internally or externally. However, there are still insufficient funds to physically monitor all sites at risk.

Management practices satisfied customers by: (1) meeting critical public health and safety standards in developed recreation sites, (2) offering a transportation system that was serviceable, (3) responding to special use permit requests in a timely manner, and, (4) maintaining landlines as funding allowed.

No private land was acquired in 2012. However, in 2011, the Forest's proposal to acquire 2,640 acres of Plum Creek lands was accepted and nominated by the regional office for acquisition.

A reliable flow of commodity outputs was provided to local economies. There was an increase in timber outputs from 2011 (see Appendix E), and demand for timber remain strong. Funding continues to constrain reaching the ASQ levels outlined in the forest plan. The interest in special wood products remained steady but the demand for firewood exceeded supply and no green biomass for sale.

Three grazing allotments were actively used for cattle grazing in 2012. The allotments are meeting the current demand for allotment-based forage resources. How vegetation treatments on the Forest have affected (improved) forage has not been evaluated. The grazing authorizations were evaluated in NEPA in 1999.

## **C. Organizational Effectiveness**

The Forest expended 97.6 percent of funds allocated with few year-end deficits. The year-end deficits are attributed to year-end payroll accruals entered by Albuquerque Service Center (ASC). Cost pool funding remained flat while operating costs increased. However, even with the increase

of costs, the Forest managed to stay within their allotted cost pool ceiling as well as the indirect cap. Travel constraints that were implemented in FY 2010 continued in FY 2012. The Forest stayed well within their constraint only expending 60.4 percent of the funds allotted.

The annual monitoring and evaluation report has not been available to the public on the Kisatchie (<http://www.fs.usda.gov/main/kisatchie/landmanagement/planning>) and Southern Region's Forest Service website since 2009. However, information from previous monitoring reports has been available by contacting the Forest. Overall, the forest plan is being kept current. The last comprehensive evaluation report (CER) was completed in 2006.

The Forest is working with multiple agencies, universities and NGOs (non-governmental organizations) to stay consistent with the best available science. The Forest: (1) has a memorandum of understanding (MOU) and Challenge Cost Share Agreement with LDWF to implement data collection/analysis and to partner with wildlife habitat work, (2) meets with LDWF on an annual basis to review the hunting and fishing regulations and discuss any new habitat improvement recommendations, (3) meets with USFWS and LDWF on an annual basis to discuss habitat work being implemented, future projects and species status for the endangered red-cockaded woodpecker, the threatened Louisiana pearlshell mussel, and the candidate Louisiana pine snake, (4) has a Candidate Conservation Agreement with USFWS and other partners (state, federal and private), (5) has a Collection Agreement with NWTf to assist with implementing eastern wild turkey habitat improvement projects, and (6) continued participation in the Non-Point Source Interagency Committee with LDEQ, the Natural Resources Conservation Service (NRCS), Louisiana Department of Forestry and other agencies. This participation is possible through the Forest's Memorandum of Agreement (MOA) with the State of Louisiana on Non-Point Source Pollution Control (Clean Water Act Section 319).

# III. Detailed M&E Results and Report Findings

## A. Ecosystem Condition, Health, and Sustainability

### Biodiversity

**Objective 2–1:** Manage to restore or maintain the structure, composition, and processes of the four major landscape forest ecosystems known to occur on the Forest, and unique or under-represented inclusional communities embedded within them. Long-term objectives for each major forest community are as follows:

- Longleaf pine forest: 263,000 acres
- Shortleaf pine / oak-hickory forest: 62,000 acres
- Mixed hardwood-loblolly pine forest: 27,800 acres
- Riparian forest: 181,000 acres (KNF Revised LRMP, page 2-4)

**Question 1:** Are management practices designed to restore or maintain the structure, composition, and processes of the four major landscape forest ecosystems and the embedded plant communities within them being implemented? (I)

### FY 2012 Findings:

- Seven environmental documents were completed in FY 2012 that focused on ecosystem landscape management for red-cockaded woodpecker (RCW) habitat, unique and native plant and animal communities, healthy growing forests for plant and animal species, water quality, recreation, enjoyment by the public, and soil conservation. In summary these seven decisions plan for commercial thinning of 17,680 acres and artificial regeneration of 342 acres for longleaf pine restoration. In FY 2012 approximately 9,800 acres of vegetation was treated. Treatment types include plantation tree release, non-native invasive removal, bog improvement, range control, mid story removal, clearcuts and a variety of thinnings.
- Other environmental documents on the forest included plans for mechanical midstory removal for RCW and wildlife habitat improvement, prescribed burning maintenance, and roads management.
- All these activities were designed to maintain the structure and composition of the major landscape forest ecosystems and the embedded plant communities within them. More emphasis over the last few years has been placed on commercial thinnings for forest health and RCW habitat improvement. There has been increased emphasis on commercial thinnings for forest health and wildlife habitat improvements. This has indirectly resulted in less emphasis on the restoration of the native forest communities. The Forest's prescribed burning program of approximately 135,508 acres in FY 2012 works toward restoring and maintaining an open understory and the native ground cover diversity.

Stand examinations were accomplished on 31,822 acres (5.3 percent) of the Forest in FY2012.

### **FY2013 Recommended Actions:**

Strive to accomplish stand exams on 10 percent of the forest every year and continue preparing environmental documents addressing management practices on as many of these acres as possible. Emphasize longleaf and shortleaf restoration where possible. The forest silviculturist should continue to field-check samples of implemented project decisions.

**Question 2:** Are the management practices successfully restoring or maintaining quality forest ecosystems; and, the structure, composition, and processes of the four major landscape forest ecosystems? (E)

- Approximately 490 acres were planted with longleaf pine seedlings in FY 2012 in areas that had been cleared by final harvests. The forest plan projected that 1,456 acres would receive final harvest annually for longleaf restoration. There is no indication that this target will be met in the future. Currently, the Forest has approximately 126,000 acres in the longleaf pine plant community, compared to the forest plan's target of 263,000 acres.
- There were 64 acres planted with shortleaf pine seedlings in FY 2012. Currently, the Forest has approximately 62,000 acres in the shortleaf pine/oak-hickory plant community, compared to the forest plan target of 62,000 acres. This forest plan objective has been met.
- There were no areas planted with mixed hardwood-loblolly pine seedlings in FY 2012. Currently, the Forest has approximately 338,000 acres in the mixed hardwood-loblolly pine plant community compared to the forest plan's long-term target of 27,800 acres.
- Riparian plant communities continue to be maintained in concert with management practices. Typically, riparian zones are excluded from mechanical harvesting activities except where selective thinning (commercial and noncommercial) are needed to improve the hardwood component for wildlife habitat improvement. In these cases, standards and guidelines are followed in order to protect the soil and water resources.

### **FY 2013 Recommended Actions**

- Strive to increase the number of acres restored to longleaf pine. Continue to monitor sites for additional treatment needs. Thinning prescriptions within red-cockaded woodpecker (RCW) Habitat management areas (HMAs) should emphasize the needed longleaf stand composition. Post implementation field checks should be done on thinnings to ensure sufficient longleaf emphasis and evaluate species composition changes and update the FSVeg database for these changes.
- Continue restoration treatments on shortleaf/hardwood sites where there is high priority for regeneration such as stands damaged by disease, insect or storms as well as those stands showing signs of decline.
- Mixed hardwood-loblolly forest types exceed long-term desired future conditions by 308,207 acres. Prescribe regeneration cuts on off-site stands where there is a high priority

for regeneration such as stands damaged by disease, insect or storms as well as those stands showing signs of decline.

- Continue to monitor management practices being implemented within streamside and riparian area protection zones for compliance with the forest plan, through timber sale contract administration and field checks. Continue to consider selective thinning and hardwood planting treatments within riparian areas to encourage hardwood component.

**Objective 2–2:** Provide for healthy populations of all existing native and desirable nonnative wildlife, fish, and plants by managing major forest ecosystems at the scale and distribution appropriate to maintain species viability. In the next 10 years, management indicator habitat objectives are as follows, noting that there will be some overlap of riparian habitat and mixed hardwood loblolly pine, mid-late stages:

- Longleaf pine, all stages: 121,000 acres
- Shortleaf pine / oak-hickory, early stages: 0 acres
- Shortleaf pine / oak-hickory, mid-late stages: 16,000 acres
- Mixed hardwood-loblolly pine, early stages: 42,000 acres
- Mixed hardwood-loblolly pine, mid-late stages: 252,000 acres
- Riparian, small streams: 85,000 acres
- Riparian, large streams: 92,000 acres (KNF Revised LRMP, page 2-4)

**Question 1:** Are management practices successfully expanding quality habitats for management indicators? (E)

**FY 2012 Findings:**

- Based on 13 years of inventoried forest-type acreages, the Kisatchie NF meets or exceeds forest plan goals for acreage provided in each landscape community except the mixed hardwood-loblolly pine early stages, which are insufficient. Table 1 compares planned and actual inventoried acreage by landscape community type. Table 2 displays acres of successional habitat types by fiscal year (2004 to 2012) in comparison to forest plan acreage goals. Table 2 indicates that the forest continues to have a deficiency of early successional habitat and exceeds forest plan goals for mid and late successional habitat. Table 3 compares successional classes in all forest types from 1999 to 2012.
- For the plan management indicator species (MIS), it is likely that these objectives are being met mainly as a result of the effective Forest prescribed burning program; however, current baseline data and survey methods have not proven effective for analyzing trends in some specific plant indicator species. There is no statistical evidence showing that management objectives have been met. Table 4 and Table 5 display MIS trends. Although 16,000 acres of botanical surveys were completed in 2012, no specific surveys for botanical MIS were conducted.
- Populations of Northern Bobwhites, Prairie Warblers, Eastern Wood-Pewees, Summer Tanagers, Hooded Warblers, Yellow-Billed Cuckoos, Acadian Flycatchers, Northern

Parulas, and Worm-Eating Warblers appear to be below their 1998-1999 population levels but somewhat stable in years since that time. The Kentucky Warbler population appears to be above its 1998-1999 population level. The remaining management indicator species' population levels appear to be stable or to increasing in comparison to their 1998-1999 population levels (USDA Forest Service 2005).

- Aquatic MIS appear to be viable and stable in the protected habitats and refuges of KNF. Although numbers of largemouth bass and sunfish in KNF are not indicative of eutrophic systems, viable populations do exist for a sustainable sport fishery. Forest-wide trends of largemouth bass and sunfish may fluctuate, but this is due to natural variability.
- The 2006 Comprehensive Evaluation Report (USDA 2007) noted, “This objective has caused some concern about the presumably low emphasis placed on restoring shortleaf pine / oak hickory. This has been explained by pointing out that the origin of this number came from vegetation modeling estimates done in FORPLAN for the first 10-year Plan period. Because the shortleaf pine / oak hickory forest ecosystem has a long rotation age and existing stands are far from maturity, the expectation during the first period was to do little or no regeneration in these areas and therefore no acres planned for the early stages” (USDA 2007, pp. 171-172).

### **FY 2013 Recommended Actions**

- The management indicator species list for plants should be modified by considering the following criteria:
  - Species occurs in a habitat that we are likely to affect through our management, or in an area that drives our management direction.
  - Species is closely associated with the habitat of interest, and population levels respond to changes in that habitat (ecological indicator species).
  - Basic biology or ecology (habitat requirements, threats, demography, etc.) is known for species or habitat.
  - Species is not so rare or obscure that its populations can't be monitored with a reasonable amount of effort.
  - Species, or habitat, occurs at a scale that allows us to monitor population in replicate treatments and control units.
- Continue to adhere to Kisatchie NF forest plan guidance.
- Continue bird surveys on Kisatchie NF.
- Resume botanical MIS surveys.
- Revisit aquatic MIS data and validate habitat and population trends.

**Table 1. Comparison of Planned and Actual Inventoried Acreage by Landscape Community Type**

<b>Landscape Community</b>	<b>Forest Plan 10-year goal (acres)</b>	<b>FY2004 Acres</b>	<b>FY2005 Acres</b>	<b>FY2007 Acres</b>	<b>FY2008 Acres</b>	<b>FY2009 Acres</b>	<b>FY 2010 Acres</b>	<b>FY 2011 Acres</b>	<b>FY 2012 Acres</b>
<b>Longleaf pine, all stages</b>	121,000	119,245	125,661	125,415	125,481	126,382	125,930	125,787	126,334
<b>Shortleaf pine / oak-hickory, early stages (&lt;10 years)</b>	0	1,149	1,182	999	1,042	1,174	1,031	1,047	936
<b>Shortleaf pine / oak-hickory, mid-late stages</b>	16,000	36,396	45,450	56,909	57,790	60,287	61,305	58,678	15,647
<b>Mixed hardwood-loblolly pine, early stages (&lt;10 years)</b>	42,000	9,720	3,053	1,141	1,129	989	981	917	950
<b>Mixed hardwood-loblolly pine, mid-late stages</b>	252,000	253,922	267,186	241,372	249,343	335,018	337,491	337,114	298,180

**Table 2. Comparison of Kisatchie NF Successional Habitat Type Acres by Fiscal Year (FY) and Forest Plan Goal**

Successional Habitat (All Forest Types)	Forest Plan Goal (Acres)	FY 2004 (Acres)	FY 2005 (Acres)	FY 2007 (Acres)	FY 2008 (Acres)	FY 2009 (Acres)	FY 2010 (Acres)	FY 2011 (Acres)	FY 2012 (Acres)
Early (0-10 years)	>= 20,000	14,339	14,859	6,216	5,947	5,987	5,360	5,772	5,634
Middle (31-50 years)	>= 50,000	66,452	78,445	86,969	89,401	87,529	80,031	80,269	82,417
Late (71+ years)	>= 75,000	175,024	189,636	238,019	257,017	272,177	289,098	288,656	298,180

**Table 3. Comparison of KNF Forest Habitat by Forest Type, Successional Class, Acre and Year**

Forest Types	Successional Classes											
	0-10 years			11-30 years			31 to 80 years			81+ years		
	1999	2010	2012	1999	2010	2012	1999	2010	2012	1999	2010	2012
<b>Pine Forest Types</b>												
Longleaf	14,170	4,173	3,704	8,736	15,729	15,216	99,110	81,077	78,897	4,320	25,355	28,789

Forest Types	Successional Classes											
	0-10 years			11-30 years			31 to 80 years			81+ years		
	1999	2010	2012	1999	2010	2012	1999	2010	2012	1999	2010	2012
Slash	147	34	32	6,734	1,503	1,332	29,723	35,006	35,088	66	129	219
Loblolly	29,936	887	735	82,987	78,122	69,781	147,324	166,388	166,906	16,527	31,378	39,350
Shortleaf	1,728	1,178	996	1,238	787	318	7,682	6,236	5,543	4,586	7,033	7,796
Subtotal	45,981	6,272	5,467	99,695	96,141	86,647	283,839	288,707	286,434	25,499	63,895	76,154
Subtotal Percent (%)*	10.1	1.7	1.2	22.1	21.1	19.0	62.1	63.0	62.3	6.1	14.1	17.1
Pine Forest Forestwide** (%)	8.1	1.0	1.0	16.4	16.1	14.1	47.1	48.1	47.2	4.2	11.0	13.1
<b>Mixed Forest Types</b>												
Pine Hardwood	2,530	423	423	3,816	4,419	4,092	14,936	11,267	10,218	4,475	9,648	11,021
Harwood-Pine	66	0	0	3,081	2,143	2,035	26,897	16,887	14,969	9,173	20,196	22,218
SubTotal	2,596	423	423	6,897	6,562	6,127	41,833	28,154	25,187	13,648	29,844	33,239

Forest Types	Successional Classes											
	0-10 years			11-30 years			31 to 80 years			81+ years		
	1999	2010	2012	1999	2010	2012	1999	2010	2012	1999	2010	2012
<b>Subtotal (%)</b>	4.2	1.1	1.1	11.1	11.0	10.1	68.1	45.1	41.1	22.1	48.2	54.0
<b>Mixed Forest Forestwide (%)</b>	0.4	0.1	0.1	1.1	1.1	1.0	7.1	5.0	4.1	2.2	5.0	6.1
<b>Hardwood Forest Types</b>												
<b>Upland</b>	106	0	0	2,025	996	639	22,694	15,085	14,137	5,538	14,283	15,777
<b>Bottomland</b>	196	0	0	2,302	1,099	847	31,726	15,570	13,369	13,215	30,767	33,030
<b>Subtotal</b>	302	0	0	4,327	2,095	1,486	54,420	30,655	27,506	18,753	45,050	48,807
<b>Subtotal (%)</b>	0.4	0	0	6.0	3.1	2.1	69.3	39.1	35.1	24.1	57.4	62.2
<b>Hardwood Forestwide (%)</b>	0.01	0	0	0.7	0.3	0.2	9.1	5.0	4.5	3.1	7.4	8.0

Forest Types	Successional Classes											
	0-10 years			11-30 years			31 to 80 years			81+ years		
	1999	2010	2012	1999	2010	2012	1999	2010	2012	1999	2010	2012
<b>Forestwide</b>												
<b>Total Acres</b>	48,879	6,695	5,890	110,919	104,798	94,260	380,092	347,516	339,127	57,900	138,789	158,200
<b>Forestwide Percent (%)</b>	8	1	1	18	17	16	63	57	56	10	23	26

\*The baseline data for 1999 was derived from Table 3-6 in the KNF Revised LRMP, page 3-23: Pine: 460,134 acres, Mixed Hardwood: 61,889 acres, Hardwood: 78,500 acres.\*\* Acres are based on 606,745 acres (KNF Revised LRMP, Appendix B-1, Table B-1, Stage 1)

**Table 4. KNF Terrestrial Management Indicator Species (MIS) Abundance Trend Baseline Averages (1998 to 2012)**

Terrestrial MIS	Found in Habitat Types <sup>2</sup>	KNF Baseline Average						
		1998 to 1999 <sup>3</sup>	2005 to 2007 <sup>4</sup>	2006 to 2008	2007 to 2010	2008 to 2010	2009 to 2011	2010 to 2012
Bachman's Sparrow	A	0.12	0.14	0.16	0.13	.10	.06	.04
Northern Bobwhite	A	0.15	0.04 <sup>a</sup>	0.03 <sup>a</sup>	0.04 <sup>a</sup>	.06	.07	.05
Prairie Warbler	A,B	0.3	0.10 <sup>a</sup>	0.07 <sup>a</sup>	0.08 <sup>a</sup>	.08	.09	.09
Red-Cockaded Woodpecker	A, C, E	0.1	0.01 <sup>c</sup>	0.02 <sup>c</sup>	0.03 <sup>c</sup>	.03	.04	.04
Red-Headed Woodpecker	A	0.11	0.1	0.11	0.11	.08	.08	.07
Cooper's Hawk	C	0	0	0	0	0	0	0
Eastern Wood-Pewee	C	0.37	0.07 <sup>a</sup>	0.09 <sup>a</sup>	0.10 <sup>a</sup>	.09	.09	.10
Pileated	C, E, G	0.25	0.27	0.25	0.23	.23	.20	.23

<sup>2</sup> A = longleaf pine habitat (early, mid & late successional stages); B = shortleaf/oak-hickory habitat (early successional stage); C = shortleaf/oak-hickory habitat (mid & late successional stages); D = hardwood – loblolly habitats (early successional stage); E = hardwood – loblolly habitats (mid & late successional stages); F = riparian habitats (small streams); and G = riparian habitats (large streams).

<sup>3</sup> Cumulative number of individuals observed per District / number of points surveyed per year per District) / 5 Districts) / the number of years in the range; <sup>a</sup>possible decreases from baseline years; <sup>b</sup>possible increases from baseline years; <sup>c</sup>this diminution is refuted by actual population counts which indicate an increasing population.

<sup>4</sup> A = longleaf pine habitat (early, mid & late successional stages); B = shortleaf/oak-hickory habitat (early successional stage); C = shortleaf/oak-hickory habitat (mid & late successional stages); D = hardwood – loblolly habitats (early successional stage); E = hardwood – loblolly habitats (mid & late successional stages); F = riparian habitats (small streams); and G = riparian habitats (large streams).

Terrestrial MIS	Found in Habitat Types <sup>2</sup>	KNF Baseline Average						
		1998 to 1999 <sup>3</sup>	2005 to 2007 <sup>4</sup>	2006 to 2008	2007 to 2010	2008 to 2010	2009 to 2011	2010 to 2012
Woodpecker								
Summer Tanager	C	0.67	0.37a	0.38a	0.34a	.35	.37	.38
Hooded Warbler	E	0.91	0.58a	0.54a	0.40a	.31	.27	.30
Wood Thrush	E	0.06	0.05	0.07	0.07	.07	.05	.05
White-Eyed Vireo	D, F	0.42	0.4	0.37	0.34	.36	.35	.34
Yellow-Billed Cuckoo	E, F	0.54	0.41	0.33a	0.34a	.29	.28	.40
Acadian Flycatcher	F	0.51	0.15a	0.10a	0.08a	.06	.07	.08
Louisiana Waterthrush	F	0.03	0	0	0	0	0	0
Kentucky Warbler	G	0.2	0.22	0.23	0.31b	.30	.32	.31
Northern Parula	G	0.12	0.04a	0.04a	0.03a	.15	.02	.02
Warbling Vireo	G	0	0	0	0	0	0	0
White-Breasted Nuthatch	G	0.05	0.02	0.03	0.02	.01	0	0
Worm-Eating Warbler	G	0.19	0.03a	0.04a	0.03a	.02	.01	.01

**Table 5. Abundance trends of Kisatchie NF Terrestrial Management Indicator Species**

Terrestrial MIS	Found in Habitat Types <sup>5</sup>	Kisatchie NF Abundance Trend* by Year					
		2007 <sup>6</sup>	2008 <sup>7</sup>	2009	2010 <sup>8</sup>	2011	2012
Bachman's Sparrow	A	0.16	0.22	.09	0.00	.08	.05
Northern Bobwhite	A	0.02	0.03	.08	0.07	.06	.02
Prairie Warbler	A,B	0.08	0.08	.09	0.08	.11	.07
Red-Cockaded Woodpecker	A, C, E	0.01	0.02	.02	0.06	.05	.02
Red-Headed Woodpecker	A	0.12	0.12	.05	0.08	.09	.05
Cooper's Hawk	C	0	0	0	0.00	0	0
Eastern Wood-Pewee	C	0.11	0.08	.07	0.11	.10	.09
Pileated Woodpecker	C, E, G	0.25	0.25	.23	0.20	.18	.31
Summer Tanager	C	0.34	0.33	.37	0.35	.39	.40

<sup>5</sup> A = longleaf pine habitat (early, mid & late successional stages); B = shortleaf/oak-hickory habitat (early successional stage); C = shortleaf/oak-hickory habitat (mid & late successional stages); D = hardwood – loblolly habitats (early successional stage); E = hardwood – loblolly habitats (mid & late successional stages); F = riparian habitats (small streams); and G = riparian habitats (large streams).

<sup>6</sup> (Cumulative number of individuals observed per District / number of points surveyed per year per District) / 5 Districts.

<sup>7</sup> (Cumulative number of individuals observed per District / number of points surveyed per year per District) / 5 Districts.

<sup>8</sup> (Cumulative number of individuals observed per District / number of points surveyed per year per District) / 5 Districts.

Terrestrial MIS	Found in Habitat Types <sup>5</sup>	Kisatchie NF Abundance Trend* by Year					
		2007 <sup>6</sup>	2008 <sup>7</sup>	2009	2010 <sup>8</sup>	2011	2012
Hooded Warbler	E	0.54	0.42	.26	0.24	.32	.33
Wood Thrush	E	0.08	0.08	.08	0.05	.02	.07
White-Eyed Vireo	D, F	0.34	0.32	.41	0.36	.29	.38
Yellow-Billed Cuckoo	E, F	0.3	0.28	.15	0.44	.26	.50
Acadian Flycatcher	F	0.08	0.07	.03	0.08	.10	.06
Louisiana Waterthrush	F	0	0.01	0	0.00	.01	0
Kentucky Warbler	G	0.27	0.22	.24	0.45	.26	.22
Northern Parula	G	0.04	0.04	.02	0.02	.03	.01
Warbling Vireo	G	0	0	0	0.00	0	0
White-Breasted Nuthatch	G	0.03	0.02	0	0.02	.01	0
Worm-Eating Warbler	G	0.05	0.03	0	0.01	.01	0

\*Cumulative number of individuals observed per district / number of points surveyed per year per district) /5 districts

**Objective 2–3:** Manage to protect, improve, and maintain habitat conditions for all threatened, endangered, sensitive, and conservation species occurring on the Forest. Manage habitat conditions on 303,000 acres of pine and pine-hardwood within 5 established Red-cockaded woodpecker (RCW) habitat management areas to achieve a long-term forest-wide RCW population of 1,405 active clusters (KNF Revised LRMP, page 2-4).

**Question 1:** Are management practices designed to protect, improve, and maintain threatened, endangered, sensitive, and conservation species being implemented? Are management strategies designed for red-cockaded woodpecker habitat management being implemented within designated habitat management areas? (I)

**Question 2:** Are habitat conditions for threatened, endangered, sensitive, and conservation species improving? (E)

**FY 2012 Findings:**

- No known occurrences of threatened or endangered plant species exist on the Kisatchie NF. The Forest's prescribed burning program is the most important practice used for restoration of pre-settlement habitats, which is proving to be very effective in protecting, improving and maintaining TESC species. On a small scale some prairies and 9 acres of bogs were managed for the benefit of sensitive and conservation species, by clearing of encroaching shrubs and trees – a result of fire suppression over decades. Additionally, treatment of non-native invasive species continues to improve habitat for TESC species. In FY 2012, approximately 65 acres were treated to remove non-native invasive species.
- Kisatchie NF District personnel are required to design and implement management activities according to NEPA standards. Kisatchie NF ecosystem conservation staff provides assistance as requested.

**Question 3:** Are red-cockaded woodpecker and Louisiana pearlshell mussel population trends responding positively to management strategies? (V)

**FY 2012 Findings**

- RCW populations have an increasing trend, see Table 6 (following page).
- Louisiana pearlshell mussel (LPM) surveys are performed every three years. The survey conducted in 2012 indicated that LPM on Kisatchie National Forest Land in Grant Parish (Catahoula Ranger District) indicated a downward trend from the prior survey, possibly due to extended periods of drought and depredation. In comparison, the survey conducted in 2009 indicated that the LPM occurring on the Forest in Rapides parish (Calcasieu Ranger District) was increasing.
- The Forest is working with the U.S. Fish and Wildlife Service (USFWS) and several partners to maintain an active task force with a panel of experts and interested parties for the betterment of the pearlshell.
- The Forest and the USFWS have collaborated in a joint project to identify the pearlshell host fishes. From the research conducted in the spring of 2011, Natchitoches National Fish Hatchery (NNFH) staff was able to narrow down when the female LPMs were developing glochidia. Angela Williamson, who is currently a graduate student at the University of New Orleans, is conducting host fish studies on the LPM as well as looking at possible factors influencing glochidial development. To support the research, staff members from NNFH, FS, and Williamson placed temperature data loggers in LMP streams.
- Through the USDA Animal and Plant Health Inspection Service (APHIS) program, beavers were removed and beaver dams were destroyed to prevent LMP from inundation. Forest personnel are also actively removing beaver dams.

- Water samples taken on mussel streams indicated good water quality and were within state standards set by Louisiana Department of Environmental Quality (LDEQ).

#### **FY 2013 Recommended Actions**

- Continue increased emphasis on RCW management across the Forest. Identify and prioritize thinning of foraging habitat, improvement and expansion of RCW clusters, and mid-story reduction projects. Work with the USFWS to prioritize future projects and identify habitat needs. Identify all LPM beds on the Forest, and develop means of stream improvement projects and continue monitoring the number of mussels on a recurring basis.

**Table 6. Red-cockaded woodpecker (RCW) population data 2004 to 2012**

<b>RCW Population</b>	<b>Population Recovery Goal</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
<b>Catahoula</b>	250	28	34	39	44	53	66	66	70	64
<b>Evangeline</b>	231	83	91	98	106	107	117	122	126	131
<b>Kisatchie</b>	292	23	27	31	37	42	45	50	46	45
<b>Winn</b>	263	23	28	31	31	32	31	33	26	27
<b>Vernon</b>	350	129	134	141	143	152	154	160	162	155
<b>Forest Total:</b>	<b>1,386</b>	<b>286</b>	<b>314</b>	<b>340</b>	<b>361</b>	<b>386</b>	<b>413</b>	<b>431</b>	<b>430</b>	<b>422</b>

**FY 2013 Recommended Actions**

- Continue monitoring all known RCW populations. Prescribe burn the RCW nesting and foraging habitat as much as feasible. Engage in RCW translocations to bolster populations, if feasible. Continue to work closely with the USFWS.
- Continue to monitor LMP streams that are prone to drought and investigate streams that are experiencing depredation. Control beaver activity and enforce regulations prohibiting off-road vehicles (ORVs) from damaging LMP habitat. Continue implementation of best management practices (BMPs) and streamside habitat protection zones (SHPZs) in LPM habitat. Rehabilitate areas that are contributing to LMP habitat damage. Encourage collaboration from other agencies, partners, private landowners and volunteers to help protect the LPM. Provide assistance to the USFWS and interested parties with monitoring and research efforts.

- Continue beaver control, enforcement of Forest Service regulations prohibiting ORVs from riding in streams, and implementation of BMPs and SHPZs that protect Louisiana pearlshell mussel habitat. Monitor areas where ORVs violations continually occur. Encourage collaboration from other agencies, partners, private landowners, and volunteers to help protect the pearlshell.

**Objective 2–4:** Develop or maintain old-growth forest attributes, for their contribution to biological and visual diversity, habitats for plant and animal species, and maintenance of a natural gene pool, within designated patches on approximately 13 percent of the Forest based upon representation of the major forest ecosystems and old-growth community types. Long-term old-growth forest objectives are as follows:

**Longleaf pine forest dominated patches: 48,800 acres**

- Coastal plain upland mesic hardwood: 2,550 acres
- Upland longleaf, woodland, and savanna: 45,350 acres
- Southern wet pine forest, woodland, and savanna: 780 acres
- Dry and xeric oak forest, woodland, and savanna: 120 acres

**Shortleaf pine/oak-hickory forest dominated patches: 13,500 acres**

- Coastal plain upland mesic hardwood: 1,290 acres
- Dry and dry-mesic oak-pine forest: 11,630 acres
- Dry and xeric oak forest, woodland, and savanna: 60 acres
- Xeric pine and pine-oak forest and woodland: 50 acres
- Seasonally wet oak-hardwood woodland: 350 acres
- River floodplain hardwood forest: 120 acres

**Mixed hardwood-loblolly pine forest dominated patches: 6,100 acres**

- Coastal plain upland mesic hardwood: 700 acres
- Seasonally wet oak-hardwood woodland: 300 acres
- Dry and dry-mesic oak-pine forest: 4,650 acres
- River floodplain hardwood forest: 450 acres

**Riparian forest dominated patches: 12,700 acres**

- Coastal plain upland mesic hardwood: 1,820 acres
- River floodplain hardwood forest: 1,180 acres
- Cypress-tupelo swamp forest: 1,400 acres

- Eastern riverfront forest: 6,400 acres
- Seasonally wet oak-hardwood woodland: 1,400 acres
- Dry and dry-mesic oak-pine forest: 500 acres (KNF Revised LRMP, page 2-4 to page 2-5)

**Question 1: Are management practices designed to develop old-growth forest attributes being implemented? (I)**

The 2006 Comprehensive Evaluation Report noted, “Although these are considered long-term objectives, restoration of old growth areas is occurring at a slower pace than originally expected. This has been partially due to less emphasis than expected, since restoring upland longleaf for HMA improvement was typically the priority in project proposals and decisions. Another factor appeared to be a reluctance to improve old-growth characteristics due to uncertainties on how to effectively create or maintain old growth communities at the site level” (USDA 2007).

A recent evaluation of stand data indicates there is minimal to no intact stands of existing old growth due to past management practices (prior to the lands being managed as National Forest) which removed old (and large) trees. Riparian bottomlands, the Kisatchie Wilderness and remnant (random) stringers of old trees may currently meet old growth criteria. Since 1999, progress has been made on moving developing old growth (trees that may meet some but not all criteria) towards forest plan desired conditions through active vegetation management. The purpose of most vegetation and prescribed fire projects has been to improve the vegetation structure of red-cockaded woodpecker (RCW) habitat. Treatments have been designed to restore species diversity and composition by increasing acres of native longleaf pine ecosystem. Treatments are designed to promote the growth of trees into the larger, older age class to sustain RCW nesting and roosting habitat. Treatments have been designed to move towards the historic disturbance regime and return fire in regular intervals to the fire-dependent landscape.

**Question 2: Are the management practices successfully developing or maintaining forest attributes similar to those found in old-growth? (E)**

**FY 2012 Findings:**

Table 3 compares Kisatchie NF forest habitat acres by forest type, successional class, and acres from 1999 to 2012. Older stands of pine and hardwood have increased the most since 1999 when the forest plan was signed. See response to Question 1 of Objective 2-4.

**FY 2013 Recommended Actions**

- Improve tracking old growth allocations at the project and landscape scale. In 2013, there should be renewed emphasis on tracking and reporting old growth allocations at the project and landscape scale (see Appendix G).
- Continue the current prescribed burning program of 80,000 to approximately 135,000 acres per year. Increase the ratio of growing season burns to dormant season burns, since growing season burns are critical for successful gains in our restoration efforts. It is important to increase efforts to remove encroaching woody plants in the Winn district

prairies and in pitcher plant bogs throughout the forest, as these natural communities provide habitat for many of our TESC species.

- Adhere to the land management practices described in the forest plan which calls for relatively older timber stands.

**Objective 2–5:** Manage to protect or enhance the unique plant and animal communities, special habitat features, habitat linkages and corridors, and aquatic ecosystems associated with streamside habitat and riparian areas (KNF Revised LRMP, page 2-5).

**Question 1:** Are streamside habitat protection zones and riparian area protection zones being delineated and managed as prescribed? (I)

**FY 2012 Findings:**

Design features and best management practices are made part of all NEPA analyses and decisions as applicable. The practices are followed during project implementation for protecting streamside habitat zones and riparian area zones. In 2012, field reviews were conducted on prescribed burning activities as discussed earlier under soils conditions. SHPZs were being protected per the forest plan.

In 2012, vegetation projects were monitored for compliance with soil and water standards and guidelines. The Winn and Kisatchie districts were in compliance. The Calcasieu District had a “minor departure” in one category concerning stream crossings, corrective actions were taken.

**FY 2013 Recommended Actions**

- Document the streamside habitat protection zones and mitigation actions needed to manage in and near these areas. Delineate these areas in the prescription stand maps and in GIS.
- Use the new national BMP protocol for monitoring.
- Continue to monitor prescribed burning and timber management activities for implementation of forest plan standards and guidelines.

**Question 2:** Are these zones successfully protecting or enhancing unique plant and animal communities, special habitat features, habitat linkages, and aquatic ecosystems? (E)

**FY 2012 Findings:**

No unacceptable impacts to plant and animal habitat communities within streamside protected zones have been detected. Also see answer to Question 1 for Objective 2-5.

**FY 2013 Recommended Actions:**

See answer to Question 1 for Objective 2-5.

**Objective 6-2:** Utilize prescribed fire in fire-dependent ecosystems, including Kisatchie Hills Wilderness, to maintain natural plant communities by varying the timing, frequency, and intensity of fire. Apply prescribed fire on 80,000–105,000 acres annually, with 10–20 percent of the area

burned during the growing season. Focus growing season burning on longleaf pine landscapes (KNF Revised LRMP, page 2-6).

**Question 1:** Are the prescribed fire regimes being applied to all appropriate landscapes as prescribed, to maintain fire-dependent ecosystems? (I)

**FY 2012 Findings:**

The prescribed burning goals in the forest plan range from 80,000 to 105,000 acres. In FY 2012, the Forest accomplished 135,508 acres which is above the range estimated in the forest plan. Approximately 96,436 acres were prescribed burned during the dormant season and 39,072 acres in the growing season. Prescribed burning occurred in the following land type associations (Table 7).

**Table 7. Kisatchie NF FY 2012 Acres of Prescribed Fire by Land Type Association**

Land Type Association Units	Dormant Season (Acres)	Growing Season (Acres)
1	59,077	21,739
2	17,001	6,748
3	4,227	4,927
4	4,222	1,384
5	8,776	4,274
6	1,934	2,449
7	684	
8		
9		
<b>Total</b>	<b>96,436</b>	<b>39,072</b>

**FY 2013 Recommended Actions**

The Forest should continue to monitor the weather and take advantage of every burning opportunity. Strive to maximize the implementation of growing season burns on longleaf pine plant community landscapes. The Forest should maximize its burn opportunities in fall. The Forest will have two regional fuels helicopters to increase the production and reduce the cost of CWN (call when needed) helicopters.

**Question 2:** Are the natural plant communities being maintained by the prescribed fire regimes? (E)

### **FY 2012 Findings:**

Movement towards re-establishing plant community composition and structure desired conditions is occurring. Botanical monitoring indicates the Forest's prescribed burning program is the most important practice used for restoration of pre-settlement habitats, which is proving to be very effective in protecting, improving and maintaining TESC species.

### **FY 2013 Recommended Actions**

Continue the current prescribed burning program of 80,000 to 135,000 acres per year. Increase the ratio of growing season burns to dormant season burns, since growing season burns are critical for successful gains in restoration efforts. It is important to increase efforts to remove encroaching woody plants in the Winn district prairies and in pitcher plant bogs throughout the forest, as these natural communities provide habitat for many of our TESC species.

### **Forest Health**

**Objective 1–3:** Manage for air quality consistent with the Clean Air Act by implementing practices which are designed to meet state air quality standards and are consistent with maintaining the general forest area in Class II air quality (KNF Revised LRMP, page 2-4).

**Question 1:** Are Forest Service and the La. Dept. of Agriculture & Forestry's smoke management guidelines and regulations being applied? Are performance requirements concerning air quality being incorporated in permitted activities?

### **FY 2012 Findings:**

- The Kisatchie NF followed the direction and parameters as set in the Louisiana Smoke Management Voluntary Guidelines" (LSU Agriculture Center 2013) .A burn plan is prepared for each proposed prescribed fire and smoke sensitive areas are identified. In addition, site specific concerns and smoke management criteria for the individual burn unit are identified in the burn plan.
- Field reviews of prescribed burning activities were conducted on the Catahoula and Winn Ranger Districts. Forest plan standards and guidelines were implemented and smoke management was rated as "full compliance" for all burns reviewed. Burn plans identified smoke sensitive areas and there was good mixing height and transport wind the days of the burns. The district coordinated with local law enforcement as necessary for traffic safety, and the roads were posted for smoke conditions.

### **FY 2013 Recommended Actions**

Use the new national BMP protocol to evaluate how Louisiana Smoke Management Guidelines are being followed.

**Question 2:** Does air quality meet NAAQS and state standards? (E)

### **FY 2012 Findings:**

Louisiana Department of Environmental Quality (LDEQ) has monitoring stations in Alexandria, Shreveport, and Monroe. All areas of the Forest are in attainment of the National Ambient Air Quality Standards (NAAQS), including those for ozone.

### **FY 2013 Recommended Actions**

Continue to coordinate with LDEQ Air Quality Department on monitoring.

**Objective 1–4:** Provide a level of wildfire protection which emphasizes cost effective wildfire prevention and suppression while minimizing loss of resources (KNF Revised LRMP, page 2-4).

**Question 1:** Is wildfire protection being provided in a cost effective manner? Are losses to wildfire being minimized? (I)

### **FY 2012 Findings:**

Wildland fire preparedness funding continues to be below the most efficient level. As a result, wildland fire losses were not being minimized due to the funding shortfall. The Forest still could not fill vacant firefighter positions. The future Fire Planning Analysis is expected to assist the Forest on this issue.

### **FY 2013 Recommended Actions**

The Forest will continue to operate at the current efficiency level until fire preparedness funding is increased, and staff accordingly.

**Question 2:** Are resources identified in NFMAs being made available in accordance with budget funding levels? Are acres lost to wildfire within the range identified by NFMAs for the current budget level? (E)

### **FY 2012 Findings:**

Resources identified in the MEL (maximum efficiency) analysis are being made available in accordance with budget funding level. The Forest experienced a total of 1,719 acres in wildland fires in FY2012. The acceptable range identified in the plan is 2,108. The Forest was 389 acres below this range. The Forest had 52 fires (1,719 acres of NFS land).

### **FY 2013 Recommended Actions**

Manage for productive and healthy forest ecosystems by utilizing prescribed fire to prevent and minimize resource losses to wildland fires.

**Objective 1–5:** Manage for productive and healthy forest ecosystems by utilizing comprehensive integrated approaches designed to prevent and minimize resource losses or damage due to insects and disease (KNF Revised LRMP, page 2-4).

**Question 1:** Do management practices provide for correct site/species selection, reduce overstocked stands to optimum levels and insure prompt detection and control of insects and diseases? (I)

### **FY 2012 Findings:**

See response to Objective 2-1, Questions 1 and 2, Objective 2-2, Question 1, and Objective 2-4, Questions 1 and 2.

### **FY 2013 Recommended Actions**

See Objective 2-1, Questions 1 and 2, Objective 2-2, Question 1, and Objective 2-4, Questions 1 and 2.

**Question 2:** Has management resulted in a decrease of susceptibility of southern pine beetle and other pests? Are pest incidents decreasing with applied integrated management? (E)

### **FY 2012 Findings:**

Severe drought has impacted southern yellow pines across the south. Generally, such stressed pines are prone to southern pine engraver beetle, attacks (*Ips*). In the last decade, virtually all, bark beetle mortality within the state have been due to *Ips*. Insect and disease population trends on the Kisatchie NF were stable and low in FY2011 and were predicted to be low through 2012 with the possible exception of an increase in scattered *Ips* beetle attacks as a result of drought.

### **FY 2013 Recommended Actions**

Continue to monitor for possible SPB attacks through aerial observations. Expect an increase in scattered pine mortality due to the southern pine engraver beetles (*Ips*) capitalizing on drought-stressed pines. Field check for increased mortality from Annosus root disease on thinned loblolly stands on high hazard sites.

### **Watershed Conditions**

**Objective 1–1:** Maintain or improve the Forest’s long-term soil productivity. This is accomplished through land management practices designed to meet requirements for minimizing soil erosion and compaction, by not exceeding allowable soil loss for any given soil, by revegetating disturbed areas, and by restoring degraded areas to a natural condition (KNF Revised LRMP, page 2-3).

**Question 1:** Are management practices designed to minimize soil erosion, compaction and loss of soil productivity being applied? (I)

### **FY 2012 Findings:**

- Monitoring for implementation of timber removal standard and guidelines was conducted on the Catahoula, Calcasieu, and Kisatchie Ranger Districts. All standards and guidelines monitored on the Winn and Kisatchie districts were in compliance. The Calcasieu District had a “minor departure” in one category concerning stream crossings, corrective actions were taken.
- Monitoring of prescribed burning activities for compliance with soil and water standards and guidelines was conducted on the Catahoula and Winn Ranger Districts. The Catahoula District had a “minor departure” in one category concerning waterbars and the Winn District had a “minor departure” in one category concerning a fireline. Recommendations were made in the monitoring evaluations.

### **FY 2013 Recommended Actions**

- Use the new national BMP protocol for monitoring (USDA 2012)

- Continue monitoring prescribed fire management and timber management activities for implementation of forest plan standards and guidelines.

**Question 2:** Is allowable soil loss being exceeded? Are disturbed and degraded areas being restored and revegetated to a natural condition? (E)

**FY 2012 Findings:**

- Monitoring for implementation of timber removal standard and guidelines was conducted on the Catahoula, Calcasieu, and Kisatchie Ranger Districts. All standards and guidelines monitored on the Winn and Kisatchie districts were in compliance. The Calcasieu District had a “minor departure” in one category concerning stream crossings, corrective actions were taken.
- Watershed improvement work is ongoing. All targets for watershed improvement work were accomplished with CWKV (Cooperative Work, Knutson-Vandenberg) and NFWW (vegetation and watershed management) funding.

**FY 2013 Recommended Actions**

Continue to restore and revegetate disturbed areas.

**Question 3:** How do timber management practices, especially timber harvesting and consequent compaction, affect soil productivity? (V)

**FY 2012 Findings:**

- The “Long Term Soil Productivity Study” is a national study being conducted to evaluate the effects of various timber management practices on the productivity of soil. Research plots are located at various locations around the United States including the Catahoula and Calcasieu Ranger Districts.
- Preliminary findings from the study being conducted by the Southern Research Station indicate that when sites located on several soil types with a severe compaction hazard rating were subjected to experimental compaction, bulk densities recovered to near original undisturbed levels within ten years and pine productivity was unaffected.
- Preliminary results also indicate that soil productivity may be decreased by slash removal or increased by phosphorus fertilization on phosphorus-deficient sites. In general, less productive sites are more susceptible to detrimental harvesting impacts than highly productive sites.

**FY 2013 Recommended Actions**

Continue to coordinate with and assist the Southern Research Station with the Long Term Soil Productivity Study (USDA Forest Service 2013).

**Objective 1–2:** Maintain or improve the integrity of aquatic ecosystems to provide for high water quality, stream-channel stability, natural flow regimes, water yield, and aquatic resources by managing in accordance with the Clean Water Act and by meeting all state and federal water quality standards (KNF Revised LRMP, page 2-3 to page 2-4).

**Question 1:** Are management practices designed to minimize contamination, sedimentation, and maintain stream channel stability being applied? (I)

**FY 2012 Findings:**

- Monitoring for implementation of timber removal standard and guidelines was conducted on the Catahoula, Calcasieu, and Kisatchie Ranger Districts. All standards and guidelines were monitored on the Winn and Kisatchie districts were in compliance. The Calcasieu District had a “minor departure” in one category concerning stream crossings, corrective actions were taken.
- Monitoring of prescribed burning activities for compliance with soil and water standards and guidelines was conducted on the Catahoula and Winn Ranger Districts. The Catahoula district had a “minor departure” in one category concerning waterbars, and the Winn district had a “minor departure” in one category concerning a fireline. Recommendations were made in the monitoring evaluations.

**FY 2013 Recommended Actions**

Continue to monitor prescribed burning and timber management activities for implementation of Standards and Guidelines.

**Question 2:** Are state water quality standards and state anti-degradation policies being met? Is water quality being degraded? (E)

**FY 2012 Findings:**

- Water quality of nine streams on the Kisatchie NF is monitored quarterly in cooperation with LDEQ. Streams / Site Numbers are: Cress Creek / 0556, Beaver Creek / 0570, Bayou Clear / 0554, Loving Creek / 0555, Long Branch / 0572, Castor Creek / 0573, Little Bayou Clear / 0574, Brown Creek / 0571, Saline Bayou / 0553. All monitored streams are habitat for the Louisiana PearlsHELL mussel except for Saline Bayou, which is a Louisiana Natural and Scenic River as well as a National Scenic Stream. The quarterly samples indicate that streams meet state water quality standards for the parameters that were tested.
- Bi-weekly testing of fecal coliform levels at Stuart, Kincaid, and Caney Lakes swim beaches indicated that water quality standards for protection of public health and safety were commonly met.

**FY 2013 Recommended Actions**

Continue to monitor nine streams cooperatively with LDEQ for dissolved oxygen, pH, temperature, turbidity, and conductivity via a portable water quality probe. Continue required monitoring for coliform bacteria at the Forest’s swim beaches.

Objective 2–6: Manage perennial and intermittent streams as well as natural and man-made lakes, reservoirs, and ponds for native and desirable nonnative fish species and aquatic communities (KNF Revised LRMP, page 2-5).

Question 1: Are lake predator-prey populations in balance? Are management practices sufficiently protecting stream and lake habitats? Are primary aquatic food chain organisms being impacted by siltation?

**FY 2012 Findings:**

- Predator/prey populations across the Forest are sufficient for a sustainable recreational fishery. Lakes were stocked with Florida strain bass and channel catfish.
- Water quality was within acceptable norms (LDEQ), and population trends of MIS suggest that BMPs and SHPZs are adequately protecting the integrity and quality of watersheds within the Forest.
- Young-of-year and recruitment of all age classes is evidence that sediment has not inhibited reproduction of fishes or altered habitat beyond natural conditions.

**FY 2013 Recommended Actions**

- Establish size and creel limits on the Forest if needed to ensure recruitment and sustainability of the resource. Continue to monitor and stock when needed.
- Continue to monitor and assess (analyze and interpret data) the effectiveness of management strategies on the Forest concerning aquatic resources.
- Continue to monitor and identify any future restoration projects.

Question 1. Are lake populations healthy? Are nonnatives and / or generalist-omnivore natives affecting lake biomass and balance? Is lake habitat sufficient? (E)

**FY 2012 Findings:**

Relative weights of largemouth bass indicate healthy populations and adequate forage bases. There is no evidence of primary or secondary infections and disease. Presence of nonnatives and omnivores were evaluated and were not found to be affecting lake biomass and balance. Channel catfish were stocked to fill the habitat niche that would otherwise be filled by undesirable species such as bullheads. Water quality on NFS lakes was within the norms associated with infertile oligotrophic systems of the sandy coastal plains. Management practices are being implemented to maintain and enhance lake habitat. The grass carp in Caney lakes continue to manage the growth of *hydrilla verticillata* and other aquatic vegetation. Corney, Valentine, and Fullerton lakes are experiencing increased aquatic weed growth.

**FY 2013 Recommended Actions**

- Continue to monitor the health of lake fisheries.
- Continue monitor for nonnatives and generalist-omnivore natives. Stock catfish fingerlings when available and necessary.
- Continue management practices to maintain and enhance lake habitat.

- Corney and Valentine lakes need to be drawn down to manage aquatic weeds and to allow decomposition of the “muck” on the benthos layer, or lake floor.
- Fullerton lake habitat improvements are needed to manage the ever increasing aquatic weed infestation. The shoreline areas need to be deepened and/or grass carp need to be stocked.

## **B. Sustainable Multiple Forest and Range Benefits**

### **Outdoor Recreation Opportunities**

Objective 2–7: Provide quality habitat for game and fish populations (KNF Revised LRMP, page 2-5).

**Question 1:** Are management practices successfully expanding quality habitats for game and fish species? (E)

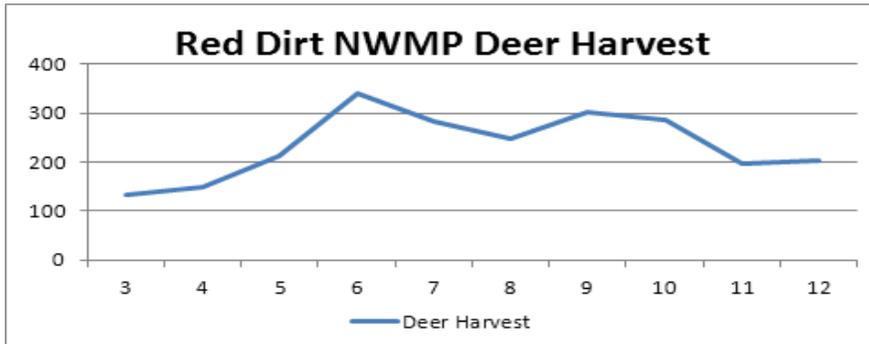
#### **FY 2012 Findings:**

- Each year the Forest implements habitat improvement by prescribed burning and reducing the basal area of the timber stands. Each management practice improves the availability for sunlight to reach the forest floor which in-turn benefits species including deer, turkey, quail and rabbits.
- The Forest has placed a priority in the reintroduction of longleaf and shortleaf pine restoration.
- The Kisatchie NF works closely with partners such as the Louisiana Department of Wildlife and Fisheries (LDWF), National Wild Turkey Federation (NWTf) and Louisiana Wildlife Federation (LWF), see Table 8 to Table 9, Figure 1 and Figure 2.

Table 8 and Figure 1 displays deer harvest data for the Red Dirt National Wildlife Management Preserve (NWMP) from 2003 to 2012.

**Table 8. Red Dirt National Wildlife Management Preserve Deer Harvest Data 2003 to 2012**

<b>Year</b>	<b>Harvest Number</b>	<b>Year</b>	<b>Harvest Number</b>
2003	134	2009	301
2004	148	2010	287
2005	213	2011	196
2006	342	2012	202
2007	284		
2008	247		

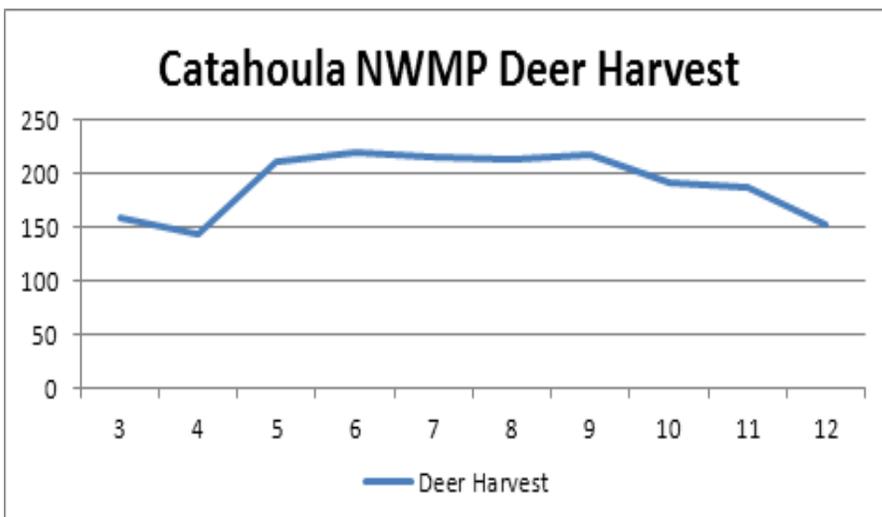


**Figure 1. Red Dirt NWMP Deer Harvest Trend 2003 to 2012**

Table 9 and Figure 2 (below) displays deer harvest data and trend for the Catahoula National Wildlife Management Preserve (NWMP) from 2003 to 2012.

**Table 9. Catahoula National Wildlife Management Preserve Deer Harvest Data 2003 to 2012**

Year	Harvest Number	Year	Harvest Number
2003	158	2009	217
2004	148	2010	191
2005	211	2011	186
2006	219	2012	152
2007	216		
2008	214		



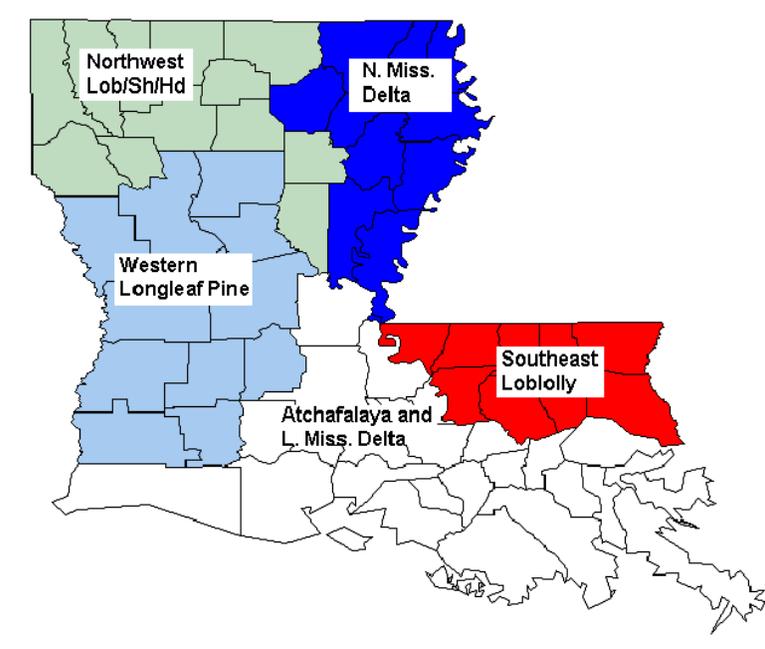
**Figure 2. Catahoula NWMP Deer Harvest Trend 2003 to 2012**

The Kisatchie NF is generally within the Western Longleaf Habitat Region (Calcasieu, Kisatchie, Catahoula and Winn Ranger Districts) and the Northwest Loblolly/Shortleaf/Hardwood Habitat Region (Caney Ranger District). No specific forest-wide data is available in areas outside the wildlife management preserves. However, deer populations are and have been considerably below the habitats' carrying capacity and herd densities are too low to provide adequate aesthetic enjoyment for non-consumptive users.

The LDWF collects wild turkey poult production data from across the state each year. Table 9 (following page) represents poult per hen (PPH) by year and habitat region. The production rates are then ranked into 5 categories: 1) Excellent (4.0 PPH or higher) 2) Very good (3.3 - 3.9 PPH) 3) Good- 2.6 - 3.2 PPH 4) Fair (2.0- 2.5 PPH) or 5) Poor- below 2.0 PPH (adapted from pers. comm. Southeast Wild Turkey Technical Committee). The state is divided along parish lines into 5 regions based largely on historic habitat/geological regions (Figure 3). The Calcasieu, Kisatchie, Catahoula and Winn Ranger Districts are generally within the Western Longleaf Habitat Region and the Caney District is within the Northwest Loblolly/Shortleaf/Hardwood Habitat Region.

The 2012 Summer Wild Turkey Survey indicates an increase in average poult production over much of Louisiana. In 2012, all habitat regions had PPH ratios above their 18-year average. With the exception of the Northwest Loblolly Short-leaf Pine Hardwood region, which was only slightly lower, all habitat regions had a substantial increase in PPH ratios over last year's index.

Long-term (19-year) declines ( $P < 0.0001$ ) have been occurring in turkey PPH production for four of five habitat regions; these regions are producing fewer poults each year (Table 10). The only habitat region not experiencing a long-term decline in PPH production is the Southeast Loblolly Pine region. This region has a significant long-term increase in PPH production ( $P = 0.02$ ).



**Figure 3. State of Louisiana Wildlife Habitat Regions**

**Table 10. LDWF Regional Estimated Wild Turkey Population Densities 1994 to 2012**

<b>Year</b>	<b>North Mississippi Delta</b>	<b>Northwest Lob/Shortleaf /Hardwood</b>	<b>South Atchafalaya /Lower Mississippi Delta</b>	<b>Southeast Loblolly Pine**</b>	<b>Western Longleaf Pine**</b>
1994	0.9	1.5	1.8	2.6	3.1
1995	0.0	2.0	3.6	1.1	2.8
1996	1.1	4.1	2.2	1.5	4.7
1997	3.4	2.4	1.4	1.6	3.4
1998	5.5	3.0	2.9	0.8	3.1
1999	3.8	3.6	3.4	1.3	3.0
2000	3.7	3.1	0.7	1.0	1.9
2001	7.0	2.9	1.3	1.2	2.9
2002	5.3	2.9	0.6	1.4	5.1
2003	3.3	1.4	0.6	2.1	2.9
2004	1.9	2.4	1.2	0.6	1.1
2005	2.0	2.6	3.0	2.0	2.1
2006	1.2	1.4	1.4	1.4	2.0
2007	1.9	1.5	1.2	1.9	1.3
2008	0.5	1.7	0.2	1.6	1.3
2009	0.7	0.8	1.2	2.1	1.7
2010	1.6	1.7	0.6	1.6	1.7
2011	1.3	2.5	0.2	1.3	0.8
2012	2.2	2.3	1.7	2.0	2.7
<b>aMean*</b>	<b>2.0 A</b>	<b>2.1 A</b>	<b>1.1 C</b>	<b>1.6 B</b>	<b>2.0 A</b>

\*Long-term means with the same letter within a row do not differ significantly (P < 0.001).

Bobwhite quail population densities are low region-wide and squirrel populations are stable. LDWF 2012 upland survey data was used to evaluate population trends in quail. The 2012 regional indices (calls per stop) remain below the long-term averages. The LDWF report states adverse weather and habitat deterioration have reduced bobwhite quail abundance over the last 20 years. The longleaf region of western and central Louisiana was historically one of the best areas of bobwhite habitat. Habitat quality in this region has deteriorated as more land is subject to intensive pine management practices. The decreased use of prescribed burning as a forest management tool on private and industrial lands is probably the most important change in this area in the past several years. The report concludes that on the Forest, burning is still common and maintains favorable plant species composition across a large area. However, burns are conducted in blocks that limit post burn proximal cover needed by quail. This area has been identified in the NBCI 2.0 plan as most likely to benefit from quail specific habitat management (Duguay and Stafford 2012).

Year to year fluctuations are due largely to weather conditions. However, deteriorating habitat conditions are thought to be responsible for the long-term decline (Duguay and Stafford 2012). Table 11 displays the results of fall bobwhite whistling surveys conducted in 2012 on selected Wildlife Management Areas (WMA) and the Vernon Unit on the Calcasieu Ranger District.

**Table 11. 2012 fall bobwhite whistling surveys results on selected Wildlife Management Areas and the Vernon Unit, Calcasieu Ranger District**

<b>Route</b>	<b>Calls per stop 2011</b>	<b>Calls per stop 2012</b>	<b>Long-term mean Calls per stop*</b>
Camp Beauregard WMA	0	0	0.03
Ft. Polk WMA	0.20	0.15	0.23
Jackson-Bienville WMA	0.20	0.10	0.32
Peason Ridge WMA	0.20	0.15	0.26
Vernon Unit #1	0.10	0	0.12
Vernon Unit #2	0.10	0.05	0.10

\*Baseline years vary by route and do not include current year: Camp Beauregard WMA 1990-2011; Ft. Polk WMA 1983-2011; Jackson-Bienville WMA 1990-2011; Peason Ridge WMA 2003-2011; Vernon Units #1 and #2 1990-2011.

Figure 4 displays the trend from 1983 to 2012 in longleaf pine which is representative for the Forest.

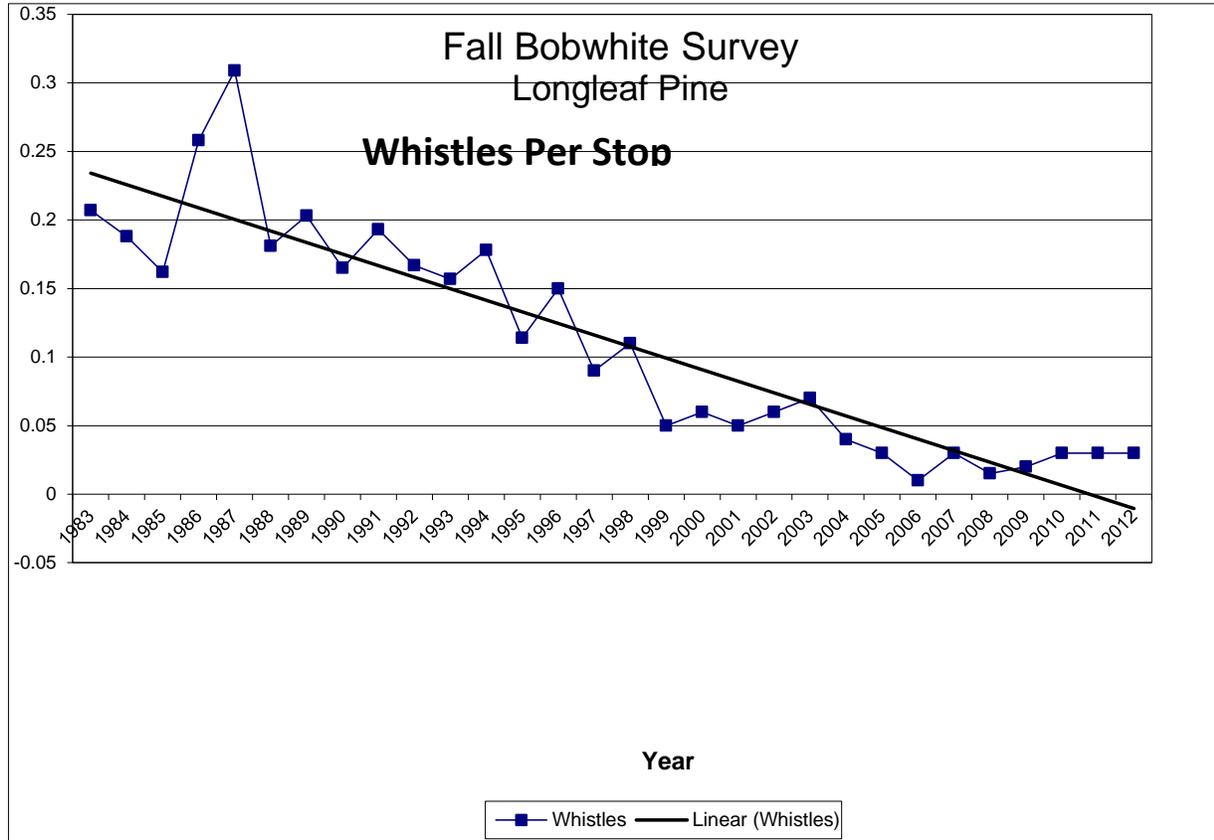


Figure 4. 2012 Fall Bobwhite Survey Longleaf Pine (Duguay and Stafford 2012)

### **FY 2013 Recommended Actions**

- Continue to implement habitat improvement projects.
- Continue to collaborate with partners.

**Question 2:** Are habitat objectives for selected demand species management indicators providing game and fish populations sufficient for quality recreational opportunities? (V)

### **FY 2012 Findings:**

The Forest partners with LDWF in collecting and monitoring harvest data for white-tailed deer and wild turkey. Each year continues to provide hunter success that is comparable to near-by private and other public areas that are available for hunting.

### **FY 2013 Recommended Actions**

- Continue working with LDWF in collecting and monitoring sample harvest data.
- Continue collaborating with LDWF in planning and implementing projects that improve and expand suitable wild turkey habitat.

**Objective 2–8:** Protect, restore, maintain, acquire, and improve habitat on the Forest for waterfowl and wetland wildlife, as stated in the North American Waterfowl Management Plan (KNF Revised LRMP, page 2-5).

**Question 1:** Are management practices designed to protect, restore, maintain, and improve waterfowl and wetland wildlife being implemented? (I)

### **FY 2012 Findings:**

KNF district personnel are required to design and implement management activities through the NEPA process and in accordance with forest plan direction. Kisatchie NF Ecosystem Conservation staff provides assistance as needed.

### **FY 2013 Recommended Actions**

Adhere to the Kisatchie NF Revised Land and Resource Management Plan guidance.

**Question 2:** Are these management practices successfully providing for waterfowl and wetland wildlife? (E)

### **FY 2012 Findings:**

Approximately 8 percent of the Kisatchie NF is categorized as riparian/bottomland hardwoods. Compared to 2011, this is a decrease of approximately 3 percent (Table 12).

**Table 12. Kisatchie NF Riparian/Bottomland Habitat Acres (2003 to 2011)**

Kisatchie NF Riparian/Bottomland Habitat						
Year	2003	2004	2005	2008	2010	2011
Acres	48,483	45,509	49,336	49,097	48,763	66,814

**FY 2013 Recommended Actions**

Adhere to the Kisatchie NF Revised Land and Resource Management Plan guidance.

**Objective 4–1:** Manage the Forest to create and maintain landscapes having high scenic diversity, harmony, and unity for the benefit of society through the application of the Scenery Management System, and consistent with assigned scenic integrity objectives (SIO). The SIOs are as follows:

- Very high: 8,699 acres
- High: 93,980 acres
- Medium: 89,155 acres
- Low: 415,020 acres
- Very low: 1,278 acres (KNF Revised LRMP, page 2-5 to page 2-6)

Question 1: Is the Forest being managed in accordance with the assigned SIOs? (I)

**FY 2012 Findings:**

Consultations with district staff reveal recent management actions do consider SIOs.

**FY 2013 Recommended Actions**

Continue to review proposed projects for SIO compliance. Work with districts to implement new scenery management system (SMS) guidelines. Encourage better participation at interdisciplinary team meetings.

**Objective 4–2:** Provide visitors the opportunity to pursue a wide variety of developed and dispersed recreation activities, with a minimum amount of regulation, consistent with the assigned recreation opportunity spectrum (ROS) class. The Forest’s ROS class objectives are as follows:

- Primitive: 8,700 acres
- Semiprimitive nonmotorized: 57,269 acres
- Semiprimitive motorized: 89,963 acres
- Roaded natural-appearing: 217,152 acres
- Roaded natural modified: 191,671 acres
- Rural: 6,162 acres (KNF Revised LRMP page 2-6)

**Question 1:** Has class eligibility shifted significantly? (E)

**FY 2012 Findings:**

Comparisons were not made due to continued staffing limitations. However, shifts in ROS class eligibility are not likely to have occurred because only minor road construction or decommissioning was planned and accomplished. ROS class eligibility changes are primarily dependent on changes in road density and OHV management status.

**FY 2013 Recommended Actions**

Continue to monitor for changes as the new travel management rule continues to be implemented.

**Objective 4–3:** Develop, maintain, and protect existing and potential developed and dispersed recreation sites and trails consistent with public use and demand through construction, operation, maintenance, and rehabilitation activities (KNF Revised LRMP, page 2-6).

**Question 1:** How satisfied are our recreation customers? Are recreation resources managed in a manner that is responsive to public recreation needs yet as cost effective as possible, in accordance with the negotiated recreation program of work based on Meaningful Measures standards? (I)

**FY 2012 Findings:**

Meaningful Measures inventories were completed and data was updated to the corporate INFRA database. Critical standards are being met. Full compliance with all Meaningful Measures standards is not possible at current funding level. Stephen F. Austin University completed the 2010 National Visitor Use Monitoring (NVUM) Survey. Customer service response has continued to improve. The customer service representative receives requests, questions, or complaints. The representative answers or refers to appropriate district or source for best response.

**FY 2013 Recommended Actions**

Continue the annual update of INFRA data. Continue management of the recreation program using the IWEB INFRA system and the recreation realignment process. Implement the “Excellence by Design” process for all recreation and trails projects to ensure design compliance, feasibility and good customer service. Continue to improve customer service through the customer service representative. The program specialist will assist with customer service requests and also assists with the INFRA database and inventory needs. Review the NVUM results and use that information to assist in meeting visitor needs.

**Infrastructure**

**Objective 3–7:** Manage the transportation system to ensure that any roads constructed are designed according to standards appropriate to the planned uses (KNF Revised LRMP, page 2-5).

**Question 1:** Is the transportation facility serviceable by the intended user? (E)

**FY 2012 Findings:**

During FY 2012, 14 miles of local and collector roads were reconstructed or constructed. Of this total, all miles were reviewed. Of the roads reviewed, 100 percent of the road length was observed to be serviceable by the intended user and required no significant increase in the level or frequency of maintenance. Table 13 displays, for comparison purposes, road reconstruction, construction and monitoring miles from 2007 to 2012.

**Table 13. Kisatchie NF FY 2007 to FY 2012 Road Reconstruction and Construction Miles**

Functional Class	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
	Local/ Collector	Local/ Collector	Local/ Collector	Local/ Collector	Local/ Collector	Local/ Collector
Road Reconstruction/Construction (miles)	0.22/0.09	1.77/0.0	0.11/0.0	5.13/0.0	22/0.0	14/0
Roads Monitored (miles)	0.22/0.09	1.77/0.0	0.11/0.0	5.13/0.0	22/0.0	14/0
Roads requiring increased level/frequency of maintenance or not serviceable by use (miles)	0.0/0.0	0.0/0.0	0.0/0.0	0.0/0.0	0.0/0.0	0/0

**FY 2013 Recommended Actions**

During FY 2013, reconstruct or construct 9 miles of local and collector roads (Table 14). Of this total, review all 9 miles and 100 percent of the road length to check for this compliance: Observed to be serviceable by the intended user and required no significant increase in the level or frequency of maintenance.

**Table 14. Kisatchie NF FY 2013 Recommended Road Reconstruction and Construction Miles**

Functional Class	FY2013		Totals
	Local	Collector	
Road Reconstruction/Construction (miles)	9	0	9
Roads Monitored (miles)	9	0	9
Roads requiring increased level/frequency of maintenance or not serviceable by use (miles)	0.0	0.0	0.0

**Human Influences**

**Objective 1–6:** Manage national forest lands in an efficient manner to provide for the future needs of society by pursuing opportunities to make land ownership adjustments that improve management effectiveness and enhance public benefits through land consolidation; acquiring rights-of-way that facilitate efficient management; issuing land use authorizations necessary to meet public and private needs only when no viable alternative to long-term commitments on Forest land exists; and establishing and maintaining all landline boundaries (KNF Revised LRMP, page 2-4).

Question 1: Are non-federal lands being acquired to enhance public benefits and improve management effectiveness? Are acquired rights-of-way achieving better Forest management? Are land use authorizations being issued only after all other alternatives are explored to provide goods and services? How well are landline boundaries being established, maintained, and protected from obliteration? (I)

**FY 2012 Findings:**

The Forest is following the progress of the Collins Camp legislated sale, introduced in Congress as H.R. 940 on February 10, 2009 (although this has stalled in Congress). No right-of-ways were identified as needed or acquired in 2012. No private land was acquired in 2012. The Kisatchie National Forest’s land and water conservation fund (LWCF) proposal for the acquisition of 2,640 acres of Plum Creek lands was accepted and nominated by the regional office for consideration in the Washington office. These lands made the President’s FY 2012 Budget Recommendation for

\$1,000,000. The KNF has not received any submittals for tripartite exchanges but will continue to pursue this process as opportunities arise.

### **FY 2013 Recommended Actions**

Continue to manage and monitor the lands program to the level that funding will allow.

**Question 2:** Are newly acquired lands compatible with management practices in the Management Area where they are located? Are encroachments discouraged by well-defined property lines? (E)

### **FY 2012 Findings:**

No land acquisitions were completed in 2012. If additional funding is available the Forest would be able to maintain more landlines. If there is continued decrease in funding, property lines will not be well-defined, which will lead to encroachments.

### **FY 2013 Recommended Actions**

Increase maintenance of landlines to facilitate the prevention and location of encroachments if additional funding is received.

**Objective 3–1:** Provide for long-term sustainable production of commodities for economies, local community stability, and people (KNF Revised LRMP, page 2-5).

**Question 1:** How does the flow of commodity outputs to local economies and people compare with the Forest Plan projections? (I)

### **FY 2012 Findings:**

The forest plan does not allocate allowable sale quantity (ASQ) by first or second decade and the ASQ is for the “life” of the plan (KNF Revised LRMP, Objective 3-2, page 2-5). There are 308,889 acres of lands classified as suitable for timber production and 268,271 acres of lands classified as unsuitable for timber production (KNF Revised LRMP, Table B-2 and Table 8-3). The forest plan (Objective 3-2) directs the Forest to offer an average of 9.69 MMCF of suitable timber sale volume on an annual basis. The allowable ASQ from the category “all lands” that is included in the timber commodity Outputs and Sale Schedule (KNF Revised LRMP, Table A-3) is 13.16 MMCF:

- In FY 2012, vegetation treatments on suitable lands yielded 9.29 MMCF (92,973 CCF) and approximately 7,091 acres was treated.
- In 2012, vegetation treatments on unsuitable lands (including RCW habitat and lands utilized by the military via special use authorization) yielded approximately 3.5 MMCF (35,237 CCF) and approximately 1,711 acres were treated.

When compared to FY 2011, FY 2012 reflects an increase of approximately 6 CCF. Analysis (Appendix E) indicates that the average annual output from 1998 to 2012 is approximately 6.65 MMCF annually (Morgan 2013). The average includes data from 1998, prior to the forest plan being in place.

Prices and markets continue to drive the demand for wood products. The future demand is uncertain, as housing starts have begun to recover, and new markets such as wood pellets are starting to increase (see Appendix E for detailed timber information). Funding is constraining the program's ability to increase and achieve the average of the offer/sold levels outlined in the forest plan.

The Secure Rural Schools and Community Self Determination Act, passed in 2000 and extended in 2007, has provided parishes with a steady income in lieu of taxes. Although 2007 was the last year for this to be in effect, a revised version was included in the Emergency Economic Stabilization Act of 2008, and parishes were allowed to re-enroll in the program for 4 more years (through 2012). Although there were some significant changes in the type of projects allowed, as well as the method of funding, the parishes still elected to spend 15 percent of the funds they receive on projects that will benefit the National Forests and rural communities. These projects must either: 1) be associated with wildfire protection, 2) provide for protection, restoration, and enhancement of fish and wildlife habitat, or 3) improve the maintenance of existing infrastructure, enhance forest ecosystems, and restore land health and improve water quality. These are all consistent with the forest plan objectives.

### **FY 2013 Recommended Actions**

Continue to monitor opportunities and impacts for providing economic products to local communities.

**Objective 3–6:** Assist local Forest communities in diversifying and enhancing existing economies with an emphasis on the conservation of natural, cultural, and recreational resources of the Forest and the State (KNF Revised LRMP, page 2-5).

**Question 1:** Are programs and opportunities for improving rural economies and social conditions being developed? (I)

### **FY 2012 Findings:**

See response to Objective 3-1, question 1.

### **FY 2013 Recommended Actions**

No recommendations

**Question 2:** Are programs and opportunities improving sustainable local economies and social conditions? (E)

### **FY 2012 Findings:**

See response to Objective 3-1, question 1.

### **FY 2013 Recommended Actions**

No recommendations

## **Roadless Areas/Wilderness/Wild and Scenic Rivers**

**Objective 5–6:** Manage each special interest area (SIA) as an integral part of the Forest, with emphasis on protecting, enhancing, or interpreting its unique values (KNF Revised LRMP, page 2-6).

**Question 1:** Is Forest Plan SIA direction being applied? (I)

### **FY 2012 Findings:**

The realignment process is assisting the recreation staff in identifying projects that may be associated with SIAs. The public is learning more about these areas through education efforts. Trails Unlimited will be assisting the forest with maintenance of Saline Bayou. The realignment process continues to assist in this area. Updated information was entered into the Wild and Scenic River IWEB database.

### **FY 2013 Recommended Actions**

- Continue to update and add information to the new Wild and Scenic River IWEB database.
- Continue with the planned maintenance tasks with Trails Unlimited.
- Work with district personnel to determine needs and work towards solutions for SIA management.

**Objective 5–7:** Manage the Kisatchie Hills Wilderness to enhance and perpetuate wilderness as a resource. Avoid resource damage resulting from overuse (KNF Revised LRMP page 2-6).

**Question 1:** Is Kisatchie Hills Wilderness being managed to enhance and perpetuate wilderness values? Are natural processes allowed to operate freely? Is Forest Plan direction that would ensure the above being applied? (I)

### **FY 2012 Findings:**

National meaningful measures standards for wilderness management have been completed. The Forest developed a 10-Year Strategy Plan to bring Kisatchie Hills Wilderness into compliance and continued working with the Wilderness Strategy Group. The Forest is in compliance with minimum standards. The Forest completed all six education kits for the districts and the supervisor's office.

### **FY 2013 Recommended Actions**

- Continue implementing the wilderness education kits at district and supervisor office level.
- Continue to promote the area and educate users.
- Maintain minimum standards
- Move towards implementing the strategy developed by the Forest and implement more standards (above the minimum)

## **Timber**

**Objective 3–2:** Offer for competitive bid an average of 9.69 million cubic feet of timber sale volume on an annual basis for the first decade of the Plan (KNF Revised LRMP, page 2-5).

Question 1: Is the Forest providing for competitive bid the average annual allowable sale quantity it projected for the first decade? (I)

### **FY 2012 Findings:**

See response to objective 3-1, question 1.

### **FY 2013 Recommended Actions**

No recommended actions

**Objective 6-1:** Manage the Forest to achieve a mixture of desired future conditions using even-aged, two-aged, and uneven-aged silvicultural systems and regeneration methods; and a variety of manual, mechanical, prescribed fire, and herbicide vegetation management treatments. Apply the uneven-aged silvicultural system on a minimum of 32,000 acres (KNF Revised LRMP, page 2-6).

Question 1: Are management practices designed to achieve a mixture of desired future conditions being applied? (I)

### **FY 2012 Findings:**

Forest-wide key desired future conditions include having a Forest that has a variety of forested conditions ranging from closed canopied stands with sparse understory to open stands with a continuous understory. The structure, composition, and processes of the four major landscape forest ecosystems that occur on the Forest (including trees with old growth forest attributes) is restored or maintained. Long term soil productivity and aquatic ecosystem integrity is maintained. Landscapes with high scenic diversity are created and maintained. Customers are satisfied and the Forest provides a reliable flow of commodity outputs and specialty products to local economies. Special interest areas (SIAs) are managed and perpetuated. Heritage resources are managed and protected.

In FY 2012, movement towards vegetation structure, composition and process desired conditions continued in three of four landscape community types. The desired quantity of mixed hardwood-loblolly early stages and longleaf pine remains below forest plan desired conditions. At the pace and scale of treatments, forest plan desired conditions are not likely to be met during the life of the plan (see Section IV for additional information). Older stands of pine and hardwood have increased the most since 1999 when the forest plan was signed. From 2011 to 2012, pine with old growth attributes increased slightly. However, there is a need to improve tracking of old growth allocations at the project and landscape (forest) level.

Management practices have supported forest plan desired conditions for long term soil productivity and aquatic ecosystem integrity as minor or no exceedance occurred in 2012. Landscapes with high scenic diversity were maintained. Management practices strove to satisfy customers by meeting critical public health and safety standards in developed recreation sites, having a transportation system that was serviceable, responding to special use permit requests in a timely manner and maintaining landlines as funding allowed. A reliable flow of commodity

outputs was provided to local economies. There was an increase in timber outputs from 2010 (9.3 MMCF or 46.9 MMBF), and demand for timber continued to remain strong. Funding continues to constrain attainment of the offer/sold levels outlined in the forest plan. The interest in special wood products remained steady but the demand for firewood exceeded supply and no green biomass for sale.

SIA's were managed and perpetuated by maintaining minimum standards within designated wilderness and wild and scenic rivers. The Forest moved towards implementing the strategy that would manage wilderness at a higher standard (above the minimum). In 2012, no archaeological resources were reported to have been harmed either internally or externally. However, there are still insufficient funds to physically monitor all sites at risk.

### **FY 2013 Recommended Actions**

- Increase scope and scale of longleaf pine restoration (see Section IV for additional information).
- More emphasis over the last few years has been placed on commercial thinnings for forest health and RCW habitat improvement. There has been increased emphasis on commercial thinnings for forest health and wildlife habitat improvements. This has indirectly resulted in less emphasis on the restoration of the native forest communities. Identify how many acres of native forest community will be improved in each vegetation analysis/project.
- Assure that treatment of non-native invasive species is interwoven into each vegetation project. Evaluate and monitor.

### **Forage**

**Objective 3–4:** Maintain or improve forage resources for domestic livestock grazing on 86,000 acres within designated grazing allotments to meet the needs of local demand (KNF Revised LRMP, page 2-5).

Question 1: Are forage resources being maintained or improved on the designated allotments? (I)

### **FY 2012 Findings:**

A 26-year trend of decreasing demand from the public for grazing resources continues. Only three grazing allotments were actively used for cattle grazing in 2012. Otherwise, grazing resources are declining in acreage available due to the lack of management and lack of use. Management practices require NEPA documentation prior to being implemented. The three active allotments are meeting the current demand for allotment-based forage resources.

### **FY 2013 Recommended Actions**

Given the continued non-use of the majority of Kisatchie NF allotments, carefully scrutinize future expenditure as to their cost-effectiveness.

**Question 2:** Are active allotments meeting the needs of the local demand for forage resources?

### **FY 2012 Findings:**

See response to Objective 3-4, Question 1.

### **FY 2013 Recommended Actions**

See response to Objective 3-4, Question 1.

### **Other Products**

**Objective 3-3:** Make all U.S. minerals available for lease except in areas where consent has been legislatively or administratively withdrawn. Development of federal minerals will be allowed within the constraints of the lease and accompanying stipulations and restrictions. To the extent legally possible, manage surface occupancy to avoid or minimize environmental effects where reserved and outstanding mineral rights exist. As allowed by state and federal law and under the terms of the severance deed, ensure that surface resources will not be adversely affected to an unacceptable degree by the exercise of reserved and outstanding mineral rights (KNF Revised LRMP, page 2-5).

Question 1: Are parcels being made available for lease according to U.S. ownership and management restrictions? Are applications for minerals exploration and development being processed according to directions and in a timely manner? Are operating plans for exploration of private minerals being reviewed for compliance with existing state and federal laws? (I)

### **FY 2012 Findings:**

Approximately 334,603 federal mineral acres are under Bureau of Land Management (BLM) leases. The Forest Service continues to offer federal minerals for lease through the BLM Federal oil and gas leasing program. Approximately 130,000 mineral acres are reserved or outstanding.

Three wells were drilled on the Catahoula Ranger District on outstanding mineral rights. All were dry holes and have been reclaimed. An APD received on the Catahoula District was completed and the federal well drilled. This well is waiting on completion. All mineral operations were inspected to ensure compliance with state and federal environmental laws.

### **FY 2013 Recommended Actions**

Continue to improve working relationship with BLM and eastern states in responding to “Expressions of Interest” in a timely manner. Work to streamline responses to BLM Expressions of Interest and other leasing questions by upgrading the minerals database on the Forest. The Forest will offer mineral acres for leasing in areas showing mineral interest.

**Objective 3-5:** Provide other forest products such as firewood and pinestraw as available, as long as their use does not impair ecosystem health or the achievement of other resource objectives (KNF Revised LRMP, page 2-5).

Question 1: Is the Forest providing opportunities for other specialty forest products without negatively impacting forest health or other resources? (V)

### **FY 2012 Findings:**

The interest in special wood products from the Forest continues to remain steady. It should be noted that many items, such as firewood, demand exceeds supply. The number of permits issued year to year is about the same, with slight variation. The demand for woody biomass declined in 2010. Demand is directly tied to the price of fuel in the marketplace. The Forest did not offer any green biomass for sale in 2011 or 2012.

### **FY 2013 Recommended Actions**

Continue offering biomass as an optional product in timber sales to determine a value

### **Heritage Resources**

**Objective 5–1:** Manage the nonrenewable heritage resources of the Forest in a spirit of stewardship for the American public. Include the Louisiana State Historic Preservation Officer (LA SHPO) and interested federally recognized tribes as primary partners in managing the Forest’s heritage resources (KNF Revised LRMP page 2-6).

Question 1: Are significant archeological and historical sites being identified, prior to project decisions, through inventories conducted in consultation with the Louisiana State Historic Preservation Officer (SHPO) according to the National Historic Preservation Act (NHPA), 36 CFR 800, NEPA, and the Southern Regional Heritage Programmatic Agreements (PA)? (I)

### **FY 2012 Findings:**

- All compliance reviews and consultations pursuant to Section 106 of the National Historic Preservation Act (NHPA) were completed prior to agency decisions. FY 2012 saw a decrease in request for surveys. In FY 2012, a total of 6,416 acres were inventoried. These acres were in support of timber sales, wildlife and fuels management.
- Three new sites were added to the Kisatchie NF heritage database. In FY2012, the Forest continued government-to-government relations with seven federally recognized tribal nations. These include the Caddo Tribe of Oklahoma, Chitimacha Indian Tribe, Coushatta Indian Tribe, Jena Band of the Choctaw, Tunica Biloxi Tribe and the Choctaw Tribe of Oklahoma.

### **FY 2013 Recommended Actions**

Continue the current course of pre-decisional inventories and consultations. Continue working with interested tribes to establish required government-to-government relations and partnerships. Make amendments to the PA as needed.

**Objective 5–2:** Provide protection for heritage resource sites that preserves the integrity of scientific data that they contain, for the benefit of the public and scientific communities (KNF Revised LRMP, page 2-6).

Question 1: Is law enforcement and heritage support provided at sufficient levels to protect significant heritage sites from internal and/or external activities? (I)

**FY 2012 Findings:**

In 2012, no archaeological resources were reported to have been harmed either internally or externally. There are still insufficient funds for law enforcement officers and heritage specialists to physically monitor all sites at risk.

**FY 2013 Recommended Actions**

Current strategies for site and buffer zone delineation appear effective and should be continued.

**Question 2:** Are protection measures effective at preventing unacceptable damage? (E)

**FY 2012 Findings:**

Contracting Officer Representatives (CORs) and paraprofessionals are doing an effective job of monitoring projects.

**FY 2013 Recommended Actions**

Current strategies for site and buffer zone delineation appear effective and should be continued.

**Objective 5–3:** Reduce the existing backlog of heritage sites needing formal evaluation so that the overall number decreases each year (KNF Revised LRMP, page 2-6).

**Question 1:** Are sufficient numbers of significant or potentially significant sites being evaluated so that the number of backlogged properties decreases each year? (I)

**FY 2012 Findings:**

The number of backlogged sites has increased to 486. This is due to having all the site data updated in IWeb. Given FY 2012 funding and staffing levels, we were not able to satisfy compliance with Section 110 of the NHPA, requiring assessments of NRHP (National Register of Historic Places) eligibility for all known cultural properties.

**FY2013 Recommended Actions:**

Continue to request additional funds needed to conduct cultural site evaluations for all sites in backlogged status.

**Objective 5–4:** Enhance and interpret appropriate sites and heritage values to the American public (KNF Revised LRMP, page 2-6).

**Question 1:** Are sites and heritage values being identified for public interpretation? (I)

**FY 2012 Findings:**

The Forest is considering interpretation of the Drake's Salt Works Complex on the Winn Ranger District. A PhD candidate from the University of Alabama is working with the Forest on this potential project.

**FY2013 Recommended Actions:**

- Continue to offer Passport in Time (PIT) projects as possible given funding constraints, and remain as a primary partner with the LA SHPO in Louisiana Archaeology Month. Work with partners to interpret the Fullerton site.
- Continue to strengthen the relationship between recreation and heritage Resources to provide interpretive opportunities between the two resources, such as the continued efforts on the Old Louisiana State University (LSU) Site trail and interpretive area.

**Question 2:** Has interpretation enhanced awareness of heritage values among the general public?  
(E)

**FY 2012 Findings:**

Public responses from public presentations indicate a general increase in awareness and sensitivity about the nonrenewable cultural resource base.

**FY 2013 Recommended Actions**

Continue to offer PIT projects, classroom and civic organization presentations, and partner with the LA SHPO in Louisiana Archeology Month.

**Objective 5–5:** Provide an ongoing interpretive services program that accurately and adequately develops an interest in and understanding for the natural and cultural environment of the Forest and the mission of the Forest Service in managing it (KNF Revised LRMP, page 2-6).

**Question 1:** Does the interpretive services program provide usable information to the public about the full scope of forest management practices and philosophy? (I)

**FY 2012 Findings:**

The full scope of forest management practices and philosophy was incorporated in presentations to the public, schools and media. The Forest continues to participate in numerous school visits and provide presentations at events such as Forestry Awareness Week and 4H Achievement Day to increase awareness about recreation and how it is incorporated with other resources such as heritage resources, timber, etc. Responsible recreation use and wellness is one of the presentation focus points in presentations. Six complete recreation/wilderness education kits and materials were made available to the public for check out and use.

**FY 2013 Recommended Actions**

- Continue to provide funding for high-profile and effective interpretive programs such as Passport In Time, Audubon Zoo Earthfest, Audubon Nature Center Demonstration, Tensas Wildlife Refuge Fire Demonstration, Outdoor Education Classroom with Louisiana School for the Deaf.
- Continue to expand types of audiences reached with educational presentations, such as schools from the larger cities. Continue to increase efforts with the Louisiana State University Agricultural Center and 4H groups.

**Question 2:** Has interpretive services increased measurable public support of Forest Service resource management goals and objectives? (E)

**FY 2012 Findings:**

The Kisatchie National Forest has public support on a wide range of issues and management activities including silvicultural work, prescribed fire, recreation management, transportation management and a host of other activities.

**FY 2013 Recommended Actions**

Increase environmental education projects, printed materials and video productions. Increase presentations to civic groups, increase participation with non-profit organizations such as Boy Scouts and Girl Scouts; travel to destinations outside Forest boundary to reach various user groups and work with nontraditional audiences. Commitments to the New Orleans Earthfest and the Shreveport State Fair should be renewed.

**C. Organizational Effectiveness**

**Economics**

**FY 2012 Findings**

- The Forest expended 97.6 percent of funds allocated with few year-end deficits. The year-end deficits are attributed to year-end payroll accruals entered by Albuquerque Service Center (ASC).
- Cost pool funding has remained flat while operating costs have increased. However, even with the increase of costs, the forest has managed to stay within their allotted cost pool ceiling as well as the indirect cap.
- Travel constraints that were implemented in FY 2010 continued in FY 2012. The Forest stayed well within their constraint only expending 60.4 percent of the funds allotted.

**FY 2013 Recommended Actions**

Continue providing funds as needed to meet forest plan objectives. Allowing forests to offset ASC payroll obligations would prevent the year-end deficits.

**Evaluation of new information**

**Objective 7-1:** Monitor and document the annual progress towards accomplishment of Forest goals, objectives, and desired future conditions (KNF Revised LRMP, page 2-6).

**Question 1:** Is the Forest preparing and distributing a yearly monitoring and evaluation report to the public? (I)

**FY 2012 Findings:**

The annual monitoring and evaluation report is available to the public on the Kisatchie (<http://www.fs.usda.gov/main/kisatchie/landmanagement/planning>) and Southern Region's Forest

Service website. Information from previous monitoring reports has been available by contacting the Forest.

### **FY 2013 Recommended Actions**

- Post previous annual monitoring and evaluation reports that are not currently on the Forest's website
- Consolidate and evaluate various forest mailing lists and seek input from interested parties on preferred method of receiving information (and what type).

**Objective 7–2:** Evaluate new information and monitoring results; adapt management accordingly (KNF Revised LRMP, page 2-6).

Question 1: Is the Forest Plan being kept current through timely changes as identified in the annual M&E Report? (I)

### **FY 2012 Findings:**

Overall, the forest plan is being kept current. However, an evaluation of desired conditions and guidance related to the management of longleaf, loblolly, mixed hardwoods and the use of prescribed fire is needed. In FY 2012, one non-significant forest plan amendment (Amendment #9) addressing hunting deer with dogs was implemented. See appendix C for a complete list of forest plan amendments.

### **FY 2013 Recommended Actions**

- Evaluate monitoring and evaluation questions for incorporation of climate change and focal species direction per 2012 planning rule.
- Evaluate all MIS Reports and determine if updates are needed.
- Revisit ability to move towards longleaf pine desired future condition. The Forest has approximately 126,000 acres in the longleaf pine plant community, compared to the forest plan's target of 263,000 acres. In 2012, approximately 490 acres of longleaf pine (that had been cleared for final harvest) was restored through planting. Approximately 64 acres of shortleaf pine was planted.
- Continue reviewing timber outputs (suitable and unsuitable categories) to document forest plan compliance (See appendix E).
- Conduct a consistency review utilizing site-specific fire analyses, MA and SMA direction and assumptions in the forest plan FEIS. It is likely that during preparation of the forest plan in the mid-to-late 1990s it was not foreseen that the Forest could implement more than a minimal amount of prescribed burning. Movement towards restoration forest plan desired future conditions is dependent on the use of fire and is likely to continue exceeding the projections in the forest plan. The scope and scale of prescribed burning that is needed to move towards restored landscape conditions will be addressed during forest plan revision.

- Improve tracking of old growth allocations at the project and landscape scale. Monitor forest plan compliance in NEPA analyses.

**Objective 8–1:** Benefit from research information, technical assistance and technology development by maintaining a close, continuous working relationship with scientists at the Southern Research Station, academic institutions, and Forest Health Protection units (KNF Revised LRMP, page 2-6).

Question 1: Are cooperative relationships being developed and maintained? (I)

**FY 2012 Findings:**

See response to Objective 9-1, question 1 and Objective 9-2, question 1.

**FY 2013 Recommended Actions**

Continue partnerships described in Objective 9-1, question 1 and Objective 9-2, question 2 (below).

**Objective 8–2:** Continue to identify research needs as the Forest implements the Plan (KNF Revised LRMP, page 2-6).

**Question 1:** Are research needs being identified in a timely manner? (I)

**FY 2012 Findings:**

- The Kisatchie NF is working with multiple agencies, universities and NGOs to stay consistent with the best available science.
- The Kisatchie NF accommodates and recommends research activities on the Forest.

**FY 2013 Recommended Actions and Future Research Opportunities:**

- Evaluate management impacts on soil productivity and the resulting longleaf pine ecosystem.
- Evaluate effectiveness of the Kisatchie NF standards and guidelines in reducing non-point source pollution.
- Reduce soil loss due to prescribed burning on erosive soils, particularly sensitive soils that are vulnerable to management activities.
- Support Biomax research project to increase alternative energy sources for the Winn Ranger District.
- Work with the Southern Research Station and the regional office to evaluate monitoring questions that address climate change and the focal species requirements of the 2012 Planning Rule.

**Objective 9–1:** Continue coordination and cooperation efforts with other federal and State agencies, such as the U.S. Department of Interior, Fish & Wildlife Service, the Louisiana Department of Wildlife and Fisheries, the Louisiana Department of Environmental Quality,

Louisiana Department of Agriculture and Forestry, and the Louisiana SHPO on issues of mutual concern (KNF Revised LRMP, page 2-6).

Question 1: Are coordination and cooperation efforts being conducted with federal and state agencies? (I)

**FY 2012 Findings:**

- In fiscal year 2012 the Kisatchie NF established project agreements and revised the memorandum of understanding with the LDWF.
- The Forest completed and signed a candidate conservation agreement for the Louisiana pine snake, with private, local, state and federal partners.

**FY 2013 Recommended Actions**

See response to Objective 9-2, Question 2.

**Objective 9–2:** Seek to increase the participation of other federal and State agencies, academic institutions, federally recognized Native American tribes, organizations and individuals in the accomplishment of Forest goals and objectives through the use of memorandums of understanding, cooperative agreements, partnerships, and challenge cost share agreements (KNF Revised LRMP, page 2-7).

Question 1: Are memorandums of understanding, cooperative agreements, partnerships, and challenge cost share agreements being developed? Are we increasing the participation of groups and individuals in the accomplishment of Forest Plan goals and objectives? (I)

**FY 2012 Findings:**

- The Forest: (1)has a memorandum of understanding (MOU) and Challenge Cost Share Agreement with LDWF to implement data collection/analysis and to partner with wildlife habitat work, (2) meets with LDWF on an annual basis to review the hunting and fishing regulations and discuss any new habitat improvement recommendations, (3) meets with USFWS and LDWF on an annual basis to discuss habitat work being implemented, future projects and species status for the endangered red-cockaded woodpecker, the threatened Louisiana pearlshell mussel, and the candidate Louisiana pine snake, (4) has a Candidate Conservation Agreement with USFWS and other partners (state, federal and private), (5) has a Collection Agreement with NWTf to assist with implementing eastern wild turkey habitat improvement projects, and (6) continued participation in the Non-Point Source Interagency Committee with LDEQ, the National Resource Conservation Service (NRCS), Louisiana Department of Forestry and other agencies. This participation is possible through the Forest's Memorandum of Agreement (MOA) with the State of Louisiana on Non-Point Source Pollution Control. (Clean Water Act Section 319).

**FY 2013 Recommended Actions**

- Continue participation with cooperators and partners such as LDWF, NWTf, LWF and in the Non-point Source Interagency Committee with LDEQ, NRCS, LDWF, NWTf,

Louisiana Department of Forestry and other agencies under the Forest's MOA with the State of Louisiana on Non-Point Source Pollution Control.

## IV. Evaluation of Outcomes on the Land

This section evaluates the perceived outcome of the monitoring results for this reporting fiscal year (FY 2012). The effectiveness of much of the plan's direction during its first five years of implementation was more thoroughly evaluated during the Comprehensive Evaluation Report (CER) (or 5-Year Review), which was done in FY2006 (USDA 2006). Based on FY 2012 monitoring results, the following observations were made:

In FY 2012, movement towards vegetation structure, composition, disturbance regime desired conditions continued in three of four landscape community types. The desired quantity of mixed hardwood-loblolly early stages and longleaf pine remains below forest plan desired conditions although older stands of pine and hardwood have increased the most (since 1999 when the forest plan was signed). From 2011 to 2012, pine with old growth attributes increased slightly. However, there is a need to improve tracking of old growth allocations at the project and landscape scale. There is a need to increase the pace and scope of longleaf pine restoration. There is a need to reduce the acres of mid and late successional mixed hardwood loblolly pine by prescribing regeneration cuts on off-site stands where there is a high priority for regeneration such as stands damaged by disease, insect or storms as well as those stands showing signs of decline. There is a need to increase the acreage of mixed hardwood loblolly pine early seral stage that is currently deficit. In prairies and pitcher plant bogs throughout the Forest there is a need to move towards native plant community composition and structure desired conditions by removing encroaching woody plants. These natural communities provide habitat for many threatened, endangered, sensitive and candidate (TESC) species

In addition to commercial thinning, the use of prescribed fire continues to be critical to achieving and maintaining natural communities and quality habitat. The prescribed burning program is the most important practice used for restoration of pre-settlement habitats, which is effectively protecting, improving and maintaining TESC species habitat. The treatment of non-native invasive species continues to improve habitat for TESC species. However, there are opportunities to include non-native invasive species (NNIS) treatments in all vegetation projects and there is a need to annually evaluate how projects are incorporating NNIS treatments.

Red-cockaded woodpecker (endangered and MIS) populations have an increasing population trend. Surveys (2012) for Louisiana pearlshell mussel (threatened) surveys indicate a downward population trend from increasing to stable likely due to extended periods of drought and depredation. There is a need to continue working with the U.S. Fish and Wildlife Service (USFWS) and several partners to maintain an active task force with a panel of experts and interested parties for the betterment of the pearlshell. There is a need to continue monitoring all pearlshell mussel beds on the Forest and identify potential threats to this species.

Forest plan objectives for terrestrial MIS are most likely being met as a result of an effective prescribed fire program which is restoring and/or maintaining habitat quantity and quality. Aquatic MIS populations and habitat trends appear to be stable. Aquatic habitat and population data has been collected annually. However, current baseline data and survey methods have not proven effective for analyzing trends in some specific plant indicator species and consistent population and habitat monitoring has not occurred since 2002. Although 16,000 acres of botanical surveys were completed in 2012, no specific surveys for botanical MIS were conducted.

Management practices have supported forest plan desired conditions for long term soil productivity and aquatic ecosystem integrity as minor or no exceedances occurred in 2012.

Management practices strove to satisfy customers by meeting critical public health and safety standards in developed recreation sites, having a transportation system that was serviceable, responding to special use permit requests in a timely manner and maintaining landlines as funding allowed. Predator/prey populations across the Forest are sufficient for a sustainable recreational fishery.

Vegetation treatments on suitable lands yielded 9.29 MMCF (92,973 CCF) and approximately 7,091 acres was treated. Vegetation treatments on unsuitable lands (including RCW habitat and lands utilized by the military via special use authorization) yielded approximately 3.5 MMCF (35,237 CCF) and approximately 1,711 acres were treated. The annual sale quantity (ASQ) was compliant with forest plan allocations.

Overall, a reliable flow of commodity outputs was provided to local economies. When compared to 2010 and 2011, there was an increase in timber outputs in 2012 and the demand for timber remained strong. The interest in special wood products remained steady; however, the demand for firewood exceeded supply and no green biomass was offered (for sale). Funding continues to constrain the ability to reach the offer/sold levels outlined in the forest plan.

Landscapes with high scenic diversity were maintained and special interest areas (SIAs) were managed and perpetuated by: (1) maintaining minimum standards within designated wilderness and wild and scenic rivers, and (2) moving towards implementing the strategy developed by the Forest and implement more standards (above the minimum) in wilderness. In 2012, no archaeological resources were reported to have been harmed either internally or externally. However, there are still insufficient funds to physically monitor all sites at risk.

The Forest expended 97.6 percent of funds allocated with few year-end deficits. However, flat or restricted budgets are resulting in less tangible resource benefits (including protection). For example:

- In 2012, no archaeological resources were reported to have been harmed either internally or externally. However, there are still insufficient funds to physically monitor all sites at risk.
- The number of backlogged archeological sites increased to 486. Due to funding and staffing levels, the Forest was not able to satisfy compliance with Section 110 of the NHPA, requiring assessments of NRHP (National Register of Historic Places) eligibility for all known cultural properties.
- There was an increase in timber outputs from 2011 (9.3 MMCF or 46.9 MMBF), and demand for timber continued to remain strong. Funding continues to constrain attainment of the offer/sold levels outlined in the forest plan. There is disparity between the desired condition targets for longleaf, loblolly and mixed hardwoods and the economic environment. Movement towards the target conditions (particularly on an annual basis) is largely dependent on successful timber contract awards and implementation of those contracts. Timber contractors are also constrained by the type and size of wood products that a local mill will accept.
- Wildland fire preparedness funding continues to be below the most efficient level. As a result, wildland fire losses were not being minimized due to the funding shortfall. The Forest still could not fill vacant firefighter positions. The future Fire Planning Analysis is expected to assist the Forest on this issue.
- If there is continued decrease in funding, property lines will not be well-defined, which will lead to encroachments. Only an increase in funding would adequately maintain landlines to facilitate the prevention and location of encroachments.

- Given the continued non-use of the majority of KNF grazing allotments, future expenditure may not be cost-effective. Of 17 total allotments, 3 are active, 4 are vacant and the remaining allotments are closed.

Funding continues to constrain environmental education by limiting education projects, printed materials and video productions. There is a need to increase participation with non-profit organizations such as Boy Scouts and Girl Scouts and travel to destinations outside the Forest boundary in order to reach various user groups and work with nontraditional audiences.

# V. Summary of M&E Recommendations Planned for FY 2013

## Biodiversity

### Objective 2-1:

- Strive to accomplish stand exams on 10 percent of the forest every year and continue preparing environmental documents addressing management practices on as many of these acres as possible. Emphasize longleaf and shortleaf restoration where possible. The forest silviculturist should continue to field-check samples of implemented project decisions.
- Strive to increase the number of acres restored to longleaf pine. Continue to monitor sites for additional treatment needs. Thinning prescriptions within red-cockaded woodpecker (RCW) Habitat management areas (HMAs) should emphasize the needed longleaf stand composition. Post implementation field checks should be done on thinnings to ensure sufficient longleaf emphasis and evaluate species composition changes and update the FS Veg database for these changes.
- Continue restoration treatments on shortleaf/hardwood sites where there is high priority for regeneration such as stands damaged by disease, insect or storms as well as those stands showing signs of decline.
- Mixed hardwood-loblolly forest types exceed long-term desired future conditions by 308,207 acres. Prescribe regeneration cuts on off-site stands where there is a high priority for regeneration such as stands damaged by disease, insect or storms as well as those stands showing signs of decline.
- Improve tracking old growth allocations at the project and landscape scale (see Appendix G).
- Continue to monitor management practices being implemented within streamside and riparian area protection zones for compliance with the forest plan, through timber sale contract administration and field checks. Continue to consider selective thinning and hardwood planting treatments within riparian areas to encourage hardwood component.

### Objective 2-2:

- The management indicator species list for plants should be modified by considering the following criteria:
  - Species occurs in a habitat that we are likely to affect through our management, or in an area that drives our management direction.
  - Species is closely associated with the habitat of interest, and population levels respond to changes in that habitat (ecological indicator species).
  - Basic biology or ecology (habitat requirements, threats, demography, etc.) is known for species or habitat.
  - Species is not so rare or obscure that its populations can't be monitored with a reasonable amount of effort.

- Species, or habitat, occurs at a scale that allows us to monitor population in replicate treatments and control units.
- Continue to adhere to Kisatchie NF forest plan guidance.
- Continue bird surveys on Kisatchie NF.
- Resume botanical MIS surveys and provide effective, meaningful and appropriate habitat and population trend data.
- Revisit aquatic MIS data and validate habitat and population trends

**Objective 2-3:**

- Continue increased emphasis on RCW management across the Forest. Identify and prioritize thinning of foraging habitat, improvement and expansion of RCW clusters, and mid-story reduction projects. Work with the USFWS to prioritize future projects and identify habitat needs. Identify all LPM beds on the Forest, and develop means of stream improvement projects and continue monitoring the number of mussels on a recurring basis.
- Continue monitoring all known RCW populations. Prescribe burn the RCW nesting and foraging habitat as much as feasible. Engage in RCW translocations to assist populations, if feasible. Continue to work closely with the USFWS.
- Continue to monitor LMP streams that are prone to drought and investigate streams that are experiencing depredation. Control beaver activity and enforce regulations prohibiting off-road vehicles (ORVs) from damaging LMP habitat. Continue implementation of best management practices (BMPs) and streamside habitat protection zones (SHPZs) in LPM habitat. Rehabilitate areas that are contributing to LMP habitat damage. Encourage collaboration from other agencies, partners, private landowners and volunteers to help protect the LPM. Provide assistance to the USFWS and interested parties with monitoring and research efforts.
- Continue beaver control, enforcement of Forest Service regulations prohibiting ORVs from riding in streams, and implementation of BMPs and SHPZs that protect Louisiana pearlshell mussel habitat. Monitor areas where ORVs violations continually occur. Encourage collaboration from other agencies, partners, private landowners, and volunteers to help protect the pearlshell.

**Objective 2-4:**

- Continue the current prescribed burning program of 80,000 to approximately 135,000 acres per year. Increase the ratio of growing season burns to dormant season burns, since growing season burns are critical for successful gains in restoration efforts. It is important to increase efforts to remove encroaching woody plants in the Winn district prairies and in pitcher plant bogs throughout the forest, as these natural communities provide habitat for many of our TESC species.
- Adhere to the land management practices described in the forest plan which calls for relatively older timber stands.

**Objective 2-5:**

- Document the streamside habitat protection zones and mitigation actions needed to manage in and near these areas. Delineate these areas in the prescription stand maps and in GIS.
- Use the new national BMP protocol for monitoring.

- Continue to monitor prescribed burning and timber management activities for implementation of forest plan standards and guidelines.

**Objective 2-6:**

- The Forest should continue to monitor the weather and take advantage of every burning opportunity. Strive to maximize the implementation of growing season burns on longleaf pine plant community landscapes. The Forest should maximize its burn opportunities in fall. The Forest will have two regional fuels helicopters to increase the production and reduce the cost of CWN (call when needed) helicopters.
- Continue the current prescribed burning program of 80,000 to 135,000 acres per year. Increase the ratio of growing season burns to dormant season burns, since growing season burns are critical for successful gains in restoration efforts. It is important to increase efforts to remove encroaching woody plants in the Winn district prairies and in pitcher plant bogs throughout the forest, as these natural communities provide habitat for many of our TESC species.

**Forest Health**

**Objective 1-3:**

- Use the new national BMP protocol to evaluate how Louisiana Smoke Management Guidelines are being followed.
- Continue to coordinate with LDEQ Air Quality Dept. on monitoring.

**Objective 1-4:**

- The Forest will continue to operate at the current efficiency level until fire preparedness funding is increased, and staff accordingly.
- Manage for productive and healthy forest ecosystems by utilizing prescribed fire to prevent and minimize resource losses to wildland fires.

**Objective 1-5:**

- See Objective 2-1, Questions 1 and 2, Objective 2-2, Question 1, and Objective 2-4, Questions 1 and 2.
- Continue to monitor for possible SPB attacks through aerial observations. Expect an increase in scattered pine mortality due to the southern pine engraver beetles (*Ips*) capitalizing on drought-stressed pines. Field check for increased mortality from Annosus root disease on thinned loblolly stands on high hazard sites.

**Watershed Conditions**

**Objective 1-1:**

- Use the new national BMP protocol for monitoring (USDA 2012)
- Continue monitoring prescribed fire management and timber management activities for implementation of forest plan standards and guidelines.
- Continue to restore and revegetate disturbed areas.

Continue to coordinate with and assist the Southern Research Station with the Long Term Soil Productivity Study (USDA FS 2013).

**Objective 1-2:**

- Continue to monitor prescribed burning and timber management activities for implementation of Standards and Guidelines.
- Continue to monitor nine streams cooperatively with LDEQ for dissolved oxygen, pH, temperature, turbidity, and conductivity via a portable water quality probe. Continue required monitoring for coliform bacteria at the Forest's swim beaches.

**Objective 2-6:**

- Establish size and creel limits on the Forest if needed to ensure recruitment and sustainability of the resource. Continue to monitor and stock when needed.
- Continue to monitor and assess (analyze and interpret data) the effectiveness of management strategies on the Forest concerning aquatic resources.
- Continue to monitor and identify any future restoration projects.
- Continue to monitor the health of lake fisheries.
- Continue monitor for nonnatives and generalist-omnivore natives. Stock catfish fingerlings when available and necessary.
- Continue management practices to maintain and enhance lake habitat.
- Corney and Valentine lakes need to be drawn down to manage aquatic weeds and to allow decomposition of the "muck" on the benthos layer, or lake floor.
- Fullerton lake habitat improvements are needed to manage the ever increasing aquatic weed infestation. The shoreline areas need to be deepened and/or grass carp need to be stocked.

**Outdoor Recreation Opportunities****Objective 2-7:**

- To continue providing habitat for game and fish populations, continue to implement the ecosystem management practices utilized in 2012; and, work with, and seek the advice from, partners.
- Continue working with LDWF in collecting and monitoring sample harvest data.
- Continue collaborating with LDWF in planning and implementing projects that improve and expand suitable wild turkey habitat.

**Objective 2-8:**

- Adhere to forest plan guidance.

**Objective 4-1:**

- Continue to review proposed projects for SIO compliance. Work with districts to implement new SMS guidelines. Encourage better participation at interdisciplinary team meetings.

**Objective 4-2:**

- Continue to monitor for changes as the new travel management rule continues to be implemented.

**Objective 4-3:**

- Continue the annual update of INFRA data. Continue management of the recreation program using the IWEB INFRA system and the recreation realignment process. Implement the

“Excellence by Design” process for all recreation and trails projects to ensure design compliance, feasibility and good customer service. Continue to improve customer service through the customer service representative. The program specialist will assist with customer service requests and also assists with the INFRA database and inventory needs. Review the NVUM results and use that information to assist in meeting visitor needs.

## **Infrastructure**

### **Objective 3-7:**

- During FY 2013, reconstruct or construct 9 miles of local and collector roads. Of this total, review all 9 miles and 100 percent of the road length to check for this compliance: Observed to be serviceable by the intended user and required no significant increase in the level or frequency of maintenance.

## **Human Influences**

### **Objective 1-6:**

- Continue to manage and monitor the lands program to the level that funding will allow.
- Increase maintenance of landlines to facilitate the prevention and location of encroachments if additional funding is received.

### **Objective 3-1:**

- Continue to monitor opportunities and impacts for providing economic products to local communities.

### **Objective 3-6:**

- Continue to monitor opportunities and impacts for providing economic products to local communities.

## **Roadless Areas/Wilderness/Wild and Scenic Rivers**

### **Objective 5-6:**

- Continue to update and add information to the new Wild and Scenic River IWEB database.
- Continue with the planned maintenance tasks with Trails Unlimited.
- Work with district personnel to determine needs and work towards solutions for SIA management.
- Continue implementing the wilderness education kits at district and supervisor office level.
- Continue to promote the area and educate users.
- Maintain minimum standards
- Move towards implementing the strategy developed by the Forest and implement more standards (above the minimum)

## **Timber**

### **Objective 5-7:**

- Increase scope and scale of longleaf pine restoration (see Section IV for additional information).
- More emphasis over the last few years has been placed on commercial thinnings for forest health and RCW habitat improvement. Identify how many acres of native forest community will be improved in each restoration and vegetation analysis/project. In 2013 and 2014, evaluate whether the annual proposed acres of native forest community type restoration is sufficient.
- Assure that treatment of non-native invasive species is interwoven into each restoration/vegetation project. Evaluate integration on an annual basis.

## **Forage**

### **Objective 3-4:**

- Given the continued non-use of the majority of KNF allotments, carefully scrutinize future expenditure for cost-effectiveness.

## **Other Products**

### **Objective 3-3:**

- Continue to improve working relationship with BLM and eastern states in responding to “Expressions of Interest” in a timely manner. Work to streamline responses to BLM Expressions of Interest and other leasing questions by upgrading the minerals database on the Forest. The Forest will offer mineral acres for leasing in areas showing mineral interest.
- Continue offering biomass as an optional product in timber sales to determine a value

## **Heritage Resources**

### **Objective 5-1:**

- Continue the current course of pre-decisional inventories and consultations. Continue working with interested tribes to establish required government-to-government relations and partnerships. Make amendments to the PA as needed.
- Current strategies for site and buffer zone delineation appear effective and should be continued.
- Continue to request additional funds needed to conduct cultural site evaluations for all sites in backlogged status.
- Continue to offer PIT projects as possible given funding constraints, and remain as a primary partner with the LA SHPO in Louisiana Archaeology Month. Work with partners to interpret the Fullerton site.
- Continue to strengthen the relationship between recreation and heritage Resources to provide interpretive opportunities between the two resources, such as the continued efforts on the Old Louisiana State University (LSU) Site trail and interpretive area.

- Continue to offer PIT projects, classroom and civic organization presentations, and partner with the LA SHPO in Louisiana Archeology Month.

**Objective 5-5:**

- Continue to provide funding for high-profile and effective interpretive programs such as Passport In Time, Audubon Zoo Earthfest, Audubon Nature Center Demonstration, Texas Wildlife Refuge Fire Demonstration, Outdoor Education Classroom with Louisiana School for the Deaf.
- Continue to expand types of audiences reached with educational presentations, such as schools from the larger cities. Continue to increase efforts with the Louisiana State University Agricultural Center and 4H groups.
- Provide increased funding for environmental education projects, printed materials and video productions. Increase presentations to civic groups, increase participation with non-profit organizations such as Boy Scouts and Girl Scouts; travel to destinations outside Forest boundary to reach various user groups and work with nontraditional audiences. Commitments to the New Orleans Earthfest and the Shreveport State Fair should be renewed.

**Economics**

**Objective 7-1:**

- Continue providing funds as needed to meet forest plan objectives. Allowing forests to offset ASC payroll obligations would prevent the year-end deficits.
- Post previous annual monitoring and evaluation reports that are not currently on the Forest's website
- Consolidate and evaluate various forest mailing lists and seek input from interested parties on preferred method of receiving information (and what type).

**Objective 7-2:**

- Evaluate monitoring and evaluation questions for incorporation of climate change and focal species direction per 2012 planning rule.
- Evaluate current MIS Reports and determine if updates are needed.
- Evaluate forest plan projected outputs for prescribed fire and determine if adjustments are needed during the life of this forest plan. The plan is 13 years old as of 2012.
- Revisit ability to move towards longleaf pine desired future condition. The Forest has approximately 126,000 acres in the longleaf pine plant community, compared to the forest plan's target of 263,000 acres. In 2012, approximately 490 acres of longleaf pine (that had been cleared for final harvest) was restored through planting. Approximately 64 acres of shortleaf pine was planted.
- Continue reviewing timber output that is attributed to both suitable and unsuitable timber lands for forest plan compliance (See appendix E).
- Conduct a consistency review utilizing site-specific fire analyses, MA and SMA direction and assumptions in the forest plan FEIS. It is likely that during preparation of the Plan in the mid-to-late 1990s it was not foreseen that the Forest could implement more than a minimal amount of prescribed burning. Movement towards restoration forest plan desired future conditions is dependent on the use of fire and is likely to continue exceeding the projections

in the Plan. The scope and scale of prescribed burning that is needed to move towards restored landscape conditions will be addressed during forest plan revision.

- Review how Forest is developing or maintain old-growth forest attributes in vegetation projects. Determine if forest plan direction of managing for developing and existing old growth forest attributes on approximately 13 percent of the Forest (based upon representation of the major forest ecosystems and old-growth community type) is being met and monitored.

**Objective 8-1:**

- Continue partnerships described in Objective 9-1, question 1 and Objective 9-2, question 2.
- Evaluate management impacts on soil productivity and the resulting longleaf pine ecosystem.
- Evaluate effectiveness of the Kisatchie NF standards and guidelines in reducing non-point source pollution.
- Reduce soil loss due to prescribed burning on erosive soils, particularly the Kisatchie severely eroded soil type.
- Support Biomax research project to increase alternative energy sources for the Winn Ranger District.
- Work with the Southern Research Station and region 8 to evaluate monitoring questions that address climate change and the focal species requirements of the 2012 Planning Rule.
- Continue participation with cooperators and partners such as LDWF, NWTF, LWF and in the Non-point Source Interagency Committee with LDEQ, NRCS, LDWF, NWTF, Louisiana Department of Forestry and other agencies under the Forest's MOA with the State of Louisiana on Non-Point Source Pollution Control.

**Objective 9-1 and 9-2:**

Continue participation with cooperators and partners such as LDWF, NWTF, LWF and in the Non-point Source Interagency Committee with LDEQ, NRCS, LDWF, NWTF, Louisiana Department of Forestry and other agencies under the Forest's MOA with the State of Louisiana on Non-Point Source Pollution Control.

# VI. Status of FY2011 Monitoring and Evaluation Report Recommendations

## 2011 Recommended Actions Implemented

- LPM surveys were conducted on the Catahoula Ranger district. The FS assisted the Natchitoches National Fish Hatchery and US Fish and Wildlife Service Ecological Field Office with ongoing life history studies.
- Smoke management activities associated with prescribe burning were monitored.
- LDEQ air quality staff was contacted concerning NAAQS.
- Coordination is ongoing with the Southern Research Station with the Long Term Soil Productivity Study.
- Monitoring was performed for both prescribed burning and timber management activities.
- All streams, swim beaches, lakes and streams were monitored.
- Fish were stocked in lakes and habitat improvements were made.
- The MOA with the State of Louisiana on Non-Point Source Pollution Control is current.
- Scenery Integrity Objective c (SIO) classes were considered in project design and will continue to be incorporated in projects that may affect SIOs.
- The Forest completed six wilderness education kits for all Kisatchie NF units per the 2011 monitoring recommendation.
- The monitoring recommendation to continue to strengthen the relationship between recreation and heritage resources to provide interpretive opportunities between the two resources, such as the continued efforts on the Old LSU Site trail and interpretive area has been implemented and continues.

## 2011 Recommended Actions Requiring Additional Action/Attention

- Resume botanical MIS surveys.
- Revisit aquatic MIS data and validate habitat and population trends
- Revisit ability to move towards longleaf pine desired future condition. The Forest has approximately 126,000 acres in the longleaf pine plant community, compared to the forest plan's target of 263,000 acres. In 2012, approximately 490 acres of longleaf pine (that had been cleared for final harvest) was restored through planting. Approximately 64 acres of shortleaf pine was planted.
- For purposes of documenting movement towards native forest community desired conditions, identify how many acres of native forest community will be improved in each vegetation environmental analysis/project.
- Assure that treatment of non-native invasive species is interwoven into each restoration/vegetation project.

# Appendix A – List of Preparers

## **U.S. Forest Service, Kisatchie National Forest, Supervisor’s Office**

Barbara Bell	Forest Silviculturist
Velicia Bergstrom	Forest Archaeologist
David Byrd	Forest Ecosystem Conservation Staff Officer
Debbie Collins	Forest Budget Officer
Paula Cote	Forest Environmental Coordinator/Forest Planner
Shanna Ellis	Forest Recreation Program Manager
Holly Morgan	Forest Sales Forester and Timber Sales Program Manager
Gretchen H. Moore	Forest Lands and Minerals Program Manager
Dave Moore	Forest Botanist/Ecologist
Jason Nolde	Forest Wildlife Biologist
Amy Robertson	Public Affairs Specialist
Marilyn Robertson	Forest Engineering, Timber and GIS Staff Officer
Ted Soileau	Forest Soils, Water, Air Program Manager
Lester Tisino	Forest Fire Management Officer

## **U.S. Forest Service, Region 8 Southern Research Station, Alexandria Forestry Center**

Dale Starkey	Forest Health Protection, Plant Pathologist
Wood Johnson	Forest Health Protection, Entomologist

## Appendix B – References

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# Appendix C- Forest Plan Amendments

**Table 15. Kisatchie NF Forest Plan Amendments 2000 to 2012**

<b>Amendment Number</b>	<b>Effective Date</b>	<b>Level of Significance</b>	<b>Amendment Summary</b>
1	09/2002	Non-significant	Clarified direction for the preparation of site-specific biological evaluations including inventory requirements for proposed, threatened, and endangered species (PETS)
2	05/2003	Non-significant	Increased the land allocation for U.S. Air Force uses under permit
3	08/2004	Non-significant	Revised the percent of the Forest open to off-road vehicles and specified percent of Forest that is open to motorized vehicles on designated trails only. Prohibited off road vehicle use in the Red Dirt Wildlife Management Preserve
4	08/2004	Non-significant	Revised the percent of the Forest open to off-road vehicles. Prohibited off road vehicle use on the Calcasieu District
5	10/2005	Non-significant	Added new direction and modified direction in response to the 2003 Recovery Plan for the Red-cockaded Woodpecker issued by USDI USFWS
6	04/2006	Non-significant	Modified trail users to exclude horses and include motorcycles.
7	11/2007	Non-significant	Designated a motorized transportation system (and season of use) of over 2,000 miles of roads and 264 miles of trails. Prohibited motorized use off designated routes forest-wide. Designated dispersed camping and big game retrieval corridors
8		Non-significant	Revised the percent of the Forest open to off-road vehicles. Limited off road vehicle use on the Calcasieu District to designated routes and areas
9	02/2012	Non-significant	Added a new standard prohibiting the use of dogs to hunt deer on the Forest and retained guideline FS-707

# Appendix D – Forest Plan Budget Estimates and 2012 Budget

Table 16. Kisatchie NF 1999 Forest Plan Budget Estimates and 2012 Budget

Budget Line Item	1999 Forest Plan EBLI	1999 Plan Budget Estimate	FY 2012 BLI	FY 2012 Budget	Difference
<b>Ecosystem Planning, Inventory, Monitoring</b>					
Inventory and Monitoring	NFEM	\$624,000	NFIM	\$254,380	-(265,313)
Land Management Planning			NFPN	\$104,307	
				TOTAL: \$358,687	
<b>Recreation</b>					
Recreation (Recreation, Wilderness, Heritage, Cooperative Work, Trail Maintenance, Fee Demo)	NFRM, NFWM, NFHR, CWFS	\$1,146,000	NFRW CMTL FDDS CWFS	\$965,228 \$307,483 \$200,000 See Wildlife and Fish TOTAL \$1,472,711	+\$326,711
<b>Rangeland Management</b>					
Range Management, Range Vegetation Management, Cooperative Work	NFRG, NFRV, CWKV	\$400,000	NFRG	\$12,800  TOTAL \$12,800	-\$387,200 )
<b>Wildlife and Fish Management</b>					
Wildlife habitat operations and improvement, Inland fish, T&E species, Cooperative Work (KV/Other)	NFWL, NFIF, NFTE, CWKV, CWFS	\$2,640,000	NFWF CWKV CWFS	\$952,767 See Forestland Mgt \$7,500 TOTAL: \$978,879	-\$1,661,121)

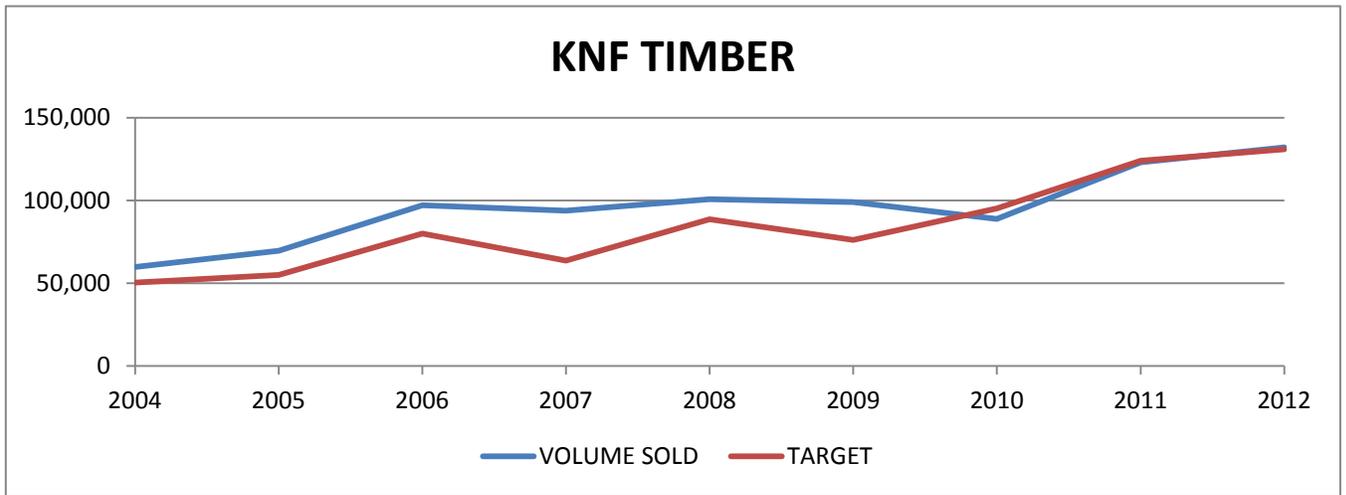
Budget Line Item	1999 Forest Plan EBLI	1999 Plan Budget Estimate	FY 2012 BLI	FY 2012 Budget	Difference
<b>Forestland Management</b>					
Timber, Vegetation, Reforestation, Cooperative Work, Timber Roads, Salvage, Forest Health Protection, Soil, Water, Air	NFTM, NFFV, RTRT, CWKV, PEPE, PUCR, SSSS, NFSO, NFSI, CWFS, SPFH, SRS2	5,859,000 (TIMBER) 403,000 (SOIL/WATER)	NFTM NFFV CWKV SSSS CWK2 RTRT RIRI SPFH SRS2	\$1,202,789 \$692,242 \$1,482,539 \$35,000 \$862,000 \$171,819 \$10,000 \$81,795 \$297,008 TOTAL: \$4,835,192	-(1,426,8008)
<b>Minerals and Geology Management</b>					
Minerals	NFMG CWF2	\$320,000	NFMG CWF2	\$79,768 \$245,500 TOTAL:\$324,768	+\$4,768
<b>Land Ownership Management</b>					
Real estate management, land line	NFLA, NFLL	\$320,000	NFLM URCP	\$322,125 \$9,300	-(26,575)
Land Acquisition	LALW	\$50,000	LALW	\$12,000 TOTAL: \$343,425	
<b>Forest Service Fire Protection</b>					
Pre-Suppression, Forest fuel reduction	WFPR, WFHF	1,375,000	WFHF WFPR	\$3,022,432 \$1,178,459 TOTAL: \$4,200,891	+\$2,825,891
<b>Infrastructure Management</b>					
Road Maintenance,	CNRM, NFFA, CWKV	\$1,161,000	CMRD	\$935,824	+\$827,341

Budget Line Item	1999 Forest Plan EBLI	1999 Plan Budget Estimate	FY 2012 BLI	FY 2012 Budget	Difference
Decommissioning, Cooperative Work, Federal Highways, Quarters Maintenance, Reforestation, Roads and Trails for States			CP09 CWF2 CWKV CMFC HTAE QMQM CMLG CMTL HTAP	\$300,470 \$245,500 See Forestland Mgt \$198,281 \$12,266 \$8,000 \$83,000 See Recreation \$205,000 TOTAL: \$1,988,341	
<b>General Administration</b>					
GA, Facilities, Cooperative Work, Timber Salvage, FS quarters, Roads and Trails for States, Reforestation Trust Fund	NFGA, NFFA, CWKV, CWFS, SSSS, QMQM	\$2,385,000	CWKV CWFS CWF2 SSSS QMQM POOL	See Forestland Mgt See Wildlife and Fish See Infrastructure See Forestland Mgt See Infrastructure \$2,222,380 TOTAL: \$2,222,380	-\$162,620
<b>External Agreements</b>					
	N/A		NFEX	\$643,000 TOTAL \$643,000	+ \$643,000
<b>Law Enforcement</b>					
	NFLE NFSA	\$73,188 \$559,948 TOTAL: \$633,136	N/A		-\$633,136
<b>Total Budget</b>		<b>\$18,778,000</b>		<b>\$17,381,074</b>	<b>(\$1,396,926)</b>

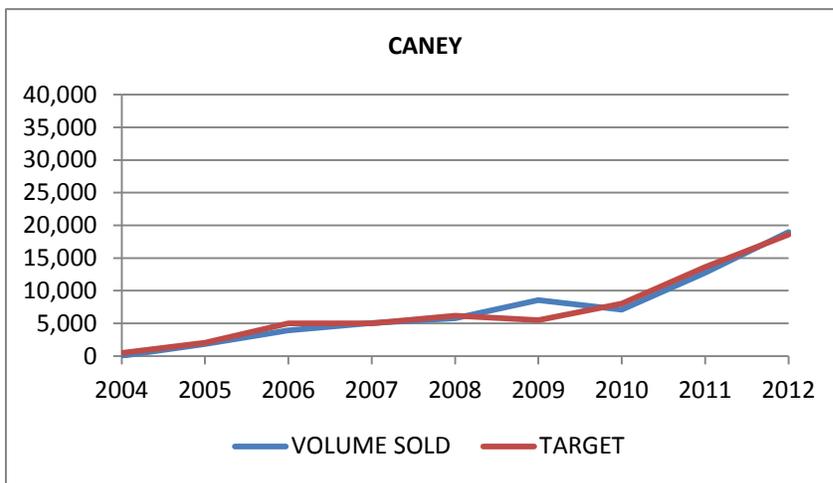
## Appendix E Timber Outputs – Historical Comparison

Table 17. Recent Kisatchie NF Timber Targets and Volume Sold by Ranger District (2004 to 2012)

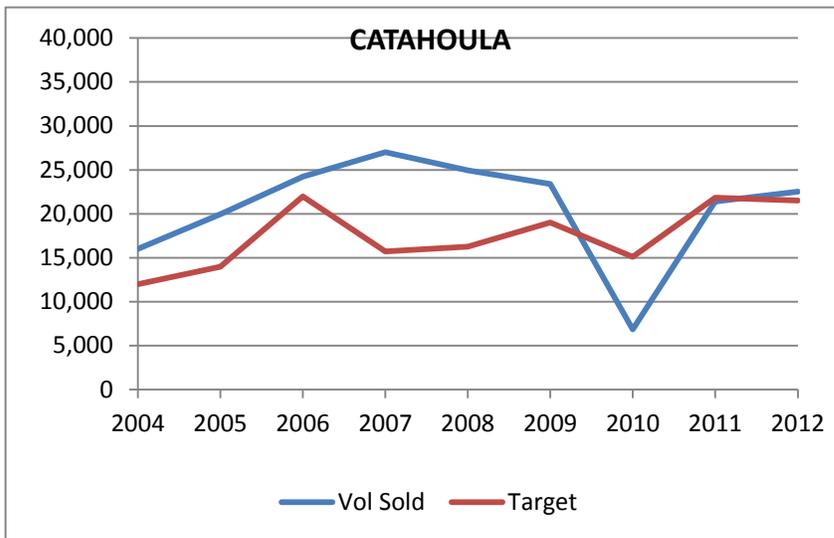
Fiscal Year (FY)	Ranger District										Total KNF Target	Total Sell
	Catahoula		Calcasieu		Kisatchie		Winn		Caney			
	Target	Volume Sold (CCF)	Target	Volume Sold (CCF)	Target	Volume Sold (CCF)	Target	Volume Sold (CCF)	Target	Volume Sold (CCF)		
2004	12,000	16,012	14,000	13,709	5,000	5,862	19,000	24,191	478	34	50,478	59,808
2005	14,000	19,938	13,000	16,180	5,000	9,147	21,000	22,582	2,000	1,841	55,000	69,688
2006	22,000	24,221	21,000	33,942	7,000	9,372	25,000	25,601	5,000	3,944	80,000	97,080
2007	15,705	27,010	17,320	23,146	7,000	6,910	18,675	31,759	5,000	5,061	63,700	93,886
2008	16,267	24,934	29,770	28,214	7,679	7,636	24,734	34,123	6,150	5,795	88,700	100,702
2009	19,000	23,385	22,000	27,365	7,500	6,928	22,200	32,785	5,500	8,527	76,200	98,990
2010	15,100	6,861	28,050	28,478	9,825	10,178	34,125	36,121	8,000	7,108	95,100	88,746
2011	21,850	21,402	38,661	39,202	8,500	7,731	41,450	41,976	13,600	12,734	124,061	123,046
2012	21,494	22,518	38,253	36,055	13,418	13,972	39,253	40,584	18,582	18,994	131,000	132,123



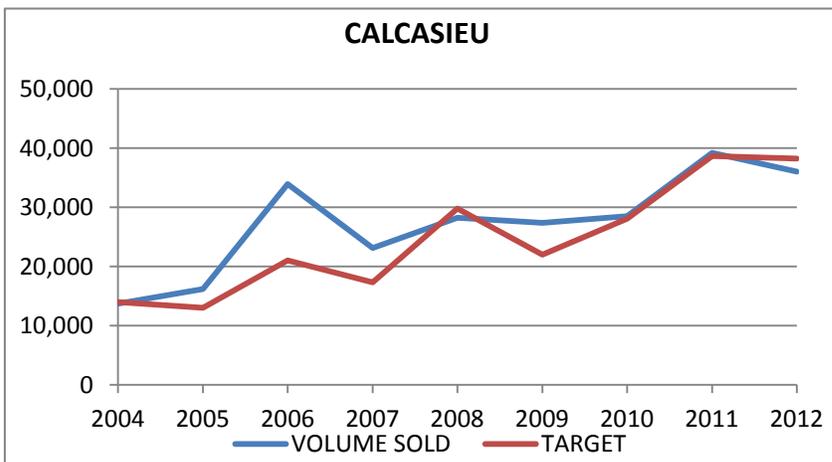
**Figure 5. Kisatchie National Forest (KNF) Timber Target and Volume Sold (2004 to 2012)**



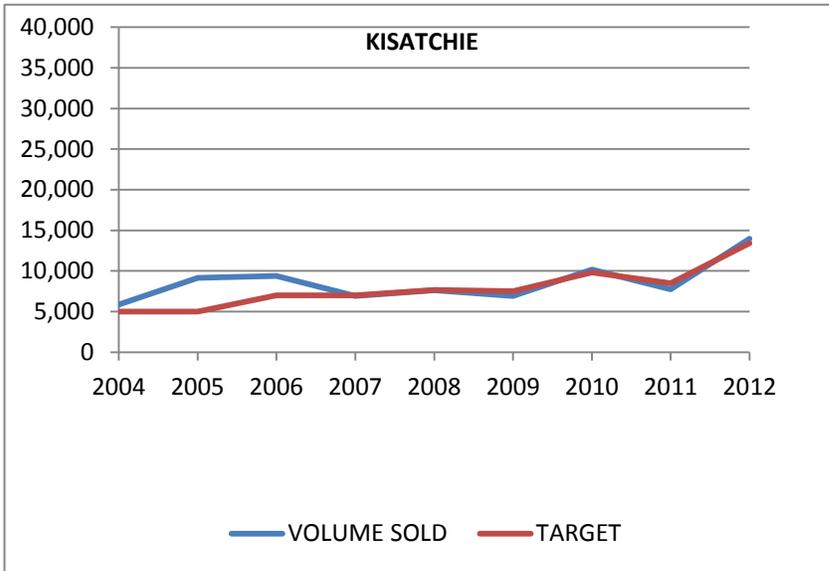
**Figure 6. Caney Ranger District Timber Target and Volume Sold (2004-2012)**



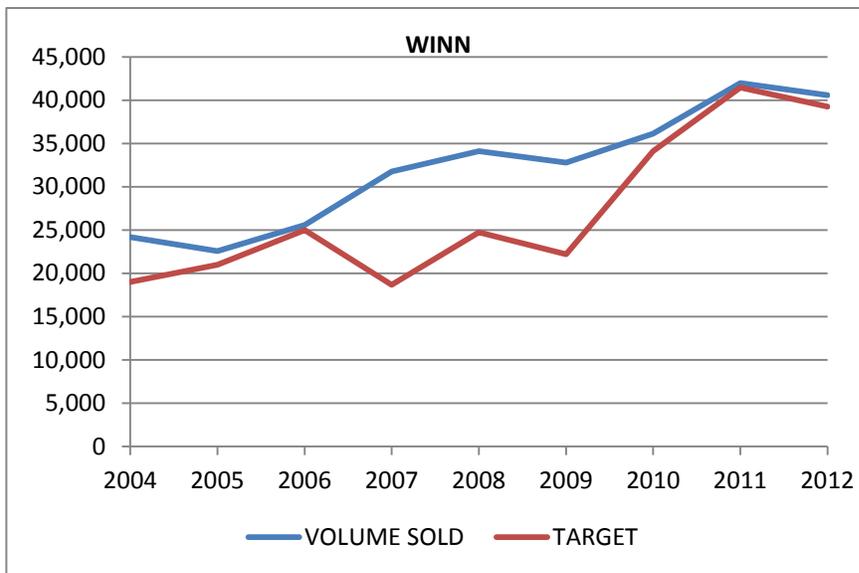
**Figure 7. Catahoula Ranger District Timber Volume Target and Sold (2004-2012)**



**Figure 8. Calcasieu Ranger District Timber Volume Target and Sold (2004-2012)**



**Figure 9. Kisatchie Ranger District Timber Volume Target and Sold (2004-2012)**



**Figure 10. Winn Ranger District Timber Volume Target and Sold (2004-2012)**

**Table 19. KNF Allowable Sale Quantity by District, Sale Name, Date and Timber Suitability Classification**

District	Sale Name	Bid Date	FY 2012 Acres		FY 2012 CCF	
			Suitable	Unsuitable	Suitable	Unsuitable
Calcasieu	CLAIBORNE SALVAGE	7/30/2012	20		215	
Caney	HARD CANDY	4/17/2012	128		2,952	
Winn	AMBERG C-111	5/10/2012	178		3,595	
Kisatchie	304 NONSAW	8/7/2012	179		5,316	
Winn	BARBUS SBA	3/13/2012	181		1,721	
Caney	TWIN POND	4/5/2012	189		3,285	
Kisatchie	BELLWOOD FIRST THIN	4/19/2012	229		3,829	
Winn	QUICK	4/12/2012	295		4,363	
Caney	DOGHEAD	6/28/2012	304		5,975	
Winn	SPOT 80	8/14/2012	344		7,721	
Winn	DOGPEN	7/31/2012	483		6,374	
Winn	C-18 SOUTH	5/31/2012	573		7,153	
Catahoula	N. CAT 6 & 30	5/15/2012	575		2,070	
Kisatchie	SIMMONS CREEK	9/6/2012	630		4,821	
Catahoula	N. CAT 7 & 10	7/19/2012	663		6,731	
Winn	STRANGE	7/24/2012	676		9,624	
Calcasieu	C-54	2/23/2012	705		6,145	
Calcasieu	C-112 SOUTH	6/26/2012	739		11,083	
Calcasieu	SNIPER	10/18/2011		79		3,683
Calcasieu	SUNDAY FIRE SALVAGE	12/16/2011		79		1,787
Calcasieu	C-244	3/20/2012		383		3,767
Calcasieu	JANUARY SALVAGE	3/13/2012		29		76
Calcasieu	WOOD DUCK	4/10/2012		172		3,920
Calcasieu	RANGE 2	5/1/2012		124		5,344
Caney	CORNEY BAYOU NS	8/1/2012		248		6,668
Catahoula	RCW RECRUITMENT	11/15/2011		193		2,389
Catahoula	CLECO ROW	1/31/2012		5		108
Catahoula	SEED ORCHARD	5/24/2012		157		1,416
Catahoula	CAMP LIVINGSTON NS	8/9/2012		242		6,079
<b>Total Acres and CCF by Category(2012)</b>			<b>7,091</b>	<b>1,711</b>	<b>92,973</b>	<b>35,237</b>

# Appendix F Prescribed Fire – Historical Comparison

**Table 18. Prescribed Fire History 1999 to 2012**

Fiscal Year	Prescribed Fire Acres by Season		Total Prescribed Fire Acres	Growing Season Prescribed Fire (Percent)
	Dormant Season Acres	Growing Season Acres		
1988	72,725	0	72,725	0
1989	61,090	0	61,090	0
1990	69,991	0	69,991	0
1991	74,098	0	74,098	0
1992	74,940	0	74,098	0
1993	71,624	0	71,624	0
1994	71,257	0	71,257	0
1995	72,576	0	72,576	0
1996	42,042	0	42,042	0
1997	83,579	0	83,579	0
1998	99,385	0	99,385	0
1999	104,760	0	104,760	0
2000	37,580	6,450	44,030	15
2001	104,718	21,282	126,000	17
2002	83,785	13,826	97,611	14
2003	99,167	37,334	136,501	27
2004	88,432	42,369	130,801	32
2005	79,256	42,946	122,202	35
2006	70,478	28,458	98,936	29
2007	79,086	44,881	127,967	35
2008	99,035	44,176	143,211	31
2009	94,187	36,210	129,910	28
2010	76,070	24,346	100,416	24
2011	93,808	19,595	113,403	17
2012	96,436	39,072	135,508	29

\*1988 to 2006 data source is 2006 KNF CER (USDA 2006), 2007 to 2012 data source is KNF Annual M&E Reports (USDA 2007-2012).

Annual Average Acres of Prescribed Fire 2000 to 2006: 108,012 acres/year

Annual Average Acres of Prescribed Fire 2007 to 2012: 125,069 acres/year

# Appendix G Management of Old Growth Community Types

## Executive Summary

The Kisatchie National Forest Revised Land and Resource Management Plan (hereafter referred to as “forest plan”) was put in place in 1999. Forest plan direction is to designate 13 percent of the Forest for old growth community development within allocated old growth emphasis areas (USDA 1999, Appendix E). A recent evaluation of stand data indicates there is minimal to no intact stands of existing old growth due to past management practices which removed old (and large) trees. Riparian bottomlands, the Kisatchie Wilderness and remnant (random) stringers of old trees may currently meet old growth criteria. Since 1999, progress has been made on moving developing old growth (trees that may meet some but not all criteria) towards forest plan desired conditions through active vegetation management. The purpose of most vegetation and prescribed fire projects has been to improve red-cockaded woodpecker (RCW) habitat. The purpose of most vegetation and prescribed fire projects has been to improve the vegetation structure of red-cockaded woodpecker (RCW) habitat. Treatments have been designed to restore species diversity and composition by increasing acres of native longleaf pine ecosystem. Treatments are designed to promote the growth of trees into the larger, older age class to sustain RCW nesting and roosting habitat. Treatments have been designed to move towards the historic disturbance regime and return fire in regular intervals to the fire-dependent landscape. However, there is an opportunity to improve tracking old growth allocations at the project and landscape scale. There is a need to ensure project planning includes measures that will move those acres with the best potential towards forest plan old growth desired conditions. In 2014, there will be renewed emphasis on tracking and reporting old growth allocations at the project and landscape scale.

## Purpose

- Establish protocol for evaluating and validating old growth community attributes at the project level and ensure compliance with forest plan old growth direction in NEPA analyses;
- Establish an implementation strategy for developing old growth communities;
- Ensure old growth data and allocations is consolidated annually and made available at both the project and landscape scale; and,
- Use information presented here to inform the upcoming forest plan revision process.

## Data Researched

### Geospatial Information System

The GIS Old Growth spatial layer [created for the FLRMP in September, 1994] was superimposed over the current FSveg 2013 Compartment and Stand layers to identify stands located within the Old Growth Emphasis Areas. The information provided in the tables below summarize Old Growth data based on the Desired Future Conditions (DFC) outlined in Appendix E of the FLRMP, rev. 1999.

**Table 1. Kisatchie NF Old Growth Community by Forest Type, Acres and Age**

<b>Caney Old Growth Community</b>	<b>Forest Type</b>	<b>Acres</b>	<b>Average Age</b>	<b>DFC Age</b>
13	46, 61, 63, 65, 68, 75	1,710	85	100
27	54, 62, 64	3,280	72	100
24	12, 32	3	27	100
6	53, 69	71	79	120
14	27, 67	39	84	200
21	51	0	0	130
22	57	0	0	110
25	13, 31, 44, 47	2,958	74	120
26	21	0	0	110
29	14, 22	0	0	80
<b>All Others Old Growth Community</b>	<b>Forest Type</b>	<b>Acres</b>	<b>Average Age</b>	<b>DFC Age</b>
6	46, 53, 69	8,253	84	120
14	24, 67, 68	1,422	83	200
21	51, 54	45	79	130
22	57	0	0	110
25	12, 13, 31, 32, 44, 47	18,250	79	120
26	21	33,347	74	110
28	75	190	38	100
29	14, 22	731	62	80

Desired Future Condition removes Forest types 25, 61, 62 and 64 from Old Growth Emphasis Areas in "All Other" Ranger Districts = **70,299 acres or 11.63% of KNF acres.**

## Assumptions

Based on the forest plan, 13% of the forest should be designated for old growth community development (see KNF forest plan, Appendix E).

## Implementation Strategy

The implementation strategy is designed to be used by district and forest silviculturists and planners at the project and landscape scale.

### Project Scale: Process for Validating Old Growth (within a project area)

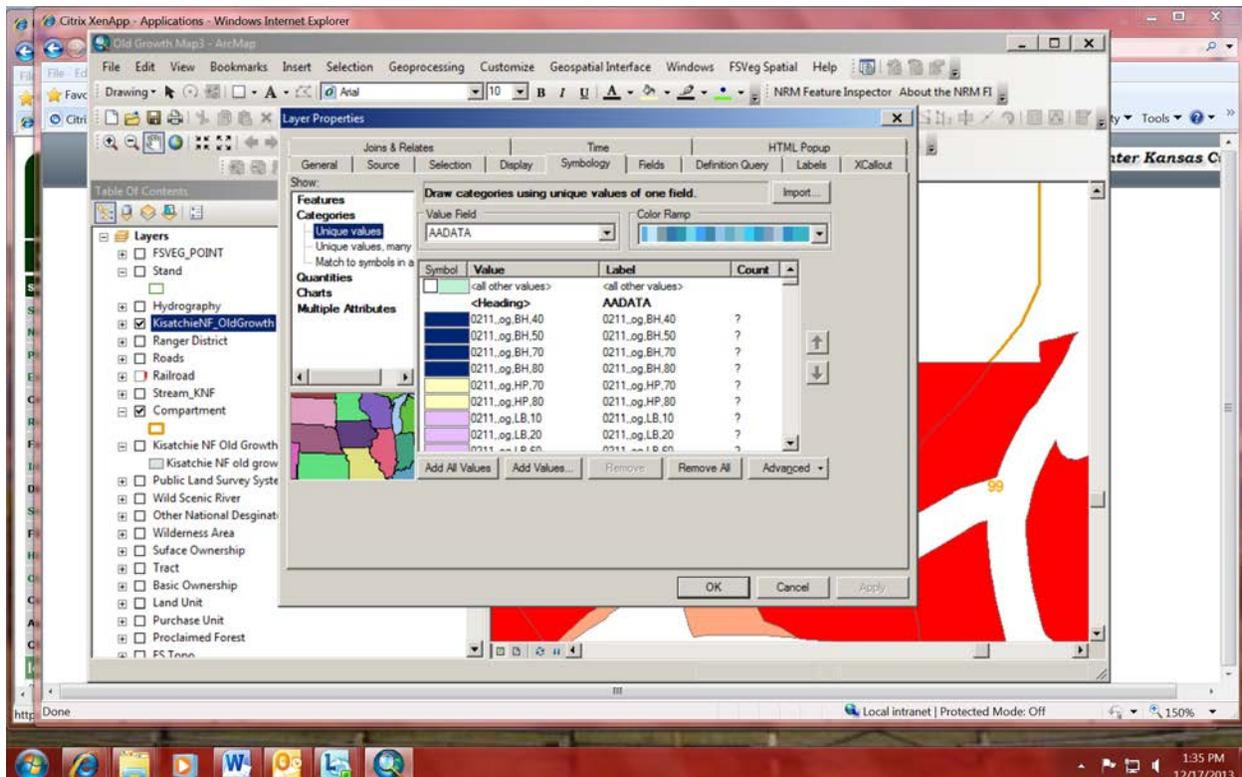
Bring the old growth emphasis data layer into your MXD project. It is located at T:\FS\Kisatchie\Program\7140Geometronics\SupervisorOffice\GIS\Data\KisatchieNF\_GIS.gdb\KisatchieNF\_Old Growth. Click on Symbology, categories. In Value Field, pick AADATA. Add all values (it will be many) say yes:

Og = old growth

LL = longleaf

70 = the age of the area at the time the forest plan was prepared

XX = forest type not known at the time the forest plan was prepared



- Check where your treatments are in relation to the old growth emphasis areas;
- In an interdisciplinary setting, review all compartments and stands for validity and data corrections;
- Document assumptions and proposals for correcting data and selecting those stands that have the most potential to move towards old growth attributes and are important in terms of providing habitat, connectivity, etc. (example: loblolly stand in the middle of longleaf pine old growth patch but is showing to be managed for loblolly instead of longleaf);
- Document why a stand should not be considered/managed as old growth (example: stand is a powerline or stand is actually on private land);
- Document proposal with acres that would be managed for old growth attributes acres that should not be managed for old growth attributes. Add old growth section to vegetation report in Chapter III. Include an affected environment and direct, indirect and cumulative environmental consequences. In vegetation report, include (document) all methodology and assumptions used to evaluate old growth.

- Document compliance with forest plan objectives and standards and guidelines. Proposed treatments must meet **forest plan standards**. A standard is an absolute requirement to be met in the design of projects and activities. A project or activity is consistent with a standard when its design is in accord with the explicit provisions of the standard; variance from a standard in any way is not allowed. You must amend the forest plan in order to have a project decision that deviates from a plan standard. A project or activity can be consistent with a **forest plan guideline** in one of two ways: (1) the project or activity design is in accord with the explicit provisions of the guideline, or (2) the project or activity design varies from the explicit provisions of the guidelines but is as effective in meeting the purpose of the guideline to maintain or contribute to the attainment of relevant desired conditions and objectives. Should a proposed treatment not be consistent with those listed in the old growth treatment methods by community type, you must evaluate and document in the environmental analysis how the proposed treatment maintains or contributes to relevant forest plan desired conditions and objectives.
- The allocation of old growth at the project level is a decision, it needs to be included in the decision and demonstrates compliance with the forest plan.
- By project, file all final old growth allocation MXD data into a project folder to be filed in: T:FS\Kisatchie\Program\7140Geometronics\SupervisorOffice\GIS\Data\KisatchieNF\_GIS.gdb\KisatchieNF\_Old Growth\YOUR PROJECT

### **Landscape Scale: Process for Validating Old Growth and Upward Reporting**

- In preparation for the annual forest plan monitoring and evaluation report, overlay all project MXD data information into the Forest's Kisatchie NF\_Old Growth GIS data.
- Create baseline assumption of acres that are defacto old growth due to special designation (designated wilderness)
- Summarize acres that have will be managed as developing old growth as a result of project decisions.
- Summarize acres that will be released from old growth management with rationale.
- Provide total summary of acres to be managed as old growth and percent of forest moving towards desired conditions.

## Appendix G-1

### Kisatchie National Forest Old Growth Management Direction

#### Upland Longleaf Old Growth Patches (see KNF Revised LRMP, E-1 to E-2)

##### *Structure:*

- Mature longleaf forests will generally be open
- Density of stems will be variable with some areas supporting relatively dense growths while other area may be much more open
- In general, upland stands maintain 50-90 square feet of pine and less than 20 square feet of hardwoods per acre
- Tree size will be variable but older trees, often exceeding 24 inches in diameter, dominate.
- Longleaf trees over 100 years old will often appear flat topped and occur in a random fashion. Intermingled within the predominantly old trees will be patches of younger growth (less than 50 years old) which occupies less than 25 percent of the designated old growth patch.
- The pattern includes many small gaps, most with pine regeneration of various ages and some remaining treeless for years. Standing dead trees and down logs will be common.

##### *Composition:*

- Uplands will be almost pure longleaf pine
- Other than longleaf pine, there will be few midstory trees and shrubs on the uplands
- Bluestem grasses, composites, legumes and other forbs dominate the understory
- Understory height will generally be less than 10 feet.

##### *Disturbance Regime:*

- Fire will be frequent within the Forest
- Overstory trees show evidence of scorch and fire scars
- Fires are hot enough to suppress much of the woody understory and to occasionally kill individual or small groups of overstory trees.

#### Shortleaf Pine/Oak Hickory-Dominated Patches (see KNF Revised LRMP, E-2 to E-3)

##### *Structure:*

- Mature shortleaf/oak-hickory forests will be relatively open and moderately stocked with pine and hardwoods
- In general, upland stands carry a combined pine and hardwood basal area of 80-110 square feet per acre.

- Shortleaf pine occupies a supercanopy position in the overstory.
- Tree size will be variable but older trees, often exceeding 24 inches in diameter, dominate.
- Shortleaf pine over 150 years old and hardwoods more than 200 years old occur randomly throughout the area.
- Intermingled with the predominantly older trees may be patches of younger growth (less than 50 years old) which occupies less than 25 percent of the designated old-growth patch.
- The midstory appears thick to fairly open.
- The understory vegetation varies from thick in open areas to fairly sparse in heavily stocked sites.

***Composition:***

- Uplands will be dominated by mixed pine-hardwood forest.
- Shortleaf pine and a variety of oaks, hickories and other hardwoods occur commonly in the overstory.
- Longleaf pine may occur in those transition zones between upland longleaf pine forests and shortleaf oak/hickory forests
- The midstory contains regenerating overstory species and a variety of shrubs (see list in E-2)
- The understory contains a variety of grasses, asters, desmodiums, partridge berry, bergamots and other flowering plants

***Disturbance Regime:***

- Fire will be a common natural disturbance factor within the forest.
- Because fires tend to be less intense and less frequent, overstory trees show little evidence of scorch and fire scars.
- Fires will be frequent enough to prevent the establishment of many fire-tender species (such as sweet gum and beech) on the drier upland sites.
- Smallscale disturbances will primarily be the result of wind, insects, disease, prescribed fire or stand improvement practices aimed at developing old-growth attributes.
- Insects, especially southern pine beetle, may have a significant effect on pine mortality in the area. During epidemic years, southern pine beetle infestations may affect moderately to fairly large areas.

**Mixed Hardwood-Loblolly Pine Dominated Patches (see KNF Revised LRMP, E-3 to E-4)**

***Structure:***

- In general, the dominant overstory canopy in an old-growth mixed hardwood-loblolly pine forest appears closed; however, small gaps in the canopy may be common.
- Overstory tree density may be variable, but most stands will be moderately to densely stocked and carry a combined hardwood and pine basal area of 100–150 square feet per acre.

- Tree size, age, and form will be variable but older trees, often exceeding 24 inches in diameter, will be well represented.
- Hardwood trees over 200 years old occur randomly throughout the area. Intermingled within the predominantly older trees may be patches of younger growth (less than 50 years old) which occupies less than 25 percent of the designated old-growth patch.
- The midstory will be multilayered and contains many shrubs, vines, and regenerating overstory species.
- The midstory appears fairly open, except in or near canopy gaps where it may be dense. The understory vegetation will typically be sparse with a thick, actively decaying leaf layer and much down woody material. Standing snags will be present in moderate numbers, more so than in pine old-growth due to the greater decay resistance of some of the hardwood species. Down logs are common.

***Composition:***

- The overstory composition will be highly variable. A wide variety of oaks (such as white, southern red, post, cow, black, water, laurel, cherrybark, and blackjack) and hickories (such as mockernut, black, and bitternut) as well as loblolly pine, southern magnolia, beech, blackgum, sweetgum, American holly, winged-elm and shortleaf pine will commonly be observed.
- Unless the area has experienced a large blowdown or insect infestation, the percentage of hardwood trees tends to increase with stand age; and hardwoods dominate the overstory over much of the area.
- Pine composition may be greater on the higher, drier sites within an area but pines will generally be replaced by longer-lived hardwood species.
- In addition to regenerating overstory trees, the midstory contains a variety of shrubs and vines. Ironwood, flowering dogwood, hophornbeam, wild grapes, greenbriers, coral honeysuckle and many others will commonly be present.
- The herbaceous understory contains a variety of shade-adapted plants, including ferns, violets, wake-robins and many other flowering plants as well as a rich assemblage of grasses, sedges, rushes, mosses, lichens and liverworts.

***Disturbance Regime:***

- Small-scale disturbances will primarily be the result of wind, insects, disease, prescribed fire, or stand improvement practices aimed at developing old-growth attributes.
- Old hardwoods with heartrot, visible cavities, and buttrot will be common. Insects, especially southern pine beetle, may have a significant effect on the pines in the area. During epidemic years, southern pine beetle infestations may occur over moderate to fairly large areas.
- Fire will be infrequent within the forest and occurs only as a result of weather and fuel factors which allow fires on adjacent uplands to burn into the area.

## **Riparian Forest Old Growth Patches (see KNF Revised LRMP, E-4 to E-5)**

### ***Structure:***

- The dominant overstory canopy appears closed; however, small gaps in the canopy are scattered throughout the area.
- Overstory tree density varies but most stands will be moderately to densely stocked and carry a total basal area of 100 to 150 square feet per acres.
- Tree size, age and form will be variable but older trees, often exceeding 24 inches in diameter will be well represented.
- Hardwood trees over 200 years old occur randomly throughout the area.
- Younger growth (less than 50 years) occupies less than 25 percent of the designated old growth patch.

### ***Composition:***

- Overstory composition will be highly variable. A wide variety of oaks and hickories as well as southern magnolia, beech, blackgum, sweetgum, sycamore, water ash, and other hardwoods may be observed.
- Loblolly or shortleaf pine may be present on small stream communities within the uplands.

### ***Disturbance Regime:***

- Small scale disturbances will primarily be the result of wind, insects, or disease. Old hardwoods with heartrot, visible cavities, and buttrot will be common.
- Fire will be rare and only occur as a result of weather and fuel factors which allow fires on adjacent uplands to burn into

## **Forest Plan Objectives**

**Objective 2–4:** Develop or maintain old growth forest attributes, for their contribution to biological and visual diversity, habitats for plant and animal species, and maintenance of a natural gene pool, within designated patches on approximately 13 percent of the Forest based upon representation of the major forest ecosystems and old growth community types. Long-term old growth forest objectives are as follows:

### **Longleaf pine forest-dominated patches: 48,800 acres**

- Coastal plain upland mesic hardwood: 2,550 acres.
- Upland longleaf, woodland, and savanna: 45,350 acres.
- Southern wet pine forest, woodland, and savanna: 780 acres.
- Dry and xeric oak forest, woodland, and savanna: 120 acres (Also see Table E-2)

### **Riparian forest-dominated patches: 12,700 acres**

- Coastal plain upland mesic hardwood: 1,820 acres.
- River floodplain hardwood forest: 1,180 acres.
- Cypress-tupelo swamp forest: 1,400 acres.
- Eastern riverfront forest: 6,400 acres.
- Seasonally wet oak-hardwood woodland: 1,400 acres.
- Dry and dry-mesic oak-pine forest: 500 acres.

(Also see Table E-X)

## **Forest-wide Standards and Guidelines**

### **General**

FW-252: Classify areas allocated to old growth forest as not suitable for timber production. (KNF) (STANDARD)

FW-253: Develop old-growth community types within designated old-growth patches in accordance with established objectives for each landscape community. Inventory future old-growth stands within these patches to determine best site choices for developing old-growth communities. Old growth patches should be managed to conserve and maintain appropriate understory species as well as overstory species. (KNF) (GUIDELINE)

FW-254: Minimize mechanical damage from rutting, fireline construction, and road construction to protect ground cover, hydrology, and soils. (KNF) (GUIDELINE)

FW-255: Normally do not permit salvage of fire, lightning, disease, or insect-killed timber. Allow snags and down woody material to develop natural patterns after fire or other natural disturbance. Use spot-growth predictive models during ~~SPB~~ epidemics to evaluate the need for control measures that could involve large numbers of trees and threaten the integrity of the unit. (KNF) (GUIDELINE)

FW-256: Most high-quality (A and AB) natural community sites identified through a challenge cost-share with The Nature Conservancy and the Louisiana Department of Wildlife and Fisheries Natural Heritage Program were included in old-growth patches or streamside habitat protection zones. These sites should take on the management direction of areas in which they are located and cease to be separately tracked. Track remaining high-quality (A and AB) natural community sites not within areas having special protection, through at least the next stand examination and silvicultural prescription period. At that time examine these sites and determine whether to continue tracking and offering special protection or to release them for management in accordance with the management prescription for that particular management area. Do not track or apply special management for sites ranked below AB quality. (KNF) (GUIDELINE)

### **Longleaf pine forest-dominated patches**

FW-257: Within designated longleaf pine patches permit the following management practices in order to develop or maintain old-growth attributes (see also, Appendix E). Consider on a case-by-case basis practices listed as permitted with restrictions, or normally not permitted. (KNF) (GUIDELINE)

- Normally permitted: Prescribed burning, Thinning, Midstory removal, Single-tree selection, Shelterwood with reserves, Group selection, Irregular plantings, Low impact, disced firelines, Oil and gas leasing
- Permitted with restrictions: Clearcutting with reserves, Fire plow lines, Mechanical site preparation, Herbicide use, Oil and gas development
- Normally not permitted: Seed-tree / shelterwood, Clearcutting, Salvage of dead timber, Pinestraw collection, Livestock grazing, Permanent open road construction, Permanent special-use structures or rights of-way

FW-258: Burn upland stands once every 2–5 years. Vary timing, duration and intensity of burning to maximize the diversity of ecological conditions, and to mimic the role of natural fire events. Allow fire to burn down into embedded riparian areas to maintain transition zones. Emphasize growing season burns. (KNF) (GUIDELINE)

FW-259: Allow thinning treatments to promote old-growth attributes and to mold overstory composition. Leave-tree basal areas (BA) and tree spacing should be irregular to more closely approximate natural disturbance events. Generally, maintain 50–90 square feet per acre BA of pine on upland stands. (KNF) (GUIDELINE)

FW-260: Allow midstory control to move uplands toward an open condition and to maintain active RCW cluster sites and recruitment stands. (KNF) (GUIDELINE)

FW-261: Encourage a variety of age and size classes to create a mosaic of variable stem densities throughout the patch using single-tree selection, group selection, and shelterwood with reserves regeneration methods. Limit maximum opening size for groups to 2 acres; and shelterwood with reserves to 10 acres. Avoid removing any overstory from within community types that are under-represented on the Forest. Utilize existing openings and rights-of-way as much as possible. (KNF) (GUIDELINE)

FW-262: Normally do not permit seed-tree, shelterwood and clearcutting regeneration methods. When restoring longleaf pine to those upland sites that are currently occupied by off-site species — such as loblolly or slash pine, use clearcutting with longleaf reserves. (KNF) (GUIDELINE)

FW-263: During regeneration or restoration ensure that at least 75 percent of a designated old-growth patch be occupied by trees 50 years old or older. (KNF) (GUIDELINE)

FW-264: Use irregular plantings to establish longleaf pine seedlings in open areas which are too large for successful natural regeneration. (KNF) (GUIDELINE)

FW-265: Permit mechanical site preparation and herbicide use only when needed to achieve restoration objectives. Encourage the use of prescribed fire prior to restoration harvests to achieve adequate site preparation conditions. (KNF) (GUIDELINE)

### **Shortleaf pine /oak hickory forest-dominated patches**

FW-266: Within designated shortleaf pine/ oak-hickory patches permit the following management practices in order to develop or maintain old-growth attributes (See also, Appendix E). Individually consider practices normally not permitted, or those listed as permitted with restrictions. (KNF) (GUIDELINE)

**Normally permitted:** Prescribed burning, thinning, midstory removal, single-tree selection, group selection, irregular plantings, oil and gas leasing

**Permitted with restrictions:** Fire plow lines, oil and gas development

**Normally not permitted:** Salvage of dead timber, seed-tree / shelterwood, shelterwood with reserves, clearcutting, mechanical site preparation, livestock grazing, herbicide use, permanent open road construction, permanent special-use structures or rights of-way

FW-267: Burn upland stands once every 5–10 years. Vary timing, duration and intensity of burning to maximize the diversity of ecological conditions, and to mimic the role of natural fire events. Allow fire to burn down into embedded riparian areas to maintain transition zones. (KNF) (GUIDELINE)

FW-268: Allow thinning treatments to promote old-growth attributes and to mold overstory composition. Leave-tree basal areas (BA) and tree spacing should be irregular to more closely approximate natural disturbance events. Generally, maintain a combined BA for pine and hardwood between 80–110 square feet per acre. (KNF) (GUIDELINE)

FW-269: Allow midstory control to maintain RCW cluster sites and recruitment stands. (KNF) (GUIDELINE)

FW-270: Encourage a variety of age and size classes to create a mosaic of variable stem densities throughout the patch using singletree and group selection regeneration methods. Limit maximum opening size for groups to 2 acres. Avoid removing any overstory from within community types that are under-represented on the Forest. Utilize existing openings and rights-of-way as much as possible. (KNF) (GUIDELINE)

FW-271: During regeneration or restoration ensure that at least 75 percent of a designated old-growth patch be occupied by trees 50 years old or older. (KNF) (GUIDELINE)

FW-272: Use irregular plantings to establish shortleaf pine or hardwood seedlings in areas with an inadequate species mixture. (KNF) (GUIDELINE)

### **Mixed hardwood-loblolly pine forest dominated patches**

FW-273: Within designated mixed hardwood loblolly pine patches, permit the following management practices for developing or maintaining old-growth attributes (See also, Appendix E). Consider individual practices listed as permitted with restrictions, or normally not permitted. (KNF) (GUIDELINE)

**Normally permitted:** single-tree selection, shelterwood with reserves, group selection, irregular plantings, midstory removal, oil and gas leasing

**Permitted with restrictions:** prescribed burning, thinning, fire plow lines, oil and gas development

**Normally not permitted:** Salvage of dead timber, herbicide use, mechanical site preparation, livestock grazing, permanent open road construction, seed-tree, shelterwood, and clearcutting, permanent special-use structures or rights of-way

FW-274: Encourage a variety of age and size classes, and promote a mixture of hardwoods within the forest canopy using singletree selection, group selection, and shelterwood with reserves regeneration methods. Limit maximum opening size for groups to 2 acres; and shelterwoods with reserves to 10 acres. Avoid removing any overstory from within community types that are underrepresented on the Forest. Utilize existing openings and rights-of-way as much as possible. (KNF) (GUIDELINE)

FW-275: Use intermediate treatments to aid in molding stand composition or to create favorable hardwood regeneration conditions. Allow crown thinning in stands less than 40 years old if needed to improve overstory hardwood composition. Leave-tree basal areas (BA) and tree spacing should be irregular to more closely approximate natural disturbance events. Generally, maintain a combined BA for hardwood and pine between 100–150 square feet per acre. (KNF) (GUIDELINE)

FW-276: Normally do not permit landscape level prescribed burning. However, the higher, drier uplands within the area may be burned on an infrequent basis (10–20 years). Allow fire to burn down into embedded riparian areas and wetlands. (KNF) (GUIDELINE)

FW-277: Allow midstory control to maintain red-cockaded woodpecker cluster sites and recruitment stands. (KNF) (GUIDELINE)

FW-278: During regeneration or restoration ensure that at least 75 percent of a designated old-growth patch be occupied by trees 50 years old or older. (KNF) (GUIDELINE)

FW-279: Allow irregular plantings to establish hardwood seedlings in areas with inadequate hardwood component. (KNF) (GUIDELINE)

### **Riparian forest-dominated patches**

FW-280: Within designated riparian forest patches, permit the following management practices in order to develop or maintain old-growth attributes (See also, Appendix E). Consider on a case-by-case basis practices listed as permitted with restrictions, or normally not permitted. (KNF) (GUIDELINE)

- Normally permitted: single-tree selection, group selection, irregular plantings, oil and gas leasing
- Permitted with restrictions: oil and gas development
- Normally not permitted: Salvage of dead timber, Herbicide use, Mechanical site preparation, Permanent open road construction, Livestock grazing, Seed-tree, shelterwood, and clearcutting, Prescribed burning, thinning, fire plow lines, permanent special-use structures or rights of way

FW-281: Encourage variety in hardwood tree species using single-tree and group selection regeneration methods. Avoid removing any overstory from within community types that are under-represented on the Forest. Utilize existing openings and rights-of-way as much as possible. (KNF) (GUIDELINE)

FW-282: Allow irregular plantings to establish hardwood seedlings in areas with an inadequate hardwood species component.(KNF) (GUIDELINE)

FW-283: Normally do not permit landscape level prescribed burning. Allow fire to burn down into embedded riparian areas and wetlands from adjacent upland sites when weather and fuel conditions are acceptable.(KNF) (GUIDELINE)

Old Growth Standards and Guidelines include the following:

- Classify areas allocated to old-growth forest as not suitable for timber production (has not been done);
- Develop old growth community types within designated old-growth patches (see GIS layer);
- Minimize mechanical damage;
- Discourage timber salvage to develop snags and down woody material;
- Track high quality natural community sites.

**Treatments allowed in Old Growth Emphasis Areas dominated by the following:**

**Longleaf Pine Forest and Shortleaf Pine/Oak-Hickory Forest**

- Control burning
- Thinning
- Mid-story control
- Single tree and group selection harvesting
- Shelterwood with reserves regeneration
- Oil and gas leasing
- Irregular plantings
- Maintain 75% of emphasis area in age 50+ years

**Mixed Hardwood-Loblolly Pine Forest**

- Mid-story control
- Single tree and group selection harvesting
- Shelterwood with reserves regeneration
- Oil and gas leasing
- Irregular plantings
- Maintain 75% of emphasis area in age 50+ years

**Riparian Forest**

- Single tree and group selection harvesting
- Oil and gas leasing
- Irregular plantings

## **Appendix G-2 – Sample Old Growth Methodology and Affected Environment for Vegetation Analysis**

### **Forest Structure – Old Growth Allocation**

#### **Introduction**

The management of old growth forest in the Southeast continues to be a challenging issue. At the time the forest plans were put in place (late 1990's) old growth forests were limited in area and distribution on the southern landscape due to past natural events and human disturbances. For this reason, forest plan strategies for addressing old growth forest communities primarily address the restoration of existing second-growth forests to develop old growth attributes over time (USDA 1997).

The forest plan describes desired future conditions (DFCs) of designated old growth patches (KNF Revised LRMP, Appendix E). DFCs are expressed as a description of composition, structure and disturbance regime.

The forest plan proposes acres of preliminary, existing and future old growth communities for 9 community types. Each old growth patch allocation is a contiguous parcel of land containing one or more representatives of old growth community types. The old growth communities range from small-sized areas (1 to 99 acres) to medium-sized areas (100 to 2,499 acres). Forest plan objective 2-4 directs the development and maintenance of old growth attributes within designated patches on 13 percent of the forest based on representation from the 4 landscape types.

Existing old growth is defined as stands or patches that meet the criteria for old growth found in the R-8 Old Growth Guidance (USDA 1997). Future old growth is defined as stands or patches allocated to old growth that do not meet one or more of the criteria from the R-8 Old Growth Guidance but is expected to develop into old growth through management (Table E-1).

The Camp Livingston project area is comprised of two landscape community types: upland long-leaf pine and riparian forest. The forest plan identified certain acres within the project area as emphasis areas for old growth. These emphasis areas are spatially available in GIS and on the forest plan "Management Area and Special Allocations Map for Modified Alternative D". Forest plan structure, composition and disturbance regime attributes of existing and future old growth for long-leaf and riparian forest is as follows:

#### **Upland Longleaf Old Growth Patches (KNF Revised LRMP, E-1 to E-2)**

##### **Structure:**

- Mature longleaf forests will generally be open
- Density of stems will be variable with some areas supporting relatively dense growths while other area may be much more open
- In general, upland stands maintain 50-90 square feet of pine and less than 20 square feet of hardwoods per acre
- Tree size will be variable but older trees, often exceeding 24 inches in diameter, dominate.

- Longleaf trees over 100 years old will often appear flat topped and occur in a random fashion. Intermingled within the predominantly old trees will be patches of younger growth (less than 50 years old) which occupies less than 25 percent of the designated old growth patch.
- The pattern includes many small gaps, most with pine regeneration of various ages and some remaining treeless for years. Standing dead trees and down logs will be common.

**Composition:**

- Uplands will be almost pure longleaf pine
- Other than longleaf pine, there will be few midstory trees and shrubs on the uplands
- Bluestem grasses, composites, legumes and other forbs dominate the understory
- Understory height will generally be less than 10 feet.

**Disturbance Regime:**

- Fire will be frequent within the Forest
- Overstory trees show evidence of scorch and fire scars
- Fires are hot enough to suppress much of the woody understory and to occasionally kill individual or small groups of overstory trees.

**Riparian Forest Old Growth Patches**

**Structure:**

- The dominant overstory canopy appears closed; however, small gaps in the canopy are scattered throughout the area.
- Overstory tree density varies but most stands will be moderately to densely stocked and carry a total basal area of 100 to 150 square feet per acres.
- Tree size, age and form will be variable but older trees, often exceeding 24 inches in diameter will be well represented.
- Hardwood trees over 200 years old occur randomly throughout the area.
- Younger growth (less than 50 years) occupies less than 25 percent of the designated old growth patch.

**Composition:**

- Overstory composition will be highly variable. A wide variety of oaks and hickories as well as southern magnolia, beech, blackgum, sweetgum, sycamore, water ash, and other hardwoods may be observed.
- Loblolly or shortleaf pine may be present on small stream communities within the uplands.

**Disturbance Regime:**

- Small scale disturbances will primarily be the result of wind, insects, or disease. Old hardwoods with heartrot, visible cavities, and buttrot will be common.
- Fire will be rare and only occur as a result of weather and fuel factors which allow fires on adjacent uplands to burn into

### **Other Relevant Forest Plan Direction**

**Objective 2–4:** Develop or maintain old growth forest attributes, for their contribution to biological and visual diversity, habitats for plant and animal species, and maintenance of a natural gene pool, within designated patches on approximately 13 percent of the Forest based upon representation of the major forest ecosystems and old growth community types. Long-term old growth forest objectives are as follows:

#### **Longleaf pine forest-dominated patches: 48,800 acres.**

- Coastal plain upland mesic hardwood: 2,550 acres.
- Upland longleaf, woodland, and savanna: 45,350 acres.
- Southern wet pine forest, woodland, and savanna: 780 acres.
- Dry and xeric oak forest, woodland, and savanna: 120 acres (Also see Table E-2)

#### **Riparian forest-dominated patches: 12,700 acres.**

- Coastal plain upland mesic hardwood: 1,820 acres.
- River floodplain hardwood forest: 1,180 acres.
- Cypress-tupelo swamp forest: 1,400 acres.
- Eastern riverfront forest: 6,400 acres.
- Seasonally wet oak-hardwood woodland: 1,400 acres.
- Dry and dry-mesic oak-pine forest: 500 acres.

(Also see Table E-X)

See Appendix A for all other old growth-related forest plan direction.

### **Methodology**

A process for validating acres to be managed as old growth was developed by the forest (Appendix B). Data associated with stands was reviewed in compartments 98, 100, 101, 102 and 104 on December 13, 2013 by both silviculture and wildlife specialists on the Catahoula Ranger District and the forest silviculturist (Appendix C). Proposed vegetation treatments were cross-walked to Kisatchie NF forest plan direction (Appendix C) to document consistency with the forest plan. All notes including data corrections are located in Appendix C of this report.

During review of forest old growth emphasis information against project stand data, it became apparent that stream (including streamside management zones) acres could fit into the longleaf-dominated or

riparian forest-dominated vegetation types in the coastal plain upland mesic hardwood community type. It was decided to keep stream vegetation in the longleaf pine vegetation type.

### **Affected Environment – Example Only**

A review of stand data indicates there are approximately X acres of longleaf pine-dominated patches. Of this, X acres are attributed to the upland longleaf, woodland and savanna community and X acres are attributed to the coastal plain upland mesic hardwood community. In the project area, zero acres are likely to meet old growth condition (based on age and basal area) and X acres have the best potential for moving toward old growth conditions. Old growth allocations are based on current conditions within the project area when compared against forest plan management direction. No treatments are planned in those acres attributed to the coastal plain upland mesic hardwood community. This analysis assumes that all acres attributed to this community type would move towards old growth condition. Table X displays proposed old growth allocations by compartment.

**Table X. Camp Livingston Ecosystem Management Project Old Growth Allocation**

<b>Forest Plan Proposed Old Growth by Community type*</b>	<b>Forest Plan Proposed Acres*</b>	<b>Stand Inventory Existing Condition Acres**</b>	<b>Proposed Changes to Forest Emphasis O/G Acres (Add)</b>	<b>Proposed Changes to Forest Emphasis O/G Acres (Subtract)</b>	<b>Total Project Acres Managed Towards Old Growth Conditions***</b>
<b>Compartment 104 - Longleaf pine-dominated old growth patches</b>					
<b>Upland longleaf, woodland and savanna</b>	100				
Loblolly Pine	150	50	0	50	100
Upland Hardwood	10				
Bottomland Hardwood					
Hardwood Pine					
<b>Coastal plain upland mesic hardwood:</b>					
Longleaf Pine (streams)	82				
Loblolly Pine (streams)					
Acres Excluded by Forest Plan	85				
<b>Total Acres</b>	<b>755</b>				