United States
Department of
Agriculture

Forest Service

Southern Region

Pineville, Louisiana

August 1999

Revised Land and Resource Management Plan

Kisatchie National Forest

Table of Contents for the Revised Land & Resource Management Plan

Chapter 1: Introduction

Chapter 2: Forestwide Direction

Chapter 4: Implementation of the Revised Forest Plan

Chapter 5: Monitoring and Evaluation

Chapter 3: Management Area Direction

Chapter 4: Implementation of the Revised Forest Plan

Chapter 5: Monitoring and Evaluation

Appendix A: Estimated Outputs and Activities

Appendix B: Timber Suitability Analysis

Appendix C: Forest Plan Budget

Appendix D: Mineral Operations

Appendix E: Old-Growth Desired Future Conditions

Appendix F: Monitoring Summary Tables

Appendix G: Glossary of Terms, Commonly Used Acronyms, and Abbreviations

Chapter 1 Introduction

PURPOSE OF THE FOREST PLAN

National Forest land and resource management planning is a process for developing, adopting, and revising forest plans for each national forest. Forest plans are required by the Forest and Rangeland Renewable Resources Planning Act of 1974 (**RPA**), as amended by the National Forest Management Act of 1976 (**NFMA**). The national forest planning process is described at title 36, part 219, *Code of Federal Regulations* (***CFR***).

This Revised Forest Land and Resource Management Plan (Forest Plan) guides all natural resource management activities on the Kisatchie National Forest for the next 10 to 15 years. It establishes management standards and guidelines, describes resource management practices, levels of resource production and management, and the availability and suitability of lands for resource management.

The revised Forest Plan establishes:

- Forestwide multiple-use goals and objectives, ***36 CFR 219.11(b)***.
- Forestwide management requirements (standards and guidelines), ***36 CFR 219.27***.
- Management areas and management area direction, including desired future condition statements, ***36 CFR 219.11(c)***.
- Lands which are suitable for timber production, ***36 CFR 219.14***.
- The allowable sale quantity (**ASQ**) for timber, ***36 CFR 219.16***.
- Recommendations for wilderness status, ***36 CFR 219.17***.
- Recommendations for wild and scenic river status.
- The lands available for oil and gas leasing, and the leasing decision on specific lands nominated to the Bureau of Land Management, ***36 CFR 228.102 (d) and (e)***.
- Monitoring and evaluation requirements, ***36 CFR 219.11(d) and 219.12(k)***.

The Forest Plan embodies the provisions of **NFMA**, the implementing regulations, and other guiding documents. It provides the programmatic direction and guidance for future decisions of site-specific projects and actions, at which point the irreversible and irretrievable commitment of resources is usually made (***40 CFR 1502.20***). While land use determinations, prescriptions, and standards and guidelines constitute a statement of the Plan's management direction, it should be noted that projected outputs, services and rates of implementation are dependent on the annual budgeting process.

RELATIONSHIP OF THE FOREST PLAN TO OTHER DOCUMENTS

This revised Forest Plan presents the preferred alternative for managing the land and resources of the Kisatchie National Forest. Documentation of the Forest Plan's environmental impacts is required by the National Environmental Policy Act of 1969 (**NEPA**) and the implementing regulations of **NFMA**. The documentation of environmental impacts is contained in the accompanying final environmental impact statement (**FEIS**).

The revised Forest Plan results from extensive analysis and considerations addressed in the accompanying **FEIS**. The planning process, analysis procedures used, and other alternatives considered in the development of the Forest Plan are also described or referenced in the **FEIS**.

The *Regional Guide for the Southern Region*, as amended, was utilized for national and regional direction to facilitate the forest planning process.

RELATIONSHIP OF THE FOREST PLAN TO OTHER DOCUMENTS

Also, this document incorporates by reference (*40 CFR 1502.21*) the management direction and environmental analysis from the following regional programmatic decisions:

- The *Final Environmental Impact Statement* (*FEIS*) and *Record of Decision* (*ROD*) *for Suppression of Southern Pine Beetle*, April 1987, as amended.
- The *FEIS and ROD for Vegetation Management in the Coastal Plain / Piedmont*, January 1989, as amended.
- The *FEIS and ROD for the Management of the Red-cockaded Woodpecker and its Habitat on National Forests in the Southern Region*, April 1995.

Activities and projects will be planned and implemented using the direction contained in this revised Forest Plan. These site-specific projects will require smaller-scale environmental analyses that employ new Forest Plan direction and tiers to the larger-scale *FEIS*.

PLAN STRUCTURE

The revised Forest Plan is divided into the following five chapters and various appendices:

Chapter 1, Introduction: Describes the purpose of the Forest Plan, its relationship to other documents, and its structure. It contains a description of the Forest, a summary of the analysis of the management situation, and Plan responses to the significant issues identified during the planning process.

Chapter 2, Forestwide Direction: Defines Forestwide goals, desired future conditions, objectives, and standards and guidelines.

Chapter 3, Management Area Direction: Defines management area and sub-management area goals, desired future conditions, and standards and guidelines.

Chapter 4, Implementation of the Forest Plan: Contains information on how the revised Forest Plan will be implemented and how amendments and / or revisions will occur.

Chapter 5, Monitoring and Evaluation: Chapter 5 details the requirements for monitoring and evaluating the implementation of the revised Forest Plan.

Appendices: The following appendices contain additional detailed information relating to the revised Forest Plan:

- *Appendix A*, Estimated Outputs and Activities
- *Appendix B*, Timber Suitability Analysis
- *Appendix C*, Forest Plan Budget
- *Appendix D*, Mineral Operations
- *Appendix E*, Old-growth Desired Future Conditions
- *Appendix F*, Monitoring Summary Tables
- *Appendix G*, Glossary of Terms, Commonly Used Acronyms, and Abbreviations

FOREST DESCRIPTION

The boundary of the Kisatchie National Forest encompasses approximately 1,024,659 acres, of which 603,769 acres are national forest land. The Forest consists of five ranger districts located within Claiborne, Grant, Natchitoches, Rapides, Vernon, Webster, and Winn Parishes of west-central and northwestern Louisiana.

The Forest headquarters is the Forest Supervisor's office in Pineville. District offices are located in Bentley, Boyce, Homer, Natchitoches, and Winnfield. Please see figure 1–1.

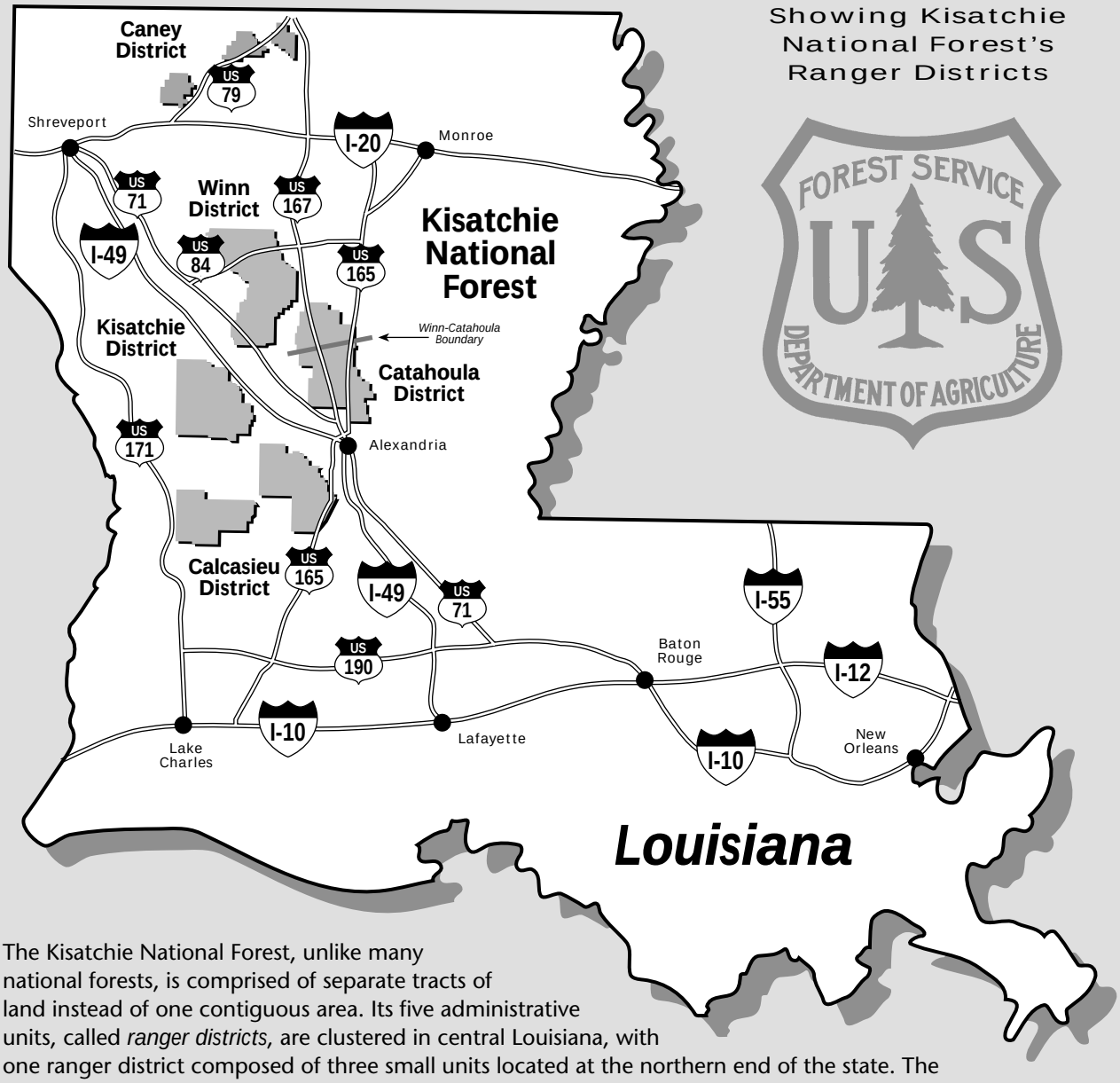
The area is predominately rural in character. The Forest is generally within a 2.5-hour drive of Shreveport and Baton Rouge, and within 4 hours of New Orleans.

Louisiana is generally considered typical coastal plain. The Forest's topography ranges from hilly to undulating on the uplands, to level on stream terraces and floodplains. Elevations range from 80 feet above sea level in floodplains and undulate from 200 to 425 feet above sea level in the Kisatchie Hills. The general slope of the area is southward to the Gulf of Mexico.

Most soils in the Forest area are highly weathered and acidic, with low nutrients. Their productivity, however, is generally high because they are generally deep with abundant plant-available moisture.

The climate of the area is subtropical. Weather is highly variable. Annual rainfall averages 59 inches. Summer temperatures range from 85° to 95° Fahrenheit (F.) in the afternoons and 65° to 75° F. in the early

FIGURE 1–1, FOREST VICINITY MAP



The Kisatchie National Forest, unlike many national forests, is comprised of separate tracts of land instead of one contiguous area. Its five administrative units, called *ranger districts*, are clustered in central Louisiana, with one ranger district composed of three small units located at the northern end of the state. The Forest's districts are located in the following parishes and municipalities: *Caney* – Claiborne / Webster, Homer; *Catahoula* – Grant / Rapides, Bentley; *Calcasieu* – Rapides / Vernon, Boyce; *Kisatchie* – Natchitoches, Natchitoches; *Winn* – Winn / Grant / Natchitoches, Winnfield.

morning hours. Winter temperatures range from 55° to 65° F. in the afternoons and 40° to 50° F. in the early morning hours. The average annual temperature is 68° F. and the average humidity is 74 percent.

Located within the Forest boundaries today are four broad historically present plant or vegetation communities: longleaf pine, shortleaf pine / oak-hickory, mixed hardwood-loblolly pine, and riparian. These communities are situated within nine landtype associations, which will be referred to as LTAs: high terrace rolling uplands, Kisatchie sandstone hills, undulating clayey uplands, alluvial floodplains and stream terraces, Winn rolling uplands, Fort Polk rolling uplands, Red River alluvial plains, Caney Lakes loamy uplands, and north Louisiana clayey hills.

ANALYSIS OF THE MANAGEMENT SITUATION SUMMARY

An *analysis of the management situation* (**AMS**) is a determination of the ability of a national forest to supply goods and services in response to the demands of society. It includes supply and demand conditions for resource commodities and services, production potentials, and use and development opportunities for the forest to which it pertains (***36 CFR 219.11 (a)***).

Abstracts of the supply and demand relationships for recreation and wildlife, range, timber, and minerals are provided below. Also provided are research needs identified for the Forest. This information is taken from the summaries contained in the accompanying **FEIS** and from the documents comprising the Kisatchie **AMS** which are located in the planning records.

RECREATION AND WILDLIFE

The Kisatchie National Forest is the second largest supplier of public recreation lands within the Forest's 32-parish recreation and wildlife market area. More than 561,000 acres are open for dispersed recreation activities. The Louisiana Department of Wildlife and Fisheries manages the bulk of the lands available for public recreation in the market area, with 24 wildlife management areas (**WMAs**) totaling 608,539 acres.

Approximately 40,000 acres of the 109,855-acre Fort Polk **WMA** are national forest. These lands are not counted in the 561,000 acres of the Kisatchie open for dispersed recreation.

In the recent past, private landowners and timber companies provided large amounts of forested acreage for public outdoor recreation. However, as more private lands are being leased by private clubs, the amount of acreage available for public recreation is decreasing, thereby increasing demands on public lands for outdoor recreation activities, not only for hunting, but for camping, off-road riding, and other recreational uses.

The Kisatchie's developed recreation role within the market area is less significant than for dispersed recreation. The Forest manages 274 developed camping units or 5.5 percent of the total offered within the market area. The Forest also manages 14 boat ramps or 4.3 percent, 5 swim sites or 7.8 percent, 10 group shelters or 42.8 percent, and 218 family picnic tables or 5.5 percent of the total number of units within the market area. Although the Kisatchie's developed recreation opportunities seem less significant than dispersed recreation, the Forest is unique as one of few places in the State offering developed recreation sites within large undeveloped areas that are available for dispersed recreation.

The Forest provides a wide variety of outdoor recreation opportunities and experiences. Historically hunting, camping, driving for pleasure, swimming, and fishing have been the five most popular outdoor recreation activities.

National forests are expected to receive increased participation in all recreational activities. Non-consumptive uses and recreational fishing are expected to increase at the greatest rates over the planning period (**Flather and Hoekstra, 1989**). Flather and Hoekstra also state that comparison of relative rates of participation for national forest with those across all ownerships shows that national forest are expected to become relatively more significant in providing opportunities to hunt big game and small game species.

According to estimates (**English, et. al, 1993**; **Flather and Hoekstra, 1990**), demand for bicycling, fishing, hiking / walking, sailing, horseback riding, developed camping, and driving for pleasure opportunities will increase most on the Kisatchie during the next 50-year period. The Forest is capable of providing such recreation activities through improvements to existing facilities and the development of new areas.

National forest lands are expected to become more important in the management of wildlife and fish habitats, and in providing for quality wildlife and fish recreational opportunities (**Flather and Hoekstra, 1989**). Although the regional demand for big and small game hunting is expected to stay relatively constant or increase slightly, hunting pressure on public lands in Louisiana is expected to increase significantly. This increased hunting pressure can be attributed to the increase in leasing large tracts of private lands to a relatively small number of hunters.

Demand for off-road vehicle (ORV) riding opportunities is another activity that is expected to increase slightly over the next 50 years. However, like hunting, as more private lands are leased, public lands will be one of the few remaining areas that the ORV enthusiast will be able to pursue their sport. Most dispersed recreation activities will be impacted to some extent by the increased amount of private lands being leased. This could ultimately increase the importance of public lands for all types of dispersed recreation opportunities.

RANGE

Rapides, Grant, Natchitoches, Winn, and Vernon Parishes define the market area or competitive zone within which the Kisatchie National Forest participates in the supply of livestock forage. Range allotment programs are active only on the Calcasieu, Catahoula and Kisatchie Districts. The Winn District has issued no grazing permits since 1985. The Caney District is considered to offer no manageable range resource.

Within the market area, the forage available for livestock consumption predominantly occurs in three settings — forestland, pasture, and cropland. On the Kisatchie, livestock forage is produced exclusively in forested settings; either under relatively open pine canopies or in large canopy openings — usually regeneration areas. Traditionally, Forest cattle grazing has been confined primarily to longleaf and slash pine stands regularly thinned and burned by prescription. Native bluestem grasses are the Kisatchie's dominant forage species.

Forage production is only one component of providing forage for livestock consumption. The other aspect requires adequate structural improvements (fences, stock watering facilities, etc.) to facilitate herd management and resource protection. Regulated grazing allotments were established on the Forest in 1967. Earlier, domestic livestock were grazed on all districts except the Caney on an open range basis.

Between 1967 and 1981, dozens of allotments became vacant and were eventually closed to grazing. Since open range laws remained in effect long after 1967 on lands surrounding national forest land, trespass livestock, including cattle, horses, and hogs have intermittently occurred on the Forest.

The large decrease in permitted use and the number of active allotments during this period generally resulted from stock reductions on overgrazed allotments, local livestock ordinances, and strict grazing permit requirements. By 1981, 54 allotments containing approximately 240,000 acres were established across the Forest, except on the Caney District, to provide forage for livestock grazing. This number of grazing allotments was recognized in the 1985 Forest Plan.

Many of the 54 allotments have seen no grazing for many years. Structural improvements on a majority of allotments inactive for extended periods have fallen into disrepair. As the number of permittees continued to elect to waive their permits and permittee fence maintenance ceased, control of trespass livestock, especially in areas where open range laws were in effect on private lands adjoining the Forest, has been an ongoing problem.

The quantity and quality of livestock forage available may vary considerably from allotment to allotment due to prescribed fire frequency and timber management practices over the past several years. Therefore the forage production and the livestock carrying capacity on those allotments managed for loblolly or shortleaf pine or mixed pine-hardwood stands has declined, while production and capacity on those managed for longleaf or slash pine has remained relatively high.

The total number of permitted livestock grazing on the Kisatchie has declined 90 percent since regulated grazing allotments were established. Today, 16 livestock owners hold grazing permits allowing 853 cattle to graze on 14 allotments covering 78,000 acres. This represents approximately one-third of the acres allocated to livestock grazing in all 54 allotments. Clearly, the current permitted livestock use on the Forest is well below its capacity.

The market area trend outside the Forest has been to graze cattle more on improved pastures, especially within the Red River floodplain; less on grazable woodlands. Although the Kisatchie can supply considerable forage, less than two percent of livestock producers in the market area utilize the Forest. Consequently, the Kisatchie's supply of beef cattle within the market area is less than two percent as well.

TIMBER

Information on the ownership, growth, removals, and productivity of timberland in the Kisatchie's timber market area was derived principally from the 1991 forest inventory and analysis (FIA) survey done by Forest Service research. This is the most recent FIA survey for the state.

The Kisatchie provides timber products to a 30-parish market area within central and northern Louisiana. Within that area, national forest timber supply competes with timber from private ownerships.

Land classed as forest occupies 9.6 million acres, or 62 percent, of the 30-parish market area's 15.3 million-acre total land base. Private landowners hold 88.5 percent of all the timberland in the Kisatchie's market area. Nonindustrial private timberland owners hold the largest share — 51 percent, or 4.9 million acres. Public ownership accounts for 11 percent of all timberland. Slightly more than half of all publicly owned acreage is represented by the Kisatchie. In 1991 the Forest accounted for 5.9 percent of all timberland acreage, 7.6 percent of all softwood acreage, and 4.6 percent of all hardwood acreage in the market area.

The majority of softwood forest types in 1991 were on forest industry lands, accounting for 47 percent of all softwood acreage in the market area, or about 2 million acres. Nonindustrial private lands held roughly 59 percent, or 3.1 million acres, of all hardwood acreage in 1991. Forest industry lands accounted for 29 percent, or 1.5 million acres, of all hardwoods.

In 1991 the volume of growing stock in the market area was 12,327.3 million cubic feet. Softwoods represented 61.2 percent of this total; hardwoods 38.8 percent. The Kisatchie accounted for 8.3 percent of all growing stock and 9.7 percent of softwoods. Other public lands accounted for 5.8 percent of all growing stock. Forest industry lands accounted for 32.3 percent of all growing stock and 35.9 percent of all softwoods; while nonindustrial private forest land accounted for 53.5 percent of all growing stock and 50.9 percent of all softwoods.

The Kisatchie contributes a small percentage to the total timber supply produced in the market area. In 1982, a low harvest year, timber from the Forest accounted for 3.0 percent of the market area's total timber production. In 1986, when total timber harvest from the Forest was at an all-time high (**230,771 MBF**), this represented a 6.76 percent of the total market area production. From 1978 to 1997 the Forest averaged 5.0 percent of all sawtimber in the market area. From 1978 to 1997 in the pulpwood market, the Forest accounted for 3.2 percent of market area production.

Since World War II demand for wood products in central Louisiana and the South has risen steadily. Current demand for wood substantially exceeds supplies, as indicated by stumpage prices and the number of bidders for most timber sales. Second-growth pine stands provided sufficient supply until the 1990's. At this writing, the majority of second-growth is on national forest, while private holdings are primarily plantation wood.

Since 1986, the beginning year of implementation for the original Forest Plan, forest types have changed across the lands considered suitable for timber. Table 1-1 shows changes since the original, or base acres, to the present.

A combination of milling facilities, relatively low logging costs, fiber growth capacity, and access to growing Texas and southeastern markets have produced strong, consistent demand for all wood products from the Forest. Nationwide timber supply and demand projections indicate an increasing role for nonindustrial timberlands as supplies from national forests decrease.

TABLE 1–1, Forest Type Changes

Forest Type	Base Acres	Current Acres
Yellow pine	333,380	310,908
Longleaf pine	84,190	78,276
Mixed pine/hardwood	35,330	49,943
Upland hardwood	23,950	30,019
Bottomland hardwood	22,770	29,840
Total	**499,620**	**499,326**

MINERALS

While providing for the conservation and protection of surface resources, the Forest encourages, facilitates, and administers the exploration, development, and production of mineral resources.

Locatable minerals include gold, silver, platinum, copper, and other minerals having unique and special values. No known deposits of locatable minerals lie within the Forest.

Leasable minerals include fossil fuels — primarily coal, oil, natural gas, oil shale — and geothermal resources. The Kisatchie has a long history of oil and gas exploration, development, and production. In recent years the acreage leased for oil and gas development has steadily increased and income from this commodity has increased concurrently. In fiscal year 1995 revenues from production and oil and gas leases totaled approximately $726,500 for the Forest. The 1998 receipts were about $1,612,000.

The United States claims ownership of all mineral rights on approximately 469,500 acres of the Forest, and mineral rights are outstanding in third parties on 113,800 acres. Since 1987 the Forest has shown a steady increase in acreage leased for oil and gas development. In 1992 approximately 187,000 acres were under lease for oil and gas. Currently, approximately 341,000 acres are leased for oil and gas exploration and development.

The largest increase in acreage occurred in 1991. This is attributed to the speculation that the Austin Chalk formation, a known producer, extends into central Louisiana — underlying the Vernon and Evangeline Units of the Calcasieu District, and the southern part of the Kisatchie District. There are a total of 42 producing wells: the Caney with 7, the Winn with 15, and 20 on the Vernon Unit. There has been recent interest in leasing on the Winn and Catahoula Districts in addition to the Calcasieu District. The total anticipated number of wells to be drilled within the next twelve months on the Forest is 7; 5 on the Winn and 2 on the Vernon Unit of the Calcasieu District. However, with the rising interest in leasing, the Catahoula District may anticipate 3 wells or more, and there may also be an increase in drilling on the Calcasieu and Winn Districts. There has been no recent drilling or leasing interest in the Kisatchie or Caney Districts.

As crude oil prices rise because of increased demands for petroleum-based products, development may again increase. However, oil production in the United States should decline as oil imports increase. These developments are attributed to higher-profit nondomestic sources. The decline of domestic development also results from diminished acreage available for exploration; many areas are being withdrawn from availability.

The production outlook for domestic natural gas is considerably better than that of domestic crude oil. Gas production and prices should increase gradually for the decade as electric utilities prefer gas to generate electric power. Another factor influencing future oil and gas development is economic growth. Using the reference case presented in the *1992 Annual Energy Outlook* as a mid-level growth rate, total energy demand increases at a 2.2 percent annual rate. Measured by changes in gross national product, increases in the growth rate reflect rising energy demand.

Salable minerals — also called minerals materials — are common varieties of stone, gravel, sand, and clay, as defined by the Minerals Act of 1947 and Public Law 167 of July 23, 1955. Common-variety minerals known to exist on the Forest are sand, gravel, low-grade iron ore, clay, and salt. Although sand and gravel deposits exist on the Vernon and Evangeline Units of the Calcasieu District, and the Catahoula District, the Forest's gravel reserves are limited.

While extensive iron ore deposits lie in Webster and Claiborne Parishes, only smaller scattered deposits are located on the Caney District. Because of its high phosphorus content, iron ore in the larger deposits has not been historically competitive with other iron ore sources. High-phosphorus iron ore produces brittle steel. Although technology is available to remove phosphorus, it is not considered cost-effective.

Clay and salt deposits are also located within the Forest. They have historically not been commercially operable because abundant reserves exist in other areas. In 1998 the Forest administered a total of 20 permits for the removal of common-variety minerals.

RESEARCH NEEDS

Research needs have been identified for the Forest. These needs recognize gaps in data or scientific knowledge that would be desir-

ANALYSIS OF THE MANAGEMENT SITUATION SUMMARY

RESEARCH NEEDS

able to fill prior to preparation of the next Forest Plan. This is not intended to be a complete listing; it may expand as changing conditions, monitoring, and evaluation indicate additional needs.

The 1985 Forest Plan included the following needs:

- Improved timber growth and yield data, especially for mixed and hardwood forest types.
- Information on the feasibility or desirability of fertilization for timber stands.
- Effects of erosion and compaction on soil productivity.
- The cumulative effect of a group of activities upon water yield and the effect upon the transport, erosion and deposition of channel sediment.
- An economical, efficient method to artificially regenerate hardwood timber.
- Management indicator species habitat definitions, and limits of acceptable habitat.
- Definitions of minimum sustainable wildlife population levels and habitat needs for these levels.
- The range of compatible timber management for the Red-cockaded Woodpecker.

The 1990 5-Year Review and Recommendations Report recommended these research needs:

- A study of yellow pine and longleaf pine old-growth management, including ways to recognize and maintain these communities.
- The effects of various mechanical activities on the long-term productivity of severely eroding Kisatchie soils.
- Validation of soil and water protection standards and guidelines, especially the effects of forest management practices on water quality, drifting and benthic macroinvertebrates, and fishes in Louisiana streams.
- Habitat requirements and management needs for the threatened Louisiana pearlshell mussel.
- The effects of prescribed burning during the growing season, as well as the optimal timing for prescribed burning of local bog communities.
- The short- and long-term effects of pinestraw harvesting on local flora and fauna.
- The long-term effects of off-road vehicles on local flora and fauna.
- The long-term effects of uneven-aged silvicultural systems at an operational scale — especially the logistics and economics of management practices.
- The effects on sensitive plant species from various timber and wildlife management activities, as well as inventories and range determinations.
- Studies to determine the effects of Red-cockaded Woodpecker management practices on other wildlife species, especially those dependent upon hard mast.

Along with those listed above, the current Forest Plan revision process identified these additional research or inventory needs:

- The number of snags expected to occur naturally within forest communities, the benefits they provide, and the possible increases in insect and disease populations.
- Ways to effectively mimic historic fire patterns that occurred at the landscape level, to reestablish fire-maintained plant and animal communities.
- The historic range of longleaf pine communities on the Kisatchie, to validate assumptions made during formulation of landtype associations for the ecological classification system.
- A study to determine foraging requirements for the Red-cockaded Woodpecker populations that occur on the Kisatchie National Forest.
- Continued research on how silvicultural practices influence long-term soil productivity.
- The effect of prescribed burning on the long-term productivity of various soil types, and monitoring methods that can be used to measure soil productivity.
- The effects of increased rotation ages for pine and hardwoods, and the impacts of implementing uneven-aged management on forest health.
- Studies to validate and expand interpretations of ecological units at the landscape and land unit planning and analysis scales of the National Hierarchical Framework of Ecological Units.
- A complete floristic inventory (with voucher specimens) of the plants occurring on each district of the Forest.
- An inventory of the community types on each district, including their frequency

and distribution.
- Studies of the autecology (life history, distribution) of the Forest's threatened, endangered, sensitive, and conservation species.

PLAN RESPONSE TO THE ISSUES

The forest planning process is guided by public issues and management concerns reflecting the differing preferences of individuals and groups; and the physical, biological, and legal limits on forest management. By identifying issues and concerns, the Forest Service can determine what the public wants in goods, services, uses, and environmental conditions.

The scoping process used to determine issues and concerns resulted in the identification of 13 significant issues. The following brief discussion addresses how the revised Forest Plan responds to the significant issues. The scoping process and more detailed discussions regarding the significant issues raised during the planning process are described in Chapter 1 and Appendix A of the **FEIS**, the affected environment is described in Chapter 3, and the disclosure of effects is in Chapter 4.

SIGNIFICANT ISSUES

ISSUE # 1: TIMBER SUPPLY

How will the needs for other resources affect timber harvest levels on the Forest and how will the change in allowable sale quantity (**ASQ**) *affect local economies?*

Timber supply concerns focused on:

- Determining which lands would not be suitable for timber production;
- Determining the Forest's allowable sale quantity (**ASQ**) and how it would be affected by coordination for other resources; and,
- Disclosing effects on the local economy from changes in harvest levels.

Concern about the amount of timber production from the Forest remains high. Public opinion continues to be divided on this issue. Many recognize that forestry is a leading industry in the State, and timber production has significant economic impacts in Louisiana and to local communities. Many also recognize increased benefits to the economy from management for resources such as recreation, tourism, and wildlife.

The revised Forest Plan identifies approximately 308,889 acres as suitable for timber production. The average annual portion of the allowable sale quantity (**ASQ**) will be 9.69 **MMCF** for the first decade, and is estimated to rise to 11.4 **MMCF** by the 5th decade in the planning horizon. The Forest will provide a sustainable flow of forest products to add to the local economy and contribute towards community stability while providing high levels of amenity resource outputs.

ISSUE #2: BIOLOGICAL DIVERSITY

What forest management direction and standards and guidelines should be implemented to maintain or improve biological diversity?

The Forest's overall biological diversity is represented by its vegetation, wildlife, fish, and aquatic organisms. Concerns regarding this issue focused on:

- Developing standards and guidelines to conserve and maintain rare or sensitive plant and animal communities; to maintain research natural areas; and to recover, restore, and conserve threatened, endangered sensitive, and conservation species on the Forest;
- Determining the appropriate level of restoration of naturally occurring forested landscapes and communities of central Louisiana;
- Identifying and developing an old-growth forest component; and,
- Determining an appropriate level of pinestraw collection on the Forest, and the use of desirable nonnative vegetation.

The revised Forest Plan emphasizes the restoration of naturally occurring forested landscapes and communities. The use of the National Hierarchical Framework of Ecological Units in future project-level decision-making will provide land managers with a critical tool for assessing biological diversity at multiple scales.

ANALYSIS OF THE MANAGEMENT SITUATION
SUMMARY
RESEARCH NEEDS
PLAN RESPONSE TO THE ISSUES
SIGNIFICANT ISSUES
ISSUE # 1: TIMBER SUPPLY
ISSUE #2: BIOLOGICAL DIVERSITY

PLAN RESPONSE TO THE ISSUES

SIGNIFICANT ISSUES

ISSUE #2: BIOLOGICAL DIVERSITY

ISSUE #3: LAND USE

ISSUE #4: MINERALS DEVELOPMENT

Land allocations and management direction (standards and guidelines) will ensure the maintenance or improvement of the Forest's native biological diversity at ecosystem, landscape, and community levels. Fire frequency, season of use, and intensity will be used to shape landscape vegetation composition and patterns on up to 105,000 acres per year.

Vegetation management will maintain an appropriate mixture of seral stages within the Forest's four major landscape communities. Approximately 81,000 acres of the Forest will be designated and managed as old-growth forest patches. An additional 215,000 forested acres, containing attributes characteristic of unmanaged old-growth, will exist on lands not appropriate for timber production.

Five new botanical *special interest areas* (**SIAs**)(Cooter's Bog, Drakes Creek, Keiffer Prairie, Tancock Prairie, Whiskey Chitto), one scenic **SIA** (Malaudos Glen), and one geological **SIA** (Bayou Luce), will be designated; and, one existing scenic **SIA** (Castor Creek) will be expanded.

The use of native, or short-lived desirable nonnative plant species is emphasized. Land allocation and management direction (standards and guidelines) will allow limited pinestraw collection while protecting soil productivity and biological diversity.

ISSUE #3: LAND USE

What are appropriate uses of national forest lands with respect to special uses, military training, landfills, large land exchanges and acquisitions, and easements?

Concerns regarding this issue revolved around:

- Establishing priorities for land acquisitions involving wetlands, rare or sensitive natural communities or species;
- Management direction for former military camps;
- Coordinating special uses with other resources; and,
- Increased military intensive use on the Vernon Unit of the Calcasieu District.

Guidelines in the revised Forest Plan establish three priority levels for land acquisitions. Management direction (standards and guidelines) is included for the former military camps and special-uses coordination with other resources.

A *memorandum of agreement* (**MOA**) signed by the Secretaries of Agriculture and Army directed the preparation of appropriate environmental analyses examining more intensive use on some or all of the 45,000 acres of military limited use lands in the Vernon Unit of the Calcasieu District. The public scoping and environmental analysis process is underway, and potential impacts to the environment will be disclosed in a separate environmental document. That document will consider the effects to the revised Plan's management direction and changes to the environmental effects expected in the **FEIS** for the Plan, along with site-specific environmental effects to the areas being affected. That decision is not expected to occur until the latter part of 1999.

ISSUE #4: MINERALS DEVELOPMENT

To what extent should the Forest provide opportunities for mineral development? Should the Forest modify its direction on oil, gas, and common variety minerals, including Forest Service use?

Increased interest in this issue, due to successful producers occurring in the Austin Chalk formation, occurred during the development of the revised Forest Plan.

All federal lands except Kisatchie Hills Wilderness would be available for leasing. Exploration and development will be allowed in most management areas. A No Surface Occupancy (**NSO**) lease stipulation would be required on all leases involving areas in the following categories where the area to be protected is larger than 40 acres: administrative sites, Research Natural Areas, State Registry Natural Areas, Special Interest Areas, the Johnson Tract experimental forest, the Air Force Bombing and Gunnery Range, the Breezy Hill No-Entry Area, scenic areas, within 600 feet of the Saline Bayou National Scenic River, cultural resource sites, the Stuart Seed Orchard, jurisdictional wetlands, and developed recreation areas. A highly restrictive Controlled Surface Use (**CSU1**) stipulation would be applied to all Streamside Habitat Protection Zones (**SHPZS**) on the Forest (varying in width from 50 feet to 150 feet, depending upon the adjacent management area theme), to the extent of

the Riparian Area Protection Zones (RAPZS) within Louisiana pearlshell mussel sub-watersheds, and to the extent of RAPZS within management area 2 (amenity emphasis). A moderately restrictive Controlled Surface Use (CSU2) stipulation would be applied to areas outside of SHPZS within the Breezy Hill No-Ground-Penetration area, the remainder of management area 2, the remainder of Forest RAPZS, within 2,000 feet of the Longleaf Trail Scenic Byway, the U.S. Marshall Service Use Area, the Longleaf Tract experimental forest, and inside the Claiborne Safety Fan area.

Management direction (standards and guidelines) will ensure an efficient and effective leasing process while minimizing potential effects to other resources.

ISSUE #5: RANGE / GRAZING

How much of the Forest should be allocated and managed for livestock forage in light of declining use trends?

Range / grazing concerns focused on:

- Determining impacts of the potential elimination of the range program;
- Determining how much of the Forest should be allocated to range development; and,
- Determining impacts of livestock on plant and animal communities.

Trends indicate the continuation of a steady decline in grazing on the Forest. In the revised Forest Plan 86,000 acres will be available for domestic livestock grazing. Management direction (standards and guidelines) will minimize impacts to other resources from grazing.

ISSUE #6: RED-COCKADED WOODPECKER

Consistent with regional direction, how should the Red-cockaded Woodpecker (RCW) and its habitat be managed to provide for long-term viable RCW populations on the Forest?

Concerns regarding management for the RCW revolved around:

- Determining how much of the Forest should be allocated to RCW management;
- Determining what habitat improvement and management practices best meet the needs of the RCW;
- Determining management direction for Wilderness clusters; and,
- Determining appropriate southern pine beetle suppression activities within RCW habitat.

The Forest will be managing for the RCW in accordance with direction provided by the *Final Environmental Impact Statement and Record of Decision for the Management of the Red-cockaded Woodpecker and Its Habitat on National Forests in the Southern Region* (June 1995). Five Habitat Management Areas (HMAs), encompassing approximately 303,000 acres of pine and pine-hardwood stands have been established. The Forest's population objective will be 1,405 active RCW clusters. The present population contains 363 active clusters. Wilderness clusters are not included within an HMA; however, Wilderness clusters will indirectly benefit from prescribed natural fire and management-ignited prescribed fire within the Wilderness. Land allocations and management direction (standards and guidelines) will provide land managers with a range of activities and practices designed to aid in the recovery of the RCW while allowing management for other resources, including the restoration of naturally occurring forested landscapes. This management strategy will result in a mosaic of habitats for a wide variety of vegetation and wildlife communities.

ISSUE #7: RECREATION

What variety of outdoor recreation experiences should the Forest provide and how will they affect other forest resources and the local economy?

Recreation concerns focused on:

- Determining off-road vehicle (ORV) management direction to provide recreation opportunities and to protect other resources;
- Determining additional recreation opportunities across the Forest;
- Providing management direction to protect visual corridors along trails;

PLAN RESPONSE TO THE ISSUES

SIGNIFICANT ISSUES

ISSUE #7: RECREATION

ISSUE #8: RIPARIAN

ISSUE #9: FOREST ROADS

- Determining the need for additional wilderness and national wild and scenic river designations; and,
- Determining the effects of recreation on local economies.

Land allocations and management direction (standards and guidelines) will provide a balance of high quality developed and dispersed recreation opportunities across the Forest. They also focus on coordinating recreation activities with other resources to enhance recreation experiences while minimizing impacts to other management activities or resources. A variety of *recreation opportunity spectrum* (**ROS**) classes will be available; with greatest emphasis on roaded natural and semiprimitive motorized opportunities. Seventy-eight percent of the Forest will be open to **ORV**s; while 22 percent will be closed year-round, seasonally, or due to military use. No new wilderness or national wild and scenic river designations are proposed. The Forest will focus on improving existing facilities while allowing for the development of new facilities as determined by public demand and funding constraints.

ISSUE #8: RIPARIAN

What measures are needed to designate and protect riparian / wetland areas and streamside management zone resources?

Riparian concerns focused on:

- Determining the width of riparian management zones;
- Determining measures to protect resource values within riparian areas;
- Determining management direction along State Natural and Scenic Rivers; and,
- Determining protection measures for the Louisiana pearlshell mussel.

Streamside and riparian protection zones (**SHPZ**s and **RAPZ**s) and appropriate management practices within them, have been established for the Forest to protect or enhance riparian associated resource values and characteristics. These zones provide:

- Important wildlife habitat components (key areas) such as hard and soft mast producers, water, snags and den trees, edge, and a variety of foods and cover;
- Unique habitats for a broad diversity of plants, some of which are rare, uncommon, sensitive, or restricted to a more moist, cooler environment;
- Vegetative cover for aquatic habitats;
- Corridors between habitat components within the home range of some species of wildlife and serve as important travel routes for nongame birds during migration; and,
- Genetic flow between potentially isolated populations in adjacent mature stands, thereby helping to maintain population genetic viability.

Dependent upon individual management area goals and objectives, assigned minimum **SHPZ** width will be 50, 100, or 150 feet on each side of stream channels. Streamside protection areas will encompass about 183,800 acres. Land allocations and management direction (standards and guidelines) provide coordination requirements for activities along State Natural and Scenic Rivers, and protection measures for the Louisiana pearlshell mussel.

ISSUE #9: FOREST ROADS

How should the Forest's road system be managed to meet resource needs and provide adequate public access?

Concerns over Forest roads focused on:

- Determining a minimum density of local roads to provide permanent effective access to national forest lands, and what percentage should be managed as open for dispersed recreation use; and,
- Determining the effects of road construction/reconstruction on other resources.

Road density across the Forest varies, with the Forestwide average at approximately 3.5 miles of road per square mile. The Forest has the authority to control 2.4 miles of road per square mile. The Forest's collector road system is in place and there are no plans to add additional collector roads. Local roads will be developed, improved, main-

tained and managed to meet the demand for limited or intermittent access, and minimum design-standard roads will be constructed. The Forest will stress using or improving existing corridors to minimize the miles of new road construction. Road closures will be used to meet management area and sub-management area goals and objectives including wildlife, soil, and water protection or other resource needs. Management direction (standards and guidelines) will provide land managers with planning and inventory, construction and reconstruction, and operations and maintenance strategies to provide effective access to the Forest while protecting other resources.

ISSUE #10: PRESCRIBED BURNING

What will be the role of prescribed fire in achieving forest management goals and objectives?

Prescribed burning concerns revolved around:

- Determining the extent, season of use, and frequency of prescribed fire;
- Determining direction for prescribed burning on sensitive Kisatchie soils;
- Determining whether prescribed fire would be used in managing the Kisatchie Hills Wilderness;
- Determining the effects of prescribed burning on plants and animals; and,
- Determining the extent of using plow lines.

Over the past 5 years the Forest applied prescribed fire on about 72,119 acres annually. In the revised Forest Plan, prescribed fire will be allowed on approximately 105,000 acres each year. Management-ignited fire will be conducted during dormant and growing seasons. The use of growing season burns will be emphasized in upland longleaf pine landscapes, and will be allowed on approximately 21,000 acres each year. Prescribed fire frequencies will vary depending upon management area and sub-management area goals and objectives, and will generally range from 2–5 years in longleaf pine, 5–10 years in shortleaf pine / oak-hickory, and 10–20 years in mixed hardwood-loblolly pine landscapes. No fire frequency is established for riparian forest landscapes. The use of plow lines will be lessened with increased emphasis given to natural fire breaks, existing roads, disced lines, and other alternate methods. Prescribed natural fire and management-ignited prescribed fire will be utilized within the Kisatchie Hills Wilderness. Land allocations and management direction (standards and guidelines) provide for the protection of Forest resources while meeting ecosystem restoration objectives.

ISSUE #11: SILVICULTURE

How will the application of various silvicultural systems and management practices affect the condition of other forest resources and sustainability of overall forest health?

Concerns over this issue focused on:

- Determining the effects of two-aged and uneven-aged management on timber and non-timber resources;
- Determining the effects of two-aged and even-aged management on habitat, visual diversity, and timber productivity;
- Determining the effects of current timber harvest and site preparation on forest health and resources;
- Determining management direction for ecosystem management;
- Determining appropriate practices to manage bottomland hardwoods;
- Determining the role of herbicide use; and,
- Determining direction for managing hardwoods within pine stands and the extent of mixed management types.

The revised Forest Plan will allow the use of even-aged, two-aged, and uneven-aged silvicultural systems. Approximately 32,000 acres of the Forest will be managed in designated patches at the landscape level, using the uneven-aged system. Land allocations and management direction (standards and guidelines) will provide land managers with a range of regeneration methods and vegetation management methods to achieve a mixture of desired future conditions.

PLAN RESPONSE TO THE ISSUES

SIGNIFICANT ISSUES

ISSUE #12: WILDLIFE AND FISH

ISSUE #13: FOREST HEALTH

ISSUE #12: WILDLIFE AND FISH

How much and what kinds of wildlife and fish habitats should the Forest provide for a diverse wildlife program?

Wildlife and fish concerns revolved around:

- Determining direction for the two national wildlife management preserves;
- Determining the program direction for wildlife and fisheries;
- Determining direction for management of upland hardwood species; and,
- Determining appropriate management indicators to monitor habitat health and response to management.

A goal of the revised Forest Plan is to provide for biologically diverse ecosystems which support viable populations of all native and desirable nonnative wildlife and fish species and to conserve threatened, endangered, and rare species. Management area and sub-management area direction (standards and guidelines) will be used to create and manage habitat mosaics, conditions, and attributes most beneficial to native wildlife communities and to provide conditions which sustain healthy, huntable populations of game species within the two preserves. Management indicators have been identified and will be used to monitor implementation of the revised Forest Plan.

ISSUE #13: FOREST HEALTH

What forest management practices are necessary to maintain or improve forest health, especially protection from insects and diseases?

Concerns over this issue focused on determining appropriate practices to maintain or improve forest health.

Through the implementation of management direction (standards and guidelines) the revised Forest Plan seeks to manage for productive and healthy forest ecosystems by using comprehensive integrated approaches to prevent and minimize resource losses or damage due to insects and disease.

Chapter 2 Forestwide Direction

INTRODUCTION

Chapter 2 presents the forestwide direction for the Kisatchie National Forest. It is divided into four major sections:

- Forestwide goals
- Forestwide desired future condition
- Forestwide objectives
- Forestwide standards and guidelines

FORESTWIDE GOALS

Goals are concise statements describing desired conditions to be achieved in the future. They are often expressed in broad general terms and are timeless, having no firm accomplishment date (***36 CFR 219.3***). Goal statements are the first step to making Forestwide desired future conditions (**DFCS**) operational.

The Kisatchie's forestwide goals are broad, strategic management statements written to provide a framework for balanced and integrated resource management designed to achieve the forestwide **DFC**. In the next chapter, Management Area Direction, goals are established for each *management area* (**MA**) and *sub-management area* (**SMA**). The attainment of forestwide goals largely depends on attainment of **MA** and **SMA** goals.

Goal 1: Ensure that healthy, sustainable forest ecosystems endure for future generations by managing with the highest standards of stewardship. Protect or conserve basic soil, water, air, and land resources and incorporate integrated pest management principles.

Goal 2: Manage to provide for a variety of life by maintaining biologically diverse ecosystems and viable populations of all native and desirable nonnative plant, wildlife, fish and aquatic species. Conserve threatened, endangered, and rare species; restore and maintain ecosystems and ecological processes; identify and manage old-growth forests; and protect riparian and streamside habitat areas.

Goal 3: Contribute to local community stability by providing an even flow of commodity resources in an environmentally acceptable manner. Allow for timber harvest to meet multiple-use goals and provide for stand regeneration; a limited amount of domestic livestock grazing; continued exploration and extraction of leasable and salable minerals; and provide a transportation system to meet multiple-use goals. Promote rural development and human resource programs.

Goal 4: Provide for scenic quality and outdoor experiences which respond to the needs of forest users and local communities. Provide access to a wide variety of recreational opportunities and facilities.

Goal 5: Manage to protect and perpetuate natural and cultural values associated with unique, rare, or irreplaceable resources. Recognize and protect historical areas, cultural sites, and areas which are of special interest because of unique geological, botanical, or zoological features.

Goal 6: Apply vegetation management activities and treatments best suited to achieve a mixture of desired future conditions or to mimic natural processes. Implement and use a variety of silvicultural systems, regeneration methods, prescribed fire applications, and vegetation management treatments needed to achieve objectives.

Goal 7: Monitor to provide feedback regarding progress toward accomplishing Forest goals and objectives; and adapt management according to new information.

Goal 8: Promote collaboration between researchers and land managers to incorporate new technologies, information, and scientific methods into the decision-making process.

Goal 9: Promote cooperation and coordination with other federal and State agencies, Native American tribes, organizations, and individuals. Actively seek public involvement during project planning, implementation and monitoring.

FORESTWIDE DESIRED FUTURE CONDITION

A DFC is defined as a narrative description of the condition of land and resources expected to occur when goals and objectives and their associated standards and guidelines for an area are fully achieved.

The forestwide DFC presented here emphasizes the significant differences between the future Forest and the present. The MA and SMA DFCS in Chapter 3 provide a more detailed description of individual landscapes.

GENERAL ENVIRONMENTAL SETTING

The Forest's fundamental resources are conserved and protected. They continue to provide the basic elements for healthy, functioning ecosystems. Long-term soil productivity, for example, has been maintained or improved. The effects of management practices on soils are within allowable limits and temporary in nature. Water quality on the Forest is maintained at a high level for aquatic ecosystems, aquifer recharge, and domestic use. Class II air quality is maintained. Smoke from prescribed fire occurs frequently and may temporarily affect air quality in localized areas. Mitigating smoke management practices, however, provide for effective smoke dispersal.

FOREST APPEARANCE

Most Forest landscapes keep a somewhat natural appearance. They provide a variety of forested conditions ranging from closed canopied stands with a sparse understory to open stands with a continuous herbaceous understory. The maintenance or restoration of natural communities on much of the Forest has produced vegetation patterns representing the four major landscape communities known to occur here prior to European settlement — longleaf pine forest, shortleaf pine / oak-hickory forest, mixed hardwood-loblolly pine forest, and riparian forest. The composition and structure of forested stands reflect the landform they occupy and the disturbance they receive.

The area dominated by the longleaf pine ecosystem has increased significantly. There is also a substantial increase in the area of the Forest containing stands with mixtures of pines and hardwoods, as well as hardwood stands.

A majority of the Forest consists of mature stands occupied by larger, older trees. Old-growth forests representing each of the four major landscape communities occur as medium-sized patches scattered throughout the Forest.

Improved protection and management of streamside and riparian areas has resulted in natural transition zones between upland stands and streams. Many small inclusional communities such as hillside bogs, sandstone glades and barrens, sandylands and calcareous prairies benefit from landscape-wide management strategies.

LANDSCAPE ALTERATION

Alterations to the Forest are implemented to mimic natural ecological processes. Visible changes result primarily from stand regeneration, stand improvement practices, and the periodic use of prescribed fire.

Even-aged management is still the predominant silvicultural system; however, there is a significant increase in the area of the Forest managed under the uneven-aged system. Seed-tree, shelterwood, and group selection are the primary regeneration methods used to promote the regeneration of upland stands. Stands of trees vary from uniform heights and ages to a wide range of heights and ages.

Stand improvement practices and prescribed fire are used to mold stand composition and structure to meet desired future conditions. Prescribed fire is a common practice and occurs on a large majority of the Forest. It is used to mimic natural fire regimes required to maintain the Forest's fire-dependent ecosystems. Growing season burning is a common practice within longleaf pine landscapes.

Insects and diseases continue to play important ecological roles in the Forest's ecosystems. Due to older forest stand conditions, tree mortality caused by insects and disease may occur more frequently. The restoration of native longleaf pine commu-

nities to sites they historically occupied and the use of integrated pest management strategies minimizes the losses.

BIOLOGICAL DIVERSITY

Biological diversity, although variable at the landscape and stand levels, is essentially maintained at the Forest level. Forest management strategies aimed at the landscape level and designed to restore or maintain the natural diversity of forest composition, structure, and function provide habitat conditions necessary to maintain viable populations of all native and desirable nonnative wildlife, fish and other aquatic species, and plant species occurring on the Kisatchie.

Habitat conditions and wildlife species associated with older forest stands are more common. In particular, those wildlife communities associated with open longleaf pine forests and mixed forests of pines and hardwoods find large areas of suitable habitat. Forest conditions provide effective breeding habitats for neotropical migratory birds that nest on the Forest or important stopover habitat for those migrating through. Wetland ecosystems provide improved habitat for a variety of waterfowl and other wetland wildlife. The Forest continues to provide huntable populations of all important game species.

The Forest provides one recovered population and four support populations to the overall Red-cockaded Woodpecker recovery. Other species formerly listed as rare because of unfavorable habitat conditions now find suitable habitat and are no longer at risk.

As a result of improved streamside and riparian area protection and watershed improvement, the Forest's aquatic ecosystems are healthy and function as habitats for a variety of fish, aquatic invertebrates, and plants. Fish and other aquatic species previously declining in numbers are no longer at risk of extirpation from the Forest.

HUMAN EXPERIENCE

The Forest provides visitors a full range of dispersed and developed recreation opportunities. Hunting, fishing, camping, mountain biking, hiking and walking, off-road vehicle riding, nature study, horseback riding, and driving for pleasure continue as the most popular forest recreation activities. Landscapes appear shaped mainly by ecological processes rather than management activities, and they have high scenic diversity. Significant heritage resources are protected, managed, and interpreted to provide visitors an understanding of the cultural heritage of the Forest.

The Forest's transportation system provides a broad spectrum of facility types and service levels to all users and visitors. Forest roads provide convenient access to developed recreation sites, trail heads, scenic areas, wilderness, lakes and streams, and wildlife management areas; and basic access requirements for management and protection. Few new roads are constructed. Unneeded ones may be permanently closed or obliterated. Others may be seasonally closed.

A sustainable flow of commodities such as forest products, minerals development, or range forage, add to the local economy and contribute towards community stability. Local communities continue to increase their economic diversity.

FORESTWIDE OBJECTIVES

Objectives are concise statements describing a specific result or condition desired that will contribute to goal achievement. Each goal has one or more objectives associated with it, defining how that goal will be accomplished. Objectives are the second step in making the forestwide DFC narrative description operational.

Each objective is numbered in such a way that you can associate it with the appropriate goal. For example, objectives 1–1 through 1–6 contribute to the accomplishment of goal 1; objectives 2–1 through 2–8 contribute to goal 2, and so on.

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.

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

FORESTWIDE OBJECTIVES

and federal water quality standards.

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.

Objective 1–4: Provide a level of wildfire protection which emphasizes cost effective wildfire prevention and suppression while minimizing loss of resources.

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 diseases.

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.

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.

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 ten 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.

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 forestwide RCW population of 1,405 active clusters.

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.

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.

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.

Objective 2–7: Provide quality habitat for game and fish populations.

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.

Objective 3–1: Provide for long-term sustainable production of commodities for economies, local community stability, and people.

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.

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.

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.

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.

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.

Objective 3–7: Manage the transportation system to ensure that any roads constructed are designed according to standards appropriate to the planned uses.

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.

FORESTWIDE OBJECTIVES

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

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.

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 (SHPO) and interested federally recognized tribes as the primary partners in managing the Forest's heritage resources.

Objective 5–2: Provide protection for heritage resource sites which preserves the integrity of scientific data that they contain, for the benefit of the public and scientific communities.

Objective 5–3: Reduce the existing backlog of heritage sites needing formal evaluation, so that the overall number decreases each year.

Objective 5–4: Enhance and interpret appropriate sites and heritage values to the American public.

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.

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.

Objective 5–7: Manage the Kisatchie Hills Wilderness to enhance and perpetuate wilderness as a resource. Avoid resource damage resulting from overuse.

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.

Objective 6–2: Utilize prescribed fire in fire-dependent ecosystems — including the 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.

Objective 7–1: Monitor and document the annual progress towards accomplishment of Forest goals, objectives, and desired future conditions.

Objective 7–2: Evaluate new information and monitoring results; adapt management accordingly.

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.

Objective 8–2: Continue to identify research needs as the Forest implements the Plan.

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.

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.

FORESTWIDE STANDARDS AND GUIDELINES

While goals and objectives define where we are headed for a particular area, standards and guidelines define the decision space within which we can operate to work towards achieving goals and objectives. Standards and guidelines are the specific technical resource management directions generated for a DFC. They provide the last link in making that DFC narrative description operational.

Standards are a definite rule, principle, or measurement. Standards define the operational space for achievement of Forest Plan goals and objectives, and assure compliance with laws, regulations, executive orders, and policy direction. Deviation from a standard requires a forest plan amendment.

Guidelines are used as a steering or preferred course of action. They promote the achievement of Forest Plan goals and objectives in a manner that permits necessary operational flexibility to respond to variations over time. Deviation from a guideline will usually not require an amendment to a forest plan, but the rationale will be documented in the project decision document.

The standards and guidelines in this section apply Forestwide, providing the basic foundation for all resource management. They constitute the bulk of the direction necessary to meet Forestwide goals, desired future condition, and objectives. Additional specific direction pertaining to a particular management area is in Chapter 3.

Each standard and guideline is preceded by an alphanumeric identifier. The 2- or 3-letter prefix identifies its applicability as *Forestwide* (FW), a *management area* (MA), or a *sub-management area* (SMA) standard or guideline. Each category begins with the number **001** and is numbered consecutively.

Immediately following each numbered standard or guideline are two references shown in separate parentheses. The first identifies the source of the standard or guideline and the second identifies it as either a standard or a guideline.

The four sources used originated from: the Kisatchie National Forest (shown as KNF); the *Record of Decision* (ROD) *for Suppression of the Southern Pine Beetle* (shown as SPB), the ROD for *Vegetation Management in the Coastal Plain / Piedmont* (shown as VM), or from the ROD for the *Management of the Red-Cockaded Woodpecker and Its Habitat on National Forests in the Southern Region* (shown as RCW).

This section is divided into three parts:

- Project-level planning and analysis;
- Cooperation / coordination with other agencies; and,
- Resource elements.

PROJECT-LEVEL PLANNING AND ANALYSIS

FW–001: Base any decisions on projects to implement the revised Plan on site-specific analysis in compliance with the National Environmental Policy Act (NEPA). Document the environmental analysis appropriately, based on direction in the *Council of Environmental Quality Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* (***40 CFR 1500–1508***) and the *Environmental Policy and Procedures Handbook* (***FSH 1909.15***). (KNF) (STANDARD)

FW–002: Evaluate projects to determine if they are consistent with the management direction in the revised Plan. Incorporate this evaluation of consistency with revised Plan direction in the project-level environmental document. (KNF) (STANDARD)

FW–003: During project planning, consider the impacts to biological diversity parameters at stand and landscape levels. Applicable aspects of composition, structure and function should be considered within each environmental analysis. (KNF) (GUIDELINE)

FW–004: During project planning, use selected vegetation, aquatic and wildlife management indicators assigned to individual management areas / sub-management areas to assess and quantify habitat changes and analyze management effects on plant, aquatic, and wildlife communities. (KNF) (GUIDELINE)

FORESTWIDE STANDARDS AND GUIDELINES

PROJECT-LEVEL PLANNING AND ANALYSIS

FW–005: Use the *interdisciplinary team* (IDT) process to provide decision-making officials quality information from which they can make informed decisions (KNF) (STANDARD)

FW–006: Follow the NEPA, *Forest Service Manual* (*FSM*), and Forest processes to fully involve interested public groups, individuals, and organizations in project-level decision-making, and to determine whether a project may proceed under a categorical exclusion, or will require documentation in an *environmental assessment* (EA) or *environmental impact statement* (EIS). (KNF) (STANDARD)

FW–007: All *management area* (MA) and some *sub-management area* (SMA) boundaries were established using specific locations such as property and compartment boundary lines, roads, or streams. Establish SMA boundaries based upon *landtype association* (LTA) lines during site-specific project analysis utilizing soil types, landform, existing vegetation, and vegetation in the surrounding area. (KNF) (GUIDELINE)

FW–008: Prepare site-specific environmental analyses which include biological evaluations (BEs) or assessments (BAs) of a project's effects on species federally listed as threatened, endangered, or proposed; or those identified by the Forest Service as sensitive or conservation species. (KNF) (STANDARD)

FW–009: A biological evaluation of whether a project could affect any species federally listed as threatened, endangered, or proposed, or identified by the Forest Service as sensitive (i.e., PETS species), is done as part of site-specific forest plan implementation and project preparation. This evaluation identifies PETS species occurring in the project area or with high likelihood of occurring in the project area. The type and amount of information used to determine effects will vary according to our knowledge of species/habitat relationships, risk to the species from proposed actions, and risk to species range-wide viability or persistence on the Forest. Appropriate project-level inventory/surveys for a PETS species are the following:

- Gathering and summarizing population occurrence data from the Forest Service and other sources such as the State Natural Heritage Program.
- Collecting information on the amount and distribution of suitable habitat.
- For some PETS species expected to occur in the vicinity of the project, additional field surveys done in suitable habitat potentially affected by the proposed project is desireable to document the presence or absence of these species. These field surveys would be most appropriate if past field surveys are not available for such areas and if they would provide more definitive information to improve the determination of effects for PETS species. However, there are some PETS species and situations where the information to determine potential effects to PETS species may not require population surveys. These situations occur when: (1) there is a low likelihood of detecting a species, the field survey would probably not provide definitive information for excluding a species from further consideration, (2) established Plan direction or mitigation, that effectively protect PETS species expected to occur in suitable habitat in the project vicinity, are already in place and are part of the proposed action, or (3) a PETS species habitat requirements are well known and there is sufficient evidence that the proposed activities will have short- or long-term beneficial effects or no effects to PETS species, or to the range-wide viability of sensitive species expected to occur in the area. For all three previous situations, the PETS species in question would be assumed to occur in the area and effects to it would be addressed in the effects analysis.

Use the appropriate information discussed above to analyze, disclose, and document effects on PETS species. In addition, conduct Endangered Species Act Section 7 consultation with the U.S. Fish and Wildlife Service for PET species, as specified in ***FSM 2671.4.***

Requirements and measures for actions affecting threatened, endangered, or proposed species are detailed in species recovery plans and ***FSH 2609.23R***. Recovery plans have been prepared for the Southern Bald Eagle, Red-cockaded Woodpecker, Louisiana black bear, and Louisiana pearlshell mussel. Chapters in ***FSH 2609.23R*** have been prepared for Red-cockaded Woodpecker, Southern Bald Eagle, and American alligator.

If it is determined that the project may positively or negatively affect threatened, endangered, or proposed species, initiate consultation with the Fish and Wildlife Service. If, during informal consultation, it is determined that the project is not likely to adversely affect listed species and the Fish and Wildlife Service concurs in writing, consultation is terminated. However, if it is determined that the project is likely to adversely affect listed species, formal consultation is initiated — or the project is changed or dropped from consideration. When the evaluation indicates that a project may have an adverse effect on a sensitive or conservation species or its habitat, appropriate State wildlife agencies, natural heritage commissions, and other cooperators or species authorities are contacted to identify coordination measures. These measures are directed towards ensuring species viability and preventing negative population trends that would result in Federal listing. (KNF) (STANDARD)

FW–010: Use integrated pest management (IPM) principles during site-specific analysis. The IPM decision-making and action process includes biological, economic, and environmental evaluation of pest-host systems to manage pest populations. Strategies based on IPM apply a comprehensive systems approach to silvicultural, wildlife, range, recreation and corridor management practices that emphasizes prevention of pest problems. These strategies consist of a range of practices that include prescribed fire, manual, mechanical, biological, and chemical tools that may be used alone or in combination. Risk rating systems and pest incidence surveys are used during site-specific analysis. Further IPM direction is provided in ***FSM 3400, FSH 3409.11.*** (VM-3) (GUIDELINE)

FW–011: Protect water quality in each project from nonpoint-source pollution through use of preventive *best management practices* (BMPs). Implementation of BMPs, monitoring and evaluation of their application and effectiveness, and adjustment of practices as needed are done to protect beneficial water uses and comply with state water quality laws. They are applied to all activities. In each project, site-specific conditions must be assessed, and the BMPs needed to meet state water quality standards must be employed. Streamside habitat protection zones will be established on all streams to protect water quality and the biological, chemical, and physical integrity of aquatic resources. (KNF) (GUIDELINE)

FW–012: Complete heritage resource inventory and necessary consultation prior to making decisions about projects which may affect historic properties. Inventory may include field survey, following assessment of predicted site probability for the project area and project effects. Emphasize inventory priorities in high resource sensitivity zones and for projects of potential high impact. (KNF) (GUIDELINE)

FW–013: Provide evidence of compliance with the National Historic Preservation Act (NHPA), ***36 CFR 800***, and other heritage-related regulations within decision documents (record of decision, decision notice, or decision memo), as appropriate. (KNF) (STANDARD)

FW–014: The Southern Region Programmatic Agreement (PA) recognizes that many actions, or classes of actions, may go forward without full review procedures under ***36 CFR 800*** and section 106 of the NHPA. Use categorical exclusion checklist for heritage resources, pursuant to the regional PA and further negotiated with the SHPO, for project types not requiring field survey. District managers consult with HRM staff for appropriate use of checklist prior to decision. (KNF) (GUIDELINE)

FW–015: Determine the significance of inventoried resources in relation to criteria of the National Register of Historic Places (NRHP) and research themes identified in Louisiana's Comprehensive Archaeological Plan. In consultation with the SHPO, do not manage properties evaluated as *not significant* (class III, ***FSM 2360***) under the Forest Heritage Program. Manage properties found *significant* (class I, ***FSM 2360***) or *potentially significant* (class II, ***FSM 2360***) as if they were listed on the NRHP. (KNF) (GUIDELINE)

FW–016: Establish and maintain government-to-governmment relations with federally recognized tribes having an interest in the Forest's landbase and resources, in accordance with the Presidential Memorandum on Government-to-Government Relations with Native American Tribal Governments (April, 1994). The Forest will consult with

FORESTWIDE STANDARDS AND GUIDELINES

PROJECT-LEVEL PLANNING AND ANALYSIS

COOPERATION / COORDINATION WITH OTHER AGENCIES

federally recognized Native American tribes having geographic or cultural ties to national forest land — for proposed actions that may affect sites or areas of special significance to those tribes. This will comply with provisions in the Archeological Resources Protection Act (ARPA), American Indian Religious Freedom Act (AIRFA), National Historic Preservation Act (NHPA), Native American Graves Protection and Repatriation Act (NAGPRA), as well as the Presidential Memorandum on Government-to-Government Relations. Forest heritage staff will develop mechanisms for consultation. Provide for traditional use or collection of forest resources by Native Americans. (KNF) (STANDARD)

COOPERATION / COORDINATION WITH OTHER AGENCIES

FW–017: Manage Federally listed threatened, endangered, or proposed species in cooperation with the U.S. Department of Interior, Fish & Wildlife Service (USFWS). Follow the requirements for consultation and conferencing with the USFWS when threatened and endangered species, species proposed for listing, or critical habitat are found in project areas. (KNF) (STANDARD)

FW–018: Cooperate with the Louisiana Department of Wildlife and Fisheries (LDWF) and the Louisiana Natural Heritage Program in identification, documentation, protection, and management of animal or plant species recognized by the Forest Service as sensitive or conservation species, and in the management of State Registry Natural Areas. (KNF) (GUIDELINE)

FW–019: Cooperate with the LDWF. Key areas of cooperation include: formulation and application of land management plans, restoration and management of wildlife and fisheries resources, state natural and scenic rivers, management of the National Catahoula and Red Dirt Wildlife Management Preserves, law enforcement, information and education programs, cooperative studies, wildlife surveys, and hunting, fishing, and trapping seasons. As needed, review and update the memorandum of understanding (MOU) between the Forest and the LDWF. (KNF) (GUIDELINE)

FW–020: Meet on an annual basis with the USFWS, the Louisiana Department of Wildlife and Fisheries, and the Louisiana Natural Heritage Program to discuss current issues of mutual concern. (KNF) (GUIDELINE)

FW–021: Cooperate with the Louisiana Department of Environmental Quality and the Louisiana Department of Agriculture and Forestry. Key areas of cooperation include: water quality monitoring, nonpoint source pollution control, and best management practices. (KNF) (GUIDELINE)

FW–022: Provide watershed management expertise to Natural Resource Conservation Service plans and programs. (KNF) (GUIDELINE)

FW–023: Cooperate with the Department of Defense to ensure that the Forest Service and the military may meet their respective missions by coordinating their activities and mitigating any resultant environmental effects. (KNF) (GUIDELINE)

FW–024: Cooperate with the Department of Interior, Bureau of Land Management for minerals activity in the Forest. (KNF) (GUIDELINE)

FW–025: Cooperate with the Department of Transportation and the Federal Highway Administration on authorizing the construction and reconstruction of public roads that are part of the federal aid system or constructed within the Forest boundary under Chapter 2 of the Highway Act. (KNF) (GUIDELINE)

FW–026: Cooperate with the Louisiana Department of Agriculture and Forestry. Key areas of coordination include: cooperative fire detection and suppression agreements, joint selection and monitoring of rural development economic assistance grants, stewardship incentive program, and forestry cost-share practices. (KNF) (GUIDELINE)

FW–027: Meet on an annual basis with the U.S. Fish & Wildlife Service, the National Park Service, and the Louisiana Office of Forestry to discuss current fire presuppression, suppression, and training issues in the State. (KNF) (GUIDELINE)

FW–028: Coordinate inventory, evaluation, nomination, protection, enhancement, and interpretation procedures with the Louisiana SHPO, interested federally recognized

tribes, and the Advisory Council on Historic Preservation, if necessary, before project decisions. (KNF) (STANDARD)

RESOURCE ELEMENTS

AIR QUALITY

FW–029: Manage for air quality consistent with the Clean Air Act. Maintain the area as general forest Class II air quality and manage to meet State air quality standards. (KNF) (STANDARD)

FW–030: Incorporate performance requirements concerning air quality in permitted activities such as minerals, oil and gas or other developments on national forest lands that could affect air quality. (KNF) (GUIDELINE)

FIRE MANAGEMENT

Fire prevention

FW–031: Emphasize wildland fire prevention. Conduct fire prevention activities and utilize maps and brochures to carry fire prevention messages. (KNF) (GUIDELINE)

Fire suppression

FW–032: Identify the *most efficient level* (MEL) of budget for wildfire protection commensurate with the threat to life and property and the potential for resource and environmental damage based on hazard, risk, and management objectives, using the National Fire Management Analysis System (NFMAS). (KNF) (GUIDELINE)

FW–033: Provide a level of wildfire protection that minimizes the sum of the fire program cost, plus the net change in the value of planned resource outputs due to fire. (KNF) (GUIDELINE)

FW–034: Develop a fire management action plan to carry out the fire program budget identified by NFMAS and documented on the R8-5100-2 form (Fire Organization and Financial Plan). (KNF) (GUIDELINE)

FW–035: Classify a fire burning on national forest land as either a wildfire or a prescribed fire. (KNF) (STANDARD)

FW–036: Recognize three kinds of ignition — *management*, *natural*, and *other*. (KNF) (STANDARD)

FW–037: Classify management ignitions as prescribed fires as long as prescription conditions are met. If prescription conditions are exceeded, classify the ignition a wildfire and apply an appropriate suppression response. (KNF) (STANDARD)

FW–038: Classify a natural ignition as a prescribed fire if it meets prescription criteria described in the Fire Management Action Plan. (KNF) (STANDARD)

FW–039: Recognize all ignitions not resulting from management actions or natural occurrences as "other" and classify as wildfires requiring an appropriate suppression response. (KNF) (STANDARD)

FW–040: Use an immediate control suppression response where life, public safety, private property, or management objectives dictate. (KNF) (STANDARD)

FW–041: Consider the impact of smoke on public health and welfare when choosing the suppression response. Also consider smoke dissipation standards and the possibility of fog formation when determining suppression tactics and mop-up standards for fire suppression. (KNF) (GUIDELINE)

FW–042: The incident commander will size up and analyze each wildfire and take the most appropriate suppression strategy to meet management direction. Strategies may range from direct control, minimizing acreage burned, to indirect methods of containment and confinement. Use surveillance when the fire is expected to be self-confined within a defined area. (KNF) (STANDARD)

FW–043: Do not use wildfires to attain resource objectives. (KNF) (STANDARD)

FW–044: Initial action response must meet fire management direction of the fire management action plan. (KNF) (STANDARD)

FW–045: Conduct a fire situation analysis (FSA) evaluating initial suppression action on each uncontrolled wildfire following the first burning period. (KNF) (STANDARD)

FW–046: Conduct an escaped fire situation analysis (EFSA) when the initial action fails and containment is not expected before the second burning period and the fire is declared an escaped fire. (KNF) (STANDARD)

FW–047: Make a timely decision to manage a lightning-caused ignition as a prescribed fire. If a delay would result in increased suppression costs plus resource loss, declare the ignition a wildfire and take immediate suppression action. (KNF) (STANDARD)

FW–048: Follow the direction in the *Health and Safety Code Handbook* and the *Fireline Handbook* during all fire management activities. (KNF) (STANDARD)

Prescribed fire

Site-specific planning

FW–049: Site-specific planning for all prescribed burns is done by trained resource specialists and approved by the appropriate Forest Service line officer prior to project implementation. This planning includes description of treatment area, burn objectives, weather factors and fuel moisture conditions, and resource coordination requirements. Coordination requirements include provisions for public and worker safety, burn day notification of appropriate agencies and persons, smoke management to comply with air quality regulations and protect visibility in Class I areas, protection of sensitive features, as well as fireline placement, specific firing patterns, ignition methods, and mop-up and patrol procedures. A post-burn evaluation compares treatment results with plan objectives. (VM-27) (GUIDELINE)

FW–050: Approval of natural ignitions as prescribed natural fires rests with the Forest Supervisor. (KNF) (STANDARD)

FW–051: Conduct each prescribed natural fire according to a burn plan prepared and approved upon declaration of a natural ignition as a prescribed fire. Comply with the requirements of *FSM 5142.23* for the preparation of the prescribed natural fire burn plan. (KNF) (STANDARD)

FW–052: Allow prescribed natural fires in MAs 5, 6, 11, and 13. (KNF) (STANDARD)

FW–053: Conduct each management ignited prescribed fire according to a burn plan prepared before ignition. The appropriate line officer must approve the burn plan before carrying out a management ignited fire, or to continue with a prescribed natural fire. (KNF) (STANDARD)

FW–054: Approval of management ignitions is delegated to district rangers by the Forest Supervisor, contingent upon the experience and qualifications of the individual ranger. (KNF) (GUIDELINE)

FW–055: All prescribed fires must contribute to resource management objectives and be funded by the benefitting function(s). (KNF) (GUIDELINE)

FW–056: Use only trained and qualified personnel to execute each prescribed fire. Conduct each prescribed fire under the direct supervision of a type 1 or 2 burn boss consistent with the project size, complexity, and risk level. (KNF) (STANDARD)

FW–057: Critical values of fuel moisture, relative humidity, wind speed, and Keetch-Bryam Drought Code are set for growing season and dormant season burns. Allow burning only on those days when measured values are within the range of prescribed values as set forth in the KNF supplement to *FSM 5140*. (KNF) (GUIDELINE)

FW–058: A prescribed fire that exceeds, or is anticipated to exceed, one or more prescription parameter and / or holding capability and cannot be maintained within prescription with project funds, is a wildfire and requires an appropriate suppression response. (KNF) (STANDARD)

FW–059: Once a prescribed fire is declared a wildfire, it may not be redesignated as a prescribed fire. (KNF) (STANDARD)

Air quality protection

FW–060: Do not conduct prescribed burning when the predicted atmospheric dispersion (mixing height and transport wind speed) does not meet criteria outlined in *A Guide for Prescribed Fire in the Southern Forests*, the KNF supplement to *FSM 5140*, or State regulations and guidelines, or when predictions indicate that smoke might drift into highways, airports, hospitals, populated

areas, or other sensitive areas. (KNF) (GUIDELINE)

Fuel, wildlife, and vegetation management

FW–061: Use prescribed fire to consume portions of fuel profiles in a safe, carefully controlled, environmentally acceptable way to reduce wildfire hazard. (KNF) (GUIDELINE)

FW–062: Space or distribute prescribed burns over the Forest to achieve desirable distributions of wildlife habitat, forage production, ecosystem diversity, and to break up large, continuous fuel types. (KNF) (GUIDELINE)

FW–063: Use prescribed fire in fire-dependant plant communities as biologically necessary to maintain ecosystems by varying the timing, frequency, and intensity of fire to cause the change required to perpetuate their existence. (KNF) (GUIDELINE)

FW–064: Conduct management ignited burns during both dormant and growing seasons. (KNF) (GUIDELINE)

FW–065: Growing season burns are those which are conducted from mid-March to mid-September. As much as possible, distribute annual growing season burned acreage equally throughout this period. (KNF) (GUIDELINE)

FW–066: In general, do not schedule understory burns during the nesting season, to avoid disrupting reproductive activities. Forest managers may, however, use burns to meet specific objectives — for example, protecting threatened and endangered species such as the RCW, reestablishing natural ecosystems, controlling brown-spot disease and promoting longleaf height growth, and site preparation. Plan and execute burns to avoid damage to habitat of any threatened, endangered, proposed, or sensitive species, such as destruction of Bald Eagle nest trees. (VM-39) (GUIDELINE)

FW–067: Prescribed fire frequencies in the Forest's four major landscapes are as follows:

- *Longleaf pine*: 2–5 years
- *Shortleaf pine / oak-hickory*: 5–10 years
- *Mixed hardwood-loblolly pine*: 10–20 years
- *Riparian*: none

More or less frequency may be required in certain plant communities as prescribed by MA and SMA direction or by site-specific environmental analysis. (KNF) (GUIDELINE)

FW–068: Use prescribed burns to control the amount and density of understory and midstory canopy layers in upland hardwood sites to promote the establishment and maintenance of advanced oak and hickory reproduction. (KNF) (GUIDELINE)

FW–069: Allow prescribed burning within the longleaf pine plant communities when the root collars of grass stage longleaf seedlings reach a size of 0.3 inches. (VM-28) (GUIDELINE)

FW–070: Allow prescribed fire in loblolly, shortleaf, and slash pine when stems reach 3 to 4 inches diameter at ground level or 10 to 15 feet of height. (VM-28) (GUIDELINE)

FW–071: Utilize natural barriers such as streams, lakes, and roads when prescribe-burning at the landscape scale. Where possible, use low-impact disced fire lines instead of those created by a fire plow. If plowed lines are needed, reuse old ones for each successive burn, where practical. Avoid plowing through known rare plant sites and Louisiana pearlshell mussel streamside habitat protection zones. (KNF) (GUIDELINE)

Recreation and scenery management

FW–072: Do not use plowed firelines for prescribed burning within developed recreation areas, special interest areas, or within 300 feet of the travelway in areas with high scenic integrity objectives (SIOs). Use the least ground-disturbing method of fireline construction in these areas, including (in order of preference) wet lines, hand-built lines, and disced or bladed lines. Plowed firelines may be used in areas with moderate, low, or very low SIOs. Rehabilitate and reseed all ground-disturbing firelines with native or desirable nonnative vegetation as soon as possible after construction. (KNF) (GUIDELINE)

Soil and water protection

FW–073: Follow prescribed burning parameters and soil exposure standards to minimize soil exposure as specified in the KNF supplement to *FSM 5140*. (KNF) (GUIDELINE)

FW–074: Conduct slash burns so they do not consume all litter and duff and alter structure and color of mineral soil on more than 20 percent of the area. Steps taken to limit soil heating include use of backing fires on steep slopes, scattering slash piles, and burning heavy fuel pockets separately. (VM-29) (GUIDELINE)

FW–075: On severely eroded forest soils any area with a litter-duff depth averaging less than 1/2 inch is not burned. (VM-30) (GUIDELINE)

FW–076: Growing season underburns are not allowed on the same site more than twice in succession without an intervening dormant season burn. (VM-31) (GUIDELINE)

FW–077: Waterbars on slopes, and a diversion berm 50 feet from the stream channel, are required on firelines. (KNF) (GUIDELINE)

FW–078: Install waterbars and diversion ditches on firelines during their construction. Revegetate firelines as soon as possible after the burn project has been completed. (KNF) (GUIDELINE)

FW–079: Locate plowed firelines outside filter strips along lakes, perennial or intermittent streams, wetlands, or water-source seeps except at designated points. Minimize soil disturbance by using the firelines only as a tie-in with natural barriers. (KNF) (GUIDELINE)

FW–080: Allow fire to burn into moist landforms and filter strips to create a transition zone or ecotone between the uplands and bottomlands. (KNF) (GUIDELINE)

FW–081: Plan the frequency at which a site is burned to prevent potential adverse effects on soil productivity and soil loss. Burn soils with poor productivity less frequently. (KNF) (GUIDELINE)

FW–082: Plan the intensity of slash burns to prevent adverse effects on soil erosion and take into account soil erosion hazard. (KNF) (GUIDELINE)

Streamside, riparian and wetland habitat protection

FW–083: When wetlands need to be protected from fire, blade, disc, or plow firelines around them only when the water table is so low that the prescribed fire might otherwise damage wetland vegetation or organic matter. Reuse previous firelines as much as possible. Use the least-disturbing method affording adequate fire protection. (KNF) (GUIDELINE)

FW–084: If a fireline is required next to a wetland, it is not plowed in the transition zone between upland and wetland vegetation except to tie into a natural firebreak. (VM-35) (GUIDELINE)

FISH AND AQUATIC ORGANISMS

Lakes

FW–085: Manage natural lakes for native species and communities. (KNF) (GUIDELINE)

FW–086: Management emphasis for man-made reservoirs, lakes and ponds capable of sustaining a recreational fishery include the following: (KNF) (GUIDELINE)

- Emphasize native game fisheries.
- Maintain approximately 30 percent of the shoreline of ponds in emergent aquatic vegetation for bank protection and for fish and waterfowl habitat.
- Allow the construction and placement of habitat improvements such as gravel spawning beds, brush structures, spawning structures, etc.

FW–087: Allow water withdrawals where necessary to rid lakes of undesirable fish species, to control excessive aquatic vegetation, and to deepen shorelines. Do not permit water withdrawals from lakes if aquatic ecosystems or adjacent riparian dependent resources would be adversely affected. (KNF) (GUIDELINE)

FW–088: Permit aquatic weed control, including the use of water withdrawals, EPA-approved aquatic pesticides, biological agents, and fisheries habitat improvements after appropriate site-specific environmental analysis. All pesticide applications will be supervised by a certified pesticide applicator. (KNF) (GUIDELINE)

FW–089: Fish may be stocked to meet sports fisheries management objectives if viable native fish populations can be maintained. (KNF) (GUIDELINE)

FW–090: Conduct fish population balance checks at least every third year in recreation lakes under Forest Service jurisdiction. If necessary, institute tailored special regulations in coordination with the LDWF based upon results of balance checks. (KNF) (GUIDELINE)

FW–091: Maintain water pH generally between 6.2 and 8.3, and except when due to natural causes, not below 5.0 or more than 9.0. (KNF) (GUIDELINE)

FW–092: Where largemouth bass management is emphasized, augment lake fertility with the application of lime and/or fertilizer as long as water quality remains in compliance with State standards and section 404 regulations. Fertilized water clarity should be such that a Secchi disk is visible at 18 inches or greater depth unless the lack of clarity is attributable to natural causes. (KNF) (GUIDELINE)

Streams

FW–093: Manage perennial and intermittent streams for native species and communities. (KNF) (GUIDELINE)

FW–094: Construct sediment traps or stream stabilization structures, or plant or manipulate vegetation to protect and improve aquatic and streamside habitat, or where management activity is causing or may cause deterioration of the streamside environment or impair water quality. (KNF) (GUIDELINE)

FW–095: Conduct inventories to identify aquatic species. (KNF) (GUIDELINE)

FW–096: Report fish kills to the appropriate State authorities for investigation and documentation to determine the cause and the measures needed to prevent future kills. (KNF) (GUIDELINE)

FW–097: Stock fish in streams only when necessary to restore native populations. (KNF) (GUIDELINE)

FW–098: When site-specific analysis determines there has been a loss of habitat such as logs, undercut banks, trees, and pools, maintain or construct these natural features to enhance in-stream habitat. (KNF) (GUIDELINE)

FW–099: Construct bridges so as not to constrict clearly defined stream channels: (KNF) (GUIDELINE)

- Consider the economic feasibility of constructing permanent bridges for 100-year flood levels.
- Construct bridge approaches to prevent erosion.

FW–100: As determined by site-specific analysis, require appropriate structures at all stream crossings of designated trails and permanent and temporary roads: (KNF) (GUIDELINE)

- Design structures so that crossings do not impede fish passage.
- Consider the feasibility of using bridges as drainage structures on all perennial streams.
- At intermittent and ephemeral streams consider crossing alternatives including culverts, bridges, aggregate and / or concrete fords.
- Minimize crossings for roads and trails with deeply incised stream banks.
- Construct crossings at right angles to the stream.

FW–101: Protect road approaches at perennial streams with aggregate, concrete, or asphalt for a minimum distance of 20 feet from the edge of the stream channel. Determine on a case-by-case basis the need for reinforced bridge approaches. Protection may be required to extend to the gradient break to include nearby transitions between the stream floodplain and other landforms. Construct wing ditches to buffer stream channels from direct road runoff. (KNF) (GUIDELINE)

FW–102: Design and engineer the construction of physical structures within stream channels considering physical stream systems, including fish habitat improvement structures, and through coordination with other resource specialists. (KNF) (GUIDELINE)

FOREST HEALTH

FW–103: Use the *Forest Health Decision Support System for National Forests in Region 8* to identify risk of insect and disease problems. (KNF) (GUIDELINE)

FW–104: In pine stands adjacent to wilderness, where spot spread from wilderness is

possible, priority will be given to reducing or eliminating potential SPB losses. (**SPB-2, General Forest Area**) (**GUIDELINE**)

FW–105: Existing landscape form, line, color, and texture will be used to mitigate effects on visually-sensitive areas that result from SPB control. This is accomplished by adjusting the shape of managed sites to be more natural and by feathering edge lines between disturbed and undisturbed areas. Visual effects are further mitigated by debris disposal, and by reducing the apparent size of the work site. (**SPB-7, General Forest Area**) (**GUIDELINE**)

FW–106: Use existing roads or access ways whenever possible for control activities. (**SPB-9, General Forest Area**) (**GUIDELINE**)

FW–107: Retain selected hardwoods in an uncut or untreated state for wildlife and plant diversity. (**SPB-10, General Forest Area**) (**GUIDELINE**)

FW–108: Use control methods that will minimize soil disturbance. (**SPB-2, General Forest Area and Wilderness—General**) (**GUIDELINE**)

FW–109: Use erosion control measures as soon as possible after the ground-disturbing SPB suppression activities are completed, to prevent or minimize erosion, sedimentation and long-term site deterioration. (**SPB-3, General Forest Area and Wilderness—General**) (**GUIDELINE**)

TABLE 2–1, FOREST PRODUCTS UTILIZATION STANDARDS

Minimum Tree Specifications		Minimum Piece Specifications (includes 1 1/2 minimum pieces for sawtimber, and 2 for small roundwood)			
Species	Product	DBH (inches)[A]	Piece Length (feet)	Small End	Net as % of Gross
Softwood	sawtimber	11.0	8	7.0 (DIB)[B]	30
Hardwood	sawtimber	13.0	8	10.0 (DIB)	30
Pine	small roundwood	5.0	5	4 (DOB)[C]	
Hardwood	small roundwood	6.0	5	4 (DOB)	
Pine	topwood		5	4 (DOB)	
Hardwood	topwood		5	4 (DOB)	

[A] Diameter at breast height. [B] Diameter inside bark. [C] Diameter outside bark.

FW–110: The cut-and-hand-spray technique must only be used according to general direction set forth in the *Forest Service Manual*, chapter 2150, pesticide-use management. Label instructions for insecticides registered for beetle control must be followed. (**SPB-5, General Forest Area and Wilderness—General**) (**STANDARD**)

FW–111: Standing trees will not be sprayed with insecticides. (**SPB-6, General Forest Area and Wilderness—General**) (**GUIDELINE**)

FW–112: Insecticides will not be used in a manner that would adversely affect threatened or endangered species. (**SPB-7, General Forest Area and Wilderness—General**) (**STANDARD**)

FW–113: Risk to humans and the environment will be minimized by applying insecticides only according to label instructions, Forest Service policies and other federal regulations. Use will be supervised by a certified pesticide applicator. Treated areas will be signed and closed to firewood collection. (**SPB-8, General Forest Area and Wilderness—General**) (**GUIDELINE**)

FW–114: Workers who apply insecticides will be trained to ensure minimum impact and maximum effect. Only methods assuring proper application of insecticides on the infested tree bole would be used. (**SPB-9, General Forest Area and Wilderness—General**) (**GUIDELINE**)

FW–115: Allow the application of behavioral chemicals approved by the EPA for operational or experimental use for SPB suppression, pending appropriate site-specific analysis. When practical, available behavioral chemicals should get top priority in special management areas or activities. (**KNF**) (**GUIDELINE**)

FW–116: Make SPB and other pest problem treatments compatible with objectives and desired future condition of management areas. (**KNF**) (**GUIDELINE**)

FW–117: Fall trees away from stream courses during SPB suppression. Where this is not possible, exclude those trees from treatment unless needed to achieve effective spot suppression. (**KNF**) (**GUIDELINE**)

FW–118: Unless specifically prohibited, apply the following methods for controlling SPB to all management areas: (KNF) (GUIDELINE)

- Cut and remove
- Cut and leave
- Cut and hand spray
- Pile and burn

FOREST PRODUCTS

Timber sales

FW–119: Conduct sustained-yield timber harvest only on lands classified as suitable for timber production. (KNF) (STANDARD)

FW–120: Timber harvest may occur on lands classified as unsuitable for timber production only when such harvesting is necessary for salvage or to protect or enhance multiple-use values other than timber production and such harvesting is consistent with the appropriate management area direction. (KNF) (STANDARD)

FW–121: The sale and disposal of all timber will comply with the applicable direction contained in *FSM 2400* and *FSH 2409*. (KNF) (STANDARD)

FW–122: Administer the timber sale program in accordance with the Region 8 Timber Theft Prevention Plan to prevent timber theft, waste, fraud, and abuse. (KNF) (STANDARD)

FW–123: Minimum operability harvest yields for regeneration cutting will be 1 CCF per acre for roundwood and 1.4 CCF per acre for sawtimber; for intermediate cuttings, 2 CCF per acre roundwood and 1.4 CCF per acre sawtimber. (KNF) (GUIDELINE)

FW–124: Include appropriate recreation, scenery management, heritage resources, wildlife and fisheries, botanical, soil and water quality, streamside habitat, and riparian area protection measures in contracts and enforce during sales administration. (KNF) (STANDARD)

FW–125: Use the utilization standards displayed in table 2–1 until technology or markets require modification. (KNF) (STANDARD)

Miscellaneous forest products

FW–126: Miscellaneous forest products permits may be sold authorizing the collection of things such as mushrooms, vines, and / or plants with cultural or economic value. Develop harvest strategies and implementation schedules for species of high commercial or personal-use interest. (KNF) (GUIDELINE)

Pinestraw collection

FW–127: Permit pinestraw collection only in Management Area 1 and stands in other management areas which have not been restored to their native forest types (i.e. slash or off-site loblolly pine plantations). Permit pinestraw collection only once in 10 years on any specific site. (KNF) (STANDARD)

FW–128: Use of motorized or heavy equipment, and concentrated human use within pinestraw raking areas must be consistent with the requirements of the *Regional Guide for Management of the RCW* (*RCW EIS, 1994*) and any other Regional guide or conservation strategy that may be developed for other rare, sensitive, or conservation species. (KNF) (STANDARD)

FW–129: Permit fertilization based on the recommendation of an interdisciplinary team. (KNF) (GUIDELINE)

FW–130: Make available no more than 10 percent of the total pinestraw acreage annually on a district-wide basis. Pinestraw acreage is defined as all acres suitable for timber production with a longleaf or slash forest type where raking is not prohibited. (KNF) (GUIDELINE)

FW–131: Pine forest types other than longleaf and slash pine may be considered for pinestraw collection on a case-by-case basis, but limit the maximum allowable acreage to that specified in **FW–130**. (KNF) (GUIDELINE)

FW–132: Allow pinestraw collection only on slopes less than 12 percent. (KNF) (GUIDELINE)

FW–133: Permit hand raking or single-pass tractor raking with a rear-mounted, drag-type rake or a combination of hand and tractor raking (as described above). Allow no ground scarification. (KNF) (GUIDELINE)

FORESTWIDE STANDARDS AND GUIDELINES

RESOURCE ELEMENTS

FOREST PRODUCTS

HEALTH AND SAFETY

FW–134: Permit burning of pinestraw collection areas only as frequently as is needed to maintain or enhance the surrounding landscape ecosystem. Allow mowing and / or burning for site preparation. (KNF) (GUIDELINE)

FW–135: Do not permit pinestraw collection on severe erosion hazard soils. (KNF) (GUIDELINE)

FW–136: Permit pinestraw collection only during dry periods when soils have high compaction or rutting hazards. (KNF) (GUIDELINE)

FW–137: Do not permit pinestraw collection on cultural / historical sites. (KNF) (GUIDELINE)

FW–138: Do not permit pinestraw collection in research natural areas, registry natural areas, special interest areas, bogs, glades, or old-growth forest patches. (KNF) (GUIDELINE)

FW–139: Do not permit motorized pinestraw raking or baling equipment or any other motorized pinestraw collection equipment within 50 feet of an RCW cavity tree. (KNF) (GUIDELINE)

FW–140: Do not permit raking, baling or other collection activities in RCW cluster sites during the nesting season. Other than this specific time / location, raking / baling may be conducted year round, except where prohibited by **FW–139**. (KNF) (GUIDELINE)

Salvage

FW–141: Retain all trees uninfested by SPB or vacated by SPB within approximately 100 feet of intermittent or perennial streams. (KNF) (GUIDELINE)

FW–142: Retain two larger vacated SPB trees per SPB spot where available, in SPB spots less than one acre. (KNF) (GUIDELINE)

FW–143: In SPB spots greater than or equal to one acre, retain six vacated SPB trees per acre where available, two of which should be the larger vacated pines. (KNF) (GUIDELINE)

FW–144: Salvage dead or dying trees creating a potential hazard to life or property within developed recreation areas, adjacent to roads, trails, or utility corridors, or in prescribed burn units. (KNF) (GUIDELINE)

FW–145: Allow the salvage harvesting of single dead trees only within 300 feet of a level D or higher system road which is in travelable timber hauling condition. In general, do not use closed or gated roads or roads retained for other use for single tree salvage hauling. (KNF) (GUIDELINE)

Firewood gathering

FW–146: Where compatible with management area and sub-management area desired future conditions, allow the sale of firewood and lighter-wood for personal and commercial use when and where an adequate supply of live, dead, or down trees of species desirable for firewood purposes exist. Except for occasional, scattered, individual dead or down trees, these conditions will usually exist in conjunction with another silvicultural or other resource projects. These projects would normally include regeneration areas, storm or insect salvage areas, and wildlife stand improvement projects such as midstory removal. In all instances, take care to ensure the protection of trees or groups of trees or areas previously designated for retention or protection. (KNF) (GUIDELINE)

FW–147: Do not provide free-use firewood to the public except in rare, well-documented cases where a significant economic or resource benefit can be shown to accrue to the Government. (KNF) (GUIDELINE)

FW–148: Give priority to the issuance of personal-use permits over commercial permits where demand exceeds the available supply of firewood. (KNF) (GUIDELINE)

HEALTH AND SAFETY

FW–149: Promote visitor safety and protect Forest resources and facilities. Inform visitors of rules and regulations governing National Forest System lands. (KNF) (GUIDELINE)

FW–150: Enforce safety regulations, both State and Federal. Inform visitors through written information and personal contact. Prepare Supervisor's Orders setting out rules and regulations. (KNF) (GUIDELINE)

FW–151: Safety equipment for Forest Service workers (such as hard hats, eye and ear protection, chaps, and fire retardant clothes)

is [to be] worn as determined by a job hazard analysis specified in the *Health and Safety Code Handbook* (***FSH 6709.11***). This analysis estimates risks to specific body parts and prescribes needed protection. (**VM-13**) (**STANDARD**)

FW–152: Forest Service workers must comply with dress and safety standards specified in the *Health and Safety Code Handbook* (***FSH 6709.11***). (**VM-86**) (**STANDARD**)

FW–153: Forest Service equipment operators must demonstrate proficiency with the equipment and be licensed to operate it. A helper must direct the operator where safety is compromised by terrain or limited sight distance. (**VM-53**) (**STANDARD**)

FW–154: Chainsaw operators must be periodically certified and demonstrate proficiency with chainsaws. (**VM-85**) (**STANDARD**)

HERITAGE RESOURCES

Program management

FW–155: Manage heritage resources in accordance with applicable federal laws, regulations, policy, agreements, and in the public interest. Emphasize the protection of significant heritage properties, completion of the Forestwide inventory, and assessing the significance of inventoried properties. Identify opportunities for appropriate use and interpretation of heritage properties. (**KNF**) (**STANDARD**)

FW–156: Tier all coordination relating to the National Historic Preservation Act (**NHPA**) and its implementing regulations (***36 CFR 800***) to the *Southern Regional Programmatic Agreement* (**PA**) and **MOU** or other agreements between the Forest and **SHPO**. All provisions of the **PA** between the Southern Region of the Forest Service, Advisory Council on Historic Preservation, and the **SHPOS** of the Southern Region are incorporated by reference. The Forest heritage program serves as the Forest / **SHPO** point of contact. (**KNF**) (**STANDARD**)

Inventory

FW–157: Priority for heritage resource inventory is as follows:

1. Lands proposed for exchange or diminishing of federal jurisdiction.
2. Lands proposed for new borrow pits or surface minerals extraction.
3. Areas proposed for site preparation (if not previously field surveyed).
4. Areas proposed for **EAM.**
5. Areas proposed for **UEAM.**
6. Other Forest areas proposed for projects
7. Other Forest areas, no project proposed, including wilderness. (**KNF**) (**GUIDELINE**)

FW–158: Use the Kisatchie predictive model to stratify survey intensity within each priority category. The three recognized resource probability zones are subject to periodic refinement based on previous and ongoing inventory, using conventional analysis techniques and **GIS** technology. Parameters defining these zones generally include distance from water, degree of surface topographic dissection, stream rank, soil types, and proximity to known heritage properties. (**KNF**) (**GUIDELINE**)

FW–159: Use certified heritage resource technicians to assist project inventories under direct guidance of heritage resource staff. (**KNF**) (**GUIDELINE**)

Internal coordination

FW–160: Consult **HRM** status atlas, **GIS HRM** database, and Forest Heritage Program manager in the planning stages of projects involving ground disturbance, diminished jurisdiction, or increased public use of, or access to, an area. (**KNF**) (**GUIDELINE**)

FW–161: Using Forest survey request form, request survey or status of compliance with section 106 of the National Historic Preservation Act (**NHPA**) and **NEPA**. Coordinate projects containing known heritage properties mitigation or protection with Forest heritage program manager. (**KNF**) (**STANDARD**)

FW–162: Responsible officials will stop ground disturbing actions that impact known or newly discovered heritage properties until such time as site significance can be evaluated by Forest heritage staff in consultation with the **SHPO,** and Council if necessary. (**KNF**) (**STANDARD**)

FW–163: Ensure that section 106 compliance clauses are inserted in timber sale contracts and sales documents, and that clauses are discussed in pre-work conferences. (**KNF**) (**STANDARD**)

FORESTWIDE STANDARDS AND GUIDELINES

RESOURCE ELEMENTS

HERITAGE RESOURCES

INTERPRETIVE SERVICES

Evaluation

FW–164: Establish a schedule for properties needing evaluation. Consult with the SHPO to reduce the untested site backlog by mutual agreement, regarding sites considered redundant or otherwise expected to contain no reasonable research potential. (KNF) (GUIDELINE)

FW–165: Place properties determined as significant under National Register of Historic Places criteria on a list of potential nominations. Nominate significant heritage properties to the Register, with management plans for each nominated property. (KNF) (STANDARD)

FW–166: Reevaluate a "not significant" property if additional evidence or information about it becomes available. (KNF) (GUIDELINE)

Protection and monitoring

FW–167: Maintain appropriate site confidentiality and include site monitoring as part of overall project planning. Ensure that protective measures, if required, are implemented during project action. Conduct law enforcement investigations on vandalized protected properties. (KNF) (GUIDELINE)

FW–168: Pursuant to ***36 CFR 296.18***, site locations are exempt from provisions of the Freedom of Information Act. Do not disclose site locations in documents available to the public, including heritage GIS data, unless agreed to by all parties, including Native American tribes as appropriate. (KNF) (STANDARD)

FW–169: Heritage specialists will mark on the ground properties designated through consultation as "protected". Protected areas will include buffers, determined on a case-by-case basis, considering landform, vegetative cover, and access, but in no case less than 25 meters beyond known site limits. Stipulate protective measures in project plans for internal coordination. (KNF) (STANDARD)

FW–170: Document in the annual Forest *Monitoring and Evaluation Report* disturbance due to either internal or external activity or natural events, and corrective measures taken, as appropriate. (KNF) (GUIDELINE)

FW–171: Law enforcement will lead investigations conducted by a team of LE officials and heritage specialists. Necessary surveillance will be conducted by LE. (KNF) (GUIDELINE)

Enhancement

FW–172: Publicly interpret heritage properties as components of the Forest recreation program, for recreational use and educational benefits. (KNF) (GUIDELINE)

FW–173: Criteria for interpretive suitability will include, but are not necessarily confined to: accessibility; property condition; protective considerations; compatibility with other resource activities, primarily recreation; and public interest or values. (KNF) (GUIDELINE)

FW–174: Offer public interpretation of Heritage properties and values through *Windows On The Past*, *Passport In Time*, and Louisiana Archaeology Week Programs. (KNF) (GUIDELINE)

FW–175: Use cooperative programs, agreements, and other partnerships to further historic preservation goals on the Forest and throughout the State. (KNF) (GUIDELINE)

FW–176: Seek to expand or enhance partnerships with State or local agencies, institutions, and other federal agencies, or develop additional partnerships. (KNF) (GUIDELINE)

INTERPRETIVE SERVICES

FW–177: Provide an ongoing Interpretive Services Program that accurately and adequately develops an interest in and understanding for the natural and cultural environment of the Kisatchie National Forest, and the mission of the Forest Service in managing it. (KNF) (GUIDELINE)

FW–178: Assist visitors and users to understand the role of the Forest's resources in the development of industry, heritage and culture in Louisiana. (KNF) (GUIDELINE)

FW–179: Promote visitor understanding of the National Forest System, Forest Research, and State & Private Forestry programs. (KNF) (GUIDELINE)

FW–180: Emphasize an appreciation of professional forest management, including balanced use of natural resources, as a neces-

sary component of a stewardship ethic for public lands. (KNF) (GUIDELINE)

FW–181: Develop interpretive services for all principal resource management programs. Information should emphasize the integration of resource activities within an interdisciplinary framework of ecosystem management. (KNF) (GUIDELINE)

FW–182: Inform visitors of the distribution, differences, and roles of the Federal, State and private lands found in Louisiana and the range of recreation and cultural interest opportunities and facilities available. (KNF) (GUIDELINE)

FW–183: Continue to pursue cooperative interpretive partnerships with other Federal and State land management agencies consistent with the principal travel routes and activity centers used by Forest visitors. (KNF) (GUIDELINE)

FW–184: Provide a variety of media types by which interpretive messages are made available to the visitor. Use media and presentation designs that are appealing, appropriate for the setting, easily understood by the intended audience, and reflect the Forest Service as a professional land management agency. (KNF) (GUIDELINE)

FW–185: Continue supporting information centers throughout the State so they can include accurate and timely information about the Kisatchie National Forest. (KNF) (GUIDELINE)

FW–186: Continue to improve existing interpretive services programs and facilities. Support shall include identification of current issues and events of interest to Forest visitors, adequate staffing to meet program objectives, and objective evaluation of programs to assure accurate and positive coverage of the natural and cultural resources on the Kisatchie National Forest. (KNF) (GUIDELINE)

FW–187: Expand the use of the interpretive association as an interpretive partner to provide Forest visitors with a broad range of interpretive media. These may include, but are not limited to, publications, video and audio tapes, and other media that feature the natural and cultural resources of the Kisatchie National Forest. Encourage support and donations to the interpretive association which can be used to develop additional materials and programs. (KNF) (GUIDELINE)

FW–188: Provide a coordinated program of awareness and training for all employees, and partners (including outfitter and guides and other public service permittees) to ensure a consistent program of public service. (KNF) (GUIDELINE)

FW–189: Encourage other agency participation in Forest interpretive services training programs. (KNF) (GUIDELINE)

FW–190: The Forest Service mission and image shall remain predominantly visible at all Forest Service facilities through the use of uniformed Forest Service personnel when appropriate, the Forest Service shield, and other media. (KNF) (GUIDELINE)

LAND ADJUSTMENT

FW–191: Prepare and maintain a landownership adjustment map based on the goals and objectives for a given area. The Forest Supervisor may approve changes to the map as long as Forest Plan objectives are met. Notify the Regional Office and ranger districts of any changes. (KNF) (GUIDELINE)

FW–192: Use the following criteria for land acquisitions (purchases, exchanges, and donations): (KNF) (GUIDELINE)

Priority 1 acquisitions
(*not listed in any order of priority*)

- Lands within the Saline Bayou National Scenic River corridor.
- Lands and associated riparian ecosystems on water frontage such as lakes and major streams.
- Critical habitat lands for federally listed endangered or threatened fish, wildlife or plant species.
- Lands having unique historical or cultural resources, when these resources are threatened by change of use or when management may be enhanced by public ownership.
- Lands primarily of value for outdoor recreation purposes and lands needing protection for aesthetic purposes.
- Lands needed for protection and management of administratively and Con-

gressionally designated areas.
- Lands needed to enhance or promote watershed improvements that affect the management of national forest riparian areas.
- Environmentally sensitive lands such as wetlands, interior salt flats, and old growth forests.
- Buffer lands needed for protection of lands acquired for specific purposes listed above.

Priority 2 acquisitions
(*not listed in any order of priority*)

- Key tracts of an ecosystem that are not urgently needed but will promote more effective management of the ecosystem and will meet specific needs for vegetative management, valuable watershed management, research, public recreation or other defined management objectives, including consolidation objectives.
- Lands needed to protect resource values by eliminating or reducing fire risks, soil erosion and occupancy trespass cases.
- Lands needed to reduce expenses of both the Forest Service and the public in administration and utilization of National Forest land. This includes energy expenditures, as well as other common efficiencies. This also supports consolidation objectives.

Priority 3 acquisition
(*all other lands desirable for inclusion in the National Forest System*)

In the case of conflict between these priorities and any land acquisition actions needed to meet the overall goals and objectives established in the Forest Plan, the Forest Supervisor may recommend variations to the Regional Forester. (KNF) (GUIDELINE)

FW–193: Land conveyances by exchange or other specific authority will be guided by the following criteria (not listed in any order of priority)

- Lands inside or adjacent to communities or intensively developed private land, and chiefly valuable for non-national forest purposes.
- Small parcels intermingled with private lands.
- Parcels that serve a greater public need in state, county, city, or other federal agency ownership.
- Parcels isolated from other NFS lands.
- Lands under special-use authorizations and occupied by substantial structural improvements.
- Occupancy trespass cases involving highly valuable structural improvements.
- Parcels within major blocks of private land, the use of which is substantially for non-forest purpose.
- Parcels having boundaries or portions of boundaries with inefficient configurations, such as projecting necks or long, narrow strips of land.

In the case of a conflict between these criteria and any land acquisition actions needed to meet the overall goals and objectives established in the Forest Plan, the Forest Supervisor may recommend variations to the Regional Forester. (KNF) (GUIDELINE)

FW–194: Confine any purchases and land exchanges to areas meeting the land adjustment criteria. (KNF) (GUIDELINE)

FW–195: Focus acquisition with Land and Water Conservation Funds on Saline Bayou, Kisatchie Bayou, high value wildlife habitat and endangered species, sensitive plants, inholdings, and other unique areas (priorities 1 and 2). (KNF) (GUIDELINE)

FW–196: In land adjustment cases, acquire fee title unencumbered by outstanding or reserved mineral rights whenever possible. Do not allow the grantor to reserve the mineral rights in perpetuity. (KNF) (GUIDELINE)

FW–197: Acquire lands with mineral rights reserved or outstanding only if the presence of those rights does not interfere with the management or protection of the resource for which the acquisition is made. Mineral rights will not be reserved in perpetuity. (KNF) (GUIDELINE)

FW–198: All new acquisitions will be on a willing seller / willing buyer basis unless a public need exists for a particular tract. (KNF) (GUIDELINE)

FW–199: When compatible, manage future acquired lands according to the management area direction within which the newly acquired lands are located. When not com-

patible, conduct an environmental analysis and prepare the appropriate decision document/Plan amendment on the suitability of those acquired lands. (KNF) (STANDARD)

FW–200: Prior to disposing of federal land, contact other resource management specialists to ensure that the disposition is in accordance with laws and regulations of each specialty area. Complete this as part of the environmental analysis process. (KNF) (GUIDELINE)

FW–201: Whenever determined to be in the public interest, retain lands identified as having a high potential for gravel. (KNF) (GUIDELINE)

FW–202: Dispose of all Saline recreation residence areas by means of land exchange as opportunities arise. (KNF) (GUIDELINE)

FW–203: Where appropriate and as opportunities occur, dispose of administrative sites that are no longer needed, by land exchange. (KNF) (GUIDELINE)

MILITARY USE LANDS — INACTIVE

FW–204: Continue to enlist the cooperation of the Department of Defense (DOD) in the identification of restoration needs and funding estimates for restoring all inactive military use lands. Of special concern are areas needing immediate action to protect the environment and to provide for public safety. Develop and maintain a restoration plan for all inactive military use lands. Apply all other Forestwide and appropriate MA and SMA direction to all inactive military use lands except in **FW–205** through **FW–218**, as listed below: (KNF) (GUIDELINE)

Breezy Hill no-entry

FW–205: Clearly mark all areas with two 6-inch wide orange bands painted on trees at approximately 50-foot intervals. Post "No entry" warning signs at approximately 250-foot intervals. (KNF) (STANDARD)

FW–206: Continue to enlist the cooperation of the U.S. Army Corps of Engineers (COE) in reclassifying the areas to *no ground penetration* designation and eventually to complete declassification. (KNF) (GUIDELINE)

FW–207: Do not allow the following activities within designated *no-entry* areas: (KNF) (GUIDELINE)

- Heritage resource work
- Dispersed recreation
- Wildlife or fish habitat improvements
- Timber harvest
- Soil and water practices
- Federal minerals exploration and development
- Common variety mineral extraction
- Special-use permits
- Road construction, reconstruction, or maintenance
- Plowing firelines

FW–208: Classify the area as not suitable for timber production. (KNF) (STANDARD)

FW–209: Issue oil and gas leases with a *no surface occupancy* stipulation. (KNF) (GUIDELINE)

FW–210: When contacted by a private minerals owner or operator, warn of potential safety hazard and advise no entry. (KNF) (GUIDELINE)

FW–211: Confine all wildfires to the boundary of the *no-entry* area. (KNF) (GUIDELINE)

Breezy Hill no ground penetration area

FW–212: Clearly mark the area by painting trees at approximate 50-foot intervals with one 6-inch wide orange band. Post warning signs at about 250-foot intervals. (KNF) (STANDARD)

FW–213: Continue to enlist the cooperation of the COE in declassifying the area. (KNF) (GUIDELINE)

FW–214: Restrict the following activities; however, activities may occur on a case-by-case basis with adequate mitigation. (KNF) (GUIDELINE)

- Tree seedling planting
- Mechanical site preparation
- Federal minerals exploration
- Leasing or sale of common variety minerals (gravel)
- Special uses involving ground penetration activity

FORESTWIDE STANDARDS AND GUIDELINES

RESOURCE ELEMENTS

MILITARY USE LANDS — INACTIVE

MINERALS — LEASABLE

FW–215: Issue oil and gas leases with a **CSU2** stipulation prohibiting on-site placement of mineral extraction equipment, buildings, ponds, and wellpads. Allow roads and the clearing of pipeline right-of-way vegetation providing that a site-specific environmental analysis results in a finding that the mitigated environmental effects would not be significant. The **CSU2** stipulation will also require the lessee to execute an *indemnification and release of liability statement*. Whereas any required decontamination of the area is the responsibility of the **COE**, the operator may choose to perform necessary mitigation or decontamination to expedite the project. (**KNF**) (**GUIDELINE**)

FW–216: When contacted by a private minerals owner or operator, warn of the potential safety hazard in writing and advise the use of a metal detector prior to any ground penetration activities. (**KNF**) (**GUIDELINE**)

FW–217: Permit the following activities after clearance of each site or corridor with metal detectors: (**KNF**) (**GUIDELINE**)

- Development of in-service gravel pits.
- Road construction or improvement that requires ground penetration.
- Plow lines for wildfire suppression or applying prescribed fire.

Old Camp Claiborne and Camp Livingston areas

FW–218: Prohibit uses in old military use areas where such authorizations would constitute a safety hazard. (**KNF**) (**GUIDELINE**)

MINERALS — LEASABLE

FW–219: The Regional Forester, or delegated official, will provide a consent to lease to the Bureau of Land Management (**BLM**) for specific lands. This consent will be valid until the Forest Service provides **BLM** written notification that consent is being withdrawn or amended. (**KNF**) (**GUIDELINE**)

FW–220: Review consents on a regular schedule to insure that all available lands are included and the stipulations which are a condition of the consent remain sufficient to protect the surface resources. (**KNF**) (**GUIDELINE**)

FW–221: Review minerals availability on a quarterly basis. Prepare an updated report when changes occur in availability or unavailability of lands resulting from acquisition, disposal, or reversion of mineral rights. Also submit an updated report when a more restrictive stipulation is needed to protect the surface resources of a specific area. (**KNF**) (**GUIDELINE**)

FW–222: Review issued oil and gas leases to ensure inclusion of two basic stipulations. One *notice to lessee* (**NTL**) from the Department of Interior, **BLM**, states that any entity holding a coal lease cannot qualify for an oil and gas lease unless the coal lease is operating properly. The other stipulation applies to all National Forest System lands under the jurisdiction of the Department of Agriculture and ensures general compliance with rules and regulations of the Secretary of Agriculture when not inconsistent with the rights granted in the lease. (**KNF**) (**GUIDELINE**)

FW–223: Four stipulations are available for use as conditions of consent to lease on an as-needed basis. These are: *no surface occupancy* (**NSO**); highly restrictive *controlled surface use stipulation* (**CSU1**); moderately restrictive *controlled surface use stipulation* (**CSU2**);and *timing limitation stipulation* (**TL**). The **CSU1** stipulation would prohibit placement of mineral extraction equipment, buildings, roads, ponds, and wellpads and the clearing of pipeline right-of-way vegetation. A **CSU2** stipulation would be similar to **CSU1** except that it would allow roads and clearing of right-of-way vegetation to occur if a site-specific environmental analysis determines that the mitigated environmental effects would not be significant. (**KNF**) (**GUIDELINE**)

FW–224: Issue oil and gas leases with a *no surface occupancy* (**NSO**) stipulation on all administrative sites, Research Natural Areas (**RNAS**), State Registry Natural Areas, Special Interest Areas, the Johnson Tract experimental forest, the Air Force Bombing and Gunnery Range, the Breezy Hill No-Entry Area, scenic areas, within 600 feet of the Saline Bayou National Scenic River, cultural resource sites, the Stuart Seed Orchard, jurisdictional wetlands, and developed recreation areas. (**KNF**) (**GUIDELINE**)

FW–225: Issue oil and gas leases with a highly restrictive *controlled surface use* (CSU**1**) stipulation on all Streamside Habitat Protection Zones (SHPZS) on the Forest, varying in width from 50 feet to 150 feet depending on the adjacent management area theme, and to the extent of the Riparian Area Protection Zones (RAPZS) inside Louisiana pearlshell mussel sub-watersheds. Also, within Management Area 2 (amenity emphasis), assign a CSU**1** stipulation out to the extent of the RAPZS, and a CSU**2** stipulation to the remainder of the management area. On the rest of the Forest's RAPZS, within 2,000 feet of the Longleaf Trail Scenic Byway, within the U.S. Marshall Service Use Area, on the Longleaf Tract experimental forest, within the Breezy Hill No-Ground Penetration (NGP) area, and inside the Claiborne Safety Fan area, assign a CSU**2** stipulation. Develop and use other local stipulations when special needs, beyond the scope of existing stipulations are identified for a specifc lease proposal. (KNF) (GUIDELINE)

FW–226: Require lined pits or portable liquid tanks where federal mineral operations are located in soils susceptible to seepage and groundwater contamination. (KNF) (GUIDELINE)

FW–227: Two regionally approved lease notices that will be used consistently on the Forest are:

1. *Lease notice #3*, which will be incorporated into all sale notices and issued leases. It serves notice to interested parties or lessees of the possible occurrence of threatened, endangered and sensitive species within the leasehold, assuring their protection.

2. *Lease notice #4*, which will be used when all or part of the lands may be classified as wetlands or a floodplain. This also serves as notice to interested parties or lessees of the statutory and regulatory requirements when the leasehold includes these areas. (KNF) (GUIDELINE)

FW–228: Discourage to the extent allowed under state law and federal laws and regulations, requests to develop private (reserved and outstanding) mineral rights where ground disturbing activities would occur in areas where federal minerals are leased with an NSO stipulation. (KNF) (GUIDELINE)

FW–229: Permit surface exploration for oil and gas by seismic methods except in areas where it is not permitted. (KNF) (GUIDELINE)

FW–230: Review new leases issued to ensure compliance with Forest Service consent and conditions of that consent. (KNF) (GUIDELINE)

FW–231: Review area-by-area (ABA) availability reports at least twice annually to ensure changes or updates are reported to the Regional Office and subsequently to the BLM. (KNF) (GUIDELINE)

FW–232: Coordinate all minerals leasing and exploration activity with BLM in accordance with the interagency agreements between the Forest Service and the BLM (dated 11/91) and the most current memorandum of understanding between the BLM's Jackson District and the Kisatchie National Forest. (KNF) (GUIDELINE)

FW–233: Respond to inquiries about availability of minerals from BLM or the public in a timely manner. (KNF) (GUIDELINE)

FW–234: Review U.S. mineral ownership in accordance with the State of Louisiana mineral prescription statutes, the Office of General Counsel's legal opinions, and applicable court rulings. Update mineral ownership records to reflect those minerals which have prescribed to the U.S. (KNF) (GUIDELINE)

FW–235: Upon notification that a *notice of staking* (NOS) or an *application for permit to drill* (APD) is being processed, prepare a site-specific environmental analysis with appropriate decision document for each proposed wellsite location and furnish BLM a copy of the analysis and decision documents with the mitigation measures or conditions of approval necessary to protect the surface resources. (KNF) (GUIDELINE)

FW–236: Process and issue required permits for off-lease areas and permit stipulations upon receipt of required plans. (KNF) (GUIDELINE)

FW–237: Manage oil and gas well sites to: (KNF) (GUIDELINE)

▶ Prevent excessive off-site movement of pollutants. Upon completion of operations,

FORESTWIDE STANDARDS AND GUIDELINES

RESOURCE ELEMENTS

MINERALS — LEASABLE

MINERALS — SALABLE

OLD-GROWTH FORESTS

reclaim the site according to the approved reclamation plan.

▶ Minimize cut and fill for wellsites and access roads as much as possible. Locate roads and wellsites on wide flat uplands and avoid drainages when possible.

FW–238: Any employee , who could as part of their job come in contact with *hydrogen sulfide* (H_2S) will receive training in the safe and proper procedures for dealing with H_2S. (KNF) (GUIDELINE)

FW–239: In mineral operations adjacent to bogs and riparian areas, require construction of berms or dikes as necessary to prevent sedimentation to streams. To protect aquatic habitat, require the sealing and diking around drilling mud pits to prevent leakage into streams or other water sources. (KNF) (GUIDELINE)

FW–240: When minerals are privately owned, encourage the location of mining or drilling activity outside the riparian area or streamside habitat protection zones. (KNF) (GUIDELINE)

FW–241: Exercise in accordance with the applicable state and federal laws, and the Secretary's rules and regulations, any mineral operation undertaken on national forest land where minerals have been reserved. (KNF) (STANDARD)

FW–242: Administer in strict accordance with terms of the deed of separation and appropriate State and federal laws, the operations of outstanding rights. (KNF) (STANDARD)

FW–243: Mineral leaseholders may conduct geophysical exploration activities within their leased area without charge. (KNF) (GUIDELINE)

MINERALS — SALABLE

FW–244: Continue exploratory operations for salable minerals on areas of the Evangeline Unit and Catahoula District and initiate inventory work on all other districts. (KNF) (GUIDELINE)

FW–245: Compile data on salable minerals for all districts as information becomes available. (KNF) (GUIDELINE)

FW–246: Issue prospecting permits for the exploration of common variety mineral materials except in areas where exploration is not permitted and in areas where deposits have been located and are reserved for future in-service use. (KNF) (GUIDELINE)

FW–247: Issue prospecting permits for common variety materials for areas no larger than 640 acres for a maximum of 2 years, in areas where gravel pits can be developed in an environmentally acceptable manner. See *36 CFR 228.60*. (KNF) (GUIDELINE)

FW–248: Issue *preference rights negotiated sales* for the production of mineral materials in accordance with an approved operating plan with acceptable mitigation measures to minimize environmental effects to public or private land and resources. (KNF) (GUIDELINE)

FW–249: Prohibit gravel mining in environmentally sensitive areas where adverse impacts cannot be adequately mitigated or where a safety hazard is constituted. (KNF) (GUIDELINE)

FW–250: Prior to approval of a new gravel or sand pit, develop an operating plan which, at a minimum, shows progressive removal of gravel and sand and contains provisions for rehabilitation including stockpiling of top soil. (KNF) (GUIDELINE)

FW–251: Do not issue new mineral material permits to public agencies unless it is determined that existing permits will not supply their indicated needs. (KNF) (GUIDELINE)

OLD-GROWTH FORESTS

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)

FORESTWIDE STANDARDS AND GUIDELINES

RESOURCE ELEMENTS

OLD-GROWTH FORESTS

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 single-tree 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 single-tree 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

FORESTWIDE STANDARDS AND GUIDELINES

RESOURCE ELEMENTS

OLD-GROWTH FORESTS

RANGE ALLOTMENTS

RECREATION MANAGEMENT

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)

RANGE ALLOTMENTS

FW–284: Prevent unauthorized livestock use and any associated impacts or damages. Control or impound and dispose of unauthorized livestock in accordance with *36 CFR 222.8* and *262.10*. (KNF) (GUIDELINE)

FW–285: Develop forage resources on suitable range within designated allotments to their reasonable potential (mid to late seral ecological condition) and manage them on a sustained yield basis. (KNF) (GUIDELINE)

FW–286: Improve and maintain productivity for grazing consistent with production efficiency. (KNF) (GUIDELINE)

FW–287: Maintain a seasonal grazing program (April–October). (KNF) (GUIDELINE)

FW–288: When managing for range forage species, wildlife and livestock use should not exceed 50 percent of current annual growth of key grass species, 20 percent of total annual production of key forb species, and 20 percent of current annual growth of key shrub species. (VM-24) (GUIDELINE)

FW–289: Protect regeneration areas from unacceptable grazing damage until they are successfully reforested. Protection may require construction of animal controls or implementation of other protection methods. (KNF) (GUIDELINE)

FW–290: Complete, implement, and annually update allotment management plans for all active allotments. (KNF) (GUIDELINE)

FW–291: Complete and update range analyses annually for all active allotments. (KNF) (GUIDELINE)

FW–292: Prescribe burn active range allotments at the same frequency specified for the management area within which they occur. (KNF) (GUIDELINE)

FW–293: Require permittees to distribute portable feeding troughs and periodically rotate livestock feeding between troughs. Move troughs as needed. (KNF) (GUIDELINE)

FW–294: Place salt and mineral blocks strategically throughout the grazing units and at a sufficient distance away from former locations to minimize vegetation or soil damage. (KNF) (GUIDELINE)

FW–295: Protect riparian area resources by placing feeding troughs, salt, and mineral blocks outside of streamside and riparian area protection zones. (KNF) (GUIDELINE)

FW–296: On areas not allocated for grazing, close and drop existing allotments from the inventory when current permittees waive their grazing permits. (KNF) (GUIDELINE)

FW–297: Remove structural improvements on those allotments dropped from the inventory as opportunities and funding allow. (KNF) (GUIDELINE)

RECREATION MANAGEMENT

Developed recreation

FW–298: Plan and develop recreation sites and expansions as demand warrants and funding permits. When selecting sites for development, expansion, or major improvement consider: health and safety, stage of completion, user demand, cost effectiveness, environmental effects, long-term need, ability to generate fees, and current level of accessibility for persons with disabilities. Assure that future improvements are consistent with the finding of the *Recreation and Wildlife Supply and Demand Analysis*, Kisatchie National Forest, July 1995. Base future recreation facility construction or reconstruction

on user demand and site suitability. Top priority will be reconstruction and improvement of existing sites. (KNF) (GUIDELINE)

FW–299: Manage developed recreation sites in accordance with the *Recreation Opportunity Spectrum* system. (KNF) (GUIDELINE)

FW–300: Assign developed recreation sites a scenic integrity objective of *high*. (KNF) (GUIDELINE)

FW–301: Manage recreation sites to provide and enhance wildlife and fish viewing opportunities. (KNF) (GUIDELINE)

FW–302: Provide recreational fishing opportunities in all suitable ponds, lakes, and streams within developed recreation sites. (KNF) (GUIDELINE)

FW–303: Prepare comprehensive, detailed site plans prior to recreation facility and site construction or reconstruction in accordance with *FSM 2330*. All site plans and revisions require Forest Supervisor approval. (KNF) (STANDARD)

FW–304: Site plans will show the specific location and design requirements of all recreation facilities. (KNF) (STANDARD)

FW–305: Use only native or desirable nonnative plant landscaping materials. (KNF) (GUIDELINE)

FW–306: Make access needs for persons with disabilities a top priority in the preparation of all site plans. (KNF) (GUIDELINE)

FW–307: Design recreation sites to minimize maintenance requirements and maximize vandalism resistance. (KNF) (GUIDELINE)

FW–308: Administration of public use at developed recreation sites shall include: inspection for hazards to public health and safety, compliance with applicable regulations, prevention of resource damage, and collection of fees when appropriate. (KNF) (GUIDELINE)

FW–309: Operate and maintain potable water sources in accordance with federal, State and local regulations. Close water systems until repaired if testing indicates a human health hazard. (KNF) (STANDARD)

FW–310: Operate and maintain toilet vaults, septic tanks, and waste-water systems in accordance with federal, State, and local regulations. Close, modify or repair any system deemed dysfunctional or threatening to human health, wildlife, or water sources. (KNF) (STANDARD)

FW–311: Operate developed recreation sites under the *Meaningful Measures* system to insure the highest quality of management possible within budget restraints. Prepare operation and maintenance (O&M) plans annually for each site. Include a fee compliance plan for all fee sites in the O&M plan. (KNF) (GUIDELINE)

FW–312: Encourage the use of volunteer campground hosts. (KNF) (GUIDELINE)

FW–313: Operate and maintain swim sites in accordance with State regulations. (KNF) (STANDARD)

FW–314: Classify developed recreation areas as not suitable for timber production. (KNF) (STANDARD)

FW–315: Manage understory and overstory vegetation for biological diversity, long term health and scenic quality in developed recreation areas. Prepare a vegetation management plan for each recreation site. Use prescribed fire for vegetative manipulation if planned in the vegetation management plan. (KNF) (GUIDELINE)

FW–316: Clearly mark and sign the boundaries of all developed recreation sites. (KNF) (GUIDELINE)

FW–317: Prohibit hunting and / or shooting within developed recreation area boundaries. (KNF) (STANDARD)

FW–318: Do not allow livestock grazing in developed recreation sites. Construct boundary fences where needed to exclude livestock. (KNF) (GUIDELINE)

FW–319: Immediately control wildfire in recreation sites at the smallest possible acreage with techniques that cause minimal resource impact. (KNF) (GUIDELINE)

FORESTWIDE STANDARDS AND GUIDELINES

RESOURCE ELEMENTS

RECREATION MANAGEMENT

FW–320: Immediately control insect and disease infestations in recreation areas. Only insecticides approved by EPA may be used. (KNF) (STANDARD)

FW–321: Do not lease, sell, or develop common variety minerals in developed recreation areas. (KNF) (GUIDELINE)

FW–322: Permit oil and gas leasing with a *no surface occupancy* stipulation. (KNF) (GUIDELINE)

FW–323: Regulate use and occupancy of developed sites in accordance with *36 CFR 261*. Limit regulation, constraint, and supervision of recreation use to the minimum necessary for resource protection, visitor satisfaction, and safety. (KNF) (STANDARD)

FW–324: Clearly notify the public of the necessary conditions of occupancy and use at each individual site. Signs must be positive in tone and explain the reasons for regulations. Initiate firm action against those who knowingly willfully, or persistently violate conditions of the occupancy and use contained in *36 CFR 261*. (KNF) (GUIDELINE)

FW–325: Collect recreation use fees at sites that meet the Land and Water Conservation Fund Act (as amended) fee site designation criteria. (KNF) (STANDARD)

Dispersed recreation

General

FW–326: Provide visitors the opportunity to pursue a wide variety of recreation activities with a minimum of regulation. Manage use with information rather than regulation when possible. Post required regulations as needed to insure visitors are aware of them. (KNF) (GUIDELINE)

FW–327: Manage dispersed recreation activities equitably with other activities and uses of Forest resources. Give recreation consideration comparable to other activities and Forest uses during site specific environmental analysis. Actively manage ORV, equestrian, hunting, and other dispersed activities. Promote a diversity of recreation uses. Minimize barriers to dispersed use such as range fences and closed roads, unless appropriate in assigned ROS class. (KNF) (GUIDELINE)

FW–328: Respond to the changing needs of recreation users by providing for different types of recreation as funding and resource constraints permit. (KNF) (GUIDELINE)

FW–329: Allow enhancement of specialized recreation opportunties with strong supporting partnership agreements. (KNF) (GUIDELINE)

FW–330: Manage dispersed recreation opportunities and use under the Meaningful Measures system. (KNF) (GUIDELINE)

FW–331: Strive to determine accurately, levels of use of dispersed areas. (KNF) (GUIDELINE)

FW–332: Use the Infrastructure, Oracle-based computer application for management of recreation data. (KNF) (GUIDELINE)

FW–333: Promote *Pack-It-In-Pack-It-Out* and *Leave No Trace* use concepts in dispersed areas. (KNF) (GUIDELINE)

FW–334: Allow camping in the general Forest area, except in areas specifically closed or restricted such as the national wildlife management preserves. (KNF) (GUIDELINE)

FW–335: Strive to make all recreation opportunities and activities universally accessible, and to provide non-traditional opportunities for persons with disabilities. (KNF) (GUIDELINE)

FW–336: Produce and keep current publications needed to facilitate quality recreation visits on the Forest. (KNF) (GUIDELINE)

FW–337: Consider the use of Forest lands for organized recreation events, developments, or uses when there is potential to accommodate the proposed use and when it is compatible with other resource activities. (KNF) (GUIDELINE)

FW–338: Manage recreation settings in accordance with the ROS. Recognize the ROS system is flexible; activities and improvements inconsistent with the assigned class may be appropriate and desirable. Strive to provide recreation opportunities in different ROS class settings, including rural, roaded natural and semiprimitive. (KNF) (GUIDELINE)

FW–339: Remove user-constructed improvements not consistent with management objectives. (KNF) (GUIDELINE)

FW–340: Schedule law enforcement patrols to insure reasonable safety and security of life and property from criminal acts. (KNF) (STANDARD)

FW–341: Routinely inspect heavily used dispersed sites for health and safety hazards on a schedule comparable to the developed recreation site inspection schedule. (KNF) (GUIDELINE)

FW–342: Provide off-road vehicle (ORV) recreation opportunities that are compatible with the environmental setting, minimize off-road vehicle effects on the land and resources, promote public safety, and minimize conflicts with other uses of the Forest. (KNF) (GUIDELINE)

FW–343: Designate Kisatchie National Forest lands as *open*, *restricted*, or *closed* to ORV use as follows: (KNF) (STANDARD)

- **Open** — Areas on which all types of motorized vehicles may be operated off roads without restrictions.
- **Restricted** — Areas on which motorized vehicle use is restricted by times or season of use, types of vehicles, vehicle equipment, or types of activity specified in orders issued under authority of *36 CFR 261*.
- **Closed** — Areas on which all motorized vehicle use is prohibited, except by permit, under authority of *36 CFR 261*.

FW–344: Allow the use of ORVs off of roads and trails except where specifically restricted or prohibited by law, regulation, Forest Plan, or Forest Supervisor order. Use of ORVs is restricted or prohibited in developed recreation sites; research natural areas; special interest areas; Saline Bayou National Scenic River corridor; Kisatchie Hills Wilderness; designated walk-in hunting areas; Stuart Seed Orchard; Breezy Hill no-entry artillery range; Fort Polk Intensive Use Area; Peason Ridge Intensive Use Area; U.S. Air Force Reserve Claiborne Bombing & Gunnery Range and safety fan; segments of special-use utility rights-of-way on the Evangeline Unit and Kisatchie District; Louisiana pearlshell mussel habitat; RCW cluster sites and certain sensitive plant communities. (KNF) (STANDARD)

FW–345: Prohibit or restrict the use of ORVs in accordance with *36 CFR 295* on additional areas when unacceptable effects from ORV use occurs to other resources or Forest visitors. Examples of additional areas where ORV use may be prohibited or restricted include but are not limited to: recently rehabilitated areas and utility rights-of-way subject to unacceptable soil and water impacts. (KNF) (GUIDELINE)

FW–346: As stated in *36 CFR 295*, provide the public an opportunity to participate in the process of allowing, restricting, or prohibiting use of areas and trails to one or more specific vehicle types off of Forest development roads. Provide 60 days advance notice to allow for public review of proposed or revised designations. In emergency situations, temporary designations up to 1 year in length may be made or revised without public participation if needed to protect the resources and / or to provide for public safety. (KNF) (STANDARD)

FW–347: Develop and distribute maps illustrating the permitted ORV use designations (see **FW–343**) — open, restricted, or closed. Use signing to identify on-the-ground areas where ORV use is prohibited or restricted. Post signs and maps in locations that are obvious and convenient to Forest visitors. Distribute maps at all Forest Service offices, developed recreation sites, and at areas of concentrated ORV use. (KNF) (GUIDELINE)

FW–348: Promote public safety by providing ORV users information on hazards and encouraging safe riding techniques and the use of protective riding gear. (KNF) (GUIDELINE)

Trails

FW–349: Avoid displacement or relocation of Forest system trails by new roads whenever possible. (KNF) (GUIDELINE)

FW–350: Address the potential effects of management activities adjacent to system trails during site-specific analysis. Require appropriate techniques to mitigate the effects of management activities. Measures to mitigate the effects of activities may include vegetative screening, avoidance, reclamation, and timing of project implementation to reduce impacts during high use periods. (KNF) (GUIDELINE)

FORESTWIDE STANDARDS AND GUIDELINES

RESOURCE ELEMENTS

RECREATION MANAGEMENT

FW–351: Manage the trail system to serve the needs of the recreationists at appropriate challenge levels, in a condition that protects the resource and meets health and safety standards. (KNF) (GUIDELINE)

FW–352: Base the intensity of trail maintenance activities on existing trail conditions and the level of use of the trail. The priorities for performing trail maintenance activities are to correct unsafe conditions, prevent resource and trail damage from occurring, and fully restore trail to the planned design standard. (KNF) (GUIDELINE)

FW–353: Maintain trail markers or blazes to provide the public with clear trail route identification. (KNF) (GUIDELINE)

FW–354: For trails management and new construction, emphasize multiple-use trails that are open to a variety of modes of travel including foot, horses, mountain bikes, and off-road vehicles (ORVs). Allow single or restricted-use trails where appropriate. (KNF) (GUIDELINE)

FW–355: Give priority for new trail construction to loop trails. (KNF) (GUIDELINE)

FW–356: When feasible and consistent with other management activities, provide trailhead parking at intersections of open roads and system trails. Adequately sign these intersections. (KNF) (GUIDELINE)

FW–357: Identify and define a network of roads and old travelways that may be used as trails for such activities as horseback riding, all-terrain vehicle (ATV) riding, and 4X4 use. In general, users of these travelways will encounter a full variety of management activities and locations may change as resource activities are implemented and completed. (KNF) (GUIDELINE)

FW–358: Develop trail management objectives for all trails on the Forest. Regularly inspect all trail and associated structures, such as bridges. (KNF) (GUIDELINE)

FW–359: Promote partnerships with user groups to aid in such activities as trail maintenance, construction and providing visitor information. (KNF) (GUIDELINE)

FW–360: Obliterate user-constructed trails not consistent with management objectives. (KNF) (GUIDELINE)

FW–361: Divert water runoff from trails to reduce soil erosion. Contour trails or construct drain dips or switchbacks to avoid channeling water down long slopes. Construct waterbars on long pitches with greater than five percent slopes. If possible, avoid impacting soil with a severe erosion hazard. (KNF) (GUIDELINE)

FW–362: Minimize the number of stream crossings as much as possible. Construct crossings at right angles to the stream. Harden crossings or use bridges on larger streams to reduce sedimentation. (KNF) (GUIDELINE)

FW–363: Vegetation along trails is treated to maintenance levels identified in the publication *Trails South*. Priority is given to correcting unsafe conditions, preventing resource damage, and providing for intended recreation experience level. (VM-23) (GUIDELINE)

Longleaf Trail Scenic Byway

FW–364: Assign the corridor a high *scenic integrity objective* (SIO) under the new Scenery Management System. Measures taken to protect and enhance scenic conditions of the landscape visible from the Byway may exceed requirements of the high SIO Forestwide standards and guidelines. (KNF) (GUIDELINE)

FW–365: Include the Forest landscape architect on ID teams for proposals within areas visible from the Byway. (KNF) (GUIDELINE)

FW–366: Allow regeneration harvests along corridor. Evaluate such proposals using an ID team, to consider the potential impact of each harvest unit on the overall sequential experience of traveling the corridor. Special requirements for residue management and disposal may be imposed. Where appropriate, retain a minimum of 40 square feet of basal area per acre of mature pine or hardwood trees within 200 feet of the edge of the Byway right-of-way edge, to maintain an aesthetic continuity of large trees. (KNF) (GUIDELINE)

FW–367: Minimize log landings and exits that are visible from the Byway. (KNF) (GUIDELINE)

FW–368: Develop a district plan for prescribe burning along the Byway with input from the Forest landscape architect, indentifying specific locations of significant species and special areas. Include direction for incorporation in prescribed burning plans that address season of burn (considering heavy visitation periods on the Byway), and contain specific measures to protect flowering species and hardwoods that display attractive fall color. (KNF) (GUIDELINE)

FW–369: Develop an aesthetic mowing plan that varies the mowed zone width, and maintains spatial diversity. (KNF) (GUIDELINE)

FW–370: Schedule right-of-way mowing dates to promote wildflower growth. (KNF) (GUIDELINE)

FW–371: Strive to establish a rich variety of native wildflower species in the mowed right-of-way corridor and in adjacent timber stands. (KNF) (GUIDELINE)

FW–372: Establish permanent openings or "*meadows*" that add to spatial diversity and contribute to wildlife viewing opportunities at selected Byway locations. Encourage wildflowers in the openings, which will be located, where possible, to create distant views and vistas. Retain mature foreground trees as described above for regeneration cuts. Openings or meadows will be viewed through these trees. Maintain lower vegetation at levels ensuring meadow or opening viewability. (KNF) (GUIDELINE)

FW–373: Protect and encourage small flowering trees, such as dogwood. (KNF) (GUIDELINE)

FW–374: Protect and encourage hardwoods with good fall color. (KNF) (GUIDELINE)

FW–375: Manage for diverse midstory and understory that includes areas of dense "brush" such as yaupon. (KNF) (GUIDELINE)

FW–376: Do not permit mineral exploration within the right-of-way. Permit oil and gas leasing with a *no surface occupancy* stipulation within the road right-of-way corridor; apply a moderately restrictive controlled surface use (CSU2) stipulation, extending out 2,000 feet from the road right-of-way, on the remainder of the Byway corridor. (KNF) (GUIDELINE)

FW–377: Do not lease or sell common variety minerals (sand, gravel, iron ore) within the corridor. (KNF) (GUIDELINE)

FW–378: Continue implementation of the existing Longleaf Trail Scenic Byway Interpretation Plan. (KNF) (GUIDELINE)

FW–379: Strive to develop partnerships with tourism related entities to promote use of the Byway. (KNF) (GUIDELINE)

REGISTRY NATURAL AREAS

FW–380: Apply the following management practices to all Louisiana registry natural areas occurring on the Forest to protect the biologically unique characteristics for which they were designed: (KNF) (GUIDELINE)

- Classify registry natural areas as not suitable for timber production.
- Sign and maintain boundaries when practical.
- Prohibit off-road vehicle use.
- Prohibit livestock grazing. Use fencing if necessary to prevent unacceptable damage from livestock. Control feral hogs if unacceptable damage occurs.
- Prohibit pinestraw collection.
- Prohibit mechanical site preparation.
- Use prescribed fire at the season and frequency that applies to the management area or sub-management area within which the area is located.
- Issue oil and gas leases with a *no surface occupancy* stipulation.
- Consider vegetation management on a case-by-case basis when needed to protect, restore, or maintain an area's unique characteristics.

FW–381: Apply the guidance found in **FW-380**, and **FW–677** through **FW–689** to Steep Hill, North Bayou L'Ivrogne, Middle Branch, and Leo's Bogs. (KNF) (GUIDELINE)

RESEARCH NATURAL AREAS

FW–382: Allow recreational use of research natural areas (RNAs) as long as it does not contribute to their modification. Discourage or prohibit recreation uses that may harm the featured communities or impair research and educational values. (KNF) (GUIDELINE)

FW–383: Close RNAs year-round to motorized travel off-roads and trails. (KNF) (GUIDELINE)

FW–384: Do not allow direct wildlife habitat improvement in RNAs. (KNF) (GUIDELINE)

FW–385: Do not allow livestock grazing in RNAs. Use fencing if necessary to prevent livestock damage. (KNF) (GUIDELINE)

FW–386: Prohibit pinestraw collection in RNAs. (KNF) (GUIDELINE)

FW–387: Classify RNAs as not suitable for timber production. (KNF) (STANDARD)

FW–388: Do not fell or remove trees killed as a result of endemic insect or disease activity in RNAs. (KNF) (GUIDELINE)

FW–389: Do not use even-aged regeneration methods in RNAs except for epidemic insect and disease control. (KNF) (GUIDELINE)

FW–390: Issue oil and gas leases with a *no surface occupancy* stipulation in RNAs. (KNF) (GUIDELINE)

FW–391: Do not lease or sell common-variety minerals in RNAs. (KNF) (GUIDELINE)

FW–392: Do not issue special-use permits in RNAs, except for research projects that are consistent with an RNA's establishment record and management plan. (KNF) (GUIDELINE)

FW–393: Allow road and trail construction and reconstruction if necessary to meet RNA objectives. Close or obliterate existing roads or trails that do not contribute to RNA objectives. Use natural vegetation for obliteration unless more intensive measures are required to mitigate adverse environmental consequences. (KNF) (GUIDELINE)

FW–394: Maintain roads at maintenance levels 2 or 3 in RNAs. Provide traffic management controls as necessary. (KNF) (GUIDELINE)

FW–395: Use the direct control suppression strategy in RNAs for all wildfires to minimize acres burned. (KNF) (STANDARD)

FW–396: Do not allow prescribed fire unless provided for in an RNA's establishment record and management plan. (KNF) (STANDARD)

RIGHT-OF-WAY ACQUISITIONS

FW–397: Acquire rights-of-way where needs are identified by means of purchase, donation, agreement or condemnation. (KNF) (GUIDELINE)

FW–398: Acquire rights-of-way for existing and proposed Forest development roads and trails. (KNF) (STANDARD)

FW–399: Acquire or exchange access with other agencies, states, counties, and private interests to assure management objectives are met for all ownerships. (KNF) (GUIDELINE)

FW–400: Acquire permanent, exclusive easements for all rights-of-way unless temporary need can be justified and proper approval obtained. (KNF) (GUIDELINE)

RURAL COMMUNITY ASSISTANCE

FW–401: Identify eligible communities or groups and assist them in developing action plans for ecologically sound projects which promote sustainable rural development and increase the quality of life in rural Louisiana. (KNF) (GUIDELINE)

FW–402: Ensure that communities and project proposals meet criteria for selection as directed by the Food, Agriculture, Conservation and Trade Act of 1990 (PL 101-624; National Forest-Dependent Communities Economic Diversification Act of 1990). (KNF) (STANDARD)

FW–403: Coordinate Action Team development and project proposals with the Louisiana Department of Agriculture and Forestry and with Resource Conservation and Development Councils (RC&D), so that proposals meet local and Statewide needs and interests. (KNF) (GUIDELINE)

FW–404: Conduct or assist in project monitoring of action plan implementation. (KNF) (GUIDELINE)

SCENERY RESOURCE MANAGEMENT

FW–405: All Kisatchie lands are assigned a *scenic integrity objective* (SIO) in accordance with the SMS process described in Appendix F of the FEIS. The SIOs are *very high*, *high*, *moderate*, *low* and *very low*. See map in Appendix F of the FEIS. All management actions will comply with assigned SIOs. In-

clude scenic resources in site-specific analyses of all proposed projects, regardless of assigned SIO. (KNF) (GUIDELINE)

Very high SIO

FW–406: In *very high* SIO areas, with few exceptions, allow ecological changes only. Prohibit human alteration and management activities such as road construction and timber harvest. Only allow alterations that are low-scenic-impact recreation facilities, such as hiking and horse trails. (KNF) (GUIDELINE)

High SIO

FW–407: In *high* SIO areas, human activity may only repeat the form, line, color, and texture found in the natural or natural-appearing landscape. The high SIO allows human alteration and managment activity that is not visually evident. (KNF) (GUIDELINE)

FW–408: Uneven-aged regeneration is generally preferred over even-aged in *high* SIO areas. Allow even-aged regeneration to affect spatial diversity, mimic natural processes, or facilitate restoration of natural plant communities. (KNF) (GUIDELINE)

FW–409: Shelterwood is the preferred even-aged regeneration method in *high* SIO areas. (KNF) (GUIDELINE)

FW–410: Retain shelterwood trees for a period not to exceed 3 years after seedling establishment if 15 or more contiguous acres of the stand are visible from the travelway and it does not conflict with other resource requirements. (KNF) (GUIDELINE)

FW–411: Shelterwood regeneration areas with a residual basal area of 20 square feet per acre or more have no scenery-based size restriction if leave trees are retained for a period of at least 3 years after seedling establishment. (KNF) (GUIDELINE)

FW–412: No more than 30 contiguous acres of a seed-tree regeneration area with a leave tree BA between 10 and 20 square feet per acre may be visible from the travelway. Adjacent stands less than 8 years old must be considered a part of the opening when determining compliance with this 30-acre restriction. Stands less than 8 years old separated by less than 330 feet must be considered part of the opening when determining compliance. Regeneration areas on opposite sides of a road, but otherwise adjacent, will be considered a contiguous opening. (KNF) (GUIDELINE)

FW–413: No more than 15 contiguous acres of a clearcut or seed-tree regeneration area with a leave-tree BA of less than 10 square feet per acre may be visible from the travelway. Adjacent stands less than 8 years old must be considered a part of the opening when determining compliance with this 15-acre restriction. Stands less than 8 years old separated by less than 330 feet must be considered part of the opening when determining compliance. Deviations from the 15-acre restriction may be approved on a case-by-case basis on lands with a DFC theme of restoration. (KNF) (GUIDELINE)

FW–414: Strive to avoid numerous even-aged regeneration areas in close proximity during the same planning cycle. (KNF) (GUIDELINE)

FW–415: Strive to establish irregular stand shapes that are based on or mimic natural boundaries such as changes in vegetation, soil type, or topography. (KNF) (GUIDELINE)

FW–416: Retain groups of trees or large single trees within cutting unit boundaries. Emphasis on trees to be retained should be in accordance with the DFC. (KNF) (GUIDELINE)

FW–417: Retain and protect midstory and understory species with desirable flowering characteristics. (KNF) (GUIDELINE)

FW–418: Use *feathering* as an edge treatment. Feathering is the partial cutting of trees along the cutting unit boundary to create transition in vegetation height and / or density between the opening and adjacent forest canopy. Feathering is appropriate in all *high* SIO zones and is required in all concern level 1 areas. Feathering is accomplished by using several different techniques singly or in combination. Possible techniques are, leaving the existing understory just inside the cutting unit boundary, thinning the overstory canopy along the interior edge of the cutting unit boundary, or leaving vegetation of progressively greater height from the interior of the cutting unit to the boundary. The technique used depends heavily on site conditions. The width of the feathered

edge should at a minimum equal the height of the adjacent uncut stand. (KNF) (GUIDELINE)

FW–419: Treat slash resulting from harvest or other management activity so it is no higher than 2 feet above the surface of the ground, by lopping, chopping, crushing, burning, chipping or removal from zone or a combination of the preceding methods. Do not pile or windrow slash adjacent to the treatment zone. The treated zone should extend 200–600 feet beyond the edge of the cleared right-of-way of the travelway; the actual width is determined on a case-by-case basis by or in consultation with the Forest landscape architect. Treatment must be accomplished within 1 year of slash production. In the most sensitive areas, such as within developed recreation sites, more intense treatment may be required, such as chipping and scattering or outright removal. (KNF) (GUIDELINE)

FW–420: Within the boundaries of developed recreation sites and other highly sensitive locations, use cut-tree marking. If leave-tree marking must be used, obliterate by over-painting with dark gray paint within one year after the timber sale is closed. (KNF) (GUIDELINE)

FW–421: Locate all log landings out of sight in the *high* SIO travelway. (KNF) (GUIDELINE)

FW–422: Minimize construction or improvement of roads that join the travelway. (KNF) (GUIDELINE)

FW–423: Do not use windrowing as a site preparation method within *high* SIO areas. (KNF) (GUIDELINE)

FW–424: For all proposed herbicide treatments in *high* SIO areas, the Forest Landscape architect must be consulted. (KNF) (GUIDELINE)

FW–425: Stumps that result from harvest operations may be ground down to or below natural grade in the most sensitive areas, such as within recreation site boundaries. (KNF) (GUIDELINE)

Moderate SIO

FW–426: In *moderate* SIO zones, human activities may repeat form, line, color, and texture of landscape elements normally found in the natural-appearing landscape character being viewed. Activities may also introduce form, line, color and texture that are found infrequently or not at all in the landscape character, but these new scenic attributes should remain subordinate to the visual strength of the natural or natural-appearing landscape character being viewed and consistent with the landscape character goal. (KNF) (GUIDELINE)

FW–427: Uneven-aged regeneration methods are generally preferred over even-aged methods in *moderate* SIO areas, but even-aged methods, with some restrictions, are fully acceptable. (KNF) (GUIDELINE)

FW–428: Shelterwood regeneration is the preferred even-aged method in *moderate* SIO areas. (KNF) (GUIDELINE)

FW–429: Retain shelterwood trees for a period not to exceed 3 years after seedling establishment if 30 or more contiguous acres of the stand is visible from the travelway and it does not conflict with other resource requirements. (KNF) (GUIDELINE)

FW–430: Shelterwood regeneration with a residual basal area of 10 square feet per acre or more have no scenery-based size restriction if leave trees are retained for at least a period of 3 years after seedling establishment. (KNF) (GUIDELINE)

FW–431: No more than 40 contiguous acres of a clearcut or seed-tree regeneration area with a leave tree BA of less than 10 square feet per acre, may be visible from the travelway. Adjacent stands less than 8 years of age must be considered a part of the opening when determining compliance with this 40-acre restriction. Stands less than 8 years of age separated by less than 330 feet must be considered part of the opening when determining compliance. (KNF) (GUIDELINE)

FW–432: Avoid numerous even-aged regeneration areas in close proximity during the same planning cycle. (KNF) (GUIDELINE)

FW–433: Establish irregular stand shapes that are based on or mimic natural boundaries such as changes in vegetation, soil type or topography. (KNF) (GUIDELINE)

FW–434: Retain groups of trees or large single trees within cutting unit boundaries. Em-

phasis on trees to be retained should be in accordance with the DFC. (KNF) (GUIDELINE)

FW–435: Retain and protect midstory and understory species with desirable flowering characteristics. (KNF) (GUIDELINE)

FW–436: Use *feathering* as an edge treatment. Feathering is removal of some trees along the cutting unit boundary to create a transition in vegetation height and / or density between the opening and adjacent forest canopy. It is appropriate in all *moderate* SIO zones but is required in all concern level 1 areas. Feathering is accomplished by using several techniques singly or in combination. Possible techniques are: leaving the existing understory just inside the cutting unit boundary, thinning the overstory canopy along the interior edge of the cutting unit boundary, or leaving vegetation of progressively greater height from the interior of the cutting unit to the boundary. The technique used depends heavily on site conditions. The width of the feathered edge should at minimum equal the height of the adjacent uncut stand. (KNF) (GUIDELINE)

FW–437: Treat slash that results from harvest or other management activities so it is no higher than 2 feet above the surface of the ground, by lopping, chopping, crushing, burning, chipping or removal from zone or a combination of the preceding methods. Slash is not piled or windrowed adjacent to the treatment zone. The treated zone should extend at least 150 feet beyond the edge of the cleared right-of-way of the travelway. Treatment must be accomplished within 1 year of the slash-producing activity. (KNF) (GUIDELINE)

FW–438: Within developed recreation sites and other highly sensitive locations, use cut-tree marking. If leave-tree marking must be used, obliterate by overpainting with dark gray paint within one year after the timber sale is closed. (KNF) (GUIDELINE)

FW–439: Minimize number of log landings visible from the travelway. (KNF) (GUIDELINE)

FW–440: Minimize construction or improvement of roads that join the travelway. (KNF) (GUIDELINE)

FW–441: Do not use windrowing as a site preparation method within *moderate* SIO areas. (KNF) (GUIDELINE)

Low SIO

FW–442: In lands with the *low* SIO human alterations and management activities dominate the original scenic attributes of the natural or natural appearing landscape character being viewed. They borrow from naturally established design attributes — form, line color, and texture — so completely and at such a scale that the scenic attributes are those of natural occurances with the surrounding area. (KNF) (GUIDELINE)

FW–443: Establish irregular stand shapes that are based on or mimic natural boundaries such as changes in vegetation, soil type or topography. (KNF) (GUIDELINE)

FW–444: Treat slash that results from harvest or other management activities so it is no higher than 2 feet above the surface of the ground, by lopping, chopping, crushing, burning, chipping, or removal from zone; or a combination of the preceding methods. Slash should not be piled or windrowed adjacent to the treatment zone. The treated zone should extend at least 50 feet beyond the edge of the cleared right-of-way of the travelway. Treatment must be accomplished within one year of the slash producing activity. (KNF) (GUIDELINE)

FW–445: Minimize number of log landings visible from the travelway. (KNF) (GUIDELINE)

FW–446: Do not use windrowing as a site preparation method within *low* SIO areas. (KNF) (GUIDELINE)

SOIL AND WATER

Fragile soils

FW–447: Obtain ID team input, including soil and water staff before burning in sub-watersheds containing fragile *Kisatchie* (KT) or *Betis* (BF) soils. Small areas of these soils may be burned if protecting them would produce excessive soil resource damage. If any of these soils are burned it is preferable to burn during the growing season. (KNF) (GUIDELINE)

FORESTWIDE STANDARDS AND GUIDELINES

RESOURCE ELEMENTS

SOIL AND WATER

SPECIAL INTEREST AREAS

FW–448: Obtain ID team and soil and water staff input before planning any surface disturbance on slopes greater than five percent in areas of fragile soils. (KNF) (GUIDELINE)

Soil productivity, erosion, and sedimentation

FW–449: Manage soils to maintain or improve productivity and to minimize erosion and compaction (refer to *FSH 2509.18* and *R8 Supplement*, *FSM 2500*, *FSH 2509.11 17* and *3509.12*). (KNF) (GUIDELINE)

FW–450: Include erosion control measures and maintenance in all program and project plans. Implement erosion control measures at the time of ground-disturbing activities. Revegetate areas as promptly as practical. (KNF) (GUIDELINE)

FW–451: Design and implement land management practices so that soil loss does not reduce soil productivity by exceeding allowable loss for any given soil. (KNF) (GUIDELINE)

FW–452: Maintain or improve water quality in accordance with State and federal standards. (KNF) (STANDARD)

FW–453: Return degraded areas to their natural condition to produce multiple resource benefits. (KNF) (GUIDELINE)

FW–454: Implement soil and water resource improvements using the following priority, as referenced in *FSM 2522*: (KNF) (GUIDELINE)

- Protection of public health and safety
- Reduction of sedimentation and erosion
- Restoration of natural ecosystems
- Maintenance of previous capital investments and improvements in the production of market goods and services

SPECIAL INTEREST AREAS

FW–455: Manage each special interest area (SIA) as an integral part of the Kisatchie National Forest with emphasis on its unique values. (KNF) (GUIDELINE)

FW–456: Manage other values or resources in SIAs to a level compatible with each area's primary special values. (KNF) (GUIDELINE)

FW–457: Do not construct campgrounds or other overnight recreation development in SIAs. (KNF) (STANDARD)

FW–458: If provided, locate trails, structures, picnic grounds and other facilities without disturbing the special features of the SIA. (KNF) (GUIDELINE)

FW–459: Permit no resorts or other high-impact special-uses within SIAs. (KNF) (STANDARD)

FW–460: Keep developments such as roads, trails, and other facilities to the minimum necessary for public enjoyment of the SIA. (KNF) (GUIDELINE)

FW–461: Encourage public use and enjoyment of each SIA up to the level that will ensure protection of the special values for which established. (KNF) (GUIDELINE)

FW–462: Provide interpretive services to enhance visitors' understanding and appreciation of an SIA's special features. (KNF) (GUIDELINE)

FW–463: Allow other occupancy and use of the SIA's resources to the extent they neither interfere with the primary values for which established nor negatively affect the visitor's experience. (KNF) (GUIDELINE)

FW–464: Assign SIAs the *high* SIO. (KNF) (GUIDELINE)

FW–465: Manage SIAs under the requirement of the ROS class of *semi-primitive non-motorized*. (KNF) (GUIDELINE)

FW–466: Allow dispersed recreation activities such as hiking, picnicking and nature study in SIAs. (KNF) (GUIDELINE)

FW–467: Prohibit military activity in SIAs. (KNF) (STANDARD)

FW–468: Do not allow direct wildlife habitat improvement in SIAs. Encourage natural succession while protecting the attributes for which the area was designated. (KNF) (GUIDELINE)

FW–469: Do not permit grazing in SIAs. (KNF) (GUIDELINE)

FW–470: Do not permit pinestraw collection in SIAs. (KNF) (GUIDELINE)

FW–471: Classify SIAs as not suitable for timber production. (KNF) (STANDARD)

FW–472: Permit oil and gas leasing with a *no surface occupancy* **(NSO)** stipulation in SIAs. (KNF) (GUIDELINE)

FW–473: Do not construct new roads in SIAs; maintain existing roads as needed. (KNF) (GUIDELINE)

FW–474: Use direct control, containment, or confinement fire suppression strategies in SIAs. Surveillance can be appropriate when the fire is expected to be self-confined within a defined area. (KNF) (GUIDELINE)

FW–475: Use prescribed fire in SIAs to maintain ecological integrity. (KNF) (GUIDELINE)

FW–476: Schedule prescribed burning in SIAs when adjoining areas are burned. (KNF) (GUIDELINE)

FW–477: Control active SPB infestations in SIAs in accordance with the management requirements and mitigation measures from the *Record of Decision for the Final EIS on Suppression of the Southern Pine Beetle*. (KNF) (GUIDELINE)

FW–478: Do not allow exploration for common variety minerals (sand, gravel, and iron ore) in SIAs. (KNF) (GUIDELINE)

FW–479: Do not allow regeneration or timber stand improvement practices in SIAs. (KNF) (GUIDELINE)

FW–480: When needed, use only salvage, sanitation, and improvement cutting in all timber types in SIAs. Cutting may be used for hazard tree removal, insect and disease control, aesthetics, and wildlife stand improvement to enhance soft and hard mast development. (KNF) (GUIDELINE)

FW–481: Prepare *Supervisor's Orders* setting out rules and regulations for SIAs. Inform visitors through written information and personal contact. (KNF) (GUIDELINE)

FW–482: Provide bulletin boards at primary access points into SIAs. (KNF) (GUIDELINE)

FW–483: Do not permit competitive trail rides, survival exercises, or other similar events in SIAs. (KNF) (GUIDELINE)

FW–484: Survey, mark and post the exterior boundary of each SIA. (KNF) (GUIDELINE)

SPECIAL USES

General

FW–485: Permit special-uses of national forest land, including those for the military, only after appropriate site-specific environmental analysis and public involvement as directed by the Project-Level Planning and Analysis and Cooperation/Coordination with Other Agencies sections of Chapter 2 of this Plan. Closely administer the conditions of approval of all permits. Review permits and establish termination dates on special-uses with recognized conflicts with higher public use. (KNF) (GUIDELINE)

FW–486: When appropriate, amend permits to reflect changes in standards by the Forest Service, new technology, or congressional direction. (KNF) (GUIDELINE)

FW–487: Charge occupancy and use fees commensurate with charges for similar uses on private lands. Fees should reflect fair market value for the use of national forest lands and improvements as determined by an appraisal, market survey, or other sound business management principle. (KNF) (STANDARD)

FW–488: Do not issue special-use permits to resolve occupancy trespass unless it can be demonstrated that the public interest is not compromised. (KNF) (GUIDELINE)

FW–489: Minimize special-uses on lands identified for exchange which would hinder disposal of the land. (KNF) (GUIDELINE)

FW–490: The Forest Supervisor must approve maintenance of special-use rights-of-way by pesticides / herbicides in advance, and approval is contingent upon meeting EPA standards. (KNF) (GUIDELINE)

FW–491: Work with utility special-use permittees to establish vegetation management objectives such as wildlife, watershed, recreation, and visual quality for location of new

utility lines and maintenance of existing ones. These objectives determine maintenance techniques and strategies. (VM-19) (GUIDELINE)

FW–492: Where feasible, low-growing shrubs and grasses are established and maintained along utility lines where wildlife and aesthetic objectives are dominant. (VM-20) (GUIDELINE)

FW–493: Approve new utility corridors only after an analysis of public need and an assessment of alternatives is made. Corridors will meet scenic integrity objectives wherever possible. Use existing corridors to the extent possible where the uses are compatible. (KNF) (GUIDELINE)

FW–494: When needed to meet environmental concerns identified in environmental analysis, bury new telephone lines and electrical power lines less than 34.5 KV. Allow exceptions when: (KNF) (GUIDELINE)

- It is not feasible because of geologic hazard or unfavorable geologic conditions;
- Greater long-term site disturbance would result; or
- It is not technologically or economically feasible.

FW–495: Authorize new communication / electronic facilities on existing sites where appropriate. (KNF) (GUIDELINE)

Recreation

FW–496: Do not permit any new recreation residence sites. (KNF) (GUIDELINE)

FW–497: Terminate existing permits and do not issue any new permits for isolated cabins when opportunities occur. (KNF) (GUIDELINE)

FW–498: Authorize recreation events on national forest lands in accordance with directions in *36 CFR 251*, *FSM 2721*, and *FSM 2300* if use is compatible with other uses based on environmental analysis. (KNF) (GUIDELINE)

FW–499: Authorize outfitter and guide permits where the use does not conflict with other management objectives. (KNF) (GUIDELINE)

Road right-of-way grants

FW–500: Issue letters of consent for the appropriation and transfer of land for easement to the Department of Transportation (DOT), Federal Highway Administration unless the proposal is contrary to the public interest or inconsistent with the purposes for which such lands have been reserved. (KNF) (STANDARD)

FW–501: Respond to requests for DOT easements in a timely manner. (KNF) (GUIDELINE)

FW–502: To qualify for DOT easements the project must be a part of the Federal Aid System. (KNF) (STANDARD)

FW–503: Where road rights-of-way are authorized to parish or State by special-use permit, encourage permittees to apply for an easement to replace the permit. (KNF) (GUIDELINE)

FW–504: Grant easements for all parish and State system roads. (KNF) (GUIDELINE)

FW–505: Utilize existing corridors for future additions as needed where uses are compatible. (KNF) (GUIDELINE)

FW–506: Permit only one access across national forest land per private subdivision or tract, when the route is environmentally acceptable and where no other readily available or historical access exists. (KNF) (GUIDELINE)

STATE NATURAL AND SCENIC RIVERS

FW–507: Coordinate management of Louisiana State Natural and Scenic Rivers with the Louisiana Department of Wildlife and Fisheries. (KNF) (GUIDELINE)

FW–508: Along State natural and scenic rivers, the width of the streamside habitat protection zone (SHPZ) will be at least 100 feet from the channel on each side of the river. In addition, prohibit the following uses within these zones: (KNF) (STANDARD)

- Channelization
- Clearing and snagging
- Channel realignment
- Reservoir construction

FW–509: Along State natural and scenic rivers, obtain approval from the LDWF for the following activities: (KNF) (STANDARD)

- Crossings by roads, bridges, railroads, pipelines or utilities
- Sharing of land and airspace by such roads, railroads, pipelines and utilities
- Point source discharge of any pollutant
- Prospecting, drilling and mining for nonrenewable natural resources
- Structures and buildings of any kind or size
- Piers, boat slips, bulkheads and landings
- Commercial uses, activities and access
- Commercial signs or other forms of outdoor advertising that are visible from the waters within a natural and scenic river
- Water withdrawals, except for withdrawals made by an individual, adjacent property owner solely for residential purposes

STREAMSIDE HABITATS, RIPARIAN AREAS, AND WETLANDS

Streamside habitat protection

FW–510: Within a zone at least 50 feet from a scour channel and extending at least 50 feet from the end of the channel, plan and conduct forest management activities to protect or enhance riparian associated resource values and characteristics. Riparian associated resources are defined as the plant and animal habitats and mesic sideslope communities that are found within or adjacent to riparian areas or scour channels. Within this zone, which shall be called a *streamside habitat protection zone (SHPZ)*, prohibit the following practices: (KNF) (STANDARD)

- Clearcutting, seed-tree, and shelterwood regeneration methods
- Salvage of single / double trees
- Removal of overstory or understory vegetation within 5 feet of the scour channel
- Mechanical site preparation
- Log decks or landings
- Extraction of common variety minerals

FW–511: Classify the area within SHPZs as not suitable for timber production. (KNF) (STANDARD)

FW–512: In SHPZs, allow group or single-tree selection regeneration techniques designed only to improve fisheries and wildlife habitat, the plant community structure or composition, or other amenity value. (KNF) (GUIDELINE)

FW–513: Within SHPZs do not allow the following practices: (KNF) (GUIDELINE)

- Roads, multiple-use trails, plow lines, and skid trails that run parallel to the scour channel, if feasible
- Stream crossings, *unless* they 1) run at right angles to the scour channel, 2) are site-designated to minimize soil and water impacts, and 3) do not impede fish passage
- Timber harvest treatments, *unless* they 1) remove less than 4.5 CCF per acre, 2) occur only when soils are dry, and 3) are intended to improve wildlife habitat, maintain or restore specific vegetation communities, or improve old growth structure
- Harvesting and site preparation methods that expose bare soil on more than 10 percent of the site
- Tractor-plow firelines *unless* they are: 1) used only for wildfire suppression; or 2) are more than 33 feet from the scour channel for prescribed fire and used only for tie-in. For wildfires, revegetate plow lines as soon as possible. For prescribed fire, hand rake and subsequently revegetate the fireline between the end of the tractor-plow line and the edge of the scour channel

FW–514: Permit oil and gas leasing with restrictions in SHPZS — apply CSU**1** stipulation. (See also **FW–223** and **FW–225**). (KNF) (GUIDELINE)

Riparian area protection

FW–515: Within a zone that may extend beyond the SHPZ to at least the extent of the flat, level area or alluvial floodplain landform, plan and conduct forest management activities to protect or enhance those distinctive resource values and characteristics that comprise the aquatic and riparian ecosystems. Within this zone, which shall be called the *riparian area protection zone (RAPZ)*, prohibit the following practices: (KNF) (STANDARD)

- Shearing and windrowing for site preparation
- Extraction of common variety minerals

FW–516: Classify the area within RAPZs as not suitable for timber production. (KNF) (STANDARD)

FW–517: In RAPZs allow group selection or single-tree selection regeneration techniques designed only to improve fisheries and wildlife habitat, the plant community structure or composition, or other amenity value. (KNF) (GUIDELINE)

FW–518: Within RAPZs do not allow the following practices: (KNF) (GUIDELINE)

- Roads, plow lines, and skid trails that run parallel to the scour channel, if feasible
- Log decks or landings, *unless* they cannot be effectively placed elsewhere
- Even-aged regeneration, temporary roads, skid trails, and mechanical site preparation, *unless* 1) needed to restore or improve riparian vegetation communities, 2) the actions can occur without fragmenting riparian habitat linkages, and 3) soil rutting and compaction impacts can be adequately mitigated. Adequate mitigation may consist of one or a combination of the following:
  - Schedule treatments to occur during seasonally dry periods.
  - Designate on-site locations that can / cannot be treated.
  - Limit the size of even-aged regeneration harvests to less than 20 acres.
- Harvesting and site preparation methods that expose bare soil on more than 10 percent of the site
- Tractor-plow firelines *unless* they are: 1) used only for wildfire suppression; or 2) are more than 33 feet from the scour channel for prescribed fire and used only for tie-in. For wildfires, revegetate plow lines as soon as possible. For prescribed fire, hand rake and subsequently revegetate the fireline between the end of the tractor-plow line and the edge of the scour channel

FW–519: Permit oil and gas leasing with the following stipulation restrictions: (See also FW–223 and FW–225). (KNF) (GUIDELINE)

- CSU**1-** RAPZs inside pearlshell mussel subwatersheds, and within Management Area 2
- CSU**2** - inside RAPZs on the remainder of the Forest

Water quality

FW–520: No herbicide shall be aerially applied within 100 horizontal feet or ground-applied within 30 horizontal feet of lakes, wetlands, or perennial or intermittent springs and streams; or applied within 100 horizontal feet of any public or domestic water source. Selective treatments (requiring added site-specific analysis and use of aquatic-labeled herbicides) may occur within these buffers only to prevent significant environmental damage such as noxious weed infestations. Buffers are clearly marked before treatment so applicators can see and avoid them. (VM-77) (STANDARD)

FW–521: Do not allow ground application of herbicides by broadcast methods within SHPZs and RAPZs. Allow selective treatments only if all of the following conditions are met: (KNF) (STANDARD)

- Additional site-specific analysis is performed
- Herbicides labeled for aquatic use are utilized
- Significant environmental damage, such as noxious weed infestations, is being prevented

FW–522: Do not obstruct water flow on streams, unless needed to provide structural wildlife or fish habitat. (KNF) (GUIDELINE)

FW–523: Channel stability of perennial and intermittent streams is protected by retaining all woody understory vegetation within at least 5 feet of the bank and by keeping slash accumulations out of the stream. (VM-10) (GUIDELINE)

FW–524: Within SHPZs leave at least 75 percent of crown cover along perennial streams receiving timber harvest treatments. (KNF) (GUIDELINE)

FW–525: Within the SHPZ and RAPZ: (KNF) (GUIDELINE)

- Locate roads and multiple-use trails outside of SHPZ zones as much as possible;
- Minimize vegetation clearing widths for roads and road-stream crossings;
- Minimize clearing and ground disturbance at stream crossings;
- Locate crossings at points of low bank slope and firm surfaces, at right angles to the stream; and,

- Design roads, trails, and crossings to minimize impacts on riparian zones.

FW–526: Treat eroding areas (such as gullies or degraded areas) that are contributing sediment directly to streams and bodies of water so that sediment yield is reduced to the natural rate as soon as possible. (KNF) (GUIDELINE)

FW–527: Utilize rip-rap, plants, mats or other methods to stabilize fill around road crossings and culverts to prevent erosion. (KNF) (GUIDELINE)

FW–528: Install barriers, fences, or other methods to create artificial sediment trap buffers. (KNF) (GUIDELINE)

FW–529: Limit the use of construction equipment in streams to the amount of time absolutely essential for completion of the project. Request input from the Forest Fisheries Biologist. (KNF) (GUIDELINE)

FW–530: Establish fords only under conditions which will not cause significant streambank erosion. (KNF) (GUIDELINE)

FW–531: Construct and maintain roads and trails to minimize sedimentation and protect riparian and aquatic habitats. (KNF) (GUIDELINE)

Floodplains and wetlands

FW–532: Locate facilities (roads, campgrounds, buildings) outside floodplain boundaries for the 100-year floodplain (Executive Order 11988), unless no practicable alternative location exists. Where present and future facilities cannot be located out of the 100-year floodplain, use structural mitigation such as deflection structures or rip-rap. (KNF) (STANDARD)

FW–533: Locate critical facilities outside the 500-year floodplain. (KNF) (STANDARD)

FW–534: Post the location of facilities that occur within the 100-year floodplain as per *FSM 2527.6*. (KNF) (GUIDELINE)

FW–535: If floodplains or wetlands occur on federal land considered for exchange, evaluate intended use of the land being exchanged and the trade-offs of both properties. Comply with E.O. 11988 and E.O. 11990. (KNF) (STANDARD)

FW–536: Within jurisdictional wetlands permit oil and gas leasing with a *no surface occupancy* stipulation. (See Appendix D). (KNF) (GUIDELINE)

STRUCTURES

FW–537: Classify agency administrative sites as not suitable for timber production. (KNF) (STANDARD)

FW–538: Do not permit oil and gas exploration within administrative sites. Permit oil and gas leasing with a *no surface occupancy* stipulation. (KNF) (GUIDELINE)

FW–539: Do not lease or sell common variety minerals within administrative sites. (KNF) (STANDARD)

FW–540: Construct new facilities or replacement facilities, including offices, work centers, residences, recreation facilities, and lookout towers, on a timely schedule as the end of the service life approaches. (KNF) (GUIDELINE)

FW–541: Monitor quality of potable and waste water within administrative sites as required by the Environmental Protection Agency, the State of Louisiana, and *FSM 7411*, *7430*, and E.O. 12088. (KNF) (STANDARD)

FW–542: Annually inspect all facilities. Correct safety items detected during annual inspections, and repair major building deficiencies. Provide accessible buildings in accordance with current direction. (KNF) (GUIDELINE)

FW–543: Sample and test all sewage treatment systems and Forest Service potable water systems in accordance with current regulations. (KNF) (GUIDELINE)

FW–544: Review the need for the four residences on the Forest as they become vacant and consider not retaining unless justified. (KNF) (GUIDELINE)

FW–545: Be environmentally alert to *hazardous materials* direction and regulations for current and future activities on the Forest. Use licensed contractors for any hazardous materials disposal necessary. Pursue any reports of hazardous materials located on the Forest using approved and standard methods for discovery. The Forest HAZMAT coordinator is to

FORESTWIDE STANDARDS AND GUIDELINES

RESOURCE ELEMENTS

STRUCTURES

STUART GENETIC RESOURCE MANAGEMENT AREA (a seed orchard)

TRANSPORTATION SYSTEM

continue to inform staff and rangers of guidelines, direction, and regulations for hazardous materials. (KNF) (GUIDELINE)

STUART GENETIC RESOURCE MANAGEMENT AREA (seed orchard)

FW–546: Prohibit or limit public use in Stuart Genetic Resource Management Area (GRMA). Allow dispersed recreation, such as hunting, in the isolation strip. (KNF) (STANDARD)

FW–547: Do not allow grazing in the Stuart GRMA. Allow grazing in the isolation strip. (KNF) (GUIDELINE)

FW–548: Classify Stuart GRMA as not suitable for timber production. (KNF) (STANDARD)

FW–549: Manage the seed orchard in accordance with the *Tree Improvement Handbook*, *FSH 247* and *FSM 2475*. (KNF) (GUIDELINE)

FW–550: Maintain soil fertility and water quality within the Stuart GRMA. (KNF) (GUIDELINE)

FW–551: Issue oil and gas leases with a *no surface occupancy* stipulation. (KNF) (GUIDELINE)

FW–552: Do not lease or sell common variety minerals in Stuart GRMA. (KNF) (STANDARD)

TRANSPORTATION SYSTEM

Planning and inventory

FW–553: Plan, locate, design, and construct / reconstruct Forest development roads with consideration for the following: resource management objectives, environmental needs, safety, traffic requirements, traffic service levels, vehicle characteristics, road users, season(s) of use, and economics. (KNF) (GUIDELINE)

FW–554: Provide a road system suitable for land and resource management activities and Forest administration. Evaluate all travelways not inventoried in the Forest Transportation System as they are encountered during project environmental analysis. Travelways subsequently determined to be needed as part of the Forest road system shall be added to the system and inventoried. Travelways determined not be needed as part of the road system should be considered for addition to the Forest trail system.

Reclaim travelways no longer needed to provide access to the land and manage for natural resource purposes. Classify these as *planned for obliteration* and reclaim within a reasonable period of time, not to exceed 10 years after termination of a contract, lease or permit. Use natural revegetation or schedule as part of a more intensive resource activity. Until reclaimed, mitigate or correct unacceptable impacts to the adjacent land or resources. Do not include these travelways in the Forest Development Road System Plan. (KNF) (GUIDELINE)

Construction and reconstruction

FW–555: Allow development, improvement, or permitting of operational activities on short-term (temporary) facilities only when both of the following conditions are met: (KNF) (GUIDELINE)

- There is a one-time need for access utilizing either an existing or planned corridor.
- An obliteration opportunity exists, immediately upon completion of the activity requiring access, to reclaim and manage the corridor for natural resource purposes.

FW–556: Minimize the miles of new road construction through use or improvement of existing corridors. Develop roads for resource management according to the following priorities: (KNF) (GUIDELINE)

- Use existing facilities, with no improvement, for year-round service.
- If the existing facility is not adequate for year-round service, restrict use to acceptable seasons or conditions.
- If the existing facility is not adequate for the intended use under any condition, improve to a standard capable of providing service with control relative to the season or soil conditions.
- If seasonal or other part-time service is unacceptable, improve the facility to provide adequate year-round use.
- If no existing facility is available to serve required access needs, construct the minimum facility adequate to provide needed services under controlled seasonal or part-time use.
- If the existing road is causing unacceptable resource damage that cannot be mitigated in a cost effective manner and there is need for the road for resource

management, obliterate and construct the minimum standard road needed in a more acceptable location.
- If year-round use is needed for a documented purpose, construct the minimum all-weather road.

FW–557: Use collector roads to collect traffic from local roads and connect with Forest arterial roads, serving multi-resource activities. Reconstruct collector roads to the minimum service level that is consistent with the use and purpose and that will safely accommodate projected traffic during design life. Specific standards for road reconstruction are located in the *Road Preconstruction Handbook*, ***FSH 7709.56***. (KNF) (GUIDELINE)

FW–558: Provide local road access for resource activities such as timber sales, range allotments, and campgrounds at the minimum acceptable service level. Favor reconstruction over construction. Specific standards for local road construction and reconstruction are in the *Road Preconstruction Handbook*, ***FSH 7709.56***. (KNF) (GUIDELINE)

FW–559: Follow road development and maintenance *best management practices* (BMPs) within wetlands and at stream crossings, as stated in section 404, *Corps of Engineers Permit Requirements*, and ***40 CFR 233.22***. (KNF) (GUIDELINE)

FW–560: Reduce short-term impacts of road construction / reconstruction on water quality by: (KNF) (GUIDELINE)

- Monitoring and controlling construction / reconstruction activities within and immediately adjacent to water courses to periods of low flow; and
- Ensuring that effective erosion control measures are used during construction / reconstruction of major drainage structures and approaches.

FW–561: Reduce long-term impact of road construction and reconstruction on erosion and sedimentation of adjacent land, and protect the road investment by: (KNF) (GUIDELINE)

- Providing adequate, timely temporary erosion control during construction / reconstruction in highly erodible soil areas;
- Requiring permanent vegetation on cut and fill slopes for all roads;
- Requiring permanent vegetation on entire roadway width, including road prism, for all local roads managed as intermittent service; and
- Restricting or prohibiting use as warranted to reduce unacceptable soil / water impacts and protect road investments.

FW–562: Reduce impacts on botanical sensitive or inclusional areas which may occur due to road location and road construction / reconstruction. Whenever possible locate roads away from these areas. (KNF) (GUIDELINE)

FW–563: Reduce impacts on wildlife habitat resulting from road location and road construction / reconstruction. Where options exist, choose a road location which minimizes loss of mast-producing vegetation. (KNF) (GUIDELINE)

FW–564: Reduce conflict of road users and cattle in range allotment areas by using right-of-way fencing along roadways where appropriate. At fence crossings on traffic service level C and D local roads, install gates or other appropriate devices. (KNF) (GUIDELINE)

Operations and maintenance

FW–565: Develop, maintain, and manage the Forest road system as needed to respond to resource management objectives. (KNF) (GUIDELINE)

FW–566: Constructed transportation routes inventoried in the Forest Transportation system (roads and trails) should remain open for public travel unless any of the following occurs: (KNF) (GUIDELINE)

- The road is unsafe for motorized public travel.
- There is unacceptable resource damage.
- Closures or restrictions are needed to meet other resource needs.

FW–567: Prepare a site-specific analysis for proposed travelway closures or restrictions based upon the criteria in FW–569. If the analysis indicates closure or restriction would be appropriate, the district ranger should submit recommendations and draft a road closure order for the Forest Supervisor's approval. Only after Forest Supervisor's closure order is signed can access to travelways be restricted by physical barriers or signing. (KNF) (GUIDELINE)

FW–568: Site-specific analyses for travel restrictions shall analyze the effects on developed and dispersed recreation, the needs of people with disabilities, and the effects on other resources. Analyses that propose access restrictions will consider season of use, alternate routes, and availability of similar experiences. (KNF) (GUIDELINE)

FW–569: Use travelway restrictions or closures as described below: (KNF) (GUIDELINE)

- *Travelways open for limited use*: Travelway is open for seasonal use or for specific vehicle types. Traffic is restricted by a gate or sign. Use of a 'let-down' wire gate is not permitted.

- *Travelways closed to all motorized vehicular use*: Travelways are closed to all motorized vehicular traffic for periods greater than one year. Traffic is blocked with an earthen mound or other similar physical barrier. A gate is not a recommended closure device. Administrative use would be permitted only in performance of emergency duties.

- *Travelways permanently closed* (*obliterated*): After site specific analysis the travelway is determined not to be needed again. It will be obliterated, revegetated, and removed from the Forest transportation system.

FW–570: In the Forest transportation system, provide developed and dispersed recreation access to people with disabilities. The Rehabilitation Act of 1973 (section 504) and the Americans with Disabilities Act of 1990 require that programs and facilities must, to the highest degree feasible, be readily accessible to and usable by all with mobility impairment. Provide equal access to all for Forest dispersed recreation opportunities. Persons with mobility impairment may be authorized to use closed roads. Coordinate requests on a case-by-case basis through the Forest accessibility coordinator. (KNF) (GUIDELINE)

FW–571: Close and obliterate temporary roads planned and constructed as part of a project. Use methods, timing, and mitigation measures in accordance with the site-specific project plan and with ***FSM 2432.35(b), FSH 2409.15, FSH 2409.18 (Chapter 40)***. (KNF) (GUIDELINE)

FW–572: Reduce cost of road maintenance by: (KNF) (GUIDELINE)

- Applying appropriate traffic control regulations to ensure compatibility with type of facility offered;
- Controlling and scheduling resource management activities to seasons or conditions that favor perpetuation of road serviceability; and
- Applying road use restrictions and prohibitions where warranted.

FW–573: Maintain all roads to the following requirements: (KNF) (GUIDELINE)

- Local roads closed between resource activities — *maintenance level 1*
- Local roads currently needed for management activities and open to high-clearance vehicles — *maintenance level 2*
- Local roads currently needed for management activities and open to low-clearance vehicles — *maintenance levels 3, 4, 5*
- Local roads serving developed recreation sites — *maintenance levels 4, 5*
- Collector roads — *maintenance levels 3, 4, 5*. On a project basis, continue cooperation with parishes for roads identified in the *Forest Development Road Cooperative Agreement*.
- Arterial roads under the jurisdiction of the State — *maintenance level 4, 5*. Maintain cooperation through memorandum of understanding.

FW–574: Provide user safety and traffic efficiency commensurate with types of activity allowed and road service level using the following guides: (KNF) (GUIDELINE)

- Utilize design criteria for Forest collector roads that will insure user safety and travel efficiency.
- Incorporate safety features in design of Forest local roads to service level (standard) offered.
- Normally, do not consider travel efficiency in Forest local road design.
- Provide and maintain signing as warranted by the *Manual on Uniform Traffic Control Devices* and ***FSH 7109.31*** according to the following, decreasing, priorities:
  - Hazard markers and warning
  - Regulatory and route markers
  - Directional and destination
  - Informational

FW–575: Share cost of road development and operation with commercial users of Forest development roads. Prohibit commercial use of all Forest development roads within an administrative unit without a permit or authorization. 'Commercial Use' will be managed as follows: (KNF) (GUIDELINE)

- Issue a blanket road order (all Forest development roads in a district) by the Forest Supervisor to prohibit commercial hauling without a permit (*36 CFR 261.54*).
- Post the road order in accordance with *36 CFR 261.51*.
- The district ranger will be responsible for issuing road use permits to authorize commercial use of Forest development roads.
- Include appropriate road maintenance requirements in the road use permit.
- Require commercial users to perform or make deposits for maintenance commensurate with their use.

FW–576: Maintain bridges, cattle guards, and other structures to be structurally sound and safe for use. (KNF) (GUIDELINE)

FW–577: Ensure that those bridges subject to the National Bridge Inspection Standards (NBIS) are identified, inventoried and inspected in accordance with *FSM 7736*. Ensure that structural load rating analyses are performed on all road bridges and, where needed, the safe load carrying capacities of all restricted bridges are posted. (KNF) (GUIDELINE)

FW–578: Permanent vegetation is established and maintained on intermittent service roads when they are closed and on cut and fill slopes of all roads. (VM-21) (GUIDELINE)

FW–579: Where practical, native flowering species are established, maintained, and enhanced on intermittent service roads when they are closed and on cut and fill slopes of all roads. (VM-22) (GUIDELINE)

FW–580: All trails, roads, ditches, and other improvements in the project area are kept free of logs, slash, and debris. Any road, trail, ditch, or other improvement damaged by operations is promptly repaired. (VM-52) (GUIDELINE)

VEGETATION MANAGEMENT

General

FW–581: The Kisatchie NF will include vegetation management in its management review process. The Forest supervisor will conduct periodic vegetation management activity reviews. At a minimum, reviews will evaluate adequacy of vegetation management mitigation and monitoring. (KNF) (GUIDELINE)

FW–582: Using existing reporting systems, the Kisatchie NF will report implementation of its vegetation management program annually. (KNF) (GUIDELINE)

FW–583: Utilize a 10-year entry cycle for stand examination and prescription. Project planning shall address both site and landscape conditions and shall include a statement on land management and resource objectives as well as the desired future condition (DFC) of the area. Consult Forest Service Handbook FSH 2409.26d for the process used to examine stands and prescribe treatments. (KNF) (GUIDELINE)

FW–584: Create and sustain the diverse Forest plant communities by managing towards desired future conditions that meet habitat objectives for selected management indicators within appropriate management and sub-management areas. (KNF) (GUIDELINE)

FW–585: Except in areas where establishment and maintenance of a ground cover to protect soil and water qualities (such as firelines and Kisatchie soil restoration projects) is necessary, do not fertilize more frequently than once every 10 years. (KNF) (GUIDELINE)

FW–586: Use native species in revegetation projects and include native species in seed mixtures depending on soil conditions and erosion hazard. Non-native species may be used when native species would not be expected to provide adequate revegetation promptly; if non-native species are used, select desirable species that do not persist in the environment. Invasive, persistent, non-native species (kudzu, crown vetch, and others) should not be used for revegetation. (KNF) (GUIDELINE)

TABLE 2–2, STOCKING GUIDES FOR STAND REESTABLISHMENT

Stems Per Acre

Species	Minimum	Desired	Maximum
Mixed*	150	250–350	500
Longleaf	300	500–700	1200
Loblolly	300	500–700	900
Shortleaf	300	500–700	900
Hardwood	150	250–350	500

* Stocking within mixed forest types will consist of both desired pine and hardwood species.

FORESTWIDE STANDARDS AND GUIDELINES

RESOURCE ELEMENTS

VEGETATION MANAGEMENT

Even-aged and two-aged management

FW–587: Use even-aged management as the predominant silvicultural system on lands suited for timber production. Even-aged, two-aged, and uneven-aged regeneration methods are also available. Specific guidance pertaining to uneven-aged management and uneven-aged regeneration methods is found on pages 2–52 to 2–53 of this section. (KNF) (GUIDELINE)

FW–588: Establish rotation length of 50 to 120 years for pines and 100 to 150 years for hardwoods on lands suited for timber production in order to attain an average diameter at breast height (DBH) of 16-20 inches. (KNF) (GUIDELINE)

Regeneration and site preparation

FW–589: Do not use regeneration harvest methods on any area suitable for timber production until its growth reaches the culmination of mean annual increment, except when harvesting damaged or sparse stands, or sites in imminent danger from insect or disease attack. (KNF) (GUIDELINE)

FW–590: The size of an opening created by a timber sale entry for the purpose of regeneration will depend on the MA within which it is located. Within even-aged and two-aged systems, limit the opening size from 10 to 80 acres. Do not exceed size limits without review and approval by the Forest Supervisor. (KNF) (GUIDELINE)

FW–591: Do not apply size limits to areas resulting from catastrophic disturbances such as fire, insect, disease, or wind. (KNF) (GUIDELINE)

FW–592: Use soil types, moisture regimes, and landform patterns found on the landscape to shape regeneration openings. (KNF) (GUIDELINE)

FW–593: Separate regeneration openings from each other by a minimum distance of 330 feet. Residual areas between regeneration openings should be at least of sufficient size to qualify as a manageable stand from a multi-resource perspective. (KNF) (GUIDELINE)

FW–594: Do not create reentry openings adjacent to regeneration openings until either minimum acceptable stocking has been established or desired regeneration has attained a height approximately 20 percent of the average height of adjacent trees. If height is the criteria being used, then base it on the average height of dominant and codominant trees in adjacent stands. Make height determinations at the time of field examination to show whether the appropriate stand height condition has been reached or whether the appropriate height condition is projected to be reached by the time of treatment. (KNF) (GUIDELINE)

FW–595: For natural regeneration by the shelterwood method, utilize the following guidelines for residual BA per acre: longleaf pine, 25–40 square feet; other pines and pine-hardwood, 10–40 square feet; and hardwoods, 20–40 square feet. (KNF) (GUIDELINE)

FW–596: For natural regeneration using the seed-tree method, retain 6-10 residual stems per acre. (KNF) (GUIDELINE)

FW–597: Use the clearcutting regeneration method only in the following circumstances: (KNF) (STANDARD)

- To restore native plant communities
- To establish, enhance or maintain habitat for threatened, endangered, or sensitive species
- To enhance wildlife habitat, or to provide for recreation, scenic vistas, utility lines, road corridors, facility sites, reservoirs, or similar development

- To rehabilitate lands adversely impacted by events such as fires, windstorms, or insect or disease infestations
- To preclude or minimize adverse impacts of insect or disease infestations, windthrow, logging damage, or other factors affecting forest health
- To provide for the establishment and growth of desired trees or other vegetative species that are shade intolerant where an adequate seed source is not available;
- To rehabilitate poorly stocked stands due to past management practices or natural events
- To meet research needs

FW–598: Assure that adequate advance hardwood reproduction is present prior to implementing a regeneration cut within a landscape which has an objective of a mixed or hardwood management type. Adequate advance reproduction will consist of at least 150 existing, or expected, desirable hardwood stump sprouts per acre, at least 3 feet in height. (KNF) (GUIDELINE)

FW–599: Do not allow mechanical site preparation on slopes greater than 20 percent. (KNF) (GUIDELINE)

FW–600: To limit soil compaction and rutting, mechanical equipment should be used on soils with a severe compaction hazard or severe rutting hazard during dry conditions only. (KNF) (GUIDELINE)

FW–601: At least 85 percent of an activity area should be left in a condition of acceptible potential soil productivity following silvicultural or other land management activities. No more than 15 percent of an area (including landings and skid trails) may be rutted, compacted, eroded, displaced, puddled, etc. (KNF) (GUIDELINE)

FW–602: Mechanical equipment is operated so that furrows and soil indentations are aligned on the contour (with grades under 5 percent). (VM-47) (GUIDELINE)

FW–603: Windrows and piles are spaced no more than 200 feet apart to limit soil exposure, soil compaction, and nutrient loss from piling and raking. Windrows are aligned on the contour. (VM-49) (GUIDELINE)

FW–604: When piling, at least 80 percent of the area must retain some ground cover of litter and duff, and soil must not be displaced by piling rakes. (VM-50) (GUIDELINE)

FW–605: Prompt revegetation is done if treatments leave insufficient ground cover to control erosion by the end of the first growing season. (VM-43) (GUIDELINE)

Stand establishment and improvement

FW–606: Use release and weeding treatments within areas to obtain desired growth rates, stocking levels, species composition, ground cover establishment and / or wildlife habitat conditions. (KNF) (GUIDELINE)

FW–607: Use silvicultural methods which maintain stocking levels of desired species (stems per acre) and improve growth rates. Forest stocking guidelines are as displayed in table 2–2. (KNF) (GUIDELINE)

FW–608: Certify that sites meet desirable minimum stocking levels by the end of the third growing season after artificial regeneration (planting or seeding), and by the end of the fifth growing season after treatment for natural regeneration. If establishment has not been achieved, conduct a field examination to determine future treatment needs. (KNF) (GUIDELINE)

FW–609: Within 3 years of stand establishment in a longleaf pine plant community, the combined cover of ruderal (weedy) plant species should not exceed 20 percent in random samples taken within the stand. (KNF) (GUIDELINE)

FW–610: Stands on timber-suitable lands must be regenerated (meet minimum stocking standards) within 5 years after final harvest (clearcut, final overstory removal in seed-tree and shelterwood, and after selection harvests). (KNF) (STANDARD)

FW–611: Consider precommercial thinning treatments when stem density exceeds the stocking guide's maximum number of stems per acre. Complete treatment normally before age 3 in pines; and after the expression of stem dominance in hardwoods, which normally occurs once stem height reaches about 25 feet. Existing older stagnant stands may also receive treatment. (KNF) (GUIDELINE)

FW–612: Unless otherwise prohibited, utilize early growing season prescribed burns for release and height growth initiation within longleaf pine plantations 1 to 7 years old. (KNF) (GUIDELINE)

FW–613: Throughout the life of the stand, create and maintain light conditions favorable for oak regeneration on sites where oak is present, and are suited and managed for hardwood composition. (KNF) (GUIDELINE)

FW–614: Apply thinning and salvage / sanitation harvests to immature stands to mold species composition and obtain optimum growth rate, maintain vigor, and capture mortality. (KNF) (GUIDELINE)

Uneven-aged management

FW–615: On lands suitable for timber production, use the uneven-aged management (UEAM) system only within designated UEAM patches. (KNF) (GUIDELINE)

FW–616: On lands not suitable for timber production, use uneven-aged management regeneration techniques within designated UEAM patches to achieve desired non-timber resource objectives. (KNF) (GUIDELINE)

FW–617: Do not prescribe existing even-aged stands for UEAM regeneration harvests until the area is capable of providing an adequate seed or sprout source and / or contains adequate advanced regeneration of the desired species at the time of harvest. (KNF) (GUIDELINE)

FW–618: Minimum stand age for initiating an UEAM regeneration method within an area will be dependent upon the canopy species involved and the resource objectives for the area. Generally, do not initiate UEAM regeneration methods within an existing even-aged stand to achieve the desired forest cover types until stands have reached the following ages: (KNF) (GUIDELINE)

- Longleaf pine — 50 years
- Mixed pine-hardwood and upland hardwood — 60 years
- Mixed hardwood-pine and bottomland hardwood — 60 years

FW–619: Allow parts of several stands previously mapped under an even-aged silvicultural system to be combined into a single area if they are on similar sites and meet the above age criteria for initiating UEAM regeneration methods. Similar sites are those with similar landform, soils, and overstory vegetation capable of producing the desired management type through UEAM regeneration methods. (KNF) (GUIDELINE)

FW–620: Use stand improvement practices within younger stands prior to initiating regeneration methods and in the area(s) surrounding group openings in those stands currently undergoing UEAM regeneration. Schedule these practices to occur at the time of regeneration methods. (KNF) (GUIDELINE)

FW–621: Use stand-tending practices to mold stand composition and structure toward the *desired future condition* (DFC) of the management area / sub-management area within which a particular UEAM patch is located; to promote advanced regeneration establishment of the desired management type; to release established advanced regeneration; and to maintain den trees, relicts and potential cavity trees between groups. (KNF) (GUIDELINE)

FW–622: Adequate regeneration for longleaf pine exists when the number of seedlings per acre is 300 or more and seedlings have attained a diameter of 1/2 inch at the root collar. Determine stocking levels for other species by following table 2–2, *stocking guides*.(KNF) (GUIDELINE)

FW–623: Utilize guidance on leave basal areas, tree spacing, canopy composition, and priority trees to retain presented in the management area / sub-management area direction in which a particular UEAM patch is located. (KNF) (GUIDELINE)

FW–624: Use *group selection* (GS) as the primary regeneration method for shade intolerant and moderately shade tolerant species, such as, pines, oaks and hickories. (KNF) (GUIDELINE)

FW–625: Establish group openings (canopy gaps) that range in size from 1/4 acre to 2 acres. Ideally, group openings should be less than twice the height of the surrounding canopy. Determine size, shape and orienta-

tion of group openings using the vegetation objectives for the MA or SMA in which a particular UEAM patch is located. (KNF) (GUIDELINE)

FW–626: Locate group openings during initial entries as follows: (KNF) (GUIDELINE)

- Where groups of advanced regeneration of the desired management type occurs
- In areas with potential to produce seed and advanced regeneration
- In clumps of mature or high-risk trees
- Adjacent to canopy gaps of 10 acres or less where adequate regeneration exists

FW–627: Locate subsequent group openings adjacent to previously established groups. (KNF) (GUIDELINE)

FW–628: Determine the maximum percent of the area in group openings aged 10 years or less based upon the percentage allowed under the area / rotation regulation for the management area in which a particular UEAM patch is located. Include all canopy gaps greater than 1/4 acre created by natural mortality such as insects, disease, and wind in this percentage. (KNF) (GUIDELINE)

FW–629: Do not include the existing area in the 0–10 year age class when determining the area needed for new group openings under the area / rotation regulation for the management area in which a particular UEAM patch is located. (KNF) (GUIDELINE)

FW–630: Within group openings, retain an overstory of trees — to the extent that establishment and development of regeneration of the following desirable species will not be unduly inhibited: (KNF) (GUIDELINE)

- Where longleaf pine is the predominant management type, retain all longleaf relicts.
- Where mixed pine-hardwood, hardwood-pine, or hardwood is the predominant management type, retain all desirable hardwoods such as oaks, hickories, beech, magnolia, ash, pecan, blackgum, or walnut greater than 10 inches DBH, not to exceed 40 square feet of basal area per acre (*exception*: *do not exceed 20 square feet of basal area of hardwoods in pine-hardwood managment types within RCW HMAs*).

FW–631: Use the single-tree selection regeneration method for promoting shade-tolerant species. Determine leave basal areas, maximum diameter limits and the constant ratio (q) factor at the site level based upon resource objectives and upon current site conditions, characteristics, and inventory. (KNF) (GUIDELINE)

FW–632: Allow even-aged regeneration techniques in UEAM patches if necessary to meet site-specific resource or management area objectives, such as restoration. Limit maximum size of regeneration openings to those allowed within the MA or SMA within which the UEAM patch is located. Acreage in the 0–10 year age class in even-aged openings will contribute to the percentage in that age class for the management area. (KNF) (GUIDELINE)

Herbicide Use

Labeling

FW–633: Herbicides are applied according to labeling information and project site-specific analyses which are used to choose the herbicide, rate, and application method for the site. They are also used to select measures to protect human and wildlife health, non-target vegetation, water, soil, and threatened, endangered, proposed, and sensitive species. Site conditions may require stricter constraints than the label, but label standards are never relaxed. (VM-54) (GUIDELINE)

Choice of herbicide

FW–634: Only herbicide formulations (active and inert ingredients) and additives registered by EPA and approved by the Forest Service are applied. (VM-55) (GUIDELINE)

FW–635: Herbicides and application methods are chosen to minimize risk to human and wildlife health and the environment. The following criteria apply to information in table II-1 (page II-42 in the *Vegetation Management* FEIS): (VM-56) (GUIDELINE)

- Class A herbicide / method combinations are first choice.
- Class B combinations are used only if no class A herbicide can meet project objectives, and then only if adverse effects are mitigated to acceptable levels.
- Class C combinations are used only if no

class A or B herbicide can meet project objectives, and then only if adverse effects are mitigated to acceptable levels.
- Class D combinations are never used.

Note: The Regional Forester has in this record of decision strengthened mitigation as follows: No class B or C chemical may be used on any project except with Regional Forester approval, which will be granted only if site-specific analysis shows that no other treatment would be effective and that all adverse health and environmental effects will be fully mitigated.

Application Rate

FW–636: Herbicides are applied at the lowest rate effective in meeting project objectives and according to guidelines for protecting human (NRC 1983) and wildlife health (EPA 1986a). Application rate and work time must not exceed typical levels unless supplementary risk assessment shows that this will not increase risk to human or wildlife health or the environment beyond standards. In pounds per acre, the typical application rates of active ingredient are as shown in table 2–3. (VM-57) (GUIDELINE)

Application method

FW–637: Method and timing of application are chosen to achieve project objectives while minimizing effects on non-target vegetation and other environmental elements. Selective treatment is preferred over broadcast treatment. Public safety during outdoor activity on the Forest is a priority concern. Application methods from most to least selective are: (VM-58) (GUIDELINE)

- Cut surface treatments
- Basal stem treatments
- Directed foliar treatments
- Soil spot (around) treatments
- Soil spot (grid) treatments
- Manual granular treatments
- Manual and / or mechanical broadcast treatments
- Helicopter treatments

Prescribed burning of treated areas

FW–638: Areas are not prescribed burned for at least 30 days after herbicide treatment. (VM-59) (GUIDELINE)

Drift control

FW–639: Weather is monitored and the project is suspended if temperature, humidity, or wind become unfavorable as shown in table 2–4. (VM-60) (GUIDELINE)

FW–640: Nozzles that produce large droplets or streams of herbicides are used. Nozzles that produce fine droplets are used only for hand treatment where distance from nozzle to target does not exceed 8 feet. (VM-61) (GUIDELINE)

Supervision and training

FW–641: A certified pesticide applicator supervises each Forest Service application crew and trains crew members in personal safety, proper handling, and application of herbicides, and proper disposal of empty containers. (VM-62) (GUIDELINE)

FW–642: Each Contracting Officer's Representative (COR), who must ensure compliance on contracted herbicide projects, is a certified pesticide applicator. Contract inspectors are trained in herbicide use, handling, and application. (VM-63) (GUIDELINE)

Protection of workers

FW–643: Forest Service workers handling herbicides must wear long-sleeve shirts and trousers made of tightly woven cloth which must be cleaned daily. They must wear a hardhat with plastic liner, waterproof boots and gloves, and other label-required safety clothing and equipment. They must bring a change of clothes to the field in case their clothes become contaminated. (VM-64) (GUIDELINE)

FW–644: Each Forest Service crew must take soap, wash water separate from drinking water, eyewash bottles, and first aid equipment to the field. (VM-65) (GUIDELINE)

FW–645: Contractors ensure that workers use proper protective clothing and safety equipment required by labeling for the herbicide and application method. (VM-66) (GUIDELINE)

FW–646: Workers must not walk through areas treated by broadcast foliar methods on the day of application. (VM-67) (GUIDELINE)

TABLE 2–3, HERBICIDES & APPLICATION RATES

In Pounds per Acre of Active Ingredient

	2,4-D/a	2,4-D/e	2,4-DP	Dicam	Fosa	Glyph
AL	2.0	2.5	3.0	10.0	1.5	
ML	2.5	4.0	4.0	2.0	7.8	1.5
HF	2.0	2.0	1.0	2.0	1.0	
HB	1.7	1.2				
HC	2.0	1.5	1.3			

	Hexaz	Imaz	Fuel	Limon	Piclo	Sulf
AL	1.5	0.75	0.5	0.9	0.5	0.13
AG	1.7					
ML	1.7	0.75	2.0	0.9	0.7	0.17
MG	1.7					
HG	1.7	0.75				
HF	1.7	1.5	0.9	0.4	0.06	
HB	0.5	1.0	0.9			
HS	0.75					
HC	0.3					

	Tebut	Triclo/a	Triclo/e
AL	1.0	3.0	4.0
AG	1.0		
ML	1.0	4.0	4.0
MG	1.0		
HF	4.0	1.4	1.0
HB	1.9		
HS	4.0		
HC	1.0		

KEY

AL = aerial liquid treatment
AG = aerial granular treatment
ML = mech. liquid treatment
MG = mech. granular treatment
HG = man. (hand) granular treatment
HF = man. foliar broadcast treatment
HB = man. basal treatment
HS = man. soil-spot treatment
HC = man. cut-surface treatment
Limon = Limonene
Piclo = Picloram

Glyph = glyphosate
Hexaz = hexazinone
Sulf = sulfometuron methyl
Tebut = tebuthiuron
Dicam = dicamba
Fosa = fosamine
Triclo = Triclopyr
Imaz = Imazapyr
/a = amine formulation
/e = ester formulation
Fuel = Fuel oil

FORESTWIDE STANDARDS AND GUIDELINES

RESOURCE ELEMENTS

VEGETATION MANAGEMENT

FW–647: Supervisors must ensure that monitoring is adequate to prevent adverse health effects. Workers displaying unusual sensitivity to the herbicide in use are medically evaluated and, if tested as sensitive to the herbicide in use, are reassigned to other activities. (VM-68) (GUIDELINE)

Protection of the general public and private land

FW–648: Notice signs (*FSH 7109.11*) are clearly posted, with special care taken in areas of anticipated visitor use. People living within one-fourth mile of an area to be treated aerially are notified during project planning and shortly before treatment. (VM-69) (GUIDELINE)

FW–649: No herbicide is broadcast within 100 feet of private land or 300 feet of a private residence, unless the landowner agrees to closer treatment. Buffers are clearly marked before treatment so applicators can easily see and avoid them. (VM-70) (GUIDELINE)

Protection of non-target vegetation

FW–650: No soil-active herbicide is applied within 30 feet of the drip line of non-target vegetation such as den trees, hardwood inclusions, adjacent stands within or next to the treated area. Side pruning is allowed, but movement of herbicide to the root systems of non-target plants must be avoided. Buffers are clearly marked before treatment so applicators can see and avoid them. (VM-71) (GUIDELINE)

Protection of threatened, endangered, proposed, sensitive, and conservation species

FW–651: Obtain ID team input before herbicide applications in SHPZS and RAPZS to ensure protection of any threatened, endangered, sensitive, and other rare aquatic species. (KNF) (GUIDELINE)

FW–652: Do not aerially apply TRICLOPYR within 300 feet, nor ground-apply within 60 feet, of any occupied habitat of the Rafinesque's big-eared bat. Clearly mark buffers before treatment so applicators can easily see and avoid them. (KNF) (GUIDELINE)

FW–653: No herbicide is aerially applied within 300 feet or ground-applied within 60 feet of any threatened, endangered, proposed, or sensitive plant. Buffers are clearly marked before treatment so applicators can easily see and avoid them. (VM-73) (GUIDELINE)

Protection of water and soil

FW–654: Application equipment, empty herbicide containers, clothes worn during treatment, and skin are not cleaned in open water or wells. Mixing and cleaning water must come from a public water supply and be transported in separate labeled containers. (VM-74) (GUIDELINE)

FW–655: Aquifers and public water sources are identified and protected. States are consulted to ensure compliance with their ground water protection strategies. (VM-75) (GUIDELINE)

FW–656: No herbicide is broadcast on rock outcrops or sinkholes. No soil-active herbicide with a half-life longer than 3 months is broadcast on slopes over 45 percent, erodible soils, or aquifer recharge zones. Such areas are clearly marked before treatment so applicators can easily see and avoid them. (VM-76) (GUIDELINE)

Aerial application operations plan

FW–657: Each aerial herbicide application project must have an operations plan approved by the Forest's air safety officer, who ensures that: 1) precautions are taken to

TABLE 2–4, WIND, TEMPS & HUMIDITY

Unfavorable Conditions at the Target

	Temp Higher than	RH Less than	Wind Greater than
Ground			
Hand (cut surface)	N/A	N/A	N/A
Hand (other)	98F	20%	15 mph
Mechanical (liquid)	95F	30%	10 mph
Mechanical (granular)	N/A	N/A	10 mph
Aerial			
Liquid	90F	50%	5 mph
Granular	N/A	N/A	8 mph

protect the crew, including equipment certification and hazard identification; 2) areas to be treated are clearly marked; and 3) methods of avoiding buffers and other sensitive areas are safe and effective. (VM-78) (GUIDELINE)

Control of Spills

FW–658: To prevent tipping or excess jarring during transport, herbicides, additives, and application equipment are secured in the part of a vehicle totally isolated from people, food, clothing, and livestock feed. (VM-79) (GUIDELINE)

FW–659: Only the amount of herbicide needed for the day's use is brought to the site. At day's end, all leftover herbicide is returned to storage. (VM-80) (GUIDELINE)

FW–660: Herbicide mixing, loading, or cleaning areas in the field are not located within 200 feet of private land, open water or wells, or other sensitive areas. (VM-81) (GUIDELINE)

FW–661: During use, equipment to store, transport, mix, or apply herbicides is inspected daily for leaks. (VM-82) (GUIDELINE)

FW–662: Containers are reused only for their designated purpose. Empty herbicide containers are disposed of according to *Group I & II Containers*, ***40 CFR 165.9***. (VM-83) (GUIDELINE)

FW–663: Accident preplanning is done in each site-specific analysis. Emergency spill plans (***Chapter 30, FSM 2109.12***) are prepared. Although unlikely, spills are quickly contained and cleaned up. Appropriate agencies and persons are promptly notified. (VM-84) (GUIDELINE)

Threatened, endangered, sensitive, and other rare plant species

General

FW–664: Protect and manage rare or sensitive communities to maintain their contribution to the overall biological diversity of the Forest. Avoid the elimination of an undisturbed or recovered plant community or site. (KNF) (GUIDELINE)

FW–665: Manage known sites and habitats of listed rare plant species. Management in stands with documented rare plant sites should be consistent with existing conservation assessments and agreements, and be reviewed by a botanist. Monitor areas with existing rare plant sites or historic rare plant sites to help assure the continued existence of rare species on the Forest. (KNF) (GUIDELINE)

FW–666: Avoid disturbance to sensitive plant populations and occupied habitat. Include project-level mitigation measures in individual projects which may impact known rare plant populations. (KNF) (GUIDELINE)

FW–667: Maintain data on rare plant sites in the Forest's geographic information system (GIS). Keep original data to provide details not available in GIS, and for future reference. Share data with the State heritage program. Otherwise, restrict data as necessary to protect sensitive areas from human-caused damage resulting from collection or other disturbances. Review and analyze data as needed for: species status on the Forest; changes occurring or needed in the habitat, or in the populations of individual species; and discovery of new rare plant sites and habitat during surveys. (KNF) (GUIDELINE)

FW–668: Survey for Forest-listed plant species and embedded communities, as well as for rare plants new to the Forest prior to ground-disturbing activities. Surveys should be done during the field examination and prescription process, preferably during the growing season. Concentrate surveys on areas of highest risk, driven by a combination of the likelihood of new Forest-listed plant locations in an area and the level of disturbance planned. Surveys for listed species which occur in areas seldom disturbed by Forest Service activities should document the plant's continued existence on the Forest. Other species may be more widespread, but are at risk because they occur in habitats most likely to be disturbed. If surveys cannot be conducted, assess project areas for the presence and condition of sensitive species habitat. (KNF) (GUIDELINE)

FW–669: Surveyors, or the botanist choosing areas for survey, will decide which species are most likely in certain areas and concentrate efforts accordingly. To the degree possible, design surveys to minimize the number of site

FORESTWIDE STANDARDS AND GUIDELINES

RESOURCE ELEMENTS

VEGETATION MANAGEMENT

visits needed to acquire credible information. Incorporate survey protocols and proposed site management into interagency conservation strategies. (KNF) (GUIDELINE)

FW–670: Conduct general plant surveys along with sensitive plant surveys in order to discover any rare species not known to the Forest. These surveys should include higher (vascular) plants, as well as mosses, liverworts, and fungi. Add newly discovered species, which meet regional and Forest guidelines for listing, to the rare species list. Delete listed species, with concurrence of the State heritage program, if data reveal that they occur commonly enough that they no longer meet requirements for listing. Make a list for all vascular plants, mosses, liverworts, and fungi known on the Forest, with habitat and frequency, to assure that the biological diversity of the Forest is documented and maintained. (KNF) (GUIDELINE)

FW–671: Enhance sensitive plant species populations and habitats to maintain reproducing, self-sustaining populations. Conduct assessments to determine which listed rare species are at higher risk. Develop conservation assessments and strategies for higher-risk listed rare plant species first, with the intent of preventing the need for federal listing as T&E species. (KNF) (GUIDELINE)

FW–672: Coordinate species maintenance and enhancement goals with other management activities on a site. Management activities should imitate the natural ecological processes that created the sensitive species' habitat. Use fire, timber management, grazing, or other activities as tools for soil disturbance and removal of competing vegetation if needed in managing the habitat. (KNF) (GUIDELINE)

FW–673: Use conservation assessments and conservation strategies to provide management direction for rare plant species and their habitat as they become available. Use drafts of these documents for management direction in consultation with Forest or zone botanists until the final products are prepared. (KNF) (GUIDELINE)

FW–674: Avoid mechanical disturbance to rare listed plant sites, especially during the growing season. (KNF) (GUIDELINE)

FW–675: If federally listed T&E plants are found on the Forest in the future, issue collecting permits only after the collector has obtained a permit from the USFWS, and then at the discretion of the district ranger in consultation with the Forest botanist. For sensitive and conservation species, no personal use permits should be issued, but permits for scientific research may be issued at the discretion of the district ranger in consultation with the Forest botanist. Discourage digging or physically removing plants in favor of collecting seeds and cuttings. (KNF) (GUIDELINE)

FW–676: Normally exclude off-road vehicles, roads, trails, skid trails, and other ground-disturbing activities from bogs, bayhead swamps, prairies, sandy woodlands, and glades and barrens. Generally limit such use to existing trails and to special trails for demonstration areas. New horse trails within these habitats should be avoided to limit the introduction of noxious weeds. Plan new trails and roads to avoid crossing these habitats. (KNF) (GUIDELINE)

Sites with Forest-listed rare plants of bogs

FW–677: Bogs that have not been registered with the Louisiana Natural Areas Registry Program qualify for management as bogs if they are at least one-half acre in extent or support one or more PETS species. Effects to qualifying bogs, including Registry program bogs, should be addressed in the environmental analysis for the appropriate compartment prescriptions. (KNF) (GUIDELINE)

FW–678: A bog management zone should include the bog and its immediate surroundings as well as a buffer zone. The outer buffer boundary should extend out to 200 feet from the edge of the natural seep edge. Along larger streams the buffer may be as little as 100 feet on the downhill side of a bog in order to follow the contour of the stream. Active seep boundaries should be determined by vegetation assessment in the late winter/early spring, at which time the water flow is greatest, and after fires have removed woody vegetation and litter. (KNF) (GUIDELINE)

FW–679: Where trees have encroached into the bog and are shading out herbaceous vegetation, use chainsaw felling and/or indi-

vidual stem selective herbicide methods. (KNF) (GUIDELINE)

FW–680: Prohibit mechanical equipment from entering bogs. (KNF) (GUIDELINE)

FW–681: Maintain an average basal area of 40-60 square feet per acre, preferably in longleaf pine, in ecotones and buffer strips surrounding bogs. Do not allow basal area to exceed 90. Remove loblolly and slash pine and leave longleaf pine, when possible, when logging occurs. Do not replant these areas; allow to reseed naturally. (KNF) (GUIDELINE)

FW–682: Require directional felling so that trees do not land in bogs. (KNF) (GUIDELINE)

FW–683: Allow logging equipment only in buffer strips around bogs and only during dry periods. (KNF) (GUIDELINE)

FW–684: Locate log landing areas outside of bogs. (KNF) (GUIDELINE)

FW–685: Apply prescribed fire, at minimum, when surrounding areas are burned, unless burning of bogs is not practical. When feasible, include bogs within larger burn areas. Use prescribed fire at the season and frequency that applies to the management area or sub-management area within which the area is located. Generally, apply prescribed fire during the growing season on a 2- to 3-year frequency. Prohibit plowlines within the bogs. (KNF) (GUIDELINE)

FW–686: Use natural fire breaks or wetlines where possible — or disked lines outside the perimeter of the buffer strips. Avoid using plowed firelines within bogs whenever possible. They may be used when needed to protect private lands. (KNF) (GUIDELINE)

FW–687: Allow dormant season fires to reduce fuels in bogs prior to growing season burns. (KNF) (GUIDELINE)

FW–688: Exclude cattle grazing and other livestock from bogs. If stocking numbers are low, animals can be attracted away from bogs by salting or feeding; in a few cases fencing may be required to prevent damage to sensitive resources. Control feral hogs if unacceptable damage occurs to bogs. (KNF) (GUIDELINE)

FW–689: Discourage foot traffic in bogs. (KNF) (GUIDELINE)

Sites with Forest-listed rare plants of bayhead swamps

FW–690: Apply prescribed fire, at minimum, when surrounding areas are burned, unless burning of bayhead swamps is not practical. When feasible, include bayhead swamps within larger burn areas. (KNF) (GUIDELINE)

FW–691: Allow dormant season fire to reduce fuels in bayhead swamps prior to growing season burns. (KNF) (GUIDELINE)

FW–692: Use natural fire breaks or wetlines where possible; alternatively, use disked lines outside the perimeter of buffer strips. Avoid plowed firelines within bayhead swamps whenever possible. They may be used, however, when needed to protect private lands. (KNF) (GUIDELINE)

Sites with Forest-listed rare plants of calcareous prairies and calcareous-streamside forests

FW–693: Manage calcareous prairies to maintain prairie character and species composition. (KNF) (GUIDELINE)

FW–694: Use prescribed fire at the season and frequency that applies to the management area or sub-management area within which the calcareous prairie and forest are located. Avoid fireplow lines in prairies as much as possible and allow fires to burn down toward streams without firelines if feasible. Alternatively, control woody encroachment by bush-hogging, cutting, or herbicide injection. (KNF) (GUIDELINE)

FW–695: Exclude cattle grazing from prairies except on an experimental basis. Control feral hogs if unacceptable damage occurs to prairies. (KNF) (GUIDELINE)

FW–696: Exclude logging equipment from prairies, and do not use prairies for skid trails or log landings. (KNF) (GUIDELINE)

Sites with Forest-listed rare plants of sandy woodlands

FW–697: Consult the Forest botanist/ecologist when planning to thin or harvest timber

in sites with listed plants in sandy woodlands. Some areas may need complete protection from mechanical disturbance, while other sites may benefit from partial canopy removal to allow sunlight to penetrate the canopy, thus benefitting these plants. Minimize ground disturbance within these areas and eliminate use of skidders where patches of rare plants are present. (KNF) (GUIDELINE)

FW–698: Use prescribed fire at the season and frequency that applies to the management area or sub-management area within which the sandy woodlands are located. Allow fires to burn down toward streams without firelines if feasible. (KNF) (GUIDELINE)

Sites with Forest-listed rare plants of glades and barrens

FW–699: Exclude cattle from glades and barrens. (KNF) (GUIDELINE)

FW–700: Prescribe burn during compartment burning when feasible, but if possible allow fire to burn into glades and barrens without direct introduction by drip torch or other ignition. Instead allow fire to invade and go out on its own. Allow fires to burn down toward streams without firelines, if feasible. Alternatively, control woody encroachment by bush-hogging, cutting, or by the injection of herbicides. (KNF) (GUIDELINE)

Exotic pest plants

FW–701: Identify and map exotic pest plant species infestations as they are located. Use appropriate control methods as funding allows, including, but not limited to, prescribed fire, herbicides, manual removal, and mowing. Monitor after control treatments and re-treat as needed to control infestations. (KNF) (GUIDELINE)

WILDLIFE

General

FW–702: Create and sustain diverse Forest wildlife habitats by managing towards desired future conditions that meet habitat objectives for selected management indicators within appropriate management and sub-management areas. (KNF) (GUIDELINE)

FW–703: Wildlife stand improvement (WSI) seeks to improve vegetation species composition in timber stands and to develop wildlife habitat areas for game and nongame species. A variety of woody and herbaceous species suited to site conditions and burning regime are maintained to assure year-round quality habitat. Exceptions that may reduce plant species variety include treatments to improve habitat for species such as Red-cockaded Woodpeckers. (VM-16) (GUIDELINE)

FW–704: For understory species WSI, proper management allows full sunlight on 30 percent of the forest floor. For hardwood overstory WSI, thinning encourages full crown development, vigorous growth, and soft or hard mast production. When thinning stands older than 30 years, stems are favored which show positive indication of bearing soft- or hard-mast. (VM-17) (GUIDELINE)

FW–705: During TSI, WSI, and site preparation, selected groups of overstory and understory vegetation are protected and managed to assure a variety of soft-mast, hard-mast, and cover species. During site preparation, active and potential den trees are retained in clumps (at least 1/2 acre per 20 acres) if they are not provided in adjacent stands unsuitable for timber production, inclusions, or streamside management zones. During TSI and WSI, all recognized den trees are protected. In addition, during TSI, WSI, and site preparation, an average of at least 2 standing snags are retained per acre — large hardwoods greater than 12 inches when possible. Appropriate treatments are used to create snags where they are lacking. (VM-18) (GUIDELINE)

FW–706: Maintain SHPZs and RAPZs to provide migration corridors, using suitable habitat links, for all species. (KNF) (GUIDELINE)

FW–707: The Louisiana Department of Wildlife and Fisheries will regulate fishing, trapping, hunting season, and bag limits. (KNF) (GUIDELINE)

FW–708: Consider trapping for beaver damage control on a case-by-case basis when resource damage becomes apparent. (KNF) (GUIDELINE)

FW–709: Within the goals and objectives stated in the North American Waterfowl

Management Plan and the Lower Mississippi Valley Joint Venture, design, promote, and implement wetland restoration, enhancement, and protection projects in association with other partners. (KNF) (GUIDELINE)

FW–710: By agreement with special-use permittees, maintain or develop wildlife food plots. Use prescribed burning, discing, fertilizing, and planting with wildlife seed mixtures, separately or in combination, when site-specific analysis indicates a need, and funding allows. Use native species when practical and feasible. (KNF) (GUIDELINE)

Red-cockaded woodpecker

General

FW–711: Management direction for the RCW is based upon the *Final Environmental Impact Statement and Record Of Decision For the Management of the Red-cockaded Woodpecker and Its Habitat on National Forests in the Southern Region* (RCW *FEIS*). Reference these documents for additional background information, analysis, rationale and discussion. Obtain Regional Forester approval of any thinning or restoration project which reduces foraging below the standards and guidelines presented in this Forest Plan. (KNF) (STANDARD)

FW–712: Manage RCW populations and suitable habitat within established *habitat management areas* (HMAs) to achieve the population objectives shown in table 2–5. (KNF) (STANDARD)

FW–713: Manage the Catahoula, Evangeline, Kisatchie, and Winn HMAs under *management intensity level* (MIL) 4. Manage the Vernon HMA under MIL 2. Proposed changes to the MIL for an individual HMA will be analyzed during the 5-Year Review process of the Forest Plan. (KNF) (GUIDELINE)

FW–714: The established HMA delineations and resulting RCW population objectives will remain stable. Analyze proposed adjustments to individual HMA boundaries and population objectives during the 5-Year Review process of the Forest Plan. (KNF) (GUIDELINE)

Management of Clusters, Replacement, and Recruitment Stands inside HMAs

FW–715: There is no set rotation for clusters, replacement, or recruitment stands, and they will remain in place until they can no longer provide suitable nesting habitat; for example, until all cavity trees are gone and habitat has deteriorated to a point beyond which a cluster can be supported. Boundaries of these stands could change as new cavities are excavated or artificial cavities are installed. (RCW) (GUIDELINE)

FW–716: Maintain clusters, replacement and recruitment stands in an open park-like condition with a basal area ranging from 60 to 80 square feet per acre. Minimum tree spacing of 20 to 25 feet to reduce SPB risk is more important than actual BA, especially in non-longleaf forest types. (KNF) (GUIDELINE)

FW–717: Permanently mark all active and inactive cavity trees for easy recognition and tag with a cluster-cavity tree identification number. Check as part of the monitoring process, and update cavity tree markings, if needed. (KNF) (GUIDELINE)

FW–718: Mark the boundaries of clusters, and recruitment stands that contain cavities, when any project that would alter the habitat, such as timber harvest or road construction, is planned within 1/4 mile of the cluster or recruitment stand. The marking of such boundaries may be temporary (signs or flagging tape) or permanent (painted bands). (KNF) (GUIDELINE)

TABLE 2–5, RCW HMA POPULATION OBJECTIVES

HMA	Objective Active Clusters
Catahoula	317
Evangeline	231
Kisatchie	292
Winn	263
Vernon	302

FW–719: The boundary of active and inactive clusters must be at least 200 feet from all cavity trees in the cluster, and encompass a stand not less than 10 acres in size. (RCW) (GUIDELINE)

FW–720: Replacement stands shall be established for all *active* clusters. The selection criteria include: (RCW) (GUIDELINE)

- At least 10 acres in size.
- Nesting suitability considering stand age, forest type, availability of relicts. Inactive clusters may be designated as replacement stands.
- Distance to a cluster: replacement stand should be adjacent to the cluster if possible, and no more than 1/2 mile from it.
- Replacement stands should ideally be 20 to 30 years younger than the cavity trees in the cluster.
- Clusters on private land: replacement stands would not be established adjacent to clusters on private lands until the group has moved onto national forest land.

FW–721: Recruitment stands shall be established in each HMA where the population objective exceeds the current RCW population. The number of recruitment stands shall, at a minimum, equal the HMA population objective minus the current number of groups in that HMA. The selection criteria include: (RCW) (GUIDELINE)

- At least 10 acres in size.
- Nesting suitability considering stand age, forest type, and availability of relicts.
- The oldest available stands or younger stands with sufficient relicts shall be selected. Inactive clusters may also be designated as recruitment stands. Midstory control shall be completed. Recruitment stands may be improved by installing artificial cavities.
- Distance to a cluster: recruitment stands should lie within 1/4 mile to 3/4 mile from a cluster or other recruitment stands to ensure good spatial distribution and increase probability of colonization.
- Must have adequate foraging habitat connected to the cluster or recruitment stand.
- Clusters on private land: recruitment stand(s) shall be established for RCW groups living on adjacent private lands within 3/4 mile of national forest lands. These stands shall be located on national forest lands as close to the cluster as possible.

FW–722: Determine the number of recruitment stands to be established within compartments, or portions of compartments, inside an HMA, based upon one cluster site or recruitment stand per: (KNF) (GUIDELINE)

- 200 acres of pine and pine-hardwood on landtype associations (LTAS) historically dominated by longleaf pine forests, LTAS 1,2,5,6.
- 250 acres of pine and pine hardwood on the Fort Polk Military Intensive Use Area.
- 300 acres of pine and pine hardwood on LTAs historically dominated by shortleaf pine / oak-hickory forests, LTA 3.
- 400 acres of pine and pine hardwood on LTAs historically dominated by mixed hardwood-loblolly pine forests, LTA 4.

FW–723: Possible recruitment stand locations have been identified within each HMA to meet the population objective. Establish final permanent recruitment stands annually at a rate equal to the estimated population growth potential (14 per year) during the compartment prescription process. (KNF) (GUIDELINE)

Cutting of Trees

FW–724: Timber harvest, other cutting, or killing of trees is prohibited within clusters or replacement or recruitment stands, except where such actions as thinning, SPB control, or midstory removal would protect or improve RCW habitat. Only snags or dead trees posing threats to public safety may be removed. (RCW) (GUIDELINE)

FW–725: Cutting of living or dead cavity trees in active or inactive clusters, including inactive clusters identified as replacement or recruitment stands, is prohibited except to maintain public safety or to protect a cluster or replacement / recruitment stand from insect attack. The U.S. Fish & Wildlife Service must be contacted and issue concurrence before *any* cavity tree is cut. (RCW) (GUIDELINE)

Midstory vegetation control

FW–726: Use midstory removal and control in all clusters, replacement and recruitment stands outside of Kisatchie Hills Wilderness. (KNF) (GUIDELINE)

FW–727: Prioritize midstory control in those clusters, replacement, and recruitment stands within 1.5 miles of existing active cluster sites. (KNF) (GUIDELINE)

FW–728: Prescribed burning on a two- to five-year rotation is preferred for midstory vegetation control. In stands with dense but small (less than two inches diameter) hardwood midstory, more frequent burning may be necessary to achieve control. (RCW) (GUIDELINE)

FW–729: In clusters, replacement or recruitment stands where hardwood midstory is too large to be killed by prescribed burning (greater than two inches diameter), the following methods may be used to remove midstory: (RCW) (GUIDELINE)

- Mechanical methods such as a feller-buncher, hydro-ax, drum chopper, mulcher, or shearing blade.
- Manual methods such as chainsaws, or brush hooks.
- Herbicides applied by injection, hypo-hatchet, or hand-sprayer.
- Or a combination of these methods.

FW–730: Midstory removal / control will occur over the entire stand (10-acre minimum) designated as a cluster, replacement or recruitment stand. (RCW) (GUIDELINE)

FW–731: All hardwood midstory trees within a 50-foot radius of active and inactive cavity trees will be removed. On average, 3 selected midstory hardwoods per acre can remain throughout the rest of the stand. Examples of desirable species to leave are dogwood, redbud, or other showy flowering species. However, no midstory treatment shall occur in natural hardwood areas, such as stream bottoms, which are within cluster boundaries unless essential to maintain the viability of the RCW group. (RCW) (GUIDELINE)

FW–732: Pine midstory shall be controlled before the trees (usually saplings and pole size trees) block access to cavity trees, potential cavity trees and line-of-sight between them. Pine regeneration should be retained where it does not interfere with cavity trees as previously described. (RCW) (GUIDELINE)

FW–733: No more than 10 within-canopy hardwoods per acre can be retained in these stands. (RCW) (GUIDELINE)

FW–734: Maintenance burns for clusters, replacement and recruitment stands which have already had midstory removed will receive priority. (RCW) (GUIDELINE)

FW–735: Emphasize growing season burns in those habitats that were naturally maintained by growing season fire. After midstory is controlled and the native herbaceous vegetation re-established, burning during other seasons may also be used if it will prevent and control midstory encroachment. (RCW) (GUIDELINE)

Artificial Cavities

FW–736: Artificial cavities shall be used in any RCW population, regardless of MIL, if suitable cavity trees are limited; for example, fewer than four functional cavities per cluster. (RCW) (GUIDELINE)

FW–737: Three types of cavities (drilled, inserts, or start holes) will be used, depending on the characteristics of available trees and the needs of a particular RCW group. (RCW) (GUIDELINE)

FW–738: The procedures and methods specified by Taylor and Hooper (1991) and Allen (1991) will be used to construct or install cavities. (RCW) (GUIDELINE)

FW–739: Only individuals experienced in the respective techniques may install artificial cavities. (RCW) (GUIDELINE)

FW–740: Midstory vegetation must be controlled in conjunction with installation of artificial cavities. (RCW) (GUIDELINE)

FW–741: The following priorities will be followed to schedule installation of artificial cavities: (RCW) (GUIDELINE)

1. Active clusters with a single cavity.
2. When needed to support augmentation of single bird groups.
3. Active clusters with fewer than 4 usable cavities.
4. Recruitment stands, which may be inactive clusters, with fewer than 4 usable cavities, within 1 mile of an active cluster.

5. Recruitment stands, which may be inactive clusters, with fewer than 4 usable cavities, within 3 miles of an active cluster.
6. Inactive clusters or recruitment stands more than 3 miles from an active cluster.

FW–742: Artificial cavities are required in MILS 2, 3, and 4. In addition to completed drilled cavities or cavity inserts, 3 or more drilled start holes are recommended in MILS 3 and 4. (RCW) (GUIDELINE)

FW–743: Cavity restrictors will be used where needed to minimize cavity competition, and in conjunction with artificial cavities, to ensure that each RCW group has at least four functional cavities. (RCW) (GUIDELINE)

FW–744: Restrictors should be placed on enlarged cavities and unenlarged cavities where experience shows cavity enlargement is likely. Use the following priorities to schedule installation of restrictors: (RCW) (GUIDELINE)

1. Active clusters with a single usable cavity.
2. Single bird groups with fewer than 4 usable cavities.
3. Active clusters with 2 to 4 usable cavities.
4. Inactive clusters with fewer than 4 usable cavities.
5. Active clusters with 5 to 8 usable cavities.

FW–745: Restrictors shall not be installed on cavities that have been enlarged internally to the point of being unusable by RCW. (RCW) (GUIDELINE)

FW–746: Monitor restrictors to ensure proper installation and acceptance by RCW. (RCW) (GUIDELINE)

FW–747: Maintain adequate levels of midstory control to create unsuitable habitat conditions for cavity competitors. (RCW) (GUIDELINE)

FW–748: Install non-lethal snake and squirrel excluder devices as needed. (RCW) (GUIDELINE)

FW–749: Install nest boxes for competitors if analysis indicate they may reduce competition for RCW cavities. (RCW) (GUIDELINE)

FW–750: Within 1/2 mile of active RCW clusters and inactive clusters or recruitment stands that have been made suitable for translocation, retain single dead trees, including vacated SPB trees, but not in an SPB spot. Within 1/4 mile of inactive RCW clusters unsuitable for translocation, retain single dead trees, including vacated SPB trees. (RCW) (GUIDELINE)

FW–751: In SPB spots one acre or larger in size, retain six vacated SPB sawtimber size trees per acre if available, two of which should be the largest trees. (RCW) (GUIDELINE)

FW–752: In SPB spots less than one acre, retain two of the larger vacated SPB trees, if available. These guidelines do not preclude salvage of dead trees from large areas resulting from insect outbreaks, hurricanes, tornadoes, or other catastrophic occurrences. (RCW) (GUIDELINE)

Translocation

FW–753: Translocation of RCWS will be used to expand existing populations and to reestablish RCW to areas where extirpated. (RCW) (GUIDELINE)

FW–754: Prior to any translocation, at least 4 suitable cavities must be available in the cluster, midstory control shall be completed, and adequate foraging (at least 2/3 of the USFWS' Blue Book standards) must be available. (KNF) (GUIDELINE)

FW–755: The following priorities will be used when planning augmentation of any single bird group; however, single bird groups in populations with 50 or less active clusters will have priority over single bird groups in populations with more than 50 active clusters: (RCW) (GUIDELINE)

1. A single bird group located a mile or more from another group containing a breeding pair.
2. A single bird group with 1 or 2 breeding pairs within a mile.
3. A single bird group with 3 to 4 breeding pairs within a mile.
4. A single bird group with 5 or more breeding pairs within a mile.

FW–756: Priorities for reestablishing RCW groups (translocation of a male and female bird) vary by management objective. If expanding an existing group, the above priorities for augmentation would be used. Rees-

tablishment may be used to expand existing populations even though all single-bird groups may not have been successfully augmented. (KNF) (GUIDELINE)

FW–757: Give priority for re-establishing RCW groups within the Forest's HMAS to inactive clusters and recruitment stands within 1 mile of active clusters. (KNF) (GUIDELINE)

FW–758: Translocation of RCW within populations / subpopulations is encouraged. Any population with reproduction, regardless of size, and single bird groups should be a candidate for such intrapopulation translocations. (RCW) (GUIDELINE)

FW–759: Prioritize translocation of RCW within and among the Kisatchie's populations to HMA populations with the greatest risk of extirpation or greatest population decline. (KNF) (GUIDELINE)

FW–760: If translocations between populations are necessary, it is desirable to move birds between areas of similar latitude, elevation, and forest type. (RCW) (GUIDELINE)

Motorized, heavy equipment, and concentrated human use areas

FW–761: Projects to improve RCW habitat within or adjacent to clusters, replacement or recruitment stands which involve motorized or heavy equipment must include sufficient project administration and / or contract language to protect these stands, especially cavity trees and potential cavity trees. (RCW) (GUIDELINE)

FW–762: The development of new concentrated equipment use or concentrated human use areas such as log decks, off-road vehicle trails, trail heads and camp sites is prohibited within clusters, replacement and recruitment stands. (RCW) (GUIDELINE)

FW–763: Short-term uses, for example, pine straw baling, may be allowed in recruitment stands if a site-specific analysis indicates they will have no long-term adverse effect on the stand's suitability as potential nesting habitat. (RCW) (GUIDELINE)

FW–764: Existing uses shall be modified or relocated if they are found to adversely affect the RCW. (RCW) (GUIDELINE)

Cavity tree protection during prescribed burning operations

FW–765: Burning prescriptions and cycles must minimize risk to cavity trees. (RCW) (GUIDELINE)

FW–766: Protect all active cavity trees from fire during prescribed burning operations. Protection may involve any number of methods including, but not limited to: (1) raking around or back firing from the base of the tree, (2) using a "wet" line or foam line around the tree or entire cluster, and (3) mechanically removing vegetation. (KNF) (GUIDELINE)

FW–767: Plow lines will be kept 200 or more feet from cavity trees unless an emergency or site-specific circumstance such as location of a property boundary, etc., dictate the need to locate them closer. If conditions dictate plow lines be placed within 200 feet of cavity trees, use of a dozer blade to lightly scrape away fuels is preferable to using a deep cutting plow. (RCW) (GUIDELINE)

Nesting season disturbance

FW–768: All potentially disturbing activities within clusters shall be scheduled before or after the nesting season. (RCW) (GUIDELINE)

FW–769: Such activities include RCW habitat improvement, except as necessary for the continued survival of the group; for example, installation of artificial cavities to replace cavities lost to natural causes. Another exception is prescribed burning, allowed during nesting season. (RCW) (GUIDELINE)

FW–770: The general nesting season dates of March 1-July 31 will be respected unless the specific RCW population's nesting season is determined through monitoring to be different. (RCW) (GUIDELINE)

Construction of rights-of-way

FW–771: Construction of linear rights-of-way, such as roads, powerlines, or pipelines is prohibited within clusters, replacement or recruitment stands. (RCW) (GUIDELINE)

Existing rights-of-way reconstruction and maintenance

FW–772: Reconstruction or maintenance of existing roads, powerlines, or pipelines through clusters, replacement or recruitment stands is allowed if activity is scheduled outside the nesting season. Activities shall be closely monitored to ensure protection of current and potential cavity trees. (RCW) (GUIDELINE)

FW–773: Light maintenance of high-standard open roads, such as road grading or right-of-way mowing, and emergency maintenance of powerlines and pipelines, may be allowed during the nesting season. (RCW) (GUIDELINE)

Southern pine beetle suppression

FW–774: Minimize the potential impact of southern pine beetle (SPB) through thinning and prompt control actions. (RCW) (GUIDELINE)

FW–775: For protecting cavity trees and RCW during SPB control actions, the following *SPB Record of Decision* standards apply in active clusters: (RCW) (STANDARD)

- Cutting of trees already vacated by SPB is prohibited unless they pose a threat to public safety.
- Cutting of SPB infested inactive cavity or relict trees is allowed within a designated treatment buffer zone only to protect the rest of the cluster.
- Cutting of any infested tree within 200 feet of a cavity tree is allowed only to protect the cavity tree.
- Cut-and-remove SPB control operations are prohibited during nesting season.
- Only minimal disturbance, such as cutting or chemical treatment, is allowed to protect cavity trees during the nesting season.
- The pile and burn SPB control technique is prohibited within clusters.

Cluster status and database management

FW–776: A database will be maintained and updated annually. It will include the status category of all RCW clusters within the HMAs. (RCW) (GUIDELINE)

FW–777: Six cluster status categories — *active*, *inactive*, *abandoned*, *historic*, *destroyed*, and *invalid* — shall be recognized and tracked. (KNF) (GUIDELINE)

FW–778: Cavity trees shall be preserved in all but the invalid category. No special management is required for an abandoned, historic, or destroyed cluster unless identified as a replacement or recruitment stand. (RCW) (GUIDELINE)

FW–779: Active clusters may be declared inactive if no RCW or signs of RCW are present. (RCW) (GUIDELINE)

FW–780: Inactive clusters in MIL 2 and 3 with declining populations and all MIL 4 populations cannot be declared abandoned. Site-specific conditions may allow declaring a cluster abandoned. Such situations will be evaluated on an individual basis and require informal consultation with and concurrence by the U.S. Fish & Wildlife Service. (RCW) (GUIDELINE)

Management of RCW cluster sites located outside the HMAs.

FW–781: For active clusters, apply all management strategies and habitat improvement practices applicable to the HMA to the 200–400 acres of suitable habitat around active cluster site(s) discovered outside established HMAs. The objective is to maintain the viability of the group. All offspring, with the possible exception of one juvenile male helper, would be relocated to augment single birds or to establish new active cluster sites within the HMA. (KNF) (GUIDELINE)

FW–782: Protect all existing cavity trees within inactive cluster sites located outside established HMAs. (KNF) (GUIDELINE)

RCW habitat management within 1.5 Miles of active clusters

FW–783: Emphasize immediate population stabilization and expansion. Give priority to direct habitat improvements within cluster sites, recruitment stands and replacement stands (midstory removal and maintenance, restrictor installation, artificial cavity creation, predator / competitor control); to population augmentation efforts; on maintaining adequate foraging substrate; and to overall

habitat improvement through the use of prescribed fire. (KNF) (GUIDELINE)

Foraging habitat management — general

FW–784: Adequate levels of foraging habitat shall be provided for all active clusters and recruitment stands (both the established recruitment stands and the tentatively identified recruitment stand locations). **(RCW) (GUIDELINE)**

FW–785: Available foraging habitat includes the cluster, recruitment and replacement stands. **(RCW) (GUIDELINE)**

FW–786: Foraging habitat is not required for inactive clusters unless identified as recruitment stands. **(RCW) (GUIDELINE)**

FW–787: Additional foraging habitat is not required for replacement stands, as they are always associated with active clusters that should have adequate foraging habitat. **(RCW) (GUIDELINE)**

FW–788: Adequate foraging habitat will be provided according to USFWS guidelines for preparation of biological assessments and evaluations for the RCW (Blue Book standards), whenever pine tree removal is planned within 1/2 mile of clusters or recruitment stands. **(RCW) (GUIDELINE)**

FW–789: The following foraging habitat requirements must be met for all active clusters and recruitment stands: **(RCW) (GUIDELINE)**

- At least 8,490 square feet of BA in pine stems larger than 5 inches DBH.
- At least 6,350 pine stems 10 inches DBH or larger and 30 years old or older.
- Must be within 1/2 mile of the geometric center of the cluster or recruitment stand. If existing foraging within 1/2 mile radius circle is inadequate, stands beyond 1/2 mile must be included to meet foraging requirements.
- Must be continuous and contiguous with the cluster or recruitment stand.
- Include only pine or pine-hardwood stands.

FW–790: Foraging habitat stands should be maintained at 70–110 square feet of pine BA, depending on site and stand condition. However, stands with 30 or more square feet of pine may be considered suitable foraging habitat; for example, mixed stands and pine shelterwood cuts. **(RCW) (GUIDELINE)**

FW–791: Where foraging is limited, make thinning of young stands less than 10 inches DBH within 1/2 mile of active clusters a priority. Thin such stands using standard silvicultural prescriptions. **(RCW) (GUIDELINE)**

FW–792: Provide 100 percent of forage for RCW groups whose 1/2-mile foraging zone extends into another ownership, unless an agreement exists with the private landowner to ensure provision of a proportional share of foraging habitat. **(RCW) (GUIDELINE)**

FW–793: Provide the Forest Service proportional share of foraging for RCW groups on adjacent non-Forest Service land when a group's 1/2-mile foraging zone extends onto National Forest, even if no cooperative agreement exists. **(RCW) (GUIDELINE)**

Reduced foraging habitat

FW–794: Foraging habitat may be provided at a level up to one-third below that given above if the following situations occur, and provided there is a finding that RCW populations would benefit in the long term: **(KNF) (GUIDELINE)**

- Thinning to reduce risk of SPB outbreaks per the SPB EIS and ROD, even if foraging is limited. Such thinning must be supported by a SPB hazard analysis showing a moderate or high risk of infestation.
- Thinning of dense immature sawtimber stands (greater than 110–120 sq. feet per acre BA) to improve their suitability as foraging habitat, even if foraging is limited. Such stands may be reduced to a BA of 90 sq. feet per acre.
- To expedite the restoration of pine species (e.g., regeneration of off-site species) preferred by RCW, foraging habitat for recruitment stands 1.5 miles or more from an active cluster can be reduced 50 percent below USFWS requirements (Blue Book standards). This would require approximately 3,175 pine stems equal to or greater than 10 inches DBH and at least 30 years old, and 4,245 square feet of pine BA in stems 5 inches DBH and larger. The foraging habitat must be contiguous and

continuous with the recruitment stand. If such a recruitment stand is activated or a new active cluster is found closer than 1.5 miles, a full complement of foraging must be provided, if available, for the new cluster and any recruitment stands within 1.5 miles of it. If a full complement of foraging is not available all foraging within 1/2 mile will be retained.

Providing future nesting habitat

FW–795: Retain, by compartment or portions of compartment within a HMA, the oldest 1/3 of existing pine acres which may be potentially suitable nesting habitat (upland stands) until they reach rotation age, through the first rotation. **(KNF) (GUIDELINE)**

FW–796: It may be desirable to regenerate a portion of the oldest 1/3 before it reaches rotation age to facilitate achieving regulation in areas managed with even-aged systems. In such cases regeneration within the oldest 1/3 may occur if the oldest 1/3 is within 10–20 years of rotation. Any regeneration must occur in the youngest end of the oldest 1/3. This is not a blanket exception to retaining the oldest 1/3 and would only be allowed in specific situations. **(RCW) (GUIDELINE)**

FW–797: Do not remove relicts in thinning operations in HMAS classified as MIL 2–4. A possible exception is non-longleaf relicts so closely spaced that potential for SPB infestation is increased. In such situations the relicts may be thinned to a minimum spacing of 20–25 feet. **(RCW) (GUIDELINE)**

FW–798: Stands approaching an age of providing potential nesting habitat, generally 70–100 years depending on pine species, should be managed as follows: **(KNF) (GUIDELINE)**

- Maintain a pine BA of 60–80 square feet and maintain a minimum spacing of 20–25 feet between dominant and codominant trees. Spacing is especially critical in the non-longleaf types. An exception to this would be allowing a minimum of 50 square feet of pine basal area in mixed pine-hardwood management types.
- Maintain an open, park-like structure through regular prescribed burning.

Prescribed burning

FW–799: Establish a burning cycle of two to five years HMA-wide. In stands where fire has been excluded for many years, annual burning may be necessary to significantly reduce midstory. **(RCW) (GUIDELINE)**

FW–800: Emphasize use of growing season burns in ecologically appropriate areas. Recognize, however, that habitat goals may require burning whenever conditions permit. **(RCW) (GUIDELINE)**

FW–801: All burning prescriptions will be based on site specific conditions, including vegetation, site and weather conditions, and RCW management priorities. **(RCW) (GUIDELINE)**

FW–802: Use natural firebreaks (streams, roads, swamps, etc.) whenever possible to reduce impacts of constructing firelines. **(RCW) (GUIDELINE)**

SPB Hazard Reduction

FW–803: In stands where SPB hazard is rated as moderate or higher, thin to achieve a minimum spacing of 20–25 feet between trees while retaining at least 70 square feet of overstory pine BA. An exception to this would be allowing a minimum of 50 square feet of pine BA in mixed pine-hardwood management types. **(KNF) (GUIDELINE)**

FW–804: Give priority to thinning stands within 1/4 mile of active clusters. **(RCW) (GUIDELINE)**

Clearing for non-timber management purposes

FW–805: Where initial oil and gas exploration activities cannot occur outside RCW HMAS, prioritize exploration within a HMA as follows: **(KNF) (GUIDELINE)**

1. Beyond 1 1/2 miles of an active cluster site
2. Beyond 1 mile of an active cluster site
3. Beyond 1/2 mile of an active cluster site
4. Beyond 1/4 mile of an active cluster site

FW–806: Minimize to the greatest extent possible the amount of pine tree removal needed to locate all oil and gas facilities on a well site. **(KNF) (GUIDELINE)**

FW–807: Permanent clearings for non-timber purposes may not occur if the loss of habitat would reduce the capability of the HMA to support its identified RCW population objective. **(RCW) (GUIDELINE)**

FW–808: In MILs 3 and 4, clearings are not allowed within 1/4 mile of RCW groups. **(RCW) (GUIDELINE)**

FW–809: Clearings are not allowed if foraging habitat is limited, or if the clearing completely severs a cluster or recruitment stand from its foraging habitat. **(RCW) (GUIDELINE)**

FW–810: The size and longevity of clearings for oil and gas well sites should be minimized to the greatest extent practicable. Clearing for these purposes should be no greater than 5–8 acres for horizontal drilling and 2–4 acres for vertical drilling. **(KNF) (GUIDELINE)**

FW–811: Require immediate reforestation of all unneeded or abandoned well site areas, access roads, or pipeline rights-of-way. **(KNF) (GUIDELINE)**

FW–812: Fit well site dimensions to the site and resource needs to the greatest extent possible. **(KNF) (GUIDELINE)**

FW–813: Do not allow timber harvesting for oil and gas facilities until immediately before drilling operations. **(KNF) (GUIDELINE)**

FW–814: Where well site locations cannot be placed on other ownerships, prioritize locations within RCW HMAS as follows: **(KNF) (GUIDELINE)**

1. Existing permanent openings or non-forest land.
2. Unsuitable RCW habitat (hardwood-pine, hardwood).
3. Off-site loblolly and slash plantations.
4. Off-site loblolly and slash < 30 years old.
5. Pine-hardwood < 30 years old.
6. Pine-hardwood ≥ 30 years old.
7. Longleaf pine < 30 years old.
8. Longleaf pine ≥ 30 years old.

FW–815: When locating well sites in pine or pine-hardwood types greater than 30 years old, select areas with the least number of relicts or suitable cavity trees and lowest basal area of pine. **(KNF) (GUIDELINE)**

FW–816: Use existing road corridors, other existing rights-of-way, and other non-forest land wherever possible for well site access routes, production facilities, and pipeline corridors. **(KNF) (GUIDELINE)**

FW–817: Specify clearing limits for all access roads and pipeline corridors within HMAS to be no more than 30 feet wherever possible. **(KNF) (GUIDELINE)**

FW–818: In situations where mineral rights are privately-owned, limit or prohibit clearings for the exploration / development of these resources to the extent legally possible. Consult with OGC. **(RCW) (GUIDELINE)**

Thinning

FW–819: Thinning of stands considered unsuitable as foraging habitat (average DBH of less than 10 inches) is encouraged and may take place at any time. Standard silvicultural guidelines apply. **(RCW) (GUIDELINE)**

FW–820: Provide for the following in stands that are equal to or greater than 10 inches DBH: **(KNF) (GUIDELINE)**

- Maintain pine BA of 70–110 square feet, depending on site and stand location. An exception would be allowing a minimum of 50 square feet of pine BA in mixed pine-hardwood management types.
- Do not remove more than 30 square feet of BA in the dominant or codominants in any single thinning operation.
- Use the following priority to select pine trees to retain:
  - Relict trees
  - Other potential cavity trees
  - Trees greater than 10 inches DBH that are not potential cavity trees
  - Trees less than 10 inches DBH.

Even-aged and two-aged silviculture for RCW habitat

FW–821: Rotation age for pine-hardwood forest types will be set by the pine species being managed. **(RCW) (GUIDELINE)**

FORESTWIDE STANDARDS AND GUIDELINES

RESOURCE ELEMENTS

WILDLIFE

FW–822: Table 2–6 shows the minimum rotation ages prescribed for the various pine species and the acreage that may be sustainably regenerated per decade. **(RCW) (GUIDELINE)**

FW–823: Calculate the appropriate even-aged and two-aged regeneration method acres within an **HMA** based on: **(KNF) (GUIDELINE)**

- The **MIL** of the particular **RCW** population.
- The acres of suitable **RCW** habitat (pine and pine-hardwood forest types with potential to produce foraging habitat) within the **HMA** regardless of their suitability for timber production.
- The rotation applicable to each management type represented.
- The existing acreage of each management type which is in the 0–10 and 0–30 age classes. Existing acres resulting from catastrophic events such as insect outbreaks, fire, weather, etc. must be included in the appropriate age class acres. Openings made to control **SPB** must also be included.

Uneven-aged silviculture for RCW habitat

FW–824: Utilize the guidance for the use of the uneven-aged management (**UEAM**) system or uneven-aged regeneration techniques within **RCW HMAS** contained in the forestwide direction given for **UEAM**, with additional guidance found in the appropriate **MA** / **SMA** standards and guidelines. **(KNF) (GUIDELINE)**

TABLE 2–6, MINIMUM PINE ROTATION AGES AND SUSTAINABLE ACREAGES

Pine Type	Rotation Age	Acreage Percentage to Regenerate in 10-Yr Period
Longleaf Pine	120 Years	8.3%
Shortleaf Pine	120 Years	8.3%
Loblolly Pine	100 Years	10.0%
Slash Pine	100 Years	10.0%

Minimizing Habitat Fragmentation

FW–825: No pine stands within **1/4** mile of an active cluster in an **HMA** classified as **MIL 3** or **4** may be regenerated using even-aged (**EAM**) or two-aged systems. This prohibition includes cuttings to restore desirable pine species. Only intermediate treatments to enhance **RCW** habitat or **UEAM** is allowed, if other applicable guidelines including required foraging habitat are met. An exception would be the planting or seeding of stands destroyed by catastrophic events such as hurricanes and tornadoes. **(RCW) (GUIDELINE)**

FW–826: Limit regeneration patch size (even-aged or two-aged systems) to 40 acres in **MILs 1** and **2** and 25 acres in **MILs 3** and **4**. An exception to this is the restoration of longleaf pine beyond 1.5 miles of an active cluster, where the maximum opening size will be 40 acres. **(KNF) (GUIDELINE)**

FW–827: Do not create openings greater than 330 feet in width, that completely sever clusters / recruitment stands from their foraging habitat, or that sever corridors linking sub-populations and isolated clusters. **(RCW) (GUIDELINE)**

Pine restoration — general

FW–828: The rate of longleaf and shortleaf pine restoration is based on regenerating 8.3 percent of the total management type acres being managed to provide suitable **RCW** habitat within each individual **HMA**. Management type acres are those acres of the existing species being restored plus the acres of offsite species to be replaced. Include management type acres identified as unsuitable for timber production or managed under an uneven-aged system within the total management type acres. **(KNF) (GUIDELINE)**

FW–829: The following apply to all restoration efforts, including accelerated pine restoration: (**KNF**) (**GUIDELINE**)

- In a population classed as **MIL 3** or **4**, restoration using an even-aged or two-aged system may not occur within **1/4** mile of an active cluster.
- Plan restoration to avoid excessive age class bulges, especially if the new stands are to be managed with an even-aged system.

- No existing stands of the desired pine type (species being restored) may be regenerated until they reach rotation age, although thinning may occur.
- Do not create openings greater than 330 feet in width which completely sever clusters or recruitment stands from their foraging habitat or that sever corridors linking sub-populations or isolated clusters.
- During restoration, all existing trees of the desired species shall be retained, with two exceptions. Clumps of desired species that are dominant or codominant with a basal area of greater than 70 square feet [per acre] can be thinned to improve RCW habitat conditions. Clumps of desired species less than 10 inches DBH and less than 30 years old can be thinned to promote growth and vigor.
- Conversion of longleaf pine to another pine species within an HMA requires consultation with the USFWS.

RCW habitat management beyond 1.5 miles of active clusters

FW–830: Emphasize creating and maintaining long-term RCW habitat. Give priority to restoration of preferred RCW forest types (longleaf and shortleaf pine); to maintaining stand health through thinning; and to overall habitat improvement through the use of prescribed fire. (KNF) (GUIDELINE)

FW–831: During the first 10–20 years of Forest Plan implementation, prioritize regeneration within a HMA beyond 1.5 miles of active RCW cluster sites. (KNF) (GUIDELINE)

Accelerated pine restoration

FW–832: Emphasize HMAS with sparse or scattered RCW populations. In order to expedite restoration in portions of an HMA that are 1.5 miles or more from an active cluster the 0-10 and 0-30 guidelines may be exceeded and a reduced level of foraging habitat may be provided for recruitment stands provided that: (RCW) (GUIDELINE)

- During the first 20 years of RCW strategy implementation the area in the 0-10 age classes cannot exceed 15 percent, and the area in the 0-30 age classes cannot exceed 40 percent.
- Foraging habitat for recruitment stands can be reduced to 3,175 pine stems ≥ 10 inches DBH and at least 30 years old and 4,245 square feet of pine BA in stems ≥ 5" DBH.

Regenerating longleaf pine

Clearcutting with reserves

FW–833: Allow the use of clearcutting with longleaf reserves in all MILs to restore longleaf pine to longleaf sites currently occupied by another species. Retain all existing longleaf pines within the regeneration area during harvest and site preparation activities, except as noted in MA or SMA guidance. (KNF) (GUIDELINE)

FW–834: In MIL 1, clearcutting may be used to regenerate very sparse (less than 24 pines per acre that are 10" DBH or larger) or damaged stands. (RCW) (GUIDELINE)

Shelterwood cutting with reserves

FW–835: MIL 1 (RCW) (GUIDELINE)

- Reduce stand to 25–30 square feet of pine BA [per acre] at first cut.
- Seed trees should be vigorous, well formed and show signs of past seed production.
- Once a new stand of seedlings is established, the seed trees can be removed.
- Retention of 10 square feet of BA but not less than 6 longleaf trees per acre (longleaf reserve trees) is optional, but encouraged. If retained, they should be clumped.

FW–836: MIL 2 and 3: (RCW) (GUIDELINE)

Same as MIL 1, except retention of longleaf reserve trees is mandatory. The priorities for selecting the reserve trees are:

- Relict trees
- Other potential cavity trees
- Other trees larger than 10 inches DBH that meet requirements as seed producers
- Reserve trees would remain until the HMA is classified as MIL 1.

FW–837: MIL 4: (RCW) (GUIDELINE)

Same as **MILs 2** and **3** except leave 40 square feet pine **BA** [per acre] at first cut.

Group and single-tree selection

FW–838: The group and single-tree selection methods may be used to regenerate longleaf pine in all **MILS**, unless foraging habitat is limited. **(RCW) (GUIDELINE)**

Regenerating shortleaf, loblolly, and slash pine

Clearcutting with reserves

FW–839: Allow the use of clearcutting with reserves in all **MILS** to restore shortleaf pine to shortleaf sites currently occupied by another species. Retain all existing shortleaf pines within the regeneration area during harvest and site preparation activities, except as noted in **MA** or **SMA** guidance. **(KNF) (GUIDELINE)**

FW–840: In **MIL 1**, clearcutting may be used to regenerate very sparse (less than 24 pines per acre 10" **DBH** or larger) or damaged stands. **(RCW) (GUIDELINE)**

Shelterwood with reserves

FW–841: MIL 1: (RCW) (GUIDELINE)

- Reduce stand to 25–30 square feet of pine **BA** [per acre] at first cut.
- Seed trees should be vigorous, well formed and show signs of past seed production.
- Once a new stand of seedlings is established the seed trees can be removed.
- Retention of 6 trees per acre (reserve trees) is optional, but encouraged.
- Distribution of reserve trees, if retained, is at the discretion of the manager.

FW–842: MIL 2: (RCW) (GUIDELINE)

Same as **MIL 1**, except retention of reserve trees is mandatory. The priorities for selecting the reserve trees are:

- Relict trees
- Other potential cavity trees
- Other trees larger than 10 inches **DBH** that meet requirements as seed producers

Reserve trees would remain until the **HMA** is classified as **MIL 1**.

FW–843: MIL 3: (RCW) (GUIDELINE)

Reduce stand to 25–30 square feet of pine **BA** [per acre] at first cut. All these trees are to remain until the **HMA** moves into **MIL 2**. Priorities for selecting trees to be retained as shelterwood are:

- Relict trees
- Other potential cavity trees
- Other trees larger than 10 inches **DBH** that meet requirements as seed producers
- When the **HMA** moves into **MIL 2** the shelterwood trees may be removed, except for 6 trees per acre.

FW–844: MIL 4: (RCW) (GUIDELINE)

Reduce stand to 40 square feet of pine **BA** [per acre] at first cut. Priorities for selecting trees to be retained as shelterwood are:

- Relict trees
- Other potential cavity trees
- Other trees larger than 10 inches **DBH** that meet requirements as seed producers
- All these trees are to remain until the **HMA** moves into **MIL 3**.
- When the **HMA** moves into **MIL 3** the shelterwood trees may be reduced to 25–30 square feet of pine **BA** [per acre].

Group Selection and Single-Tree Selection

FW–845: The group and single-tree selection methods may be used to regenerate longleaf pine in all **MILS**, unless foraging habitat is limited. **(RCW) (GUIDELINE)**

Monitoring

FW–846: Monitoring requirements for **RCW** populations and habitat is in accordance with that given in the ***RCW FEIS Record of Decision*** and can be found in Chapter 5 and Appendix F. **(KNF) (GUIDELINE)**

Consultation requirements

FW–847: Ensure all active cavity trees lost or any active cavities destroyed by prescribed fire will be replaced within 48 hours by installing the appropriate number of artificial cavities within suitable trees, weather permitting. **(KNF) (GUIDELINE)**

FW–848: Conduct post-burn evaluations within 48 hours of a prescribed burn to inspect for damage to **RCW** cavity trees. Within two weeks of that evaluation, provide the

USFWS's Lafayette Field Office with a written report of any cavity trees or cavities damaged, any known losses of nest cavities, eggs, nestlings, and/or adults, and remediation actions taken. (KNF) (GUIDELINE)

FW–849: By January 31 of each year, report to the USFWS's Lafayette Field Office the total number of active clusters affected by the prescribed burn by Unit and/or District. The number of active cavity trees and active cavities destroyed by prescribed burning will also be reported, along with any known losses of nest cavities, eggs, nestlings, and/or adults. The number of artificial cavities installed to replace the losses will also be reported. If all of the above-mentioned data are contained within the annual monitoring report the Kisatchie National Forest supplies to the USFWS's RCW recovery coordinator each year, a copy of that report could be forwarded to the Lafayette Field Office in lieu of a separate report. (KNF) (GUIDELINE)

FW–850: Upon locating a dead, injured, or sick individual of an endangered or threatened species, initial notification must be made to the USFWS according to the terms outlined in the Kisatchie National Forest's most current Endangered Species Act Section 10(a)(1)(A) permit. Care should be taken in handling sick or injured individuals and in the preservation of specimens in the best possible state for later analysis of cause of death or injury. (KNF) (GUIDELINE)

Other threatened, endangered, sensitive, and rare wildlife

General

FW–851: Enhance sensitive and conservation animal species' populations and habitats to maintain reproducing, self-sustaining populations. Conduct assessments to determine which listed rare species are at higher risk. Develop conservation assessments and strategies for higher-risk listed rare animal species first, with the intent of preventing the need for federal listing as T&E species. (KNF) (GUIDELINE)

Bald Eagle

FW–852: Manage Bald Eagle nest and roost sites as described in the USFWS *Habitat Management Guidelines for the for the Bald Eagle in the Southeast Region, January 1987, U.S. Fish and Wildlife Service.* (KNF) (GUIDELINE)

Louisiana black bear

FW–853: Within the constraints of the other Forestwide and Management Area goals, desired future conditions, and standards and guidelines, comply with the conservation measures presented in the 1995 Louisiana Black Bear Recovery Plan including: (KNF) (GUIDELINE)

- Maintaining a diverse, productive forest that provides preferred bear foods (hard-mast producers and soft-mast producers) and cover (thickets).
- Using single-tree, group selection, patch clearcuts, or a combination of these in uneven-aged or even-aged hardwood management.
- Creating SHPZs, forested hardwood corridors (as wide as possible) along major drainages in hardwood forests and pine forests — to provide habitat diversity, mast production, den sites, and travel lanes for bears.
- Preserving present and potential cavity trees as denning sites.
- Favoring cypress stands, escape thickets, food sources, and travel corridors connecting forested areas.
- Optimizing diversity in hardwood and pine plantations — in considering the size, shape, and arrangement of harvest cuts, as well as the proximity and age of nearby harvested areas.
- Favoring hard-mast producing species such as oaks and pecans on suitable sites.
- Thinning natural hardwood stands when feasible, preferably at 5-15 year intervals.
- Burning pine stands on a 3-5 year rotation, always protecting SHPZs.
- Limiting construction of permanent all-weather roads into forested areas and gating or closing such roads when not in use.

Louisiana pearlshell mussel

FW–854: Manage habitat for the Louisiana pearlshell mussel by complying with conservation measures addressed in the Louisiana Pearlshell Recovery Plan (**1989**), including: (**KNF**) (**GUIDELINE**)

- Maintaining the beaver control program within the known range of this mussel.
- Restricting the use of off-road vehicles near known pearlshell populations.
- Ensuring that cattle and cattle grazing pose no threat to existing mussel beds.
- Maintaining high water quality in streams where this species is known to occur.

FW–855: Protect the Louisiana pearlshell mussel habitat by reducing the delivery of sediment into the stream channel. Use the following guidance: (**KNF**) (**GUIDELINE**)

- Provide improved roadway ditch relief by increasing the number of lead-off ditches.
- Construct lead-off ditches so that they do not discharge directly into streams.
- Provide for temporary erosion control measures during construction and / or reconstruction; hay-bale ditch checks, inclusion of annual grass seed (rye) into the permanent seed mix, and placing silt fences along the road **ROW** where needed (toe of fills, in natural drains downstream of culvert outlets, and at the ends of lead-off ditches).
- Ensure that roads to be constructed / reconstructed are located as far from the streambeds as practical (preferably along ridges).
- Issue oil and gas leases with a highly restrictive *controlled surface use* (**CSU1**) stipulation within all **SHPZs** and **RAPZs** inside Louisiana pearlshell mussel sub-watersheds.
- Avoid plowing through Louisiana pearlshell mussel **SHPZs** when prescribe burning. See also, **FW–071.**
- Plan and conduct other forest management activities within Louisiana pearlshell mussel **SHPZs** and **RAPZs** to protect or enhance the habitat of the mussel. See **FW–510** through **FW-519** for limitations on management activities within **SHPZs** and **RAPZs .**

Chapter 3 Management Area Direction

INTRODUCTION

Chapter 3 defines *management area* and *sub-management area goals, desired future conditions*, and *standards and guidelines*. Forestwide goals, desired future condition (DFC), and standards and guidelines are defined in Chapter 2, *Forestwide Direction*.

Management area (MA) and sub-management area (SMA) goals describe the primary resource emphasis on a more specific landscape. Provisions are made for other resources at varying levels.

The DFCs in MAs and SMAs address the ecological legacy and condition of such areas along with their potential for human use and experience. Each DFC includes a description of the landscape alterations, forest appearance, associated wildlife, and possible human experiences and interactions.

The standards and guidelines in MAs and SMAs provide additional guidance supplementing Forestwide standards and guidelines. Taken together, the combination of Forestwide, management area, and sub-management area standards and guidelines provide the overall direction for a specific landscape.

MANAGEMENT AREA 1: FOREST PRODUCTS

DESCRIPTION

This management area is allocated to approximately 31,000 acres on the Forest. It occurs on the Catahoula District (32 percent); the Evangeline Unit of the Calcasieu District (46 percent); and the Winn District (22 percent).

MANAGEMENT GOALS

Emphasize high levels of commodity outputs while meeting all minimum management requirements.

Focus forest management activities and practices to produce vigorously growing stands of pine sawtimber. Produce additional wood fiber products through periodic stand tending activities and the salvaging of dead and dying trees.

DESIRED FUTURE CONDITION

The natural landscape in this area has been modified to a high degree due to past management activities. Vegetation patterns are primarily a product of frequent timber harvests resulting in numerous large openings. Evidence of prescribed fire activities (plow lines, blackened tree trunks, vegetation) can be seen on a limited amount of the area. The landscape is frequently intersected by narrow road corridors.

The overstory vegetation on a majority of the area consists primarily of pine stands. The pine stands are frequently dissected by narrow bands of mixed hardwood and pine forest associated with perennial and intermittent stream channels. These narrow buffers provide the minimum protection necessary to maintain water quality and associated terrestrial and aquatic habitats. Within any given stand, trees are essentially the same age; however, tree ages vary between

MANAGEMENT AREA 1: FOREST PRODUCTS

DESIRED FUTURE CONDITION

stands. The amount of younger, intermediate, and older stands results in a fairly balanced age class distribution. Evidence of intermediate harvesting (thinning) is apparent throughout the entire area. Management maintains a relatively closed forest canopy resulting in a sparse patchy understory and midstory dominated by shrubs and saplings.

There are numerous, moderate-sized pine regeneration areas scattered throughout the landscape. The character of these openings ranges from those that were recently harvested to those that are well-stocked with vigorously growing pine seedlings and saplings. Those areas that were recently harvested may still exhibit evidence of chopping and burning.

Wildlife that prefer openings and early to mid-successional forest habitats are common. Species finding favorable habitats within this landscape include white-tailed deer, eastern cottontail, Mourning Dove, Northern Cardinal, Prairie Warbler, Red-tailed Hawk, and Pine Warbler. Some cavity nesting wildlife may be observed; however, due to the lack of snags and hardwood den trees, they are not common. Any threatened, endangered or sensitive plant or animal species would be afforded minimum protection.

For people using the area, there is a very high probability of experiencing the sights and sounds of other people or viewing the evidence of management activities. Only a very few designated hiking trails and dispersed recreation facilities exist.

STANDARDS AND GUIDELINES

FIRE MANAGEMENT

Wildfire suppression

MA–1–01: Use a suppression strategy of direct control to minimize acreage burned. (KNF) (GUIDELINE)

Prescribed fire

MA–1–02: Do not allow prescribed natural fires. (KNF) (STANDARD)

MA–1–03: Use prescribed fire where necessary to meet specific tree establishment and maximum growth objectives or to maintain safe levels of fuel loadings to reduce damage from wildfire. (KNF) (GUIDELINE)

FOREST PRODUCTS

MA–1–04: Classify this management area as suitable for timber production except in areas specifically classified unsuitable by Forestwide standards and guidelines. (KNF) (STANDARD)

STREAMSIDE HABITATS, RIPARIAN AREAS, AND WETLANDS

MA–1–05: Management type for all streamside habitat protection zones (SHPZ) and riparian area protection zones (RAPZ) will be hardwood forest types. See Forestwide standards and guidelines for appropriate management practices within SHPZ and RAPZ. (KNF) (GUIDELINE)

TRANSPORTATION SYSTEM

MA–1–06: Plan and develop the transportation system to provide access to within 1/4 mile of all products. Typically, access within the compartment will be by dead-end local (traffic service level D) roads. (KNF) (GUIDELINE)

VEGETATION MANAGEMENT

MA–1–07: Depending upon stand density and product operability, initiate thinnings near age 20 for loblolly and shortleaf pine, and age 30 for all other forest types. Determine target residual basal areas and scheduling of subsequent thinnings based upon those needed to optimize timber production. (KNF) (GUIDELINE)

MA–1–08: Mixed pine-hardwood and hardwood pine are not appropriate management types within this management area. (KNF) (GUIDELINE)

SUB-MANAGEMENT AREA 1C

PRIMARY MANAGEMENT GOALS

Emphasize producing and sustaining a high level of a mixture of commodity outputs. Provide other resources a moderate level of protection during management activities.

DESIRED FUTURE CONDITION

The overstory vegetation on a large majority of the area consists primarily of pine stands which may contain up to 30 percent hardwoods. In the older managed stands, trees are typically 90–100 feet tall, 18–20 inches in diameter, and roughly 70–80 years old. In these older areas the trees are evenly spaced. Standing dead trees and downed logs are scattered throughout a majority of the area.

There are numerous pine regeneration areas, up to 40 acres in size, scattered throughout the landscape. These areas are primarily seed-trees and shelterwoods where a variable amount of overstory pine is initially maintained to provide a seed source for the regenerating stand. After the regenerating stand is established, most of the pine overstory is removed. Some live pine or hardwood trees and standing snags are left scattered or clumped throughout the stand indefinitely. Approximately 15 percent of the area is in stand-sized openings less than 10 years old.

STANDARDS AND GUIDELINES

Vegetation

SMA–1C–01: Use seed-tree and shelterwood as the primary even-aged regeneration methods to regenerate all upland forest types. Maximum size of a regeneration opening is 40 acres. (**KNF**) (**GUIDELINE**)

SMA–1C–02: Set rotation age for slash pine management type at 50 years; for remaining pine types, 70 years; for upland hardwood, 100 years; and for bottomland hardwoods, 120 years. (**KNF**) (**GUIDELINE**)

SMA–1C–03: Set earliest entry age for regeneration purposes for pine management types at 35 years; and for upland hardwood, 90 years. (**KNF**) (**GUIDELINE**)

MANAGEMENT AREA 2: AMENITY VALUES

DESCRIPTION

This management area is allocated to approximately 16,000 acres on the Forest. It occurs on the Evangeline Unit of the Calcasieu District (48 percent) and the Caney District (52 percent).

MANAGEMENT GOALS

Emphasize protection and enhancement of non-market resources and values. Consider commodity outputs to be secondary and occur as by-products of management practices.

Focus forest management practices and activities on protecting, maintaining or enhancing amenity values, such as recreation, visual quality, wildlife and plant habitats. Offer the highest level of recreational opportunities and experiences in a relatively undisturbed or natural setting. Do not require sustained production of forest products. Allow some cutting of trees to improve overall stand characteristics for amenity reasons or to salvage or control large natural mortality events such as wildfire, windthrow, and southern pine beetle **(SPB)**.

DESIRED FUTURE CONDITION

The landscape in this area maintains a highly natural appearance. Small openings occur frequently as a result of either natural mortality or stand improvement practices. Large openings occur on an infrequent basis as a result of insect infestations, disease, wind storms, etc. The landscape is frequently intersected by narrow road corridors.

The uplands are frequently dissected by perennial and intermittent streams. Buffers on these stream channels provide for the protection of water quality and associated terrestrial and aquatic habitats. A majority of the forest consists of larger older trees interspersed with small patches of variable-sized younger trees, saplings, seedlings or small openings. The forest canopy ranges from sparse to dense, with old trees greater than 100 years old occurring commonly as individuals, in groups or on large areas. Standing dead trees and down logs are abundant as a result of natural mortality. Management activities eventually result in old-growth forest over the entire area. Threatened, endangered and sensitive species associated with these habitat conditions receive the maximum level of protection and management. Rare, unique or sensitive communities are identified, protected, and actively managed.

For people using the area, the probability of experiencing the sights, sounds and evidence of other people is common. The highest amount and variety of developed and dispersed recreation facilities, opportunities and experiences are provided to meet the needs of local demand.

STANDARDS AND GUIDELINES

FIRE MANAGEMENT

Wildfire suppression

MA–2–01: Use a suppression strategy that may range from direct control to more indirect methods of containment and confinement, including surveillance where appropriate. (**KNF**) (**GUIDELINE**)

Prescribed fire

MA–2–02: Do not allow prescribed natural fires. (**KNF**) (**STANDARD**)

FOREST PRODUCTS

MA–2–03: Classify this management area as unsuitable for timber production. (**KNF**) (**STANDARD**)

STREAMSIDE HABITATS, RIPARIAN AREAS, AND WETLANDS

MA–2–04: Along all streams where the area immediately adjacent to the scour channel is composed of mixed pine and hardwood habitats, extend the streamside habitat protection zone (**SHPZ**) out to a minimum of 100 feet. Mixed pine and hardwood habitats are defined as areas where more than 30 percent of the total overstory basal area is composed of hardwood tree species. See Forestwide standards and guidelines for appropriate management practices within **SHPZ** and **RAPZ**. (**KNF**) (**GUIDELINE**)

VEGETATION MANAGEMENT

MA–2–05: Do not manage using a silvicultural system. No rotation lengths are established. (KNF) (STANDARD)

MA–2–06: Allow uneven-aged regeneration method techniques and stand improvement cuts to meet specific amenity resource objectives, such as improving old-growth characteristics, wildlife habitats, scenic quality, or plant community composition and structure. See Forestwide direction for specific uneven-aged regeneration methods guidance. (KNF) (GUIDELINE)

MA–2–07: Allow periodic stand improvement cuts for upland stands outside SHPZ and RAPZ , beginning when a stand nears age 30 and continuing as long as needed to meet specific amenity resource objectives. (KNF) (GUIDELINE)

MA–2–08: Restrict even-aged regeneration method techniques to regeneration of damaged stands or for insect and disease control. (KNF) (GUIDELINE)

SUB-MANAGEMENT AREA 2AL

PRIMARY MANAGEMENT GOALS

Emphasize protection and enhancement of non-market resources and values associated with longleaf pine-dominated landscapes. Allow the highest level of landscape-wide alteration.

DESIRED FUTURE CONDITION

Alterations to the area are done so as to mimic natural processes. Prescribed fire is the primary tool used to alter the landscape and is used at the frequency, intensity and time of year which occurred prior to European settlement. Evidence of fire occurs across the landscape.

As a result of frequent prescribed fire, the landscape is composed of relatively open pine stands eventually dominated by native, fire dependent longleaf pine communities. These areas are open in aspect, typically with long scenic vistas, and broken only by hardwood-lined slopes, creeks and river bottoms. Other than longleaf, there are few shrubs and mid-story trees on the uplands. The ground cover is a continuous swath of herbaceous plants dominated by grasses, composites, legumes and other forbs.

Wildlife associated with open, frequently burned old-growth conifer communities find favorable habitat conditions. Species expected to be inhabiting the area include: Red-headed Woodpeckers, Bobwhite Quail, Wild Turkey, Eastern Bluebird, white-tailed deer, Louisiana pine snake, Bachman's Sparrow, fox squirrel, Prairie Warbler, and red bat.

STANDARDS AND GUIDELINES

Fire management

SMA–2AL–01: Apply prescribed fire at the landscape scale every 2–5 years, with increased emphasis on growing season burns. (KNF) (GUIDELINE)

Vegetation

SMA–2AL–02: Manage upland stands outside the SHPZ and RAPZ predominantly for longleaf pine. Slash, loblolly, and shortleaf pine are not appropriate management types within this sub-management area. (KNF) (GUIDELINE)

SMA–2AL–03: Favor the retention of longleaf pine during stand improvement cuts in upland stands. Manage for an open canopy with variable tree densities having an average pine basal area of 70 square feet per acre. (KNF) (GUIDELINE)

SUB-MANAGEMENT AREA 2AS

PRIMARY MANAGEMENT GOALS

Emphasize protection and enhancement of non-market resources and values associated with shortleaf pine / oak-hickory (SOH) dominated landscapes. Allow the highest level of landscape-wide alteration.

DESIRED FUTURE CONDITION

Alterations to the area are done so as to mimic natural processes. Prescribed fire is the primary tool used to alter the landscape and is used at the frequency, intensity and time of year which occurred prior to European settlement. Evidence of recent fire occurs on a limited amount of the landscape.

MANAGEMENT AREA 2: AMENITY VALUES

SUB-MANAGEMENT AREA 2AS

DESIRED FUTURE CONDITION

STANDARDS AND GUIDELINES

SUB-MANAGEMENT AREA 2AM

PRIMARY MANAGEMENT GOALS

DESIRED FUTURE CONDITION

STANDARDS AND GUIDELINES

Because of infrequent prescribed fire mixed communities of shortleaf pine, oaks, and hickories dominate the landscape. The overstory canopy is more or less open; moderately to densely stocked with all sizes of shortleaf pines and hardwoods. Various shrubs and saplings form fairly thick midstory and understory components. Herbaceous ground cover is sparse to moderate.

Wildlife associated with mixed pine and hardwood old-growth communities find favorable habitat conditions. Species expected to inhabit the area include: Red-bellied Woodpecker, Cooper s Hawk, Eastern Screech Owl, Summer Tanager, Black-and-white Warbler, Field Sparrow, Wild Turkey, fox squirrel, gray fox, golden mouse, and white-tailed deer.

STANDARDS AND GUIDELINES

Fire management

SMA–2AS–01: Apply prescribed fire every 7–10 years at the landscape scale. (KNF) (GUIDELINE)

Vegetation

SMA–2AS–02: Manage upland stands outside the SHPZ and RAPZ predominantly for mixed pine-hardwood. Longleaf, slash, and loblolly pine are not appropriate management types within this sub-management area. (KNF) (GUIDELINE)

SMA–2AS–03: Favor the retention of shortleaf pine, oaks, and hickories during stand improvement cuts in upland stands. Manage for a relatively open canopy with variable tree densities having an average combined, pine and hardwood, basal area of 80 square feet per acre. (KNF) (GUIDELINE)

SUB-MANAGEMENT AREA 2AM

PRIMARY MANAGEMENT GOALS

Emphasize protection and enhancement of non-market resources and values associated with mixed hardwood-loblolly pine (MHL) dominated landscapes. Allow the highest level of landscape-wide alteration.

DESIRED FUTURE CONDITION

Alterations to the area are done so as to mimic natural processes. Forest succession plays a major role in shaping the landscape vegetation.

This landscape is dominated by communities composed primarily of various hardwoods, with loblolly pine as a major associate. The overstory is relatively closed, multi-layered, and moderately to densely stocked. The midstory is a diverse multi-layering of shrubs, vines and overstory saplings. Herbaceous ground cover is sparse. Leaf litter and down woody material in various stages of decay cover the ground.

Wildlife associated with mixed hardwood and pine old growth communities find favorable habitat conditions. Species expected to be inhabiting the area include: Pileated Woodpecker, Wood Thrush, Blue-gray Gnatcatcher, Yellow-throated Vireo, White-eyed Vireo, Yellow-billed Cuckoo, spring peeper, eastern narrow-mouthed toad, gray squirrel, Barred Owl, small-mouthed salamander, and white-tailed deer.

STANDARDS AND GUIDELINES

Fire management

SMA–2AM–01: Apply prescribed fire at landscape scale every 15–20 years. (KNF) (GUIDELINE)

Vegetation

SMA–2AM–02: Manage all stands predominantly for mixed hardwood-pine or hardwood. Longleaf, slash, and shortleaf pine are not appropriate management types within this sub-management area. (KNF) (GUIDELINE)

SMA–2AM–03: Favor the retention of oaks, hickories, and other desirable hardwoods during stand improvement cuts. Manage for a relatively closed canopy with variable tree densities having an average combined, hardwood and pine, basal area of 100 square feet per acre. (KNF) (GUIDELINE)

MANAGEMENT AREA 3: NATIVE COMMUNITY RESTORATION

DESCRIPTION

This management area is allocated to approximately 142,000 acres on the Forest. It occurs on the Catahoula District (23 percent); the Evangeline Unit of the Calcasieu District (7 percent); the Kisatchie District; (15 percent); the Winn District (37 percent); the Vernon Unit of the Calcasieu District (less than 1 percent); and the Caney District (17 percent).

MANAGEMENT GOALS

Emphasize restoration of the historical landscape vegetation to those landtype associations on which they once occurred.

Focus forest management activities and practices on restoring and maintaining the composition, structure and processes that formed the major landscape plant communities on those landforms where they occurred prior to the large-scale logging of the late 19th and early 20th centuries. Provide benefit for rare and unique embedded communities associated with these landscapes through management activities.

DESIRED FUTURE CONDITION

The natural landscape is modified through management activities during restoration. This includes maintaining areas of existing native plant communities and the associated understory while restoring those areas currently dominated by off-site species. Vegetation patterns are primarily a product of prescribed fire frequency, restoration harvests, and stand improvement practices. Prescribed fire is used at the frequency, intensity, and time of year which occurred historically. The landscape is frequently intersected by narrow road corridors.

Perennial and intermittent streams frequently dissect the uplands. Buffers along these stream channels protect water quality and associated terrestrial and aquatic habitats. A large portion of the forest is in areas with trees of essentially the same age, although ages do vary. In the older managed stands, trees are typically 90-100 feet tall and 18-20 inches in diameter. Evidence of stand improvement practices is apparent throughout an entire area. Standing dead trees and down logs are common due to natural mortality.

Restoration areas are scattered throughout the landscape, ranging from clearcuts where few if any live trees remain standing to those where a variable amount of trees remain indefinitely scattered or clumped throughout. The character of these openings ranges from recently harvested to well-stocked with tree seedlings. Areas recently harvested may still exhibit evidence of site preparation, burning or planting.

Threatened, endangered and sensitive species are afforded a moderate level of protection. Additional rare, unique or sensitive communities have been identified, protected and are actively managed.

For people using the area, there is a high probability of experiencing the sights and sounds of other people or viewing the evidence of management activities. The highest amount and variety of dispersed and developed recreation facilities, opportunities and experiences are provided to meet the needs of local demand.

STANDARDS AND GUIDELINES

FIRE MANAGEMENT

Wildfire suppression

MA–3–01: Use a suppression strategy that may range from direct control to more indirect methods of containment and confinement, including surveillance where appropriate. (KNF) (GUIDELINE)

Prescribed fire

MA–3–02: Do not allow prescribed natural fires. (KNF) (STANDARD)

FOREST PRODUCTS

MA–3–03: Classify this management area as suitable for timber production except in areas specifically classified unsuitable by Forestwide standards and guidelines. (KNF) (STANDARD)

MANAGEMENT AREA 3: NATIVE COMMUNITY RESTORATION

DESCRIPTION

MANAGEMENT GOALS

DESIRED FUTURE CONDITION

STANDARDS AND GUIDELINES

MANAGEMENT AREA 3: NATIVE COMMUNITY RESTORATION

STANDARDS AND GUIDELINES

SUB-MANAGEMENT AREA 3BL

PRIMARY MANAGEMENT GOALS

DESIRED FUTURE CONDITION

STANDARDS AND GUIDELINES

STREAMSIDE HABITATS, RIPARIAN AREAS, AND WETLANDS

MA–3–04: Along all streams where the area immediately adjacent to the scour channel is composed of mixed pine and hardwood habitats, extend the streamside habitat protection zone (SHPZ) out to a minimum of 100 feet. Mixed pine and hardwood habitats are defined as areas where more than 30 percent of the total overstory basal area is composed of hardwood tree species. See Forest-Wide standards and guidelines for appropriate management practices within SHPZ and RAPZ. (KNF) (GUIDELINE)

VEGETATION MANAGEMENT

MA–3–05: Pursue restoration or maintenance of native plant communities on all sites through the re-establishment of natural community composition, structure, and ecological processes. (KNF) (GUIDELINE)

SUB-MANAGEMENT AREA 3BL

PRIMARY MANAGEMENT GOALS

Emphasize restoration of native, fire dependent longleaf pine communities in an intermediate time period while providing a moderate level of protection of other resources.

DESIRED FUTURE CONDITION

Vegetation patterns are primarily a product of frequent prescribed fire, longleaf restoration harvests and longleaf stand improvement practices which result in many large openings in an open pine canopy. Restoration includes maintaining areas of existing longleaf pine and associated ground cover while restoring those areas currently dominated by off-site species back to longleaf pine communities. Off-site species are those other than longleaf currently existing on sites historically occupied by longleaf pine. Longleaf restoration harvests result in many large openings scattered throughout the area. Small openings occur as a result of prescribed fire. Evidence of prescribed fire activities (plowlines, blackened tree trunks and vegetation) is common and occurs across the landscape.

As a result of frequent prescribed fire, the landscape is composed of relatively open park-like pine stands eventually dominated by native, fire dependent longleaf pine communities. The forest canopy ranges from sparse to moderately stocked. The forest typically has long scenic vistas broken only by hardwood-lined slopes, creeks, and river bottoms. Other than longleaf pine, there are few shrubs and mid-story trees on the uplands. The native ground cover is a continuous carpet of herbaceous plants dominated by grasses, composites, legumes, and other forbs. Old trees greater than 100 years of age occur as individuals or in small groups.

Many large longleaf restoration areas of up to 80 acres are scattered throughout the landscape. About 15 percent of the area is in stand-sized openings at any given time.

Wildlife associated with open, frequently burned conifer communities find favorable habitat conditions. Species expected to be inhabiting the area include: Red-headed Woodpeckers, Bobwhite Quail, Wild Turkey, Eastern Bluebird, white-tailed deer, Louisiana pine snake, Bachman's Sparrow, fox squirrel, Prairie Warbler, and red bat.

STANDARDS AND GUIDELINES

Fire management

SMA–3BL–01: Apply prescribed fire at the landscape scale every 2–5 years, with increased emphasis on growing season burns. (KNF) (GUIDELINE)

Forest health

SMA–3BL–02: Prescribe dormant season and early growing season burns to reduce impacts of brown-spot needle blight on high-blight-risk longleaf restoration sites; and to release longleaf seedlings from competition. (KNF) (GUIDELINE)

Vegetation

SMA–3BL–03: Manage upland stands outside the SHPZ and RAPZ predominantly for longleaf pine. Slash, loblolly, and shortleaf pine are not appropriate management types within this sub-management area. (KNF) (GUIDELINE)

SMA–3BL–04: Use clearcutting as the primary even-aged regeneration method to restore longleaf pine forest to uplands dominated by off-site pine (loblolly, slash). Maximum regeneration openings are 80 acres. (KNF) (GUIDELINE)

SMA–3BL–05: Set rotation age for longleaf pine management type at 70 years; for mixed pine-hardwood, 70 years; for mixed hardwood-pine and upland hardwood, 100 years; and for bottomland hardwood, 120 years. (KNF) (GUIDELINE)

SMA–3BL–06: Set earliest entry age for regeneration purposes for off-site pines on longleaf sites at 35 years; for longleaf pine and mixed pine-hardwood, 60 years; and for mixed hardwood-pine and upland hardwood, 90 years. (KNF) (GUIDELINE)

SMA–3BL–07: Until restoration efforts in this sub-management area are nearly complete, focus even-aged regeneration harvests on off-site pine species occupying longleaf pine sites. (KNF) (GUIDELINE)

SMA–3BL–08: Schedule stand improvement cuts in upland stands to occur at 10-year intervals, beginning near age 20 for loblolly and age 30 for longleaf, and continue as needed for the life of the stand. Favor the retention of longleaf pine. Manage for an open canopy with variable tree densities having an average pine basal area of 70 square feet per acre. (KNF) (GUIDELINE)

SUB-MANAGEMENT AREA 3BS

PRIMARY MANAGEMENT GOALS

Emphasize restoration of native shortleaf pine / oak-hickory (SOH) communities in an intermediate time period while providing a moderate level of protection of other resources.

DESIRED FUTURE CONDITION

Vegetation patterns are primarily a product of infrequent prescribed fire, restoration harvests and stand improvement practices which result in many large openings in the forest canopy. Restoration includes maintaining areas of existing SOH and associated understory while restoring those areas currently dominated by off-site species back to SOH communities. Off-site species are those other than SOH currently existing on a site historically occupied by SOH. Harvests to restore SOH result in many large openings scattered throughout the area. Small openings may occur as a result of prescribed fire. Evidence of recent prescribed fire (plowlines, blackened tree trunks and vegetation) occurs on a limited amount of the landscape.

As a result of infrequent prescribed fire, the landscape is dominated by mixtures of shortleaf pine, oaks and hickories. The overstory has a more or less open canopy which is moderately to densely stocked with variable-sized shortleaf pines and hardwoods. Various shrubs are present, and in combination with saplings of overstory species, form a fairly thick midstory and understory component. The herbaceous ground cover is sparse to moderate. A portion of the forest consists of areas where larger older trees are interspersed with small patches of variable-sized younger trees, saplings, seedlings, or small openings. Old trees greater than 100 years of age occur as individuals or in small groups.

Scattered throughout the landscape are many large SOH restoration areas of up to 80 acres. Approximately 15 percent of an area is in stand-sized openings at any given time.

Wildlife associated with mixed pine and hardwood communities find favorable habitat conditions. Species expected to be inhabiting the area include Red-bellied Woodpecker, Cooper's Hawk, Eastern Screech Owl, Summer Tanager, Black-and-white Warbler, Field Sparrow, white-tailed deer, Wild Turkey, fox squirrel, gray fox, and golden mouse.

STANDARDS AND GUIDELINES

Fire management

SMA–3BS–01: Apply prescribed fire at the landscape scale every 7–10 years. (KNF) (GUIDELINE)

Vegetation

SMA–3BS–02: Manage upland stands outside the SHPZ and RAPZ predominantly for mixed pine-hardwood. Longleaf, slash, and loblolly pine are not appropriate management types within this sub-management area. (KNF) (GUIDELINE)

SMA–3BS–03: Use clearcutting as the primary even-aged regeneration method to restore shortleaf pine/oak-hickory forest to upland areas. Maximum size of a regeneration opening is 80 acres. (KNF) (GUIDELINE)

MANAGEMENT AREA 3: NATIVE COMMUNITY RESTORATION

SUB-MANAGEMENT AREA 3BS

STANDARDS AND GUIDELINES

SUB-MANAGEMENT AREA 3BM

PRIMARY MANAGEMENT GOALS

DESIRED FUTURE CONDITION

STANDARDS AND GUIDELINES

SMA–3BS–04: Set rotation age for shortleaf pine management type at 70; for mixed pine-hardwood types at 70 years; for mixed hardwood-pine and upland hardwood, 100 years; and for bottomland hardwoods, 120 years. (KNF) (GUIDELINE)

SMA–3BS–05: Set the earliest entry age for regeneration purposes for sites identified for restoration at 60 years; for shortleaf pine and mixed pine-hardwood at 60 years; and for mixed hardwood-pine and upland hardwood, 90 years. (KNF) (GUIDELINE)

SMA–3BS–06: Until restoration efforts in this sub-management area are nearly complete, focus even-aged regeneration harvests on off-site pine species occupying shortleaf pine / oak-hickory sites. (KNF) (GUIDELINE)

SMA–3BS–07: Schedule stand improvement cuts in upland stands to occur at 10–20 year intervals, beginning near age 20 for shortleaf and loblolly pine, and age 30 for all other forest types, and continue as needed for the life of the stand. Favor the retention of shortleaf pine, oaks, and hickories. Manage for a relatively open canopy with variable tree densities having an average combined, pine and hardwood, basal area of 80 square feet per acre. (KNF) (GUIDELINE)

SUB-MANAGEMENT AREA 3BM

PRIMARY MANAGEMENT GOALS

Emphasize restoration of native mixed hardwood-loblolly pine (MHL) communities in an intermediate time period while providing a moderate level of protection of other resources.

DESIRED FUTURE CONDITION

Vegetation patterns are primarily a product of restoration harvests, stand improvement practices, and the lack of prescribed fire which result in many large openings in the forest canopy. Restoration includes maintaining areas of MHL while restoring those areas currently dominated by off-site species back to MHL communities. Off-site species are those other than MHL currently existing on sites historically occupied by MHL.

The forest is dominated by communities composed primarily of various hardwoods, with loblolly pine as a major associate. The overstory is relatively closed, multi-layered and moderately to densely stocked. The midstory is also multi-layered, composed of a diversity of shrubs, vines and overstory saplings. The herbaceous ground cover is sparse. The ground is covered with leaf litter and down woody material. Old trees greater than 100 years of age occur as individuals or in small groups.

There are many large MHL restoration areas of up to 80 acres in size, scattered throughout the landscape. Approximately 15 percent of the area is in stand-sized openings at any given time.

Wildlife associated with mixed hardwood and pine communities find favorable habitat conditions. Species expected to be inhabiting the area include: Pileated Woodpecker, Wood Thrush, Blue-gray Gnatcatcher, Yellow-throated Vireo, White-eyed Vireo, Yellow-billed Cuckoo, spring peeper, eastern narrow-mouthed toad, gray squirrel, white-tailed deer, Barred Owl, and small-mouthed salamander.

STANDARDS AND GUIDELINES

Fire management

SMA–3BM–01: Apply prescribed fire at the landscape scale every 15–20 years. (KNF) (GUIDELINE)

Vegetation

SMA–3BM–02: Manage all stands predominantly for mixed hardwood-pine or hardwood. Longleaf, slash, and shortleaf pine are not appropriate management types within this sub-management area. (KNF) (GUIDELINE)

SMA–3BM–03: Use clearcutting as the primary even-aged regeneration method to restore mixed hardwood-loblolly pine forest to upland areas. Maximum size of a regeneration opening is 80 acres. (KNF) (GUIDELINE)

SMA–3BM–04: Set rotation age for loblolly pine management type at 70; for mixed pine-hardwood types at 70 years; for mixed hardwood-pine and upland hardwood, 100 years; and for bottomland hardwood, 120 years. (KNF) (GUIDELINE)

SMA–3BM–05: Set earliest entry age for regeneration purposes for sites identified for

restoration at 60 years; for mixed pine-hardwood at 60 years; and for mixed hardwood-pine and upland hardwood, 90 years. (KNF) (GUIDELINE)

SMA–3BM–06: Until restoration efforts in this sub-management area are nearly complete, focus even-aged regeneration harvests on off-site pine species occupying mixed hardwood-loblolly pine sites. (KNF) (GUIDELINE)

SMA–3BM–07: Schedule stand improvement cuts in upland stands to occur at 10–20 year intervals, beginning near age 20 for shortleaf and loblolly pine, and age 30 for all other forest types, and continue as needed for the life of the stand. Favor the retention of oaks, hickories, and other desirable hardwoods. Manage for a relatively closed canopy with variable tree densities having an average combined, hardwood and pine, basal area of 100 square feet per acre. (KNF) (GUIDELINE)

SUB-MANAGEMENT AREA 3CL

PRIMARY MANAGEMENT GOALS

Emphasize restoration of native, fire dependent longleaf pine communities in an extended time period while providing a moderate to maximum level of protection of other resources.

DESIRED FUTURE CONDITION

Vegetation patterns are primarily a product of frequent prescribed fire, longleaf pine restoration harvests, and longleaf stand improvement practices which result in scattered, moderate-sized openings in an open pine canopy. Restoration entails maintaining areas of existing longleaf and associated ground cover while restoring those areas currently dominated by off-site species back to longleaf communities over an extended period of time. Off-site species are those other than longleaf currently on sites that it has historically occupied. Longleaf restoration harvests result in moderate-sized openings scattered throughout the area. Small openings may be caused by prescribed fire. Evidence of prescribed fire activities (plowlines, blackened tree trunks and vegetation) is common across the landscape.

As a result of frequent prescribed fire, the landscape is composed of relatively open, park-like pine stands eventually dominated by native, fire-dependent longleaf pine communities. The forest canopy ranges from sparse to moderately stocked. The forest typically has long scenic vistas broken only by hardwood-lined slopes, creeks and river bottoms. Other than longleaf pine, there are few shrubs and mid-story trees on the uplands. The native ground cover is a continuous carpet of herbaceous plants dominated by grasses, composites, legumes and other forbs.

Moderate-sized longleaf restoration areas of up to 40 acres are scattered throughout the landscape. About 10 percent of the area is in stand-sized openings at any given time.

Wildlife associated with open, frequently burned conifer communities find favorable habitat conditions. Species expected to be inhabiting the area include: Red-headed Woodpecker, Bobwhite Quail, Wild Turkey, Eastern Bluebird, white-tailed deer, Louisiana pine snake, Bachman's Sparrow, fox squirrel, Prairie Warbler, and red bat.

STANDARDS AND GUIDELINES

Fire management

SMA–3CL–01: Apply prescribed fire at the landscape scale every 2–5 years, with increased emphasis on growing season burns. (KNF) (GUIDELINE)

Forest health

SMA–3CL–02: Prescribe dormant season and early growing season burns to reduce impacts of brown-spot needle blight on high-blight-risk longleaf restoration sites; and to release longleaf seedlings from competition. (KNF) (GUIDELINE)

Vegetation

SMA–3CL–03: Manage upland stands outside the SHPZ and RAPZ predominantly for longleaf pine. Slash, loblolly, and shortleaf pine are not appropriate management types within this sub-management area. (KNF) (GUIDELINE)

SMA–3CL–04: Use clearcutting as the primary even-aged regeneration method for restoring longleaf pine to upland forest areas dominated by off-site pines such as loblolly and slash. Maximum size of a regeneration opening is 40 acres. (KNF) (GUIDELINE)

MANAGEMENT AREA 3: NATIVE COMMUNITY RESTORATION

SUB-MANAGEMENT AREA 3CL

STANDARDS AND GUIDELINES

SMA–3CL–05: Set rotation age for longleaf pine management type at 100 years; for mixed pine-hardwood, 100 years; for mixed hardwood-pine and upland hardwood, 130 years; and for bottomland hardwood, 150 years. (KNF) (GUIDELINE)

SMA–3CL–06: Set earliest entry age for regeneration purposes for off-site pines on longleaf sites at 35 years; for longleaf pine and mixed pine-hardwood, 90 years; and for mixed hardwood-pine and upland hardwood, 120 years. (KNF) (GUIDELINE)

SMA–3CL–07: Until restoration efforts in this sub-management area are nearly complete, focus even-aged regeneration harvests on off-site pine species occupying longleaf pine sites. (KNF) (GUIDELINE)

SMA–3CL–08: Schedule stand improvement cuts in upland stands to occur at 10-year intervals, beginning near age 20 for loblolly and age 30 for longleaf, and continue as needed for the life of the stand. Favor the retention of longleaf pine. Manage for an open canopy with variable tree densities having an average pine basal area of 70 square feet per acre. (KNF) (GUIDELINE)

SUB-MANAGEMENT AREA 3CS

PRIMARY MANAGEMENT GOALS

Emphasize restoration of native shortleaf pine / oak-hickory (SOH) communities in an extended time period while protecting other resources at a moderate-to-maximum level.

DESIRED FUTURE CONDITION

Vegetation patterns are primarily a product of infrequent prescribed fire, SOH restoration harvests and stand improvement practices which result in scattered, moderate-sized openings in the forest canopy. Restoration includes maintaining areas of existing SOH while restoring those areas currently dominated by off-site species back to SOH communities over an extended time. Off-site species are those other than SOH currently on sites historically occupied by SOH. Restoration harvests for SOH result in moderate-sized openings scattered throughout the area. Small openings are caused by prescribed fire. Evidence of recent prescribed fire (plowlines, blackened tree trunks, and vegetation) occurs on a limited amount of the landscape.

As a result of infrequent prescribed fire, the landscape is dominated by mixtures of shortleaf pine, oaks and hickories. The overstory has a more or less open canopy which is moderately to densely stocked with variable-sized shortleaf pines and hardwoods. Various shrubs are present and, in combination with regenerating overstory species, form a fairly thick midstory and understory component. The herbaceous ground cover is sparse to moderate.

Moderate-sized SOH restoration areas of up to 40 acres are scattered throughout the landscape. About 10 percent of the area is in stand-sized openings at any given time.

Wildlife associated with mixed pine and hardwood communities find favorable habitat. Species expected to inhabit the area include Red-bellied Woodpecker, Cooper's Hawk, Eastern Screech Owl, Summer Tanager, Black-and-white Warbler, Field Sparrow, white-tailed deer, Wild Turkey, fox squirrel, gray fox, and golden mouse.

STANDARDS AND GUIDELINES

Fire management

SMA–3CS–01: Apply prescribed fire at landscape scale every 7–10 years. (KNF) (GUIDELINE)

Vegetation

SMA–3CS–02: Manage upland stands outside the SHPZ and RAPZ predominantly for mixed pine-hardwood. Longleaf, slash, and loblolly pine are not appropriate management types within this sub-management area. (KNF) (GUIDELINE)

SMA–3CS–03: Use clearcutting as the primary even-aged regeneration method to restore shortleaf pine / oak-hickory forest to upland areas. Maximum size of a regeneration opening is 40 acres. (KNF) (GUIDELINE)

SMA–3CS–04: Set rotation age for shortleaf pine management type at 100; for mixed pine-hardwood types at 100 years; for mixed hardwood-pine and upland hardwood, 130 years; and for bottomland hardwood, 150 years. (KNF) (GUIDELINE)

SMA–3CS–05: Set earliest entry age for regeneration purposes for sites identified for restoration at 60 years; for shortleaf pine and mixed pine-hardwood at 90 years; and for mixed hardwood-pine and upland hardwood, 120 years. (KNF) (GUIDELINE)

SMA–3CS–06: Until restoration efforts in this sub-management area are nearly complete, focus even-aged regeneration harvests on off-site pine species occupying shortleaf pine / oak-hickory sites. (KNF) (GUIDELINE)

SMA–3CS–07: Schedule stand improvement cuts in upland stands to occur at 10–20 year intervals, beginning near age 20 for shortleaf and loblolly pine, and age 30 for all other forest types, and continue as needed for the life of the stand. Favor the retention of shortleaf pine, oaks, and hickories. Manage for a relatively open canopy with variable tree densities having an average combined, pine and hardwood, basal area of 80 square feet per acre. (KNF) (GUIDELINE)

SUB-MANAGEMENT AREA 3CM

PRIMARY MANAGEMENT GOALS

Emphasize restoration of native mixed hardwood-loblolly pine (MHL) communities in an extended time period while providing a moderate to maximum level of protection of other resources.

DESIRED FUTURE CONDITION

Vegetation patterns are primarily a product of MHL restoration harvests, stand improvement practices and the lack of prescribed fire which result in scattered, moderate-sized openings in the forest canopy. Restoration includes maintaining areas of existing MHL while restoring those areas currently dominated by off-site species back to MHL over an extended period of time. Off-site species are those other than MHL currently existing on sites historically occupied by MHL.

The forest is dominated by communities composed primarily of various hardwoods, with loblolly pine as a major associate. The overstory is relatively closed, multi-layered and moderately to densely stocked. The midstory is also multi-layered composed of a diversity of shrubs, vines and overstory saplings. The herbaceous ground cover is sparse. The ground is covered with leaf litter and down woody material.

There are moderate-sized MHL restoration areas of up to 40 acres scattered throughout the landscape. About 10 percent of the area is in stand-sized openings at any given time.

Wildlife associated with mature mixed hardwood and pine communities find favorable habitat conditions. Species expected to be inhabiting the area include: Pileated Woodpecker, Wood Thrush, Blue-gray Gnatcatcher, Yellow-throated Vireo, White-eyed Vireo, Yellow-billed Cuckoo, spring peeper, eastern narrow-mouthed toad, gray squirrel, white-tailed deer, Barred Owl, and small-mouthed salamander.

MANAGEMENT AREA 3: NATIVE COMMUNITY RESTORATION

SUB-MANAGEMENT AREA 3CM

STANDARDS AND GUIDELINES

STANDARDS AND GUIDELINES

Fire management

SMA–3CM–01: Apply prescribed fire at the landscape scale every 15–20 years. (KNF) (GUIDELINE)

Vegetation

MA–3CM–02: Manage all stands predominantly for mixed hardwood-pine or hardwood. Longleaf, slash, and shortleaf pine are not appropriate management types within this sub-management area. (KNF) (GUIDELINE)

SMA–3CM–03: Use clearcutting as the primary even-aged regeneration method to restore mixed hardwood-loblolly pine forest to upland areas. Maximum size of a regeneration opening is 40 acres. (KNF) (GUIDELINE)

SMA–3CM–04: Set rotation age for loblolly pine management type at 100; for mixed pine-hardwood types at 100 years; for mixed hardwood-pine and upland hardwood, 130 years; and for bottomland hardwoods, 150 years. (KNF) (GUIDELINE)

SMA–3CM–05: Set earliest entry age for regeneration purposes for sites identified for restoration at 60 years; for mixed pine-hardwood at 90 years; and for mixed hardwood-pine and upland hardwood, 120 years. (KNF) (GUIDELINE)

SMA–3CM–06: Until restoration efforts in this sub-management area are nearly complete, focus even-aged regeneration harvests on off-site pine species occupying mixed hardwood-loblolly pine sites. (KNF) (GUIDELINE)

SMA–3CM–07: Schedule stand improvement cuts in upland stands to occur at 10–20 year intervals, beginning near age 20 for shortleaf and loblolly pine, and age 30 for all other forest types, and continue as needed for the life of the stand. Favor the retention of oaks, hickories, and other desirable hardwoods. Manage for a relatively closed canopy with variable tree densities having an average combined, hardwood and pine, basal area of 100 square feet per acre. (KNF) (GUIDELINE)

MANAGEMENT AREA 5: RCW AND NATIVE COMMUNITY RESTORATION

DESCRIPTION

This management area is allocated to approximately 228,000 acres on the Forest. It occurs on the Catahoula District (29 percent); the Evangeline Unit of the Calcasieu District (23 percent); the Kisatchie District (17 percent); and the Winn District (31 percent). All acres occur within established Red-cockaded Woodpecker (RCW) habitat management areas (HMAs).

MANAGEMENT GOALS

Emphasize management of Red-cockaded Woodpecker (RCW) habitat and on the restoration of the historical landscape vegetation to those landtype associations on which it occurred. Provide other resources a moderate to maximum level of protection.

Focus activities and practices on achieving established population objectives and on restoring and maintaining the composition, structure and processes that formed the major landscape plant communities on those landforms where they occurred prior to the large-scale logging that occurred in the late 19th and early 20th centuries. Provide benefit to rare and unique embedded communities associated with frequently burned landscapes.

DESIRED FUTURE CONDITION

The natural landscape is modified through management activities during the restoration period. Alterations to the area are done to produce and sustain suitable habitat for the immediate and long-term needs of the RCW. Restoration includes maintaining areas of existing native plant communities and the associated understory while restoring those areas currently dominated by off-site species. Vegetation patterns are primarily a product of prescribed fire frequency, restoration harvests and habitat improvement practices. Prescribed fire is used at the frequency, intensity and time of year which occurred historically. The landscape is frequently intersected by narrow road corridors.

The uplands are frequently dissected by perennial and intermittent streams. The buffers along these stream channels provide for the protection of water quality and associated terrestrial and aquatic habitats. A large portion of the forest occurs as areas within which trees are essentially the same age. Tree ages vary from area to area. In the older managed stands, trees are typically 90-100 feet tall and 18-20 inches in diameter. Evidence of habitat improvement practices is apparent throughout the entire area. Old trees greater than 100 years of age occur as individuals, in groups, or on large areas. Standing dead trees and down logs are common as a result of natural mortality. Threatened, endangered and sensitive species associated with these areas are afforded the maximum level of protection and management. Additional rare, unique or sensitive communities have been identified, protected and are actively managed.

There are restoration areas scattered throughout the landscape. The appearance of these areas ranges from clearcuts where few if any live trees remain standing to those where a variable amount of trees remain scattered or clumped throughout the area indefinitely. The character of these openings ranges from those that were recently harvested to those that are well-stocked with tree seedlings. The areas that were recently harvested may still exhibit evidence of site preparation, burning, or planting.

For people using the area, there is a high probability of experiencing the sights and sounds of other people or viewing the evidence of management activities. The highest amount and variety of dispersed and developed recreation facilities, opportunities and experiences are provided to meet the needs of local demand.

STANDARDS AND GUIDELINES

FIRE MANAGEMENT

Wildfire suppression

MA–5–01: Use a suppression strategy that may range from direct control to more indirect methods of containment and confinement, including surveillance where appropriate. (KNF) (GUIDELINE)

MANAGEMENT AREA 5: RCW AND NATIVE COMMUNITY RESTORATION

DESCRIPTION

MANAGEMENT GOALS

DESIRED FUTURE CONDITION

STANDARDS AND GUIDELINES

MANAGEMENT AREA 5: RCW AND NATIVE COMMUNITY RESTORATION

STANDARDS AND GUIDELINES

SUB-MANAGEMENT AREA 5CL

PRIMARY MANAGEMENT GOALS

DESIRED FUTURE CONDITION

Prescribed fire

MA–5–02: Allow prescribed natural fires to burn if prescribed conditions are met. (KNF) (GUIDELINE)

FOREST PRODUCTS

MA–5–03: Classify this management area as suitable for timber production except in areas specifically classified unsuitable by Forestwide standards and guidelines. (KNF) (STANDARD)

MA–5–04: Within 1/2 mile of active RCW clusters and inactive RCW clusters or recruitment stands that have been made suitable for translocation, salvage only to control SPB, retaining SPB-vacated trees. Within 1/4 mile of inactive clusters not suitable for translocation, salvage only to control SPB, retaining SPB-vacated trees. (KNF) (GUIDELINE)

STREAMSIDE HABITATS, RIPARIAN AREAS, AND WETLANDS

MA–5–05: Along all streams where the area immediately adjacent to the scour channel is composed of mixed pine and hardwood habitats, extend the streamside habitat protection zone (SHPZ) out to a minimum of 100 feet. Mixed pine and hardwood habitats are defined as areas where more than 30 percent of the total overstory basal area is composed of hardwood tree species. See Forestwide standards and guidelines for appropriate management practices within SHPZ and RAPZ. (KNF) (GUIDELINE)

VEGETATION MANAGEMENT

MA–5–06: Restore or maintain native plant communities for all sites through the re-establishment of natural community composition, structure, and ecological processes. (KNF) (GUIDELINE)

MA–5–07: Concentrate restoration efforts beyond 1.5 miles of active RCW cluster sites for the first 10–20 years. (KNF) (GUIDELINE)

WILDLIFE

MA–5–08: Adhere to guidance presented in the *Record of Decision and the Final Environmental Impact Statement for the Management of the RCW and its Habitat on National Forests in the Southern Region*. See Forestwide standards and guidelines for direction on vegetation management, habitat improvement, and other practices pertaining to the RCW. (KNF) (GUIDELINE)

SUB-MANAGEMENT AREA 5CL

PRIMARY MANAGEMENT GOALS

Emphasize the management of RCW habitat and restoring native, fire dependent longleaf pine communities in an extended time period.

DESIRED FUTURE CONDITION

Vegetation patterns are primarily a product of frequent prescribed fire, longleaf pine restoration harvests and RCW habitat improvement practices producing scattered, moderate openings in an open pine canopy. Restoration entails maintaining longleaf and its associated ground cover, while restoring areas now dominated by off-site species to longleaf communities over an extended period. Off-site species are those other than longleaf currently on sites that it historically occupied. Longleaf restoration harvests produce scattered, moderate openings throughout an area. Small openings may result from prescribed fire. Evidence of prescribed fire activities (plowlines, blackened tree trunks and vegetation) is common across the landscape.

As a result of frequent prescribed fire, the landscape is composed of relatively open, park-like pine stands eventually dominated by native, fire dependent longleaf communities. The forest canopy ranges from sparse-to-moderate stocking. The forest typically has long scenic vistas broken by hardwood-lined slopes, creeks and river bottoms. Other than longleaf, few shrubs and mid-story trees grow on the uplands. The native ground cover is continuous: herbaceous plants dominated by grasses, composites, legumes and other forbs. Portions of the forest are areas where larger, older trees are interspersed with small, variable patches of younger trees, saplings, seedlings, or small openings.

Moderate longleaf restoration areas up to 40 acres are scattered throughout the landscape. About 8 percent of the area is in stand-sized openings at any given time.

Wildlife associated with open, frequently burned conifer communities find favorable

habitat. Species expected to inhabit the area include: Red-cockaded and Red-headed Woodpeckers, Bobwhite Quail, Wild Turkey, Eastern Bluebird, white-tailed deer, Louisiana pine snake, Bachman's Sparrow, fox squirrel, Prairie Warbler, and red bat.

STANDARDS AND GUIDELINES

Fire management

SMA–5CL–01: Apply prescribed fire at the landscape scale every 2–5 years, with increased emphasis on growing season burns. (KNF) (GUIDELINE)

Forest health

SMA–5CL–02: Prescribe dormant season and early growing season burns to reduce impacts of brown-spot needle blight on high-blight-risk longleaf restoration sites; and to release longleaf seedlings from competition. (KNF) (GUIDELINE)

Vegetation

SMA–5CL–03: Manage upland stands outside the SHPZ and RAPZ predominantly for longleaf pine. Slash, loblolly, and shortleaf pine are not appropriate management types within this sub-management area. (KNF) (GUIDELINE)

SMA–5CL–04: Use clearcutting with longleaf reserves as the primary two-aged regeneration method to restore longleaf pine forest to upland areas dominated by off-site pines (loblolly, slash). (KNF) (GUIDELINE)

SMA–5CL–05: During restoration, retain all longleaf pine except as follows: (KNF) (GUIDELINE)

- To improve RCW habitat conditions within restoration areas, allow thinning where clumps of retained dominant or codominant longleaf pine exceed 70 square feet of basal area per acre.
- To promote growth and vigor of retained longleaf pine, allow thinning where clumps of longleaf are less than 10 inches DBH and are less than 30 years old.

SMA–5CL–06: Maximum size of a regeneration opening is 40 acres if it occurs beyond 1.5 miles of an active RCW cluster site and 25 acres if it occurs within 1.5 miles of an active cluster site. (KNF) (GUIDELINE)

SMA–5CL–07: Set rotation age for longleaf pine management type at 120 years; for mixed pine-hardwood, 120 years; for mixed hardwood-pine and upland hardwood, 130 years; and for bottomland hardwood, 150 years. (KNF) (GUIDELINE)

SMA–5CL–08: Allow no more than 8.3 percent of the longleaf management type within this sub-management area in the 0–10 age class per HMA. Longleaf management type acres are considered as all acres being managed toward longleaf pine regardless of current forest type (other southern pines) or suitability for timber production (old-growth, RCW cluster sites, recruitment stands, etc). (KNF) (GUIDELINE)

SMA–5CL–09: Set earliest entry age for regeneration purposes for off-site pines on longleaf sites at 35 years; for longleaf pine and mixed pine-hardwood, 110 years; and for mixed hardwood-pine and upland hardwood, 120 years. (KNF) (GUIDELINE)

SMA–5CL–10: Until restoration efforts in this sub-management area are nearly complete, avoid applying regeneration harvests within existing longleaf pine stands. (KNF) (GUIDELINE)

SMA–5CL–11: Schedule stand improvement cuts in upland stands to occur at 10 year intervals, beginning near age 20 for loblolly and age 30 for longleaf, and continue as needed for the life of the stand. Favor the retention of longleaf pine. Manage for an open canopy with variable tree densities having an average pine basal area of 70 square feet per acre. (KNF) (GUIDELINE)

Wildlife

SMA–5CL–12: Establish one RCW cluster site or recruitment stand per 200 acres of pine and pine-hardwood forest type in this sub-management area. (KNF) (GUIDELINE)

SUB-MANAGEMENT AREA 5CS

PRIMARY MANAGEMENT GOALS

Emphasize management of RCW habitat and restoring native shortleaf pine / oak-hickory (SOH) communities in an extended time period.

DESIRED FUTURE CONDITION

Vegetation patterns are primarily a product of infrequent prescribed fire, SOH restoration harvests and RCW habitat improvement practices which result in scattered, moderate-sized openings in the forest canopy. Restoration includes maintaining areas of existing SOH while restoring those areas currently dominated by off-site species back to SOH communities over an extended period of time. Off-site species are those other than SOH currently existing on sites historically occupied by SOH. Harvests for SOH restoration result in moderate-sized openings scattered throughout the area. Small openings may occur as a result of prescribed fire. Fire frequency is increased on those areas providing RCW cluster site and foraging habitat. Evidence of recent prescribed fire (plowlines, blackened tree trunks and vegetation) occurs on a limited amount of the landscape.

As a result of prescribed fire, the landscape is dominated by mixtures of shortleaf pine, oaks and hickories. The overstory has a more or less open canopy which is moderately to densely stocked with variable-sized shortleaf pines and hardwoods. Various shrubs are present, and in combination with regenerating overstory species, form a sparse to moderate midstory and understory component. The herbaceous ground cover is sparse to moderate.

There are moderate-sized SOH restoration areas of up to 25 acres scattered throughout the landscape. About 8 percent of the area is in stand-sized openings at any given time.

Wildlife associated with mixed pine and hardwood communities find favorable habitat conditions. Species expected to be inhabiting the area include: Red-cockaded Woodpecker, Red-bellied Woodpecker, Cooper's Hawk, Eastern Screech Owl, Summer Tanager, Black-and-white Warbler, Field Sparrow, white-tailed deer, Wild Turkey, fox squirrel, gray fox, and golden mouse.

STANDARDS AND GUIDELINES

Fire management

SMA–5CS–01: Apply prescribed fire at the landscape scale every 5–10 years. Use prescribed fire more frequently on areas supporting suitable RCW habitat. (KNF) (GUIDELINE)

Vegetation

SMA–5CS–02: Manage upland stands outside the SHPZ and RAPZ primarily for mixed pine-hardwood. Longleaf, slash, and loblolly pine are not appropriate management types within this sub-management area. (KNF) (GUIDELINE)

SMA–5CS–03: Use clearcutting with longleaf reserves as the primary two-aged regeneration method to restore shortleaf pine / oak-hickory forest to upland areas. Maximum size of a regeneration opening is 25 acres. (KNF) (GUIDELINE)

SMA–5CS–04: During restoration, retain all shortleaf pine except as follows: (KNF) (GUIDELINE)

- To improve RCW habitat conditions within restoration areas, allow thinning where clumps of retained dominant or codominant shortleaf pine exceed 70 square feet of basal area per acre.
- To promote growth and vigor of retained shortleaf pine, allow thinning where clumps of shortleaf are less than 10 inches DBH and are less than 30 years old.

SMA–5CS–05: Set rotation age for shortleaf pine management type at 120; for mixed pine-hardwood types at 120 years; for mixed hardwood-pine and upland hardwood, 130 years; and for bottomland hardwood, 150 years. (KNF) (GUIDELINE)

SMA–5CS–06: Allow no more than 8.3 percent of the shortleaf pine and pine-hardwood management types within this sub-management area in the 0–10 age class per HMA. Shortleaf pine or pine hardwood management type acres are considered to be all acres being managed for shortleaf pine or pine-hardwood regardless of current forest type (other pines) or suitability for timber production (old growth, RCW sites, recruitment stands, etc). (KNF) (GUIDELINE)

SMA–5CS–07: Set earliest entry age for regeneration purposes for sites identified for restoration at 60 years; for shortleaf pine and mixed pine-hardwood at 110 years; and for mixed hardwood-pine and upland hardwood, 120 years. (KNF) (GUIDELINE)

SMA–5CS–08: Until restoration efforts in this sub-management area are nearly complete, avoid applying regeneration harvests within existing shortleaf pine / oak-hickory types. (KNF) (GUIDELINE)

SMA–5CS–09: Schedule stand improvement cuts in upland stands to occur at 10–20 year intervals, beginning near age 20 for shortleaf and loblolly pine, and age 30 for all other forest types, and continue as needed for the life of the stand. Favor the retention of shortleaf pine, oaks, and hickories. Manage for a relatively open canopy with variable tree densities having an average combined, pine and hardwood, basal area of 90 square feet per acre, with a minimum of 50 square feet of pine per acre. (KNF) (GUIDELINE)

Wildlife

SMA–5CS–10: Establish one RCW cluster site or recruitment stand per 300 acres of pine and pine-hardwood forest type in this sub-management area. (KNF) (GUIDELINE)

SUB-MANAGEMENT AREA 5CM

PRIMARY MANAGEMENT GOALS

Emphasize management of RCW habitat and restoring native mixed hardwood-loblolly pine (MHL) communities in an extended time period.

DESIRED FUTURE CONDITION

Vegetation patterns are primarily a product of MHL restoration harvests, RCW habitat improvement practices and the minimal effects of prescribed fire which result in scattered, moderate-sized openings in the forest canopy. Restoration includes maintaining areas of existing MHL while restoring those areas currently dominated by off-site species back to MHL over an extended period of time. Off-site species are those other than MHL currently existing on sites occupied by MHL prior to European settlement. Although prescribed fire is a primary tool used to develop and maintain suitable RCW habitat, it has a minimal effect in altering and maintaining the landscape in this area. Fire frequency is increased in those areas providing RCW cluster sites and foraging habitat. Evidence of recent prescribed fire occurs on a limited amount of the landscape. Forest succession plays a major role in shaping the landscape vegetation.

The forest is dominated by communities composed primarily of various hardwoods, with loblolly pine as a major associate. The overstory is relatively closed, multi-layered, and moderately to densely stocked. The midstory is also multi-layered composed of a diversity of shrubs, vines and overstory saplings. The herbaceous ground cover is sparse. The ground is covered with leaf litter and down woody material.

Moderate-sized MHL restoration areas of up to 25 acres are scattered throughout the landscape. About 10 percent of the area is in stand-sized openings at any given time.

Wildlife associated with mature mixed hardwood and pine communities find favorable habitat conditions. Species expected to be inhabiting the area include: Pileated Woodpecker, Wood Thrush, Blue-gray Gnatcatcher, Yellow-throated Vireo, White-eyed Vireo, Yellow-billed Cuckoo, spring peeper, eastern narrow-mouthed toad, gray squirrel, white-tailed deer, Barred Owl, and small-mouthed salamander. Suitable RCW habitat exists on a limited portion of the area.

STANDARDS AND GUIDELINES

Fire management

SMA–5CM–01: Apply prescribed fire at the landscape scale every 10–15 years. Use prescribed fire more frequently on areas supporting suitable RCW habitat. (KNF) (GUIDELINE)

Vegetation

SMA–5CM–02: Manage all stands predominantly for mixed pine-hardwood, hardwood-pine or hardwood. Longleaf, slash, and shortleaf pine are inappropriate management types within this sub-management area. (KNF) (GUIDELINE)

MANAGEMENT AREA 5: RCW AND NATIVE COMMUNITY RESTORATION

SUB-MANAGEMENT AREA 5CM

STANDARDS AND GUIDELINES

SMA–5CM–03: Use shelterwood with reserves as the primary two-aged regeneration method to regenerate pine and pine-hardwood forest types within this sub-management area. Retain 40 square feet of pine basal area per acre during initial cut. In addition to the pine, retain desirable overstory hardwoods, up to 20 square feet of basal area per acre. All residual pine trees and hardwoods are to be retained until the RCW HMA improves to the next management intensity level. Priorities for selecting trees to be retained as shelterwood are:

1. Relict trees
2. Other potential cavity trees
3. Other trees larger than 10 inches DBH that meet requirements as seed producers

Maximum size of a regeneration opening is 25 acres. See Forestwide standards and guidelines for additional RCW shelterwood with reserves direction. (KNF) (GUIDELINE)

SMA–5CM–04: Use shelterwood with reserves as the primary two-aged regeneration method to regenerate upland mixed hardwood-pine and hardwood areas. Retain overstory hardwoods up to 40 square feet of basal area per acre during regeneration. Twenty to 40 square feet of hardwood residual basal area per acre may be retained indefinitely to allow establishment of advanced hardwood reproduction and allow additional time for seedlings to grow. Maximum size of a regeneration opening is 25 acres. (KNF) (GUIDELINE)

SMA–5CM–05: Set rotation age for loblolly pine management type at 100; for mixed pine-hardwood types at 100 years; for mixed hardwood-pine and upland hardwood, 130 years; and for bottomland hardwood, 150 years. (KNF) (GUIDELINE)

SMA–5CM–06: Allow no more than 10 percent of the loblolly pine and pine-hardwood management types within this sub-management area in the 0–10 age class per HMA. Loblolly pine or pine-hardwood management type acres are considered to be all acres being managed towards loblolly pine or pine-hardwood regardless of current forest type (longleaf, shortleaf, or slash pine) or suitability for timber production (old growth, RCW cluster sites, recruitment stands, etc). (KNF) (GUIDELINE)

SMA–5CM–07: Set earliest entry age for regeneration purposes for all pine types at 60 years; for mixed pine-hardwood at 90 years; and for mixed hardwood-pine and upland hardwood, 120 years. (KNF) (GUIDELINE)

SMA–5CM–08: Until restoration efforts in this sub-management area are nearly complete, avoid applying regeneration harvests within existing mixed hardwood-loblolly pine stands. (KNF) (GUIDELINE)

SMA–5CM–09: Schedule upland stand improvement cuts to occur at 10–20 year intervals, beginning near age 20 for shortleaf and loblolly pine, and age 30 for all other forest types, and continue as needed for the life of the stand. Favor the retention of oaks, hickories, and other desirable hardwoods. Manage for a relatively closed canopy with variable tree densities having an average combined, hardwood and pine, basal area of 100 square feet per acre. Maintain a 50-square-foot pine minimum basal area per acre where possible. (KNF) (GUIDELINE)

Wildlife

SMA–5CM–10: Establish one RCW cluster site or recruitment stand per 400 acres on pine and pine-hardwood forest type in this sub-management area. (KNF) (GUIDELINE)

MANAGEMENT AREA 6: RCW AND WILDLIFE HABITATS

DESCRIPTION

This management area is allocated to approximately 45,000 acres on the Forest. It occurs on the Vernon Unit of the Calcasieu District and consists of military limited use areas under permit to Fort Polk. All acres occur within an established Red-cockaded Woodpecker (RCW) habitat management area (HMA).

MANAGEMENT GOALS

Emphasize management of RCW habitat and providing a wide range of favorable habitats for all native wildlife. Provide other resources a moderate to maximum level of protection.

Focus forest management activities and practices on achieving established population objectives while creating and managing those habitat mosaics, conditions and attributes most beneficial to indigenous wildlife communities.

DESIRED FUTURE CONDITION

The landscape in this area maintains a somewhat natural appearance. Alterations to the area are done to produce and sustain suitable habitat for the immediate and long term needs of the RCW as well as optimal habitat conditions for associated wildlife communities. Vegetation patterns are primarily a product of prescribed fire frequency, habitat improvement practices and stand regeneration harvests. Prescribed fire is used at the frequency, intensity and time of year which occurred prior to European settlement. The landscape is frequently intersected by narrow road corridors.

The uplands are frequently dissected by perennial and intermittent streams. The buffers along these stream channels provide maximum protection and enhancement of water quality, aquatic habitats, riparian vegetation and those additional resources tied to stream channels. A large majority of the forest consists of areas within which trees are essentially the same age. Tree ages vary from area to area; and the mix of younger, intermediate and older stands results in a variety of successional habitats. In the older managed stands, trees are typically 90-100 feet tall and 18-20 inches in diameter. Evidence of stand improvement practices for wildlife habitat purposes is apparent throughout the entire area. Standing dead trees and downed logs are common as a result of natural mortality. Threatened, endangered and sensitive species associated with these habitat conditions receive the maximum level of protection and management. Additional rare, unique or sensitive communities are identified, protected and actively managed.

There are small regeneration areas of up to 25 acres and moderate-sized longleaf restoration areas of up to 40 acres scattered throughout the landscape. The appearance of these areas ranges from clearcuts where few if any live trees remain standing to those where a variable amount of trees remains scattered or clumped throughout the area indefinitely. The character of these openings ranges from those that recently received the initial regeneration harvest to those that contain various levels of pine and hardwood seedlings. The areas that were recently harvested may still exhibit evidence of site preparation and burning.

For people using the area, the probability of experiencing the sights, sounds and evidence of other people is common. Some designated hiking trails and dispersed recreation facilities are provided.

STANDARDS AND GUIDELINES

FIRE MANAGEMENT

Wildfire suppression

MA–6–01: Use a suppression strategy that may range from direct control to more indirect methods of containment and confinement, including surveillance where appropriate. (KNF) (GUIDELINE)

Prescribed fire

MA–6–02: Allow prescribed natural fires to burn if prescribed conditions are met. (KNF) (GUIDELINE)

MANAGEMENT AREA 6: RCW AND WILDLIFE HABITATS

STANDARDS AND GUIDELINES

SUB-MANAGEMENT AREA 6BL

PRIMARY MANAGEMENT GOALS

DESIRED FUTURE CONDITION

FOREST PRODUCTS

MA–6–03: Classify this management area as suitable for timber production except in areas specifically classified unsuitable by Forestwide standards and guidelines. (KNF) (STANDARD)

MA–6–04: Within 1/2 mile of active RCW clusters and inactive RCW clusters or recruitment stands that have been made suitable for translocation, salvage only to control SPB, retaining SPB-vacated trees. Within 1/4 mile of inactive RCW clusters not suitable for translocation, salvage only to control SPB, retaining SPB-vacated trees. (KNF) (GUIDELINE)

STREAMSIDE HABITATS, RIPARIAN AREAS, AND WETLANDS

MA–6–05: Along all streams where the area immediately adjacent to the scour channel is composed of mixed pine and hardwood habitats, extend the streamside habitat protection zone (SHPZ) out to a minimum of 150 feet. Mixed pine and hardwood habitats are defined as areas where more than 30 percent of the total overstory basal area is composed of hardwood tree species. See Forestwide standards and guidelines for appropriate management practices within SHPZ and RAPZ. (KNF) (GUIDELINE)

VEGETATION MANAGEMENT

MA–6–06: Restore or maintain native plant communities for all upland sites through the re-establishment of natural community composition, structure, and ecological processes. (KNF) (GUIDELINE)

MA–6–07: Concentrate restoration and regeneration efforts beyond 1.5 miles of active RCW cluster sites for the first 10–20 years. (KNF) (GUIDELINE)

WILDLIFE

MA–6–08: Adhere to guidance presented in the *Record of Decision and the Final Environmental Impact Statement for the Management of the RCW and its Habitat on National Forests in the Southern Region*. See Forestwide standards and guidelines for direction on vegetation management, habitat improvement, and other practices pertaining to the RCW. (KNF) (GUIDELINE)

SUB-MANAGEMENT AREA 6BL

PRIMARY MANAGEMENT GOALS

Emphasize management of RCW habitat and producing high quality wildlife habitats created within an open, frequently burned landscape.

DESIRED FUTURE CONDITION

Vegetation patterns are primarily a product of frequent prescribed fire, stand regeneration harvests and RCW and other wildlife habitat improvement practices. Small openings may occur frequently as a result of prescribed fire. Evidence of prescribed fire occurs commonly across the landscape.

As a result of frequent prescribed fire, the landscape is composed of relatively open park-like pine stands eventually dominated by native, fire dependent longleaf pine communities. The forest canopy ranges from sparse to moderately stocked. The forest typically has long scenic vistas broken only by hardwood-lined slopes, creeks and river bottoms. There are few shrubs and midstory trees on the uplands. The ground cover is a continuous swath of herbaceous plants dominated by grasses, composites, legumes and other forbs. A portion of the forest consists of areas where larger older trees are interspersed with small patches of variable-sized younger trees, saplings, seedlings or small openings. Old trees greater than 100 years of age occur as individuals, in groups or on large areas.

Small regeneration areas of up to 25 acres, and moderate sized restoration areas up to 40 acres are widely scattered throughout the landscape. These are primarily longleaf restoration harvests and longleaf shelterwoods. During shelterwood harvests, a portion of the overstory (hardwoods and pines) is initially left to provide a seed source for the regenerating stand. After the regenerating stand is established, most of the pine overstory is removed. Some of the canopy pines and all the remaining hardwoods are left (scattered and clumped) throughout the stand indefinitely. These reserve trees are left to provide some level of continuous canopy during regeneration and to become important habitat attributes in the next stand. Less than 10 percent of the area occurs as stand-

sized openings (greater than 10 acres) at any given time.

Wildlife associated with mature open, frequently burned conifer communities find favorable habitat conditions. Species expected to be inhabiting the area include: Red-cockaded and Red-headed Woodpeckers, Bobwhite Quail, Wild Turkey, Eastern Bluebird, white-tailed deer, Louisiana pine snake, Bachman's Sparrow, fox squirrel, Prairie Warbler, and red bat.

STANDARDS AND GUIDELINES

Fire management

SMA–6BL–01: Apply prescribed fire at the landscape scale every 2–5 years, with increased emphasis on growing season burns. (KNF) (GUIDELINE)

Forest health

SMA–6BL–02: Prescribe dormant season and early growing season burns to reduce impacts of brown-spot needle blight on high-blight-risk longleaf restoration sites; and to release longleaf seedlings from competition. (KNF) (GUIDELINE)

Vegetation

SMA–6BL–03: Manage upland stands outside the SHPZ and RAPZ predominantly for longleaf pine. Slash, loblolly, and shortleaf pine are not appropriate management types within this sub-management area. (KNF) (GUIDELINE)

SMA–6BL–04: Use clearcutting with longleaf reserves as the primary two-aged regeneration method to restore longleaf pine forest to upland areas dominated by off-site pines (loblolly, slash). Maximum size of a restoration opening is 40 acres. (KNF) (GUIDELINE)

SMA–6BL–05: During restoration, retain all longleaf pine except as follows:

- To improve RCW habitat conditions within restoration areas, allow thinning where clumps of retained dominant or codominant longleaf pine exceed 70 square feet of basal area per acre.
- To promote growth and vigor of retained longleaf pine, allow thinning where clumps of longleaf are less than 10 inches DBH and are less than 30 years old. (KNF) (GUIDELINE)

SMA–6BL–06: Use shelterwood with longleaf reserves as the primary two-aged regeneration method to regenerate longleaf pine forest type within this sub-management area. During the initial cut, retain 25–30 square feet of pine basal area per acre within the Vernon HMA; and 40 square feet of pine basal area within all other HMAS. Retain 10 square feet of pine basal area but not less than 6 longleaf trees per acre (longleaf reserve trees) clumped through the area indefinitely or until the HMA achieves management intensity level I. Priorities for selecting trees to be retained as seed sources are:

1. Relict trees
2. Other potential cavity trees
3. Other trees larger than 10 inches DBH that meet requirements as seed producers

Maximum size of a regeneration opening is 25 acres. See Forestwide standards and guidelines for additional direction pertaining to regeneration of longleaf pine within a HMA. (KNF) (GUIDELINE)

SMA–6BL–07: Set rotation age for longleaf pine management type at 120 years; for mixed pine-hardwood, 120 years; for mixed hardwood-pine and upland hardwood, 130 years; and for bottomland hardwood, 150 years. (KNF) (GUIDELINE)

SMA–6BL–08: Allow no more than 8.3 percent of the longleaf management type within this sub-management area in the 0–10 age class per HMA. Longleaf management type acres are considered as all acres being managed toward longleaf pine regardless of current forest type (other southern pines) or suitability for timber production (old-growth, RCW cluster sites, recruitment stands, etc). (KNF) (GUIDELINE)

MANAGEMENT AREA 6: RCW AND WILDLIFE HABITATS

SUB-MANAGEMENT AREA 6BL

STANDARDS AND GUIDELINES

SMA–6BL–09: Set earliest entry age for regeneration purposes for off-site pines on longleaf sites at 35 years; for longleaf pine and mixed pine-hardwood, 110 years; and for mixed hardwood-pine and upland hardwood, 120 years. (KNF) (GUIDELINE)

SMA–6BL–10: Until restoration efforts in this sub-management area are nearly complete, avoid applying regeneration harvests within existing longleaf pine stands. (KNF) (GUIDELINE)

SMA–6BL–11: Schedule stand improvement cuts in upland stands to occur at 10-year intervals, beginning near age 20 for loblolly and age 30 for longleaf, continuing as needed for the life of the stand, favoring longleaf pine retention. Manage for an open canopy with variable tree densities and average pine basal area of 70 square feet per acre. (KNF) (GUIDELINE)

Wildlife

SMA–6BL–12: Establish one RCW cluster site or recruitment stand per 200 acres on pine and pine-hardwood forest type in this sub-management area. (KNF) (GUIDELINE)

MANAGEMENT AREA 7: HARDWOODS

DESCRIPTION

This management area is allocated to approximately 10,000 acres on the Winn District.

MANAGEMENT GOALS

Emphasize providing high levels of hardwood composition, featuring hardmast producers.

Focus forest practices and activities on improving the composition of hardwoods in all forested stands. Manage a large majority of the area as hardwood or mixed stands of hardwoods and pines. Provide benefits to those wildlife species that are associated with habitats containing an increased component of hardwood, especially hard mast producers.

DESIRED FUTURE CONDITION

The landscape in this area maintains a relatively natural appearance and is dominated by communities comprised of mixtures of hardwoods and pines. Vegetation patterns are primarily a product of forest regeneration harvests, stand improvement practices, and infrequent prescribed fire that protect and promote increased hardwood composition across the entire area. The landscape is frequently intersected by narrow road corridors.

The uplands are frequently dissected by perennial and intermittent streams. The overstory is relatively closed, multi-layered, and moderately to densely stocked. The canopy consists of a variety of hardwood trees, with pine being a major associate. The midstory is also multi-layered composed of a diversity of shrubs, vines and overstory saplings. Herbaceous understory vegetation is sparse. The ground is covered with leaf litter and down woody material in various stages of decay. A majority of the forest occurs as areas within which trees are essentially the same age. Tree ages vary from area to area. In the older managed stands, trees are typically 90-100 feet tall and 18-20 inches in diameter. A portion of the forest consists of areas where larger older overstory trees are interspersed with small patches of variable-sized mixtures of younger hardwoods and pine trees, saplings, seedlings, or small openings. Old hardwood trees greater than 100 years of age occur commonly as individuals, groups, or large areas. Evidence of stand improvement practices is apparent throughout the entire area. Standing dead trees and down logs are common as a result of natural mortality.

There are small regeneration harvest areas of up to 25 acres in size, scattered throughout the landscape. These are primarily shelterwoods where a significant portion of the overstory (hardwoods and pines) is initially left to provide a seed source and a beneficial environment for the regenerating stand. A maximum amount of canopy hardwood trees are retained during the initial cut. A large majority of these canopy hardwoods and standing snags are left (scattered or clumped) throughout the stand indefinitely. The character of these areas ranges from those that recently received a shelterwood harvest to those that contain hardwood or pine seedlings. The areas that were recently harvested may still exhibit evidence of minimal site preparation. Less than 10 percent of the area occurs as stand-sized openings (greater than 10 acres) at any given time.

Wildlife associated with mature hardwood or mixed pine and hardwood communities find favorable habitat conditions. Species expected to be inhabiting the area include: Pileated and Red-bellied Woodpecker, Barred Owl, Wood Thrush, raccoon, gray and fox squirrel, Wild Turkey, Cooper's Hawk, gray fox and white-tailed deer. Habitats containing any known threatened, endangered or sensitive plant or animal species associated with these habitat conditions receive protection and active management.

For people using the area, the probability of experiencing the sights, sounds and evidence of other people is not common. Some designated hiking trails and dispersed recreation facilities are provided.

MANAGEMENT AREA 7: HARDWOODS

DESCRIPTION

MANAGEMENT GOALS

DESIRED FUTURE CONDITION

MANAGEMENT AREA 7: HARDWOODS

STANDARDS AND GUIDELINES

STANDARDS AND GUIDELINES

FIRE MANAGEMENT

Wildfire suppression

MA–7–01: Use a suppression strategy of direct control to minimize acreage burned. (KNF) (GUIDELINE)

Prescribed fire

MA–7–02: Use prescribed fire rarely, but allow it at the multi-stand level when needed for upland hardwood establishment. (KNF) (GUIDELINE)

MA–7–03: Do not allow prescribed natural fire. (KNF) (STANDARD)

FOREST PRODUCTS

MA–7–04: Classify this management area as suitable for timber production except in areas specifically classified unsuitable by Forestwide standards and guidelines. (KNF) (STANDARD)

STREAMSIDE HABITATS, RIPARIAN AREAS, AND WETLANDS

MA–7–05: Along all streams where the area immediately adjacent to the scour channel is composed of mixed pine and hardwood habitats, extend the streamside habitat protection zone (SHPZ) out to a minimum of 100 feet. Mixed pine and hardwood habitats are defined as areas where more than 30 percent of the total overstory basal area is composed of hardwood tree species. See Forestwide standards and guidelines for appropriate management practices within SHPZ and RAPZ. (KNF) (GUIDELINE)

VEGETATION MANAGEMENT

MA–7–06: Manage all stands predominantly for mixed pine-hardwood, hardwood-pine, or hardwood. Longleaf and slash are not appropriate management types within this management area. (KNF) (GUIDELINE)

MA–7–07: Use shelterwood with reserves as the primary two-aged regeneration method to regenerate upland areas. Retain overstory hardwoods up to 40 square feet basal area per acre during regeneration harvests. Maximum size of a regeneration opening is 25 acres. Twenty to 40 square feet of hardwood residual basal area per acre may be retained indefinitely to allow establishment of advanced hardwood reproduction and allow additional time for seedlings to grow. (KNF) (GUIDELINE)

MA–7–08: Set rotation age for all pine and mixed pine-hardwood management types at 100; for mixed hardwood-pine and upland hardwood, 130 years; and for bottomland hardwood, 150 years. (KNF) (GUIDELINE)

MA–7–09: Set earliest entry age for regeneration purposes for pines at 60 years; for mixed pine-hardwood at 90 years; and for mixed hardwood-pine and upland hardwood, 120 years. (KNF) (GUIDELINE)

MA–7–10: Schedule stand improvement cuts needed to establish and promote advanced hardwood reproduction to occur at 10–20 year intervals, beginning near age 20 for shortleaf and loblolly pine, and age 30 for all other forest types, and continue as needed for the life of the stand. Favor the retention of oaks, hickories, and other desirable hardwoods. Manage for a relatively closed canopy with variable tree densities having an average combined, hardwood and pine, basal area of 100 square feet per acre. (KNF) (GUIDELINE)

MANAGEMENT AREA 9: MILITARY INTENSIVE USE

DESCRIPTION

This management area consists of the Fort Polk and Peason Ridge military intensive use areas, the Claiborne U.S. Air Force Reserve Bombing and Gunnery Range impact area and safety fan. It is allocated to approximately 40,000 acres on the Forest, on the Evangeline Unit of the Calcasieu District (14 percent); the Kisatchie District (1 percent); and the Vernon Unit of the Calcasieu District (85 percent).

MANAGEMENT GOALS

Maintain intensive military use — small arms firing ranges, tank firing ranges, artillery range impact areas, bombing range, maneuver areas, and other related military facilities. Accomplish Forest Service management activities in coordination with the military.

Focus Forest management practices and activities on allowing near-normal operations in coordination with the military. Protect and maintain the basic resource values to limit offsite impacts. Allow hunting and other recreation to occur when not precluded by military actions. Do not require sustained production of timber products. Carry out silvicultural practices for stand health, wildlife habitat improvement, salvage, or other non-market resource purposes.

DESIRED FUTURE CONDITION

The natural landscape in this area has been modified to a high degree through human intervention. Vegetation patterns are primarily a product of clearing and maintaining permanent openings, explosives, fire, and habitat improvement practices. Evidence of prescribed fire activities (plowlines, blackened tree trunks, vegetation) are common. Much of the landscape is dissected by narrow road corridors.

Overstory vegetation on most of the area consists primarily of pine stands. The uplands are frequently dissected by perennial and intermittent streams. A majority of the forest consists of areas within which trees are essentially the same age. Tree ages vary from area to area. Evidence of stand improvement practices is apparent throughout the entire area.

Small to moderate-sized regeneration areas are scattered throughout the landscape. Their character ranges from recently harvested to well-stocked with pine seedlings.

Although public use of the area will be limited, there remains a high probability of hearing or seeing other people or viewing evidence of management and military activities.

STANDARDS AND GUIDELINES

FIRE MANAGEMENT

Wildfire suppression

MA–9–01: Use a suppression strategy of direct control. The Forest Service role in this management area is secondary to military role, and the military is responsible for wildfire protection under the memoranda of agreement with the Department of Defense. (KNF) (GUIDELINE)

MA–9–02: When it is safe to enter, assist the military with fire suppression or take initial action in the intensive-use areas. (KNF) (GUIDELINE)

Prescribed fire

MA–9–03: Do not allow prescribed natural fires. (KNF) (STANDARD)

FOREST PRODUCTS

MA–9–04: Classify the area as unsuitable for timber production. Timber may be sold to accomplish other non-market resource objectives including forest health, wildlife habitat improvement, and threatened and endangered species management. (KNF) (STANDARD)

MA–9–05: Keep timber sales within this area small to allow logging within the contract term, recognizing short-duration logging opportunities due to scheduling of military activities. (KNF) (GUIDELINE)

HERITAGE RESOURCES

MA–9–06: Cooperate with the U.S. military authorities and the Louisiana SHPO, in accordance with the programmatic agreement among the U.S. Army, Forest Service, Louisiana SHPO, and the Advisory Council on Historic Preservation. (KNF) (STANDARD)

MANAGEMENT AREA 9: MILITARY INTENSIVE USE

DESCRIPTION

MANAGEMENT GOALS

DESIRED FUTURE CONDITION

STANDARDS AND GUIDELINES

MANAGEMENT AREA 9: MILITARY INTENSIVE USE

STANDARDS AND GUIDELINES

SUB-MANAGEMENT AREA 9DL

PRIMARY MANAGEMENT GOALS

DESIRED FUTURE CONDITION

MINERALS — LEASABLE

MA–9–07: Request input from the military at Fort Polk prior to making lands at Fort Polk or Peason Ridge available for oil and gas leasing. Within the Claiborne safety fan area, assign a moderately restrictive controlled surface use (CSU2) stipulation to oil and gas leases. (KNF) (GUIDELINE)

MA–9–08: Coordinate oil and gas exploration activities with the Army at Fort Polk and Peason Ridge, and with the U.S. Air Force Reserves at the Claiborne range safety fan. Activities must occur outside the impact area at the Claiborne range. (KNF) (GUIDELINE)

MINERALS — SALABLE

MA–9–09: Coordinate with the military on any applications for common variety minerals exploration permits. (KNF) (GUIDELINE)

SPECIAL-USES

MA–9–10: Do not authorize new special-uses unless they are compatible with military objectives. (KNF) (GUIDELINE)

U.S. Air Force Reserve Bombing and Gunnery Range safety fan

MA–9–11: For safety, all resource management within the 2,535 acres shall be coordinated with the U.S. Air Force Reserves. Conditions of use will be in accordance with the special-use permit. (KNF) (GUIDELINE)

MA–9–12: Limit resource management activities, permits, and public use within the area to 90 days a year, to be scheduled according to conditions in the special-use permit. (KNF) (GUIDELINE)

MA–9–13: Post notices when the area is to be open to the public. (KNF) (GUIDELINE)

U.S. Air Force Reserves Bombing and Gunnery Range Impact Area

MA–9–14: Use of this 672 acres by the military is authorized by a special-use permit. Coordinate resource management activities with the Air Force. (KNF) (GUIDELINE)

STREAMSIDE HABITATS, RIPARIAN AREAS, AND WETLANDS

MA–9–15: Along all streams where the area immediately adjacent to the scour channel is composed of mixed pine and hardwood habitats, extend the streamside habitat protection zone (SHPZ) to a minimum of 100 feet. Mixed pine and hardwood habitats are defined as areas where more than 30 percent of the overstory basal area is composed of hardwood tree species. See Forestwide standards and guidelines for appropriate management practices within SHPZ and RAPZ. (KNF) (GUIDELINE)

VEGETATION MANAGEMENT

MA–9–16: Do not manage using a silvicultural system. No rotation lengths are established. (KNF) (STANDARD)

MA–9–17: Allow even-aged, two-aged, and uneven-aged regeneration method techniques for stand health, restoration, wildlife habitat improvement, salvage, or other nonmarket resource purposes. (KNF) (GUIDELINE)

WILDLIFE

MA–9–18: Cooperate with U.S. military authorities and the Louisiana Department of Wildlife and Fisheries in accordance with existing agreements. (KNF) (GUIDELINE)

MA–9–19: Coordinate habitat improvement with military use. (KNF) (GUIDELINE)

SUB-MANAGEMENT AREA 9DL

PRIMARY MANAGEMENT GOALS

Emphasize management of RCW habitat and producing the highest quality wildlife habitats created within an open, frequently burned landscape.

DESIRED FUTURE CONDITION

Vegetation patterns are primarily a product of frequent prescribed fire, RCW and other wildlife habitat improvement, salvage, or other practices to maintain forest health. Small openings may occur frequently as a result of prescribed fire. Evidence of fire is common and occurs across the landscape.

As a result of frequent prescribed fire, the landscape is composed of relatively open park-like pine stands eventually dominated by native, fire dependent longleaf pine communities. The forest canopy ranges from sparse to moderately stocked. The forest typically has long scenic vistas broken only by hardwood-lined slopes, creeks and river bottoms. The buffers along these stream channels provide maximum protection and enhancement of water quality, aquatic habitats, riparian vegetation, and those additional resources tied to stream channels. Other than longleaf pine, there are few shrubs and mid-story trees on the uplands. The native ground cover is a continuous carpet of herbaceous plants dominated by grasses, composites, legumes and other forbs. Old trees greater than 100 years of age occur as individuals, in groups, or on large areas.

There are small regeneration areas of up to 25 acres widely scattered throughout the landscape. These are primarily longleaf restoration harvests and longleaf shelterwoods. All existing longleaf pine and standing snags as well as some desirable hardwoods are protected during restoration harvests. During shelterwood harvests, a portion of the overstory (hardwoods and pines) is initially left to provide a seed source for the regenerating stand. After the regenerating stand is established, most of the pine overstory is removed. Some of the canopy pines and all the remaining hardwoods are left (scattered and clumped) throughout the stand indefinitely. These reserve trees are left to provide some level of continuous canopy during regeneration and to become important habitat attributes in the next stand. Approximately 8 percent of the area occurs as stand-sized openings (greater than 10 acres) at any given time.

Wildlife associated with mature open, frequently burned conifer communities find favorable habitat conditions. Species expected to be inhabiting the area include: Red-cockaded and Red-headed Woodpeckers, Bobwhite Quail, Wild Turkey, Eastern Bluebird, white-tailed deer, Louisiana pine snake, Bachman's Sparrow, fox squirrel, Prairie Warbler, and red bat. Threatened, endangered and sensitive species associated with these habitat conditions receive the maximum level of protection and management. Rare, unique or sensitive communities are identified, protected, and managed.

STANDARDS AND GUIDELINES

Fire management

SMA–9DL–01: Apply prescribed fire at the landscape scale every 2–5 years, with increased emphasis on growing season burns. (KNF) (GUIDELINE)

Forest health

SMA–9DL–02: Prescribe dormant season and early growing season burns to reduce impacts of brown-spot needle blight on high-blight-risk longleaf restoration sites; and to release longleaf seedlings from competition. (KNF) (GUIDELINE)

Forest products

SMA–9DL–03: Within 1/2 mile of active RCW clusters and inactive RCW clusters or recruitment stands that have been made suitable for translocation, salvage only to control SPB, retaining SPB-vacated trees. Within 1/4 mile of inactive RCW clusters not suitable for translocation, salvage only to control SPB, retaining SPB-vacated trees. (KNF) (GUIDELINE)

Vegetation

SMA–9DL–04: Manage upland stands outside the SHPZ and RAPZ predominantly for longleaf pine. Slash, loblolly, and shortleaf pine are not appropriate management types within this sub-management area. (KNF) (GUIDELINE)

SMA–9DL–05: Use clearcutting with longleaf reserves as the primary two-aged regeneration method technique to restore longleaf pine forest to upland areas dominated by off-site pines (loblolly, slash). Retain all longleaf pine stems, regardless of size, during restoration harvests. In addition, retain up to 10 square feet of basal area per acre of desirable overstory hardwoods scattered and clumped throughout the area indefinitely. Maximum size of a restoration opening is 25 acres. (KNF) (GUIDELINE)

SMA–9DL–06: Use shelterwood with longleaf reserves as the primary two-aged regeneration method technique to regenerate longleaf pine forest type within this sub-management area. During the initial cut, retain 25–30 square feet of pine basal area per acre. In

MANAGEMENT AREA 9: MILITARY INTENSIVE USE

SUB-MANAGEMENT AREA 9DL

STANDARDS AND GUIDELINES

addition, retain up to 10 square feet of basal area of desirable overstory hardwoods scattered and clumped throughout the area indefinitely. Retain 10 square feet of pine basal area but not less than 6 longleaf trees per acre (longleaf reserve trees) clumped throughout the area indefinitely or until the HMA achieves management intensity level I. Priorities for selecting trees to be retained as shelterwood are:

1. Relict trees
2. Other potential cavity trees
3. Other trees larger than 10 inches DBH that meet requirements as seed producers

Maximum size of a regeneration opening is 25 acres. See Forestwide standards and guidelines for additional direction pertaining to regeneration of longleaf pine within a HMA. (RCW) (GUIDELINE)

SMA–9DL–07: Allow no more than 8.3 percent of the longleaf management type within this sub-management area in the 0–10 age class. Longleaf management type acres are considered to be all acres being managed towards longleaf pine regardless of current forest type (shortleaf, loblolly, or slash pine). (KNF) (GUIDELINE)

SMA–9DL–08: Set earliest entry age for regeneration purposes for off-site pines on longleaf sites at 35 years; for longleaf pine and mixed pine-hardwood, 110 years; and for mixed hardwood-pine and upland hardwood, 120 years. (KNF) (GUIDELINE)

SMA–9DL–09: Until restoration in this sub-management area is nearly complete, avoid applying regeneration harvest techniques within existing longleaf pine stands. (KNF) (GUIDELINE)

SMA–9DL–10: Schedule stand improvement cuts in upland stands to occur at 10 year intervals, beginning near age 20 for loblolly and age 30 for longleaf, and continue as needed for the life of the stand. Favor the retention of longleaf pine. Manage for an open canopy with variable tree densities having an average pine basal area of 70 square feet per acre. (KNF) (GUIDELINE)

Wildlife

SMA–9DL–11: Adhere to guidance presented in the *Record of Decision and the Final Environmental Impact Statement for the Management of the RCW and its Habitat on National Forests in the Southern Region*. See Forestwide standards and guidelines for direction on vegetation management, habitat improvement, and other practices pertaining to the RCW. (KNF) (GUIDELINE)

SMA–9DL–12: Establish one RCW cluster site or recruitment stand per 250 acres of pine and pine-hardwood forest type in this sub-management area. (KNF) (GUIDELINE)

SUB-MANAGEMENT AREA 9E

PRIMARY MANAGEMENT GOALS

Emphasize producing and sustaining a mixture of non-market resources.

DESIRED FUTURE CONDITION

The overstory vegetation on a large majority of the area consists primarily of pine stands which may contain up to 30 percent hardwoods. In the older managed stands, trees are typically 90–100 feet tall, 18–20 inches in diameter, and approximately 70–80 years old. In these older areas the trees are evenly spaced. Standing dead trees and downed logs are scattered throughout a majority of the area.

Numerous pine regeneration areas of up to 40 acres are scattered throughout the landscape. These areas are primarily seed-trees and shelterwoods where a variable amount of overstory pine is initially maintained to provide a seed source for the regenerating stand. After the new stand is established, most of the pine overstory is removed. Some live pine or hardwood trees and standing snags are indefinitely left scattered or clumped throughout the stand. Approximately 15 percent of the area is in stand-sized openings less than 10 years old.

STANDARDS AND GUIDELINES

Vegetation

SMA–9E–01: Manage upland stands outside the **SHPZ** and **RAPZ** predominantly for pine. Mixed pine-hardwood and hardwood-pine are generally not appropriate management types for upland stands within this sub-management area. (**KNF**) (**GUIDELINE**)

SMA–9E–02: Use seed-tree and shelterwood as the primary even-aged regeneration method techniques to regenerate all upland forest types. Maximum regeneration opening is 40 acres. (**KNF**) (**GUIDELINE**)

SMA–9E–03: Allow no more than 15 percent of all pine management types and no more than 10 percent of all upland hardwood management types in the 0–10 age class within this sub-management area. (**KNF**) (**GUIDELINE**)

SMA–9E–04: Set earliest entry age for regeneration purposes for pine management types at 35 years; and for upland hardwood, 90 years. (**KNF**) (**GUIDELINE**)

MANAGEMENT AREA 10: NATIONAL SCENIC RIVERS

DESCRIPTION

This management area is allocated to approximately 5,800 acres on the Forest and contains Saline Bayou National Scenic River and corridor. It occurs only on the Winn District.

MANAGEMENT GOALS

Emphasize providing a variety of recreational and other public uses.

Focus forest management activities on protecting and enhancing the values for which Saline Bayou was designated a national scenic river. Do not require sustained production of timber products.

DESIRED FUTURE CONDITION

The landscape in this area maintains a natural appearance. Vegetation patterns are primarily a product of periodic flooding, infrequent prescribed fire, forest succession, and limited stand improvement practices.

The landscape is dominated by cypress swamps, bottomland hardwoods, and mixed hardwood-loblolly pine stands. The overstory is relatively closed, multilayered, and moderately to densely stocked. Canopy gaps produce midstory vegetation that is multilayered and composed of a diversity of shrubs, vines and overstory saplings. Trees greater than 100 years old occur commonly as individuals, in groups, or on large areas. Standing dead trees and down logs are abundant as a result of natural mortality. Management activities eventually result in old-growth forest over the entire area.

Evidence of stand improvement practices and prescribed fire is rare throughout the entire area.

Wildlife associated with mature bottomland hardwoods, cypress swamps or mixed pine and hardwood communities find favorable habitat conditions. Species expected to inhabit the area include Pileated Woodpecker, Barred Owl, Great Blue Heron, Kentucky Warbler, Prothonotary Warbler, Northern Parula, Wood Duck, raccoon, gray squirrel, Wild Turkey, river otter, Red-shouldered Hawk, gray fox and white-tailed deer. Habitats containing any known threatened, endangered or sensitive plant or animal species associated with these habitat conditions receive protection and active management.

The river environment is maintained in a natural free-flowing state while providing for recreational opportunities. The river area appears largely primitive and shorelines largely undeveloped. The shorelines do not show substantial evidence of human activity, although some discernible developments may be present. Recreation users will occasionally meet other individuals.

STANDARDS AND GUIDELINES

FIRE MANAGEMENT

Wildfire suppression

MA–10–01: Use a suppression strategy of direct control to minimize acres burned. (KNF) (GUIDELINE)

Prescribed fire

MA–10–02: Allow infrequent prescribed fire when needed to maintain or enhance desired conditions and to reduce natural fuels in the river corridor, thus reducing wildfire hazard and promoting the safety of river users. (KNF) (GUIDELINE)

MA–10–03: Schedule prescribed fires to occur when adjoining areas are burned and during periods of low recreation use. (KNF) (GUIDELINE)

MA–10–04: Do not allow prescribed natural fires. (KNF) (STANDARD)

FOREST HEALTH

MA–10–05: Control active SPB infestations in the river corridor in accordance with management requirements and mitigation measures from the Record of Decision for the Final EIS on suppression of the Southern Pine Beetle. See Forestwide direction for more specific SPB infestation control. (KNF) (STANDARD)

FOREST PRODUCTS

MA–10–06: Classify this management area as unsuitable for timber production. (KNF) (STANDARD)

HEALTH AND SAFETY

MA–10–07: With USGS advice, set depth gauges at selected locations where users launch boats. Relate river depth to safety hazards and difficulty of trip. (KNF) (GUIDELINE)

LAND ADJUSTMENT

MA–10–08: Condemnation is authorized, when necessary to clear title or to acquire scenic easements or other such easements as are reasonably necessary to give access to the river. However, based upon prior and existing land uses, it is not anticipated there would be a need for either voluntary conveyance of such easements nor the exercise of condemnation authority. Pursue fee title to lands within and adjacent to the corridor. (KNF) (GUIDELINE)

MINERALS

MA–10–09: Do not sell or lease common variety minerals — sand, gravel, iron ore. (KNF) (STANDARD)

MA–10–10: Permit oil and gas leasing with a no surface occupancy stipulation within 600 feet of the bayou. (KNF) (GUIDELINE)

MA–10–11: Exercise reserved mineral rights in accordance with Secretary's Rules and Regulations attached to the deed of conveyance. Encourage owners to locate well sites outside of riparian areas and to conduct seismic surveys when suitable ground conditions exist. Determine future management when minerals revert to the U.S. under the same guidelines currently in effect for U.S. minerals. (KNF) (GUIDELINE)

MA–10–12: Do not issue a permit for surface occupancy of outstanding oil and gas rights. Review the proposed plan of operation for development of private mineral rights and determine an agreed-upon access route and source of water. Exercise of these rights are governed by conditions in the severance deed and State and federal laws and State regulations. Encourage mineral owners / lessors to locate well sites outside of riparian areas and conduct seismic surveys where suitable ground conditions exist. (KNF) (GUIDELINE)

RECREATION MANAGEMENT

General

MA–10–13: Manage the area for non-degradation and enhancement of activities that protect and enhance the values for which the river was designated. (KNF) (STANDARD)

MA–10–14: Manage river use levels to maintain the scenic experience quality in cooperation with the Louisiana Natural and Scenic River System. (KNF) (STANDARD)

MA–10–15: Manage the river and river corridor north of Forest Service Road 513 as *semiprimitive-nonmotorized* ROS class. Close land in the corridor north of Forest Service Road 513 to all vehicles, both on and off roads. (KNF) (GUIDELINE)

MA–10–16: Do not allow boats with motors (gasoline or electric) north of Louisiana Highway 126. (KNF) (GUIDELINE)

MA–10–17: Manage the river and river corridor south of Forest Service Road 513 as *semiprimitive-motorized* ROS class. (KNF) (GUIDELINE)

MA–10–18: Do not allow boats with gasoline motors larger than 25 horsepower to operate between the Louisiana Highway 126 bridge and the Louisiana Highway 156 bridge. (KNF) (GUIDELINE)

MA–10–19: Allow boats to operate with no restriction on motor size south of Louisiana Highway 156. (KNF) (GUIDELINE)

MA–10–20: Provide interpretation on the unique qualities of the corridor and the range of recreation opportunities available. (KNF) (GUIDELINE)

MA–10–21: Monitor recreation use to ensure that the experiences available are consistent with the assigned ROS classes. (KNF) (GUIDELINE)

MA–10–22: Do not restrict picnicking or camping in the corridor. Encourage pack-in, pack-out concept to maintain a clean area. Promote *no-trace* camping. Monitor camping near the bayou. Develop camping restrictions if adverse impacts to resources develop or use conflicts occur from camping near the bayou. (KNF) (GUIDELINE)

MANAGEMENT AREA 10: SALINE BAYOU NATIONAL SCENIC RIVER

STANDARDS AND GUIDELINES

Dispersed recreation

MA–10–23: Construct additional hiking trails within the river corridor if recreation demand warrants. (KNF) (GUIDELINE)

MA–10–24: Maintain the river periodically to remove sections of fallen trees to facilitate canoeing or boating. Remove sections of debris only wide enough to allow the passage of small boats or canoes. (KNF) (GUIDELINE)

MA–10–25: Maintain signs along Saline Bayou Canoe Trail to adequately mark the course. Destination and distance information may be included on trail identification signs. (KNF) (GUIDELINE)

MA–10–26: Provide bulletin boards at major river access points. Provide recreation information, regulations, emergency phone numbers, and recommended safety precautions at minimum, on bulletin boards at boat access points. (KNF) (GUIDELINE)

Scenery resource management

MA–10–27: Assign the river corridor a scenic integrity objective (SIO) of *high*. Place special emphasis on the scenic qualities along the river with scenic values. (KNF) (STANDARD)

SOIL AND WATER

MA–10–28: Evaluate proposed projects that have the potential to affect the free flowing condition and / or outstandingly remarkable values of the river according to the implementing regulations for Section 7 of the Wild & Scenic Rivers Act and *36 CFR 297* as outlined in *FSM 2354.7*. (KNF) (STANDARD)

Projects likely to be subject to Section 7 analysis include, but are not limited to:

- Fisheries habitat and watershed restoration and enhancement.
- Bridge and other roadway construction and reconstruction.
- Bank stabilization.
- Recreation facilities such as boat ramps and fishing piers.
- Activities that require 404 permits from the Corps of Engineers.

SPECIAL-USES

MA–10–29: Allow a maximum of two permitted outfitters on the river. (KNF) (GUIDELINE)

MA–10–30: For special-uses, permit linear rights-of-way, which cannot be reasonably located outside the corridor. Use existing corridors if possible. If not possible, approve minimum width necessary for the special-use. (KNF) (GUIDELINE)

MA–10–31: For utility rights-of-way, require buried installation where economically feasible. (KNF) (GUIDELINE)

MA–10–32: Consider on a case-by-case basis other proposed special-uses. (KNF) (GUIDELINE)

STATE NATURAL AND SCENIC RIVERS

MA–10–33: In accordance with the Louisiana Natural and Scenic Rivers System, activities that may have a direct significant ecological impact on the river must acquire a permit from the Department of Wildlife and Fisheries. (KNF) (STANDARD)

STREAMSIDE HABITATS, RIPARIAN AREAS, AND WETLANDS

MA–10–34: Along all streams where the area immediately adjacent to the scour channel is composed of mixed pine and hardwood habitats, extend the streamside habitat protection zone (SHPZ) out to a minimum of 100 feet. Mixed pine and hardwood habitats are defined as areas where more than 30 percent of the total overstory basal area is composed of hardwood tree species. See Forestwide standards and guidelines for appropriate management practices within SHPZ and RAPZ. (KNF) (GUIDELINE)

TRANSPORTATION SYSTEM

Planning and inventory

MA–10–35: Plan, coordinate, construct, or reconstruct roads as needed in connection with planned boat access, launch sites, or additional camping or picnicking sites. Do not plan road construction or reconstruction for timber purposes. If needed, use temporary roads for insect and disease control or other salvage activities. (KNF) (GUIDELINE)

Operations and maintenance

MA–10–36: Except for FS Roads 508, W003F, and W003L, which access private property, close to vehicular traffic level D roads on the transportation system north of FS Road 513. (KNF) (GUIDELINE)

MA–10–37: Permit vehicle use only on open system roads and designated trails south of FS Road 513. Permit off-road vehicles (ORVs) only on designated trails. Do not permit cross-country travel. (KNF) (GUIDELINE)

VEGETATION MANAGEMENT

MA–10–38: Do not manage using a silvicultural system. No rotation lengths are established. (KNF) (STANDARD)

MA–10–39: Manage the river corridor to retain scenic conditions, maintain vigorous forest stands, provide for plant and animal diversity, and visual variety. (KNF) (STANDARD)

MA–10–40: Allow uneven-aged regeneration method techniques and stand improvement cuts when needed for hazard tree removal, insect and disease control, or to improve old-growth characteristics, wildlife habitats, scenic quality, or plant community composition and structure. (KNF) (GUIDELINE)

MA–10–41: Allow periodic stand improvement cuts for upland stands outside SHPZ and RAPZ , beginning when a stand nears age 30 and continuing as long as needed to meet specific amenity resource objectives. (KNF) (GUIDELINE)

MA–10–42: Restrict the use of even-aged regeneration method techniques. Use only for regeneration of damaged stands or for insect and disease control. (KNF) (GUIDELINE)

MA–10–43: Design all tree harvesting projects with the aid of a district wildlife biologist, silviculturist, and the Forest landscape architect. (KNF) (GUIDELINE)

WILDLIFE

MA–10–44: Use prescribed fire and wildlife stand improvement for the development of hard and soft mast in mixed and hardwood forest types. (KNF) (GUIDELINE)

SUB-MANAGEMENT AREA 10DM

PRIMARY MANAGEMENT GOALS

Emphasize management of the scenic river corridor while providing some areas of marginal RCW habitat.

DESIRED FUTURE CONDITION

Alterations to the area are done so as to produce suitable RCW habitat conditions where possible. Although prescribed fire is a primary tool used to develop and maintain suitable RCW habitat, it has a minimal effect in altering and maintaining the landscape in this area. Fire frequency is increased on those areas providing RCW cluster site and foraging habitat. Evidence of recent prescribed fire occurs on a limited amount of the landscape. Forest succession plays a major role in shaping the landscape vegetation.

STANDARDS AND GUIDELINES

Fire management

SMA–10DM–01: Apply prescribed fire at the landscape scale every 10–15 years. Use prescribed fire more frequently on areas supporting suitable RCW habitat. (KNF) (GUIDELINE)

Forest products

SMA–10DM–02: Within 1/2 mile of active RCW clusters and inactive RCW clusters or recruitment stands that have been made suitable for translocation, salvage only to control SPB, retaining SPB-vacated trees. Within 1/4 mile of inactive RCW clusters not suitable for translocation, salvage only to control SPB, retaining SPB-vacated trees. (KNF) (GUIDELINE)

Vegetation

SMA–10DM–03: Manage all stands predominantly for mixed pine-hardwood, hardwood-pine, or hardwood. Longleaf, slash, and shortleaf pine are not appropriate management types within this sub-management area. (KNF) (GUIDELINE)

SMA–10DM–04: Favor retention of oaks, hickories, and other desirable hardwoods in stand improvement cuts. Manage for a relatively closed canopy with varying tree densities of combined hardwood and pine basal area averaging 100 square feet per acre. Maintain 50 square feet of pine basal area per acre minimum where possible. (KNF) (GUIDELINE)

Wildlife

SMA–10DM–05: Adhere to guidance presented in the *Record of Decision and the Final Environmental Impact Statement for the Management of the RCW and its Habitat on National Forests in the Southern Region*. See Forestwide standards and guidelines for direction on vegetation management, habitat improvement, and other practices pertaining to RCWs. (KNF) (GUIDELINE)

SMA–10DM–06: Establish one RCW cluster site or recruitment stand per 400 acres of pine and pine-hardwood forest types in this sub-management area. (KNF) (GUIDELINE)

SUB-MANAGEMENT AREA 10EM

PRIMARY MANAGEMENT GOALS

Emphasize management of the wild and scenic river corridor.

DESIRED FUTURE CONDITION

Alterations to the area are done on an extremely limited basis and only under special circumstances. Forest succession and periodic flooding play major roles in shaping the landscape vegetation.

STANDARDS AND GUIDELINES

Fire management

SMA–10EM–01: Apply prescribed fire rarely and only on a case-by-case, site-specific basis. (KNF) (GUIDELINE)

Vegetation

SMA–10EM–02: Manage all stands predominantly for mixed hardwood-pine or hardwood. Longleaf, slash, and shortleaf pine are not appropriate management types within this sub-management area. (KNF) (GUIDELINE)

SMA–10EM–03: Favor the retention of oaks, hickories, and other desirable hardwoods in stand improvement cuts. Manage for a relatively closed canopy with variable tree densities having an average combined, hardwood and pine, basal area of 100 square feet per acre. (KNF) (GUIDELINE)

MANAGEMENT AREA 11: NATIONAL WILDLIFE MANAGEMENT PRESERVES

DESCRIPTION

This management area is allocated to approximately 70,000 acres on the Forest. It consists of the National Catahoula and Red Dirt Wildlife Management Preserves and occurs on the Catahoula District (21 percent); the Winn District (30 percent); and the Kisatchie District (49 percent).

MANAGEMENT GOALS

Emphasize managing wildlife habitats and providing dispersed recreation opportunities.

Focus forest management activities and practices on creating and managing those habitat mosaics, conditions, and attributes most beneficial to native wildlife communities. Provide conditions which sustain healthy, huntable populations of indigenous game species.

DESIRED FUTURE CONDITION

The landscape in this area maintains a somewhat natural appearance. Alterations to the area are done to produce and sustain optimal habitat conditions for associated wildlife communities. Vegetation patterns are primarily a product of prescribed fire frequency, habitat improvement practices, and stand regeneration harvests. The landscape is frequently intersected by narrow road corridors most of which are closed or restricted by type of vehicle yearlong or on a seasonal basis.

The uplands are frequently dissected by perennial and intermittent streams. The buffers along these stream channels provide maximum protection and enhancement of water quality, aquatic habitats, riparian vegetation and those additional resources tied to stream channels. Much of the forest contains areas within which trees are essentially the same age. In the older managed stands, trees are typically 90-100 feet tall and 18-20 inches in diameter. Tree ages vary from area to area, and the mix of ages results in a variety of successional habitats. The remaining portions of the forest consists of areas where larger older trees are interspersed with small patches of variable-sized younger trees, saplings, seedlings or small openings. Evidence of stand improvement practices for wildlife habitat purposes is apparent throughout the entire area. Old trees greater than 100 years of age occur commonly as individuals, groups, or large areas. Standing dead trees and down logs are common as a result of natural mortality. Threatened, endangered and sensitive species associated with these areas receive the maximum level of protection and management. Rare, unique or sensitive communities are identified, protected, and actively managed.

There are small regeneration areas of up to 25 acres widely scattered throughout the landscape. These areas are primarily restoration harvests and shelterwoods. The appearance of these areas ranges from clearcuts where few if any live trees remain standing, to those where a variable amount of trees remains scattered or clumped throughout the area indefinitely. The character of these openings ranges from those that recently received the initial regeneration harvest to those that contain various levels of pine and hardwood seedlings. The areas that were recently harvested may still exhibit evidence of site preparation and burning.

For people using the area, the probability of experiencing the sights, sounds, and evidence of other people is not common. Some designated trails and dispersed recreation facilities are provided.

STANDARDS AND GUIDELINES

FIRE MANAGEMENT

Wildfire suppression

MA–11–01: Use a suppression strategy that may range from direct control to more indirect methods of containment and confinement, including surveillance where appropriate. (KNF) (GUIDELINE)

Prescribed fire

MA–11–02: Manipulate vegetation with prescribed fire to enhance wildlife habitat by increasing fruit and seed production, yield and quality of herbage, legumes, and browse from hardwood sprouts; and creating openings for feeding, travel, and dusting. (KNF) (GUIDELINE)

MANAGEMENT AREA 11: NATIONAL WILDLIFE MANAGEMENT PRESERVES

STANDARDS AND GUIDELINES

SUB-MANAGEMENT AREA 11DL

PRIMARY MANAGEMENT GOALS

DESIRED FUTURE CONDITION

MA–11–03: Allow prescribed natural fires to burn if prescribed conditions are met. (KNF) (GUIDELINE)

FOREST PRODUCTS

MA–11–04: Classify this management area as suitable for timber production except in areas specifically classified unsuitable by Forestwide standards and guidelines. (KNF) (STANDARD)

RECREATION

MA–11–05: Restrict camping for public safety and to ensure better hunter distribution in areas of high quality habitat. (KNF) (GUIDELINE)

MA–11–06: Permit camping only in designated areas from October 1 through April 30. These areas will be mutually agreed to by the Forest Service and the Louisiana Department of Wildlife and Fisheries, and will be delineated on the applicable maps for public distribution. (KNF) (GUIDELINE)

MA–11–07: Require a Forest Service season permit in addition to applicable state licenses and permits for hunting, fishing, and trapping. (KNF) (GUIDELINE)

STREAMSIDE HABITATS, RIPARIAN AREAS, AND WETLANDS

MA–11–08: Along all streams where the area immediately adjacent to the scour channel is composed of mixed pine and hardwood habitats, extend the streamside habitat protection zone (SHPZ) to a minimum of 150 feet. Mixed pine and hardwood habitats are defined as areas where more than 30 percent of the total overstory basal area is composed of hardwood tree species. See Forestwide standards and guidelines for appropriate management practices within SHPZ and RAPZ. (KNF) (GUIDELINE)

TRANSPORTATION SYSTEM

MA–11–09: To maintain habitat effectiveness, manage road use (including road closures and area closures) to provide for the needs of management indicators and game species. (KNF) (GUIDELINE)

MA–11–10: Close local and collector roads that are not essential. (KNF) (GUIDELINE)

MA–11–11: Manage the majority of local dead-end roads as either closed yearlong to all vehicle use, closed on a seasonal basis, or open yearlong to low-psi vehicles only. Jointly decide road closures with the Louisiana Department of Wildlife and Fisheries. (KNF) (GUIDELINE)

WILDLIFE

MA–11–12: Manage the National Wildlife Management Preserves under the terms of the cooperative agreement with the Louisiana Department of Wildlife and Fisheries. (KNF) (GUIDELINE)

SUB-MANAGEMENT AREA 11DL

PRIMARY MANAGEMENT GOALS

Emphasize management of optimal RCW habitat and producing high quality wildlife habitats created within an open, frequently burned landscape.

Focus forest management practices and activities on achieving established RCW population objectives and on creating and managing those habitat mosaics, conditions and attributes most beneficial to the wildlife communities reliant upon frequently burned, mature pine habitats.

DESIRED FUTURE CONDITION

Vegetation patterns are primarily a product of frequent prescribed fire, RCW and other wildlife habitat improvement practices, and stand regeneration harvests. Small openings may occur frequently as a result of prescribed fire. Evidence of fire is common and occurs across the landscape.

As a result of frequent prescribed fire, the landscape is composed of relatively open park-like pine stands dominated by native, fire dependent longleaf pine communities. The forest canopy ranges from sparse to moderately stocked. The forest typically has long scenic vistas broken only by hardwood-lined slopes, creeks and river bottoms. Other than longleaf pine, there are few shrubs and mid-story trees on the uplands. The native ground cover is a continuous carpet of herbaceous plants dominated by grasses, composites, legumes and other forbs.

There are small regeneration areas widely scattered throughout the landscape. These are primarily longleaf restoration harvests and longleaf shelterwoods. All existing longleaf pine and standing snags as well as some desirable hardwoods are protected during restoration harvests. During shelterwood harvests, a portion of the overstory (hardwoods and pines) is initially left to provide a seed source for the regenerating stand. After the regenerating stand is established, most of the pine overstory is removed. Some of the canopy pines and all the remaining hardwoods are left (scattered and clumped) throughout the stand indefinitely. These reserve trees are left to provide some level of continuous canopy during regeneration and to become important habitat attributes in the next stand. Approximately 8 percent of the area occurs as stand-sized openings (greater than 10 acres) at any given time.

Wildlife associated with mature open, frequently burned conifer communities find favorable habitat conditions. Species expected to be inhabiting the area include: Red-cockaded and Red-headed Woodpeckers, Bobwhite Quail, Wild Turkey, Eastern Bluebird, white-tailed deer, Louisiana pine snake, Bachman's Sparrow, Prairie Warbler, red bat, and fox squirrel.

For people using the area, the probability of experiencing the sights, sounds and evidence of other people is not common. Some designated hiking trails and dispersed recreation facilities are provided.

STANDARDS AND GUIDELINES

Fire management

SMA–11DL–01: Apply prescribed fire at the landscape scale every 2–5 years, with increased emphasis on growing season burns. (KNF) (GUIDELINE)

Forest health

SMA–11DL–02: Prescribe dormant season and early growing season burns to reduce impacts of brown-spot needle blight on high-blight-risk longleaf restoration sites; and to release longleaf seedlings from competition. (KNF) (GUIDELINE)

Forest products

SMA–11DL–03: Within 1/2 mile of active RCW clusters and inactive RCW clusters or recruitment stands that have been made suitable for translocation, salvage only to control SPB, retaining SPB-vacated trees. Within 1/4 mile of inactive RCW clusters not suitable for translocation, salvage only to control SPB, retaining SPB-vacated trees. (KNF) (GUIDELINE)

Vegetation

SMA–11DL–04: Manage upland stands outside the SHPZ and RAPZ predominantly for longleaf pine. Slash, loblolly, and shortleaf pine are not appropriate management types within this sub-management area. (KNF) (GUIDELINE)

SMA–11DL–05: Use clearcutting with longleaf reserves as the primary two-aged regeneration method to restore longleaf pine forest to upland areas dominated by off-site pines (loblolly, slash). Maximum size of a restoration opening is 25 acres. (KNF) (GUIDELINE)

SMA–11DL–06: During restoration, retain all longleaf pine and some desirable hardwoods except as follows:

- To improve RCW habitat conditions within restoration areas, allow thinning where clumps of retained dominant or codominant longleaf pine exceed 70 square feet of basal area per acre.
- To promote growth and vigor of retained longleaf pine, allow thinning where clumps of longleaf pine are less than 10 inches DBH and are less than 30 years old. (KNF) (GUIDELINE)

SMA–11DL–07: Use shelterwood with longleaf reserves as the primary two-aged regeneration method to regenerate longleaf pine forest type within this sub-management area. During the initial cut, retain 40 square feet of pine basal area per acre. Retain 10 square feet of pine basal area, but not less than 6 longleaf trees per acre (longleaf reserve trees) clumped through the area indefinitely or until the HMA achieves management intensity level I. Priorities for selecting trees to be retained as a seed source are:

1. Relict trees
2. Other potential cavity trees

3. Other trees larger than 10 inches DBH that meet requirements as seed producers

Maximum size of a regeneration opening is 25 acres. See Forestwide standards and guidelines for additional direction pertaining to regeneration of longleaf pine within a HMA. (RCW) (GUIDELINE)

SMA–11DL–08: Set rotation age for longleaf pine management type at 120 years; for mixed pine-hardwood, 120 years; for mixed hardwood-pine and upland hardwood, 150 years; and for bottomland hardwood, 170 years. (KNF) (GUIDELINE)

SMA–11DL–09: Allow no more than 8.3 percent of the longleaf management type within this sub-management area in the 0–10 age class per HMA. Longleaf management type is considered to be all acres being managed towards longleaf pine regardless of current forest type (shortleaf, loblolly, or slash pine) or suitability for timber production (old-growth, RCW cluster sites, recruitment stands, etc). (KNF) (GUIDELINE)

SMA–11DL–10: Set earliest entry age for regeneration purposes for off-site pines on longleaf sites at 35 years; for longleaf pine and mixed pine-hardwood, 110 years; and for mixed hardwood-pine and upland hardwood, 140 years. (KNF) (GUIDELINE)

SMA–11DL–11: Until restoration efforts in this sub-management area are nearly complete, avoid applying regeneration harvests within existing longleaf pine stands. (KNF) (GUIDELINE)

SMA–11DL–12: Schedule stand improvement cuts in upland stands to occur at 10 year intervals, beginning near age 20 for loblolly and slash pine and age 30 for longleaf, and continue as needed for the life of the stand. Favor the retention of longleaf pine. Manage for an open canopy with variable tree densities having an average pine basal area of 70 square feet per acre. (KNF) (GUIDELINE)

Wildlife

SMA–11DL–13: Adhere to guidance presented in the *Record of Decision and the Final Environmental Impact Statement for the Management of the RCW and its Habitat on National Forests in the Southern Region*. See Forestwide standards and guidelines for direction on vegetation management, habitat improvement, and other practices pertaining to the RCW. (KNF) (GUIDELINE)

SMA–11DL–14: Establish one RCW cluster site or recruitment stand per 200 acres of pine and pine-hardwood forest type in this sub-management area. (KNF) (GUIDELINE)

SUB-MANAGEMENT AREA 11DS

PRIMARY MANAGEMENT GOALS

Emphasize management of suitable RCW habitat and producing high quality wildlife habitats created within a mixed pine-hardwood landscape.

Focus forest management practices and activities on achieving established RCW population objectives and on creating and managing those habitat mosaics, conditions, and attributes most beneficial to the wildlife communities reliant upon mature mixed pine-hardwood habitats.

DESIRED FUTURE CONDITION

Vegetation patterns are primarily a product of RCW and other wildlife habitat improvement practices, stand regeneration harvests, and infrequent prescribed fire. Small openings may occur frequently as a result of prescribed fire. Evidence of recent prescribed fire occurs on a limited amount of the area.

As a result of infrequent prescribed fire, the landscape is dominated by mixtures of pines, oaks, and hickories. Uplands are frequently dissected by perennial and intermittent streams. The overstory has a more or less open canopy which is moderately to densely stocked with variable-sized pines and hardwoods. Various shrubs are present and, in combination with regenerating overstory species, form a fairly thick midstory and understory component. The herbaceous ground cover is sparse to moderate.

There are small regeneration areas widely scattered throughout the landscape. These are primarily shortleaf pine / oak-hickory restoration harvests and shelterwoods. All existing shortleaf pines, desirable overstory hardwoods and standing snags are protected during restoration harvests. During shelterwood harvests, a portion of the overstory (hardwoods and pines) is initially left to

provide a seed source for the regenerating stand. All canopy pines and hardwoods are left (scattered or clumped) throughout the stand indefinitely. These reserve trees are left to provide some level of continuous canopy during regeneration and to become important habitat attributes in the next stand. Approximately 8 percent of the area occurs as stand-sized openings (greater than 10 acres) at any given time.

Wildlife associated with mixed pine and hardwood communities find favorable habitat conditions. Species expected to be inhabiting the area include: Red-cockaded Woodpecker, Red-bellied Woodpecker, Cooper's Hawk, Eastern Screech Owl, Summer Tanager, Black-and-white Warbler, Field Sparrow, white-tailed deer, Wild Turkey, fox squirrel, gray fox, and golden mouse.

STANDARDS AND GUIDELINES

Fire management

SMA–11DS–01: Apply prescribed fire at the landscape scale every 5–10 years. Use prescribed fire more frequently on areas supporting suitable RCW habitat. (KNF) (GUIDELINE)

Forest products

SMA–11DS–02: Within 1/2 mile of active RCW clusters and inactive RCW clusters or recruitment stands that have been made suitable for translocation, salvage only to control SPB, retaining SPB-vacated trees. Within 1/4 mile of inactive RCW clusters not suitable for translocation, salvage only to control SPB, retaining SPB-vacated trees. (KNF) (GUIDELINE)

Vegetation

SMA–11DS–03: Manage upland stands outside the SHPZ and RAPZ predominantly for mixed pine-hardwood. Longleaf, slash, and loblolly pine are not appropriate management types within this sub-management area. (KNF) (GUIDELINE)

SMA–11DS–04: Use clearcutting with reserves as the primary two-aged regeneration method to restore shortleaf pine / oak-hickory forest to upland areas. Maximum size of a regeneration opening is 25 acres. (KNF) (GUIDELINE)

SMA–11DS–05: During restoration, retain all shortleaf pine and some desirable hardwoods except as follows:

- To improve RCW habitat conditions within restoration areas, allow thinning where clumps of retained dominant or codominant shortleaf pine exceed 70 square feet of basal area per acre.
- To promote growth and vigor of retained shortleaf pine, allow thinning where clumps of shortleaf pine are less than 10 inches DBH and are less than 30 years old. (KNF) (GUIDELINE)

SMA–11DS–06: Use shelterwood with reserves as the primary two-aged regeneration method to regenerate shortleaf pine and pine-hardwood forest types within this sub-management area. During the initial cut, retain 40 square feet of pine basal area per acre. In addition to the pine, retain desirable overstory hardwoods up to 20 square feet of basal area per acre indefinitely. Retain all residual pines until the RCW HMA improves to the next management intensity level. Priorities for selecting trees to be retained as seed sources are:

1. Relict trees
2. Other potential cavity trees
3. Other trees larger than 10 inches DBH that meet requirements as seed producers

Maximum size of a regeneration opening is 25 acres. See Forestwide standards and guidelines for additional direction pertaining to regeneration of shortleaf pine and pine-hardwood within a HMA. (KNF) (GUIDELINE)

SMA–11DS–07: Set rotation age for shortleaf pine management type at 120; for mixed pine-hardwood types, at 120 years; for mixed hardwood-pine and upland hardwood, 150 years; and for bottomland hardwood, 170 years. (KNF) (GUIDELINE)

SMA–11DS–08: Allow no more than 8.3 percent of the shortleaf pine and pine-hardwood management types in the 0–10 age class within this sub-management area per HMA. Shortleaf pine or pine-hardwood management type acres are considered to be all acres being managed towards shortleaf pine or pine-hardwood regardless of current forest type (longleaf, loblolly, or slash pine) or suitability for timber production (old-growth,

MANAGEMENT AREA 11: NATIONAL WILDLIFE MANAGEMENT PRESERVES

SUB-MANAGEMENT AREA 11DS

STANDARDS AND GUIDELINES

SUB-MANAGEMENT AREA 11DM

PRIMARY MANAGEMENT GOALS

DESIRED FUTURE CONDITION

RCW cluster sites, recruitment stands, etc). (KNF) (GUIDELINE)

SMA–11DS–09: Set earliest entry age for regeneration purposes for sites identified for restoration at 60 years; for shortleaf pine and mixed pine-hardwood, at 110 years; and for mixed hardwood-pine and upland hardwood, 140 years. (KNF) (GUIDELINE)

SMA–11DS–10: Until restoration efforts in this sub-management area are nearly complete, avoid applying regeneration harvests within existing shortleaf pine / oak-hickory types. (KNF) (GUIDELINE)

SMA–11DS–11: Schedule stand improvement cuts in upland stands to occur at 10–20 year intervals, beginning near age 20 for shortleaf and loblolly pine, and age 30 for all other forest types, and continue as needed for the life of the stand. Favor the retention of shortleaf pine, oaks, and hickories. Manage for a relatively open canopy with variable tree densities having an average combined, pine and hardwood, basal area of 90 square feet per acre, with a minimum of 50 square feet of pine per acre. (KNF) (GUIDELINE)

Wildlife

SMA–11DS–12: Adhere to guidance presented in the *Record of Decision and the Final Environmental Impact Statement for the Management of the RCW and its Habitat on National Forests in the Southern Region*. See Forestwide standards and guidelines for direction on vegetation management, habitat improvement, and other practices pertaining to the RCW. (KNF) (GUIDELINE)

SMA–11DS–13: Establish one RCW cluster site or recruitment stand per 300 acres on pine and pine-hardwood forest type in this sub-management area. (KNF) (GUIDELINE)

SUB-MANAGEMENT AREA 11DM

PRIMARY MANAGEMENT GOALS

Emphasize management of RCW habitat and production of high quality wildlife habitats within a mixed hardwood-pine landscape. Focus forest management practices and activities on achieving established RCW population objectives and on creating and managing those habitat mosaics, conditions and attributes most beneficial to the wildlife communities reliant upon mature mixed hardwood-pine habitats.

DESIRED FUTURE CONDITION

Vegetation patterns are primarily a product of RCW and other wildlife habitat improvement practices, stand regeneration and the lack of prescribed fire. Although prescribed fire is a primary tool used to develop and maintain suitable RCW habitat, it has a minimal effect in altering and maintaining the landscape in this area. Fire frequency is increased in those areas providing RCW cluster sites and foraging habitat.

The forest is dominated by communities composed primarily of various hardwoods, with loblolly pine as a major associate. The uplands are frequently dissected by perennial and intermittent streams. The overstory is multi-layered and moderately to densely stocked. The midstory is also multi-layered composed of a diversity of shrubs, vines and overstory saplings. The herbaceous ground cover is sparse. The ground is covered with leaf litter and down woody material.

Small regeneration areas are widely scattered throughout the landscape. These are primarily mixed hardwood-loblolly pine restoration harvests and shelterwoods. All existing desirable overstory hardwoods and standing snags are protected during restoration harvests. During shelterwood harvests, a portion of the overstory (hardwoods and pines) is initially left to provide a seed source for the regenerating stand. All canopy pines and hardwoods are left (scattered and clumped) throughout the stand indefinitely. These reserve trees are left to provide some level of continuous canopy during regeneration and to become important habitat attributes in the next stand. Approximately 10 percent of the area occurs as stand-sized openings (greater than 10 acres) at any given time.

Wildlife associated with mature mixed hardwood and pine communities find favorable habitat conditions. Species expected to be inhabiting the area include: Pileated Woodpecker, Wood Thrush, Blue-gray Gnatcatcher, Yellow-throated Vireo, White-eyed Vireo, Yellow-billed Cuckoo, spring peeper, eastern narrow-mouthed toad, gray squirrel, white-tailed deer, Barred Owl, and small-mouthed salamander.

STANDARDS AND GUIDELINES

Fire management

SMA–11DM–01: Apply prescribed fire at the landscape scale every 10–15 years. Use prescribed fire more frequently on areas supporting suitable RCW habitat. (KNF) (GUIDELINE)

Forest products

SMA–11DM–02: Within 1/2 mile of active RCW clusters and inactive RCW clusters or recruitment stands that have been made suitable for translocation, salvage only to control SPB, retaining SPB-vacated trees. Within 1/4 mile of inactive RCW clusters not suitable for translocation, salvage only to control SPB, retaining SPB-vacated trees. (KNF) (GUIDELINE)

Vegetation

SMA–11DM–03: Manage all stands predominantly for mixed pine-hardwood, hardwood-pine or hardwood. Longleaf, slash, and shortleaf pine are not appropriate management types within this sub-management area. (GUIDELINE)

SMA–11DM–04: Use shelterwood with reserves as the primary two-aged regeneration method to regenerate pine and pine-hardwood forest types within this sub-management area. Retain 40 square feet of pine basal area per acre during initial cut, and retain desirable overstory hardwoods, up to 20 square feet of basal area per acre. Retain all residual pines and hardwoods until the RCW HMA improves to the next management intensity level. Priorities for selecting trees to be retained as seed sources are:

1. Relict trees
2. Other potential cavity trees
3. Other trees larger than 10 inches DBH that meet requirements as seed producers

Maximum size of a regeneration opening is 25 acres. See Forestwide standards and guidelines for additional RCW shelterwood with reserves direction. (KNF) (GUIDELINE)

SMA–11DM–05: Use shelterwood with reserves as the primary two-aged regeneration method to regenerate upland mixed hardwood-pine and hardwood areas. Retain overstory hardwoods during regeneration harvests. Retain 20 to 40 square feet of hardwood residual basal area per acre indefinitely to allow establishment of advanced hardwood reproduction and allow additional time for seedlings to grow. Maximum size of a regeneration opening is 25 acres. (KNF) (GUIDELINE)

SMA–11DM–06: Set rotation age for loblolly pine management type at 100; for mixed pine-hardwood types at 100 years; for mixed hardwood-pine and upland hardwood, 150 years; and for bottomland hardwood, 170 years. (KNF) (GUIDELINE)

SMA–11DM–07: Allow no more than 10 percent of the loblolly pine and pine-hardwood management types within this sub-management area in the 0–10 age class per HMA. Loblolly pine or pine-hardwood management type acres are considered to be all acres being managed towards loblolly pine or pine-hardwood regardless of current forest type (longleaf, shortleaf, or slash pine) or suitability for timber production (old growth, RCW cluster sites, recruitment stands, etc). (KNF) (GUIDELINE)

SMA–11DM–08: Set earliest entry age for regeneration purposes for all pine types at 60 years; for mixed pine-hardwood at 90 years; and for mixed hardwood-pine and upland hardwood, 140 years. (KNF) (GUIDELINE)

SMA–11DM–09: Until restoration efforts in this sub-management area are nearly complete, avoid applying regeneration harvests within existing mixed hardwood-loblolly pine stands. (KNF) (GUIDELINE)

SMA–11DM–10: Schedule stand improvement cuts in upland stands to occur at 10–20 year intervals, beginning near age 20 for shortleaf and loblolly pine, and age 30 for all other forest types, continuing as needed for the life of the stand. Favor the retention of oaks, hickories, and other desirable hardwoods. Manage for a relatively closed canopy with variable tree densities having an average combined hardwood and pine basal area per acre of 100 square feet. Maintain 50 square feet of pine basal area per acre minimum where possible. (KNF) (GUIDELINE)

Wildlife

SMA–11DM–11: Adhere to guidance presented in the *Record of Decision and the Final Environmental Impact Statement for the Management of the RCW and its Habitat on National Forests in the Southern Region*. See Forestwide standards and guidelines for direction on vegetation management, habitat improvement, and other practices pertaining to the RCW. (KNF) (GUIDELINE)

SMA–11DM–12: Establish one RCW cluster site or recruitment stand per 400 acres of pine and pine-hardwood forest type in this submanagement area. (KNF) (GUIDELINE)

SUB-MANAGEMENT AREA 11E

PRIMARY MANAGEMENT GOALS

Emphasize providing the highest levels of hardwood stands and mixed stands of hardwoods and pines. Feature hardwoods that produce hard mast.

DESIRED FUTURE CONDITION

Vegetation patterns are primarily produced by infrequent prescribed fire and forest regeneration harvests that protect and promote maximum hardwood composition across the entire area. Regeneration harvests result in small stand-sized openings scattered throughout the area.

Much of the forest consists of larger, older overstory trees interspersed with small patches of variable-sized mixtures of hardwoods and pines, or small openings. On the remaining portion, small regeneration harvests are scattered throughout the landscape, primarily shelterwoods, where a significant portion of overstory hardwoods and pines are initially left to provide a seed source and a beneficial environment for the new stand. A maximal canopy of hardwood trees is retained during the initial cut, and a large majority of these and standing snags are left indefinitely scattered or clumped throughout the stand. At any given time, less than 10 percent of the area is in openings (greater than 10 acres).

Wildlife associated with mature hardwood or mixed pine and hardwood communities find favorable habitat conditions. Species expected to be inhabiting the area include: Pileated and Red-bellied Woodpecker, Barred Owl, Wood Thrush, raccoon, gray and fox squirrel, Wild Turkey, Cooper's Hawk, gray fox and white-tailed deer.

STANDARDS AND GUIDELINES

Fire management

SMA–11E–01: Use prescribed fire rarely, but allow it at the multi-stand level when needed for upland hardwood establishment. (KNF) (GUIDELINE)

Vegetation management

SMA–11E–02: Manage all stands predominantly for mixed pine-hardwood, hardwood-pine, or hardwood. Longleaf and slash are not appropriate management types within this management area. (KNF) (GUIDELINE)

SMA–11E–03: Use shelterwood with reserves as the primary two-aged regeneration method to regenerate uplands. Retain overstory hardwoods up to 40 square feet of basal area per acre during regeneration. Maximum size of a regeneration opening is 25 acres. Twenty to 40 square feet of hardwood residual basal area per acre may be retained indefinitely, to allow advanced hardwood reproduction establishment and permit more time for seedling growth. (KNF) (GUIDELINE)

SMA–11E–04: Set rotation age for all pine and mixed pine-hardwood management types at 100; for mixed hardwood-pine and upland hardwood, 150 years; and for bottomland hardwoods, 170 years. (KNF) (GUIDELINE)

SMA–11E–05: Set earliest entry age for regeneration purposes for pines at 60 years; for mixed pine-hardwood at 90 years; and for mixed hardwood-pine and upland hardwood, 140 years. (KNF) (GUIDELINE)

SMA–11E–06: At 10- to 20-year intervals, schedule stand improvement cuts to establish and promote advanced hardwood reproduction, beginning near age 20 for shortleaf and loblolly pine, and age 30 for all other forest types. Continue as needed for the life of the stand. Favor retention of oaks, hickories, and other desirable hardwoods. Manage for a relatively closed canopy with variable tree densities having an average combined, hardwood and pine, basal area of 100 square feet per acre. (KNF) (GUIDELINE)

MANAGEMENT AREA 12: PALUSTRIS EXPERIMENTAL FOREST

DESCRIPTION

This management area is allocated to approximately 7,200 Forest acres. It occurs only on the Evangeline Unit of the Calcasieu District, and consists of the Johnson and Longleaf Tracts administered by the Southern Research Station (SRS).

MANAGEMENT GOALS

Emphasize use for research to improve southern pine regeneration through improved growth and yield procedures and other forest management techniques which enhance values of water, timber, and related forest resources.

Do not require sustained production of timber products. Carry out silvicultural practices for experimental purposes, stand health, regeneration, or salvage purposes.

DESIRED FUTURE CONDITION

The natural landscape in this area has been modified by past management activities. Vegetation patterns are similar to those outside except that there is evidence of experimental plot replications of varying forest management techniques. Management action, prescribed burning, and habitat improvement practices are the primary tools used to alter the landscape. The landscape is frequently intersected by narrow road corridors.

The overstory vegetation on a majority of the area consists primarily of pine stands. The uplands are frequently dissected by perennial and intermittent streams. Buffers on these stream channels provide for the protection of water quality and associated terrestrial and aquatic habitats. The forest consists of areas within which trees are essentially the same age. Tree ages vary from area to area. Evidence of stand improvement practices is apparent throughout the entire area. Threatened, endangered and sensitive species are afforded a moderate level of protection. Additional rare, unique or sensitive communities have been identified, protected and are actively managed.

There are small to moderate-sized regeneration areas scattered throughout the landscape. The character of these openings ranges from those that were recently harvested to those that are well-stocked with pine seedlings.

For people using the area, there is a good probability of experiencing the sights, sounds, and evidence of other people. Minimal dispersed recreational facilities are provided.

STANDARDS AND GUIDELINES

FIRE MANAGEMENT

Wildfire suppression

MA–12–01: Use a suppression strategy of direct control to minimize acres burned. Modify mechanical control methods to minimize impact on study plots. (KNF) (GUIDELINE)

MA–12–02: Use preconstructed fuel and fire breaks, wet or foam lines, and handtools when practical, instead of plowed lines. Minimize the amount of plowed lines, which might damage study plots. (KNF) (GUIDELINE)

Prescribed fire

MA–12–03: Apply prescribed fire within the normal regional and Forest guidelines under the direction of a qualified burn boss. The objective will be set by the SRS and the burn plans approved by the Forest Supervisor or delegated to the district ranger where appropriate. (KNF) (GUIDELINE)

FOREST HEALTH

MA–12–04: Evaluate SPB spots and apply treatments compatible with long- and short-term research objectives. (KNF) (GUIDELINE)

FOREST PRODUCTS

Timber sales

MA–12–05: Classify this management area as unsuitable for timber production. (KNF) (STANDARD)

MA–12–06: Allow non-chargeable timber yield derived from research practices. (KNF) (GUIDELINE)

MA–12–07: Timber sale activities will be administered by the Kisatchie National Forest.

MANAGEMENT AREA 12: PALUSTRIS EXPERIMENTAL FOREST

STANDARDS AND GUIDELINES

SUB-MANAGEMENT AREA 12D

PRIMARY MANAGEMENT GOALS

DESIRED FUTURE CONDITION

(KNF) (GUIDELINE)

Pinestraw collection

MA–12–08: Prohibit pine straw collection unless compatible with research needs. (KNF) (GUIDELINE)

Firewood gathering

MA–12–09: Prohibit firewood gathering unless compatible with research needs. (KNF) (GUIDELINE)

MINERALS

MA–12–10: Allow mineral exploration, leasing, and development that do not have adverse effects on research activities or conflict with them. (KNF) (GUIDELINE)

MA–12–11: Request input from SRS prior to making lands available for lease. Use the no surface occupancy stipulation to protect investment in research projects on the Johnson Tract. (KNF) (GUIDELINE)

MA–12–12: Use a moderately restrictive (CSU2) stipulation in oil and gas leases on the Longleaf Tract. (KNF) (GUIDELINE)

MA–12–13: Coordinate with SRS any applications for oil and gas development. (KNF) (GUIDELINE)

MA–12–14: Do not lease or sell common variety minerals. (KNF) (GUIDELINE)

RANGE MANAGEMENT

MA–12–15: Coordinate allotment planning, inventory, analysis, administration, and management between the SRS and the Calcasieu District on the Longleaf Tract. (KNF) (GUIDELINE)

RECREATION

MA–12–16: Allow dispersed recreation activities that do not conflict with research activities on the area. (KNF) (GUIDELINE)

SPECIAL-USES

MA–12–17: Do not allow new special-use permits that will adversely affect research projects. (KNF) (GUIDELINE)

STREAMSIDE HABITATS, RIPARIAN AREAS, AND WETLANDS

MA–12–18: Along all streams where the area immediately adjacent to the scour channel is composed of mixed pine and hardwood habitats, extend the streamside habitat protection zone (SHPZ) out to a minimum of 100 feet. Mixed pine and hardwood habitats are defined as areas where more than 30 percent of the total overstory basal area is composed of hardwood tree species. See Forestwide standards and guidelines for appropriate management practices within SHPZ and RAPZ. (KNF) (GUIDELINE)

VEGETATION MANAGEMENT

MA–12–19: Do not use a specific silvicultural system. No rotation lengths are established. (KNF) (STANDARD)

MA–12–20: Allow even-aged, two-aged, and uneven-aged regeneration methods for research purposes, stand health, restoration, regeneration, habitat improvement, or salvage. (KNF) (GUIDELINE)

WILDLIFE

MA–12–21: Coordinate with the SRS in accomplishing wildlife habitat improvement projects and practices. (KNF) (GUIDELINE)

SUB-MANAGEMENT AREA 12D

PRIMARY MANAGEMENT GOALS

Maintain habitat for the RCW while continuing research activities for southern pine forests.

DESIRED FUTURE CONDITION

Vegetation patterns are primarily a product of research management practices, prescribed fire, regeneration harvests, and RCW habitat improvement practices. Small openings may occur as a result of prescribed fire and research activities. Evidence of prescribed fire activities (plowlines, blackened tree trunks and vegetation) is common and occurs across the landscape.

As a result of frequent prescribed fire, the landscape is composed of relatively open, park-like pine stands. The forest canopy

ranges from sparse to moderately stocked. The forest typically has long scenic vistas broken only by hardwood-lined slopes, creeks and river bottoms. There are few shrubs and mid-story trees on the uplands. The native ground cover is a continuous carpet of herbaceous plants dominated by grasses, composites, legumes and other forbs.

Wildlife associated with open, frequently burned conifer communities find favorable habitat conditions. Species expected to be inhabiting the area include: Red-cockaded and Red-headed Woodpeckers, Bobwhite Quail, Wild Turkey, Eastern Bluebird, white-tailed deer, Louisiana pine snake, Bachman's Sparrow, fox squirrel, Prairie Warbler, and red bat.

STANDARDS AND GUIDELINES

Fire management

SMA–12D–01: Encourage prescribed fire at the landscape scale every 2–5 years, with increased emphasis on growing season burns. (KNF) (GUIDELINE)

Forest health

SMA–12D–02: Encourage prescribed dormant season and early growing season burns to reduce impacts of brown-spot needle blight on high-blight-risk longleaf restoration sites; and to release longleaf seedlings from competition. (KNF) (GUIDELINE)

Forest products

SMA–12D–03: Within 1/2 mile of active RCW clusters and inactive RCW clusters or recruitment stands that have been made suitable for translocation, encourage salvage only to control SPB, retaining SPB-vacated trees. Within 1/4 mile of inactive RCW clusters not suitable for translocation, encourage salvage only to control SPB, retaining SPB-vacated trees. (KNF) (GUIDELINE)

Vegetation

SMA–12D–04: Encourage continued management of upland stands outside the SHPZ and RAPZ predominantly for pine. (KNF) (GUIDELINE)

SMA–12D–05: Allow no more than 8.3 percent of the longleaf management type within this sub-management area in the 0–10 age class. Longleaf management type acres are considered to be all acres being managed towards longleaf pine regardless of current forest type (shortleaf, loblolly, or slash pine) or suitability for timber production (old-growth, RCW cluster sites, recruitment stands). (KNF) (GUIDELINE)

Wildlife

SMA–12D–06: Establish 1 RCW cluster site or recruitment stand per 200 acres of pine and pine-hardwood forest type in this sub-management area. (KNF) (GUIDELINE)

SMA–12D–07: Adhere to guidance presented in the *Record of Decision and the Final Environmental Impact Statement for the Management of the RCW and its Habitat on National Forests in the Southern Region*. See Forest-wide standards and guidelines for direction on vegetation management, habitat improvement, and other practices pertaining to the RCW. (KNF) (GUIDELINE)

SUB-MANAGEMENT AREA 12E

PRIMARY MANAGEMENT GOALS

Emphasize continuing research activities for southern pine forests.

DESIRED FUTURE CONDITION

Vegetation patterns are primarily a product of research activities, regeneration harvests, and limited use of prescribed fire. Small openings may occur as a result of research activities.

Wildlife that prefer openings and early to mid-successional forest habitats are common. Species finding favorable habitats within this landscape include white-tailed deer, eastern cottontail, Mourning Dove, Northern Cardinal, Prairie Warbler, Red-tailed Hawk, and Pine Warbler.

STANDARDS AND GUIDELINES

Fire management

SMA–12E–01: Use prescribed fire where necessary to meet research objectives or to maintain safe levels of fuel loadings to reduce damage from wildfire. (KNF) (GUIDELINE)

MANAGEMENT AREA 13: KISATCHIE HILLS WILDERNESS

DESCRIPTION

This management area is allocated to 8,700 acres on the Forest. It lies within the Kisatchie District.

MANAGEMENT GOALS

Emphasize maintaining and protecting the enduring resource of wilderness as one of the multiple uses of Kisatchie National Forest while providing a wide range of suitable wildlife habitats for all native wildlife. Focus management activities and practices on perpetuating wilderness character and public values including, but not limited to, opportunities for scientific study, education, solitude, physical and mental challenge and stimulation, inspiration, and primitive recreation experiences. Do not manage for sustained production of timber products.

DESIRED FUTURE CONDITION

The landscape in this area maintains a highly natural appearance. The effects of natural disturbances such as tornados, windstorms, fire, insects, and disease may be evident over portions of the Wilderness. Evidence of southern pine beetle (SPB) control may be evident near the Wilderness boundary.

Fire and succession play the primary roles in shaping the landscape. Blackened tree trunks and vegetation reflect evidence of frequent periodic fire across the landscape. Use of motorized equipment may be visible for short times around recent wildfires, but are not visible elsewhere. There may be evidence of a permanently maintained fire line around the perimeter of the Wilderness.

As a result of periodic fire, the landscape is composed of areas of relatively open pine stands eventually dominated by native, fire dependent longleaf pine communities. These areas are open in aspect, typically with long scenic vistas, and broken only by hardwood-lined slopes and creeks. Other than longleaf, there are few shrubs and midstory trees on the uplands with yaupon and wax myrtle the primary components. The ground cover varies from being dominated by grasses, composites, legumes, and other forbs to areas that are highly eroded with scattered clumps of grasses. Seasonal variation in appearance of the area is associated with the native ground cover and the hardwoods associated with the stream channels.

The forest canopy ranges from sparse to dense, with old pine trees greater than 100 years of age occurring commonly as individuals, groups, or large areas. The advancement of forest succession eventually results in old-growth forest over the entire area. Standing dead trees and down logs are abundant as a result of natural mortality.

Wildlife associated with open frequently burned old-growth conifer communities find favorable habitat conditions. Species expected to be inhabiting the area include: Red-cockaded and Red-headed Woodpeckers, Bobwhite Quail, Wild Turkey, Eastern Bluebird, white-tailed deer, Louisiana pine snake, Bachman's Sparrow, fox squirrel, Prairie Warbler, and red bat.

The Kisatchie Hills Wilderness is excluded from the Kisatchie District HMA. No active habitat management occurs for existing RCW cluster sites located inside the Wilderness. Additional rare, unique, or sensitive animal or plant communities are protected, but not actively managed.

The majority of trail system within the Wilderness is maintained to support hiking and equestrian uses. For hiking, the trail difficulty level is considered easiest and for equestrian use, more difficult. These trails accommodate a variety of users and high use rates. Encounters with other wilderness visitors are fairly common on the trail. The remainder of the trail system contains low-standard hiking trails, which are open for equestrian use. These trails are considered more difficult with narrow tread widths and steeper grades which require a moderate degree of skill and challenge to negotiate. Encounters with other wilderness visitors may occur along the trails, but probably do not happen while off the trail or camped. The frequency of human contact decreases the further users travel from the main trailheads. Additional trails are constructed for human foot travel only.

STANDARDS AND GUIDELINES

FIRE MANAGEMENT

Wildfire suppression

MA–13–01: Use a suppression strategy of direct control to minimize acreage burned. (KNF) (GUIDELINE)

MA–13–02: Allow prescribed natural fires to burn if prescribed conditions are met. (KNF) (GUIDELINE)

MA–13–03: Use primarily non-motorized fire fighting tools such as rakes, axes, shovels, flaps, and pulaskies. Favor suppression methods and equipment that cause the least: (KNF) (GUIDELINE)

- Alteration of the landscape;
- Disturbance of the land surface;
- Disturbance to visitor solitude;
- Reduction of visibility during periods of visitor use; and
- Effects on other air quality-related values.

MA–13–04: Use appropriate motorized fire fighting equipment with Forest Supervisor's approval if there is an unacceptable risk to private property / life or proposed, threatened, or endangered species. Use chainsaws, ATVS, blowers, fireline explosives, and aircraft where needed for suppression of the target fire at the smallest possible size. With Regional Forester's approval, use tractor plow units within the boundary of the Wilderness after other techniques have proven to be unsuccessful. (KNF) (GUIDELINE)

Prescribed fire

MA–13–05: In the absence of prescribed natural fire, use management-ignited fire at the landscape level or within specific areas to maintain fuel loads, reducing to acceptable levels the risk and consequences of wildfire occurring within or escaping from the Wilderness. (KNF) (GUIDELINE)

MA–13–06: Maintain natural fuels at 8 to 12 tons per acre. Monitor fuel loadings and plan burning treatments based on actual measured fuels. The estimated burning frequency needed to maintain fuels below 12 tons per acre is 5 to 8 years. (KNF) (GUIDELINE)

MA–13–07: Use natural features as fire breaks when possible. If fireline construction is needed, construct the line to the minimum level necessary to achieve the goals and objectives. Use hand tools or plows drawn by draft animals. (KNF) (GUIDELINE)

FOREST HEALTH

MA–13–08: Take no SPB control action in the Wilderness unless the infestation occurs within 1/4 mile of susceptible host on State and private lands, or high value forest resources on federal land; or unless the infestation occurs within 1/4 mile of active RCW clusters/foraging that are immediately adjacent to (within 1/4 mile) the Kisatchie Hills Wilderness and is predicted to spread, causing unacceptable damage. Before taking action, complete and document a site-specific analysis of the infestation and surrounding site conditions. The site-specific analysis must indicate that successful control can be expected, given: a) the intensity of the infestation; b) the constraints applied to the control methods for use in wilderness; and c) the resources available to control the spot. (KNF) (GUIDELINE)

MA–13–09: Use the following modified Integrated Pest Management (IPM) control methods for SPB in the Wilderness: (KNF) (GUIDELINE)

- *Cut-and-remove* — use helicopter, draft animals, or cable skidding from public roads or access to remove infested logs. In visually sensitive zones such as hiking trails, remove entire tree if feasible or otherwise remove slash from sight. Helicopter flight lines should avoid trails where possible.
- *Cut-and-leave* — no modification for use in Wilderness except to cut slash to lay close to the ground or remove slash if feasible in visual zones to mitigate visual impact.
- *Cut-and-hand spray* — same modifications as cut-and-leave method.

MA–13–10: Monitoring, ground checking and tree felling crews will travel to infestations by non-motorized methods. Only under conditions in **MA–13–11** will vehicles be allowed. (SPB-4, Wilderness-General) (GUIDELINE)

MANAGEMENT AREA 13: KISATCHIE HILLS WILDERNESS

STANDARDS AND GUIDELINES

MA–13–11: In extenuating circumstances, such as intense outbreak or lack of adequate resources to implement the preceding control methods, using motorized ground vehicles may be necessary to protect adjacent lands from imminent unacceptable damage. However, such use during control work in wilderness would require complete documentation of the extenuating circumstances and advance Regional Forester's approval, and only as a last resort.

When the use of motorized ground vehicles in wilderness is permitted by the Regional Forester, apply the following management requirements:

- Use only existing roads or access. Limit road improvement only to a level required for safe passage of equipment and workers, and to protect the soil.
- Return existing roads to as near their preuse condition as possible once they have served their purpose.
- Close to motorized public use all roads and access needed for SPB control. Allow only SPB control and administration.
- Use fords (no structure) where possible, but only under conditions that will not visibly change physical stream characteristics. These conditions are:
  - Where bedrock stream bottom and lower banks occur;
  - Where rock or gravel stream bottom and lower banks occur; or
  - Where temporary stream crossing structures are installed using the largest fill material available. Remove crossings completely following control operations. Reclaim stream banks and bottoms to approximate original conditions.
- To the greatest extent possible, schedule control activities when visitor use is expected to be lightest. (KNF) (GUIDELINE)

MA–13–12: All practical efforts to protect hardwoods will be made when SPB control actions are implemented. No hardwoods will be cut unless to insure the safety of crews or wilderness user (SPB-6, Wilderness-General). (GUIDELINE)

MA–13–13: The affected and interested public will be informed or involved as appropriate in the decision to control in wilderness. (SPB-7, Wilderness-General) (GUIDELINE)

MA–13–14: Use aerial detection to identify and locate for ground checking all infestations in the Wilderness meeting the criteria of **MA–13–08**.(KNF) (GUIDELINE)

MA–13–15: Infestations located within 1/4 mile of these lands [wilderness] will be ground checked as soon as possible (generally two days) following detection to collect data for input in a SPB spot growth model and determine the direction of spread (SPB-3, Wilderness-Protection of Adjacent Lands). (GUIDELINE)

MA–13–16: Spot growth model predictions will be completed as soon as possible (generally three days) from ground check. Forest Health Protection personnel will provide the extent of tree kill predicted by the model. This information will be used to estimate the location and extent of damage on adjacent lands from the uncontrolled infestation (SPB-4, Wilderness-Protection of Adjacent Lands). (GUIDELINE)

MA–13–17: A site-specific analysis will be completed and documented on each infestation predicted to impact adjacent lands prior to implementing control action. It will assess the predicted impacts to adjacent land considering landowners management objectives, age and condition of trees, and the current threat of SPB impacts from other non-wilderness sources. Direct, indirect, and cumulative impacts to the wilderness attributes and other resources will be assessed and considered equally in the control decision process (SPB-5, Wilderness-Protection of Adjacent Lands). (GUIDELINE)

MA–13–18: Whenever possible, allow indigenous insect and plant diseases to play their natural ecological role within the Wilderness. (KNF) (GUIDELINE)

FOREST PRODUCTS

MA–13–19: Classify this area as unsuitable for timber production. (KNF) (STANDARD)

MA–13–20: Do not issue permits for the removal of any forest product. (KNF) (GUIDELINE)

HEALTH AND SAFETY

MA–13–21: Parish and State authorities are responsible for search and rescue of lost or injured visitors. Provide assistance to them when requested for such things as scouting services, detailed maps, aerial photography,

and detailed information about the area. Use of motorized equipment for search and rescue operations within the Wilderness must be approved in advance by the Forest Supervisor. Refer to the *Guidelines for Use of Motorized and Mechanical Equipment for Search and Rescue Within Wilderness* (4/91). (KNF) (GUIDELINE)

HERITAGE RESOURCES

MA–13–22: Allow shovel tests to be conducted during cultural resource surveys. (KNF) (GUIDELINE)

MA–13–23: Do not provide interpretive facilities at heritage resource sites. Do not restore or enhance sites for recreational purposes. (KNF) (GUIDELINE)

MINERALS

MA–13–24: Do not lease or sell common variety minerals within the Wilderness. (KNF) (STANDARD)

MA–13–25: As provided by law, do not issue new leases of U.S. mineral rights in the Wilderness. A lease may be issued with a NSO stipulation where a nearby well, either on private rights or in federal minerals with a lower royalty rate, is draining oil and gas from adjacent U.S. minerals. (KNF) (STANDARD)

RECREATION MANAGEMENT

Signing

MA–13–26: Survey, mark, and post the exterior boundary of the Wilderness in accordance with *FSM 7153*. (KNF) (GUIDELINE)

MA–13–27: Provide signs as necessary to protect the wilderness resource and for administrative purposes. (KNF) (GUIDELINE)

MA–13–28: Do not sign geographic features within the Wilderness. (KNF) (GUIDELINE)

MA–13–29: Provide signing for visitor convenience or for environmental interpretation only at trailheads. Permit minimal signing or blazes on trails within the Wilderness. Provide no mileage on signs within the Wilderness. (KNF) (GUIDELINE)

MA–13–30: Use regulatory or informational signs in situations where control of excessive resource damage is needed. (KNF) (GUIDELINE)

MA–13–31: Construct signs inside the Wilderness from natural, native materials with routed letters mounted on natural colored or stained posts. (KNF) (GUIDELINE)

MA–13–32: Provide bulletin boards at primary access points into the Wilderness. (KNF) (GUIDELINE)

Dispersed recreation

MA–13–33: Do not allow group sizes to exceed 25 individuals. No permit is needed for overnight use. (KNF) (GUIDELINE)

MA–13–34: Provide for primitive camping and encourage visitors to disperse and practice *no-trace* camping techniques. Discourage camping at trailhead and parking areas. (KNF) (GUIDELINE)

MA–13–35: Locate campsites to take advantage of vegetative screening and topography, thus providing a moderate-to-high degree of solitude. Where terrain allows, camps should be separated from each other and set back at least 100 feet from trails, streams, and key interest features. (KNF) (GUIDELINE)

MA–13–36: Ban campfires during high fire danger periods or when resource impacts are unacceptable. (KNF) (GUIDELINE)

MA–13–37: In opportunity zone I — all wilderness beyond 1/8 mile of designated trails — no more than one previously used campsite per square mile, with only one fire ring per campsite, should be evident. (KNF) (GUIDELINE)

MA–13–38: Keep pets under voice control and / or physical restraint. (KNF) (GUIDELINE)

MA–13–39: Assign the Wilderness a primitive recreation opportunity class. (KNF) (GUIDELINE)

MA–13–40: Allow the use of the Wilderness to persons with disabilities, without special provisions or improvements. (KNF) (GUIDELINE)

MA–13–41: Use the limits of acceptable change (LAC) concept for monitoring the effects of management and use on the wilderness resource. (KNF) (GUIDELINE)

MANAGEMENT AREA 13: KISATCHIE HILLS WILDERNESS

STANDARDS AND GUIDELINES

Trails

MA–13–42: Wilderness travel shall be by nonmechanical means consistent with the primitive character of wilderness (***FSM 2326***). Use of bicycles or motorized equipment shall be prohibited. The Forest Supervisor may approve exceptions for emergencies involving threats to life, health, or property. The Regional Forester may approve use of mechanized equipment for other situations. (**KNF**) (**STANDARD**)

MA–13–43: Manage Backbone Trail and corridor from FS Road 339 to intersection with Turpentine Trail and Turpentine Trail and corridor in accordance with opportunity zone III standards:

- Permit human foot travel and equestrian use.
- Construct trail tread to be no more than 24 inches wide, and cleared corridor no more than 6 feet wide and 10 feet high.
- Permit evidence of up to 1 campsite for every mile of trail. Two fire rings per campsite may be evident. Denuded area, up to 200 square feet per campsite, may be present.
- Up to 10 other parties of visitors may be encountered per day. (**KNF**) (**GUIDELINE**)

MA–13–44: Manage Backbone Trail from intersection with Turpentine Trail to Longleaf Scenic Byway, Explorer, and High Ridge Trails in accordance with opportunity zone II standards:

- Permit only human foot travel use.
- Construct trail tread no more than 18 inches wide, and cleared corridor no more than 4 feet wide and 8 feet high.
- Permit evidence of up to 1 campsite for every 2 miles of trail. One fire ring per campsite may be evident. Denuded area, up to 100 square feet per campsite may be present.
- Up to 6 other parties of visitors may be encountered per day. (**KNF**) (**GUIDELINE**)

MA–13–45: Use native and local site materials for trail construction, reconstruction, and maintenance. (**KNF**) (**GUIDELINE**)

MA–13–46: Protect soil and water resources and meet minimum requirements for health and safety in trail maintenance and reconstruction projects. (**KNF**) (**GUIDELINE**)

MA–13–47: Allow additional trail construction if demand warrants. Build all new trails in accordance with opportunity zone II standards. (**KNF**) (**GUIDELINE**)

RESEARCH

MA–13–48: Allow non-manipulative scientific study if compatible with the goals and objectives of the Wilderness. Approve only studies consistent with wilderness management. (**KNF**) (**GUIDELINE**)

MA–13–49: Mark test plots in a temporary manner, generally not visually evident to the average user. (**KNF**) (**GUIDELINE**)

MA–13–50: Require a permit and Forest Supervisor approval for the collection of specimens for research. (**KNF**) (**GUIDELINE**)

SCENERY RESOURCE MANAGEMENT

MA–13–51: Assign the Wilderness a *very high* scenic integrity objective. (**KNF**) (**GUIDELINE**)

SOIL AND WATER

MA–13–52: Develop soil resource improvements to rehabilitate critical areas. (**KNF**) (**GUIDELINE**)

MA–13–53: Stabilize eroding areas to maintain or improve soil water resource for stated objectives for Bayou Cypre watershed. (**KNF**) (**GUIDELINE**)

MA–13–54: Implement watershed restoration and enhancement projects on areas where erosion is due to man-caused activities and is consistent with the wilderness concept. (**KNF**) (**GUIDELINE**)

RIGHT-OF-WAY ACQUISITION

MA–13–55: Pursue an easement to construct and maintain a permanent fire break adjacent to the Wilderness on private lands when funds are available. (**KNF**) (**GUIDELINE**)

SPECIAL-USES

MA–13–56: Allow special-uses consistent with wilderness values on a case-by-case basis. (KNF) (GUIDELINE)

MA–13–57: Do not permit competitive trail rides, survival exercises (including military), or other competitive events of this nature. (KNF) (GUIDELINE)

VEGETATION MANAGEMENT

MA–13–58: Allow natural processes, including fire, to determine the composition and distribution of plant species. (KNF) (GUIDELINE)

MA–13–59: Use native materials and species to revegetate denuded areas. (KNF) (GUIDELINE)

WILDLIFE

MA–13–60: Exclude Kisatchie Hills Wilderness from the Kisatchie District HMA. (KNF) (STANDARD)

MA–13–61: Establish replacement stands for all active RCW clusters within the Wilderness as close to the cluster as possible, but not more than 3 miles from it, and located outside the Wilderness boundary. (KNF) (GUIDELINE)

MA–13–62: Protect RCW cavity trees within known active Wilderness clusters during prescribed burning activities. (KNF) (GUIDELINE)

Chapter 4

Implementation of the Revised Forest Plan

INTRODUCTION

Chapter 4 provides information on how the revised Forest Plan will be implemented, and how it will be kept current as conditions change and new information becomes available. It is divided into two major sections:

- Plan implementation direction
- Plan amendment and revision

PLAN IMPLEMENTATION DIRECTION

FOREST PLAN DECISIONS

National Forest System planning involves two levels of decisions. The first level consists of the development of a forest plan that provides programmatic direction for all resource management programs, practices, uses, and protection measures. Forest plans consist of both forestwide and management area standards and guidelines that provide for land uses with anticipated resource outputs under the given set of management constraints. Outputs are not hard and fast decisions within a plan since all conditions required to produce outputs, such as annual budget appropriations, are not controlled by a forest. The decision approving a forest plan requires full compliance with both the National Forest Management Act (NFMA) and the National Environmental Policy Act (NEPA). (*FSM 1922*)

Forest plans do not dictate a commitment of resources or the selection of any specific project; they do determine what types of projects are permissible and under what conditions they may occur on different portions of the forest. Detailed, site-specific decisions and associated impacts are beyond the scope of the Forest Plan.

PROJECT-LEVEL DECISIONS

The second level of planning involves the analysis and implementation of management practices designed to achieve the goals and objectives of the Forest Plan on a particular, or site-specific, portion of the Forest landscape. This level involves site-specific analysis to meet NEPA requirements for decisionmaking (*FSM 1922*). Public participation will be an integral part of this decisionmaking process.

Project-level environmental analysis will tier to the revised Forest Plan and final environmental impact statement (FEIS). The FEIS for the revised Forest Plan is an aid to project-level NEPA compliance.

Documentation of project-level analysis will be consistent with the Council of Environmental Quality Regulations (*40 CFR 1500-1508*), and Forest Service Manual (*FSM*) and Handbook direction. A NEPA document in the form of an environmental impact statement (EIS) or environmental assessment (EA) will often be prepared; or if the analysis shows neither the activity nor the impacts to be significant and the activity conforms to the list of categories in *FSM 1950*, the analysis could be categorically excluded from documentation in an EIS or EA.

The NEPA analysis of the proposed actions should provide the documentary basis for NFMA findings on consistency, suitability for timber production, clearcutting and even-aged management, and vegetation manipulation (*FSH 1909.12, 5.31a*). This NEPA analysis and documentation leads to project decisionmaking that fully complies with NEPA, NFMA, and all other applicable regulations.

IMPLEMENTATION AND COMPLIANCE

The Forest Supervisor has the overall responsibility for implementing the revised Forest Plan. Implementation will occur through the identification, selection, scheduling, and execution of practices, projects, or actions

designed to meet the management direction of the revised Forest Plan. The Forest Plan implementation process is displayed in figure 4-1.

Implementation will also involve responding to proposals by others for use and / or occupancy of Forest lands. It is necessary for other plans or instruments, budget proposals, and environmental analysis required for implementation of specific management practices to be consistent with this revised Forest Plan.

The Kisatchie's revised Forest Plan supersedes the 1985 Forest Plan. All outstanding permits, contracts, cooperative agreements and other instruments for occupancy and use of lands included in the 1985 Forest Plan will be brought into agreement with this revised Forest Plan, subject to the valid existing rights of the parties involved. This will be done as soon as practicable (*USC 1604 (i)*), and generally within three years of the date of the Plan. Subsequent administrative activities affecting such lands, including budget proposals, will be based on the revised Forest Plan.

If a proposed practice, project, or action is determined to be incompatible with the direction in the revised Forest Plan, one of three things will occur. The proposal will be revised to make it compatible with the revised Forest Plan, the proposal will be abandoned, or the proposal will be implemented after the revised Forest Plan has been amended to allow for the proposed activity. Recurring conflicts may result in review of the relevant Plan direction through the monitoring and evaluation process (Chapter 5) to determine whether a Plan amendment or revision to the Plan is needed.

BUDGET PROPOSALS

Management programs, practices, and uses scheduled in this revised Forest Plan are linked to a multi-year program budget proposal that identifies funds necessary to implement the Forest Plan (*FSM 1930*). The budget proposal is then used to request and allocate funds needed to carry out the planned management direction. Outputs and activities in individual years may vary significantly, depending on available funds. Upon approval of the final budget for the Forest, the annual program of work is adjusted to the final budget and then carried out. Accomplishment of the annual program of work results in the incremental implementation of the Forest Plan management direction. The revised Forest Plan's average annual budget proposal is displayed in Appendix C.

PLAN AMENDMENT AND REVISION

AMENDMENTS

The revised Forest Plan will be kept current through the use of amendments. The need to amend the Forest Plan may arise from several sources, including:

- Recommendations of the Forest interdisciplinary team based on findings that result from monitoring and evaluating implementation of the Forest Plan (*36 CFR 219.12 (k)* and *FSM 1922.7*);
- Findings that existing or proposed permits, contracts, cooperative agreements, and other instruments authorizing occupancy and use are not consistent with the Forest Plan but should be approved (*36 CFR 219.10 (e)*);
- Changes in proposed implementation schedules (*36 CFR 219.10 (e)*) necessary to reflect differences between funding levels contemplated in the Forest Plan and funds actually appropriated;
- Changes necessitated by resolution of administrative appeals;
- Changes to correct planning errors;
- Changes necessitated by changed physical, social, or economic conditions; and
- Implementation of management practices outside the scope of the Forest Plan. (*FSM 1922.5*)
- Changes in law that may occur during the planning period.

When the need to amend occurs, a determination will be made as to whether the amendment is or is not a significant change to the Forest Plan. Examples of changes not significant to a forest plan include:

- Actions that do not significantly alter the multiple-use goals and objectives for long-term land and resource management;
- Adjustments of management area boundaries or management prescriptions resulting from further site-specific analysis when the adjustments do not cause significant changes in the multiple-use goals and objectives for long-term land and resource management;

- Minor changes in standards and guidelines; and
- Opportunities for additional management practices that will contribute to achievement of the management prescription. (*FSM 1922.51*).

For an amendment that is not significant, the Forest Supervisor can implement the change after completion of NEPA procedures — public involvement, decision documentation, and public notification of the decision.

Significant changes to a forest plan can result from:

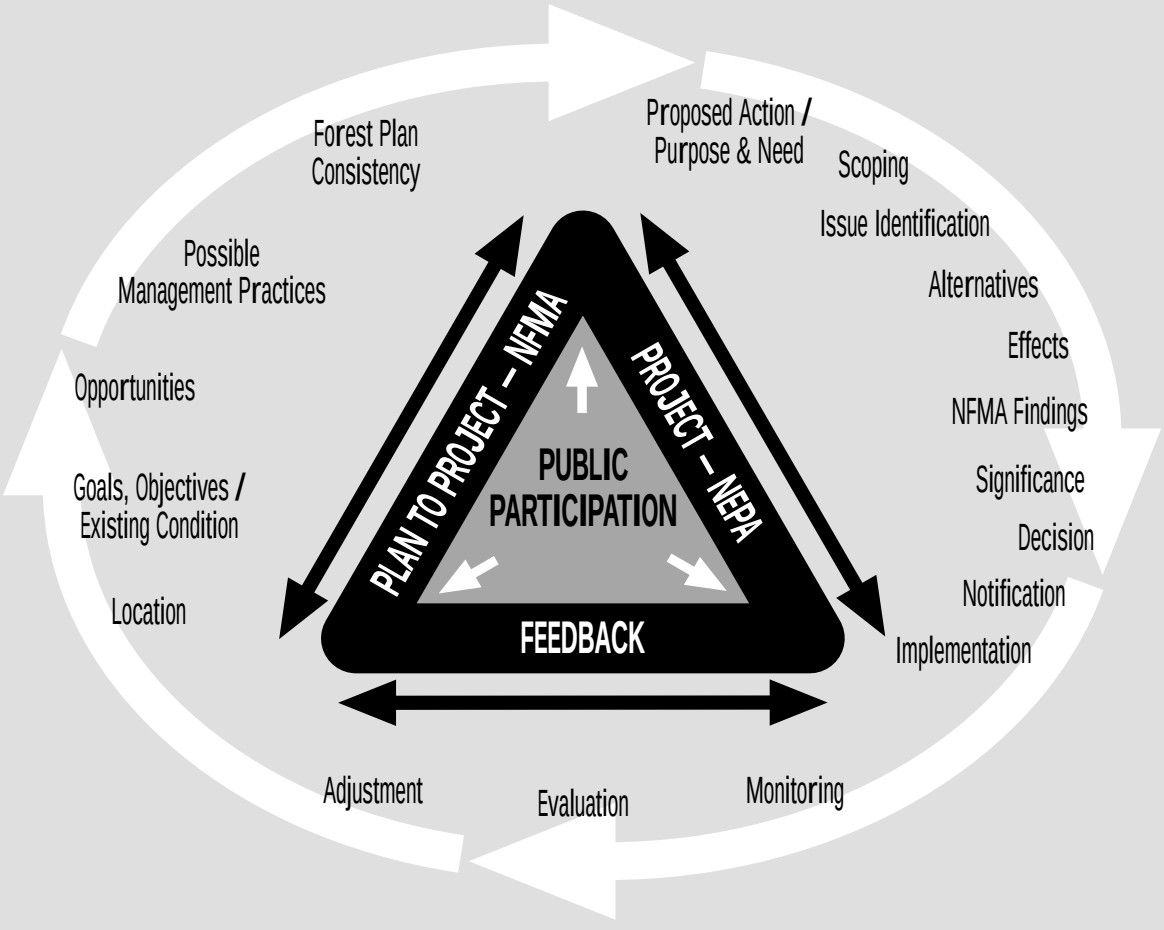
- Changes that would significantly alter the long-term relationship between levels of multiple-use goods and services originally projected (*36 CFR 219.10(e)*); and
- Changes that may have an important effect on an entire forest plan or affect land and resources throughout a large portion of the planning area during the planning period.

For amendments determined to be significant, the Forest Supervisor will follow the same procedures that are required for the development and approval of a forest plan (*36 CFR 219.10 (f)* and *36 CFR 219.12*). Significant amendments will require approval by the Regional Forester.

REVISIONS

The NFMA regulations require forest plans to be revised on a 10–15 year cycle or sooner for significant changes of conditions or demands in a plan coverage area. The Forest Supervisor will review the conditions on the lands covered by this Forest Plan at least every five years, to determine whether significant change has occurred. Revision procedures are the same as those required for the development and approval of a forest plan (*36 CFR 219.10 (g)* and *36 CFR 219.12*). While approval of the Chief of the Forest Service is required to schedule a forest plan revision, revisions themselves are approved by the Regional Forester.

FIGURE 4–1, FOREST PLAN IMPLEMENTATION



Source: NEPA / NFMA Forest Plan Implementation Course (1900-1)

Chapter 5 Monitoring and Evaluation

INTRODUCTION

Chapter 5 provides information on how the implementation of the revised Forest Plan will be monitored and evaluated. It is divided into 5 major sections:

- Purpose and objectives of monitoring and evaluation,
- Types of forest plan monitoring,
- Monitoring process framework,
- Management indicator species, and
- Annual reporting procedures.

PURPOSE AND OBJECTIVES OF MONITORING AND EVALUATION

Monitoring and evaluation are separate, sequential activities that provide information to determine whether programs and projects are meeting forest plan direction. Overall direction for the monitoring and evaluation of forest plans is found in ***FSM 1922.7***; ***FSH 1909.12,6***; and ***36 CFR 219.12(k)***.

Monitoring is observing or measuring results for a specific purpose, such as compliance with applicable laws and regulations or addressing issues. Monitoring:

- Measures progress in forest plan implementation;
- Determines how well forest plan desired future conditions, goals and objectives are being met;
- Determines if management standards and guidelines are appropriate for meeting the forest's outputs and environmental protection;
- Determines whether or not we are effectively responding to public needs and issues;
- Determines if assumptions used in developing the forest plan reflect actual conditions, new information, and / or legal requirements; and
- Increases and improves our scientific knowledge of effects of our management in sustaining communities and ecosystems.

Evaluation of monitoring findings and results is an ongoing activity conducted throughout the year, so that timely responses to changed conditions and new information can be made. Evaluation includes management and interdisciplinary resource review findings as well as formal, end of the year evaluation conducted as part of the publication of the Kisatchie National Forest's annual *Monitoring and Evaluation Action Plan and Report (M& E Report)*.

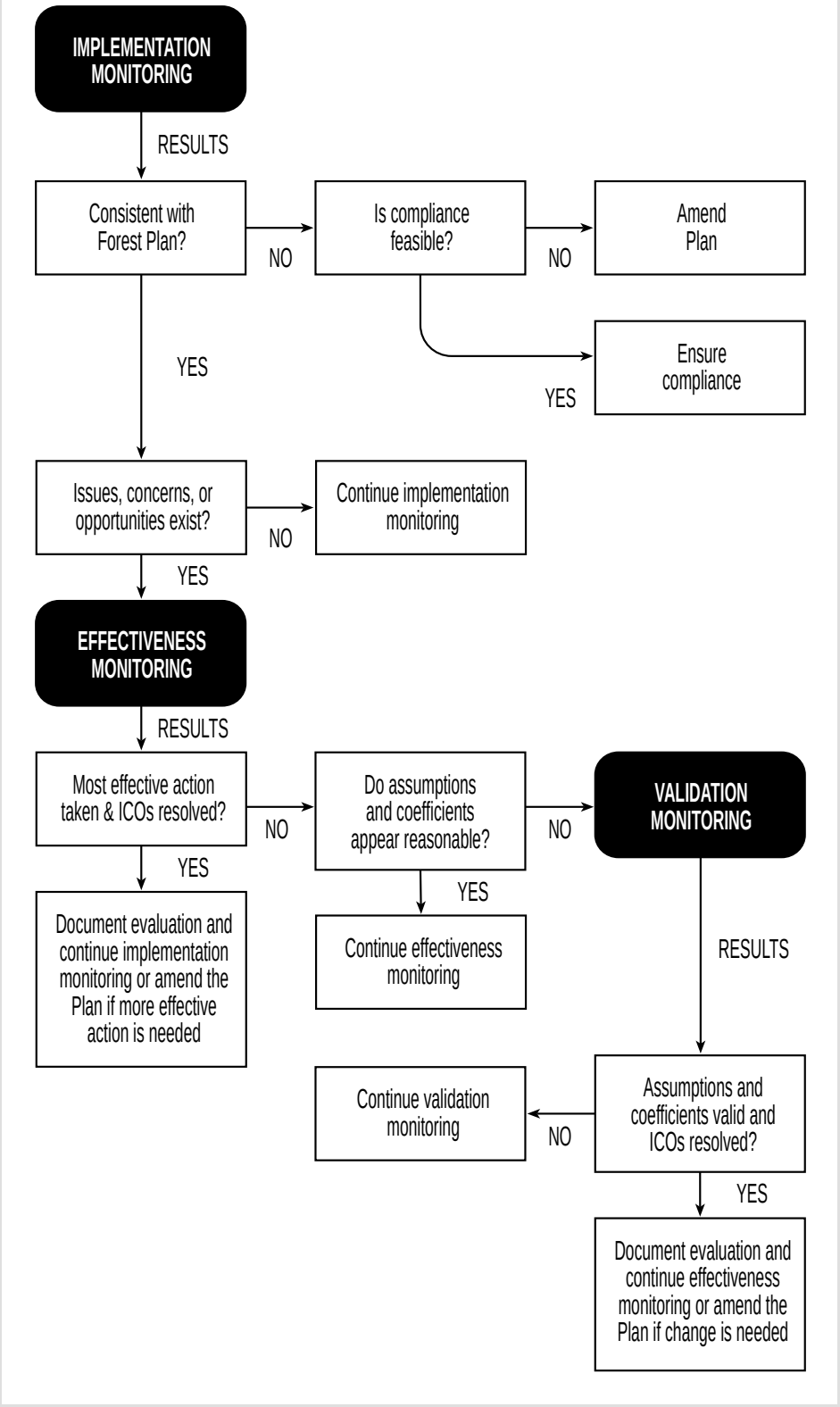
Evaluation assesses the significance of the observations or measured results from monitoring through analysis or study to determine if changes are needed in the Forest Plan. Evaluation determines if planned conditions or results are being attained and when they are within the Forest Plan direction. When a situation is identified as being outside the limits of acceptable variability, changes to the Forest Plan may need to occur. Evaluation therefore serves two functions:

- It identifies when a change in management practices is needed; and
- It provides a means to adjust the Forest Plan to keep it dynamic and responsive to changing conditions.

When we monitor how well we are meeting our Forest Plan desired future conditions, goals and objectives, and standards and guidelines we are monitoring how effectively we have addressed the public issues and management concerns raised during the forest planning process. As detailed in Chapters 1 and 2 of the **FEIS**, public issues and management concerns were the foundation upon which desired future conditions, goals and objectives, and standards and guidelines were established. New issues that arise during the implementation of this revised

PURPOSE AND OBJECTIVES OF MONITORING & EVALUATION

FIGURE 5–1, THE FOREST PLAN MONITORING & EVALUATION PROCESS



Forest Plan may result in additional monitoring items being added to our annual monitoring program.

TYPES OF FOREST PLAN MONITORING

The Kisatchie National Forest monitoring program includes inventory and data collection, internal reviews, and preparation of annual reports for the public and for our Regional and Washington Offices. While all of the above contribute to the Kisatchie's monitoring program, not all will be monitored to the same level, or be identified as a specific monitoring item in our *M& E Report*.

Three types of forest plan monitoring will be conducted:

- Implementation monitoring;
- Effectiveness monitoring; and
- Validation monitoring.

Implementation monitoring is meant to satisfy the question: *Did we do what we said we would do?*

It determines if plans, prescriptions, projects, and activities are implemented as designed and in compliance with forest plan objectives, requirements, and standards and guidelines. Evaluation of implementation monitoring may require adjustment of prescriptions and targets or changes in plan or project administration. (***FSM 1922.7***)

Effectiveness monitoring is meant to satisfy the question: *Did what we said we would do accomplish our goals and objectives — or, did it work?*

It determines whether plans, prescriptions, projects, and activities are effective in meeting management direction, objectives, and standards and guidelines. Evaluation of the results of effectiveness monitoring is used to adjust forest plan objectives, targets, prescriptions, standards and guidelines, conservation practices, mitigation measures, and other best management practices and could result in change to or amendment of the forest plan. (***FSM 1922.7***)

Validation monitoring is meant to satisfy the question: *Are our assumptions valid or are there better ways of meeting our goals and objectives?*

It is designed to ascertain whether the initial assumptions and coefficients used in development of a forest plan are correct or if there is a better way to meet forest planning regulations, policies, goals, and objectives. Evaluation of this type of monitoring can result in amendment of forest plans and may be used to recommend changes in laws, regulations, and policies that affect both the plan and project implementation. (***FSM 1922.7***)

Figure 5–1 displays the monitoring and evaluation process.

MONITORING PROCESS FRAMEWORK

Considering the types of forest plan monitoring discussed above, monitoring questions were developed based on the revised Forest Plan desired future conditions, goals and objectives, and standards and guidelines. Monitoring questions are those that need to be answered to determine whether the revised Forest Plan decisions are being implemented, and that the decisions are effective and valid. Table 5–1 displays the monitoring questions developed for the Kisatchie's revised Forest Plan. The questions in table 5–1 along with the level of monitoring associated with the question are considered a forest plan decision; therefore, any changes to them will require an amendment to the Forest Plan.

Monitoring task sheets similar to the example in figure 5–2 detail how information will be acquired to answer each monitoring question. Task sheets are used to further develop the details, priorities and budgeting for monitoring. They serve as a checklist for organizing, developing, implementing and maintaining the monitoring and evaluation program. Changes to task sheets do not require an amendment of the Forest Plan, unless the desired future conditions, goals and objectives, or standards and guidelines being monitored change, or the monitoring questions and/or monitoring level changes; but, they will be updated as part of the Kisatchie's annual *M&E Report*. The task sheets are part of the planning records for the revised Forest Plan. A summary of the task sheets can be found in Appendix F.

FIGURE 5–2, FACSIMILE OF A MONITORING TASK SHEET

DFC / GOAL:

OBJECTIVE:
and / or
STANDARD:

MONITORING
QUESTION:

MONITORING
LEVEL: Implementation ___ Effectiveness ___ Validation ___

MONITORING
ITEMS:

Existing data check:
Site / location:
Range of acceptable results:
Who collects data:
Data collection
methodology / design:
Frequency / duration:
Expected precision: L( ) M( ) H( ) Expected reliability: L( ) M( ) H( )
Estimated cost of collection:
Personnel needed:
Data source:
Data storage:

ANALYSIS / EVALUATION
OF FINDINGS:

Responsibility /
method of analysis:
Estimated cost of analysis:
Who evaluates findings: Line: FS( ) DR( ) IDT: RO( ) SO( ) DO( )
Other:
Findings:
Recommended actions:
Date recommended
action implemented:

REPORTING OF FINDINGS:

Responsibility of reporting:
Information to be reported:
Frequency of reporting:
Method of reporting:
Target audience of report:
Additional comments:

The responsibility for the evaluation of monitoring results lies with the personal involvement of the Forest Supervisor and district rangers with Forest interdisciplinary teams. The Forest will also depend upon continuing partnerships, relationships, and collaboration with the Southern Research Station, universities, state and local government agencies, environmental groups, and the public for quality assurance and involvement in the Kisatchie's monitoring program.

MANAGEMENT INDICATOR SPECIES

Management indicator species are selected, in part, to help ensure that viable populations of plant and animal species are maintained in the planning area and because their population changes are believed to indicate the effects of management activities. The 36 CFR 219 Planning Regulations directs that "Population trends of management indicator species will be monitored and relationships to habitat changes determined." To meet the intent of the regulations, table 5-2 identifies the use of management indicator species (MIS) to monitor the effectiveness of the Plan direction in meeting desired habitat conditions and plant/animal outcomes. Appendix F, table F-1, outlines the monitoring strategy for the MIS to meet the intent of the 36 CFR 219 Planning Regulations.

The monitoring strategy for MIS and their habitats includes measures for tracking conditions and trends for habitats, key habitat parameters, and trends to populations. Conclusions about population trends and their relationship to habitat are developed through a variety of approaches.

MONITORING APPROACHES

Monitoring MIS Habitat Conditions

At the most basic level, conditions and trends of habitats will be tracked for each MIS . The relationship of all MIS to forest communities, forest successional classes, rare communities, or other habitat parameters is documented in the process records and EIS. Forest-wide trends for the habitat conditions for each MIS will be reported and evaluated in terms of change over time specific to meeting Forest Plan desired conditions for that particular MIS.

Monitoring MIS Population Trends

Conclusions about population trends and their relationship to habitat are developed through a variety of methods. Because methodologies to determine population numbers and/or estimate trends vary by species, conclusions that relate population trends to habitat conditions are also reached through a variety of methods. It is appropriate for a range of methods to be used to estimate, or approximate, population trends for MIS. The choice of which one, or combination, of these methods to use for a given MIS is based on: (1) the risk associated with a species status and (2) the information needed by line officers to make informed decisions. The methods include:

- Population trends may be inferred using species-habitat relationships information. This approach involves inferring population trends from trends in amount and condition of habitat over time, based on known relationships between species and habitat. The use of this approach is appropriate under the following conditions: (1) the species is relatively common and risk of local extirpations are low; (2) habitat is known to be a primary factor influencing populations; and (3) there have been valid empirical studies relating the species to habitat and these are applicable to the area where the approach is being applied. When population trends are inferred from habitat trends, the relationship of species to habitat should be understood well enough to interpret how the population would respond to habitat alterations.

- Population trends can be estimated using population occurrence data. In addition, this information can improve knowledge of species distribution and habitat relationships. These measures, repeated over time, may provide information on trends in distribution and relative abundance. Examples could include element occurrence records (EOR), documented changes in occurrences, and an evaluation of those changes from established baseline EOR. This approach would be appropriate for a MIS where the risk to local or broad extir-

pations is low to moderate (cost of making a management decision that would adversely affect the species is low to moderate) and there is high correlation and understanding for a MIS and its associated habitat(s) (high likelihood the conclusions regarding population trends would be correct).

- Population trends can be estimated through the use of population indices. These indices are not estimates of actual population numbers, but are aimed at reflecting population trends or relative abundance for a species. Properly designed population indices are a well accepted method for assessing populations for many taxa. Examples could include State hunting/fishing information, track counts, and bird point counts. Some of this information may be useful in validating species/habitat relationships. This method is commonly used in natural resource management.

- Populations trends can be determined through the use of 100% population counts or can be estimated through the use of population sampling designed to estimate actual population numbers. (Although rarely used, 100% population counts can be feasible for some species, such as for populations in very restricted geographic areas.) In addition, demographic analysis can be used to infer population trends and further provide additional insight into species population status. These are the most intensive and rigorous methodologies, usually reserved for some federally-listed species or some high risk globally-imperiled species selected as MIS. These methods would be appropriate for a MIS where the risk of local or broad extirpations is high (cost of making a management decision that would adversely affect the species is high) and either there is not strong correlation of an MIS and its associated habitat(s) or the relationship is poorly understood (high likelihood the conclusions regarding population trends would be incorrect).

ANNUAL REPORTING PROCEDURES

Each year, in order to keep the revised Forest Plan dynamic and responsive to changing conditions, the results of our Forest Plan monitoring will be published in our *M&E Report*. The *M&E Report* will include the implementation status of the previous fiscal year monitoring recommendations as well as the detailed results and action plan of the fiscal year being monitored. The report will also contain a certification statement from the Forest Supervisor indicating that they have evaluated the findings and recommendations, and have directed that the action plans developed to respond to the recommendations be implemented.

The *M&E Report* will be available, upon request, generally during the second quarter of the following year (January-March). Any amendments or revisions made to the revised Forest Plan will be made using the appropriate National Environmental Policy Act public involvement procedures.

TABLE 5–1, MONITORING QUESTIONS

FORESTWIDE DESIRED FUTURE CONDITION GOALS AND OBJECTIVES	IMPLEMENTATION QUESTIONS	EFFECTIVENESS QUESTIONS	VALIDATION QUESTIONS
Goal 1: Ensure that healthy, sustainable forest ecosystems endure for future generations by managing with the highest standards of stewardship. Protect or conserve basic soil, water, air, and land resources and incorporate integrated pest management principles.			
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.	Are management practices designed to minimize soil erosion, compaction and loss of soil productivity being applied?	Is allowable soil loss being exceeded? Are disturbed and degraded areas being restored and revegetated to a natural condition?	How do timber management practices, especially timber harvesting and consequent compaction, affect soil productivity?
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.	Are management practices designed to minimize contamination, sedimentation, and maintain stream channel stability being applied?	Are State water quality standards and State anti-degradation policies being met? Is water quality being degraded?	
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.	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?	Does air quality meet NAAQS and State standards?	
Objective 1–4: Provide a level of wildfire protection which emphasizes cost-effective wildfire prevention and suppression while minimizing loss of resources.	Is wildfire protection being provided in a cost-effective manner? Are losses to wildfire being minimized?	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?	
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.	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?	Has management resulted in a decrease of susceptibility of southern pine beetle and other pests? Are pest incidents decreasing with applied integrated management?	
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.	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?	Are newly acquired lands compatible with management practices in the Management Area where they are located? Are encroachments discouraged by well-defined property lines?	

TABLE 5–1, MONITORING QUESTIONS

FORESTWIDE DESIRED FUTURE CONDITION GOALS AND OBJECTIVES	IMPLEMENTATION QUESTIONS	EFFECTIVENESS QUESTIONS	VALIDATION QUESTIONS
Goal 2: Manage to provide for a variety of life by maintaining biologically diverse ecosystems and viable populations of all native and desirable nonnative plant, wildlife, fish, and aquatic species. Conserve threatened, endangered, and rare species; restore and maintain ecosystems and ecological processes; identify and manage old-growth forests; and protect riparian and streamside habitat areas.			
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 is 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	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?	Are the management practices successfully restoring or maintaining quality forest ecosystems; and, the structure, composition, and processes of the four major landscape forest ecosystems?	
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: ▶ 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		Are management practices successfully expanding quality habitats for management indicators?	Are the habitat objectives for selected management indicators providing for healthy populations of all existing native and desirable nonnative wildlife, fish, and plants?
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.	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?	Are habitat conditions for threatened, endangered, sensitive, and conservation species improving?	Are Red-cockaded Woodpecker and Louisiana pearlshell mussel population trends responding positively to management strategies?

TABLE 5–1, MONITORING QUESTIONS

FORESTWIDE DESIRED FUTURE CONDITION GOALS AND OBJECTIVES	IMPLEMENTATION QUESTIONS	EFFECTIVENESS QUESTIONS	VALIDATION QUESTIONS
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.	Are management practices designed to develop old-growth forest attributes being implemented?	Are the management practices successfully developing or maintaining forest attributes similar to those found in old-growth?	
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.	Are streamside habitat protection zones and riparian area protection zones being delineated and managed as prescribed?	Are these zones successfully protecting or enhancing unique plant and animal communities, special habitat features, habitat linkages, and aquatic ecosystems?	
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.	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?	Are lake populations healthy? Are nonnatives and / or generalist-omnivore natives affecting lake biomass and balance? Is lake habitat sufficient?	

TABLE 5–1, MONITORING QUESTIONS

FORESTWIDE DESIRED FUTURE CONDITION GOALS AND OBJECTIVES	IMPLEMENTATION QUESTIONS	EFFECTIVENESS QUESTIONS	VALIDATION QUESTIONS
Objective 2–7: Provide quality habitat for game and fish populations.		Are management practices successfully expanding quality habitats for game and fish species?	Are habitat objectives for selected demand species providing game and fish populations sufficient for quality recreational opportunities?
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.	Are management practices designed to protect, restore, maintain, and improve waterfowl and wetland wildlife being implemented?	Are these management practices successfully providing for waterfowl and wetland wildlife?	
Goal 3: Contribute to local community stability by providing an even flow of commodity resources in an environmentally acceptable manner. Allow for timber harvest to meet multiple-use goals and provide for stand regeneration; a limited amount of domestic livestock grazing; continued exploration and extraction of leasable and salable minerals; and provide a transportation system to meet multiple-use goals. Promote rural development and human resource programs.			
Objective 3–1: Provide for long-term sustainable production of commodities for economies, local community stability, and people.	How does the flow of commodity outputs to local economies and people compare with the Forest Plan projections?		
Objective 3–2: Offer for competitive bid an average of 9.7 million cubic feet of timber sale volume on an annual basis for the first decade of the Plan.	Is the Forest providing for competitive bid the average annual allowable sale quantity it projected for the first decade?		
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.	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?		
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.	Are forage resources being maintained or improved on the designated allotments?	Are active allotments meeting the needs of the local demand for forage resources?	

TABLE 5–1, MONITORING QUESTIONS

FORESTWIDE DESIRED FUTURE CONDITION GOALS AND OBJECTIVES	IMPLEMENTATION QUESTIONS	EFFECTIVENESS QUESTIONS	VALIDATION QUESTIONS
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.	How does management of these products compare with Forest Plan direction?		Is the Forest providing opportunities for other specialty forest products without negatively impacting forest health or other resources?
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.	Are programs and opportunities for improving rural economies and social conditions being developed?	Are programs and opportunities improving sustainable local economies and social conditions?	
Objective 3–7: Manage the transportation system to ensure that any roads constructed are designed according to standards appropriate to the planned uses.		Is the transportation facility serviceable by the intended user?	
Goal 4: Provide for scenic quality and outdoor experiences which respond to the needs of forest users and local communities. Provide access to a wide variety of recreational opportunities and facilities.			
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.	Is the Forest being managed in accordance with the assigned SIOs ?		
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.		Has class eligibility shifted significantly?	

TABLE 5–1, MONITORING QUESTIONS

FORESTWIDE DESIRED FUTURE CONDITION GOALS AND OBJECTIVES	IMPLEMENTATION QUESTIONS	EFFECTIVENESS QUESTIONS	VALIDATION QUESTIONS
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.	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?		
Goal 5: Manage to protect and perpetuate natural and cultural values associated with unique, rare, or irreplaceable resources. Recognize and protect historical areas, cultural sites, and areas which are of special interest because of unique geological, botanical, or zoological features.			
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 (SHPO) and interested federally recognized tribes as primary partners in managing the Forest's heritage resources.	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)?		
Objective 5–2: Provide protection for heritage resource sites which preserves the integrity of scientific data that they contain, for the benefit of the public and scientific communities.	Is law enforcement and heritage support provided at sufficient levels to protect significant heritage sites from internal and/or external activities?	Are protection measures effective at preventing unacceptable damage?	
Objective 5–3: Reduce the existing backlog of heritage sites needing formal evaluation so that the overall number decreases each year.	Are sufficient numbers of significant or potentially significant sites being evaluated so that the number of backlogged properties decreases each year?		
Objective 5–4: Enhance and interpret appropriate sites and heritage values to the American public.	Are sites and heritage values being identified for public interpretation?	Has interpretation enhanced awareness of heritage values among the general public?	
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.	Does the interpretive services program provide usable information to the public about the full scope of forest management practices and philosophy?	Has interpretive services increased measurable public support of Forest Service resource management goals and objectives?	
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.	Is Forest Plan SIA direction being applied?		

TABLE 5–1, MONITORING QUESTIONS

FORESTWIDE DESIRED FUTURE CONDITION GOALS AND OBJECTIVES	IMPLEMENTATION QUESTIONS	EFFECTIVENESS QUESTIONS	VALIDATION QUESTIONS
Objective 5–7: Manage the Kisatchie Hills Wilderness to enhance and perpetuate wilderness as a resource. Avoid resource damage resulting from overuse.	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?		
Goal 6: Apply vegetation management activities and treatments best suited to achieve a mixture of desired future conditions or to mimic natural processes. Implement and use a variety of silvicultural systems, regeneration methods, prescribed fire applications, and vegetation management treatments needed to achieve objectives.			
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.	Are management practices designed to achieve a mixture of desired future conditions being applied?		
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.	Are the prescribed fire regimes being applied to all appropriate landscapes as prescribed, to maintain fire-dependent ecosystems?	Are the natural plant communities being maintained by the prescribed fire regimes?	
Goal 7: Monitor to provide feedback regarding progress toward accomplishing Forest goals and objectives; and adapt management according to new information.			
Objective 7–1: Monitor and document the annual progress towards accomplishment of Forest goals, objectives, and desired future conditions.	Is the Forest preparing and distributing a yearly monitoring and evaluation report to the public?		
Objective 7–2: Evaluate new information and monitoring results; adapt management accordingly.	Is the Forest Plan being kept current through timely changes as identified in the annual M&E Report?		
Goal 8: Promote collaboration between researchers and land managers to incorporate new technologies, information, and scientific methods into the decision-making process.			
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.	Are cooperative relationships being developed and maintained?		

TABLE 5–1, MONITORING QUESTIONS

FORESTWIDE DESIRED FUTURE CONDITION GOALS AND OBJECTIVES	IMPLEMENTATION QUESTIONS	EFFECTIVENESS QUESTIONS	VALIDATION QUESTIONS
Objective 8–2: Continue to identify research needs as the Forest implements the Plan.	Are research needs being identified in a timely manner?		
Goal 9: Promote cooperation and coordination with other federal and State agencies, Native American tribes, organizations, and individuals. Actively seek public involvement during project planning, implementation and monitoring.			
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.	Are coordination and cooperation efforts being conducted with federal and State agencies?		
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.	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?		

TABLE 5–2, MANAGEMENT INDICATOR SPECIES FOR LONGLEAF PINE LANDSCAPES

The major landscape community in these areas is longleaf pine forest. Unique or under-represented inclusional communities include hillside bogs, sandy woodlands, Fleming glade, longleaf pine flatwoods savannah, and sandstone glades and barrens. These landscapes are most closely associated with landtype associations 1, 2, 5, and 6.

General habitat characteristics / attributes (compositional, structural and functional components) featured: These areas are dominated by pine communities. The forest canopy for those stands at or approaching maturity is primarily single-layered and open, with a limited amount of within-canopy hardwoods (generally < 30 percent). The midstory is sparse. The herbaceous ground cover is a thick, continuous swath of grasses, composites, legumes, and other forbs. Snags and down logs are common. Prescribed fire is used frequently and is the principal influence in creating and maintaining open, parklike forest conditions. Generally, 10 percent or less of the landscape is in stand-size (10–40 acres) openings ≤ 10 years old. Additional small canopy gaps occur due to natural mortality or as a result of fire, insects, disease, or wind throw.

The management indicator species are:

Landscape-wide plants

Longleaf pine
Noseburn
Pinehill bluestem
Pale purple coneflower

Landscape-wide wildlife habitats

Bachman's Sparrow
Northern Bobwhite Quail
Prairie Warbler
Red-headed Woodpecker
Red-cockaded Woodpecker (in HMA)

TABLE 5–2, MANAGEMENT INDICATOR SPECIES FOR SHORTLEAF PINE / OAK-HICKORY LANDSCAPES

The major landscape community in these areas is shortleaf pine / oak-hickory forest. Unique or under-represented inclusional communities include calcareous priaires, and calcareous forests. These landscapes are most closely associated with landtype associations 3, 8, and 9.

General habitat characteristics / attributes (compositional, structural and functional components) featured: These areas are dominated by mixed pine-hardwood communities. The forest canopy for those stands at or approaching maturity is multilayered and relatively open with considerable amounts of within-canopy hardwoods (generally 30–50 percent). The midstory is diverse, multilayered, and relatively open, but may be thick in some areas. The herbaceous ground cover ranges from sparse to thick. Snags, down logs, and den trees are common. Prescribed fire is employed at regular intervals and is an important factor in controlling plant community composition and in maintaining open midstory conditions. Generally 10 percent or less of the landscape is in stand-sized openings ≤10 old. Additional small canopy gaps occur due to natural mortality or as a result of insects, disease, fire, or wind throw.

The management indicator species are:

Landscape-wide plants
Black hickory
Flowering dogwood
Mockernut hickory
Partridge pea
Shortleaf pine
White oak
Wild bergamot

Early successional wildlife habitats
Prairie Warbler

Mid-to-late successional wildlife habitats
Cooper's Hawk
Eastern wood-Pewee
Pileated Woodpecker
Summer Tanager
Red-cockaded Woodpecker (in HMA)

TABLE 5–2, MANAGEMENT INDICATOR SPECIES FOR MIXED HARDWOOD-LOBLOLLY PINE LANDSCAPES

- **The major landscape community in these areas is mixed hardwood-loblolly pine forest. Unique or under-represented inclusional communities include sandy woodlands. These landscapes are most closely associated with landtype association 4.**

  General habitat characteristics / attributes (compositional, structural and functional components) featured: These areas are generally moist, rich woods dominated by mixed hardwood-pine and hardwood communities. They may include many temporary ponds. The forest canopy for those stands at or approaching maturity is multilayered and relatively closed with high amounts of within-canopy hardwoods (generally >50 percent). The midstory is also multilayered and contains a variety of trees, shrubs, vines, and overstory saplings. The herbaceous understory is sparse and the ground is generally covered with leaf litter. Snags, down logs, and den trees are common to abundant. Prescribed fire is employed infrequently, thus minimally influencing the alteration or maintenance of vegetation patterns. Generally, 10 percent or less of the landscape is in stand-sized (10–40 acres) openings ≤10 years old. Additional small canopy gaps occur due to natural mortality or as a result of insects, disease, or wind throw.

- **The management indicator species are:**

Landscape-wide plants
Bigleaf snowbell
Black snake-root
Christmas fern
Loblolly pine
Partridge berry
Southern red oak
Virginia Dutchman's pipe

Early successional wildlife habitats
White-eyed Vireo

Mid-to-late successional wildlife habitats
Yellow-billed Cuckoo
Pileated Woodpecker
Wood Thrush
Hooded Warbler
Red-cockaded Woodpecker (in HMA)

TABLE 5–2, MANAGEMENT INDICATOR SPECIES FOR RIPARIAN LANDSCAPES

- **The major landscape community in these areas is riparian forest. This includes cypress swamp, bottomland hardwood forest, and small-stream riparian forest. No unique or under-represented inclusional communities are noted. These areas are embedded within all landtype associations.**

  General habitat characteristics / attributes (compositional, structural and functional components) featured: These areas are moist, rich woods associated with water and dominated by hardwood and hardwood-pine communities. The forest canopy for those stands at or approaching maturity is generally closed and is composed of a variety of oaks, hickories, and other hardwoods. Some pines may be present on small-stream communities within the uplands. The midstory is multilayered and diverse. The herbaceous understory is sparse but may contain a variety of ferns, mosses, sedges, and flowering plants. Snags, down logs, and den trees range from common to abundant. Fire frequency ranges from infrequent to rare. Plant community composition and structure is largely influenced by the frequency, extent, and duration of annual flooding events. Generally, stand-sized (10–40 acres) openings ≤10 years old are frequent or rare. Small canopy gaps occur due to natural mortality or as a result of insects, disease, or wind throw.

- **The management indicator species are:**

Small-stream riparian plants

American beech	Ironwood
Basswood	Mayapple
Cherrybark oak	Wild azalea
Inland sea-oats	

Large-stream riparian plants

Green hawthorn	Louisiana sedge
Inland sea-oats	Southern magnolia
Lizard's tail	Swamp chestnut oak

Small-stream riparian wildlife habitats

Acadian Flycatcher
Louisiana Waterthrush
White-eyed Vireo (canopy gaps)
Yellow-billed Cuckoo

Large-stream riparian wildlife habitats

Kentucky Warbler	Warbling Vireo
Northern Parula	White-breasted Nuthatch
Pileated Woodpecker	Worm-eating Warbler

TABLE 5–2, FORESTWIDE AQUATIC MANAGEMENT INDICATOR SPECIES

- **Aquatic management indicators apply forestwide. The group used depends on the aquatic habitat category involved.**
- **The management indicator species are:**

Swift-flowing — sand / gravel bottom
Brown madtom
Redfin darter
Louisiana pearlshell mussel

Slow-flowing — silt / clay bottom
Pirate perch
Blackspotted topminnow

Impoundments and ponds
Largemouth bass
Sunfish

Appendix A

Estimated Outputs and Activities

INTRODUCTION

This appendix presents tables depicting the estimated average outputs and activities that the Kisatchie National Forest is expected to provide as the revised Forest Plan is implemented. If conditions change as the Plan is implemented, information in these tables may be updated. Projects may be added, modified, or deferred as they are identified during project-level analysis. Depending upon available funding, projects may or may not be completed during the Plan implementation period.

TABLE A–1, ESTIMATED WILDLIFE HABITAT CONDITIONS

Condition	Units	Per Year
Tagged stands for RCW foraging[1]	ACRES	80,247
Additional non-tagged stands available for RCW foraging within HMA	ACRES	42,599
Quality habitat for white-tailed deer[2]	M-ACRES	266
Quality habitat for eastern wild turkey	M-ACRES	385
Quality habitat for bobwhite quail	M-ACRES	157
Quality habitat for fox squirrel	M-ACRES	224
Quality habitat for gray squirrel	M-ACRES	181
Longleaf pine habitat, all stages	M-ACRES	121
Shortleaf / oak-hickory habitat, early stages	M-ACRES	0
Shortleaf / oak-hickory habitat, mid-late stages	M-ACRES	16
Mixed hardwood / loblolly habitat, early stages	M-ACRES	42
Mixed hardwood / loblolly habitat, mid-late stages	M-ACRES	252
Riparian habitat, small streams	M-ACRES	85
Riparian habitat, large streams	M-ACRES	92

[1] Those stands that were reserved in the FORPLAN model to provide foraging habitat meeting the minimum requirements to sustain the RCW objective within the HMAs.
[2] Habitat ranging from marginally suitable to optimal for a particular species, based on *HabCap* simulation model.

TABLE A–2, ESTIMATED VEGETATION CONDITIONS

Condition	Units	Per Year
Even-aged management final harvests	ACRES	1,576
Even-aged management thinning harvests	ACRES	16,836
Group selection patch cuts	ACRES	232
Longleaf restoration cuts (EA harvests, GS patch cuts, old growth cuts)	ACRES	1,456
Pine-to-mixed restoration (EA harvests, GS patch cuts, old growth cuts)	ACRES	178
Final harvests of even-aged high-hazard SPB stands	ACRES	1,070

OUTPUTS AND ACTIVITIES

TABLE A–3, TIMBER COMMODITY OUTPUTS AND SALE SCHEDULE

Outputs and Conditions	Units	Per Year
Long-term sustained yield	MCF	16,360
Stand average inventory volume	MCF	77,543
Inventory volume, first period	MCF	75,113
Inventory volume, last period	MCF	90,964
Timber volume — all lands	MCF	13,158
Timber volume — timber-suitable lands (average annual ASQ)	MCF	9,687
Timber volume — amenity DFC lands	MCF	150
Timber volume — military intensive use lands	MCF	117
Timber volume — streamside areas	MCF	1,300
Timber volume — old-growth patches	MCF	1,904
Sawtimber sales	MCF	3,754
Veneer sales	MCF	3,407
Roundwood sales	MCF	5,988
Even-age volume — suitable lands	MCF	9,224
Uneven-age volume — suitable lands	MCF	665
Softwood volume — even-age suitable lands	MCF	8,957
Softwood volume — uneven-age suitable lands	MCF	608
Hardwood volume — even-age suitable lands	MCF	97
Hardwood volume — uneven-age suitable lands	MCF	25
No planned volume (experimental forest, wilderness, Saline Bayou, and unsuitable land class inclusions)	ACRES	43,876

TABLE A–4, SILVICULTURAL ACTIVITIES

Activity	Units	Per Year
Planting on prepared sites	ACRES	1,406
Site preparation for planting	ACRES	1,406
Site preparation for natural regeneration	ACRES	8
Site preparation — burning	ACRES	1,420
Site preparation — chemical	ACRES	409
Release — burning	ACRES	73,861
Release — chemical	ACRES	568
Old growth burning	ACRES	7,735
Amenity DFC burning	ACRES	763
Precommercial thinning	ACRES	11

TABLE A–5, ESTIMATED TIMBER SALE PROGRAM

Condition	Units	Per Year
Timber program expenses	M$	2,783
Timber program direct and indirect revenues	M$	25,967
Timber-associated jobs to local community	P-YRS	369
Timber-associated income to local community	MM$	12.7
25% contributions to local parish schools and roads	MM$	3.1
Timber sale gross receipts	MM$	12.3

TABLE A–6, TIMBER SALE ACTIVITIES

Activity	Units	Per Year
Sales — timber commodity (ASQ)	MCF	9,687
Sales — forest stewardship	MCF	3,450
Sales — personal uses	MCF	21
Purchaser local road construction	MILES	6
Purchaser local road reconstruction	MILES	121

TABLE A–7, SOIL AND WATER EFFECTS

Effect	Units	Per Year
Final harvests soil loss	TONS	13,399
Intermediate harvests soil loss	TONS	39,952
Mechanical site preparation soil loss	TONS	17,996
Road construction / reconstruction soil loss	TONS	8,946
Prescribed burning soil loss	TONS	293,290

TABLE A–8, DEVELOPED RECREATION CONSTRUCTION AND RECONSTRUCTION PROJECTS

District	Site	Action	Priority
Calcasieu, Evangeline Unit	Kincaid Complex	Master plan implementation	high
	Kincaid Entrance Road	Existing site reconstruction	med
	Loran Site Campground (in CIP)	New site construction	top
	Valentine Lake Complex	Existing site reconstruction	med
Calcasieu, Vernon Unit	Blue Hole Complex	Master plan Implementation	low
	Enduro Campground	New site construction	high
	Fullerton Lake Complex	Existing site reconstruction	high
	Little Cypress Complex	Existing site enhancement	med
	Longleaf Scenic Area	Natural attraction enhancement	med
	Vernon Camp	Existing site enhancement	top
Caney	Caney Lakes Complex	Master plan implementation	med
	Caney Lakes Complex (in CIP)	Existing site reconstruction	top
	Corney Lake Complex	Master plan implementation	med
Catahoula	Beaver Pond Wildlife Viewing Site	New site construction	low
	Big Creek Boat Launches	New site construction	top
	Big Creek Campground	New site construction	top
	Breezy Hill Enduro Campground	New site construction	med
	Camp Catahoula Horse Camp	New site construction	med
	Camp Livingston Shooting Range	New site construction	top
	Catahoula NWMP Hunter Camps	Existing site enhancement	high
	Iatt Lake Complex	New site construction	med
	Mosley Hill Fire Tower	Master plan implementation	high
	Pearson Camp	Existing site expansion	high
	Stuart Lake Campground	Existing site reconstruction	top
	Stuart Lake Complex Expansion	Existing site expansion	med
Kisatchie	Anderson Pond Fishing Site	Existing site enhancemen	high
	Cane Campground	Existing site reconstruction	top
	Kisatchie Bayou Camp (in CIP)	Existing site enhancement	top
	Longleaf Trail Interpretation	Master plan implementation	top
	Longleaf Vista Picnic	Existing site reconstruction	high
	Lotus Campground	Existing site enhancement	high
	Red Dirt NWMP Hunter Camps	Existing site enhancement	high
Winn	Catahoula NWMP Hunter Camps	Existing site enhancement	high
	Cloud Crossing Boat Launch	Existing site reconstruction	med
	Gum Springs Complex	Existing site reconstruction	high
	Hwy 126 Boat Launch)	Existing site enhancement	high
	W-D Equestrian Camp (in CIP)	Existing site enhancement	top
	Winn Shooting/Archery Range	New site construction	top
Forestwide	Primitive Camps (in CIP)	Existing site enhancement	top

TABLE A–9, DEVELOPED TRAIL CONSTRUCTION AND RECONSTRUCTION PROJECTS

District	Trail	Action Needed	Length (Miles)	Uses	Priority
Calcasieu, Evangeline Unit	Claiborne	Harden problem segments	20	Hiking, biking, horse, ORV	medium
	Kincaid	Harden for accessibility	6	Hiking, biking	top
	Lakeshore	Harden problem segments	5	Hiking, biking	top
	Valentine	Addition to an existing trail	7	Hiking, biking	top
	Valentine	Harden for accessibility	3	Hiking, biking	medium
	Wild Azalea NRT	Harden problem segments	15	Hiking, biking	top
Calcasieu, Vernon Unit	Enduro	Addition to an existing trail	24	Hiking, biking, horse, ORV	top
	Vernon Camp	Construction of new trail	30	Hiking, biking, horse	high
	Whiskey Chitto	Reconstruction to standard	10	Hiking, biking	medium
Caney	Corney Lake	Construction of a new trail	12	Hiking, biking	medium
	Caney Unit	Construction of a new trail	20	Hiking, biking, horse	top
	Corney Lake Horse	Construction of a new trail	16	Hiking, biking, horse	top
	Middle Fork	Construction of a new trail	20	Hiking, biking, horse	high
	Sugar Cane NRT	Addition to an existing trail	15	Hiking, biking	high
Catahoula	Breezy Hill	Construction of a new trail	60	Hiking, biking, horse	medium
	Camp Catahoula	Construction of a new trail	10	Hiking, horse	medium
	Catahoula Loop	Construction of a new trail	18	Hiking, biking	high
	Hickman	Complete planned trail	50	Hiking, biking, horse, ORV	top
	Iatt Lake	Construction of a new trail	18	Hiking, biking	medium
	Iatt Lake Pirogue	Construction of a new trail	12	Water craft nonmotorized	top
Kisatchie	Kisatchie Bayou Loop	Construction of a new trail	2	Hiking, biking	high
	LL Vista Interpretive	Reconstruction to standard	1.5	Hiking	top
	Sandstone	Harden problem segments	15	Hiking, biking, horse, ORV	top
	Sandstone	Addition to an existing trail	10	Hiking, biking, horse, ORV	top
Winn	Bayou	Addition to an existing trail	18	Hiking, biking	medium
	Gum Springs Horse	Addition to an existing trail	12	Hiking, biking, horse	top
	Gum Springs	Construction of a new trail	6	Hiking, biking	high
	Winn	Construction of a new trail	60	Hiking, biking, horse, ORV	high

TABLE A–10, ESTIMATED RECREATION PROGRAM

OUTPUTS AND ACTIVITIES

Condition	Units	Per Year
Reasonable dispersed recreation capacity	MRVD	2,354
Recreation use, non-hunt / fish only	MRVD	513
Hunting, fishing, non-consumptive wildlife use only	MWFUD	158
Recreation-associated jobs to local community	P-YRS	439
Recreation-associated income to local community	MM$	10.7
Recreation area gross receipts	M$	90.2

Appendix B

Timber Suitability Analysis

INTRODUCTION

During forest planning, the Forest Service is required to identify lands unsuited for timber production (***16 USC 1604(k); 36 CFR 219.14***). This identification process involves three stages of analysis. *Stage 1* analysis identifies lands tentatively suitable for timber production. *Stage 2* analysis is designed to explore the financial attractiveness of varying intensities of timber management on lands identified as tentatively suitable for timber production. *Stage 3* analysis identifies lands as unsuited for timber production under the alternative selected as the revised Forest Plan.

STAGE 1: PHYSICAL SUITABILITY

The first stage of the timber suitability analysis identified lands in these categories:

- Those lands that do not meet the definition of forest land.
- Those lands that have been withdrawn from timber production by an act of Congress, the secretary of agriculture, or the chief of the Forest Service.
- Those forest lands incapable of producing industrial wood.
- Those lands where technology is not available to ensure timber production from the land without irreversible soil and water resource damage.
- Those lands where there is no reasonable assurance that they can be adequately restocked.
- Those lands where there is inadequate response information.

Table B–1 displays the determination of those lands on the Kisatchie National Forest tentatively suitable for timber production.

STAGE 2: FINANCIAL ANALYSIS

The second stage analysis did not identify any lands as unsuitable for timber production. The costs and benefits associated with each management intensity that may be used in the production of timber were assessed. Costs exceeded revenues on an insignificant number of acres. Overall, the

TABLE B–1, STAGE 1 — ACRES TENTATIVELY SUITABLE FOR TIMBER PRODUCTION

Classification	Acres
Total national forest land	606,745
Non-forest land	(11,477)
Forest land	595,268
Forest land — withdrawn for wilderness, RNAs	(11,428)
Forest land — incapable of producing crops of industrial wood, or inadequate response information	(4,680)
Forest land — irreversible damage likely to occur; not restockable	(2,000)
Tentatively suitable forest land	577,160

INTRODUCTION

STAGE 1: PHYSICAL SUITABILITY

STAGE 2: FINANCIAL ANALYSIS

STAGE 2: FINANCIAL ANALYSIS

STAGE 3: IDENTIFICATION OF SUITABLE ACRES

benefits gained by other resources from timber management outweighed the costs. Stage 3 analysis considered these results in making the final determination of lands suited for timber production.

STAGE 3: IDENTIFICATION OF SUITABLE ACRES

Stage 3 analysis was accomplished during the formulation of alternatives. Three criteria were used during this stage to identify lands as not suited for timber production:

- Based upon a consideration of multiple-use objectives for the alternative, the land is proposed for resource uses that preclude timber production.
- Other management objectives for the alternative limit timber production activities to the point where management requirements set forth in ***36 CFR 219.27*** cannot be met.
- The lands are not cost efficient, over the planning horizon, in meeting Forest objectives, which include timber production.

Table B–2 displays lands classified on the Kisatchie National Forest as suitable for timber production for the alternative selected as the revised Forest Plan. Table B-3 shows how these lands are allocated by management areas.

TABLE B–2, STAGE 3 — LAND CLASSIFIED AS SUITABLE FOR TIMBER PRODUCTION

Classification	Acres
Tentatively suitable forest land — from Stage 1	577,160
Land not appropriate for timber production	
Recreation sites	(6,192)
Special interest areas	(4,468)
Saline Bayou Scenic River corridor	(3,395)
Stuart Seed Production Area	(594)
Military Intensive Use Areas	(27,082)
Experimental Forest	(7,445)
Administrative sites	(163)
Active and inactive RCW cluster sites	(7,708)
RCW recruitment stands	(6,074)
Louisiana Pearlshell Mussel stands	(1,020)
State Registry Natural Areas	(1,097)
Streamside protection areas	(153,494)
Old-growth management patches (net acres)	(43,015)
Amenity DFC management	(5,409)
Miscellaneous unsuitable acres	(1,115)
Lands suitable for timber production	308,889

TABLE B–3, LANDS CLASSIFIED AS SUITABLE FOR TIMBER PRODUCTION

MANAGEMENT AREA ALLOCATION

STAGE 3: IDENTIFICATION OF SUITABLE ACRES

Management Area	Sub-management Area	Timber-suitable Acres
1	1C	25,754
3	3BL	38,963
3	3BS	33,542
3	3BM	7,742
3	3CL	3,574
3	3CS	1,621
3	3CM	1,281
5	5CL	113,476
5	5CS	10,345
5	5CM	9,470
6	6BL	23,750
6	6BS	40
7	7C	8,068
11	11DL	11,385
11	11DS	5,916
11	11DM	3,305
11	11E	10,657
Total		**308,889**

Forest Plan Budget

Appendix C

INTRODUCTION

INTRODUCTION

Management programs, practices, and uses scheduled in this revised Forest Plan are linked to a multi-year program budget proposal that identifies funds necessary to implement the Forest Plan (***FSM 1930***). The budget proposal is then used to request and allocate funds needed to carry out the planned management direction. Outputs and activities in individual years may vary significantly, depending on available funds.

Upon approval of the final budget for the Forest, the annual program of work is adjusted to the final budget and then carried out. Accomplishment of the annual program of work results in the incremental implementation of the Forest Plan management direction.

Table C–1 displays the historic (**FY99**) annual budget and the estimated average annual budget that is needed to achieve the revised Forest Plan goals and objectives during the first decade of implementation. Overall, the planned budget is approximately 33% higher than the historic budget level. Some areas, like minerals and geology management, are expected to be lower; however, most areas are expected to increase in order to fully implement the revised Plan objectives. If budget levels stay at the current or historic level, a reduction in Plan outputs can be expected.

The most significant reduction in planned accomplishments could occur in recreation construction projects (a 331% planned increase in **CNRF** from historic level), threatened and endangered (**T&E**) species habitat management (a 217% increase in **NFTE** expected costs), and heritage resource management (a 150% **NFHR** increase). If budgets stay at the current level or decrease, proportionately fewer recreation construction projects would occur; **T&E** habitat enhancement projects like prescribed burning and midstory removal would occur less often; and inventory and protection of heritage resources would not be fully implemented. Appendix A, tables A-8 and A-9, of the Plan shows the recreation areas and trails planned for the Plan period.

The timber management budget (**NFTM**) is approximately 17% higher than under the **FY99** budget. This occurs because the **FY99** timber volume output of 9.8 **MMCF** is lower than the average allowable timber sale quantity in the Revised Plan, which could be as much as 35% more (13.2 **MMCF**). If timber program budgets remain the same or decrease, less intensive forest management methods would be used or possibly deferred. This could lower overall forest productivity, slow down the rate of planned restoration, and adversely affect forest health.

ESTIMATED ANNUAL BUDGET

TABLE C–1, REVISED FOREST PLAN ESTIMATED ANNUAL BUDGET

BUDGET LINE ITEM	EBLI	Historic Budget	Revised Plan
Ecosystem planning, inventory, monitoring			
Ecosystem management	NFEM	$533,000	$ 600,000
Recreation use			
Recreation management	NFRM	463,000	826,000
Wilderness management	NFWM	33,000	46,000
Heritage resources	NFHR	80,000	200,000
Cooperative work — other	CWFS	22,000	30,000
Rangeland management			
Range management	NFRG	59,000	60,000
Range vegetation management	NFRV	70,000	140,000
Cooperative work — KV	CWKV	113,000	200,000
Wildlife and fish management			
Wildlife habitat operations and improvement	NFWL	157,000	219,000
Inland fish operations and improvement	NFIF	100,000	90,000
Threatened and endangered species operations and improvement	NFTE	167,000	529,000
Cooperative work — KV	CWKV	1,001,000	1,777,000
Cooperative work — other	CWFS	18,000	25,000
Forestland management			
Timber management	NFTM	2,052,000	2,400,000
Forest vegetation management	NFFV	445,000	426,000
Reforestation trust fund	RTRT	231,000	110,000
Cooperative work — KV	CWKV	1,117,000	1,400,000
Timber roads — purchaser election	PEPE	50,000	53,000
Timber roads — purchaser construction	PUCR	972,000	1,200,000
Timber salvage sales	SSSS	298,000	270,000
Soil, water, and air management			
Soil, water, and air operations	NFSO	59,000	65,000
Soil and water improvement	NFSI	67,000	91,000
Cooperative work — KV	CWKV	25,000	47,000
Cooperative work — other	CWFS	147,000	200,000
Minerals and geology management			
Minerals	NFMG	367,000	320,000
Land ownership management			
Lands — real estate management	NFLA	166,000	185,000
Landline location	NFLL	54,000	140,000
Construction			
Recreation construction/reconstruction	CNRF	270,000	1,165,000
Trail construction	CNTR	76,000	53,000
Roads reconstruction and construction	CNRD	806,000	940,000
Land acquisition			
Land acquisition — Land and Water Conservation Fund	LALW	19,000	50,000
Forest Service fire protection			
Forest fire pre-suppression	WFPR	813,000	875,000
Forest fuel reduction	WFHF	500,000	500,000
Infrastructure management			
Road maintenance	CNRM	749,000	811,000
Cooperative work — other	CWFS	257,000	350,000
General administration			
General administration	NFGA	995,000	1,254,000
Maintenance of facilities	NFFA	200,000	204,000
Cooperative work — KV	CWKV	428,000	760,000
Cooperative work — other	CWFS	73,000	99,000
Timber — salvage sales	SSSS	55,000	48,000
Operation and maintenance — Forest Service quarters	QMQM	21,000	20,000
Total (In 1999 Dollars)		**$14,128,000**	**$18,778,000**

Appendix D

Mineral Operations

INTRODUCTION

The purpose of Appendix D is to describe the guidance and direction for federal minerals operations on the Kisatchie National Forest. All federally-owned lands except those within the Kisatchie Hills Wilderness area are available for leasing, subject to the clauses and stipulations in the next two sections:

- Mineral operations clauses with attachments; and
- Leasing stipulations.

MINERAL OPERATIONS CLAUSES WITH ATTACHMENTS

Conditions of approval (**COA**), which provide guidance and direction to minerals operators, are determined during site-specific environmental analysis. Those **COA**s become part of the permit and are required for mineral operations that utilize lands of the Kisatchie National Forest. The Forest recommends the same types of clauses for owners and operators of the private mineral estate.

The following conditions and attachments may be used in part or in their entirety, depending on the recommendations of the authorized officer following site-specific environmental analysis. They should supplement and not duplicate conditions included in the *surface use plan of operations* (**SUPO**) or issued lease. *These conditions should be reviewed and edited to fit each specific project*.

TERMS PERTAINING TO SURFACE USE PLAN OF OPERATIONS OR FOR MINERAL OPERATIONS PERMIT

- This permit (permit also refers to **SUPO**) is subject to all valid rights and claims.
- In case of change of address or ownership, permittee (also includes the operator for **SUPO**) shall immediately notify the district ranger.
- The permittee shall comply with all applicable federal, state, and local laws, regulations, and standards and other relevant environmental laws, as well as public health and safety laws.
- The permittee shall maintain the improvements and permit area to standards of repair, orderliness, neatness, sanitation, and safety acceptable to the authorized Forest officer and consistent with other provisions of this authorization. If requested, the holder shall comply with inspection requirements deemed appropriate by the authorized officer.
- The permittee has a continuing responsibility to identify all hazardous conditions on the permit area which would affect the improvements, resources, or pose a risk of injury to individuals. Any non-emergency actions to abate such hazards shall be performed after consultation with the authorized officer. In emergency situations, the permittee shall notify the authorized officer of its actions as soon as possible, but not more than 48 hours, after such actions have been taken.
- The permittee shall be responsible for the prevention and control of soil erosion or other resource damage on the area covered by this permit and lands adjacent thereto, and shall provide preventive measures as required by specifications attached to and made a part of this permit.
- No waste or by-products shall be discharged containing any substances in concentrations which may result in significant harm to fish and wildlife, or to human water supplies. Storage facilities for mate-

MINERAL OPERATIONS CLAUSES WITH ATTACHMENTS

ATTACHMENT #1

rials capable of causing water pollution, if accidentally discharged, shall be located so as to prevent any spillage into waters, or to channels leading into water, that would result in significant harm to fish and wildlife or to human water supplies.

- The permittee shall protect the scenic esthetic values of the area under this permit, and the adjacent land, associated with the authorized use, during construction, operation and maintenance of the improvements.

- All access roads will be built on locations and to specifications approved in advance of construction by the Forest officer in charge.

- The authorized operation may be temporarily suspended due to excessively wet soil conditions when unacceptable resource damage is anticipated or occurring as determined by the authorized officer.

- No member or delegate of Congress shall be admitted to any share or part of this agreement or to any benefit that may arise here from unless it is made with a corporation for its general benefit. This does not apply to outstanding minerals.

- The permittee shall fully and currently repair all damage other than ordinary wear and tear to national forest roads and trails caused by the permittee in the exercise of the privilege granted by this permit.

- Pipeline rights-of-way will be authorized by a special-use permit. Conditions of use, including restoration and abandonment, will be included in the permit. There will be no charge for occupancy on the leasehold interest.

- Activities located in an area that has the potential to contain live ordnance due to its past usage as a military training site will require clearing prior to implementing any activity. Ordnance avoidance or decontamination will be done in accordance with the recommendation of the U.S. Army Corps of Engineers.

- The heritage resource report and **LA SHPO** concurrence are on file; however, prior to or during excavation work, items of archeological, paleontological, or historic value are reported or discovered, or an unknown deposit of such items is disturbed, the permittee will immediately cease excavation in the area so affected. The holder will then notify the Forest Service and will not resume work until written approval is given by the authorized officer.

ATTACHMENT #1

Resource protection plan for oil and gas drilling, production, and storage sites

The permittee or an authorized representative of the permittee will:

- Immediately after site construction and as needed throughout the life of the authorization, install or construct erosion devices where appropriate. Also revegetate those disturbed areas which will not sustain traffic (see also attachment #3). The following will be accomplished as directed by the overseeing Forest officer:
  - Sediment dams in gullies, etc.
  - Contour terraces on areas which exceed three percent gradient.
  - Diversion terraces if the potential exists for heavy water flow onto or across the site.
  - Erosion control blankets on all cut or fill slopes that cannot be shaped to a 3:1 gradient or less.
  - Fences around treated areas on sensitive soils until new vegetation is firmly established.

- Locate the well site on the most level upland location that will accommodate the intended use, away from drainages and riparian areas. Site layout will be oriented to conform to the best topographic situation given the geologic target and any safety considerations. The site will be staked and reviewed to determine its compliance with environmental analysis documentation. Any timber cutting will be done in accordance with and under the direction of the district ranger.

- Prior to drilling associated water well(s), the operator will provide the district ranger

MINERAL OPERATIONS CLAUSES WITH ATTACHMENTS

ATTACHMENT #1

with the appropriate approved State permits authorizing such a well(s).

- Notify the district ranger at least five working days in advance of all work which will result in surface disturbance for a predrill inspection.

- Obtain the district ranger's approval for any changes in a permitted site plan which would result in additional surface disturbance.

- Notify any subcontractors of required permits for activity not covered under the terms and conditions of this permit.

- Confine all surface-disturbing activities to the project areas as shown on the site plans and designated on the ground.

- Fencing the entire drilling site will be required. The permittee may choose the type of fencing, but the design and material must be approved by the Forest officer. Fencing will be done as soon as site preparation is completed (trees removed) and will remain in place until pits are constructed and reclamation is completed in compliance with the restoration plan.

- As specified in attachment #3, stockpile the surface soil from the entire area to be disturbed in approved locations. Also, soil stockpiles should be leveled or rounded on top and smoothed on the sides to 3:1 slope and vegetated as specified.

- Brush, slash, and other debris may be burned if authorized by Forest officer, or otherwise will be disposed of as directed. See attachment #6. Burning will follow all applicable Forest Service, Louisiana Office of Forestry, and State of Louisiana air quality regulations and procedures. See attachment #7. Stumps and woody material will not be buried in pits or fill areas.

- Prior to the commencement of the drilling operations, the method of disposal of the drilling fluids and cuttings must be approved by the authorized officer.

- The Forest Service recommends a fully containerized (closed) drilling system.

- Construct mud pits so that they will not leak, break, or allow any discharge of liquids. The need for lining production pits and other types of pits with either an impervious clay material or an artificial liner will be determined by the Forest officer. If a liner is required, it will be installed along the bottom and sides of pits and be equivalent to 3 continuous feet of recompacted or natural clay having a hydraulic conductivity no greater than 1 x 10–7cm / sec. Such liners include:

  • Natural liner
  • Soil mixture liner
  • Recompacted clay liner
  • Manufactured liners
  • Combination liners

  Minimum specifications for an artificial pit liner are: tensile grab strength (warp) of 150 pounds and mullen burst strength of 300 pounds. All seams must be heat treated.

  Pits are not to be located in stream channels. At least 50 percent of the pit should be constructed in an excavation (cut) of the pad site. Pit walls shall be smoothed and keyed. Side slopes shall not exceed 3:1. Outside pit walls shall be vegetated.

- A central collection tank made of impervious material will be located in an area to catch contaminates before overflow into pits. This collection tank will be pumped routinely to prevent overflow and contents disposed of according to Statewide Order 29-B.

- Protect pits from surface waters by levees or walls and by drainage ditches, where needed, and no siphons or openings will be placed in or over levees or walls that would permit escaping of contents so as to cause pollution or contamination.

- After drilling operations cease:

  • The disposal of fluids and cuttings will be accomplished within 30 days of completion of the drilling operations.

  • Materials may be pumped back down hole only after proper approval from the Louisiana Office of Conservation or Bureau of Land Management (BLM), as applicable,

MINERAL OPERATIONS CLAUSES WITH ATTACHMENTS

ATTACHMENT #1

ATTACHMENT #2

has been presented to the Forest Service. Pit sludge and cuttings may be buried on site in the existing pit only if an independent laboratory has tested the material and provided the Forest Service with proof that all Federal and State waste disposal requirements are met. If burial is allowed, only existing pits may be utilized. If burial is not allowed, all drilling sludge and cuttings will be removed and appropriately disposed of. If man-made pit liners are used they will be removed from the pit and disposed of off of national forest.

• Pits will be backfilled when dry; and site smoothed and recontoured as near as practicable to the original topography, with stockpiled topsoil respread evenly. Pits will remain fenced until backfilled unless fencing is needed to protect from cattle or off-road vehicle use. The authorized officer will notify the operator when fencing may be removed, usually after 2 growing seasons or when 70 percent coverage is achieved, as per attachment #3.

- Pit closure — Pits will be closed in accordance with Louisiana Office of Conservation Statewide Order No. 29-B, Section 129.B.6 (a–c).

- Follow these sanitation guidelines:

  • All litter and garbage deposited on and off the site as a result of this project will be kept in a container and disposed of as necessary.

  • Portable toilets will be used, and waste will be hauled to an approved disposal facility.

  • In lieu of portables, flush toilets such as those in trailers used for office space or crew quarters may be used — when connected to a closed sewage system. Tanks will be pumped prior to reaching system capacity. Wastes will be hauled to an approved disposal facility.

- Coordinate the proposed site surfacing (boards or gravel) with the Forest officer in the planning phase. No changes should be made without approval of the Forest officer.

- Remove all surfacing material (gravel) from the areas not needed for production operations; revegetate those areas according to attachment #3. This will be done within 30 days unless directed by the Forest officer.

- Within 90 days of termination of oil or gas production, or plugging of the well, remove the wellhead control device and appurtenances, unless permittee has approval from the BLM not to remove them. Remove gravel or other surfacing, recontour the site and revegetate according to attachment #3.

- If the activity authorized by this permit is, or may later be found to be within the watershed of the Louisiana pearlshell mussel, then by acceptance of this permit the permittee agrees to further conditions for protection from oil and gas activities within the pearlshell watershed. All activities within the watershed need prior approval by the Forest Service and concurrence by U.S. Fish & Wildlife Service.

ATTACHMENT #2

Road and pad management

Permittees agree to the following provisions:

- Construction and surfacing requirements for road access to the project areas will be as stated in the specifications of the environmental assessment, shown as typical section drawings.

- Roads and pads will be adequately maintained during the life of the authorization. This maintenance shall include blading and shaping to smooth surfaces and pull surfacing material back onto roadway, resurfacing, spot graveling, ditch work, and culvert repair or additional work as specified. This work shall be conducted as needed or as directed by the Forest officer.

- Except for the driving surface, the road right-of-way will be revegetated according to attachment #3.

- The road may be left and maintained for the operation of a producing well or for the use of the Forest Service at the district ranger's discretion.

- Upon termination of operations, if the district ranger wants the road closed, the permittee or his authorized representative will:

  • Remove all surfacing, bridging and water-handling materials and unless otherwise authorized by the district ranger, remove from national forest land.

  • Recontour the abandoned roadway as nearly as practical to original condition.

  • Revegetate the abandoned roadway according to attachment #3.

- Use of roads other than those constructed by the permittee may be subject to additional requirements. Inquiry will be made to the Forest officer prior to use of preexisting roads. On all Vernon Unit of the Calcasieu District **COAs**, replace the above condition with the following:
  • Use of Forest development roads (**FDR**) other than those constructed by the permittee for site access requires separate Forest Service authorization in the form of a *road use permit*.
  • Additionally, proposed use of any **FDR** within the area permitted to the U.S. Army for intensive use on the Vernon Unit of the Calcasieu District (including Lookout Road, **FDR 405**) will require a separate *joint use road agreement* mutually acceptable to the permittee, the U.S. Army, and the Forest Service. This agreement will serve to assign road improvement and maintenance responsibilities, schedule road work activities, assign appropriate financial obligations and specify cost sharing or recovery methods. The agreement will also designate a process to handle conflict resolution in a timely manner.
  • Prior to planned use, the permittee should contact the district ranger for information on obtaining the *road use permit*. If needed, the Forest Service will facilitate a meeting with the permittee and Army to develop the *joint road use agreement*.

ATTACHMENT #3

Restoration of disturbed areas

The permittee agrees to the following provisions:

A permanent vegetation cover will be established on all disturbed areas where bare mineral soil is exposed. The following are procedures recommended and commonly used to accomplish this reclamation.

Except for those areas needed for access and / or production, areas where soil has been disturbed shall not ordinarily be left unseeded for more than 30 days. If it is anticipated the area will be left exposed for a longer period, seeding should occur immediately — before 30 days have elapsed. Seeding areas include cut and fill slopes, all ditches, shoulders, and any other areas exposed by the project. Sites such as pit walls and topsoil stockpiles, that will be exposed only one fall growing season, will be seeded to a rye grass and wheat mixture at the rates shown below under *seed species, rate, and season*.

- *Stockpile soil* — During initial clearing for the project, the topsoil (to a depth determined by the Forest officer at the predrill meeting) from the site will be removed and stockpiled for later use in restoration. Remove woody material prior to stockpiling soil. See attachment #1 for additional instructions.

- *Waterbars and terraces* — During occupancy and restoration, slopes or gradients 3 percent or greater will require waterbars and / or terraces to be constructed and maintained. The Forest officer will instruct where these structures will be placed.

- *Baled hay and silt fence for erosion control* — Temporary erosion, sediment, and water pollution control measures will be required as described in the attached specifications.

- *Seedbed preparation* — After returning the site to its original contour and forming any needed terraces, spread stockpiled soil evenly over the site, till the surface to produce about 2 to 5 inches of loose soil, fertilize as in item 5 below and

MINERAL OPERATIONS CLAUSES WITH ATTACHMENTS

ATTACHMENT #3

ATTACHMENT #4

sow the recommended seed mixture on the freshly prepared soil bed. Rip subsoil on pads and roads prior to spreading topsoil as directed by the Forest officer.

- *Fertilization rates* — Fertilize all disturbed areas at the following rate: 13-13-13 complete fertilizer, to be applied uniformly at 500 pounds per acre.

- *Seed species, rate, and seasons* — Use mixtures of at least two grasses and one legume. Heavier rates can be used. It is always cheaper to plant more seed than to have to replant. These are minimum rates. In case of seeding failure, the permittee will reseed following the same recommendations.

March 1 – June 30:
Hulled bermuda, 10 lbs / acre
Pensacola bahia, 40 lbs / acre
Common lespedeza, 6 lbs / acre
Kaufmans' wildlife mix, 50 lbs / acre

July 1 – August 31:
Hulled bermuda, 15 lbs / acre
Pensacola bahia, 35 lbs / acre
Brown top millet, 20 lbs / acre

September 1 – January 31:
Unhulled bermuda, 10 lbs / acre
Pensacola bahia, 30 lbs / acre
Subterranean clover, 25 lbs / acre
Annuals —
Elbon rye, 20 lbs / acre *or*
Winter wheat, 20 lbs / acre
Crimson clover, 10 lbs / acre

And, yearlong, a minimum of one of the following native species:
Little bluestem, 8 lbs / acre
Big bluestem, 8 lbs / acre
Switch grass, 8 lbs / acre
Partridge pea, 10 lbs / acre
Round head lespedeza, 10 lbs / acre

- *Harrowing* — After fertilizing and seeding as recommended above, drag-harrow lightly, taking care not to cover seed too deeply. About 1/4 inch of soil should cover the seed.

  Seeding must be repeated if necessary until success in establishing cover is achieved.

- *Mulching* — The use of hay, straw, or commercial mulch will be necessary when slopes exceed 3 percent. These areas should be covered with 1-1/2 to 2-1/2 tons per acre of mulch. Mulch will be applied to the entire area during periods of drought (normally June 15–Oct. 1). Mulch should be tied down with woven nets, asphalt tackifier, synthetics, or disked lightly into the soil. Erosion control blankets will be used on cut or fill slopes which cannot be shaped to a 3:1 gradient or less.

  The utilization of appropriate machinery usually results in considerable savings and produces a more uniform job.

- Reclamation may be approved not earlier than one year following the successful establishment of vegetative cover. Vegetative cover over at least 70 percent of the entire disturbed area will be considered successful establishment, if no gullies or other erosion related problems exist. All drilling / production related equipment or rubbish must be removed prior to Forest Service acceptance of the site as restored.

- The permittee is responsible for successful restoration regardless of weather or other natural factors.

- Performance bonds (if applicable) will not be released until satisfactory reclamation is complete.

ATTACHMENT #4

Reports

The permittee agrees to the following provisions:

- Upon completion of pit / pipeline closure testing, permittee will send the district ranger copies of test results required by Louisiana Department of Natural Resources Office of Conservation Order 29-B.

- A copy of any or all permits required by the Louisiana Department of Natural Resources will be given to the district ranger.

- Produced water disposal information shall be provided to the district ranger. This information will include disposal location, route, and amount of water disposal

traffic on national forest roads or lands.

- The permittee shall provide a *spill prevention control and countermeasure plan* or similar document which conforms to the requirements of ***40 CFR 112***.

ATTACHMENT #5

Standards for oil and gas production facilities on the Kisatchie National Forest

The permittee agrees to the following:

- Petroleum product and water storage tanks will be placed on level ground and surrounded by a dike capable of holding 1-**1/2** times the volume of the largest tank. A sump shall be installed inside the dike and routinely pumped to prevent overflow.

- Tanks will be placed on a stable, solid foundation six inches or more in height to insure that they remain clear of standing water. The foundation will be designed so that it will not subside and cause the tanks to sink or lean. Trenching within diked areas will not be allowed.

- Dikes will not be dug from a level surface. Instead, a level surface will be used as a base with the dike built upon that. The dike core will be of clay or other similarly impermeable material. The top of the dike will be level and maintained so that it does not become beaten down at any point. The top of the dike should be a minimum of 18 inches in width and side slopes of no greater than 3:1. It is recommended that the sides and top of all dikes be covered with a thick plastic sheet and washed gravel on top of the plastic. This will help prevent erosion and sloughing of dike material. Also, this will help solve the problem of vegetation growth and fire hazards; spraying or mowing should not be necessary. Dikes must be constructed before any liquid is stored in the tanks.

- Any liquids collected within dikes, including liquids that may be rainwater, will not be drained off the site (outside dike area). Drains will not be installed. Liquids will be removed by vacuum truck to an approved disposal or injection facility.

- All lines used to drain oil or salt water will have well-maintained and sealed valves to prevent leaks and vandalism. Load-out valves shall be located within dike area.

- Only that amount of the site that is needed to contain production facilities, a reasonable adjacent work area, and the access road will be occupied. The remaining authorized area will be restored as per attachment #3. Guy wires left on site for work-over rigging will be well-marked.

- A fence is required to exclude casual foot traffic and cattle. It will enclose all surface production equipment. Its location will be approved by the Forest officer. Construction standards will be to specifications supplied by the Forest officer. These specifications, as a minimum, include safety signs and fencing. Forest Service requirements for signing gates will be met.

- On-site equipment will be kept well maintained, neatly arranged, and painted where appropriate. It is the intent that a neat, orderly appearance is presented. Facilities will be painted to blend into the surrounding environment; specific painting requirements will be determined by the authorized Forest officer.

- Pesticides, including herbicides, may not be used to control undesirable woody and herbaceous vegetation, aquatic plants, insects, rodents, or trash fish without prior written approval of the Forest officer. A request for approval of planned uses and schedule of applications of pesticides will be submitted annually by the permittee. Exceptions to this schedule may be allowed only when unexpected outbreaks of pest require control measures which were not anticipated at the time the annual report was submitted / required. At that time an emergency request and approval may be made.

  Only those materials registered by the U.S. Environmental Protection Agency for the specific purpose planned will be considered for use on national forest land. Label instructions will be strictly followed in the application of pesticides and disposal of excess materials and containers.

MINERAL OPERATIONS CLAUSES WITH ATTACHMENTS

ATTACHMENT #4

ATTACHMENT #5

MINERAL OPERATIONS CLAUSES WITH ATTACHMENTS

ATTACHMENT #5

ATTACHMENT #6

- Any chemicals stored on site will have prominent labeling and stored off the ground out of direct sunlight.

- As required by on-site conditions, measures will be taken to prevent soil erosion. Erosion control specifications are shown in attachment #3.

- Site access roads will be gated only upon the approval of the Forest officer. Gate specifications must also be approved by the Forest officer. Gates shall be signed and comply with the *Manual of Uniform Traffic Control Devices* (MUTCD).

- Signs restricting public access will be placed only with the approval of the district ranger. All signs will be removed by the permittee at the conclusion of operations.

- Upon a spill occurrence, the permittee shall take immediate containment and cleanup action and notify the Forest officer at the earliest opportunity — not more than 48 hours. The plan shall include all pipelines.

- Upon plugging and abandonment of the well bore, the casing will be cut off below ground level as per LDOC and BLM specifications.

- All nonessential equipment for the production facility will be removed from national forest land within 30 days of being excess.

ATTACHMENT #6

Threatened and endangered species management and protection

If the facility authorized by this permit is, or later may be found to be, within 1/4 mile of a Red-cockaded Woodpecker (RCW) cluster site or recruitment stand, then by acceptance of this permit the permittee agrees to cut no trees for maintenance or improvement without the specific advance authorization of the Forest officer. In cases where proposed cutting of the trees may conflict with the *Final Environmental Impact Statement for the Management of the Red-Cockaded Woodpecker and Its Habitat in the Southern Region* or a plan for RCW management and recovery, the Forest officer may deny the request to cut trees.

The permittee may be required to trench, bore, or directionally drill pipelines under or near RCW cavity trees and / or within RCW cluster sites to prevent or minimize damage to the root systems of cavity trees when laying pipelines on a case-by-case basis, as deemed appropriate by the Forest officer, with U.S. Fish & Wildlife Service (USFWS) concurrence.

The permittee agrees to the following for impacts within the *habitat management area* (HMA) for the Red-cockaded Woodpecker (RCW):

Note — Use only the provisions that apply to the project. Implementation of the identified provisions will not necessarily result in a "no adverse affect" to the species, and consultation with the USFWS should be initiated in those instances.

- For every well site constructed within 1.5 miles of an active RCW cluster site in current suitable habitat of 25 years or older pine or pine / hardwood, the permittee shall provide for 3 improved (10 acres of hardwood understory and midstory removal and 4 artificial cavity inserts each) recruitment stands or cluster sites, of suitable habitat, at location determined by the Forest Service.

- For every well site within 1.5 miles of an active RCW cluster site in 0–25 year-old pine or pine / hardwood, the permittee shall provide for 1 improved site (10 acres midstory removal and 4 inserts).

- For every well site constructed beyond 1.5 miles from an active RCW cluster site with suitable habitat, the permittee shall provide for one improved recruitment stand or cluster site at a location determined by the Forest Service.

- For every 5 acres of pine or pine / hardwood of suitable habitat removed for production facilities within 1.5 miles of an active RCW cluster site of suitable habitat, the permittee shall provide for 3 improved recruitment stands or cluster sites at locations determined by the Forest Service.

- For every 5 acres of pine or pine / hardwoods of suitable habitat, removed for production facilities outside 1.5 miles of an active RCW cluster site, the permittee

shall provide for one improved recruitment stand or cluster site at location determined by the Forest Service.

- For every 5 acres of suitable pine or pine / hardwood habitat removed for pipelines or transmission lines within an **HMA**, a permittee shall provide for one improved recruitment stand or cluster site at location determined by the Forest Service.

- If it is determined not to adversely affect **RCWS** and the road is pre-existing, then for every active cluster site in which drilling activity vehicles will have to travel through during nesting season (March 1 through July 31), 4 artificial cavity inserts, away from the road, shall be provided for by the permittee.

- Three times annually, permittee shall provide for monitoring of all active sites within **1/2** mile of drilling activities, and monitoring of all sites improved by permittee funding. This will be done during nesting season (mid-April through mid-June), fall (Sept. through Nov.), and late winter (Feb. through March); and will begin on active sites during the monitoring period following drilling activity. On improved sites it will begin during the monitoring period following improvement of the sites. Monitoring will continue on all sites for three years following completion of construction. The permittee shall provide annual monitoring results to the Forest Service.

- If well sites are located within **1/4** mile of an active cluster site, the permittee shall provide for augmentation of 3 improved sites with a pair of **RCWs** (male and female).

- It is the responsibility of the permittee to provide for the establishment of these improved sites within 30 days following initiation of site construction. This can be accomplished by permittee providing cooperative funds to the Forest Service to accomplish the work, or by permittee accomplishing improvement work. If permittee performs work, the Forest Service will provide permittee with improvement location within 30 days of construction initiation, and improvement work will begin 30 days following Forest Service providing improvement locations. Work will meet Forest Service specifications.

- The Forest Service will have the option to request funding for dormant season burning and / or growing season burning to improve habitat for the **RCW** in lieu of improved or augmented sites. With this option, the permittee shall provide funding for 250 acres of dormant season burning or 50 acres of growing season burning for every improved site required.

- If the activity authorized by the permit is or may later be found to be within the watershed of the Louisiana pearlshell mussel, all activities within the watershed need prior approval by the Forest Service and concurrence by the U.S. Fish & Wildlife Service.

ATTACHMENT #7

Fire protection or other hazard plan

The permittee agrees to the following provisions:

- Obtain district ranger's permission prior to any burning activity.

- Comply with Louisiana State fire laws.

- All vehicles used on the construction sites will be equipped with a fire extinguisher.

- All gasoline- and diesel-powered equipment must have Forest Service approved spark arrestors/mufflers.

- Take all reasonable action to prevent and suppress forest fires and require all employees to do likewise.

- Pay for the cost of suppressing forest fires and damages to government property caused by fires resulting from acts of the permittee, his subcontractors, operators, or his employees.

- Notify the district ranger in case of fire and take immediate action to control the fire. The district ranger will provide the permittee with phone numbers where fires shall be reported.

- It is the permittee's responsibility to notify the district ranger when flaring of the formation gas is to begin. Prior to flaring, the permittee must have approval from

MINERAL OPERATIONS CLAUSES WITH ATTACHMENTS

ATTACHMENT #7

State or BLM as appropriate.

- Maintain a fuel break by mowing around all production equipment to reduce fire danger during the months from May through September.

ATTACHMENT #8

- A list of chemicals (including MSOS sheets) on site will be provided to the district ranger's office for emergency response planning.

- If H_2S is encountered during the drilling process, the Forest Service must be notified within 12 hours. If the operator is drilling into a zone known to contain H_2S, a safety plan must be prepared and attached to the permit. This plan should identify safety equipment to be maintained on site, how the area will be posted, emergency procedures, and a secondary exit in case of an emergency.

  All H_2S wells will be fenced and posted accordingly. These wells will be monitored according to the level of H_2S being emitted.

ATTACHMENT #8

Conditions of use for
pipeline authorization, operation,
maintenance, and abandonment

*Use this attachment **only** when the pipelines are being authorized as part of the APD.*

- **Liability** — The holder shall be liable for all injury, loss, or damage, indirectly or directly resulting from or caused by the holder's use and occupancy of the area covered by this authorization, regardless of whether the holder is negligent, provided that the maximum liability without fault shall not exceed $1 million for any one occurrence. Payment of damages for occurrence where there is liability without fault (strict liability) does not limit the holder's liability for damages in excess of $1 million where actual negligence is shown or imputed. Liability for injury, loss, or damage in excess of the specified maximum, shall be determined by the laws governing ordinary negligence.

- **Indemnification** — The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of national forest lands under this permit.

- **Risks and hazards** — Avalanches, rising waters, high winds, falling limbs or trees, and other hazards are natural phenomena in the Forest that present risks which the holder assumes. The holder has responsibility of inspecting the site, lot, right-of-way, an immediate adjoining area for dangerous trees, hanging limbs, and other evidence of hazardous conditions and, after securing permission from the Forest Service, of removing such hazards.

- **Construction safety** — The holder shall carry on all operations in a skillful manner, having due regard for the safety of employees; and shall safeguard with fences, barriers, fills, covers, or other effective devices, pits, cuts, and other excavations which otherwise would unduly imperil the life, safety, or property of other persons.

- **Width of ROW** — The width of the right-of-way is limited to _____ feet plus the ground occupied by the pipeline.

- **Standards and practices** — All designs, materials, and construction, operation, maintenance, and termination practices employed in connection with this use shall be in accordance with safe and proven engineering practices and shall meet or exceed the following standards:

  1. U.S.A. Standard Code for Pressure Piping, ANSI B 31.4, "Liquid Petroleum Transportation Piping System".[1/]

  2. Department of Transportation Regulations, *49 CFR, Part 195*, "Transportation of Hazardous Liquids by Pipeline".[1/]

  3. Department of Transportation Regulations, *49 CFR, Part 192*, "Transportation of Natural and Other Gas by Pipelines: Minimum Federal Safety Standards".[2/]

[1/] Not applicable to gas pipelines.
[2/] Not applicable to oil pipelines.

MINERAL OPERATIONS CLAUSES WITH ATTACHMENTS

ATTACHMENT #8

- **Oil, gas & related material pipeline standards** — Related mechanical facilities such as pumps, pump stations, and tanks shall be designed, constructed, operated and maintained in accordance with safe and proven engineering practice, and meet or exceed recognized engineering standards for the type of facility.

- **Survey, land corners** — The holder shall protect, in place, all public land survey monuments, private property corners, and Forest boundary markers. In the event that any such land markers or monuments are destroyed in the exercise of the privileges authorized by this permit, depending on the type of monument destroyed, the holder shall see that they are reestablished or referenced in accordance with (1) the procedures outlined in the *Manual of Instructions for the Survey of the Public Land of the United States*, (2) the specifications of the county surveyor, or (3) the specifications of the Forest Service.

  Further, the holder shall cause such official survey records as are affected to be amended as provided by law. Nothing in this clause shall relieve the holder's liability for the willful destruction or modification of any Government survey marker as provided at ***18 U.S.C. 1858***.

- **Pipeline drilling and boring** — Pipelines will be drilled or bored from a distance of at least 50 feet from the stream channel and exit at least 50 feet from the opposite side of the channel. The pipeline will be installed at least 5 feet beneath the channel bottom. The Forest Service will determine whether the drilling or boring method will be used. If water is not flowing in the stream channel during the time of construction the Forest Service may authorize installation of the pipeline by trenching. The agency considers any natural drainage with a defined scour channel to be a stream. All streams are to be protected by a streamside habitat management zone which extends at least 50 to 150 feet on either side of the stream channel. Any clearing or soil disturbance within the streamside habitat management zone will be kept to the absolute minimum necessary to install the pipeline. No clearing or soil disturbance within the streamside habitat management zone will be allowed within 50 feet of either side of the channel when boring or drilling is employed to install the pipeline.

- **Revegetation, surface restoration of ground cover** — The holder shall be responsible for the prevention and control of soil erosion and gullying on lands covered by this permit and adjacent thereto, resulting from construction, operation, maintenance, and termination of the permitted use. Holder shall so construct permitted improvements to avoid the accumulation of excessive heads of water and to avoid encroachment on streams. Holder shall revegetate or otherwise stabilize all ground where the soil has been exposed and shall construct and maintain necessary preventive measures to supplement the vegetation as indicated in Attachment #3 and as directed by the Forest Service.

- **Pesticide use** — Pesticides may not be used to control undesirable woody and herbaceous vegetation, aquatic plants, insects, rodents, trash fish, etc., without the prior written approval of the Forest Service. A request for approval of planned uses of pesticides will be submitted annually by the holder on the due date established by the authorized officer. The report will cover a 12-month period of planned use beginning 3 months after the reporting date. Information essential for review will be provided in the form specified. Exceptions to this schedule may be allowed, subject to emergency request and approval, only when unexpected outbreaks of pests require control measures which were not anticipated at the time the annual report was submitted.

  Only those materials registered by the U. S. Environmental Protection Agency for the specific purpose planned will be considered for use on national forest lands. Label instructions will be strictly followed in the application of pesticides and disposal of excess materials and containers.

- **Subsistence, local residents** — The holder shall use care not to damage any fish, wildlife, or biotic resources in the general area of the right-of-way upon which persons living in the area rely for subsistence purposes; and the holder will comply promptly with all requirements and or-

MINERAL OPERATIONS CLAUSES WITH ATTACHMENTS

ATTACHMENT #8

ders of the authorized officer to protect the interests of such persons.

- **Resource management plan** — The holder shall join the Forest Service in preparing a resource management plan which will be attached hereto and made a part hereof. Holder agrees to perform all of the acts and practices of land management specified therein. The aforesaid plan shall be reviewed periodically, as determined by the authorized officer.

- **Crude oil pipelines** — Any domestically produced crude oil transported by the permitted pipeline except such crude oil which is either exchanged in similar quantity for convenience or increased efficiency of transportation with persons or the government of an adjacent foreign state, or which is temporarily exported for convenience or increased efficiency of transportation across parts of an adjacent foreign state and reenters the United States, shall be subject to all of the limitations and licensing requirements of the Export Administration Act of 1969 (***Act of December 30, 1969; 83 Stat. 841***) and, in addition, before any crude oil subject to this section may be exported under the limitation and licensing requirements and penalty and enforcement provisions of the Export Administration Act, the President must make and publish and express finding that such exports will not diminish the total quantity or quality of petroleum available to the United States and are in the national interest and are in accord with the provisions of the Export Administration Act.

- **Common-carrier operation** — Pipelines and related facilities authorized herein, shall be constructed, operated, and maintained as common carriers. The holder shall accept, convey, transport, or purchase without discrimination, all oil or gas delivered to the pipeline without regard to whether the oil or gas was produced from federal lands or non-federal lands. In the case of oil or gas produced from federal lands or from resources on the federal lands in the vicinity of the pipeline. The Secretary of the Interior may, after a full hearing with due notice thereof to the interested parties and a proper finding of facts, determine the proportionate amounts to be accepted, conveyed, transported, or purchased. Provided, that this stipulation shall not apply to any natural gas pipeline operated by any person subject to regulation under the Natural Gas Act or by any public utility subject to regulation by a state or municipal regulatory agency having jurisdiction to regulate the rates and charges for the sale of natural gas to consumers within the state or municipality. Where natural gas is not subject to state regulatory or conservation laws governing its purchase by pipelines is offered for, each such pipeline shall purchase without discrimination, any such natural gas produced in the vicinity of the pipeline.

- **Implied permission** — Nothing in this permit shall be construed to imply permission to build or maintain any structure not specifically named on the face of this permit, or approved by the authorized officer in the form of a new permit or permit amendment.

- **Area access** — The holder agrees to permit the free and unrestricted access to and upon the premises at all times for all lawful and proper purposes not inconsistent with the intent of the permit or with the reasonable exercise and enjoyment by the holder of the privileges thereof.

- **Improvement relocation** — This permit is granted with the express understanding that should future location of United States Government improvements or road rights-of-way require the relocation of the holder's improvements, such relocation will be done by, and at the expense of, the holder within a reasonable time as specified by the authorized officer.

  Note: *Use **only one** X-45 or X-46 either / or R8X-46.*

- **Partnership representative** — (X-45) The holder shall furnish the authorized officer:

  • A copy of the articles of a resolution of the partners specifically authorizing one or more of the partners to represent the permit holder in dealings with the Forest Service if not specified in the articles or partnership.

• A list containing the name and address of each partner.

Corporation status notification — (X-46) The following condition shall be included in all special-use authorizations issued to corporations.

• The holder shall notify the authorized officer within 15 days of the following changes:

- Names of officers appointed or terminated.
- Names of stockholders who acquire stock shares causing their ownership to exceed 50 percent of shares issued or who otherwise acquire controlling interest in the corporation.

• The holder shall furnish the authorized officer:

- A copy of the articles of incorporation and bylaws.
- An authenticated copy of a resolution of the board of directors specifically authorizing a certain individual or individuals to represent the holder in dealing with the Forest Service.
- A list of officers and directors of the corporation and their addresses.

• The corporation will also furnish the authorized officer with names and addresses of shareholders owning three percent or more of the shares, and number and percentage of any class of voting shares of the entity which such shareholder is authorized to vote. (***36 CFR 251.54 (e)(1)(iv)***).

• The authorized officer may, when necessary, require the holder to furnish additional information as set forth in ***36 CFR 251.54 (e)(1)(iv)***.

Corporate status notification — (R8 X-46) Holder shall provide sufficient information so that the authorized officer will know the true identity of the corporation. Upon request by the authorized officer, the Holder will furnish additional information as set forth under ***36 CFR 251.54 (e)(1)(IV)***. A certified copy of either the minutes of the board, or the pertinent excerpts from the corporate resolutions authorizing the corporate official designated to handle its affairs with the Forest Service will be furnished the authorized officer.

Nonexclusive use — This permit is not exclusive; that is, the Forest Service reserves the right to use or permit others to use any part of the permitted area for any purpose, provided such use does not interfere with the rights and privileges hereby authorized.

Disputes — Appeal of any provisions of this authorization or any requirements thereof shall be subject to the appeal regulations at ***36 CFR 251, Subpart C*** (54 FR 3362, January 23, 1989), or revisions thereto.

Protection of road facilities — Authorized improvements shall be placed no closer than 10 feet from an existing road structure (bridge, culvert, etc.) or buried at a sufficient depth, so as not to interfere with the replacement and/or maintenance of said structure.

Environmental standards — Holder shall conduct all activities associated with the pipeline in a manner that will avoid or minimize degradation of air, land, and water quality. In the construction, operation, maintenance, and termination of the pipeline, holder shall perform its activities in accordance with applicable air and water quality standards, related facility siting standards, and related plans of implementation, including but not limited to standards adopted pursuant to the Clean Air Act, as amended (***42 USC 1857***) and the Federal Water Pollution Control Act, as amended (***33 USC 1321***).

Purge and test all associated pipelines along with the closure of the well site. Testing requirements of the associated pipelines will be required to meet the same stated above, in *crude oil pipelines* (section 129.B.6.c.1-5. LOC). Copies of test results are to be presented to the Forest Service as proof that all federal and State waste disposal requirements are met. The Forest officer will determine if the lines will be allowed to remain buried as a disposal method.

EXHIBIT D–1
NOTICE TO LESSEE

Provisions of the Mineral Leasing Act (MLA) of 1920, as amended by the Federal Coal Leasing Amendments of 1976, affect an entity's qualifications to obtain an oil and gas lease. Sections 2(a)(2)(A) of the MLA, 30 U.S.C. 201(a)(2)(A), requires that any entity that holds and has held a federal coal lease for 10 years beginning on or after August 4, 1976, and who is not producing coal in commercial quantities from each such lease, cannot qualify for the issuance of any other mineral lease granted under the MLA. Compliance by coal lessees with Section 2(a)(2)(A) is explained in *43 CFR 3472*.

In accordance with the terms of this oil and gas lease with respect to compliance by the initial lessee with qualifications concerning federal coal lease holdings, all assignees and transferees are hereby notified that this oil and gas lease is subject cancellation if: (1) the initial lessee as assignor or as transferor has falsely certified compliance with Section 2(a)(2)(A), or (2) because of a denial or disapproval by a State Office of a pending coal action, i.e., arms-length assignment, relinquishment, or logical mining unit, the initial lessee as assignor or as transferor is no longer in compliance with Section 2(a)(2)(A). The assignee, sublessee or transferee does not qualify as a bona fide purchaser and, thus, has no rights to bona fide purchaser protection in the event of cancellation of this lease due to noncompliance with Section 2(a)(2)(A).

Information regarding assignor, sublessor or transferor compliance with Section 2(a)(2)(A) is contained in the lease case file as well as in other Bureau of Land Management records available through the state office issuing this lease.

LEASING STIPULATIONS

Examples of leasing stipulations and lease notices used consistently on the Kisatchie National Forest are illustrated in exhibits D–1 to D–7. A *controlled surface use* (**CSU**) stipulation in a lease is used when fluid mineral occupancy and use are generally allowed on all or portions of the lease area year-round, but because of special values, or resource concerns, lease activities must be strictly controlled. To provide consistency with Plan standards and guidelines, two types of **CSU** stipulations are used — one that is highly restrictive of the types of activities that can occur (**CSU1**) and one that is moderately restrictive (**CSU2**). The **CSU1** stipulation would prohibit placement of mineral extraction equipment, buildings, roads, ponds, and wellpads and the clearing of pipeline right-of-way vegetation. A **CSU2** stipulation would be similar to **CSU1** except it would allow roads and clearing of right-of-way vegetation to occur if a site-specific environmental analysis detemines that the mitigated environmental effects would not be significant.

LEASING STIPULATIONS

EXHIBIT D–2, STIPULATION FOR LANDS OF THE NATIONAL FOREST SYSTEM UNDER THE JURISDICTION OF DEPARTMENT OF AGRICULTURE

The licensee/permittee / lessee must comply with all the rules and regulations of the Secretary of Agriculture set forth at Title 36, Chapter II, of the *Code of Federal Regulations* governing the use and management of the National Forest System (NFS) when not inconsistent with the rights granted by the Secretary of Interior in the license/prospecting permit/lease. The Secretary of Agriculture's rules and regulations must be complied with for (1) all use and occupancy of the NFS prior to approval of a permit/operation plan by the Secretary of the Interior, (2) uses of all existing improvements, such as forest development roads, within and outside the area licensed, permitted or leased by the Secretary of the Interior, and (3) use and occupancy of the NFS not authorized by a permit / operating plan approved by the Secretary of the Interior.

All matters related to this stipulation are to be addressed to:

Forest Supervisor
Kisatchie National Forest
2500 Shreveport Highway
Pineville, LA 71360-2009

Telephone: 318/473-7160

who is the authorized representative of the Secretary of Agriculture.

BLM District Office:

USDI, Bureau of Land Management
Jackson District Office
411 Briarwood Drive, Suite 404
Jackson, MS 39213

Surface Management Agency:

USDA, Forest Service — Region 8
Room 792S, Lands and Minerals
1720 Peachtree Street, NW
Atlanta, GA 30367

EXHIBIT D–3
NO SURFACE OCCUPANCY STIPULATION

KISATCHIE NATIONAL FOREST
STIPULATION #

Serial No.

NO SURFACE OCCUPANCY STIPULATION

No surface occupancy or use is allowed on the lands described below (legal subdivision or other description).

T-N R-W

For the purpose of:

Any changes to this stipulation will be made in accordance with the land use plan and/or the regulatory provisions for such changes. (For guidance on the use of this stipulation, see BLM Manual 1624 and 3101 or FS Manual 1950 and 2820.)

EXHIBIT D–4
CONTROLLED SURFACE USE STIPULATION

KISATCHIE NATIONAL FOREST
STIPULATION

Serial No.

CONTROLLED SURFACE USE STIPULATION

Surface occupancy or use is subject to the following operating constraints.

T-N R-W

For the purpose of:

Any changes to this stipulation will be made in accordance with the land use plan and/or the regulatory provisions for such changes. (For guidance on the use of this stipulation, see BLM Manual 1624 and 3101 or FS Manual 1950 and 2820.)

Serial No._____

LEASING STIPULATIONS

EXHIBIT D–5
TIMING LIMITATION STIPULATION

No surface use is allowed during the following time period(s). This stipulation does not apply to operation and maintenance of production facilities.

Site-specific proposals for activities within these areas will be analyzed. Such analysis could result in establishment of protective requirements, limitations for the affected site, or possibly require relocation of the activities during the specified time period.

March 1 to June 30

On the lands described below:

T-N, R-W

For the purpose of:

Any changes to this stipulation will be made in accordance with the land use plan and / or the regulatory provisions for such changes. (For guidance on the use of this stipulation, see BLM Manual 1624 and 3101 or FS Manual 1950 and 2820.)

EXHIBIT D–6, LEASE NOTICE #3

All or part of the leased lands may contain animal or plant species classified under the Endangered Species Act of 1973, as amended. Other species may have been identified as sensitive in accordance with Forest Service Manual 2670 and be listed on the current Regional Forester's list of sensitive plant and animal species. Further information concerning the classification of these species may be obtained from the authorized Forest officer.

Exploration and development proposals may be limited or modifications required if activity is planned within the boundaries of a threatened, endangered or sensitive plant or animal species location as it then exists. All activities within these areas must be conducted in accordance with existing laws, regulations and the Forest Land and Resource Management Plan guidelines.

All available land in T_N R_W, Louisiana Meridian

Serial No. _____

EXHIBIT D–7, LEASE NOTICE #4

All or part of the leased lands may be classified as wetlands in accordance with Executive Order 11990, "Protection of Wetlands" or a floodplain in accordance with Executive Order No. 11988, "Floodplain Management." Additional management requirements for the protection of riparian areas are contained in 36 CFR 219.27(e) and the National Forest Management Act of 1976.

All activities within these areas may require special measures to mitigate adverse impacts to the resource values. They must comply with the above referenced executive orders, regulations, laws and be in accordance with the Forest Land and Resource Management Plan guidelines.

Further information concerning the classification and management of these lands may be obtained from the authorized Forest officer.

Lands in T_N R_W, Louisiana Meridian

Old-Growth Desired Future Conditions

Appendix E

INTRODUCTION

The purpose of Appendix E is to describe the desired future conditions (**DFCs**) of designated old-growth forest patches. The **DFCs** for each type of old-growth forest patch are expressed as a description of composition, structure, and disturbance regime.

Within each landscape community, acres of old-growth community types are given. Each old-growth patch allocation is a contiguous parcel of land containing one or more representatives of old-growth community types. These old-growth communities vary from small-sized areas (1–99 acres) to medium-sized areas (100–2499 acres). The names for the 11 old-growth communities existing on the Kisatchie are based on the classification and inventory direction found in the *Guidance for Conserving and Restoring Old-Growth Forest Communities on National Forests in the Southern Region* (**R-8 Old-Growth Guidance**). In the following sections, acres of preliminary, existing, and future old-growth communities for 9 community types are proposed for the Forest (see tables E-2 through E-5). Two community types — the *dry and xeric oak forest, woodland, and savanna* (type 22), and the *xeric pine and pine-oak forest and woodland* (type 24) are not explicitly allocated as existing or future old growth but should be added if future inventories locate potential sites within the larger patches. Existing old growth is defined as stands or patches that meet the criteria for old growth found in the **R-8 Old-Growth Guidance.** 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 displays the old-growth communities recognized on the Kisatchie and the criteria used to identify existing old growth.

ATTRIBUTES OF UPLAND LONGLEAF PINE-DOMINATED PATCHES

Composition — The uplands will be almost pure longleaf pine. A variety of oaks, hickories, and gums may also be present as single individuals or scattered clumps. Due to a frequent prescribed fire regime, canopy hardwood composition on upland sites may diminish over time. On those topographic positions that burn less intensely or less frequently, some shortleaf or loblolly pine as well as a variety of hardwoods may be present

INTRODUCTION

ATTRIBUTES OF UPLAND LONGLEAF PINE-DOMINATED PATCHES

TABLE E–1, CRITERIA USED TO DETERMINE OLD-GROWTH FOREST COMMUNITY TYPES

Ranger District	Old-Growth Forest Community Types	Minimum Age	Existing CISC[1] Forest Types
A. Caney	13 – river floodplain hardwood forest	100	46, 61, 63, 65, 68, 75
	27 – seasonally wet oak-hardwood woodland	100	54, 62, 64
	24 – xeric pine and pine-oak forest and woodland	100	12, 32
	06 – coastal plain upland mesic hardwood	120	53, 69
	14 – cypress-tupelo swamp forest	200	24, 67
	21 – dry-mesic oak forest	130	51
	22 – dry and xeric oak forest, woodland, and savanna	110	57
	25 – dry and dry-mesic oak-pine forest	120	13, 31, 44, 47
	26 – upland longleaf	110	21
	29 – southern wet pine forest, woodland, and savanna	80	14, 22
B. All Others	06 – coastal plain upland mesic hardwood	120	46, 53, 69
	14 – cypress-tupelo swamp forest	200	24, 67, 68
	21 – dry-mesic oak forest	130	51, 54
	22 – dry and xeric oak forest, woodland, and savanna	110	57
	25 – dry and dry-mesic oak-pine forest	120	12, 13, 31, 32, 44, 47
	26 – upland longleaf	110	21
	28 – eastern riverfront forest	100	75
	29 – southern wet pine forest, woodland, and savanna	80	14, 22

[1] Database for *continuous inventory of stand conditions* (CISC)

ATTRIBUTES OF UPLAND LONGLEAF PINE-DOMINATED PATCHES

ATTRIBUTES OF SHORTLEAF PINE / OAK-HICKORY-DOMINATED PATCHES

in the overstory composition. This same canopy species mixture may also occur in relatively narrow transition zones on slopes between the uplands and the riparian areas associated with perennial and intermittent streams. 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 vegetation may vary from grasses on xeric sites, to sedges, forbs, and some woody species in more mesic conditions. Understory height will generally be less than 10 feet.

Structure — Mature longleaf forests will generally be open. The density of longleaf pine stems, however, will be highly variable with some areas supporting relatively dense growths while other areas may be much more open. A wide range of overstory basal areas may be encountered; but in general, upland stands maintain 50–90 square feet of pine and less than 20 square feet of hardwood 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 older 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.

TABLE E–2, UPLAND LONGLEAF PINE OLD-GROWTH PATCHES

Old-Growth Community Type	Preliminary inventory acres (future & existing old-growth)	Acres meeting minimum criteria (existing old-growth)
06 – coastal plain upland mesic hardwood	2,267	0
14 – cypress-tupelo swamp forest	1,200	0
21 – dry-mesic oak forest	42	0
25 – dry and dry-mesic oak-pine forest	5,545	29
26 – upland longleaf, woodland, and savanna	39,555	654
29 – southern wet pine forest, woodland, and savanna	672	0
Needs inventory	2,044	0

Disturbance regime — Fire will be a frequent natural disturbance factor within the forest. Overstory trees show evidence of scorch and fire scars. Fires will be frequent enough, and hot enough to suppress much of the woody understory and to occasionally kill individual or small groups of overstory trees. Small-scale disturbances will primarily be the result of wind, prescribed fire, or stand improvement practices aimed at developing old growth attributes. Redheart rot and standing snags will be common. There may be moderate-sized longleaf restoration areas scattered throughout the landscape.

ATTRIBUTES OF SHORTLEAF PINE / OAK-HICKORY-DOMINATED PATCHES

Composition — The 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. Hardwoods which may be present include post oak, blackjack oak, southern red oak, black oak, white oak, winged elm, black cherry, blackgum, mockernut hickory and black hickory. Longleaf pine may occur in those transition zones between upland longleaf pine forests and shortleaf / oak-hickory forests. Loblolly pine and other fire-tender hardwoods may be present in the overstory composition where shortleaf oak / hickory forests grade into mixed hardwood-loblolly pine forests, or on slopes adjacent to intermittent and perennial streams, or on upland sites that have experienced reduced fire frequencies or intensities, or forest type conversions in the past. The midstory contains regenerating overstory species and a variety of shrubs including huckleberries, flowering dogwood, hawthorns, persimmon, viburnums, and French mulberry. The understory contains a variety of grasses, asters, desmodiums, partridge berry, bergamots, and other flowering plants.

Structure — Mature shortleaf / oak-hickory forests will be relatively open and moderately stocked with pines and hardwoods. Overstory tree stocking densities vary from site to site; but 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 pines over 150 years old and hardwoods more than 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 appears thick to fairly open. The understory vegetation varies from thick in open areas to fairly sparse in heavily stocked sites. Much down woody material in various stages of decay occurs on the forest floor. Snags and den trees will be common.

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. Small-scale 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.

ATTRIBUTES OF MIXED HARDWOOD-LOBLOLLY PINE DOMINATED PATCHES

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.

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

TABLE E–3, SHORTLEAF PINE / OAK-HICKORY OLD-GROWTH PATCHES

Old-Growth Community Type	Preliminary inventory acres (future & existing old-growth)	Acres meeting minimum criteria (existing old-growth)
06 – coastal plain upland mesic hardwood	1,204	0
13– river floodplain hardwood forest	123	0
14 – cypress-tupelo swamp forest	82	0
24 –xeric pine and pine-oak forest and woodland	14	0
25 – dry and dry-mesic oak-pine forest	10,456	278
27 – seasonally wet oak-hardwood woodland	360	0
Needs inventory	1,410	0

ATTRIBUTES OF SHORTLEAF PINE / OAK-HICKORY-DOMINATED PATCHES

ATTRIBUTES OF MIXED HARDWOOD-LOBLOLLY PINE-DOMINATED PATCHES

TABLE E–4, MIXED HARDWOOD-LOBOLLY PINE OLD-GROWTH PATCHES

Old-Growth Community Type	Preliminary inventory acres (future & existing old-growth)	Acres meeting minimum criteria (existing old-growth)
06 – coastal plain upland mesic hardwood	514	0
13 –river floodplain hardwood forest	508	0
21 – dry-mesic oak forest	23	0
24 –xeric pine and pine-oak forest and woodland	3	0
25 – dry and dry-mesic oak-pine forest	3,434	424
26 – upland longleaf	31	31
27– seasonally wet oak-hardwood woodland	248	0
Needs inventory	1,519	0

ATTRIBUTES OF MIXED HARDWOOD-LOBLOLLY PINE-DOMINATED PATCHES

ATTRIBUTES OF RIPARIAN FOREST-DOMINATED PATCHES

than in pine old-growth due to the greater decay resistance of some of the hardwood species. Down logs are common.

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.

ATTRIBUTES OF RIPARIAN FOREST-DOMINATED PATCHES

Composition — The overstory composition will be highly variable. A wide variety of oaks (such as willow, cow, water, laurel, cherrybark, white, nuttall, and overcup) and hickories (such as water, black, shagbark, pignut, and bitternut) 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. Rarely, if ever, would all these species be observed in a single area. In general, overstory species composition will be related to frequency, extent and duration of annual flooding events. In addition to regenerating overstory trees, the midstory contains a variety of shrubs and vines. Midstory composition will also be influenced by the natural flooding regime. Depending on the stream, ironwood, hophornbeam, swamp dogwood, wild azalea, deciduous holly and many others will commonly be present. The herbaceous understory will be vary sparse but may contain a variety of ferns, mosses, sedges and flowering plants.

Structure — In general, the dominant overstory canopy in an old-growth riparian or bottomland forest appears closed; however, small gaps in the canopy are scattered throughout the area. Overstory tree density may be variable, but most stands will be moderately to densely stocked and carry a total 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 much down woody material. Standing snags and hardwood den trees will be common-to-abundant.

ATTRIBUTES OF RIPARIAN FOREST-DOMINATED PATCHES

TABLE E–5, RIPARIAN FOREST OLD-GROWTH PATCHES

Old-Growth Community Type	Preliminary inventory acres (future & existing old-growth)	Acres meeting minimum criteria (existing old-growth)
06 – coastal plain upland mesic hardwood	1,283	77
13 – river floodplain hardwood forest	297	0
14 – cypress-tupelo swamp forest	1,465	0
25 – dry and dry-mesic oak-pine forest	2,604	133
26 – upland longleaf, woodland, and savanna	595	0
27 – seasonally wet oak-hardwood woodland	2,592	8
28 – eastern riverfront forest	206	0
Needs inventory	5,280	0

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 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.

Monitoring Summary Tables

Appendix F

INTRODUCTION

INTRODUCTION

This appendix contains a table designed to provide additional information regarding the Kisatchie National Forest's program for monitoring this document, the Forest Plan (Plan).

Table F–1 summarizes the information contained in the monitoring task sheets. Monitoring task sheets were developed to detail how data will be collected with the objective of answering each Plan monitoring question.

The table will be updated to reflect the Kisatchie's annual monitoring and evaluation report, or as warranted by other new information. For more information on monitoring requirements for the Plan, please see Chapter 5 of this document.

TABLE F–1, MONITORING TASK SHEET SUMMARY

TASK NUM	MON OBJ	MONITORING QUESTION	MONITORING ITEMS	FREQCY / DURATION	PRECISION / RELIABLTY	EST. COST OF COLLECTION	RESPONSIBILITY / METHOD OF ANALYSIS
1	1–1	Are management practices designed to minimize soil erosion, compaction, and loss of soil productivity being applied?	Management practices designed to minimize soil erosion, compaction, and loss of soil productivity.	Annually	High / High	$1,000	Soil & water staff will compare project-level decisions with on-site implementation.
2	1–1	Is allowable soil loss being exceeded? Are disturbed and degraded areas being restored and revegetated to a natural condition?	Site prep areas — percent soil cover, estimated amount of soil loss.	Annually	Medium / Medium	$1,000	Soil scientist / hydrologist will sample and estimate soil loss on a representative portion of the areas.
			Off-road vehicles use areas — occurrences of accelerated soil loss or stream sedimentation.	Annually	Medium / Medium	$500	Soil scientist / hydrologist will evaluate selected trail segments and make recommendations.
			Restored/revegetated areas — percent of vegetative cover.	Annually	Medium / Medium	$750	Soil scientist / hydrologist will evaluate percent cover of restored/revegetated area
3	1–1	How do timber management practices, especially timber harvesting and consequent compaction, affect soil productivity?	Results of the long-term soil productivity study and other Southern Research Station studies.	Annually or as results are updated	High / High	$400	Southern Research Station staff and soil & water staff will review findings.
4	1–2	Are management practices designed to minimize contamination, sedimentation, and maintain stream channel stability being applied?	Management practices designed to minimize contamination, sedimentation, and maintain stream channel stability.	Annually	High / Medium	$1,000	Supervisor's Office and soil & water staff will compare project-level decisions with on-site implementation.
5	1–2	Are State water quality standards and State anti-degradation policies being met? Is water quality being degraded?	Water quality parameters of selected streams.	Monthly	High / High	$100	Dept. of Environmental Quality will use surface water assessment procedures.
6	1–2	Are State water quality standards and State anti-degradation policies being met? Is water quality being degraded?	Water quality parameters of selected Louisiana pearlshell mussel streams, Saline Bayou National Scenic River, and other selected streams.	Quarterly	High / Medium	$3,000	Dept. of Environmental Quality surface water assessment procedures.
7	1–2	Are State water quality standards and State anti-degradation policies being met? Is water quality being degraded?	Fecal coliform levels at swimming recreation sites.	Twice/week during swim season.	High / High	$3,000	Soil scientist/hydrologist will coordinate on-site sampling by district recreation personnel.

TABLE F–1, MONITORING TASK SHEET SUMMARY

TASK NUM	MON OBJ	MONITORING QUESTION	MONITORING ITEMS	FREQCY / DURATION	PRECISION / RELIABLTY	EST. COST OF COLLECTION	RESPONSIBILITY / METHOD OF ANALYSIS
8	1–3	Are Forest Service and La. Dept. of Agriculture & Forestry's smoke management guidelines and regulations being applied? Are performance requirements concerning air quality being incorporated in permitted activities?	Project plans, environmental assessments.	Ongoing	Medium / Medium	$500	Zone air resource specialist and soil scientist / hydrologist will compare project-level decisions with burning plans and permitted activities.
9	1–3	Does air quality meet NAAQS and State standards?	Concentrations of pollutant not meeting NAAQS.	Ongoing	High / High	$3,000	La. DEQ air quality section, zone air quality specialist and forest soil scientist / hydrologist will compare data with standards.
10	1–4	Is wildfire protection being provided in a cost-effective manner? Are losses to wildfire being minimized?	Annual work plans.	Annually	Medium / Medium	$1,000	Fire staff (FMO) will compare results annually to determine if within range and determine reason if outside range.
11	1–4	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?	Fire season readiness, acres burned.	Annually	Medium / Medium	$1,000	Fire staff will compare resources planned to NFMAS and compare acres burned to NFMAS .
12	1–5	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?	Regeneration of desired species/ site selection; restoration acres. Reduction of stocking levels if overstocked stands; acres treated by precommercial thinning, commercial thinnings, and timber stand improvements. Promptness of detection and control of southern pine beetle outbreaks.	Ongoing	High / High	$1,000	Forest silviculturist will review annual accomplishments of restoration acres, thinning, TSI, and SPBIS documentation.
13	1–5	Has management resulted in a decrease of susceptibility of southern pine beetle and other pests? Are pest incidents decreasing with applied integrated management?	Location and population trends of southern pine beetle.	Every 5 years	Medium / Medium	$1,500	Forest Health staff will use 5-year analysis of southern pine beetle from SPBIS records. Last analysis 1991-1995, next analysis will be 1996-2000.

TABLE F–1, MONITORING TASK SHEET SUMMARY

TASK NUM	MON OBJ	MONITORING QUESTION	MONITORING ITEMS	FREQCY / DURATION	PRECISION / RELIABLTY	EST. COST OF COLLECTION	RESPONSIBILITY / METHOD OF ANALYSIS
14	1–6	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?	Location of tracts acquired and exchanged, location and number of ROWs acquired, number and kinds of permits issued.	Annually	High / High	$4,000	Lands staff and Forest planning unit will compare results with objectives at end of 5th year.
15	1–6	How well are landline boundaries being established, maintained, and protected from obliteration?	Miles of landline maintained.	Annually	Medium / Medium	$1,000	Lands staff (surveyor) will review for compliance and assess miles of landline maintained.
16	1–6	Are newly acquired lands compatible with management practices in the management area where they are located?	Maps of lands acquired.	Upon completion of case	High / High	$1,500	Lands staff and Forest planning unit will compare suitability of acquired lands with management practices authorized in surrounding lands in a management area.
17	1–6	Are encroachments being discouraged by well defined property lines?	Number of encroachments where landline identification may be a factor.	Annually	Medium / Medium	$1,000	Lands staff (surveyor) will compare landline maintenance and encroachment reporting.
18	2–1	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?	Management practices designed to restore or maintain longleaf pine and embedded plant communities in LTAS 1, 2, 5, and 6.	Annually	High / High	$200 / day	Forest silviculturist will compare project-level decisions with on-site implementation.
19	2–1	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?	Management practices designed to restore or maintain shortleaf pine / oak-hickory and embedded plant communities in LTAS 3, 8, and 9.	Annually	High / High	$200 / day	Forest silviculturist will compare project-level decisions with on-site implementation.
20	2–1	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?	Management practices designed to restore or maintain mixed hardwood-loblolly and embedded plant communities in LTA 4.	Annually	High / High	$200 / day	Forest silviculturist will compare project-level decisions with on-site implementation.

TABLE F–1, MONITORING TASK SHEET SUMMARY

TASK NUM	MON OBJ	MONITORING QUESTION	MONITORING ITEMS	FREQCY / DURATION	PRECISION / RELIABLTY	EST. COST OF COLLECTION	RESPONSIBILITY / METHOD OF ANALYSIS
21	2–1	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?	Management practices designed to restore or maintain riparian plant communities in LTA 7 and streamside and riparian areas.	Annually	High / High	$200 / day	Forest silviculturist will compare project-level decisions with on-site implementation.
22	2–1	Are the management practices successfully restoring or maintaining quality forest ecosystems; and the structure, composition, and processes of the four major landscape forest ecosystems?	Acres of longleaf pine forest type.	Annually	High / High	$200 / year	Forest silviculturist will compare existing community acres with desired acres.
23	2–1	Are the management practices successfully restoring or maintaining quality forest ecosystems; and the structure, composition, and processes of the four major landscape forest ecosystems?	Acres of shortleaf pine/oak-hickory forest types.	Annually	High / High	$200 / year	Forest silviculturist will compare existing community acres with desired acres.
24	2–1	Are the management practices successfully restoring or maintaining quality forest ecosystems; and the structure, composition, and processes of the four major landscape forest ecosystems?	Acres of mixed hardwood-loblolly pine forest type.	Annually	High / High	$200 / year	Forest silviculturist will compare existing community acres with desired acres.
25	2–1	Are the management practices successfully restoring or maintaining quality forest ecosystems; and the structure, composition, and processes of the four major landscape forest ecosystems?	Acres of riparian plant communities.	Annually	High / High	$200 / year	Forest silviculturist will compare existing community acres with desired acres.
26	2–1	Are the management practices successfully restoring or maintaining quality forest ecosystems; and the structure, composition, and processes of the four major landscape forest ecosystems?	Acres of embedded plant communities supporting PETS plants, subjectively ranked for quality of the habitat condition.	Annually	Medium / Medium	$4,000 / year	Resource unit (botanists / ecologists) will compare existing community acres with desired acres.
27	2–2	Are management practices successfully expanding quality habitats for management indicators?	Acres of all management indicator plant species habitat.	Annually	Medium / Medium	$4,000 / year	Resource unit (botanists / ecologists) will compare results from previous inventory with new inventory.

TABLE F–1, MONITORING TASK SHEET SUMMARY

TASK NUM	MON OBJ	MONITORING QUESTION	MONITORING ITEMS	FREQCY / DURATION	PRECISION / RELIABLTY	EST. COST OF COLLECTION	RESPONSIBILITY / METHOD OF ANALYSIS
28	2–2	Are management practices successfully expanding quality habitats for management indicators?	Acres in early succession, and mid-late succession, by landscape.	Annually	Low / Low	$2,500 / year / district	Forest wildlife biologist will query CSC data for stand ages by forest type by landscape.
29	2–2	Are the habitat objectives for selected management indicators providing for healthy populations of all existing native and desirable nonnative wildlife, fish, and plants?	Population trends of all management indicator plant species.	Annually	Medium / Medium	$4,000 / year	Resources unit (botanists / ecologists) will compare frequency with past frequency of occurrence for management indicator plant species.
30	2–2	Are the habitat objectives for selected management indicators providing for healthy populations of all existing native and desirable nonnative wildlife, fish, and plants?	Population trends of all management indicator animal species.	Annually	Medium / Medium	$3,000 / year / district	Forest wildlife biologist will review districts survey sheets bird point counts from "landbird" monitoring program and determine population trends.
31	2–3	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 with designated habitat management areas?	Management practices used to protect, improve, and maintain habitat conditions for all threatened, endangered, sensitive, and conservation plant species.	Annually	Medium / Medium	$2,000 / year	Botanist / ecologists will compare project-level decisions with on-site implementation.
32	2–3	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 with designated habitat management areas?	Management practices and strategies designed to protect, improve, and maintain threatened, endangered, sensitive, and conservation fish and wildlife species.	Annually	Medium / Medium	$1,000 / year	Forest fisheries and/or wildlife biologist will compare project-level decisions with on-site implementation.
33	2–3	Are habitat conditions for threatened, endangered, sensitive, and conservation species improving?	Acres of embedded plant communities supporting PETS plants, subjectively ranked for quality of the habitat condition.	Annually	Medium / Medium	$4,000 / year	Botanists / ecologists will compare acres and site quality rankings with previous year's data.
34	2–3	Are habitat conditions for threatened, endangered, sensitive, and conservation species improving?	Acres of longleaf pine and riparian management indicator habitat for threatened, endangered, sensitive, and conservation wildlife species.	Annually	Low / Low	$1,000 / year	Forest wildlife biologist will query CSC database to assess acreage of longleaf pine and riparian management indicator habitats.

TABLE F–1, MONITORING TASK SHEET SUMMARY

TASK NUM	MON OBJ	MONITORING QUESTION	MONITORING ITEMS	FREQCY / DURATION	PRECISION / RELIABLTY	EST. COST OF COLLECTION	RESPONSIBILITY / METHOD OF ANALYSIS
35	2–3	Are Red-cockaded Woodpecker (RCW) population trends responding positively to management strategies?	Population size and trend, group check, nesting success, group survey, problem identification.	Annually	High / High	$50 / year / cluster	Forest wildlife biologist will review district RCW cluster surveys.
36	2–3	Are La. pearlshell mussel population levels responding positively to management strategies?	Population size and trend, problem identification.	Minimum every 3 years	High / High	$1,000 / year / mussel population	Forest fisheries biologist will review mussel population estimates and assess changes to population.
37	2–4	Are management practices designed to develop old-growth forest attributes being implemented?	Management practices designed to develop old-growth forest attributes.	Annually	High / High	$200 / year	Forest silviculturist will compare project-level decisions with on-site implementation needed to achieve old-growth community type objectives.
38	2–4	Are the management practices successfully developing or maintaining forest attributes similar to those found in old-growth?	Designated old-growth patches subjectively ranked for quality by representation of the old-growth community types found within the major forest ecosystems.	Annually	Medium / Medium	$200 / day	Forest silviculturist will compare existing conditions of designated small and medium-sized old-growth patches with operational definitions found in Table 2 of *Guidance for Conserving and Restoring Old-Growth Forest Communities on National Forests in the Southern Region.*
39	2–5	Are streamside habitat protection zones and riparian area protection zones being delineated and managed as prescribed?	Management practices within streamside and riparian zones designed to protect or enhance the unique plant and animal communities, special habitat features, habitat linkages and corridors, instream habitat, and aquatic ecosystems associated with streamside habitat and riparian areas.	Annually	High / High	$1,000 / year	Forest botanist / ecologist, Forest fisheries biologist, and Forest hydrologist will compare project-level decisions with on-site implementation.
40	2–5	Are these zones successfully protecting or enhancing unique plant and animal communities, special habitat features, habitat linkages, and aquatic ecosystems?	Occurrence of Forest-listed streamside zone species.	Annually	Medium / Medium	$400 / year	Forest botanist will compare field data with previous data and assess changes.

TABLE F–1, MONITORING TASK SHEET SUMMARY

TASK NUM	MON OBJ	MONITORING QUESTION	MONITORING ITEMS	FREQCY / DURATION	PRECISION / RELIABLTY	EST. COST OF COLLECTION	RESPONSIBILITY / METHOD OF ANALYSIS
41	2–6	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?	Combination of largemouth bass/ sunfish species.	Minimum once every 3 years	Medium / Medium	$9,000 / year	Forest fisheries biologist will determine proportional stock density, length frequency histogram.
42	2–6	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?	Conductivity, pH, dissolved oxygen, temperature, turbidity, population trends of aquatic management indicator species.	Minimum every 3 years on major perennial or watershed	Medium / Medium	$500 / sample	Forest fisheries biologist will compare measurements with expected norms and assess species prevalence and range integrity with prior and historic data.
43	2–6	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?	Sediment analysis.	Every 3 years/major perennial or watershed - 100 M reach minimum	Medium / Medium	$4,500 / year	Forest fisheries biologist will count and tabulate data.
44	2–6	Are lake populations healthy? Are nonnatives and / or generalist-omnivore natives affecting lake biomass and balance? Is lake habitat sufficient?	Fish condition (length-weight ratios, age and growth, relative weight) fungal prevalence, disease and deformities.	Minimum once every 3 years	Medium / Medium	$4,500 / year	Forest fisheries biologist will compare physical indices with norms.
45	2–6	Are lake populations healthy? Are nonnatives and / or generalist-omnivore natives affecting lake biomass and balance? Is lake habitat sufficient?	Presence of forage fish and omnivores.	Minimum once every 3 years	Medium / Medium	$9,000	Forest fisheries biologist will assess effects of presence of nonnative and / or generalist-omnivore natives on lake biomass and balance.
46	2–6	Are lake populations healthy? Are nonnatives and / or generalist-omnivore natives affecting lake biomass and balance? Is lake habitat sufficient?	Growing season conductivity, pH and turbidity, alkalinity, dissolved oxygen, temperature, depth; presence of aquatic vegetation, fine and coarse structure, and spawning substrate.	Minimum once every 3 years	High / High	$500 / sample	Forest fisheries biologist will compare data collected with norms for lake habitat.
47	2–7	Are management practices successfully expanding quality habitats for game and fish species?	Forestwide acres of quality habitat for the primary demand species.	Every 5 years	Low / Low	$2,500	Forest wildlife biologist will query cisc data for stand ages by forest type.

TABLE F–1, MONITORING TASK SHEET SUMMARY

TASK NUM	MON OBJ	MONITORING QUESTION	MONITORING ITEMS	FREQCY / DURATION	PRECISION / RELIABLTY	EST. COST OF COLLECTION	RESPONSIBILITY / METHOD OF ANALYSIS
48	2–7	Are habitat objectives for selected demand species providing game and fish populations sufficient for quality recreation opportunities?	Population estimates of white-tailed deer, Northern Bobwhite Quail, Wild Turkey, eastern fox squirrel and grey squirrel.	Annually	Low / Low	$200 / year	Forest biologist will compare changes in population estimates from the Louisiana Department of Wildlife and Fisheries.
49	2–8	Are management practices designed to protect, restore, maintain, acquire, and improve waterfowl and wetland wildlife being implemented?	Management practices designed to protect, restore, maintain, acquire, and improve waterfowl and wetland wildlife habitat.	Annually	Medium / Medium	$1,000 / year	Forest wildlife biologist will compare project-level decisions with on-site implementation.
50	2–8	Are these management practices successfully providing for waterfowl and wetland wildlife?	Acres of wetland and riparian habitats.	Annually	Medium / Medium	$2,000 / year	Forest biologist will query GIS and CISC databases and assess changes from previous monitoring results.
51	3–1	How does the flow of commodity outputs to local economies and people compare with he Forest Plan projections?	Returns to parishes from 25% funds and effects to local job and income from Forest commodity production.	Quarterly	High / High	$1,000	Timber sales officer and sale administration specialist will query STARS database and evaluate TPIR01 report for input into IMPLAN model.
52	3–2	Is the Forest providing for competitive bid the average annual allowable sale quantity it projected for the first decade?	Timber offered —MAR item 77.2, STARS 33-2, periodic timber sale accomplishment.	Ongoing	High / High	$2,500	Sales administration specialist will query STARS database and annually compare results with average annual ASQ.
53	3–3	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?	Consents to lease lands covered in area by area or individual tracts.	Annually	High / High	$1,000	Lands staff will review available lands and compare with acres withdrawn.
54	3–3	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?	Applications to drill, common variety minerals permits and operating plans.	Annually	Medium / Medium	$1,500	Lands and minerals staff will review applications to drill and operating plans for compliance with State and federal laws.

TABLE F–1, MONITORING TASK SHEET SUMMARY

TASK NUM	MON OBJ	MONITORING QUESTION	MONITORING ITEMS	FREQCY / DURATION	PRECISION / RELIABLTY	EST. COST OF COLLECTION	RESPONSIBILITY / METHOD OF ANALYSIS
55	3–4	Are forage resources being maintained or improved on the designated allotments?	Management practices designed to maintain or improve range resources.	Ongoing, annually	High / High	$800 / year	Resource unit / range conservationist will compare project-level decisions with on-site implementation.
56	3–4	Are active allotments meeting the needs of the local demand for forage resources?	Number of requests received from public for range permits.	Annually	High / High	$200 / year	District ranger staff will monitor number of requests for range use and compare with available, planned allocations.
57	3–5	How does management of these products compare with Forest Plan direction?	Sale and permits of non-convertible products in timber sale accounting reports.	Annually	Low / High	$500	Timber sales officer, sale administration specialist will query STARS and timber sale accounting databases and compare to Plan direction.
58	3–5	Is the Forest providing opportunities for other specialty forest products without negatively impacting forest health or other resources?	Results of Southern Research Station studies.	Annually or as results are updated	High / High	$400 / year	Southern Research Station staff and Forest soil scientist and botanist will review findings.
59	3–6	Are programs and opportunities for improving rural economies and social conditions being developed?	Number of community contacts or users; number of grants awarded, number of requests for technical assistance.	Annually and as needed	High / High	$1,000	Cooperative Forestry coordinator will compare new proposals with previous years.
60	3–6	Are programs and opportunities improving sustainable local economies and social conditions?	Number of jobs, number of new businesses, population shift, per capita income.	Every 5 years	Medium / Medium	$3,000	Supervisor's Office — Cooperative Forestry coordinator will compare planned conditions with current trends.
61	3–7	Is the transportation facility serviceable by the intended user?	Frequency and level of road maintenance activities.	Annually/ ongoing	Medium / Medium	$1,000	Supervisor's Office — transportation system management engineer will identify those roads which are not serviceable by the user or which required a significant increase in maintenance to assure serviceability.
62	4–1	Is the Forest being managed in accordance with the assigned SIOs?	SIO compliance	Ongoing	High / High	$1,500	Scenery specialist will compare project designs with SIO guidance.

TABLE F–1, MONITORING TASK SHEET SUMMARY

TASK NUM	MON OBJ	MONITORING QUESTION	MONITORING ITEMS	FREQCY / DURATION	PRECISION / RELIABLTY	EST. COST OF COLLECTION	RESPONSIBILITY / METHOD OF ANALYSIS
63	4–2	Has class eligibility shifted significantly?	ROS class consistency and eligibility shift.	Ongoing	Medium / Medium	$1,000	Recreation staff will compare planned class objectives with shifts in eligibility.
64	4–3	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?	FS comment cards, customer report cards and comment cards.	Ongoing	High / High	$10,000	Forest landscape architect will review comment cards and summarize responses.
65	4–3	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?	Compliance with negotiated recreation program of work based on *Meaningful Measures* standards.	Annually	High / High	$10,000	Forest landscape architect will inspect developed sites, trails, and use areas and compare with *Meaningful Measures* standards.
66	5–1	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)?	Number of NEPA decisions with appropriate NHPA compliance.	Ongoing	High / High	$1,000	Forest archeologist will review summaries and compare with decision documents.
67	5–2	Is law enforcement and heritage support provided at sufficient levels to protect significant heritage sites from internal and / or external activities?	Number of sites protected; number of site revisits; number of law enforcement incident reports or case reports.	Ongoing	Medium / Medium	$5,000	Heritage staff will examine law enforcement incident reports and summarize impacts.
68	5–2	Are protection measures effective at preventing unacceptable damage?	Number of sites protected, buffer zone definition.	Annually	Medium / Medium	$3,000	Forest archeologist will compare buffer zones with monitored sites and assess damage.

TABLE F–1, MONITORING TASK SHEET SUMMARY

TASK NUM	MON OBJ	MONITORING QUESTION	MONITORING ITEMS	FREQCY / DURATION	PRECISION / RELIABLTY	EST. COST OF COLLECTION	RESPONSIBILITY / METHOD OF ANALYSIS
69	5–3	Are sufficient numbers of significant or potentially significant sites being evaluated so that the number of backlogged properties decreases each year?	Number of evaluations conducted; number of sites added to list during current year.	Annually	High / High	$15,000	Forest archeologist will summarize the number of sites tested and compare with the number added to the evaluation list.
70	5–4	Are sites and heritage values being identified for public interpretation?	Number of sites interpreted; number of sites available for visitation or participation.	Ongoing	High / High	$8,000	Forest archeologist will review projects and summarize sites interpreted.
71	5–4	Has interpretation enhanced awareness of heritage values among the general public?	Number of contacts, feedback from awareness projects, contacts with cooperators.	Ongoing	Medium / Medium	$2,000	Forest archeologist will review and summarize responses.
72	5–5	Does the interpretive services program provide usable information to the public about the full scope of the forest management practices and philosophy?	Number of brochures; number of public-oriented written or video projects; number of partnerships.	Ongoing	Medium / Medium	$2,000	Public Affairs Office and Interpretive Services will assess current management practices and identify new products or updates as needed.
73	5–5	Has interpretive services increased measurable public support of Forest Service resource management goals and objectives?	Number of positive contacts, number of congressional inquiries, number of appeals.	Ongoing	Medium / Medium	$2,000	Public Affairs Office / Interpretive Services will review and summarize response.
74	5–6	Is Forest Plan SIA direction being applied?	Compliance with Forest Plan SIA direction.	Ongoing - annual inspection	High / High	$5,000	Recreation staff will review project plans and environmental assessments and compare to Forest Plan direction.
75	5–7	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?	Level of compliance with wilderness direction and *Meaningful Measures*.	Annually	High / High	$5,000	Forest landscape architect will conduct reviews of field reviews, and will review implementation schedules and project plans; and compare with *Meaningful Measures* standards.
76	6–1	Are management practices designed to achieve a mixture of desired future conditions being applied?	Acres of even-aged, two-aged, and uneven-aged regeneration methods, and intermediate treatments being accomplished.	Annually	High / High	$3,000 / year	Forest silviculturist will compile data and then compare to projected annual average outputs.

TABLE F–1, MONITORING TASK SHEET SUMMARY

TASK NUM	MON OBJ	MONITORING QUESTION	MONITORING ITEMS	FREQCY / DURATION	PRECISION / RELIABLTY	EST. COST OF COLLECTION	RESPONSIBILITY / METHOD OF ANALYSIS
77	6–2	Are the prescribed fire regimes being applied to all appropriate landscapes as prescribed to maintain fire-dependent ecosystems?	Prescribed burning acres by landscape type and season.	Ongoing	High / High	$200 / day	Fire staff will compare actual accomplishments with prescribed burning objectives.
78	6–2	Are the natural plant communities being maintained or restored by the prescribed fire regimes?	Plant community/species response to applied management practices.	Annually, or as results are updated	Medium / Medium	$15,000	Forest silviculturist and research scientists will compare response to treatments and compare landscape developments with desired future condition statements.
79	7–1	Is the Forest preparing and distributing a yearly monitoring and evaluation report to the public?	Annual Monitoring & Evaluation Report.	Annually	High / High	$3,000	Planning staff will collate responses on monitoring items, determine adequacy of findings, and publish recommendations.
80	7–2	Is the Forest Plan being kept current through timely changes as identified in the Annual Monitoring & Evaluation Report?	Plan amendments.	Annually	High / High	$500 / year	Planning staff will review findings and recommendations and determine needs for amendments.
81	8–1	Are cooperative relationships being developed and maintained?	Number of cooperative studies undertaken and status.	Annually	High / High	$200	Silviculture / resource unit will evaluate status of studies and relationships.
82	8–2	Are research needs being identified in a timely manner?	Research needs identified.	Annually	High / High	$200	Resource unit / silviculture will summarize the number of research needs identified.
83	9–1	Are coordination and cooperation efforts being conducted with federal and State agencies?	NEPA documentation.	Annually	Medium / Medium	$500 / year	Planning staff will assess project-level NEPA documentation.
84	9–2	Are Memorandums of Understanding, cooperation 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?	Number of agreements, partnerships, and cooperators.	Annually	Medium/ Medium	$4,000	Grants / agreements coordinator will summarize participation.

Glossary of Terms, Commonly Used Acronyms, and Abbreviations

Appendix G

AC ..... Acres
ADA ..... Americans with Disabilities Act
AMS..... Analysis of the management situation
APD ..... Application for permit to drill
ASQ ..... Allowable sale quantity
ATV ..... All-terrain vehicle
AU ..... Animal unit
AUM ..... Animal unit month
BA..... Basal area
BE ..... Biological evaluation
BF ..... Board foot
BGS ..... Below ground surface
BLM ..... Bureau of Land Management
BMP..... Best management practices
BTU ..... British thermal unit
CCC ..... Civilian Conservation Corps
CCF..... Hundred cubic feet
CEQ ..... Council on Environmental Quality
CF ..... Cubic feet
CFR ..... Code of Federal Regulations
CISC ..... Continuous inventory of stand conditions
CMAI ..... Culmination of mean annual increment
COR ..... Contracting officer representative
CSU ..... Controlled surface use
DBH..... Diameter at breast height
DEIS..... Draft environmental impact statement
DFC ..... Desired future condition
EA ..... Environmental assessment
EAM..... Even-aged (silvicultural) management
ECS ..... Ecological classification system
EIS ..... Environmental impact statement
EPA ..... Environmental Protection Agency
FDR..... Forest development roads
FEIS ..... Final environmental impact statement
FIA ..... Forest inventory analysis
FMAP..... Fire management action plan
FORPLAN.... Forest planning model
FS ..... Forest Service
FSH..... Forest Service Handbook
FSM ..... Forest Service Manual
FY ..... Fiscal year
GIS ..... Geographic information system
GNP..... Gross national product
HABCAP ..... Habitat capability model
HMA ..... Habitat management areas for RCW
HUC..... Hydrologic unit code
ID ..... Interdisciplinary
IDT ..... Interdisciplinary team
IMPLAN ..... Economic input / output model
IPM ..... Integrated pest management
KHW ..... Kisatchie Hills Wilderness
KNF ..... Kisatchie National Forest
KV..... Knutson-Vandenberg (Act)
LAC..... Limits of acceptable change
LANG..... Louisiana Army National Guard
LDEQ ..... Louisiana Department of Environmental Quality
LDOTD ..... Louisiana Department of Transportation and Development
LDWF ..... Louisiana Department of Wildlife and Fisheries
LNHP ..... Louisiana Natural Heritage Program
LORP ..... Louisiana Outdoor Recreation Plan
LTA ..... Landtype associations
LTSY ..... Long-term sustained yield
M ..... Thousand
MA ..... Management area
MAUM..... Thousand animal unit month
MBF..... Thousand board feet
MCF..... Thousand cubic feet
MHL ..... Mixed hardwood-loblolly pine
MI..... Management indicator
MIL..... Management intensity level
MIS..... Management indicator species
MM$ ..... Million dollars
MMBF ..... Million board feet
MMCF ..... Million cubic feet
MOA..... Memorandum of agreement
MOU..... Memorandum of understanding

ACRONYMS & ABBREVIATIONS

MRVD ..... Thousand recreation visitor days
MWFUD ..... Thousand wildlife / fish user days
NDF ..... Nondeclining flow
NEPA ..... National Environmental Policy Act
NFMA ..... National Forest Management Act
NFMAS ..... National Fire Management System
NHPA ..... National Historic Preservation Act
NFS ..... National Forest System
NOI ..... Notice of intent
NPB ..... Net public benefits
NRCS ..... National Resource Conservation Service
NRHP ..... National Register of Historic Places
NRI ..... Nationwide Rivers Inventory
NSO ..... No surface occupancy
NTMB ..... Neotropical migratory birds
NWMP ..... National wildlife management preserve
NWR ..... National wildlife refuge
OGC ..... Office of General Counsel
ORV ..... Off-road vehicle
PAOT ..... Persons at one time
PETS ..... Proposed, endangered, threatened, sensitive species
PA ..... Programmatic agreement
PL ..... Public law
PNV ..... Present net value
R-8 ..... Region 8 (Southern Region, USDA Forest Service)
RAPZ ..... Riparian area protection zone
RARE ..... Roadless Area Review and Evaluation
RARE II ..... Second Roadless Area Review and Evaluation
RCA ..... Rural community assistance
RCW ..... Red-cockaded Woodpecker
RD ..... Ranger district
RIM ..... Recreation information management
RM ..... Roaded modified
RN ..... Roaded natural
RNA ..... Research natural area
ROD ..... Record of decision
ROR ..... Reserved and outstanding rights
ROS ..... Recreation opportunity spectrum
ROW ..... Right-of-way
RPA ..... Forest & Rangeland Renewable Resources Planning Act
RVD ..... Recreation visitor day
S&G ..... Standards and guidelines
SAF ..... Society of American Foresters
SCO ..... Scenic condition objective
SCORP ..... Statewide Comprehensive Outdoor Recreation Plan
SHPO ..... State Historic Preservation Office
SHPZ ..... Streamside habitat protection zone
SIA ..... Special interest area
SIO ..... Scenic integrity objective
SMA ..... Sub-management area
SMS ..... Scenery management system
SMZ ..... Streamside management zone
SOH ..... Shortleaf pine / oak-hickory
SPB ..... Southern pine beetle
SPM ..... Semiprimitive, motorized
SPNM ..... Semiprimitive, nonmotorized
SRI ..... Soil resource inventory
SRS ..... Southern Research Station
T&E ..... Threatened and endangered
TEA ..... Transaction evidence appraisal
TES ..... Threatened, endangered, and sensitive
TMDL ..... Total maximum daily load
TSI ..... Timber stand improvement
TSL ..... Traffic service level
TSPIRS ..... Timber Sale Program Information Reporting System
UEAM ..... Uneven-aged (silvicultural) management
USDA ..... United States Department of Agriculture
USDI ..... United States Department of Interior
USFWS ..... United States Fish & Wildlife Service
USGS ..... United States Geological Survey
VM ..... Vegetation management
VQO ..... Visual quality objective
YACC ..... Young adult conservation corps
WFUD ..... Wildlife and fish user day
WMAs ..... Wildlife management areas
WSR ..... Wild & scenic river

COMMONLY USED TERMS

A,B,C

A

Abiotic. *a*. The nonliving (as opposed to conceptual) material components of the environment such as air, rocks, soil, water, coal, peat, plant litter; *b*. Nonliving components of an ecosystem; basic elements and compounds of the environment.

Adaptation. A genetically determined characteristic that enhances an organism's chances for survival and reproduction.

Adaptive management. Implementing policy decisions as an ongoing process that requires monitoring the results. It applies scientific principles and methods to improve resource management activities incrementally as the managers and scientists learn from experience and new scientific findings and adapt to social changes and demands.

Advance regeneration (syn: *reproduction*). Advance growth seedlings or saplings that develop or are present in the forest understory.

Age class (cohort). A distinct aggregation of trees originating from a single natural disturbance or regeneration cutting.

Aquatic ecosystem. *a*. A water-based ecosystem; *b*. A system of water interacting with aquatic plants and animals. Also see *ecosystem*.

Areas of critical environmental concern. A designation coined by the Bureau of Land Management, where special management attention is required to protect and prevent irreparable damage to important values, including fish and wildlife resources or other natural systems or processes.

Artificial regeneration (syn: *reproduction*). Creation of a new age class by renewal of a tree crop by direct seeding, or by planting seedlings or cuttings.

All-terrain vehicle (ATV). Any motorized, off-highway vehicle 50 inches or less in width, having a maximum dry weight of 800 pounds, travels on 3 or more low-pressure tires, and has a seat designed to be straddled by the operator. Low-pressure tires are at least 6 inches in width and designed for use on wheel rim diameters of 12 inches or less, utilizing an operating pressure of 10 pounds per square inch (PSI) or less, as recommended by the vehicle manufacturer.

Autecology. Study of the ecology of a single species, its requirements, tolerances, and responses.

B

Biodiversity. *a*. Variety of life and its ecological processes; *b*. The variety of organisms considered at all levels, from genetic variants belonging to the same species, through arrays of genera, families, and still higher taxonomic levels. Includes the variety of ecosystems which comprise both the communities of organisms within particular habitats and the physical conditions under which they live.

Biomass. The total quantity (weight) of plants and / or animals per unit area.

Biome. A major biotic unit consisting of plant and animal communities having similarities in form and environmental conditions, but not including the abiotic portion of the environment.

Bioregion. A territory defined by a combination of biological, social, and geographic utilization, and planned management of living organisms and their vital processes to prevent their depletion, exploitation, destruction, or waste.

C

Clearcutting. An even-aged regeneration method used on stands to develop a new age class in a fully-exposed microclimate by removal in a single harvest of all trees in the previous stand. Regeneration is from natural seeding, direct seeding, planted seedlings, and / or advance reproduction. Harvesting may be done in groups or patches (group or patch clearcutting), or in strips (strip clearcutting).

Clearcutting with reserves. A two-aged regeneration method similar to clearcutting except that varying numbers of reserve trees are not harvested to attain goals other than regeneration.

COMMONLY USED TERMS

C, D

Codominant. Crown class of trees whose crowns form the general level of the main canopy in even-aged stands. They receive full light from above and comparatively little from the sides. Also see *dominant*.

Coppice methods. Methods of regenerating a stand in which the majority of regeneration is from stump sprouts or root suckers.

Coppice. An even-aged regeneration method used on stands in which all trees in the previous stand are harvested and the majority of regeneration develops from sprouts or root suckers.

Coppice with reserves. A two-aged regeneration method similar to coppice except that reserve trees are retained for goals other than regeneration. The number of reserve trees retained is sufficient to create a two-aged stand.

Corridor. *a*. A route permitting species to spread from one ecoregion or province to another; *b*. A linear strip of land offering ecological, technical, economic, social, or similar advantages over other areas for location of transportation or utility rights-of-way within its boundaries.

Corridors, landscape. A dissimilar matrix or aggregation of landscape elements serving to connect similar patches.

Crop tree. Any tree selected to become a component of a future final harvest.

Crown. The part of a tree or woody plant bearing live branches and foliage.

Crown class. A class of tree based on crown position relative to the crowns of adjacent trees.

Cumulative effects analysis. An analysis of the effects on the environment resulting from the incremental impacts of a proposed action when added to other past, present, and reasonably foreseeable future actions — regardless of what agency (federal or non-federal), or person undertakes such other actions.

Crown cover. The ground area covered by the crowns of trees or woody vegetation as delimited by the vertical projection of crown perimeters and commonly expressed as a percent of total ground area Also called canopy cover.

Crown density. The amount, compactness, or depth of foliage of the crowns of trees and / or shrubs.

Cutting cycle. The planned interval between partial harvests in a managed uneven-aged stand. Also see *thinning interval*.

D

Desired future condition. A portrayal of the land or resource conditions which are expected to result if goals and objectives are fully achieved.

Desired future vegetation. The composition and structural characteristics of the plant community on a site or an ecological unit which meets forest plan or other management objectives.

Disturbance. A discrete event, either natural or human induced, causing change in the condition of an ecological system.

Diversity. *a*. The condition of being different; *b*. the distribution and abundance of plant and animal species and communities in an area (***26 CFR 219***); *c*. The distribution and abundance of different plants and animal communities within an area.

Diversity, compositional. Variation in types of landscape elements or vegetation types, their relative proportions within the landscape, or their degree of rarity or commonness.

Diversity, process. Relates to the variety of landscape flows, functions, and processes present on a given area.

Diversity, structural (syn: *heterogeneity*). Variation in sizes and shapes of landscape elements, as well as diversity of pattern.

Dominant. Crown class of trees with crowns extending above the general level of the main canopy of even-aged stands. They receive full light from above and partial light from the sides.

E

Ecological approach. Natural resource planning and management activities that assure consideration of the relationship between all organisms (including humans) and their environment.

Ecological classification. A multifactor approach to categorizing and delineating, at different levels of resolution, areas of land and water having similar characteristic combinations of the *physical environment* — such as climate, geomorphic processes, and hydrologic functions of geology and soils; *biological communities* — such as plants, animals, microorganisms, and potential natural communities; and the *human dimension* — such as social, economic, cultural, and infrastructure.

Ecological process. The actions or events that link organisms (including humans) and their environment, such as disturbance, successional development, nutrient cycling, carbon sequestration, productivity, and decay.

Ecological site. A specific location on the land, representative of an ecological type.

Ecological status. The degree of similarity between the existing vegetation (all components and their characteristics) and existing soil conditions compared to the potential natural community and the desired soil condition of a site.

Ecological type. A category of land having a unique combination of potential natural community, soil, landscape features, climate, and differing from other ecological types in its ability to produce vegetation and respond to management.

Ecological unit. A mapped landscape unit designed to meet management objectives, comprised of one or more ecological types.

Ecology. From Greek *oikos*, meaning "house" or "place to live"; literally, the study of organisms at home. The science of the interrelationships or organisms or group of organisms with their environment.

Ecoregion. A continuous geographic area over which the macroclimate is sufficiently uniform to permit development of similar ecosystems on sites with similar properties. Ecoregions contain multiple landscapes with differing ecosystem spatial patterns.

Ecosystem. The system formed by the interaction of a group of organisms and their environment.
a. Formal: "Any unit including all of the organisms (for example, the "community"), in a given area interacting with the physical environment so that a flow of energy leads to a clearly defined trophic structure, biotic diversity, and material cycles within the system" (**E.P. Odum, 1971**);
b. Regional: Large land areas that encompass many biological communities and land management regimes and are identifiable by climate, landform, soils, and landscape patterns; *c*. The natural complex of plant and animal populations and the particular sets of physical conditions under which they exist; *d*. The organisms of a particular habitat together with the physical environment in which they live; a dynamic complex of plant and animal communities and their associated nonliving environment; *e*. Humans as a part of, not apart from, a life support system composed of the atmosphere, water, minerals, soils, plants, animals, and microorganism that function together to keep the whole viable.

Ecosystem management. *a*. The use of an ecological approach that blends social, physical, economic and biological needs and values to assure productive, healthy, sustainable ecosystems; *b*. Using a careful and skillful ecological approach to achieve the multiple-use management of national forests and grasslands by blending the needs of people and environmental values in such a way that national forests and grasslands represent diverse, healthy, productive, and sustainable ecosystems; *c*. The skillful use of ecological, economic, social, and managerial principles in managing ecosystems to produce, restore, or sustain ecosystem integrity and conditions, uses, products, values, and services over the long term.

COMMONLY USED TERMS

E,F

Ecosystem functions (syn: *processes*). The major processes of ecosystems that regulate or influence structure, composition, and pattern. These include nutrient cycles, energy flows, food chains, diversity patterns in time / space development and evolution, hydrologic cycles, and weathering processes.

Ecosystem composition. The specific elements that make up an interacting system, i.e., plant and animal species, microorganisms, soil type, landform, and climate regimes.

Ecosystem structure. The physical arrangement of the various components. Also, trophic structure; measured in standing crop or energy fixed per unit area per unit time. May be pyramids of numbers, biomass, or energy flows.

Ecosystem pattern. The structure that results from the distribution of organisms in, and their interaction with their environment. Includes zonation, stratification, activity or periodicity, food-webs, reproductive, social and stochastic.

Ecotone. *a*. A transition between two or more biotic communities or ecotones; *b*. A transition area between two communities, having characteristics of both kinds of neighboring vegetation as well as characteristics of its own. Varies in width, depending on site and climatic factors.

Ecotype. A locally adapted population of a species which has a distinctive limit of tolerance to environmental factors; a genetically uniform population of a species resulting from natural selection by the special conditions of a particular habitat.

Edaphic. Pertaining to the soil and its ecological relationships resulting from or influenced by factors inherent in the soil or other substrate, rather than by climatic factors.

Endemic (n. endemism). Restricted to a specified region or locality.

Environment. *a*. The complex of climatic, soil and biotic factors that act upon an organism or ecological community and ultimately determine its form and survival; *b*. The sum of all external conditions that affect an organism or community to influence its development or existence.

Environmentally acceptable commodity production. The management and production of desired yields of natural resources while meeting standards for protection of environmental values, including guidelines for management practices and aesthetic conditions.

Even-aged stand. A stand of trees containing a single age class in which the range of tree ages is usually less than 20 percent of the rotation length. Also see *rotation*.

Even-aged silvicultural system. A planned sequence of treatments designed to maintain and regenerate a stand with one age class. The range of tree ages is usually less than 20 percent of the rotation. (Also, see *clearcutting*, *seed-tree*, *shelterwood*, *coppice*).

Exotic species. Species which occur in a given place, area, or region as the result of direct or indirect, deliberate or accidental introduction of the species by humans, and for which introduction has permitted the species to cross a natural barrier to dispersal.

Ex situ. A conservation method that entails the removal of germplasm resources (seed, pollen, sperm, individual organisms) from their original habitat or natural environment.

Extinct. No longer existing.

Extirpate. To remove all individuals in a population completely.

F

Food web. The interlocking pattern of food chains in an ecosystem. A food chain is a transfer of food energy from plants through a series of animals.

Forest canopy. The cover of branches and foliage formed collectively by tree crowns.

Forest health. A condition wherein a forest has the capacity across the landscape for renewal, for recovery from a wide range of disturbances, and for retention of its ecological resiliency while meeting current and future needs of people for desired levels of values, uses, products, and services.

Forest management. The practical application of scientific, economic, and social principals to the administration and working of a forest for specified objectives.

Forest type. A category or class of forest defined by its vegetation (species composition) and / or by its locality.

Fragmentation. Breaking up of contiguous areas into progressively smaller patches of increasing degrees of isolation.

G

Gap analysis. Process to determine distribution and status of biological diversity and assess adequacy of existing management areas to protect biological diversity.

Gap phase succession. Progressive changes in community structure, composition, and diversity following small-scale forest disturbances.

Genotype. The genetic constitution of an organism as distinguished from its physical appearance, called phenotype, which is the result of both heredity and environment. Also see *phenotype*.

Goods and services. Various outputs produced by forest and rangeland renewable resources, the tangible and intangible values of which are expressed in market and nonmarket terms.

Group selection. An uneven-aged regeneration method used on stands in which trees are removed, and new age classes are established, in small groups. The maximum width of groups is approximately twice the height of the mature trees, with small openings providing microenvironments suitable for tolerant regeneration and the larger openings providing conditions suitable for more intolerant regeneration. In the group selection system, the management unit or stand in which regeneration, growth, and yield are regulated consists of a landscape containing an aggregation of groups (Also, see *clearcutting*).

Guild. A group of organisms sharing a common food resource.

H

Habitat. The place within the environment in which an organism lives.

Habitat type. The collective land area which one association occupies, or will come to occupy, as succession advances.

Habitat connections. A network of habitat patches linked by areas of similar habitat. For example, the linkages connect habitat areas within a watershed to each other and to areas outside the watershed. These connections include riparian areas, midslopes, and ridges. In the case of old-growth forest habitat connections, each connection is planned to be sufficiently wide (at least 1,000 feet) to retain interior old-growth associated species.

Harvesting method. A cutting method by which a stand is harvested. Emphasis is on meeting logging requirements rather than silvicultural objectives. Also see *regeneration method*.

Healthy ecosystem. An ecosystem in which structure and functions allow the maintenance of biological diversity, biotic integrity, and ecological processes over time.

Home range. The geographic area within which an animal restricts its activities.

Human dimension. An integral component of ecosystem management that recognizes people as a vital part of ecosystems: their pursuits of past, present, and future desires, needs and values — including perceptions, beliefs, attitudes and behaviors — have and will continue to influence ecosystems; and that ecosystem management must include consideration of the physical, emotional, mental, spiritual, social, cultural and economic well-being of people and communities.

COMMONLY USED TERMS

I, L, M

I

Improvement cutting. A cutting made in a stand past the sapling stage primarily to improve composition and quality by removing less desirable trees of any species.

Ingrowth. Trees that during a specified period have grown past an arbitrary lower limit of (usually) diameter or height. Ingrowth is usually measured as basal area or volume per unit area.

In situ. A conservation method that attempts to preserve the genetic integrity of biotic responses by conserving them in their original habitat or natural environment.

Integrated pest management. A pest management philosophy based on an understanding of forest growth and development, forest pest-host dynamics, and the interaction of the two — which provides the resource manager with information for making decisions.

Integrated resources management. The simultaneous consideration of ecological, physical, economic, and social aspects of lands, waters, and resources in developing and carrying multiple-use, sustained-yield management.

Intermediate. Crown class of trees whose crowns extend into the lower portion of the main canopy of even-aged stands, but shorter in height than the codominants. They receive little direct light from above and none from the sides. Also see *dominant*.

Intermediate treatments (syn: *tending*). A collective term for any treatment designed to enhance growth, quality, vigor, and composition of the stand after establishment of regeneration and prior to final harvest. Also see *tending* and *stand improvement*.

Irregular planting. Planting of seedlings in areas as allowed by existing physical conditions, rather than rows with regular spacing between seedlings.

L

Landscape. An area composed of interacting ecosystems that are repeated because of geology, land form, soils, climate, biota and human influences throughout the area. Landscapes are generally of a size, shape and pattern which is determined by interacting ecosystems.

Landscape; *scenery*. A more or less extensive view of, or prospect of scenery, such as may be comprehended within the scope or vision from a single point of view. Also a watershed, basin, or other physiographic feature viewed from a point.

Landtype association (LTA). An ecological unit ranging in size from about 25,000 acres to as much as 500,000 acres. An LTA is fairly uniform in land-surface form, subsurface geology, soil patterns, and historical vegetation.

Linkages. Routes permitting movement of individual plants (by dispersal) and animals from a landscape unit or habitat type to another similar landscape unit or habitat type.

M

Management direction. A statement of multiple-use goals, other goals and objectives, management prescriptions, and the associated standards and guidelines for attaining these.

Management indicator species. *a*. Any species, or species habitat element selected to focus management attention for the purpose of resource production, population recovery, maintenance of population viability, or ecosystem diversity. *b*. A species whose condition can be used to assess the impacts of management actions on a particular area. *c*. A species whose welfare is presumed to indicate the welfare of other species using the same habitat.

Management type. A forest vegetation type that has been selected as the species that will best achieve desired future conditions and meet the goals and objectives of the Forest Plan.

Mast. Hard mast is the fruit or nuts of oaks, beech, walnuts, chinquapins, and hickories. Soft mast includes the fruits and berries of dogwood, viburnums, elderberry, huckleberry, crataegus, grape, raspberry, and blackberry.

Mature forest. Generally used in an economic sense to indicate that a forest has attained harvest age.

Microsite. A rock outcrop, snag, seep, stream pool, or other environmental feature, small in scale but unique in character.

Monitoring. To watch, observe, or check, especially for a specific purpose, such as to keep track of, regulate, or control.

Mosaic. Variable patterns created by vegetation communities on the landscape.

Multiple use. The management of lands and their various resource values for use combinations best meeting present and future public needs.

Mixed stand. A stand in which there is a mixture of tree species.

N

Natural conditions. Plant and animal communities where people have not directly impacted either those communities or their soils by such activities as logging, grazing, or cultivation. Indirect activities, such as fire suppression and air quality are part of the current environment and part of natural succession.

Natural regeneration. An age class created from natural seeding, sprouting, suckering, or layering.

New Perspectives. A Forest Service project to bring about new thinking, new technologies, and new alliances to improve ecological management of the National Forest System. Managing ecosystems to sustain diversity and productivity for future resource uses, values, products, and services. This project was a precursor to the concept of ecosystem management. See also *ecosystem management*.

Nurse tree (syn: *nurse crop*). A tree, group or crop of trees, shrubs, or other plants, either naturally occurring or introduced, used to nurture or improve the form of a more important tree or crop during youth by protecting it from frost, insolation, or wind.

O

Off-road vehicle (ORV). Any motorized vehicle designed for or capable of cross-country travel on or immediately over land, water, snow, ice, marsh, swampland, or other natural terrain. It includes but is not limited to four-wheel drive or low-pressure-tired vehicles, motorcycles and related two-wheeled vehicles, amphibious machines, ground-effect or air-cushion vehicles, and any other means of transportation deriving power from any source other than muscle or wind; except that such term shall exclude any registered motorboat; any military, fire, or law enforcement vehicle; any farm-type tractor and other self-propelled agricultural equipment used exclusively for agricultural purposes; any self-propelled equipment for harvesting and transporting forest products, or for earth moving or construction while being used for these purposes on the work site (and self-propelled lawnmowers, snowblowers, garden or lawn tractors, or golf carts while being used for their designed purpose).

Old-growth forests. An ecosystem distinguished by old trees and related structural attributes. Old growth encompasses the later stages of stand development that typically differ from earlier stages in a variety of characteristics including tree size, accumulation of large dead woody material, number of canopy layers, species composition, and ecosystem function. Old growth is not necessarily virgin or primeval. It can develop over time following human disturbances, just as it does following natural disturbances. Old growth encompasses both older forests dominated by early seral species and forests in later successional stages dominated by shade tolerant species.

COMMONLY USED TERMS

O,P,R,S

Overstory removal. The cutting of trees comprising an upper canopy layer in order to release trees or other vegetation in an understory.

Overtopped (syn: *suppressed*). Crown class of trees with varying levels of vigor whose crowns are completely covered by crowns of one or more neighboring trees.

P

Precommercial thinning. A thinning that yields no trees of commercial value, usually designed to improve crop spacing.

Plant association. *a*. A potential natural plant community of definite floristic composition and uniform appearance; *b*. A basic unit of vegetation classification based on the climax plant community; a distinctive combination of vascular plants at climax; *c*. Stands of vegetation with similar combinations of species united into abstract types; a basic unit in plant community classification; *d*. An arbitrary grouping of plant communities into a type within environmental gradients and the distribution of populations along the gradients; *e*. An association is a subdivision of *formation*, the highest level of plant community classification. It is divided into three more lower units. The lowest, *location*, is the basic unit in plant community classification.

Population. A group of individuals with common ancestry that are much more likely to mate with one another than with individuals from another such group.

Potential natural community. The biotic community that would be established if all successional sequences of its ecosystem were completed without additional human-caused disturbances under present environmental conditions. Grazing by native fauna, natural disturbances such as drought, floods, wildfire, insects, and disease, are inherent in the development of potential natural communities which may include naturalized nonnative species.

Province. A continuous geographic area wherein species composition, both plant and animal, is more homogeneous than between adjacent areas.

Pure stand. A stand composed of essentially a single tree species.

R

Riparian areas. Geographically delineable areas with distinctive resource value and characteristics that are comprised of the aquatic and riparian ecosystem.

Riparian-associated resources. The plant and animal habitats and mesic sideslope communities that are found within or adjacent to riparian areas or scour channels.

Riparian area protection zone (RAPZ). An area that may extend beyond the SHPZ to at least the extent of the flat, level area or alluvial floodplain landform. This area is provided to protect or enhance those distinctive resource values and characteristics that comprise the aquatic and riparian ecosystems.

Range of variability (syns: *natural variability*, *historic variability*). The spectrum of conditions possible in ecosystem composition, structure, and function considering both temporal and spatial factors.

Regeneration (syn: *reproduction*) method. A cutting method by which a new age class is created. The major methods are clearcutting, seed-tree, shelterwood, selection, and coppice.

Release. A treatment designed to free young trees from competitive, usually overtopping, vegetation.

S

Scour channel. A definable channel of flow where water converges showing signs of soil movement.

Seed-tree. An even-aged regeneration method in which a new age class develops from seedlings that germinate in fully exposed microenvironments after removal of all the previous stand except a small number of trees left to provide seed. Seed trees are removed after regeneration is established.

Seed-tree with reserves. A two-aged seed-tree method in which some or all of the seed trees are retained after regeneration has become established, to attain goals other than regeneration.

Shelterwood. An even-aged regeneration method used on stands in order to develop new age classes beneath the partially shaped microenvironment provided by residual trees. The sequence of treatments can include three distinct types of cuttings:
1. Optional preparatory harvest to enhance conditions for seed production.
2. Establishment harvest to prepare the seed bed and to create a new age class.
3. Removal harvest to release established regeneration from competition with the overwood. Harvesting may be done uniformly throughout the stand — uniform shelterwood, in groups or patches — group shelterwood, or in strips — strip shelterwood.

Shelterwood with reserves. A two-aged regeneration method similar to a shelterwood, except that some or all shelter trees are retained well beyond the normal period of retention for goals other than regeneration. The resulting stand may be two-aged or tend towards an uneven-aged condition as a consequence of both an extended period of regeneration establishment and the retention of reserve trees that may represent one or more age classes.

Single-tree selection. An uneven-aged method of creating new age classes in uneven-aged stands throughout which individual trees of all size classes are removed more or less uniformly to achieve desired stand structure.

Silviculture. The science of controlling the establishment, growth, composition, health, and quality of forests and woodlands. Silviculture entails the manipulation of forest and woodland vegetation in stands and on landscapes to meet the diverse needs and values of society on a sustainable basis.

Silvicultural system. A planned process whereby a stand is tended, harvested, and reestablished. The system name is based on the number of age classes, and / or the regeneration method used. See also *even-aged*, *two-aged*, *uneven-aged*, *clearcutting*, *seed-tree*, *shelterwood*, *single-tree selection*, *coppice*.

Site. *a*. Classification of land area based on its climate, physiographic (physical geography), edaphic (soil), and biotic factors that determine its suitability and productivity for particular species and silvicultural alternatives; *b*. In ecology, an area described or defined by biotic, climatic, and soil conditions related to its capacity to produce vegetation; an area sufficiently uniform in biotic, climatic, and soil conditions to produce a particular climax vegetation.

Site class. A classification of site quality, usually expressed in terms of ranges of dominant tree height at a given age or potential mean annual increment at culmination.

Site preparation. A treatment designed to condition the soil and remove competing vegetation to enhance the survival and growth of seedlings or seeds.

Site quality (syn: *productivity*). The productive capacity of a site, usually expressed as volume production of a given species.

Size classes. Tree sizes recognized by distinct ranges, usually of diameter or height.

Species. A population or series of populations of organisms that are capable of interbreeding freely with each other but not with members of other species.

Stand. A contiguous group of trees sufficiently uniform in age class distribution, composition, and structure, and growing on a site of sufficiently uniform quality, to be a distinguishable unit.

Stratified mixture. A stand in which different tree species occupy different strata of the total crown canopy.

Stand composition. The representation of tree species in a forest stand, expressed by some measure of dominance such as percent of volume, number, basal area, cover.

COMMONLY USED TERMS

S, T

Stand density. A quantitative, absolute measure of tree occupancy per unit of land area in such terms as numbers of trees, basal area, or volume.

Stand improvement. A term comprising all intermediate cuttings made to improve the composition, structure, condition, health, and growth of even-aged, two-aged, or uneven-aged stands.

Stewardship. *a*. Caring for land and associated resources and passing healthy ecosystems to future generations. *b*. The management of someone else's property — for example, the Forest Service's management of the American people's National Forest System.

Stocking. An indication of growing-space occupancy relative to a preestablished standard. Common indices of stocking are based on percent occupancy, basal area, relative density, and crown competition factor.

Stratum (canopy layer). A distinct layer of vegetation within a forest community.

Streamside habitat protection zone (SHPZ). An area adjacent to a stream scour channel provided to protect or enhance riparian-associated resource values and characteristics.

Stressors. Physical or biotic factors that stress individual organisms / communities.

Succession. Over time, *a*. an orderly process of biotic community development involving changes in species, structure and community processes. It is reasonably directional and therefore predictable; *b*. The succession or progression of plant communities on a site that previously contained a plant community removed by disturbance such as fire or logging; *c*. In an ecological sense, a process of community development involving changes in species structure and community processes.

Successional stage. One in a series of usually transitory communities or developmental stages that occur on a particular site or area over a period of time.

Suitability. The appropriateness of applying certain resource management practices to a particular area of land, as determined by an analysis of the economic and environmental consequences and the alternative uses foregone.

Sustainability. The ability of an ecosystem to maintain ecological processes and functions, biological diversity, and productivity over time.

Sustainability; *ecosystem*. *a*. The ability to sustain diversity, productivity, resilience to stress, health, renewability, and / or yields of desired values, resource uses, products, or services from an ecosystem while maintaining the integrity of the ecosystem over time; *b*. Management of ecosystems so that the desired mix of values and resources are tempered to ensure that their capabilities and suitabilities are not compromised for future generations.

T

Tending. See *intermediate treatments*.

Terrestrial ecosystem. A land based ecosystem (see *ecosystem*). An interacting system of soil, geology, and topography with plant and animal communities.

Thinning. Tree cutting to reduce stand density — primarily to improve growth, enhance forest health, or to recover potential mortality. Four commonly used types are:

***Crown thinning* (*thinning from above*, *high thinning*).** The removal of trees from the dominant and codominant crown classes in even-aged stands, or in even-aged groups within uneven-aged stands, in order to favor the best trees of those same crown classes.

***Free thinning*.** The removal of trees in even-aged, two-aged, or uneven-aged stands to control stand spacing and favor desired trees using a combination of thinning criteria without regard to crown position.

***Low thinning*.** The removal of trees from the lower crown classes to favor those in the upper crown classes.

Mechanical thinning (geometric thinning). The thinning of trees in either even-aged or two-aged stands, or in even-aged groups within uneven-aged stands, in the dominant crown class in order to favor the lower crown classes.

Thinning interval. The period of time between successive thinning entries, usually used in connection with even-aged stands. Also see *cutting cycle*.

Two-aged stand. A stand composed of two distinct age classes, separated in age by more than 20 percent of the rotation length.

Two-aged silvicultural system. A planned sequence of treatments designed to maintain and regenerate a stand with two age classes. Also see *shelterwood with reserves*, *coppice with reserves*.

Two-aged methods. Methods designed to maintain and regenerate a stand with two age classes.

U

Uneven-aged (selection) methods. Methods of regenerating a forest stand and maintaining an uneven-aged structure by removing some trees in all size classes — singly, in small groups, or in strips.

Undercutting (syn: *root pruning*). The root pruning of seedlings in a nursery bed.

Uneven-aged stand. A stand of trees of three or more distinct age classes, either intimately mixed or in small groups.

Uneven-aged silvicultural system. A planned sequence of treatments designed to maintain and regenerate a stand with three or more age classes. Also see *single-tree selection* and *group selection*.

Unsuitable forest land. Forest land that is not managed for timber production because a) the land has been withdrawn by Congress, the Secretary, or the Chief; b) the land is not producing or not capable of producing crops of industrial wood; c) technology is not available to prevent irreversible damage to soils, productivity, or watershed conditions; d) there is no reasonable assurance that lands can be adequately restocked within five years after final harvest, based on existing technology and knowledge, as reflected in current research and experience; e) there is at present a lack of adequate information in response to timber management activities; or f) timber management is inconsistent with or not cost efficient in meeting the management requirements and multiple-use objectives specified in the Forest Plan.

V

Vascular plants. Plants with well-developed vascular systems that transport water, minerals, sugars, and other nutrients throughout the plant body. This excludes the bryophytes: mosses, hornworts, and liverworts.

Viability. The likelihood of continued existence in an area for some specified period of time.

W

Watershed. An area of land with a characteristic drainage network that contributes surface or ground water to the flow at that point; a drainage basin or a major subdivision of a drainage basin.

Weeding. A release treatment in stands not past the sapling stage, which eliminates or suppresses undesirable vegetation regardless of crown position.

Wrenching. The disturbance of seedling roots in a nursery bed — for example, using a tractor-drawn blade — with the objective of stimulating development of a fibrous root system.