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Forest  
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# Revised Land and Resource Management Plan

## Ouachita National Forest Arkansas and Oklahoma

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# PART 1 – VISION

## Introduction

The Revised Land and Resource Management Plan (Forest Plan) for the Ouachita National Forest provides broad, strategic direction for managing the land and its resources. It does not make project-level decisions, nor does it contain commitments to implement specific projects. Those decisions are made after more detailed analyses and further public comment. Site-specific project decisions must be consistent with the Forest Plan. In some cases, the Forest Plan may be amended to allow projects to be implemented that would otherwise be inconsistent with the Plan.

This Forest Plan was prepared according to the requirements of the National Forest Management Act (NFMA), the National Environmental Policy Act (NEPA), and other laws and regulations. This Revised Forest Plan replaces the 1990 Amended Land and Resource Management Plan for the Ouachita National Forest.

The Forest Plan was developed to present the management alternative that, compared with other management alternatives, comes nearest to maximizing net public benefits, consistent with the resource integration management requirements of the 36 Code of Federal Regulations (CFR) Section 219.13 through 219.27 in effect prior to January 5, 2005. The accompanying Final Environmental Impact Statement (FEIS) describes the analysis that was used to compare Forest Plan alternatives and to provide information for use in selecting the alternative to implement as the 2005 Revised Forest Plan.

## Organization of the Revised Forest Plan

This Forest Plan is presented in a format based on a relatively new model developed for national use. It consists of three interrelated parts:

**Part 1, the Vision**, describes the Ouachita National Forest's roles and contributions; desired conditions (36 CFR 219.11(b)) for the various landscapes within the Forest; and evaluation/monitoring indicators (36 CFR 219.11 (d)) that will be used to assess the progress made toward accomplishing the desired conditions. Part 1 includes:

- *Distinctive Roles and Contributions of the Forest.* The Vision begins with a description of the Forest, including its distinctive roles and contributions to the local area, states, region, and nation.
- *Desired Conditions.* Desired conditions describe how the Forest is expected to look and function in the future when management direction in the Forest Plan has been successfully implemented. Desired conditions are described using the ecological, economic, and social attributes that characterize or exemplify the outcomes of land management. The degree to which the Forest achieves the desired conditions will be monitored. Desired conditions are not commitments and may be achievable only over the long term.
- *Evaluation/Monitoring.* Descriptions of planned monitoring and evaluation are included after each statement of desired conditions.

**Part 2, the Strategy**, describes the objectives (36 CFR 219.11 (b)) that the U.S. Forest Service intends to implement in order to move the Forest toward the Vision described in Part 1; types of land use by Management Area (MA); and past and anticipated future management performance. It also includes a landownership adjustment and a monitoring strategy.

**Part 3, the Design Criteria**, includes the management standards (36 CFR 219.11 (c), 219.13 through 219.27). Standards are mandatory requirements that apply to site-specific activities. Design criteria are intended to assure that projects protect resources and are consistent with achieving the objectives and desired conditions for the Ouachita National Forest, as a whole, and the desired conditions and strategies for the MAs.

A Glossary of Commonly Used Terms and a Glossary of Commonly Used Abbreviations and Acronyms follow Part 3.

## Purpose of the Revised Forest Plan

The Revised Forest Plan guides all natural resource management activities for the Ouachita National Forest. To accomplish this, the Revised Forest Plan:

- Establishes long-range goals (desired conditions) and short-range objectives (generally for the next 10 to 15 years)
- Specifies management prescriptions and associated standards and anticipates the rates or levels of management practices that will be applied
- Establishes monitoring and evaluation requirements that provide a basis for periodic determination and evaluation of the effects of implementing the Forest Plan

The Revised Forest Plan was developed in accordance with the provisions of the NFMA, its implementing regulations, and other pertinent guidance. Together, land allocations, management prescriptions, and design criteria represent a statement of long-term management direction. Projected outcomes, services, and rates of implementation are dependent on the annual budgeting process, among other variables.

The Revised Forest Plan sets the context for project development. Projects may be proposed to respond to public requests or as part of regular Forest Service programs. Projects address differences between current conditions and desired conditions.

When a project is proposed, the suitable use and use strategy descriptions (see Part 2, Strategy) are reviewed for compatibility with the proposed activities. If the project is an allowable use, appropriate and relevant standards (see Part 3, Design Criteria) are incorporated. The proposed action is then analyzed using various laws, regulations, and policy. If the project is inconsistent with plan direction, the project may be redesigned or rejected, or a forest plan amendment may be considered.

A forest plan is a component of a cycle of adaptation that provides a framework guiding future management decisions and actions. As such, a plan does not create or execute any ground-disturbing activity. A plan in and of itself does not grant, withhold, or modify any contract, permit, or other legal instrument; does not subject anyone to civil or

criminal liability; and creates no legal rights. A plan by itself is not an action-forcing document.

The cycle of adaptation is incorporated through monitoring and evaluation requirements that are found within the plan. Part 1 identifies outcome level performance measures for each desired condition. These are long-term measures of movement toward the respective desired condition. Part 2 identifies program strategies and associated performance indicators. Project-level adaptation, triggered by reviews of selected projects, is focused on the effectiveness of project design criteria (presented in Part 3). The annual monitoring and evaluation report evaluates all three levels of monitoring at the appropriate time cycle.

## Forest Roles, Contributions, and Vision

### Location

The Ouachita National Forest is located in western Arkansas and southeastern Oklahoma and includes nearly 1.8 million acres of federally managed land, shown on the vicinity map (Figure 1).

The Forest is located within Ashley, Garland, Hot Spring, Howard, Logan, Montgomery, Perry, Pike, Polk, Saline, Scott, Sebastian, and Yell Counties in Arkansas and LeFlore and McCurtain Counties in Oklahoma.

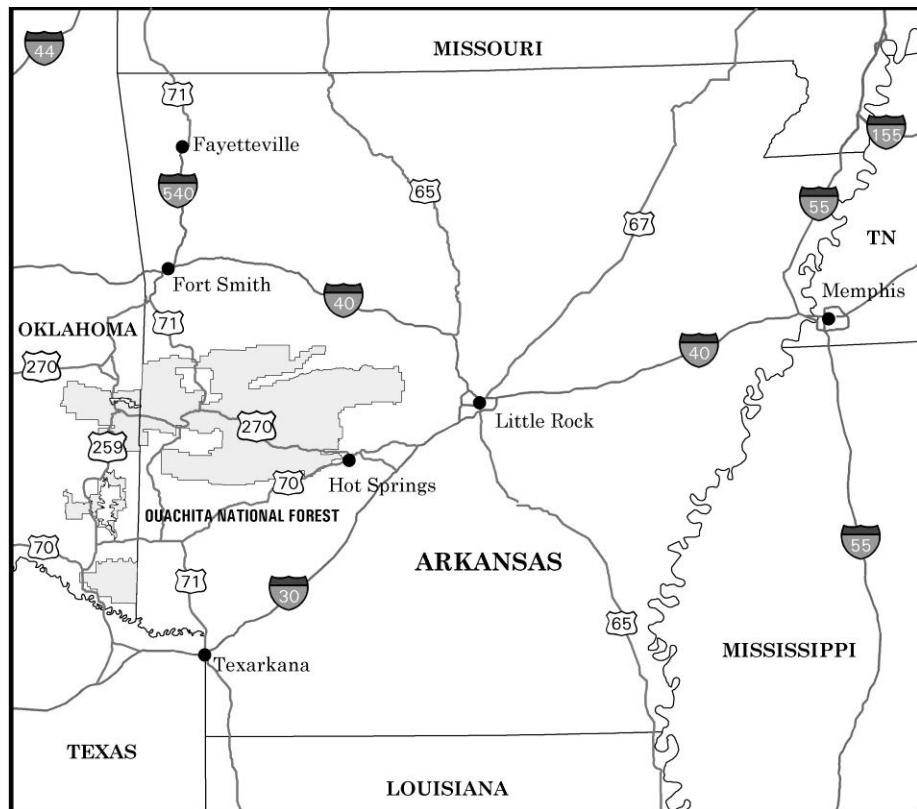


Figure 1. Ouachita National Forest Vicinity Map

## Roles and Contributions

At the global and national scales, the Ouachita National Forest:

- sustains the largest expanse of native shortleaf pine ecosystems under one ownership and also harbors outstanding oak-dominated and mixed mesic forest and woodland systems
- provides opportunities for scenic driving on National Forest Scenic Byways, Scenic Highways, and a wealth of scenic unpaved roads
- provides high-quality recreation settings for the 192 miles of the Ouachita National Recreation Trail that are within the boundaries of the Forest, the Winding Stair National Recreation Area, and two designated Wild and Scenic Rivers
- together with the Ozark National Forest, is part of a recreation draw zone (a 75-mile straight-line radius from the borders of the two national forests) in which more than 5 million people live
- includes six designated wildernesses covering approximately 65,000 acres
- is one of the few sources for electronic grade, high-quality quartz in North America and a major world producer, and the leading U.S. producer of quartz crystal, for aesthetic and jewelry uses
- is thought to have the largest concentration of prehistoric mines (novaculite mines) in North America
- is home to a wealth of native biodiversity (plants, animals, natural communities), including at least five salamander species, seven fish species, 13 crayfish species, and 15 plant species that are endemic to the Ouachita Mountains; the Forest also provides the only breeding and foraging habitat for the largest population of the endangered Red-cockaded Woodpecker (RCW) in the Ouachita Mountains and foraging and potential breeding habitat for the only other population of RCW
- conserves one archeological site and 90 buildings/structures on the National Register of Historic Places and over 1,400 sites eligible to be included on the National Register

On regional and local scales, the Ouachita National Forest:

- contains diverse habitats important to maintaining populations of many native plant, fish, and animal species
- conserves an important 16.5-mile segment of the Glover River, the last free-flowing river in Oklahoma, and almost two miles of the Mountain Fork River (which, like the Glover River segment, is designated as Critical Habitat for the threatened leopard darter)

- is an important source of high-quality wood products, especially shortleaf pine sawtimber, for local and regional economies
- is one of the few large areas in Arkansas or Oklahoma where access for hunting is free and opportunities to hunt wild turkey, white-tailed deer, gray squirrel, and black bear are good to excellent
- provides high-quality recreation settings for hiking, mountain biking, and horseback riding on more than 600 miles of trail; motorized use on hundreds of miles of roads and about 100 miles of trails; and fishing in hundreds of miles of clear streams and dozens of lakes and ponds
- is the primary place of origin for much of the surface water that supplies communities in the Ouachita Mountains and is an important source of water for central Arkansas (via Lake Winona); lands of the Ouachita National Forest surround the source of potable water (Broken Bow Lake) for a large area in southeastern Oklahoma

## **Vision**

The Ouachita National Forest is a model of sustainable ecosystem management, featuring healthy ecosystems that provide a balanced and sustainable flow of goods and services for a growing, diverse population. Forest watersheds provide many benefits, including flood protection and quality drinking water for downstream communities, as well as protection of wildland-urban interface areas from wildfire. They offer a haven for many native plants and animals and provide unique and irreplaceable habitat for threatened, endangered, and sensitive species. The National Forest provides much needed open space and a wide variety of recreation opportunities. It also serves as an outdoor classroom, a “living laboratory,” for learning about our natural and cultural heritage and the importance of conservation.

### Employees’ Vision for the Ouachita National Forest

- A Forest that is healthy, beautiful, and useful with the full complement of native plants and animals, high-quality lakes and streams, and intact, productive soils;
- Forest Service employees and citizens working together to develop ecologically sustainable and socially acceptable land management programs; and
- A highly competent and diverse workforce, proud of the Forest Service and the work we do, openly communicating in a spirit of trust with each other and with the public we serve.

# Desired Condition of the Ouachita National Forest

## Terrestrial, Riparian, and Aquatic Ecosystems

The desired condition for terrestrial ecosystems is a mix of closed-canopy forest, intermittent-canopy woodlands, and open prairie and glade conditions. Forest and/or woodland systems may be dominated by pine, oak, or pine and oak species together. Non-forested systems are primarily dominated by grasses, forbs, and shrubs. Fire, thinning, and other vegetation management practices are used to help sustain the balance of structural and compositional diversity needed to support healthy populations of native plants and animals while maintaining the productivity of the land.

The desired condition for riparian and aquatic-associated terrestrial communities (within designated Streamside Management Areas) is high water quality, undiminished soil productivity, stable streambanks, and high-quality habitat for riparian-dependent and aquatic species. Properly functioning systems support healthy populations of native and desired non-native species.

Species composition for all native plant communities falls within the natural range of variation described in 2003 by NatureServe (a non-profit conservation organization that provides the scientific information and tools needed to help guide effective conservation action) for the Ouachita Mountain and West Gulf Coast Plain communities that occur within the Forest. Where native species have been displaced by non-native or off-site species, systems will be restored over time to native species composition. The mix of ecological conditions, including a range of structural conditions in the major community types, will be adequate to support viable populations of all native plant and animal species.

The 17 ecological systems (plus 3 subsystems) recognized within the Forest are:

### **Terrestrial Communities**

- Ouachita Shortleaf Pine-Oak Forest and Woodland, comprised of:
  - Ouachita Shortleaf Pine-Oak Forest
  - Ouachita Shortleaf Pine-Oak Woodland
  - Ouachita Shortleaf Pine-Bluestem (Red-cockaded Woodpecker Habitat)
- West Gulf Coastal Plain Pine-Hardwood Forest
- Ouachita Dry-Mesic Oak Forest
- Ouachita Mesic Hardwood Forest
- Ouachita Montane Oak Forest
- Ouachita Dry Oak Woodland
- Ouachita Novaculite Glade and Woodland
- Central Interior Highlands Dry Acidic Glade and Barrens
- Central Interior Acidic Cliff and Talus
- Calcareous Prairie

### **Riparian and Aquatic Communities**

- Ouachita Mountain Forested Seep
- Ouachita Riparian
- West Gulf Coastal Plain Small Stream and River Forest
- South-Central Interior Large Floodplain
- West Gulf Coastal Plain Wet Hardwood Flatwoods (Red Slough)
- Ouachita Rivers and Streams
- Ouachita Ponds, Lakes, and Waterholes

## **Ouachita Shortleaf Pine-Oak Forest and Woodland**

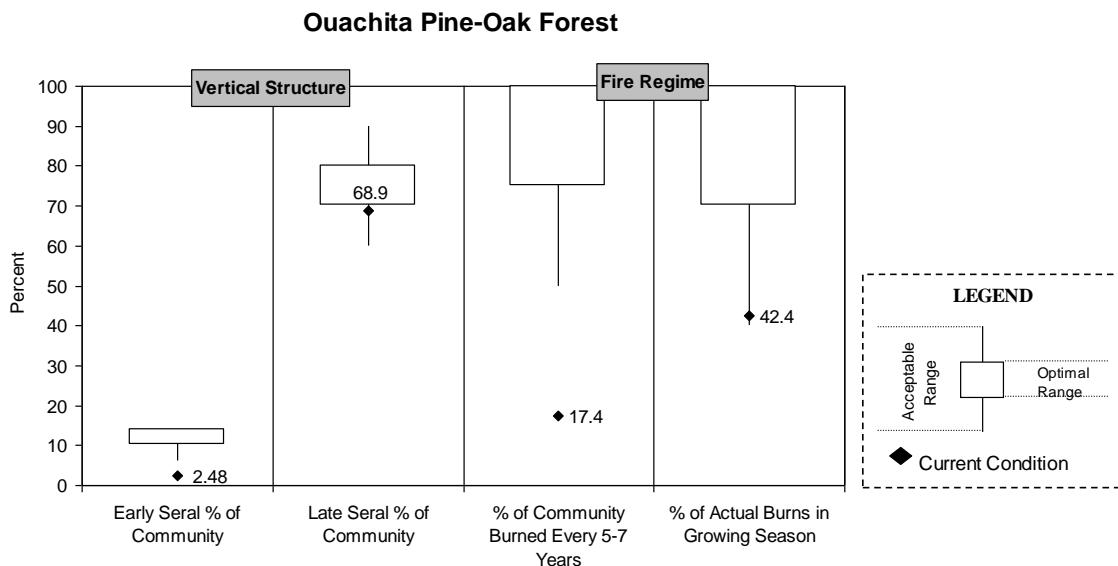
This system represents forests and woodlands of the Ouachita Mountains and Ozark Plateaus of Arkansas, adjacent Oklahoma, and southern Missouri where shortleaf pine is an important or dominant component. Although examples of this system occur throughout this region, there is local variation in the extent to which they were present historically. Pine was virtually ubiquitous in the historical forests of the Ouachitas. In nearly all Ouachita occurrences, shortleaf pine occurs with a variable mixture of hardwood species. The exact composition of the hardwoods is much more closely related to aspect and topographic factors than is the pine component. In some examples of this system, the aggregate importance of hardwoods may be greater than pine, especially on subxeric and mesic sites. This ecological system comprises approximately 70 percent of the Forest. Three subsystems, each with its own desired conditions in terms of structure and fire regime, are recognized:

- Ouachita Shortleaf Pine-Oak Forest
- Ouachita Shortleaf Pine-Oak Woodland
- Ouachita Shortleaf Pine-Bluestem (Red-cockaded Woodpecker Habitat)

### **Ouachita Shortleaf Pine-Oak Forest**

This subsystem represents the closed-canopy, somewhat fire-dependent, more densely forested component of pine-oak dominated systems on the Forest. The defining characteristic of this subsystem is canopy closure in excess of 70 percent. This habitat supports 25 animal and 4 plant species of viability concern.

*Desired Condition:* The pine-oak forest subsystem should constitute 40-65 percent of all pine-oak dominated systems on the Forest. Currently, the pine-oak forest subsystem constitutes approximately 71 percent of all known pine-oak dominated systems and approximately 50 percent of the Forest. The desired condition for vertical structure is 6-14 percent in grass/forb or seedling/sapling/shrub condition and 60-90 percent in the mature forest condition, with an average canopy closure of greater than 70 percent (Basal Area 60 or greater). Old growth pine-oak forests will develop naturally in a range of patch sizes within research natural areas (MA 4), riparian areas (MA 9), wilderness (MA 1), portions of semi-primitive areas (MA 17), and other parts of the Forest outside the “lands suitable for timber production” in MAs 14, 15, and 16 (see other pine-oak subsystems for descriptions of fire maintained old growth). At least 50 percent of the spatial extent of the pine-oak forest is treated with prescribed fire every 5-7 years with an occasional growing season fire. Figure 2 represents the current condition and range of desired vertical structure and fire regime conditions for the pine-oak forest community.



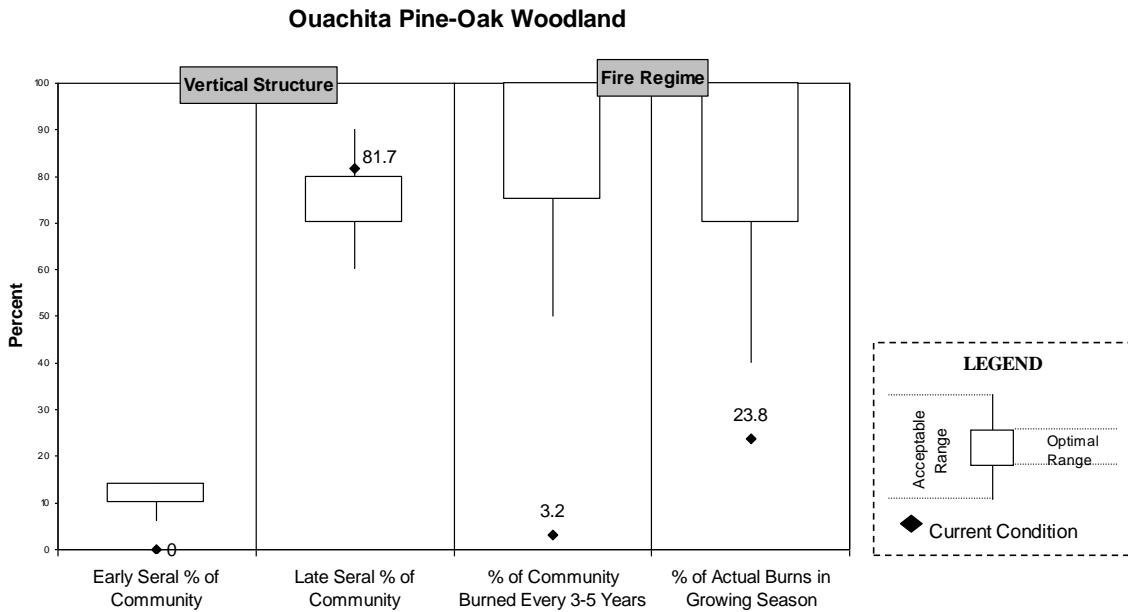
**Figure 2. Current Condition and Range of Desired Vertical Structure and Fire Regime Conditions for the Ouachita Pine-Oak Forest Community**

**Monitoring and Evaluation:** Annually report acres of vegetation management treatments, including thinning for restoration to woodland condition, regeneration harvests, and acres burned in cool season and in growing season. At five-year intervals, evaluate appropriate vertical structure/age classes, canopy closure, and fire regime and progress toward achievement of the desired condition of 40-65 percent of pine-oak dominated systems in pine-oak forest versus woodland condition.

### Ouachita Shortleaf Pine-Oak Woodland

This subsystem represents the more open canopy, fire-dependent, less densely forested component of pine-oak dominated systems on the Forest. The defining characteristics of this subsystem are canopy closure of less than 60 percent, abundant herbaceous groundcover, and a mix of pine and oak among the dominant canopy trees. This habitat supports 8 animal species of viability concern.

**Desired Condition:** The pine-oak woodland subsystem should constitute 20-45 percent of all pine-oak dominated systems on the Forest. This less densely forested subsystem currently constitutes approximately 23 percent of the shortleaf pine-oak dominated communities and 16 percent of the Forest. The desired condition for vertical structure is 6-14 percent in grass/forb and seedling/sapling/shrub and 60-90 percent in the mature woodland condition. Small, medium, and large patches of old growth pine-oak woodlands will develop on at least 79,000 acres (MA 21), well distributed across the Forest. Prescribed fire is applied to at least 50 percent of this community every 3-5 years, with an occasional growing season fire. Figure 3 represents the current condition and range of desired vertical structure and fire regime conditions.



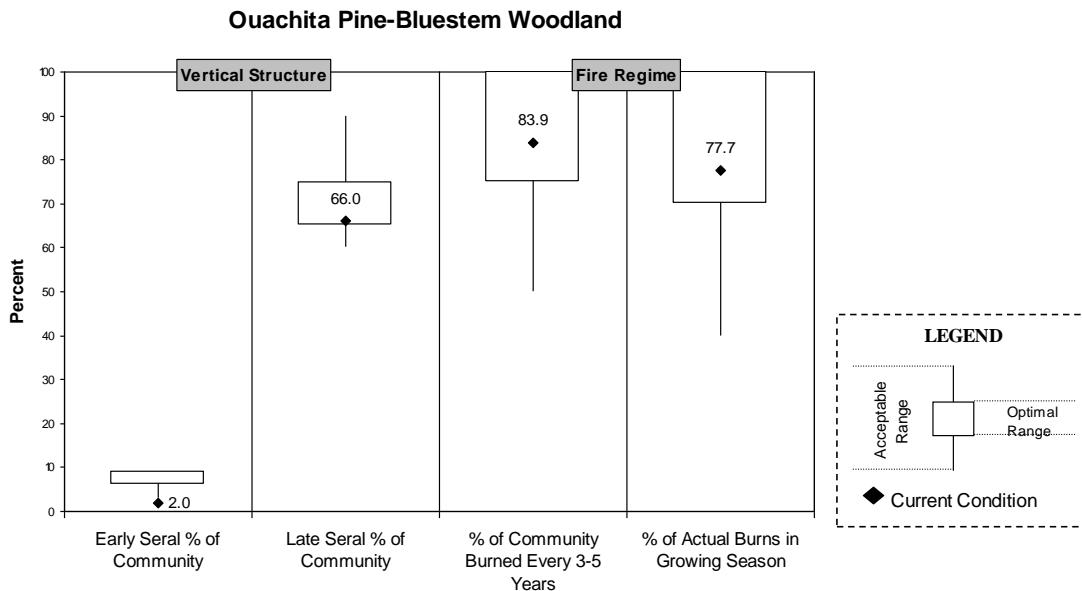
**Figure 3. Current Condition and Range of Desired Vertical Structure and Fire Regime Conditions for the Ouachita Pine-Oak Woodland Community**

*Monitoring and Evaluation:* Annually report acres treated, including thinning for restoration to woodland condition, regeneration harvests, and acres burned in cool season and in growing season. At five-year intervals, evaluate appropriate vertical structure/age classes, canopy closure, and fire regime and compare current condition to the desired condition of 20-45 percent of pine-oak dominated systems in pine-oak woodland versus forest condition.

#### Ouachita Shortleaf Pine-Bluestem (includes Red-cockaded Woodpecker Habitat)

This subsystem represents the most open-canopy, fire-dependent component of pine-oak systems on the Forest. The defining characteristics of this subsystem are canopy closure of 40-60 percent, sparse to absent midstory, abundant herbaceous groundcover, and a minimal oak component among the dominant canopy trees. This habitat supports 11 animal species of viability concern.

*Desired Condition:* The pine-bluestem subsystem should constitute 7-20 percent of all known pine-oak dominated systems on the Forest. This subsystem currently constitutes approximately five percent of the shortleaf pine-oak dominated communities and four percent of the Forest. The desired condition for vertical structure is 3-8.3 percent in grass/forb and seedling/sapling/shrub and 60-90 percent in the mature woodland condition with canopy closure of 40-60 percent. Small to medium sized patches of old growth pine-bluestem woodland will develop within at least 24,000 acres of MA 22. Prescribed fire is applied to at least 50 percent of this community every 3-5 years with an occasional growing season fire. Figure 4 represents the current condition and range of desired vertical structure and fire regime conditions.



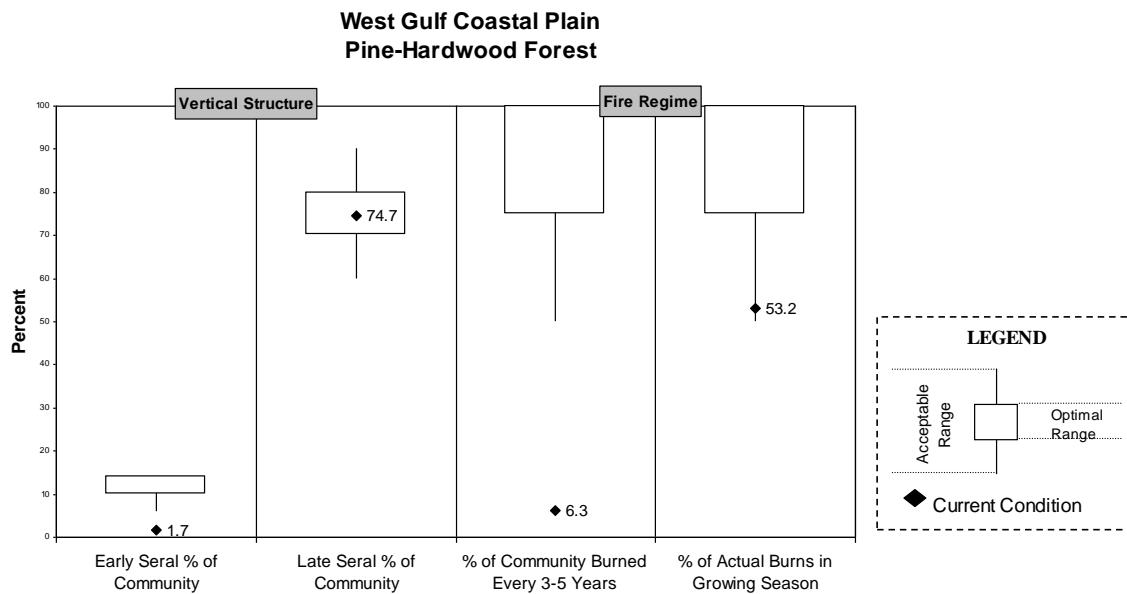
**Figure 4. Current Condition and Range of Desired Vertical Structure and Fire Regime Conditions for the Ouachita Pine-Bluestem Woodland Community**

**Monitoring and Evaluation:** Annually report acres treated, including thinning for restoration to woodland condition, regeneration harvests, and acres burned in cool season and in growing season. At five-year intervals, progress toward the desired conditions of appropriate vertical structure/age classes, canopy closure, and fire regime will be evaluated.

### West Gulf Coastal Plain Pine-Hardwood Forest

This West Gulf Coastal Plain ecological system consists of forests and woodlands dominated (within the Arkansas and Oklahoma portions of the Coastal Plain) by shortleaf pine and loblolly pine in combination with many dry to dry-mesic hardwood species. In this region of southern Arkansas, northwestern Louisiana, and parts of eastern Oklahoma and Texas, this type was historically present on nearly all uplands except on the most edaphically limited sites (droughty sands, calcareous clays, and shallow soil barrens/rock outcrops). Such sites are underlain by loamy to fine-textured soils of variable depths. These are upland sites with moderate fertility and moisture retention.

**Desired Condition:** The desired condition for vertical structure is 6-14 percent in grass/forb and seedling/sapling/shrub and 60-90 percent in the mature, fire-maintained forest condition with canopy closure of 70 percent or greater. Old growth conditions will develop and go through regeneration cycles naturally on most of the acres in the West Gulf Coastal Plain pine-hardwood forest community, which are represented by small and medium patches. Prescribed fire is applied to at least 50 percent of this community every 3-5 years with an occasional growing season fire. Figure 5 represents the current condition and range of desired vertical structure and fire regime conditions.



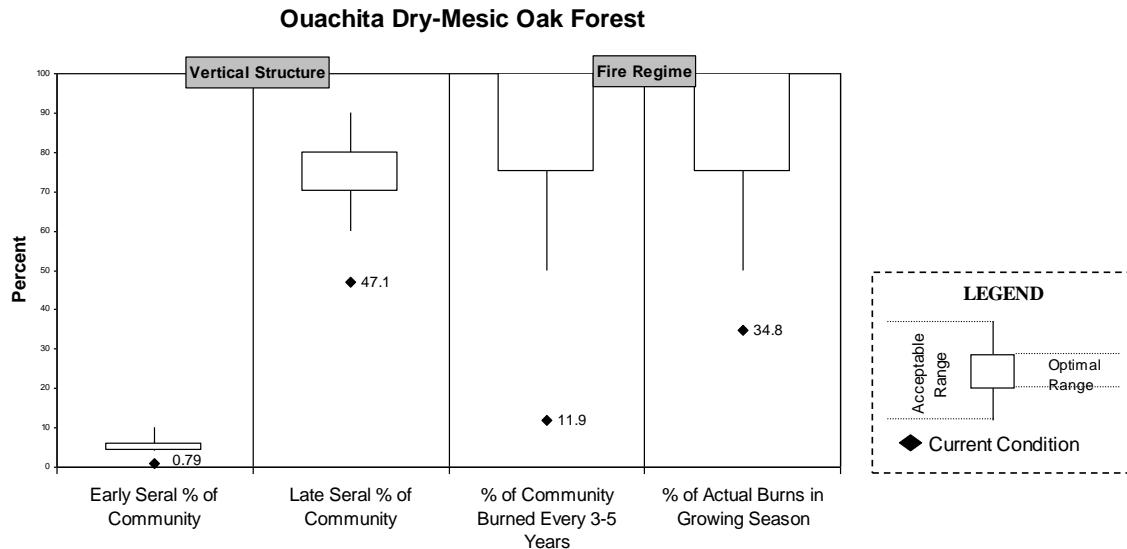
**Figure 5. Current Condition and Range of Desired Vertical Structure and Fire Regime Conditions for the WGCP Pine-Hardwood Forest Community**

**Monitoring and Evaluation:** Annually report acres treated, including regeneration harvests, and acres burned in cool season and in growing season. At five-year intervals, progress toward the desired conditions of appropriate vertical structure/age classes, canopy closure, and fire regime will be evaluated.

### Ouachita Dry-Mesic Oak Forest

This system is found throughout the Ozark and Ouachita Highlands. It occurs on dry-mesic to mesic sites and gentle to moderately steep slopes. Soils are moderately drained to well-drained and more fertile than those associated with drier, more open oak woodlands. A closed canopy of oak-hickory species typifies this system. Maples may occur on more mesic sites. Wind, drought, lightning, and occasional fires influence this system. This habitat supports 20 animal and four plant species of viability concern.

**Desired Condition:** The desired condition for vertical structure is 4-10 percent in grass/forb and seedling/sapling/shrub and 60-90 percent in the mature forest condition. Old growth conditions will develop and go through regeneration cycles naturally on most of the acres in the dry-mesic oak forest community, which is represented by the complete range of patch sizes. To mimic natural fire regimes, many of these communities will receive prescribed burns. Prescribed fire is applied to at least 50 percent of this community every 5-7 years with an occasional growing season fire. Figure 6 represents the current condition and range of desired vertical structure and fire regime conditions.



**Figure 6. Current Condition and Range of Desired Vertical Structure and Fire Regime Conditions for the Ouachita Dry-Mesic Oak Forest Community**

*Monitoring and Evaluation:* Annually report acres treated, including thinning for forest health, regeneration harvests, and acres burned (cool season and growing season). At five-year intervals, progress toward the desired conditions of appropriate vertical structure/age classes, canopy closure, and fire regime will be evaluated.

### Ouachita Mesic Hardwood Forest

This system is found on toeslopes and valley bottoms within the region, as well as on north slopes. Northern red oak increases in abundance compared to dry-mesic habitats. American beech, sugar maple, chinquapin oak, American basswood, and redbud may be locally common. These habitats are usually small, isolated, and/or disjunct. They are maintained primarily through naturally occurring circumstances, such as elevation, moisture regime, soil productivity, slope, and aspect. This habitat supports 29 animal and 12 plant species of viability concern.

*Desired Condition:* The desired condition for vertical structure is 0.5-5 percent in grass/forb and seedling/sapling/shrub and 80-98 percent in the mature forest condition with mostly closed canopy and infrequent fire. Old growth conditions will develop and go through regeneration cycles naturally on most of the acres in mesic hardwood forests, which are represented by small to medium patches on the Forest.

*Monitoring and Evaluation:* Annually report maintenance or restoration treatments. Every fifth year, evaluate vertical structure/age classes, canopy closure, and fire frequency and progress toward restoration of the desired condition.

### Ouachita Montane Oak Forest

This system represents hardwood forests on relatively shallow soils at the highest elevations of the Ouachita Mountains. Vegetation consists of forests dominated by oaks. Canopy trees are often stunted due to the effects of ice and wind, in combination with fog, shallow soils over rock, occasional fire, and periodic severe drought. Some stands form almost impenetrable thickets. This habitat supports two animal species of viability concern.

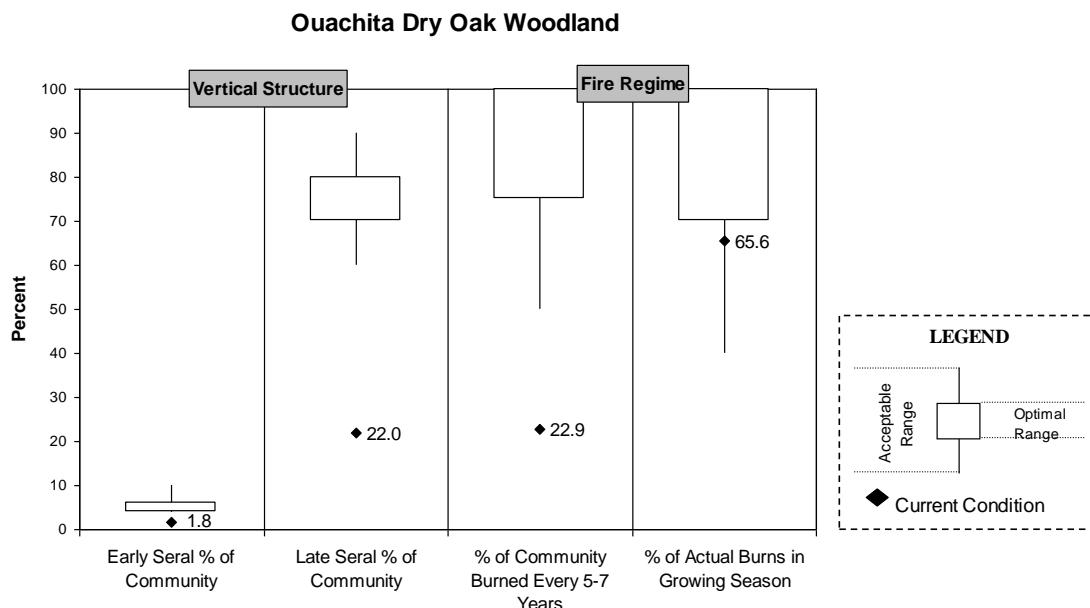
**Desired Condition:** The desired condition is a stunted, oak-dominated system maintained by naturally occurring processes and occasional prescribed fire. Old growth will develop and go through regeneration cycles naturally on most of the acres in the Ouachita montane oak forest, which is represented by small and medium patches.

**Monitoring and Evaluation:** Annually report any maintenance or restoration treatments.

### Ouachita Dry Oak Woodland

This system occurs in the Ozark and Ouachita Highlands and far western portions of the Interior Low Plateau along gentle to steep slopes and over bluff escarpments with southerly to westerly aspects. Parent material can range from calcareous to acidic with very shallow, well-drained to excessively well-drained soils, sometimes with a fragipan that causes "xero-hydric" moisture conditions. This system was historically woodland in structure, composition, and process but now includes areas of more closed canopy forests due to fire suppression. Oak species dominate this system with an understory of herbaceous and shrub species. Drought stress and associated fire are the major dynamics influencing and maintaining this system. This habitat supports 16 animal and three plant species of viability concern.

**Desired Condition:** The desired condition for vertical structure is 4-10 percent in grass/forb seral stage and 60-90 percent in the mature woodland condition, as defined by abundant herbaceous groundcover and canopy closures ranging from 40-80 percent. Old growth conditions will develop and go through regeneration cycles naturally on most of the acres in the dry oak woodland community, which is represented by small to medium patches. To mimic natural fire regimes, many of these communities will receive prescribed burns. At least 50 percent of the dry oak woodland community is treated with prescribed fire every 5-7 years, with an occasional growing season fire included. Figure 7 represents the current condition and range of desired conditions for vertical structure and fire regime.



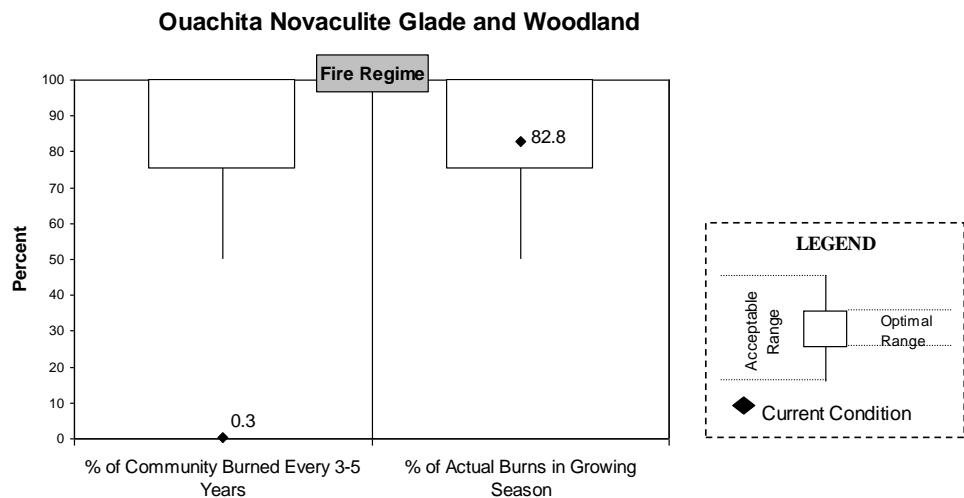
**Figure 7. Current Condition and Range of Desired Vertical Structure and Fire Regime Conditions for the Ouachita Dry Oak Woodland Community**

**Monitoring and Evaluation:** Annually report maintenance and restoration treatments. At five-year intervals, progress toward the desired conditions of appropriate vertical structure/age classes, canopy closure, and fire regime will be evaluated.

### Ouachita Novaculite Glade and Woodland

This system represents a mosaic of glades and woodlands found on novaculite outcrops in the central Ouachita Mountains of western Arkansas. Novaculite is a weakly metamorphosed rock of sedimentary origin that is primarily composed of microcrystalline quartz and chalcedony. Examples of this system generally occupy ridgetops at 1,400-2,100 feet elevation. This community appears as a mosaic of small woodlands scattered on ridges and upper slopes with outcrops and patches of talus scattered throughout. Some woodland or forest patches may appear as almost linear strips interspersed with grassy openings. Wooded patches have a variable, often patchy, structure with some areas of dense canopy interspersed with more open canopies and open grassy patches. In general, the grassy openings occur on shallow soils with exposed bedrock, while the woodlands occur on somewhat deeper soils. In all cases, these are fairly extreme growing conditions due to droughty, rocky soils. The structure of this system is maintained primarily through a combination of periodic fire and severe drought. This habitat supports three animal and three plant species of viability concern.

**Desired Condition:** The desired condition is an open glade structure maintained by prescribed fire. The fire regime should reflect that at least 50 percent of the novaculite glade and woodland community is treated with prescribed fire every 3-5 years with an occasional growing season burn included. Old growth conditions will develop and go through regeneration cycles naturally, supplemented by prescribed fire, in all the acres of this community, which occurs in small patches. Figure 8 represents the current condition and range of desired conditions for fire regime.



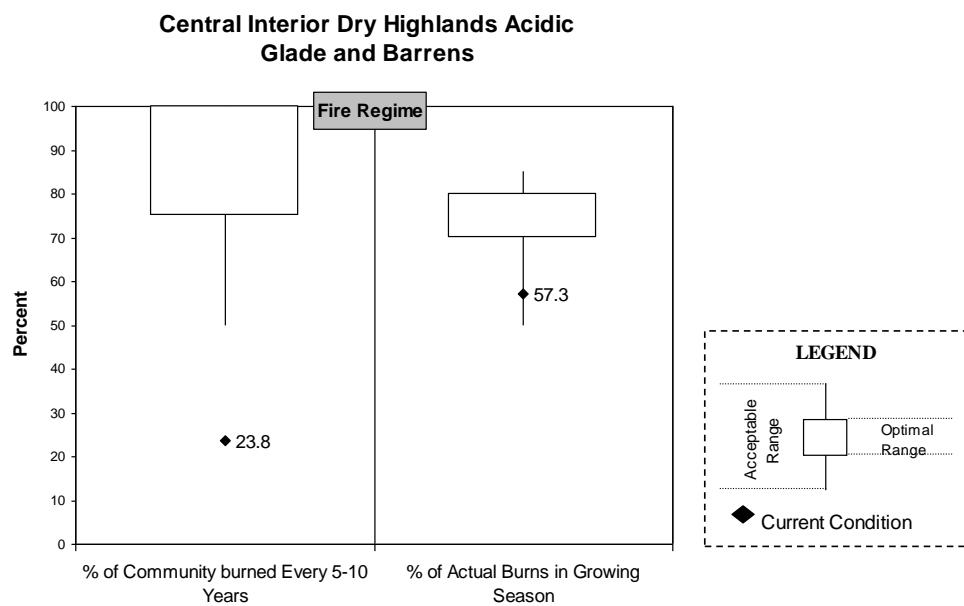
**Figure 8. Current Condition and Range of Desired Fire Regime Conditions for the Ouachita Novaculite Glade and Woodland Community**

**Monitoring and Evaluation:** Annually report maintenance and restoration treatments. At five-year intervals, evaluate progress toward achieving the desired fire regime.

## Central Interior Highlands Dry Acidic Glade and Barrens

This system is found in the Interior Highlands of the Ozark, Ouachita, and Interior Low Plateau regions. It occurs along moderate to steep slopes or valley walls of rivers along most aspects. Parent material includes chert, igneous and/or sandstone bedrock with well-drained to excessively well-drained, shallow soils interspersed with rock and boulders. These soils are typically dry during the summer and autumn, becoming saturated during the spring and winter. Grasses dominate this system, with stunted oak species and shrub species occurring on variable depth soils. This system is influenced by drought and infrequent to occasional fires. This habitat supports five animal and eight plant species of viability concern.

*Desired Condition:* The desired condition is an open glade structure maintained by periodic fire. The fire regime should reflect that 50-85 percent of the dry acidic glades and barrens system and a 100-meter buffer are burned every 5-10 years, including an occasional growing season fire. Old growth conditions will develop and go through regeneration cycles naturally, supplemented by prescribed fire, in all the acres of this community, which occurs in small patches. Figure 9 represents the current condition and range of desired conditions for fire regime.



**Figure 9. Current Condition and Range of Desired Fire Regime Conditions for the Central Interior Dry Highlands Acidic Glade and Barrens Community**

*Monitoring and Evaluation:* Annually report maintenance and restoration treatments. At five-year intervals, evaluate progress toward achieving the desired fire regime.

### **Central Interior Acidic Cliff and Talus**

This system is found primarily in the Interior Highlands. Sandstone outcrops and talus ranging from moist to dry typify this system. It is typically sparsely vegetated; however, on moister sites with more soil development, several fern species and sedges (*Carex* spp.) may become established. Wind, fire, and water erosion are the major natural forces that influence this system. This habitat supports six animal species of viability concern.

*Desired Condition:* The desired condition is an open, rocky, herbaceous-dominated system with sparse woody vegetation occasionally influenced by natural or prescribed fires.

*Monitoring and Evaluation:* Annually report any maintenance and restoration treatments. At five-year intervals, report on condition of monitored sites.

### **Calcareous Prairie**

This system includes natural grassland vegetation and associated wooded vegetation in a relatively small natural region of the Upper West Gulf Coastal Plain of Arkansas. Although other calcareous prairies are found west of the Mississippi River, this system represents some of the largest known and highest quality of remaining examples. Plant communities in this system occur over relatively deep soils with circumneutral surface soil pH, which is unusual given the predominance of acidic, generally forested soils in the region. In most cases, individual prairie openings are small and isolated from one another, but were formerly more extensive prior to European settlement forming a mosaic of grassland and woodlands under frequent fire regimes. The flora has much in common with other Mississippi Embayment Prairie systems as well as the classic midwestern prairies. This habitat supports five animal and three plant species of viability concern.

*Desired Condition:* The desired condition is an open, fire-maintained grassland with sparse to absent woody vegetation. The fire regime should reflect that 50 percent of the calcareous prairie system and a 100-meter buffer are burned every 3-5 years with an occasional growing season fire included. Fire in surrounding/adjacent habitats helps prevent woody encroachment and allows for distribution and dispersal of obligate species.

*Monitoring and Evaluation:* Annually report maintenance and restoration treatments. At five-year intervals, evaluate progress toward achieving the desired fire regime.

## Riparian and Aquatic Ecosystems

*Monitoring and Evaluation (for all riparian and aquatic ecosystems):* Annually report lake, pond, stream, and river surveys; amphibian surveys; water chemistry data; and habitat enhancement activities such as liming, fertilizing, and adding fish structures. Basin Area Stream Surveys will be conducted periodically (typically on a five-year cycle). When a forested seep or community associated with streams, rivers, or lakes occurs within an area affected by a management project that is reviewed as part of an Implementation Monitoring Review (IMR), compliance with all applicable standards will be reviewed. At five-year intervals, evaluate the desired condition status of this habitat.

### Ouachita Mountain Forested Seep

Forested seeps occur in the Ouachita Mountains of Arkansas and Oklahoma. Examples may be found along the lower slopes of smaller valleys where rock fractures allow water to seep out of the mountainsides and into the riparian zones of larger creeks, sometimes extending upslope along small ephemeral drains. The soil remains saturated to very moist throughout the year. The vegetation is typically forested but is highly variable in canopy composition. Red maple, black tupelo, sweetgum, and white oak are common and typical; American beech and/or umbrella magnolia may be present. Canopy coverage may be moderately dense to quite open. The subcanopy is often well-developed and characteristically includes American holly, umbrella magnolia, and ironwood. This habitat supports eight animal and four plant species of viability concern.

*Desired Condition:* The desired condition for this system is a largely undisturbed, mature community with a protective buffer 100 feet from the seep boundaries. Old growth seep communities develop and regenerate naturally in relatively small patches.

### Ouachita Riparian

This system is found along streams and small rivers within the Ozark and Ouachita regions. In contrast to larger floodplain systems, this system has little to no floodplain development and often contains cobble bars and steep banks. Ozark-Ouachita Riparian communities are typically higher gradient than larger floodplains and experience periodic, strong flooding. These communities are often characterized by a cobble bar with forest directly adjacent and little or no marsh development. Canopy cover can vary within examples of this system, but typical trees include sweetgum, sycamore, river birch, maple species, and oak species. The richness of the herbaceous layer varies from species-rich to species-poor. Likewise, the shrub layer can vary considerably, and small seeps can often be found within this system, especially at the headwaters and terraces of streams. These areas are typically dominated by wetland-obligate species of sedges, ferns, and other herbaceous species. Flooding and scouring strongly influence this system and prevent the floodplain development found on larger rivers. This habitat supports 24 animal and 11 plant species of viability concern.

*Desired Condition:* The desired condition for this system is a largely undisturbed, mature or old growth community with intact hydrologic functions and processes within a minimum protective buffer of 100 feet on each side of perennial streams and 30 feet on each side of defined channels. Water quality is good to very good and riparian vegetation remains intact during and after vegetation management activities, such as harvesting, prescribed burning, road or fireline construction, and pesticide application.

### **West Gulf Coastal Plain Small Stream and River Forest**

This is a predominately forested system of the West Gulf Coastal Plain associated with small rivers and creeks. In contrast to West Gulf Coastal Plain Large River Floodplain Forest, examples of this system have fewer major geomorphic floodplain features. Those features that are present tend to be smaller and more closely intermixed with one another, resulting in less obvious vegetation divisions. Bottomland hardwood tree species are typically important and diagnostic, although mesic hardwood species are also present in areas with less inundation, such as upper terraces and possibly second bottoms. Flooding occurs at least once annually, but the water table is usually well below the soil surface throughout most of the growing season. Areas impacted by beaver impoundments are also included in this system. This habitat supports 15 animal species of viability concern.

*Desired Condition:* The desired condition for this system is a largely undisturbed, mature or old growth, closed-canopy forest shaped by intact hydrologic functions and processes within a minimum protective buffer of 100 feet on each side of perennial streams and 30 feet on each side of defined channels.

### **South-Central Interior Large Floodplain**

Examples of this system occur along large rivers where topography and alluvial processes have resulted in a well-developed floodplain. A single occurrence may extend from river's edge across the outermost extent of the floodplain or to where it meets a wet meadow or upland system. Many examples of this system contain well-drained levees, terraces, and stabilized bars, and some include herbaceous sloughs and shrub wetlands resulting, in part, from beaver activity. A variety of soil types may be found within the floodplain, from very well-drained sandy substrates to very dense clays. It is this variety of substrates in combination with different flooding regimes that creates the mix of vegetation. Most areas are inundated at some point each spring; microtopography determines how long the various habitats are inundated. Although vegetation is quite variable in this broadly defined system, silver maple, sycamore, sweetgum, and oak species are common. Understory species are mixed, but include shrubs and sedges. This system likely floods at least once annually and can be altered by occasional severe floods. Impoundments and conversion to agriculture can also impact this system. This habitat supports 13 animal species of viability concern.

*Desired Condition:* The desired condition for this system is a largely undisturbed, mature or old growth, closed-canopy forest shaped by intact hydrologic functions and processes within an appropriate Streamside Management Area.

### **West Gulf Coastal Plain Wet Hardwood Flatwoods (Red Slough)**

This system historically represented predominately wet hardwood flatwoods of the West Gulf Coastal Plain; however, in its current condition, it represents a man-made wetland environment. Examples may be somewhat more common in the inland portions of the region but are also found in the outer coastal plain as well. Soils are fine-textured and hardpans may be present in the subsurface. The limited permeability of these soils contributes to perched water tables during fairly substantial portions of the year (when precipitation is greatest and evapotranspiration is lowest). Saturation occurs not from overbank flooding but whenever precipitation events occur. The local landscape is often

a complex of ridges and swales, usually occurring in close proximity. There is vegetation variability related to soil texture and moisture and disturbance history. This system has undergone major transformations since European settlement of the region. This habitat supports 16 animal species of viability concern.

*Desired Condition:* The desired condition over much of the area is an intact marsh ecosystem with some reestablishment of a bottomland hardwood forest. Recreation opportunities, particularly Watchable Wildlife, abound, and native biodiversity potential is maximized.

### **Ouachita Rivers and Streams**

Rivers and streams consist of all the flowing-water systems on the Forest. These systems provide critical habitats for fish, mussels, invertebrates, reptiles, and amphibians. The larger streams and rivers on the Forest are important sport fishing resources. Many stream systems are impacted by fragmentation of aquatic habitats by road crossings and dams that hinder or block upstream movements of aquatic organisms. Some bird and mammal species also depend on rivers and streams for foraging habitat. This habitat supports 52 animal and 5 plant species of viability concern.

*Desired Condition:* The desired conditions for Ouachita rivers and streams are good to excellent water quality, site productivity, channel stability, intact riparian vegetation, sustainability of the sport fisheries, and connectivity of habitats for riparian-dependent species. Aquatic ecosystems function properly and support aquatic biota commensurate with the associated ecoregion. Permanent roads within the SMAs will be minimized but may occur at designated crossings and designated access points. Movement of fish and other aquatic organisms in otherwise free-flowing perennial streams and other streams are not obstructed by road crossings, culverts, or other human-caused obstructions. These desired conditions are achieved through designation of Streamside Management Areas (SMAs) and the implementation of the management standards associated with them.

### **Ouachita Ponds, Lakes, and Waterholes**

Ponds, lakes, and waterholes consist of all lentic (still, impounded, or otherwise non-flowing) aquatic systems on the forest. These systems provide a water source for a wide range of plants and animals. In addition, these waterbodies provide critical reproductive habitat for amphibians and critical foraging habitat for bald eagles. Most of the lakes and ponds over one-half acre are managed for sustainable sport fishing. Enhancement of sport fisheries through stocking, habitat enhancement, and fertilization/aquatic weed control is practiced by the Forest in cooperation with the appropriate state fish and wildlife agencies. This habitat supports eight animal species of viability concern.

*Desired Condition:* The desired condition for unstocked ponds and waterholes is habitat suitable for amphibians and other wildlife and a source of water for upland wildlife species. The desired conditions for fishable waters are high-quality angling opportunities and good to excellent water quality, site productivity, associated vegetation, and habitat for associated riparian and aquatic dependent species.

## **Watershed Function**

In addition to providing habitat for many aquatic and riparian-dependent species, the streams and rivers that originate on and/or flow through the Ouachita National Forest provide water for many cultural uses, including recreational activities and municipal, commercial, and agricultural uses downstream from the Forest. Watershed health is vital to sustaining these uses.

*Desired Condition:* Watersheds are healthy, dynamic, and resilient, and are capable of responding to natural and human caused disturbances while maintaining the integrity of their biological and physical processes and maintaining the connectivity of habitats for aquatic organisms. Watersheds, streams, groundwater recharge areas, springs, wetlands, and aquifers produce high quality water. Soil productivity, riparian dependent resources, and other uses are sustained.

*Monitoring and Evaluation:* Annually report acres of soil and water improvement. Every fifth year, watershed condition will be evaluated to determine if the progress in improving condition ratings has been made.

## **Wildlife and Fish Habitat**

*Desired Condition:* Habitat conditions sustain healthy populations of native and desired non-native wildlife and fish species. Wildlife habitat functions are sustained or improved, including primary feeding areas, breeding areas, and migration corridors. Reintroduction of extirpated species is given serious consideration when proposals originate from or have strong support from the appropriate state and federal fish and wildlife agencies. Fishable waters support high-quality angling opportunities. Vegetation conditions reflect the desired conditions described for each system in the previous section. Habitat conditions are stable or improving over time as indicated by the status of management indicator species. Movement of fish and other aquatic organisms are not obstructed by road crossings, culverts, or other human-caused obstructions.

*Monitoring and Evaluation:* See the monitoring elements under each of the Terrestrial, Riparian, and Aquatic Communities.

## **Proposed, Endangered, Threatened, and Sensitive (PETS) Species Habitat**

*Desired Condition:* Habitats for federally listed species (and those proposed for listing) are conserved or restored, and listed species are recovered. Habitats for sensitive species and other species of concern are sufficient to prevent downward trends in populations or habitat capability and to prevent federal listing. Flow regimes and habitat connectivity in streams that provide habitat for Proposed, Endangered, Threatened, and Sensitive aquatic and riparian-dependent species are sufficient to allow the affected species to complete all phases of their life cycles. Vegetation conditions reflect the desired conditions identified for each system in the previous section.

*Monitoring and Evaluation:* Annually report findings of all monitoring and research efforts involving PETS species. At five-year intervals, evaluate trends.

## Geologic Resources

*Desired Condition:* Unique geological resources and values on the Forest are sustained. Threats from geologic hazards to human life, natural resources, or financial investment are minimized.

*Monitoring and Evaluation:* Geologic resources and hazards will be identified, reported, and monitored for value and risk, respectively.

## Landownership Pattern

### Land Administration

*Desired Condition:* Public lands are easily accessible. Land adjustment administration contributes to the reduction of the complexity of landownership patterns and consolidates the National Forest System land base; reduces administrative problems and costs; enhances public access and use; and supports resource management objectives, including the protection and improvement of habitat condition and linkage. Clear title to National Forest System land is retained. Occupancy trespass is eliminated, and National Forest boundaries are clearly posted.

*Monitoring and Evaluation:* Annually report acres of land adjustment miles surveyed to establish clear boundaries, and the number of occupancy trespasses resolved. Every fifth year, an evaluation of progress in reducing the amount of interface with private lands and the number of occupancy trespasses will be conducted. A landownership strategy is included Part 2 of the Revised Forest Plan. A map of current ownership and desirable areas for exchange will be maintained and periodically updated as a non-binding planning tool.

## Heritage Resources

### Heritage Stewardship

*Desired Condition:* Significant heritage resource sites are identified, preserved, or enhanced. Connections are made with the American people on the importance of public land heritage stewardship through public involvement programs. The past, present, and future of heritage resources' role in ecosystem management, including socio-cultural values in an environmental context, are recognized.

*Monitoring and Evaluation:* Annually report sites managed to standard (sites inventoried, evaluated, protected, promoted, preserved, restored, rehabilitated, monitored, or enhanced). Include the number of site management plans developed, conflicting site-specific land use activities identified and resolved, Section 110 targets achieved, the number of public involvement programs/projects initiated, agreements with research entities, and report and database updates. Every fifth year, progress in increasing the number of heritage resources protected and managed to standard will be evaluated.

## **Tribal and Native American Interests**

*Desired Condition:* The Forest is maintained in a condition that allows Native American tribes and individuals to retain traditional connections to the land and to foster both traditional and contemporary cultural uses of the Forest. The Forest has active agreements and protocols to facilitate consultation (all resources) and government-to-government relationships.

*Monitoring and Evaluation:* Annually report the number and types of agreements and protocols executed and the number of consultations. Every fifth year, feedback and satisfaction will be evaluated as indicators of progress toward the desired condition.

## **Public Use and Enjoyment**

Abundant opportunities exist for the public to use and enjoy the Ouachita National Forest. Areas or facilities include developed recreation sites, semi-primitive and wilderness areas, and trails. Activities include boating, hunting, fishing, rock hounding, and sightseeing. Desired conditions for recreation participation, conservation education and stewardship, landscape management, and law enforcement are presented here. For wilderness, special interest areas, developed recreation areas, major lakes, semi-primitive areas, the Winding Stair National Recreation Area, and wild and scenic rivers, desired conditions are included in the individual Management Areas in Part 2 of the Revised Forest Plan.

### **Recreation Participation**

*Desired Condition:* Recreation participation, activities, and services contribute to visitors' physical and mental well-being and represent a variety of skill levels, needs, and desires. Quality fish and wildlife habitat and a variety of access opportunities are available to the public. Facilities and infrastructure are high quality, well maintained, safe, accessible, and consistent with visitors' expectations. Primitive recreation opportunities are maintained on at least 70,000 acres, semi-primitive recreation opportunities on at least 136,000 acres, and roaded-natural recreation opportunities on much of the remainder of the National Forest. Existing "rural" recreation opportunities in developed recreation areas are maintained.

*Monitoring and Evaluation:* Annually report the number of recreation sites maintained to standard and occupancy/use rates. A facility condition index and maintenance backlog will be maintained. Every fifth year, the forest will evaluate trends in annual indicators and visitor satisfaction surveys to determine if the Forest has provided quality recreational experiences that result in increased visitor satisfaction.

### **Conservation Education and Stewardship**

*Desired Condition:* People connect to the land and to each other, aided by high-quality public information, interpretive services, and environmental education programs/activities, with nonprofit partners often in a lead or cooperating role. Proactive efforts reach both traditional and nontraditional users and lead to a greater citizen understanding, appreciation, advocacy, and participation in forest stewardship and ecosystem conservation. Particular emphasis is placed on an ecosystem-based approach to management that takes into account the roles of the Forest as a contributor to local quality of life, including opportunities for sustainable economic development through recreation, tourism, and carefully designed timber harvests; as a producer of

clean water; as a provider of habitat vitally important to many native species; and as a source of wildlife, wilderness, and abundant recreation opportunities.

Through public involvement programs associated with project-level and plan-level activities, connections are made with the American people on the importance of public land heritage stewardship. The role that heritage resources play in ecosystem management, including the role of socio-cultural values within an environmental context, is highlighted.

*Monitoring and Evaluation:* Annually document the number of nongovernmental organizations, groups, and volunteers involved in stewardship activities. Annually, document the number of conservation education products/presentations and the estimated number of people reached.

## **Landscape Management**

*Desired Condition:* The biological, physical, and cultural features of landscapes that provide for a "sense of place" as defined in the Landscape Character descriptions are intact. Landscapes possess a vegetation pattern and species mix that is natural in appearance. Built elements and landscape alterations complement the lines, forms, colors, and textures found in the landscape. Fifty percent of projects undertaken on the Ouachita National Forest within High Scenic Integrity Objective (SIO) areas will attain a high SIO, 65 percent of projects undertaken in Moderate SIO areas will attain Moderate SIO rating, and 100 percent of projects located in Low SIO areas will attain that rating. Refer to the FEIS, Chapter 3, Scenery Management System for a more detailed description of the Scenery Management System and Scenic Integrity Objectives.

*Monitoring and Evaluation:* During implementation monitoring reviews, determine if the project under review adequately considered SIOs. Report annually the number and type of management projects conducted in areas having a high SIO. Report whether a landscape architect was consulted in each case where project implementation was likely to affect scenic integrity, and if applicable, to what degree SIOs were maintained/achieved.

## **Law Enforcement**

*Desired Condition:* A safe environment for the public and agency employees is provided on National Forest System land; natural resources and other property under the agency's jurisdiction are protected.

*Monitoring and Evaluation:* Annually report on the number of accidents, citations, and acres and type of impact of each illegal activity. Every fifth year, evaluate trends in unlawful or criminal behaviors.

# **Facility Operation and Maintenance**

## **Facility Administration**

*Desired Condition:* Facilities and infrastructure are high-quality, well maintained, safe, accessible, and consistent with visitor expectations and the Built Environment Image Guide principles. Facility maintenance meets established national standards. Structures are well integrated into the landscape and advance environmentally sensitive technology.

*Monitoring and Evaluation:* Annually report the number of facilities maintained to standard. Every fifth year, trends in the facility condition index and maintenance backlog will be evaluated to determine progress toward the desired condition. Every fifth year, review the Forest Facility Master Plan for facility condition and future facility and administrative site needs.

## **Transportation System**

*Desired Condition:* The transportation system of roads and trails is safe, affordable, and environmentally sound, responds to public needs, and is efficient to manage. The system provides public access for recreation, special uses, and fire protection activities and supports Forest management objectives. The system is well maintained commensurate with levels of use and available funding. The system is connected to state, county, or local public roads and trails. Unnecessary roads and trails are removed and the landscape restored. Rights-of-way to access National Forest System lands satisfy public needs and facilitate planned resource activities. Over the planning period, the number of inventoried unclassified roads and trails is reduced, and the development and proliferation of new unclassified roads is minimized.

An environmentally sustainable, integrated system of backcountry and rural non-motorized trails is maintained. The system can accommodate a range of experiences in high-quality settings for a diverse visitor population; conflicts among users are minimized; and opportunities for partnerships are provided. The availability of day use "loop hikes" is improved.

Recreation opportunities for OHV (Off-Highway Vehicle) enthusiasts will be available within an integrated system of designated roads and trails. Designated OHV routes provide a high-quality OHV experience. Conflicts between OHV enthusiasts and other recreational uses, with private lands and homeowners adjacent to National Forest land, and with resource issues are addressed and resolved in a timely manner. Resolutions are consistent with area objectives and management direction.

*Monitoring and Evaluation:* Annually report the number of miles of road and trails maintained and operated to meet the objective maintenance level and class; report the miles of unclassified roads removed or classified into the system. Every fifth year, evaluate trends in miles of road and trail facilities and trends in number of accidents per year. Report annually the total miles of roads and trails available for use by off-highway vehicles. Every fifth year, evaluate visitor satisfaction surveys, including the number of conflicts identified by field staff or reported by the public and the resolution of the complaints to determine if progress is being made toward the desired condition.

## **Commodity, Commercial, and Special Uses**

### **Minerals and Energy Development**

*Desired Condition:* Minerals and energy developments meet legal mandates to facilitate production of mineral and energy resources on the Forest in a manner that minimizes adverse impacts to surface and groundwater resources.

*Monitoring and Evaluation:* Annually report the number of operating plans administered to standard, including the number and type of mitigation standards implemented.

## **Livestock Grazing**

*Desired Condition:* Livestock grazing opportunities are maintained consistent with other resource values in designated livestock grazing areas (allotments).

*Monitoring and Evaluation:* Annually report the number of acres in allotments managed to standard. Every fifth year, an evaluation of rangeland conditions and trends will determine progress toward the desired condition.

## **Lands and Special Uses (Non-recreation)**

*Desired Condition:* Facilities are centrally located or concentrated on existing sites or designated corridors, minimizing the number of acres encumbered by special use authorizations. Special uses serve public needs, provide public benefits, and conform to resource management and protection objectives. All uses are authorized and are in full compliance with the terms and conditions of the authorization.

*Monitoring and Evaluation:* Annually report the number of permits administered to standard, including number of permits with resource conflicts resolved versus unresolved. Every fifth year, evaluate whether suitable areas are being used efficiently (minimizing acres encumbered), in harmony with other uses and resources, and environmentally sustainable.

## **Fire (Community Protection and Safety)**

Wildland fires, whether lightning-caused or human-caused, can pose a threat to communities and developments adjacent to the Ouachita National Forest. “At-risk communities” are those with the most potentially significant threats to human life or property from a wildland fire event. The Wildland Urban Interface (WUI) is that area of Federal land immediately adjacent to the at-risk communities and typically extends one-quarter to one-half mile either side of National Forest System lands. In the WUI, specific vegetation management is often needed to reduce the risk of destructive wildland fires. Management of this area is usually focused on changing fuel loading and fuel profiles to a more “natural” condition, one less likely affected by catastrophic fire. There are 21 communities adjacent to the Ouachita National Forest in the WUI environment.

*Desired Condition:* The goals within the WUI are to reduce the risk of loss of human life, enhance protection of homes and improvements, and provide an area where firefighters can safely conduct tactical operations to stop the spread of a wildland fire. In WUI areas, vegetation management to restore, maintain, or enhance fire-adapted ecosystems to an approximate “reference condition” will be vigorously undertaken. For these types of ecosystems (Fire Regime 1), stands will be treated by reducing the number of overstory trees per acre (to approximately 50 to 70 square feet basal area) and removing woody midstory and understory vegetation. A “park-like” or “woodland” condition is the goal in both pine and oak types and is the most common condition where fuel mitigation projects are likely to be initiated. Local jurisdictional authorities, citizen groups, and the Forest Service will act together to mitigate hazardous fuel conditions in areas surrounding at-risk communities and developments. Practices such as the creation of “defensible space” around structures will be encouraged through fire prevention programs such as “Firewise.”

*Monitoring and Evaluation:* Annually report the condition class changes and the number of acres of hazardous fuel reduction in the WUI, including those implemented through cooperative agreements. In addition, the number of communities or facilities protected by treatment will be documented. Every fifth year, evaluate progress toward the desired condition through an analysis of the status of high hazard and high-risk areas.

## Management Areas (MAs)

Part 2 of the Revised Forest Plan contains the desired conditions and Part 3 contains the design criteria for the following management areas:

- 1 Wilderness
- 2 Special Interest Areas
- 3 Developed Recreation Areas
- 4 Research Natural Areas and National Natural Landmarks
- 5 Experimental Forests
- 6 Rare Upland Communities
- 7 Ouachita Seed Orchard
- 8 Administrative Sites/Special Uses
- 9 Water and Riparian Communities
- 14 Ouachita Mountains, Habitat Diversity Emphasis
- 15 West Gulf Coastal Plain, Habitat Diversity Emphasis
- 16 Lands surrounding Lake Ouachita and Broken Bow Lake
- 17 Semi-Primitive Areas
- 19 Winding Stair Mountain National Recreation Area (and Associated Non-Wilderness Designations)
- 20 Wild and Scenic River Corridors
- 21 Old Growth Restoration
- 22 Renewal of the Shortleaf Pine/Bluestem Grass Ecosystem and Red-cockaded Woodpecker Habitat

Management Areas 10-13, 18, and 23 used in the 1990 Amended Forest Plan are retained in a reserve status and are not actively used under the 2005 Revised Plan.

# PART 2 – STRATEGY

## Forest Plan Strategies

Part 2 presents the strategic direction to be followed in order to move toward the desired conditions described in the Vision (Part 1). Strategic direction is included to address land allocations to management areas, landownership adjustment, and monitoring. This strategic direction includes:

- Assignment or “allocation” of nearly 1.8 million acres of National Forest System land to management areas, each of which is characterized by a unique set of desired conditions (which are described) and suitable land uses (summarized in the following segment)
- Summaries and descriptions of suitable uses by management area
- Proposed special area designations
- A “prospectus” describing past management performance history and anticipated management performance
- Program priorities and objectives
- A discussion of risks associated with fluctuations in the natural and institutional environment with the potential to affect projections included in the Forest Plan
- Landownership adjustment strategy
- Monitoring strategy

Although Part 2 describes the uses that may be appropriate in a given management area, all use of National Forest System lands is subject to the design criteria identified in Part 3 (Design Criteria) of this plan. The Design Criteria include legally required and other standards for designing acceptable projects to implement the Forest Plan.

## Land Allocation Strategy (Management Areas)

The 1982 planning regulations guiding implementation of the National Forest Management Act call for lands and waters to be assigned to “management areas” (36 CFR 219.11). Management Areas (MAs) are areas within a national forest having common desired conditions, suitable uses, management objectives, and design criteria. Taken together, these attributes constitute the “prescription” for a management area. Where possible, MAs are shown on the Forest Plan map. This section describes the 17 MAs identified for the Forest. Acreages are approximate and are subject to change based on land adjustments (purchases, exchanges) and updated inventories. The 17 MAs represent all of the MAs used in the 1990 Amended Forest Plan; however, several areas have been combined to streamline management. For example, lands formerly included in MAs 10-13 and MA 18 have been included in other MAs because they are naturally dispersed throughout the Forest. The reference numbers for these MAs have been “reserved” so that the numbering system in place can be maintained for ease of implementation.

## **Management Area 1. Wilderness**

Total Acres: approximately 70,220

### **1a. Designated Wilderness**

Total Acres: approximately 64,469

Six congressionally designated wilderness areas totaling approximately 64,469 acres are located within the Forest. These areas are unsuitable for timber production, withdrawn from mineral leasing, unsuitable for motorized travel, and unsuitable for livestock grazing.

The wilderness acts that established these areas are as follows:

- The Eastern Wilderness Act of 1975, Public Law 93-622: Caney Creek Wilderness, Arkansas (14,460 acres).
- Arkansas Wilderness Act of 1984, Public Law 98-508: Black Fork Mountain Wilderness (8,350 acres); Poteau Mountain Wilderness (11,299 acres), Dry Creek Wilderness (6,310 acres) and Flatside Wilderness (9,507 acres), all in Arkansas.
- Winding Stair Mountain National Recreation and Wilderness Area Act of 1988, Public Law 100-499: Black Fork Mountain Wilderness (4,789 acres) and Upper Kiamichi Wilderness (9,754 acres), both in Oklahoma.

#### *Desired Condition*

Naturally-occurring processes will predominate. People are temporary visitors who leave no permanent imprint. Opportunities will abound for primitive recreation featuring solitude, physical and mental challenges, freedom from the intrusion of unnatural sights, sounds and odors, and the chance to experience relatively unmodified ecosystems. Except for trails and designated primitive campsites, no facilities will be available. Manipulation of flora, fauna, or the surface of the land will occur only to the extent necessary to maintain trails and primitive campsites and to meet provisions of the wilderness acts, the Endangered Species Act, and other pertinent laws.

### **1b. Poteau Mountain Management Area**

Total Acres: approximately 3,958

Management Area 1b consists of land between the two separate units of the Poteau Mountain Wilderness. As part of the deliberations leading up to the Arkansas Wilderness Act of 1984, the House Committee on Interior and Insular Affairs determined that the area possessed a “very high wilderness potential” but “is also popular for off-road vehicle use...it should remain open to motorized use.” The committee requested that the Forest Service manage this area to “maintain its existing wild character, with no timber harvest, mineral leasing, or new road construction permitted.” Management Area 1b is unsuitable for timber production, available for oil and gas exploration and leasing with controlled surface use, and unsuitable for livestock grazing.

*Desired Condition*

Essentially natural biophysical conditions will prevail with opportunities for solitude and low level of encounters with other users.

### 1c. Recommended Wilderness Additions

Total Acres: approximately 1,793

Management Area 1c consists of lands adjacent to Flatside Wilderness and the East Unit of Poteau Mountain in Arkansas and Upper Kiamichi Wilderness in Oklahoma that are recommended as additions to the National Wilderness System. Management Area 1c is unsuitable for timber production, withdrawn from mineral leasing, unsuitable for livestock grazing, and is managed for wilderness potential. If Congress adds these areas to the National Wilderness Preservation System, they will automatically become part of MA 1a.

*Desired Condition*

Essentially natural biophysical conditions will prevail with opportunities for solitude and low level of encounters with other users.

## Management Area 2. Special Interest Areas

Total Acres: approximately 27,313

- 2a. Scenic Areas, approximately 2,700 acres
- 2b. Watchable Wildlife Areas, approximately 5,853 acres
- 2c. Botanical Areas: Rich Mountain, approx. 3,200 acres, and South Fourche, approximately 2,580 acres (the Cove Creek Lake Project Area, approximately 324 acres surrounded by the South Fourche Botanical Area, is specifically excluded from the botanical area)
- 2d. Rich Mountain Recreation Area, approximately 12,980 acres

Special Interest Areas consist of Scenic Areas, Watchable Wildlife Areas, two Botanical Areas, and one large, undeveloped recreation area (Rich Mountain). Most of Management Area 2 is unsuitable for timber production, available for oil and gas exploration with a controlled surface use stipulation, and unsuitable for livestock grazing. Approximately 3,700 acres of the 12,980-acre Rich Mountain Recreation Area are suitable for timber production; the remaining acres are unsuitable.

Timber harvesting (including forest regeneration cuts) may be conducted in the Watchable Wildlife Areas and the South Fourche Botanical Area as needed to thin existing pine plantations, restore native ecological systems (including future old growth), and maintain or restore sensitive plant habitats in these areas. There are four scenic areas (shown in the following tabulation), and three of these—Blowout Mountain, Dutch Creek, and Crystal Mountain—are designated to sustain characteristics of old growth shortleaf pine-hardwood forests.

<b>Scenic Area – MA 2a.</b>	<b>Ranger District</b>	<b>Acres</b>
Blowout Mountain	Oden	526
Dutch Creek Mountain	Cold Springs, Fourche	624
Crystal Mountain	Caddo, Womble	100
Irons Fork	Jessieville	1,450

Two designated Watchable Wildlife Areas are listed as part of Management Area 2: Red Slough (5,815 acres) on the Tiak Unit of the Oklahoma Ranger District and Richardson Bottoms (38 acres) on the Jessieville Unit of the Jessieville/Winona/Fourche Ranger District. Other Watchable Wildlife Areas, such as Buffalo Road Shortleaf Pine-Bluestem Restoration Area Auto Tour and Blue Moon Wildlife and Fisheries Demonstration Area in Management Area 22, are found throughout the Forest within other Management Areas. Rich Mountain Botanical Area and Rich Mountain Recreation Area are on the Mena Ranger District. The two congressionally designated botanical areas in Oklahoma—Beech Creek Botanical Area and Robert S. Kerr Memorial Arboretum, Nature Center, and Botanical Area—are addressed in MA 19 along with the other non-wilderness areas designated by the Winding Stair Mountain National Recreation Area and Wilderness Act.

#### *Desired Condition*

Visitors generally will find a natural landscape accessible by trails and/or nearby roads. In all areas except for the Watchable Wildlife Areas, Rich Mountain Botanical and Recreation Area, and South Fourche Botanical Area, forest vegetation generally will reflect old growth conditions or be moving toward such conditions.

- South Fourche Botanical Area will include a mix of areas with old growth characteristics; younger, open woodlands (formerly pine plantations); dry acidic glades and barrens; marshy areas; and high quality riparian ecosystems. One ecologically unique “core area” will be off limits to timber harvesting unless site-specific analysis shows harvesting is needed to control insect or disease outbreaks. Upland areas will be treated periodically with prescribed burns and may be thinned or regenerated to restore native vegetation or specific habitats.
- In the Rich Mountain Botanical Area and the scenic areas, the desired condition is a natural appearing landscape generally undisturbed except by natural events, dispersed recreation, and an occasional prescribed burn. Signs of vegetation management will be due to actions needed to address forest health concerns or sustain habitat for Proposed, Endangered, Threatened, or Sensitive species. Rich Mountain Recreation Area has a similar desired condition except that some vegetation manipulation for forest health may also be visible, particularly in the portions suitable for timber production (about one-fourth of the area, and concentrated at lower elevations).
- In the Watchable Wildlife Areas, visitors will be able to view a variety of wildlife and experience wetlands in various stages of ecological succession. Signs of active vegetation and water management may be apparent. Parking facilities, observer platforms, levees, water control structures, and other facilities will be encountered.

## Management Area 3. Developed Recreation Areas

Total Acres: approximately 5,189

Management Area 3 consists of developed recreation sites. Development ranges from an essentially natural environment with few facilities to a high degree of site development with comfort and convenience facilities, including features such as paved roads, water systems, flush toilets, and boat-launching ramps. Included within this management unit are campgrounds, picnic areas, horse camps, interpretive and observation sites, information sites, float camps, shooting ranges, and swimming areas. Management Area 3 is unsuitable for timber production, available for oil and gas exploration and leasing with no surface occupancy, and unsuitable for livestock grazing. Management Area 3 is unsuitable for OHV use.

### *Desired Condition*

The landscape will generally be modified but still present a forest-type setting. Little to no evidence of non-recreation resource development will be noticed; however, vegetation management activities may include planting, pruning, cutting, herbicide application (e.g., for, poison ivy control), or hazard-tree removal. Facilities, such as roads, buildings, camping sites and tables, will be evident but compatible with the overall setting of the area. Various levels of human activity and sounds from vehicles and other motorized equipment will be evident. Depending upon the particular location, easy access for activities such as fishing and hiking, swimming, and group events will be available. Visitors will find a moderate level of user restrictions to ensure public health and safety and protection of resource values.

## Management Area 4. Research Natural Areas and National Natural Landmarks

Total Acres: approximately 2,115

Management Area 4 includes the following areas:

Name	Unit	Acres
Roaring Branch	Caddo	330
Gap Creek	Caddo	1,225
Lake Winona	Winona	280
Tiak RNA	Tiak	200
R.R. Reynolds	Crossett Experimental Forest	80

Roaring Branch and Lake Winona have dual status as Research Natural Areas (RNA) and National Natural Landmarks. Designated under 36 CFR 251.23, RNAs provide continued opportunity for studies of ecological succession and other research interests in a setting where disturbance by humans is very limited. Administration and protection are supplied by the National Forest, with scientific and educational uses coordinated through the Southern Research Station. An additional RNA, R. R. Reynolds Research

Natural Area on the Crossett Experimental Forest in Ashley County, Arkansas is established. Management Area 4 is unsuitable for timber production, available for oil and gas exploration and leasing with no surface occupancy, generally unsuitable for OHVs, and unsuitable for livestock grazing.

*Desired Condition*

These areas will have a naturally appearing landscape. Natural processes will continue with little or no impact from humans. Some evidence of activities associated with scientific or research studies may be apparent from time to time. Habitat capability for species associated with mature forest conditions will prevail, while habitat capability for early seral stage associates will only be created by natural occurrences such as tree-fall from storm events.

## **Management Area 5. Experimental Forests**

Total Acres: approximately 6,021

Management Area 5 consists of the Alum Creek Experimental Forest (EF) on the Winona Ranger District, and the Crossett Experimental Forest in Ashley County, Arkansas. These areas are administered in cooperation with the Southern Research Station. Experimental Forests are withdrawn from entry for locatable minerals. For leasable minerals, no surface occupancy is applied. Management Area 5 is unsuitable for timber production but suitable for livestock grazing.

*Desired Condition*

These areas provide actively managed settings for forest-related research in the Ouachita Mountains and West Gulf Coastal Plain. The landscapes in these areas will be similar to those that users will find in MA 14, Ouachita Mountains-Habitat Diversity Emphasis (in the case of Alum Creek EF), and MA 15, West Gulf Coastal Plain (in the case of Crossett EF). Although these experimental forests are unsuitable for timber production, some research projects could include vegetation management in the form of timber harvesting, wildlife management activities, and/or road construction, reconstruction, and maintenance. Additional evidence of activities for research studies may also be apparent. Habitat conditions in the Crossett Experimental Forest will support the perpetuation of the existing, small Red-cockaded Woodpecker population.

## **Management Area 6. Rare Upland Communities**

Total Acres: approximately 48,030

Management Area 6 consists of Rare Upland Communities, including upland (non-riparian; non-bottomland) areas supporting one or more natural communities that are relatively rare or uncommon in the Ouachita Mountains or West Gulf Coastal Plain. These communities are managed to perpetuate or restore their ecological integrity, including high-quality habitat for certain sensitive species. These patchy systems range from a few acres to a few hundred acres. A prescribed fire program that mimics the natural fire regime is an important management tool for restoring and maintaining most of these communities and providing for patch connectivity among the interspersed

communities. The natural communities included are: Ouachita Mesic Hardwood Forest; Ouachita Montane Oak Forest; Ouachita Dry Oak Woodland; Ouachita Novaculite Glade and Woodland; Central Interior Acidic Cliff and Talus; Central Interior Highlands Dry Acidic Glade and Barrens; and West Gulf Coastal Plain Calcareous Prairie. Riparian, lowland, and seep communities are included in MA 9, Water and Riparian Communities. Management Area 6 is unsuitable for timber production, available for oil and gas exploration and leasing with no surface occupancy, and suitable for livestock grazing.

*Desired Condition* Forest-wide desired conditions by structural class and community are presented in the Vision (Part 1) for these communities:

Ouachita Mesic Hardwood Forest (approx. 27,712 acres)  
Ouachita Montane Oak Forest (approx. 7,836 acres)  
Ouachita Dry Oak Woodland (approx. 3,574 acres)  
Ouachita Novaculite Glade and Woodland (approx. 1,315 acres)  
Central Interior Acidic Cliff and Talus (approx. 4,418 acres) and  
Central Interior Highlands Dry Acidic Glade and Barrens (approx. 2,912 acres)  
West Gulf Coastal Plain Calcareous Prairie (approx. 263 acres)

## **Management Area 7. Ouachita Seed Orchard**

Total Acres: approximately 636

Management Area 7 consists of an established seed orchard managed for the production of improved seed from shortleaf pine, loblolly pine, and certain hardwoods. MA 7 is unsuitable for timber production, available for oil and gas exploration and leasing with no surface occupancy, and unsuitable for livestock grazing. The Ouachita Seed Orchard is unsuitable for OHV use.

*Desired Condition*

The landscape within this area has been modified from a natural setting to a seed orchard setting and will continue to be maintained as a seed orchard for desired conditions. This seed orchard is an important federal source of improved shortleaf pine seed. Well-spaced seedtrees with a maintained, grassy forest floor will dominate the setting. Resource management for other purposes and public use occurs only if conducted in a manner compatible with the management objectives for the Seed Orchard; consult with the regional geneticist prior to approving such activities.

## **Management Area 8. Administrative Sites/Special Uses**

Total Acres: approximately 551

Management Area 8 consists of district ranger offices, district work centers, district residences, Forest Service communication facilities and sites for communication facilities under special use permit, and the administrative site within the seed orchard. Management Area 8 is unsuitable for timber production and available for oil and gas exploration and leasing with no surface occupancy. Special Use sites are suitable for

livestock grazing. A list of the approved communication sites and those pending approval as of September 2005, is included in Appendix A. Roads, rights-of-way, utility easements, and other linear features are not included as a part of Management Area 8 but are interspersed within other management areas.

*Desired Condition*

Visitors will encounter a variety of well-maintained facilities, including roads, buildings, parking areas and other facilities, typically in a forest setting with a high level of site reinforcement and regularly occurring maintenance.

## **Management Area 9. Water and Riparian Communities**

Total Acres: approximately 278,284

Management Area 9 consists of Water and Riparian Communities, including streams, rivers, lakes and ponds, and Streamside Management Areas necessary to protect water quality and associated beneficial uses found within the Ouachita Mountains, Arkansas River Valley, and West Gulf Coastal Plain. Management Area 9 direction applies to streams, riparian areas, ponds, and lakes, except where even more stringent management requirements are in place, notably in Wilderness (MA 1). Included are flowing and non-flowing aquatic habitats; wetlands; woodland seeps and springs; portions of floodplains; variable distances (but at least 100 feet) from both edges of all perennial streams and from the shores of bodies of water equal to or greater than one-half acre; variable distances (but at least 30 feet) from both edges of other streams with defined stream channels and ponds less than one-half acre in size; and certain lands surrounding public water supplies, lakes, and streams. Management Area 9 is unsuitable for timber production, available for oil and gas exploration and leasing with no surface occupancy, and is suitable for livestock grazing.

The riparian-associated vegetation community types that occur in this MA include Ouachita Mountain Forested Seep; Ouachita Riparian; South-Central Interior Large Floodplain; and West Gulf Coastal Plain Small Stream/River Forest.

*Desired Condition*

Riparian areas, lakes, and ponds have a relatively natural appearance. Permanent roads are minimized but may occur at designated crossings and designated access points. Water quality is good to excellent. Protection for public water sources will be provided. Aquatic ecosystems function properly and support aquatic biota commensurate with the associated ecoregion. Vegetation consists of native species. Suitable lakes and ponds sustain a diversity of sport fishing experiences. Developed recreation sites containing intensively managed lakes and ponds provide improved visitor access and sport fish populations provide sustained yield. Lakes and ponds managed for primitive use and fishing have limited access but support balanced sport fish populations. Movement of fish and other aquatic organisms in otherwise free-flowing perennial streams and other streams is not obstructed by road crossings, culverts, or other human-caused obstructions.

## Management Area 14. Ouachita Mountains-Habitat Diversity Emphasis

Total Acres: approximately 740,583

Management Area 14 consists of extensive blocks of upland (non-riparian) forest located throughout the Ouachita Mountains. The primary community types, each of which also occurs in other MAs, are Ouachita Pine-Oak Forest; Ouachita Pine-Oak Woodland; and Ouachita Dry-Mesic Oak Forest. The Ouachita Mountains-Habitat Diversity Emphasis MA includes all National Forest System lands in the Ouachita Mountains not assigned to special areas. These lands are available for varied intensities of ecosystem management and roaded-natural recreational opportunities. Management Area 14 includes areas suitable and unsuitable for timber production, available for oil and gas exploration and leasing with standard stipulations, and suitable for livestock grazing.

### *Desired Condition*

This Management Area is a mosaic of shortleaf pine-hardwood (including pine-dominated, hardwood-dominated, and evenly mixed forests and woodlands). Forest-wide desired conditions by structural class and community are presented in Part 1 for these communities. Within this MA, grass-forb and seedling-sapling conditions are well represented, particularly in the portions suitable for timber management, where they make up at least 6 percent of the landscape. These “early successional” conditions exist primarily under partial canopies of overstory pines and/or hardwood trees. Mid-successional and mature forests and woodlands are even more widespread, making up at least 70 percent of the landscape.

Adequate amounts of all forest conditions needed to sustain viable populations of many of the plant and animal species native to the Forest are available. The habitat needs of other native species with specialized habitat needs are met in other appropriate MAs. Deer and turkey habitat capability remain near 2004 levels; habitat capability for prairie warbler and northern bobwhite, among other indicator species, are higher than 2004 levels.

Visitors and managers have access to a moderately extensive transportation system. Visitors find non-motorized recreation opportunities available on a seasonal and shifting basis, depending on road closures and the scheduling of resource management activities. The main road system is well maintained, but visitors may see timber harvest equipment and encounter logging traffic. A portion of the road system is available for low clearance vehicle travel. Some portions are designated and available for OHV use. The remainder of the road system is closed seasonally or long-term.

Recently cut areas with logging slash, stumps, and some areas of disturbed soil are evident on a short-term and continuing basis, as are signs of prescribed burning and roadwork. Where such active management activities take place, appropriate scenery management techniques are practiced.

## **Management Area 15. West Gulf Coastal Plain-Habitat Diversity Emphasis**

Total Acres: approximately 13,066

Management Area 15 consists of lands in the West Gulf Coastal Plain of southeastern Oklahoma that are available for varied intensities of timber, wildlife, fisheries, range management and roaded-natural recreational opportunities. The primary community type represented here is West Gulf Coastal Plain Pine-Hardwood Forest. Additional Forest lands in the West Gulf Coastal Plains of southern Arkansas are included in MA 5 (Experimental Forests), and other portions of the southeastern Oklahoma Coastal Plain lands are included in MA 2 (Special Interest Areas), MA 3 (Developed Recreation Areas), MA 4 (Research Natural Areas and National Natural Landmarks), MA 6 (Rare Upland Communities), MA 8 (Special Uses/Administrative Sites), and MA 9 (Water and Riparian Communities). Management Area 15 is suitable for timber production (with a few exceptions), available for oil and gas exploration and leasing with standard stipulations, and suitable for livestock grazing.

### *Desired Condition*

This Management Area provides a mix of habitat conditions in coastal plain loblolly pine communities for a variety of species. More specific desired conditions are presented in Forest-wide desired conditions in Part 1 for this community (pine-oak forest).

## **Management Area 16. Lands Surrounding Lake Ouachita and Broken Bow Lake**

Total Acres: approximately 87,153

Management Area 16 includes National Forest lands surrounding Lake Ouachita in Arkansas and Broken Bow Lake in Oklahoma. All management activities within this area are designed to address wildlife and recreation objectives and the protection of resource values for each lake. The overriding objective is to sustain the unique combination of recreational, aesthetic, wildlife, and water quality values represented here. Portions of this MA are suitable for some timber management activities; others such as steep slopes are unsuitable. Management Area 16 is available for oil and gas exploration and leasing with controlled surface use stipulations, and suitable for livestock grazing.

### *Desired Condition*

A variety of dispersed recreational opportunities are available. Visitors encounter varied forest conditions, from fairly open, "park-like" stands of native pines and hardwoods with a forest floor rich in grasses and forbs to stands having a nearly continuous high canopy and sparse ground layer. Abrupt changes in vegetation are few, limited mainly to small openings in the forest and places where Forest land abuts private land, roads, or developed areas on other public land. Mature forest predominates, but some younger forests may be observed as well. Evidence of prescribed fire is apparent at times. A pattern of mixed hardwood and pine contributes to the visual attractiveness of the area. An adequate variety of sizes and forest conditions are present to support populations of

many animal species native to the uplands of the Lake Ouachita and Broken Bow Lake areas.

Visitors on the lake or shoreline view the surrounding National Forest lands as predominantly naturally appearing, with resource management activities not usually evident. Lands surrounding the lakes may be accessed by trails and by a variety of roads, but there is little or no addition of road miles to the transportation system.

## Management Area 17. Semi-Primitive Areas

Total Acres: approximately 136,091

Management Area 17 consists of areas that (a) meet the Recreation Opportunity Spectrum (ROS) criteria for motorized and non-motorized semi-primitive recreation settings and (b) are not included in other MAs. (Wilderness areas (MA 1), the Poteau Mountain Area (MA 1b), portions of some special interest areas (MA 2), and National Forest lands around Broken Bow Lake and Lake Ouachita (MA 16), for example, also offer either semi-primitive motorized or non-motorized recreation opportunities or both. Emphasis in this MA is to provide motorized and non-motorized semi-primitive recreation experiences. Management is dictated by recreational and wildlife objectives that provide for a semi-primitive experience and a range of wildlife habitats. Management Area 17 is available for oil and gas exploration and leasing with standard stipulations, and is suitable for livestock grazing. For areas identified in the following tabulation, timber harvesting and road construction are deferred for the planning period except for actions needed to address threats to forest health, including thinning of any existing pine plantations and control of southern pine or Ips beetle outbreaks.

Area Name	Approximate Acres
Black Fork Mountain	406
Blue Mountain	11,678
Brush Heap	8,353
Cedar Mountain	3,428
Flood Mountain	4,915
Fourche Mountain	2,403
Irons Fork Mountain	8,303
Leader Mountain	9,185
Little Missouri Area	1,226
Statehouse Mountain	3,612

In the remainder of MA 17, including most walk-in turkey areas, more active forest management may be implemented.

### *Desired Condition*

Visitors view a predominately naturally appearing landscape with some evidence of vegetation manipulation in the form of small openings, individual tree cutting, prescribed

fire, and some stands managed as more open, shortleaf pine-bluestem grass or oak woodland communities. Dispersed recreation experiences, including hunting and hiking, are available with fewer disturbances from motorized traffic than the general forest area. A moderate level of solitude is present in most areas.

## **Management Area 19. Winding Stair Mountain Recreation National Area and Associated Non-Wilderness Designations**

Total Acres: approximately 79,897

Management Area 19 contains lands designated by the Winding Stair Mountain National Recreation and Wilderness Area Act of 1988, Public Law 100-499, except for the two wilderness areas, which are included with other Forest wilderness in MA 1, Wilderness. A variety of outstanding recreational opportunities exists in MA 19. Lands within this area are both suitable and unsuitable for timber production; however, suitable acres are only managed in support of recreational and wildlife objectives that are compatible with the National Recreation Area and other special designations. Management Area 19 is available for oil and gas exploration and leasing with controlled surface use stipulations and suitable for livestock grazing. Designations in the Winding Stair Mountain National Recreation and Wilderness Act included in MA 19 are listed in the following tabulation:

<b>Area Name*</b>	<b>Acres</b>
19a. Winding Stair Mountain National Recreation Area	25,890
19c. Robert S. Kerr Memorial Arboretum, Nature Center, and Botanical Area	8,256
19e. Beech Creek Botanical Area	380
19f. Beech Creek National Scenic Area	6,200
19g. Indian Nations National Scenic and Wildlife Area	29,171

\*19b and 19d (Rich Mountain Recreation and Botanical Areas in Arkansas) from the 1990 Amended Forest Plan were moved into MA 2.

Designations in the Winding Stair Mountain National Recreation and Wilderness Act included in MA 1 (Wilderness) are the Oklahoma portion of Black Fork Mountain Wilderness and Upper Kiamichi Wilderness, which is entirely in Oklahoma. Rich Mountain Recreation Area and Rich Mountain Botanical Area, both in Arkansas and formerly part of MA 19, are now part of MA 2, Special Interest Areas. MA 19 is subdivided into several distinct areas to address the designated areas named and numbered above. The wilderness areas in the Act are now included in MA 1. Other letter designations used in the Act and in the 1990 Amended Forest Plan are continued in this Revised Forest Plan.

### *Desired Condition*

Along the Talimena Scenic Drive, visitors view predominately hardwood vegetation that is naturally appearing, and in the remaining area, a mixed forest condition. Some vegetation management in the form of small openings, individual tree cutting, and prescribed fire is evident. Resource management treatments viewed from scenic points within the area meet high scenic integrity objectives. Paved roads and state highways provide primary

access to developed recreation facilities and State parks. Additional access is provided by unpaved roads and trails.

## **Management Area 20. Wild and Scenic River Corridors and Eligible Wild and Scenic River Corridors**

Total Acres: approximately 26,571

Management Area 20 consists of the corridors of the congressionally designated Cossatot and Little Missouri Wild and Scenic Rivers and approximately ½-mile wide corridors for the Ouachita, forks of the Saline (eastern), Caddo, Glover, and Mountain Fork Rivers. The 16.5-mile segment of the Glover River within the Forest is recommended as an addition to the National Wild and Scenic Rivers System with a classification as “scenic.” The remaining rivers are eligible for consideration as components of the National System, but suitability studies are deferred to the respective States due to the very limited extent of National Forest (or other federal) lands within the corridors of these rivers. Management activities and practices will protect the inherent qualities of the rivers that have not been congressionally designated, including their “outstandingly remarkable features.” River-related recreational opportunities that are compatible with the outstandingly remarkable features of these rivers and their corridors will be offered. The lands within this MA are unsuitable for timber production. Designated rivers are congressionally withdrawn from mineral activity, and rivers under consideration for designation will have a No Surface Occupancy stipulation applied. Management Area 20 is suitable for livestock grazing subject to management area design criteria. Management Area 20 has been subdivided into three distinct areas: 20a. Designated Wild River Segments; 20b. Scenic River Segments; and 20c. Recreational River Segments. See Management Area 20 design criteria (Part 3 of this Plan) for tables listing specific segments.

### *Desired Condition*

A variety of dispersed and developed recreational opportunities are available. Visitors encounter natural landscapes featuring exceptionally scenic, free-flowing mountain rivers. Little evidence of human-caused disturbance are visible, except in the form of a few system roads, prescribed fire, control activities to address pest outbreaks, trails, and river access facilities. Much of the vegetation in the corridor has old-growth characteristics. Signs of natural disturbances may be evident.

## **Management Area 21. Old Growth Restoration (Pine-Grass Emphasis)**

Total Acres: approximately 70,379

Management Area 21 includes 35 separate old growth restoration units, ranging in size from 600 acres to nearly 6,000 acres. The emphasis in this MA is the restoration and perpetuation of pine-grass old growth forests, woodlands and other old growth conditions associated with frequent fire. Inclusions of existing hardwood stands will also

be managed for old growth characteristics. Maintenance or restoration of other kinds of old growth forests (including other hardwood-dominated forests), woodlands, and glades will be accomplished in other management areas. See additional discussion of old growth in Appendix D.

Restoration of pine-grass old growth forests and woodlands fills a missing component (an ecological gap) among existing communities of the Ouachita Mountains, created largely by decades of fire suppression and large-scale logging in the 1920s and 1930s. Pine-grass old growth systems will provide habitat for a wide range of wildlife, including both late seral stage species and some open area associates. Portions of this area (replacement stands) are suitable for timber production under long rotations. MA 21 is available for oil and gas exploration and leasing; however, no surface occupancy is allowed in the core area and controlled surface use stipulations apply in the remainder of this management area. MA 21 is suitable for livestock grazing subject to management area design criteria.

#### *Desired Condition*

The restoration of pine-grass old growth forests and woodlands is emphasized within MA 21, with the perpetuation of old growth conditions assured by core areas connected to replacement stands that are managed under long rotation (160 years). Regeneration of young trees occurs in some replacement stands on an infrequent basis. Pine stands are generally not densely stocked (total basal area 50-80 square feet) and include many trees over 100 years old. Many trees are large (>20" dbh) and have a "flat topped" appearance. Old growth pine-grass forests and woodlands are fire-maintained communities characterized by relatively open conditions and a grassy understory. MA 21 may include pine in almost pure stands, pine mixed with oak and sometimes hickory, or even patches of relatively pure stands of post oak and blackjack oak. These forests and woodlands are characterized by open stands of old, large, and often widely spaced pines and oaks, occurring in patches and clumps. The forest floor supports a rich mix of grasses, forbs, wildflowers, and low shrubs.

Redheart disease, downed woody debris, and snags are common. Visitors encounter evidence of frequent, specific disturbance, particularly fire, in a naturally appearing landscape. While usually associated with management, disturbances are consistent with, and reflect, natural processes. Evidence of vegetation management is visible following thinning operations or infrequent reproduction cutting primarily in replacement stands. Access is from low-standard roads, many of which are closed seasonally or year-round. Fire scars and snags are visible in most areas, but the increased viewing depth, diversity of vegetation, abundance of wildflowers, and age and character of the trees contribute to scenic quality.

Pine-grass old growth provides habitat for a wide range of wildlife. Deer and other early-seral stage species are favored by the abundant grassy understory, while woodpeckers and other species associated with mature forests are supported by the mature-tree component. Species requiring cavities and snags (e.g., raptors, bluebirds, woodpeckers) are favored over those highly dependent on hard mast (e.g., squirrels) or dense brush (e.g., gray fox).

**Disturbance Regime**—These forests are maintained by frequent, moderately intense ground fires, some of which occur in the summer and fall (July-November). Fire return intervals range from one to more than four years, but occur on an irregular basis, at varying times, seasons, and intensities. Fires are frequent and hot enough to suppress the woody understory and occasionally kill individual overstory trees or small groups of trees.

**Core Areas**—At least ten percent of the suitable acres of each old growth restoration unit is designated as a “core area.” The core area ages and is not subject to artificial regeneration. Initially, thinnings and midstory treatment may be necessary to establish pine-grass conditions. Fire is an important component to maintain such conditions.

**Replacement Stands**—The remainder of the pine stands within each old growth restoration unit are managed as replacement stands in order to perpetuate old growth conditions and maximize the effective area in old growth at any one time. Replacement stands range in age from very young to approximately 160 years. These replacement stands with extremely old trees are available to take the place of core areas that, for whatever reason, can no longer function as old growth. Replacement stands may be regenerated as necessary using irregular seedtree or irregular shelterwood reproduction cutting methods. These methods differ from traditional seedtree or shelterwood cutting in that some of the seedtrees are retained indefinitely. The result will be two-aged stands of trees. Replacement stands are suitable for timber production; in the course of managing for old growth objectives, significant yields of high-quality wood may be produced and sold from these areas. In some cases, desired stocking may be maintained by burning alone.

**Regeneration**—The periodic use of prescribed fire under open canopies may promote natural regeneration at irregular intervals, resulting in “banked” advanced reproduction in many core and replacement stands. Therefore, regeneration in some replacement stands may be accomplished simply by thinning to a seedtree or shelterwood residual basal area (BA), and excluding fire for a few years to ensure the survival of seedlings. With periodic burning, some regeneration will be of coppice origin.

**Hardwood Stands**—Hardwood stands and inclusions are unsuitable for timber production and are managed to restore upland hardwood and oak-pine old growth. Fire is not excluded from these areas, although burns generally are less intense and less frequent.

## **Management Area 22. Renewal of the Shortleaf Pine-Bluestem Grass Ecosystem and Red-cockaded Woodpecker Habitat**

Total Acres: approximately 188,002

Management Area 22, an area for the renewal of the Shortleaf Pine-Bluestem Grass Ecosystem and Red-cockaded Woodpecker habitat, is located on National Forest land on the Poteau/Cold Springs, Mena, and Oklahoma Ranger Districts. These lands consist primarily of extensive blocks of Ouachita Pine-Oak Forest, Ouachita Pine-Oak Woodlands, and intermingled stands of Ouachita Dry-Mesic Oak Forest. In addition to

providing extensive areas in which restoration of pine-bluestem ecosystems is featured, MA 22 incorporates two Habitat Management Areas (HMAs; one in Arkansas, one in Oklahoma) for the endangered Red-cockaded Woodpecker (RCW).

Management Area 22 is available for oil and gas exploration and leasing with controlled surface use stipulations on the entire management area except for the Blue Moon Wildlife and Fisheries Demonstration Area, where no surface occupancy stipulations apply. MA 22 is suitable for livestock grazing subject to MA design criteria. Acres in this Management Area are both suitable and unsuitable for timber production. Active RCW stands, recruitment stands, and recruitment clusters are all unsuitable for timber production. As required by the 1995 Red-cockaded Woodpecker EIS, HMAs (MA 22a) have been designated. HMA acres are shown by Ranger District in the following tabulation:

District	Total
Cold Springs	6,581
Mena	11,147
Poteau	66,584
Tiak	50,945
Total	135,257

The remaining part of MA 22 (entirely in Arkansas) is the Extended Area, or MA 22b. The Extended Area provides for renewal of the shortleaf pine-bluestem grass ecosystem and future expansion habitat for RCWs.

#### *Desired Condition*

The dominant natural plant community of this area is shortleaf pine trees with bluestem grasses and a variety of other herbaceous plants flourishing on the forest floor. Restoration of landscape patterns and functions—with special emphasis on renewing the historic role of fire and increasing the abundance of older pine and hardwood stands with grassy understories—are key features of this MA. Hardwood trees are more common in stream corridors and on some north-facing slopes in the area; they are also important components of all pine stands in the MA. Hardwood dominated areas will be less numerous in this MA than in others across the Forest, but will still comprise at least 20 percent of the area.

The Ouachita Mountains Red-cockaded Woodpecker Habitat Management Area (HMA) in Arkansas is designed to support a future population of at least 250 RCW breeding groups, as defined by the USFWS Recovery plan for a Secondary Core Population. This HMA has sufficient habitat capacity to provide for 400 active clusters; the smaller Oklahoma HMA has sufficient habitat capacity to provide for 50 active clusters. Active management of these HMAs should yield an approximate 5 percent annual population increase.

Visitors will see a large portion of the area featuring a fairly open canopy varying from approximately 60 square feet to 80 square feet of basal area per acre of older pine and

hardwood trees. To develop and sustain older stands, regeneration cycles are a minimum of 120 years. Regeneration areas also retain a portion of the overstory indefinitely to reduce potential impacts from canopy fragmentation and to retain visual quality. In the future, those pine-dominated areas that would be committed to regeneration, i.e., the 0-10 year age class, will make up no more than 8.3 percent of the area. This MA has at least 66 percent of the acreage in trees older than 40 years, including 40 percent of the acreage in trees older than 70 years, and approximately 17 percent of the acreage in trees older than 100 years.

Fire is used to maintain a healthy functioning ecosystem. The forest floor in the burned areas contains a high number of herbaceous plant species, reptiles, small mammals, and breeding birds. Harvesting activities are planned to provide large blocks of older trees. Ecotonal differences are minimized by limiting age differences between stands. Visitors may encounter disturbances to the forest in this area from prescribed fire and timber harvest activities. The disturbances are seasonal and short-term.

## **Suitable Land Uses**

National Forest System lands are suitable for a variety of uses (36 CFR 219), including outdoor recreation, livestock grazing, timber harvest, wildlife habitat, wilderness, energy resource development, mining activities, watershed restoration, and cultural and heritage interpretation, among others. Rather than determine the suitability of all lands for all uses, the Forest Plan is based on the assumption that all lands are potentially suitable for a variety of activities except when specific activities or areas are determined not to be compatible with one another or capable of supporting such use.

A plan must identify National Forest System lands as not suited ("unsuitable") for a certain use under the following circumstances:

1. If law, regulation, or Executive Order prohibits that use.
2. If agency resource management directives prohibit the use.
3. If the use would result in substantial and permanent impairment of the productivity of the land or renewable resources.
4. If the use is incompatible with the desired conditions established for all or part of the plan area.

Table 2.1 indicates whether the following uses are suitable (S), unsuitable (U), or both suitable and unsuitable (S+U) within each MA:

- Timber Production
- Public Use of Off-Highway Vehicles (OHVs)
- Livestock Grazing
- Road Construction, Power lines, Linear Rights-of-Way (ROW)

Additional detail concerning each of these suitable uses follows Table 2.1.

**Table 2.1 Suitability by Management Area**

Management Area	Timber Production	Public Use of OHVs <sup>1</sup>	Livestock Grazing	Road Construction, Power lines, Linear ROW
1. Wilderness & Poteau Mtn.	U	U (S, Designated Routes in Poteau Mtn)	U	U
2. Special Interest Areas	S + U (parts of 2c are suitable)	S, Designated Routes	S, FW Restrictions	S, Restricted
3. Developed Recreation Areas	U	U	U	S, Minimum Necessary
4. Research Natural Areas & National Natural Landmarks	U	U	U <sup>1</sup>	U
5. Experimental Forests	U	S, Designated Routes	S, FW Restrictions	S, Minimum Necessary
6. Rare Upland Communities	U	S, Designated Routes	S, FW Restrictions	S, Minimum Necessary
7. Ouachita Seed Orchard	U	U	U	S, Minimum Necessary
8. Administrative Sites/ Special Uses	U	S, Designated Routes	S + U, FW Restrictions	S, Minimum Necessary
9. Water/Riparian Communities	U	S, Designated Routes	S, FW Restrictions MA Restrictions	S, Restricted
14. Ouachita Mountains, Habitat Diversity Emphasis	S + U	S, Designated Routes	S, FW Restrictions	S, Minimum Necessary
15. W. Gulf Coastal Plain, Habitat Diversity Emphasis	S + U	S, Designated Routes	S, FW Restrictions	S, Minimum Necessary
16. Lands Surrounding Lake Ouachita & Broken Bow Lake	S + U	S, Designated Routes	S, FW Restrictions MA Restrictions	S, Minimum Necessary
17. Semi-Primitive Areas	S + U	S, Designated Routes	S, FW Restrictions	S, Minimum Necessary
19. Winding Stair Mountain NRA (and associated non-Wilderness designations)	S + U (parts of 19a, f, and g are suitable)	S, Designated Routes	S, FW Restrictions MA Restrictions	S, Restricted
20. Wild and Scenic River Corridors	U	S, Designated Routes	S, FW Restrictions MA Restrictions	S, Restricted
21. Old Growth Restoration	S + U	S, Designated Routes	S, FW Restrictions MA Restrictions	S, Minimum Necessary
22. Renewal of the Shortleaf Pine/ Bluestem Grass Ecosystem and RCW Habitat	S + U	S, Designated Routes	S, FW Restrictions MA Restrictions	S, Minimum Necessary (Not allowed in RCW clusters)

S = Suitable, U = Unsuitable, S + U = both Suitable and Unsuitable

<sup>1</sup> See Public Use of Off-Highway Vehicles section for clarification on the timeframe for when trails and roads will be designated for OHV use.

## Suitability for Timber Production

The 1982 planning regulations (36 CFR 219) direct Responsible Officials to “identify lands which are not suited for timber production.” The regulations define timber production as “the purposeful growing, tending, harvesting, and regeneration of regulated crops of trees to be cut into logs, bolts, or other round sections for industrial or consumer use. The term timber production does not include production of fuel wood” (36 CFR 219.3). Calculation of the acres of land “suitable” for timber production is used as the basis for setting the maximum quantity of timber that may be sold from the Forest. This quantity is usually expressed on an annual basis as the “average annual allowable sale quantity (ASQ).”

Table 2.2 summarizes acres suitable for timber production. After all unsuitable categories have been subtracted; approximately 1,016,228 acres are classified as suitable for timber production. The lands that are considered unsuitable for timber production total 732,590 acres. Lands considered unsuitable for timber production include those 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 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 5 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 to responses 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.

Nine of the 17 Management Areas are unsuitable in their entirety for timber production:

- MA 1. Wilderness and Poteau Mountain
- MA 3. Developed Recreation Areas
- MA 4. Research Natural Areas and National Natural Landmarks
- MA 5. Experimental Forests
- MA 6. Rare Upland Communities
- MA 7. Ouachita Seed Orchard
- MA 8. Administrative Sites/Special Uses
- MA 9. Water and Riparian Communities
- MA 20. Wild and Scenic River Corridors

The eight remaining management areas contain a mix of lands both suitable and unsuitable for timber production.

**Table 2.2 Classification of Ouachita National Forest Lands Relative to their Suitability for Producing Timber across All Management Areas**

<b>Classification</b>	<b>Acres</b>
Nonforest – Water	4,916
Nonforest – Roads	15,001
Nonforest – Administrative Sites	780
Nonforest – Developed Recreation	2,139
Nonforest from Continuous Inventory of Stand Conditions Database	8,447
Total Nonforest	31,283
Total Forested	1,748,818
Withdrawn – Wilderness	64,469
Lands Withdrawn and Recommended for Wilderness	1,793
Withdrawn – Scenic Areas	4,195
Withdrawn – Research Natural Areas	2,035
Withdrawn – Poteau Mountain Management Area	3,958
Withdrawn – Botanical Areas	11,456
Lands Withdrawn for Fourche Mountain Botanical Area	1,673
Withdrawn – Wild/Scenic Rivers	14,639
Total Withdrawn	104,218
Not Capable	5,479
Tentatively Suitable	1,639,121
Land not Appropriate for Timber Production	622,893
Total Suitable Forested Land	1,016,228
Unsuitable Forested Land	732,590

It is important to recognize that, even if lands are classified as unsuitable for timber production, timber may be cut and harvested for other purposes. Dead or dying trees in developed recreation areas or along roads or trails, for example, often need to be removed (salvaged) for safety reasons. Trees may need to be cut and harvested to control insect outbreaks, to provide essential habitat for federally listed species and other wildlife, to maintain scenic overlooks, and for many other purposes. Timber removed from lands unsuitable for timber production is not included when calculating timber volumes chargeable to the allowable sale quantity, which is 27 million cubic feet, nor is volume harvested by salvage. Table 2.3 indicates which management areas are suitable for timber salvage.

**Table 2.3 Salvage Suitability by Management Area**

Management Area	Salvage Suitability
1 Wilderness	No
2 Special Interest Areas	Yes
3 Developed Recreation Areas	Yes
4 Research Natural Areas and National Natural Landmarks	No
5 Experimental Forests	Yes
6 Rare Upland Communities	Yes
7 Ouachita Seed Orchard	Yes
8 Administrative Sites/Special Uses	Yes
9 Water and Riparian Communities	Yes*
14 Ouachita Mountains, Habitat Diversity Emphasis	Yes
15 West Gulf Coastal Plain, Habitat Diversity Emphasis	Yes
16 Lands surrounding Lake Ouachita and Broken Bow Lake	Yes
17 Semi-Primitive Areas	Yes
19 Winding Stair Mountain National Recreation Area (and Associated Non-Wilderness Designations)	Yes – 19a, 19g No – 19c, 19e, 19f
20 Wild and Scenic River Corridors	No – 20a Yes – 20b, 20c
21 Old Growth Restoration	No – core Yes – replacement stands
22 Renewal of the Shortleaf Pine/Bluestem Grass Ecosystem and Red-cockaded Woodpecker Habitat	Yes

\* See Table 3.10

## Public Use of Off-Highway Vehicles

The management direction for public use of off-highway vehicles (OHVs) presented in Table 2.1 represents an important change from the direction in the 1990 Amended Forest Plan. The latter implied that cross-country OHV use was suitable in the Forest except where specifically posted otherwise (e.g., wilderness areas, the forest floor of the Broken Bow unit, the “wild” portion of the Little Missouri Wild and Scenic River). Within four years, the Ouachita National Forest intends to designate a system of roads and trails for public use of motorized vehicles, including OHVs and, at the same time, limit motorized vehicles to those designated roads and trails (i.e., no cross-country travel). Until that system of designated routes is established, public use of motorized vehicles may continue on routes and in areas where such use is not prohibited. Routes closed to vehicle use by a gate, berm, or other obvious means and areas posted closed to cross-country travel by motorized vehicle (e.g., wildernesses, walk-in turkey hunting areas during certain seasons, portions of wild and scenic river corridors) will remain unavailable for public use of OHVs. Additional area closures may be necessary in the period between the release of the Revised Forest Plan and the designation of suitable routes.

## Livestock Grazing

The 1982 planning regulations (36 CFR 219.20) direct Responsible Officials to identify “the suitability and potential capability of National Forest System lands for producing forage for grazing animals.” As shown in Table 2.1, it has been determined that grazing is not a suitable use in the following MAs:

- MA 1. Wilderness and Poteau Mountain
- MA 3. Developed Recreation Areas
- MA 4. Research Natural Areas and National Natural Landmarks
- MA 7. Ouachita Seed Orchard
- MA 8. Administrative Sites (suitable in Special Use areas)

In other MAs, grazing is permitted, subject to the design criteria in Part 3.

## Road Construction, Power Lines, and Other Linear Rights-of-Way

Road construction, power lines, and other rights-of-way that would create linear openings in the Forest are unsuitable (prohibited) in:

- MA 1. Wilderness and Poteau Mountain
- MA 4. Research Natural Areas and National Natural Landmarks
- MA 22. Within active Red-cockaded Woodpecker clusters

In other MAs, these linear features are allowed but must be installed in a manner that is consistent with the management objectives of the area. Linear features are not prohibited but are restricted in:

- MA 2. Special Interest Areas
- MA 9. Water and Riparian Communities
- MA 19. Winding Stair Mountain NRA
- MA 20. Wild and Scenic River Corridors

The Forest designates two multi-facility corridors to maximize co-location of future uses:

- Between Norman and Danville, AR along Arkansas State Highway 27
- Between Broken Bow and Heavener, OK along Oklahoma State Highway 259

Protection of water resources is of particular importance due to the potential for soil disturbance and production of sediment from the creation of linear rights-of-way. Where road location is necessary, roads and stream crossings should be designed to minimize impacts and to protect the natural and beneficial values of the area. See Part 3 for design criteria and specific restrictions.

## Minerals-Related Uses

The General Mining Law of 1872 applies to all mineral deposits in National Forest System lands reserved from the public domain. Where public domain lands have been formally withdrawn, no authority exists to explore for, or develop, locatable minerals on those lands. Minerals, such as metallic minerals, that would be locatable minerals on public domain lands are hardrock leasable minerals on acquired lands. Leasing act minerals such as oil, gas, coal, and other leasing act minerals, and mineral materials, including, but not limited to sand gravel and building stone, are regulated by other laws and regulations.

Forest Service policy regarding minerals management includes ensuring “the integration of mineral resource programs and activities with the planning and management of renewable resources through the land and resource management planning process, recognizing that mineral development may occur concurrently or sequentially with other resource uses” ([http://www.fs.fed.us/geology/minerals\\_policy.html](http://www.fs.fed.us/geology/minerals_policy.html)). Consistent with federal law, including the U.S. Mining Laws Act of 1872, and the Mining and Minerals Policy Act of 1970, forest plans *do not* make decisions to withdraw National Forest System lands from mineral exploration or development.

The Forest Plan includes recommendations for making or removing withdrawals, based on an evaluation of the compatibility of mineral development with the objectives of individual MAs. The Withdrawal Review for the Forest is in Appendix B.

### Minerals Actions in Management Areas:

Unless statutorily withdrawn, federal hardrock leasable minerals are available for lease in all MAs.

Quartz mining operations take place under contracts issued by the Forest Service. Quartz crystal excavations can occur in all MAs with the exceptions of:

- MA 1. Wilderness
- MA 3. Developed Recreation Areas
- MA 4. Research Natural Areas and National Natural Landmarks
- MA 9. Water and Riparian Communities

Oil and Gas Lease access is most restrictive in No Surface Occupancy stipulated MAs:

- MA 3. Developed Recreation Areas
- MA 4. Research Natural Areas and National Natural Landmarks
- MA 5. Experimental Forests
- MA 6. Rare Upland Communities
- MA 21. Old Growth Restoration – Core

Mining claim locations under the General Mining Law of 1872 may not take place in designated Wildernesses (MA 1), designated Wild and Scenic Rivers (MA 20), or lands formally withdrawn from mineral entry. Withdrawn lands are found in various MAs.

Mineral collecting for personal use may be allowed where such use is compatible with MA desired conditions, specifically:

- Surface exposures of quartz crystal may be removed by hand or by using small trowels, provided the removal is for personal use, not commercial use. Groups, organizations, and agencies may be allowed to remove mineral specimens for educational and scientific purposes after review and approval by the Responsible Official.
- Mineral material for panning must be taken only from the bed of the stream, not streambanks, and can only be dug with the edge of the pan and a small trowel to loosen gravels. No hazards can be created and all pan excavations must be filled. Any mineral retrieved is only for personal use and cannot be sold. Groups of people who wish to pan within a stream on the Forest must obtain permission from the appropriate District Ranger. (Note: Economic gold deposits are not noted in the Ouachita Mountains. Panning activities in Ouachita National Forest streams are primarily to hone skills.)

The Regional Forester consents (for acquired lands) or has no objection (for Public Domain lands) to lease lands available for oil and gas leasing subject to standard lease terms or subject to additional constraints (stipulations such as No Surface Occupancy and Controlled Surface Use) as required for a specific management area. This consent/no objection decision is valid until the Forest Service provides the Bureau of Land Management written notification that consent is withdrawn or amended. Table 2.4 displays gas leasing stipulations, whether lands are available or closed for oil and gas exploration, and leasing according to the consent decision. The table also shows acres of lands subject to the stipulations.

**Table 2.4 Oil and Gas Leasing Consent Decisions**

Management Area	Oil and Gas Exploration and Leasing	Oil and Gas Leasing Stipulation	Acres
1a. Designated Wilderness	Closed	Closed	64,469
1b. Poteau Mountain	Available	CSU	3,958
1c. Recommended Wilderness	May Be Available	Closed or CSU*	1,793
2. Special Interest Areas	Available	CSU	27,313
3. Developed Recreation Areas	Available	NSO	5,189
4. RNAs/Nat. Natural Landmarks	Available	NSO	2,115
5. Experimental Forests	Available	NSO	6,021
6. Rare Upland Communities	Available	NSO	48,030
7. Ouachita Seed Orchard	Available	CSU	636
8. Admin Sites/Special Uses	Available	CSU	551
9. Water/Riparian Communities	Available	CSU	278,284
14. Ouachita Mountains Habitat Diversity	Available	Standard Stipulation	740,583
15. W. Gulf Coastal Plain Habitat Diversity	Available	Standard Stipulation	13,066
16. Lands Surrounding Lake Ouachita and Broken Bow Lake	Available	CSU	87,153
17. Semi-Primitive Areas	Available	Standard Stipulation	136,091
19. Winding Stair Mountain National Recreation Area non-Wilderness	Available	CSU	79,897
20. Wild River Corridors**	Closed	Closed	1,245
20. Wild & Scenic River Corridors**	Available	CSU	25,326
21. Old Growth Restoration – core	Available	NSO	5,520
21. Old Growth Restoration – non-core	Available	CSU	64,859
22. Shortleaf Pine/ Bluestem Grass Ecosystem /RCW	Available	CSU***	188,002
No Leasing	67,507 acres, 4%		
NSO: No Surface occupancy Stipulation	66,875 acres, 4%		
CSU: Controlled Surface Use Stipulation*	755,979 acres, 43%		
Standard Stipulations****	889,740 acres, 49%		

\* Until Congress acts to designate as wilderness, these recommended areas will have Controlled Surface Use Stipulations; however, if they are designated, they will be Closed. For purposes of this table, these areas are counted in the Closed category.

\*\*Rivers, not designated, but under consideration for designation, will have a No Surface Occupancy stipulation applied.

\*\*\*Except for Blue Moon Wildlife and Fisheries Demonstration Area, which is No Surface Occupancy

\*\*\*\* The Standard Stipulation is as follows:

The lessee/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 the 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.

#### Authorities for minerals permitting:

- The Forest Supervisor has delegated authority to District Rangers for decisions concerning locatable and saleable hardrock minerals cases and geophysical exploration requests. In leasable cases, the District Ranger is responsible for evaluating the suitability (availability) of Forest lands for exploration and mining, which are then presented as recommendations by the Forest Supervisor to the Regional Forester.
- The Regional Forester is the authorized Forest Service officer responsible for making the final decision to consent or deny permission to the USDI, Bureau of Land Management for issuance of permits and leases.
- The USDI, Bureau of Land Management (BLM) is the federal agency responsible for issuing and administering leasable mineral permits and leases once Forest Service consent is granted.

## Military Use of the Forest

Use of National Forest System lands for military training activities is within the statutory authority of the Act of June 4, 1897. By a Master Agreement dated September 30, 1988, the Department of Agriculture and the Department of Defense agree that prior to requesting use of the Forest, the Department of Defense will determine if lands they administer are available and suitable.

In the last 30 years, there has been only sporadic use of the Forest for military readiness activities such as survival exercises using unfamiliar or rugged terrain and radio signal relay training. Special use permits may be issued to National Guard units and agreements may be made with Army Reserve units for low impact military readiness activities. The requesting military unit is required to complete an environmental review following NEPA procedures. In addition to being approved only after appropriate NEPA review, the special use permits contain terms and conditions that specify the scope of the activity, precautions, and prohibitions. The Forest Service requires that the requesting unit be aware of and respect private ownerships that are intermingled with Forest ownership. The permit holder is responsible for all costs associated with rehabilitation, repair, or replacement of damaged Forest resources.

When requests for military use of the Forest for readiness activities are received, they will be evaluated. Restrictions on type of use and periods of use would be based on a case-by-case analysis. Past experience with military readiness activities on the Forest is that they have been fairly non-intrusive, leaving no noticeable environmental impacts on Forest resources. Residents of communities near the Forest have expressed concern over military use of helicopters, and for this reason, the landing of any military aircraft on National Forest System lands for training must be coordinated with the Forest prior to the event. It is not possible to prohibit military use of air space over the Forest. Military pyrotechnic use is not permitted on National Forest System lands because of the potential for damaging fire.

Due to other concerns and a need to protect resource values, some areas of the Forest are not available for all military uses. See Table 2.5 for types of military use that may be requested for consideration in specific MAs.

**Table 2.5 Suitable Military Uses by Management Area**

Management Area	<u>Category of Use</u>			
	Foot Traffic <sup>1</sup>	Light Vehicles <sup>2</sup>	Heavy Vehicles and Site Disturbance <sup>3</sup>	Ground Based Air Operations <sup>4</sup>
<b>1 Wilderness</b>				
1a. Designated Wilderness	No	No	No	No
1b. Poteau Mountain	Yes	No	No	No
1c. Recommended Wilderness	No	No	No	No
<b>2 Special Interest Areas</b>				
2a. Scenic Areas	Yes	No	No	No
2b. Watchable Wildlife Areas	No	No	No	No
2c. Rich Mountain Botanical Area	No	No	No	No
2d. Rich Mountain Recreation Area	No	No	No	No
<b>3 Developed Recreation Areas</b>	No	No	No	No
<b>4 Research Natural Areas/National Natural Landmarks</b>	Yes	No	No	No
<b>5 Experimental Forests</b>	No	No	No	No
<b>6 Rare Upland Communities</b>	No	No	No	No
<b>7 Ouachita Seed Orchard</b>	No	No	No	No
<b>8 Special Uses/Administrative Sites</b>	No	No	No	No
<b>9 Water and Riparian Communities</b>	No	No	No	No
<b>14 Ouachita Mountains-Habitat Diversity Emphasis</b>	Yes	Yes	Yes	No
<b>15 West Gulf Coastal Plain-Habitat Diversity Emphasis</b>	Yes	Yes	Yes	No
<b>16 Lands Surrounding Lake Ouachita and Broken Bow Lake</b>	Yes	No	No	No
<b>17 Semi-Primitive Areas</b>	Yes	No	No	No
<b>19 Winding Stair Mountain NRA and Associated Non-Wilderness Designations</b>				
19a. Winding Stair Mountain NRA	Yes	No	No	No
19c. Robert S. Kerr Memorial	No	No	No	No
19e. Beech Creek Botanical Area	No	No	No	No
19f. Beech Creek National Scenic Area	Yes	No	No	No
19g. Indian Nations National Scenic and Wildlife Area	Yes	No	No	No
<b>20 Wild and Scenic River Corridors</b>				
20a. Recreation River Segments	Yes	No	No	No
20b. Wild River Segments	No	No	No	No
20c. Scenic River Segments	Yes	No	No	No
<b>21 Old Growth Restoration</b>	Yes	No	No	No
<b>22 Renewal of the Shortleaf Pine-Bluestem Grass Ecosystem and Red-cockaded Woodpecker Habitat</b>	Yes <sup>5</sup>	No	No	No

<sup>1</sup> Only foot traffic will be allowed. The number of persons permitted at one time and duration of stay will be based on the type of use and season, among other things. This could include low impact overnight camping.

<sup>2</sup> Passenger vehicles, bus traffic, light transport trucks (5 tons or less), and vans will be allowed. Radio training exercises will be permitted along access road rights-of-way. Normally, radio-training exercises include the operation of a manned radio relay station 24 hrs/day for a 30-day period. Portable toilets will be allowed. The level of military activity could have a moderate impact on the landscape.

<sup>3</sup> This category includes heavy equipment with a gross weight above 5 tons and could involve troop carriers, heavy transport trucks, track vehicles, and support equipment. Generally, military exercises involve more than 50 troops at a time. They will be permitted to camp on the forest for extended periods, usually for two or more weeks at a time. Installation of temporary camps and related facilities needed to support the troops will be allowed. This also includes construction of temporary fortifications.

<sup>4</sup> Aviation landing facilities for military training activities are not allowed in any area of the Forest. Existing heliports and other existing openings will not be considered for use in support of military training maneuvers.

<sup>5</sup> Outside of active RCW clusters.

## Public Uses Regulated by Other Agencies

The Arkansas Game and Fish Commission (AGFC) manages Arkansas' fish and wildlife populations for their ecological values and for their use and enjoyment by the public. The Oklahoma Department of Wildlife and Conservation (ODWC) does the same for Oklahoma.

Hunting is not permitted in developed recreation areas or other posted sites. Otherwise, hunting is permitted throughout the Ouachita National Forest during hunting seasons designated by the AGFC and the ODWC. All state hunting and fishing regulations, fees, and seasons apply on National Forest land.

Angling is allowed in most areas of the National Forest during fishing seasons designated by the AGFC and the ODWC. Some locations have special regulations in order to protect/enhance aquatic species that depend on high-quality habitat. Swimming areas are closed to fishing.

## Proposed Special Area Designations

Analyses were conducted during plan revision and during a previous significant plan amendment to determine if any additional special area designations should be recommended. As a result of those analyses and associated public involvement, one addition to the National Wild and Scenic Rivers System is recommended and three additions to the National Wilderness Preservation System are recommended.

### National Wild and Scenic Rivers System

Currently, the Cossatot and Little Missouri Rivers are the only designated Wild and Scenic Rivers within the Ouachita National Forest. The eligibility and suitability of the Glover River in southeastern Oklahoma was studied as part of a significant amendment to the 1990 Forest Plan completed in 2002. The Glover River's "outstandingly remarkable" values are described in Appendix B of the Environmental Impact Statement for that amendment, and a recommendation that 16.5 miles of the Glover River in McCurtain County, Oklahoma, be added to the National Wild and Scenic Rivers System with a designation of "scenic" was part of the Record of Decision. A review of other eligible rivers during plan revision revealed none suited for recommendation as a National Wild and Scenic River, because these rivers are bordered by too little National Forest System land. Final suitability studies are deferred to the respective states.

Designating the Glover River as a Wild and Scenic River would help meet Forest-wide desired conditions for aquatic and riparian ecosystems, Threatened and Endangered species habitat, watershed health, and public use and enjoyment (including conservation of areas having a scenic integrity). Pending congressional action, an approximately ½-mile wide corridor of the roughly 16.5-mile segment of the Glover River within the Ouachita National Forest will be managed as part of MA 20c.

## National Wilderness Preservation System

The eligibility and suitability of certain areas within the Ouachita National Forest for possible future wilderness designation were studied during the revision of the Forest Plan. Lands adjacent to Flatside Wilderness (620 acres) and the East Unit of Poteau Mountain (77 acres) in Arkansas and Upper Kiamichi Wilderness (1,096 acres) in Oklahoma are recommended for addition to the National Wilderness System, primarily because adding these lands to the National Wilderness Preservation System would establish more logical and manageable boundaries for these areas. Completing these additions would also be consistent with Forest Plan desired conditions for public use and enjoyment of national forest lands, including conservation of opportunities for semi-primitive recreation settings.

The proposed Flatside Wilderness and Poteau Mountain additions in Arkansas, and Upper Kiamichi Wilderness addition in Oklahoma are contiguous to existing wilderness boundaries, would increase visibility and ease of identification of wilderness versus non-wilderness areas, would create more manageable overall boundaries for administrative purposes, and would add areas of scenic value to each wilderness. The recommended wilderness additions total 1,793 acres. If Congress adds these areas to the National Wilderness Preservation System, they will become part of MA 1a.

These recommendations are preliminary administrative recommendations that will receive further review and possible modification by the Chief of the Forest Service, the Secretary of Agriculture, and/or the President of the United States. Congress has reserved the authority to make final decisions on wilderness designation; therefore, wilderness recommendations in the Revised Forest Plan are not appealable under the agency's administrative appeal procedures.

## Prospectus

This prospectus describes recent trends and future expectations regarding the levels of experiences, goods and services, or conditions that are supplied by the Forest. Past performance is generally a good indicator of what can be expected in the near future. It is important to note that the projections in this prospectus are not precise quantities to be achieved, but rather indicators of trends and possible changes in the future.

Strategic program emphasis is described through specific objectives that the Forest will focus on under current budget expectations (see Program Priorities and Objectives). Annual monitoring and periodic evaluation of trends in performance indicators determine if there is a need to shift program emphasis and implementation in order to more effectively move toward the desired conditions. Responsible Officials (Forest Supervisor and District Rangers) will plan and implement projects that contribute to achieving desired conditions described in Part 1 while meeting the design criteria discussed in Part 3. Information in this prospectus will be updated on a regular basis to reflect changes in management emphases or budget fluctuations. The final section describes examples of performance risks that could cause a need for change in management emphasis.

## Budget History

The Ouachita National Forest experienced significant changes in National Forest System (NFS) budgets between Fiscal Year (FY) 2000 and FY 2004. Funding levels increased in FY 2001 to cover increased costs stemming from powerful ice storms in December 2000 but declined in FY 2002 due to fire borrowing (transfer of funds to fight major wildfires nationwide). The borrowing issue did not significantly affect FY 2003 or 2004 funding. Total NFS funds in FY 2003 totaled \$11.4 million, approximately \$6.2 million less than FY 2002 (FY 2002 still included a portion of the ice storm funding received in FY 2001).

FY 2003 receipts totaled \$10,627,217, which is representative of a near normal program year.

## Performance History

Table 2.6 displays some of the management accomplishments completed on the Forest during FY 1998 through FY 2004. An annual monitoring report is compiled for the Forest that reflects almost all program accomplishments. A five-year summary of activities would normally be sufficient to establish trends; however, seven years of accomplishments are reported here because the ice storms of December 2000 resulted in atypical outcomes in 2001 and 2002. FY 1999 was also anomalous in terms of acres thinned.

**Table 2.6 Resource Management Accomplishments**

Objective or Activity	Unit of Measure	Year						
		1998	1999	2000	2001	2002	2003	2004
Trail construction	Miles	133.8	30.9	37	10	6	6	6
Trail maintenance	Miles	135.0	186.6	120	620	280	293	288
Heritage resource survey	Acres	22,175	9,842	10,264	14,381	30,239	6,490	22,930
Waterhole development	Structures	115	150	153	128	12	107	142
Midstory reduction	Acres	2,160	3,193	4,467	4,174	4,450	3,014	353
Prescribed fire	Acres	118,806	106,110	99,931	52,342	80,285	128,319	134,386
Lime, fertilize and/or stock lakes/ponds	Acres	222	227	408	567	647	670	828.5

Objective or Activity	Unit of Measure	Year						
		1998	1999	2000	2001	2002	2003	2004
Livestock	Number	806	1,361	1,116	1,082	1,179	903	715
Animal unit months	Number	10,045	9,258	5,367	5,317	8,334	5,081	5,595
Active range allotments	Number	23	23	21	20	20	17	16
Basin Area Stream Survey	Acres	5,930	0	0	48,237	0	0	0
Watershed improvement & maintenance	Acres	34	35	45	30	35	56	73
Minerals administration	Cases	521	250	128	191	191	577	860
Timber offered	Million cubic feet	19.6	20.57	17.21	15.04	5.88	13.11	17.77
Timber sold	Million cubic feet	25.99	13.02	20.65	19.05	3.42	11.09	14.17
Acres sold by harvest method:								
Clearcut	Acres	0	0	0	0	0	0	0
Seedtree/shelterwood	Acres	2,509	1,850	1,838	937	460	2,068	2,702
Thinning	Acres	23,684	1,075	16,706	5,984	5,873	12,073	8,933
Uneven-aged management	Acres	7,674	5,677	2,857	1,157	1,334	2,760	3,289
Timber harvested	Million cubic feet	19.4	25.75	22.18	15.56	16.05	12.24	11.40
Reforestation	Acres	9,757	13,930	12,980	6,403	6,307	7,840	7,011
Land line location or maintenance	Miles	52	51	106.75	16	39.5	77	80
Rights-of-way	Cases	3	150	1	2	2	1	1
Arterial/collector roads reconstructed	Miles	15	13	10	11	33	4	14
Local roads constructed	Miles	16	7	19	6	5	5	5

## Program Priorities and Objectives

Restoring and maintaining healthy and productive ecosystems, providing high-quality recreation opportunities, protecting air quality, and providing clean water, appealing scenery, forest products, and economic opportunities to communities that rely upon this Forest are the highest priorities under the Revised Forest Plan. The following sections list program priorities and objectives for achieving the desired conditions set forth in Part 1 and Part 2.

Many variables that influence the degree to which objectives are achieved cannot be fully assessed when a plan is revised or amended. Legal mandates, congressional intent as expressed in annual budgets, natural disturbance events, and other issues or factors over which the Forest Supervisor has little or no control all influence performance. The actual mix and level of activities to be conducted will be determined each year, utilizing every opportunity to move toward the desired conditions and to contribute to the Forest Service's national strategic goals (<http://www.fs.fed.us/plan>). Appendix C presents a summary of proposed and probable activities. The following sections contain a discussion of these and other risks associated with implementation of this Forest Plan.

### Forest Health/Terrestrial, Riparian, and Aquatic Communities/Wildlife and Fish Habitat (including Proposed, Threatened, Endangered, and Sensitive Species Habitat)

#### *Priorities*

- Take steps to improve forest health by reducing the likelihood of insect infestations, disease outbreaks, and establishment of non-native, invasive species on National Forest System lands.
- Use an integrated pest management approach to prevent or reduce damage to forest resources from pest organisms, including non-native, invasive species.
- Maintain or restore community diversity—and a significant component of species diversity—by utilizing prescribed burning in appropriate portions of MA 6 (Rare Upland Communities) and by utilizing prescribed burning, regeneration harvests, intermediate stand treatments (thinning), and midstory reduction in MAs 14, 15, 21, and 22. Of these, MAs 6, 21, and 22 will have priority for prescribed burning.
- Address fine-scale species diversity needs during project-level planning by consulting (and adding to) States' natural heritage and the Forest species of viability concern databases and applying the best available science to ensure that management actions either maintain or enhance the long-term viability of these species.
- Restore the shortleaf pine-bluestem grass ecosystem within landscapes of 10,000 to 150,000 acres.
- Maintain the full range of natural systems found within the Ouachita National Forest, giving special attention to the conservation of rare systems or communities and the restoration of a component of "old growth" in all forest and woodland system types. Conserve rare upland communities and rare riparian/aquatic communities within the Rare Upland Communities and Water

and Riparian Communities Management Areas. Use active management to restore fire-maintained old growth forests and woodlands (principally in MAs 21 and 22, but also in MA 17) and primarily custodial management to allow natural restoration of old growth conditions in wildernesses (MA 1), special interest areas (MA 2), research natural areas (MA 4), riparian areas (MA 9), portions of semi-primitive areas (MA 17), and other parts of the national forest outside the “lands suitable for timber production” in MAs 14, 15, and 16. Maintain or restore the full range of patch sizes commensurate with natural occurrences of community (system) types. (See Appendix D for the initial inventory of possible old growth and a summary of projected future old growth conditions by management area and ecological system.)

- Continue to make use of the Fire Learning Network and other successful protocols to enhance monitoring the efficacy of the prescribed burning program.

### *Objectives*

OBJ01. Increase prescribed fire to an average of 180,000 acres per year by 2011 to help achieve and maintain desired community conditions.  
**Performance Indicator:** acres treated with prescribed fire per year.

OBJ02. Move 5,000 acres into fire regime condition class I annually.  
**Performance Indicator:** number of acres moved into fire regime condition class I annually.

OBJ03. Treat at least 300 acres per year for non-native, invasive species.  
**Performance Indicator:** acres treated.

OBJ04. Maintain or improve the population status of all species that are federally listed or proposed for listing when evaluated at 5-year intervals.  
**Performance Indicators:** trends in monitored populations; accomplishment of recovery plan tasks.

OBJ05. For wildlife purposes, strive to achieve a total open road density of 1.0 mile per square mile or less for all MAs except MAs 1 and 4 (where the desired density is zero open roads per square mile) and MAs 2, 16, 17, 19, and 21 (where the desired density is 0.75 mile of open road per square mile or less during critical periods for wildlife, i.e., March to August). **Performance Indicators:** roads analyses completed, projects that achieve this objective, and miles of road decommissioned.

OBJ06. Establish 5,500 acres per year in grass/forb condition within the pine-oak forest subsystem while maintaining 60-90 percent in mature to late seral condition. **Performance Indicators:** acres of regeneration harvest under irregular shelterwood or irregular seedtree system per year; acres of mature pine-oak forest.

- OBJ07. Increase cumulative total area being restored to shortleaf pine-bluestem grass or shortleaf pine-oak woodland conditions to 350,000 acres by 2021. **Performance Indicator:** acreage of landscapes in which active management (e.g., thinning, burning) to restore a significant pine-bluestem or pine-oak woodland component are underway.
- OBJ08. Establish and maintain the following mix of seral stages in pine-bluestem woodland: 3-9% early, 15-30% mid, and 60-90% late seral. **Performance Indicator:** percentages of pine-bluestem in early and late seral stages.
- OBJ09. Apply management actions to restore ecosystem health in at least 5,000 acres per year of oak forests and woodlands affected by oak decline and other hardwood diseases, insect problems, and drought. **Performance Indicators:** acres of oak forest and woodland burned; acres thinned or regenerated.
- OBJ10. Reduce susceptibility to southern pine or Ips beetle outbreaks on at least 25,000 acres per year. **Performance Indicators:** acres treated and acres at risk.
- OBJ11. Apply management practices to begin replacing off-site loblolly pine plantations with shortleaf pine and native hardwoods where such plantations were installed outside the natural range of loblolly pine (i.e., most of the Ouachita Mountains); treat at least 500 acres per year. **Performance Indicator:** acres of loblolly pine plantation treated and acres of off-site loblolly pine remaining.
- OBJ12. Refine the Forest-wide inventory of rare natural systems (upland systems named in MA 6, plus Ouachita Mountains Forested Seep) by ensuring that such systems are identified during forest vegetation surveys and by other means, which may include remote sensing, GIS analyses, and special surveys. Add newly located upland rare systems or communities to MA 6 and newly located seeps or other rare wet or riparian systems to MA 9. Report revised inventory figures in annual monitoring reports, beginning in the FY 2010 report. **Performance Indicator:** acres of each rare natural system added and, if appropriate, subtracted from the inventory.
- OBJ13. Refine the Forest-wide inventory of possible old growth by verifying or modifying the existing inventory, as needed. The initial inventory is summarized in the Old Growth Strategy section (also see Standard VM002). **Performance Indicator:** acres of each type of possible old growth added and, if appropriate, subtracted from the inventory.

The maintenance and improvement of habitat for management indicator species (MIS) are encompassed by other objectives, design criteria (listed in Part 3), and MA allocations. Table 2.7, which includes all MIS for this revised Forest Plan, lists the related objectives and other direction for each individual MIS.

**Table 2.7 Related Objectives and Other Direction for Each Individual MIS**

Common Name	Scientific Name	Habitat Objectives (OBJ) and Other MIS-Related Direction
Northern bobwhite	<i>Colinus virginianus</i>	OBJ01, OBJ02, OBJ03, OBJ05, OBJ06, OBJ07, OBJ10, OBJ11
White-tailed deer	<i>Odocoileus virginianus</i>	OBJ01, OBJ02, OBJ03, OBJ05, OBJ06, OBJ07, OBJ08, OBJ10, OBJ11
Eastern wild turkey	<i>Meleagris gallopavo</i>	OBJ01, OBJ02, OBJ03, OBJ05, OBJ06, OBJ07, OBJ08, OBJ10, OBJ11
Red-cockaded Woodpecker	<i>Picoides borealis</i>	OBJ01, OBJ02, OBJ03, OBJ04, OBJ05, OBJ06, OBJ07, OBJ09, OBJ10, MA 22 allocation and direction
Pileated Woodpecker	<i>Dryocopus pileatus</i>	OBJ06, OBJ07, OBJ08, OBJ10, OBJ11, OBJ12, design criterion WF004, WF005,
Scarlet tanager	<i>Piranga olivacea</i>	OBJ01, OBJ03, OBJ05, OBJ08, OBJ10, OBJ11, OBJ12
Prairie warbler	<i>Dendroica discolor</i>	OBJ01, OBJ02, OBJ03, OBJ05, OBJ06, OBJ07, OBJ08, OBJ10, OBJ11, OBJ12, MA 21 and 22
Ponds, Lakes & Waterholes		
Bluegill	<i>Lepomis macrochirus</i>	Desired condition for Ponds, Lakes & Waterholes
Redear sunfish	<i>Lepomis microlophus</i>	
Largemouth bass	<i>Micropterus salmoides</i>	
Arkansas River Valley Streams		
Yellow bullhead	<i>Ameiurus natalis</i>	Desired condition for conservation of productive soils and beneficial uses of water, and MA 9 allocation and direction within the Arkansas River Valley streams
Central stoneroller	<i>Campostoma anomalum</i>	
Redfin darter	<i>Etheostoma whipplei</i>	
Green sunfish	<i>Lepomis cyanellus</i>	
Longear sunfish	<i>Lepomis megalotis</i>	
Gulf Coastal Plain Ecoregion Streams		
Pirate perch	<i>Aphredoderus sayanus</i>	Desired condition for conservation of productive soils and beneficial uses of water, and MA 9 allocation and direction within the Gulf Coastal Plain Ecoregion streams
Central stoneroller	<i>Campostoma anomalum</i>	
Creek chubsucker	<i>Erimyzon oblongus</i>	
Green sunfish	<i>Lepomis cyanellus</i>	
Longear sunfish	<i>Lepomis megalotis</i>	
Ouachita Mountain Ecoregion Streams		
Central stoneroller	<i>Campostoma anomalum</i>	Desired condition for conservation of productive soils and beneficial uses of water, and MA 9 allocation and direction within the Ouachita Mountain Ecoregion streams
Johnny darter (Glover & Mtn. Fork Rivers only)	<i>Etheostoma nigrum</i>	
Orangebelly darter	<i>Etheostoma radiosum</i>	
Redfin darter	<i>Etheostoma whipplei</i>	
Northern studfish	<i>Fundulus catenatus</i>	
Northern hog sucker	<i>Hypentelium nigricans</i>	
Green sunfish	<i>Lepomis cyanellus</i>	
Longear sunfish	<i>Lepomis megalotis</i>	
Striped shiner	<i>Luxilus chryscephalus</i>	
Smallmouth bass	<i>Micropterus dolomieu</i>	
Channel darter (Glover & Mtn. Fork Rivers only)	<i>Percina copelandi</i>	

## Soil, Water, and Air

### *Priorities*

- Maintain or enhance designated beneficial uses of water.
- Protect source waters and other potable water sources.
- Include erosion and sediment control measures in all ground disturbing project plans.
- Maintain or improve long term soil productivity.
- Identify roads and trails that should be reconstructed or decommissioned to reduce sediment and improve watershed condition.
- Meet Federal and State goals concerning air and water quality (e.g., National Ambient Air Quality Standard (NAAQS), Environmental Protection Agency (EPA)/state water quality goals).
- Protect watershed functions by implementing standards that meet or exceed state best management practice guidelines.
- Monitor compliance with Forest Plan design criteria intended to protect soil, air, and water quality.
- Minimize air pollution impacts to the Air Quality Related Values (AQRV) of the Class I Area, Caney Creek Wilderness, through a cooperative working relationship with agencies managing air quality.

### *Objectives*

Also, see Transportation System objectives.

OBJ14. Maintain or improve watershed health. **Performance Indicators:** Basin Area Stream Survey results (conducted approximately every five years); number of impaired waterbodies that are on or downstream of the Forest; soil quality monitoring results; percent of treatment units meeting soil quality standards.

OBJ15. Conduct watershed improvement actions on at least 40 acres per year. **Performance Indicator:** acres treated.

OBJ16. Protect and improve the Air Quality Related Values of the Class I Area. **Performance Indicators:** number of AQRV monitoring sites, number of PSD permits reviewed, and number of regional air quality planning committees participated in.

## Lands

### *Priorities*

- Continue to work with the U.S. Army Corps of Engineers toward mutually beneficial interchanges of federal public land adjacent to Lake Ouachita, Lake Nimrod, and Broken Bow Lake.
- Using land exchanges and purchases, reduce the complexity of landownership patterns to reduce administrative costs and management challenges (See Landownership Adjustment Strategy).

### *Objectives*

OBJ17. Maintain landlines on a 10-year cycle. **Performance Indicator:** miles of boundary line maintained per decade.

## Minerals

### *Priorities*

- Administer the federal mineral resource program to meet demands for energy and non-energy minerals consistent with MAs, multiple use objectives, and in accordance with agency policies and existing laws.
- For non-energy mineral resources and mineral material authorizations, emphasize authorizations of minerals needed for environmental protection, public infrastructure, flood protection, erosion control, and watershed restoration.
- On National Forest System tracts where mineral rights are outstanding or reserved, the exercise of private mineral rights to explore and develop mineral resources will be respected.
- Where reserved or outstanding mineral rights are involved, the mineral owner is encouraged to implement all surface-disturbing activities outside riparian areas.
- Manage geologic resources to protect public safety and facilities.
- Locate and design facilities and management activities to avoid, minimize, or mitigate negative effects on geologic resources with identified values (scientific, scenic, paleontological, ecological, recreational, drinking water, etc.).

### *Objectives*

OBJ18. Process applications for federal mineral leases, licenses, and permits within 120 days. **Performance Indicator:** percent of applications processed within 120 days.

OBJ19. Process operations proposed under outstanding and reserved mineral rights within 60 days and 90 days, respectively. **Performance Indicator:** percent of operations processed within specified timelines.

# Heritage Stewardship and Tribal and Native American Interests

## *Priorities*

- Inventory and evaluate historic and prehistoric cultural resources for their eligibility for inclusion on the National Register of Historic Places.
- Based on evaluation, provide protection for those eligible sites; incorporate suitable sites into interpretative programs for the public.
- Develop agreements with tribal governments and State Historic Preservation Offices (SHPOs) to facilitate consultation and conserve heritage resources.

## *Objectives*

OBJ20. Complete a forest overview of heritage resources by 2007 incorporating the results of 20+ years of Section 106 and Section 110 work and documentation. **Performance Indicator:** date forest overview completed.

OBJ21. Drawing upon the heritage resources overview, complete a Heritage Resources Management Plan by 2010. **Performance Indicator:** date Heritage Resources Management Plan completed.

OBJ22. Revise the Programmatic Agreement with SHPOs and THPOs by 2011. **Performance Indicator:** date revision completed.

# Public Use and Enjoyment

## Provide Outdoor Recreation Opportunities

### *Priorities*

- Supply a spectrum of recreational facilities and opportunities that are responsive to user demands.
- Provide abundant and diverse opportunities for enjoying scenery, streams, lakes and rivers, heritage sites, geological features, and wildlife.
- Sustain the availability of the least common segments of the Recreation Opportunity Spectrum—Primitive, Semi-Primitive Non-motorized, and Semi-Primitive Motorized.
- Improve the cost effectiveness of operating recreational facilities by using one or more of the following techniques where feasible: decommissioning underused sites, concessionaire agreements, entering into management partnerships, and other measures.
- Maintain a network of hiking, biking, equestrian, and multiple-use trails in good condition, relying upon partnerships to the greatest extent possible.

- Construct new trails only when partnerships are in place to support trail maintenance long-term.
- Designate and sign a system of designated routes suitable for recreational travel by motorized vehicles, including off-highway vehicles.
- Maintain or enhance the visual character of the Forest by using the Scenery Management System to achieve scenic integrity objectives.
- Provide for an optimal, sustained yield of sport fish populations through structural and nonstructural habitat improvements.
- Provide for an optimal, sustained yield of game animals by perpetuating a mix of early, mid, and late successional forest and woodland conditions.

### *Objectives*

OBJ23. Conduct maintenance on at least 300 miles of trails (non-motorized use) per year. **Performance Indicator:** miles of trail maintained to standard annually.

OBJ24. Maintain all recreation facilities to standard. **Performance Indicator:** facilities maintained to standard annually.

OBJ25. Improve accessibility within at least one recreation site per year. **Performance Indicator:** sites improved for accessibility annually.

OBJ26. Designate and sign a system of roads and trails suitable for public access by motor vehicle, including off-highway vehicles, no later than October 2009; at the same time, initiate the process to prohibit cross country travel by motorized vehicles except for emergency purposes and specific authorized uses. **Performance Indicators:** Date system of designated routes established; percentage of designated routes appropriately signed.

OBJ27. Maintain recreational fishing opportunities of stocked lakes and ponds. **Performance Indicators:** percentage of game fish of harvestable size; electrofishing catch per unit (time) effort; suitable ratios of bass to sunfish from shoreline seining reproduction checks.

OBJ28. Improve or maintain all designated scenic overlooks at least once per decade. **Performance Indicators:** number improved or maintained per year; percent maintained or improved per decade.

## Wilderness

OBJ29. Conduct inventories to determine the presence and extent of non-native invasive species in wildernesses by 2010; based on results of these inventories, develop and implement appropriate monitoring and treatment programs. **Performance Indicators:** inventories completed; monitoring plans completed; acres treated for invasive species control.

OBJ30. Update all Wilderness Management Plans, including monitoring components, wilderness education, and restoration needs, by 2008. **Performance Indicator:** Wilderness Management Plans updated.

## Facility Operation and Maintenance

### *Priorities*

- Identify buildings and other structures on National Forest System land that are essential to meeting management objectives, and maintain them to standard.
- Upgrade the energy efficiency and accessibility of administrative buildings and other facilities open to the public.
- Identify and dispose of non-essential facilities.
- Eliminate leased facilities.

### *Objectives*

OBJ31. Eliminate three leased facilities by 2015. **Performance Indicator:** leases eliminated by 2015.

OBJ32. Eliminate 30 percent of other non-essential administrative facilities by 2015. **Performance Indicator:** non-essential facilities remaining as a percentage of the FY 2005 baseline (to be determined).

OBJ33. Upgrade all identified public facilities to Architectural Barriers Act standards by 2015. **Performance Indicator:** percentage of identified public facilities that are accessible.

OBJ34. Complete energy efficiency upgrades on all administrative buildings and complete identified work on 10 percent of administrative buildings needing upgrades by 2015. **Performance Indicator:** percentage of administrative buildings needing work with energy efficiency upgrades completed by 2015.

OBJ35. Inspect all buildings compliance with health and safety standards and address all identified health and safety issues. **Performance Indicator:** percentage of inspected buildings that met health and safety standards.

# Transportation System

## *Priorities*

- Develop and operate the minimum road system, including all bridges and culverts, maintained to the minimum standard needed to meet requirements of proposed actions, protect the environment, and provide for reasonable and safe access.
- When conducting roads analyses, place special emphasis on reducing the impacts of roads in Streamside Management Areas (by proposing road closures, road reconstruction, or other means).
- Manage the forest transportation system, including the open road density, to minimize wildlife habitat disturbance during the critical reproductive period (March–August), optimize road maintenance, reduce road-related barriers to aquatic organism passage, and reduce conflicts with non-motorized recreational activities.
- Develop and operate a system of OHV routes that satisfies some public demands for motorized recreation and protects environmental quality; maintain routes to agency guidelines, when the latter are published.

## *Objectives*

OBJ36. Complete a transportation plan for the Ouachita National Forest by late 2007 that (among other things) addresses the backlog of maintenance and reconstruction needs. **Performance Indicator:** transportation plan completion date.

OBJ37. By 2015, identify all system roads that should be obliterated. **Performance Indicator:** miles of system roads decommissioned.

OBJ38. Obliterate 25 percent of roads identified under the previous objective by 2015 (many such needs to obliterate roads will be identified well before 2015). **Performance Indicator:** miles of road obliterated by 2015.

OBJ39. Reduce miles of road under Forest Service maintenance. **Performance Indicator:** miles of system roads eliminated from road maintenance inventory per year.

OBJ40. Improve aquatic organism passage on an average of no less than six stream crossings per year (where there are road-related barriers to passage). **Performance Indicator:** number of stream crossings where aquatic organism passage is improved.

## Commodity and Commercial Uses (Timber, Minerals, Energy)

### *Priorities*

- Contribute to the economic base of local communities by providing a sustained yield of high-quality wood products at a level consistent with sound economic principles, local market demands, and desired ecological conditions.
- Develop local economy marketing opportunities to improve utilization of hardwood products.
- Administer minerals program to:
  - (a) Encourage and facilitate the orderly exploration, development, and production of mineral and energy resources in order to promote self-sufficiency in those mineral and energy resources necessary for economic growth and national defense.
  - (b) Ensure that exploration, development, and production of mineral and energy resources are conducted in an environmentally sound manner and that these activities are integrated with the planning and management of other National Forest resources.
  - (c) Ensure that lands disturbed by mineral and energy activities are reclaimed for other productive uses.

### *Objectives*

OBJ41. Sell an average of at least 200,000 hundred cubic feet (ccf) of timber per year. **Performance Indicator:** Volume of timber sold per year and a running annual average.

## Fuels

### *Priorities*

- Reduce fuel loads of National Forest System lands that have the greatest potential for catastrophic wildland fire.
- Lands in and around “Firewise Communities” and other “Communities at Risk” are the highest priority for mechanical treatment including commercial and non-commercial thinning and/or midstory removal followed by prescribed fire (usually done within two years of mechanical work).
- Suppress wildfires at minimum cost, ensuring firefighter and public safety as the first priority. Protect property and natural and cultural resources based on the relative values to be protected.

## *Objectives*

- OBJ42. Treat the highest priority areas at a rate of 500 to 1,000 acres per year. Most of these areas (i.e., adjacent NF lands) should be restored to condition class 1 by FY 2011. **Performance Indicator:** acres burned per year.
- OBJ43. Complete 50,000 to 100,000 acres per year of hazardous fuel reduction in the other moderate to high priority areas. **Performance Indicators:** acres burned per year and percent forest in fire regime condition class I and II.

## **Performance Risks**

The Forest operates in a dynamic environment, characterized by uncertainties in both internal and external operating conditions, due to fluctuations in the natural environment and the institutional environment. If events unfold in a manner that was not anticipated when this prospectus was prepared, attainment of the objectives shown above will be affected.

### Risks Related to the Natural Environment

Tornadoes; ice storms; insect or disease outbreaks; lightning ignited fires; other natural disturbances; and arson fires are likely to occur, and some of these events could significantly alter current conditions. The Forest has been affected by several major disturbance events in the last 10 years. Predicting where and when future major natural disturbance events or arson fires are likely to occur is not possible, but it is likely that such events will affect the extent, location, and timing of management activities.

### Risks Related to the Institutional Environment

Annual budgets could differ from projections. The trends in accomplishment of objectives shown above are dependent on the Forest receiving an operating budget similar to the last three years. Fluctuations in the budget, either upward or downward, would lead to changes in the direction and/or magnitude of projected accomplishments. In addition, changes in the mix of funds among program areas also have the potential to affect the rate and/or magnitude of performance.

National or regional strategic initiatives may emerge in response to broad-scale issues. As noted previously, this Forest Plan is linked to the agency's national strategic plan, which is updated every three to five years. Historically, both Congress and the Executive Branch have also instituted program initiatives outside of the forest planning process that affect much or all of the National Forest System (e.g., roadless rule, the National Fire Plan, and the National Energy Policy). Such changes in national direction have the potential to add to, override, or otherwise adjust the performance objectives for the Ouachita National Forest.

## Landownership Adjustment Strategy

The primary objective of land adjustment is to achieve the optimum land National Forest System ownership pattern that provides for resource use and protection to meet public needs. Adjustments can also be used to settle claims equitably and properly.

The landownership adjustment strategy is used for guidance in considering and undertaking future adjustment proposals and should not be construed or interpreted to require a private land owner to convey any land to the Forest Service. Land adjustments are completely voluntary transactions for both the Forest Service and private land owners and are completed only after an evaluation determines the action is in the public interest. Only lands offered by a willing seller, exchange proponent, or donor will be considered. Individual land exchange case evaluation includes public involvement procedures as required by the National Environmental Policy Act, Council on Environmental Quality applicable regulations, and National Forest land exchange policy and regulations. Forest Service policy for landownership adjustment is found in the Forest Service Manual 5400.

A map of National Forest System lands available for exchange is maintained in the Forest Supervisor's office, with copies in District Offices. The types of lands that will be considered suitable for acquisition through purchase, exchange, or donation are as follows (not listed in any order of priority):

1. Lands and associated riparian ecosystems on water frontage such as lakes and major streams.
2. Critical habitat lands needed for the protection of federally listed endangered or threatened fish, wildlife, or plant species.
3. Lands needed for the protection of significant historical or cultural resources when these resources are threatened or when management may be enhanced by public ownership.
4. Lands that enhance recreation opportunities, public access, and protection of aesthetic values.
5. Lands needed to protect and manage administrative and congressionally designated areas.
6. Lands needed to enhance or protect watershed improvements that affect National Forest riparian area management.
7. Environmentally sensitive lands such as wetlands and old growth.
8. Buffer areas needed to protect lands acquired for specific purposes listed.
9. Key tracts of an ecosystem that promote more effective management of that ecosystem and meet specific needs for vegetation and watershed management, research, public recreation, or other defined management objectives. (Generally, lands that will support consolidation objectives.)
10. Lands needed to protect resource values by eliminating or reducing fire risks, soil erosion, and occupancy trespass.
11. Lands needed to reduce administration and utilization expenses of both the Forest Service and the public.
12. Consolidation of split estates.
13. Other lands desirable for inclusion in the National Forest System.

The types of lands considered suitable to be conveyed from Forest Service ownership by exchanging away, or granting through the Small Tracts Act, Title Claims, or other law, are as follows (not listed in any order of priority):

1. Lands inside or adjacent to communities or intensively developed private lands, which are determined by the Forest Service to be chiefly valuable for non-National Forest System purposes.
2. Parcels that will serve a greater public need in state, county, city, or other federal agency ownership.
3. Inaccessible parcels isolated from other National Forest System lands. Parcels surrounded by or intermingled with private lands that are judged by the Forest Service to be suitable for exchange.
4. Parcels within major blocks of private land, the use of which is substantially for non-National Forest System purposes.
5. Parcels having boundaries, or portions of boundaries, which cannot be efficiently managed (examples: projecting necks or long, narrow strips of land, etc.).
6. A site-specific analysis will be conducted, and must clearly show that any proposed conveyance meets the laws and regulations governing such conveyance, and that it is in the public interest.

## Monitoring Strategy

The 1982 NFMA planning regulations (36 CFR 219) specify that “[plan] implementation shall be evaluated on a sample basis to determine how well objectives have been met and how closely management standards and guidelines have been applied. Based upon this evaluation, the interdisciplinary team shall recommend to the Forest Supervisor such changes in management direction, revisions, or amendments to the forest plan as are deemed necessary.”

Specific Forest Plan monitoring and evaluation measures accompany many Plan components in Parts 1 and 2. Monitoring of *desired conditions*, including actions, outcomes, or resources to be measured and the frequency of measurement and reporting, are included in Part 1 of the Plan. Performance indicators to be monitored against Forest Plan *objectives*, including the frequency of measurement and reporting, are presented in Part 2. A compilation of these and other monitoring activities is available at <http://www.fs.fed.us/r8/ouachita/planning/index.shtml>.

Some monitoring results will have a very high degree of precision and reliability. For example, annual changes in the numbers of federally listed Red-cockaded Woodpeckers should be accurate to within  $\pm$  5 percent. Monitoring results for less readily countable species whose populations are likely to fluctuate considerably from year to year, including fish, mussels, amphibians, and most plants, will be less precise but should still provide useful data on trends. Most of the performance measures tied to *objectives* (Part 2 of the Plan) are derived from corporate databases (e.g., those that track timber sales, prescribed burning, and other vegetation management activities) that have a high level of precision and reliability. Initially, the precision and reliability of some of the monitoring data concerning the ecological systems named in Part 1 of the Plan will not be optimal, due to the transition from a long-standing vegetation inventory protocol (Continuous

Inventory of Stand Conditions, or CISC) to a new one (FS Veg) that incorporates these newly-recognized systems.

Monitoring adherence to the design criteria in Part 3 entails activities as diverse as contract compliance inspections (e.g. timber sale inspections), implementation monitoring reviews of selected projects (conducted by interdisciplinary teams), individual specialist reviews of project compliance with particular sets of standards (e.g., soil productivity standards, trail protection standards), health and safety inspections (of buildings, bridges, etc), and interdisciplinary reviews of selected environmental assessments (EAs). Implementation of some standards will be monitored by two or more of these means. The primary means of reporting and evaluating compliance with design criteria will be the results of implementation monitoring reviews and individual specialist reviews. Both types of reviews are expected to have moderate to high degrees of precision and high degrees of reliability.

The Revised Forest Plan does not specify particular protocols for each element of the monitoring program. Such protocols are well established for most monitoring elements; however, protocols are subject to change as new findings emerge, new technologies become available, and/or partnerships with other agencies and organizations produce improved methods or procedures for monitoring. Each specialist responsible for one or more monitoring elements maintains and, as needed, appropriately adjusts the monitoring protocol(s). Monitoring task sheets that summarize current protocols are maintained on the website cited previously.

An annual evaluation report that summarizes monitoring results and findings will be prepared and made available to the public. The emphasis of this report will be on those results of monitoring that indicate how well objectives have been met, how well standards have been followed, what expenditures have been made to implement the Forest Plan, and what changes to the Plan may be needed. This report will not present information every year about each monitoring activity in the Forest Plan because some monitoring activities are not conducted every year and others may not yield results that deserve to be reported upon annually.

# PART 3 – DESIGN CRITERIA

## Introduction

Part 3 of the Forest Plan presents design criteria for planning and implementing projects. This set of standards—the rules against which practices are measured—and other guidance provide the technical and scientific specifications that must be met to complete acceptable projects. Design criteria were developed to ensure compliance with applicable laws, regulations, Executive Orders, and policies; to resolve management issues and concerns; and to direct management practices toward achievement of desired conditions. Forest-wide design criteria are presented first, followed by Management Area-specific design criteria.

## Forest-Wide Design Criteria

### Ecosystem Health

#### Air Quality

According to the Clean Air Act of 1990 and the Organic Administration Act of 1897, the Forest Service has the responsibility to protect the air, land, and water resources from the impacts of air pollutants produced within the Forest boundaries and to work with States to protect those same resources from degradation associated with the impacts of air pollution emitted outside of the Forest. Due to the regional nature of air quality issues, it is important to track air quality within and near the Forest boundaries, because the attainment status of adjacent areas may influence Forest management activities.

- AQ001 Conduct all Forest management activities (including activities conducted under permit) in a manner that does not result in (1) a significant contribution to a violation of National Ambient Air Quality Standards or (2) a violation of applicable provisions in State Implementation Plans.
- AQ002 Best available smoke management practices (FSM 5140, State Smoke Management Plans and State Implementation Plans) will be used to minimize the adverse effects of prescribed burning on public health and safety and to protect visibility in Class I areas (Caney Creek and Upper Buffalo Wildernesses).
- AQ003 Prescribed burning may be conducted in, or adjacent to, counties with forecasted high Air Quality Index (AQI) values (AQI equals orange or higher) only if meteorological conditions indicate that smoke will be carried away from the high AQI area.
- AQ004 Burning will not be conducted when county burn bans are in effect.

## Soil and Water Resources

The Multiple-Use and Sustained-Yield Act of 1960, the Forest and Rangeland Renewable Resources Planning Act of 1974, the National Forest Management Act of 1976, and the Clean Water Act, as amended, among other important laws, mandate protection of soil productivity and water resources on the national forests. Beyond laws and regulatory mandates, soil is the basis from which all terrestrial life derives its sustenance. Productive soils are key components in maintaining ecological diversity and watershed function. Streams and rivers offer habitat to numerous aquatic and riparian-dependent species within the Forest, in addition to providing water for municipal, commercial, and agricultural uses off the Forest. A separate management area, MA 9 (Water and Riparian Communities), contains most of the standards for water resource protection to be used in project planning and implementing. The standards in this section and all others in the Revised Forest Plan that are designed to protect soil and water (including standards addressing prescribed burning, timber harvest administration, herbicide use, and activities in streamside management areas) comprise the Best Management Practices for nonpoint source pollution management on the Ouachita National Forest.

- SW001 Allow heavy equipment operations on hydric soils, soils with a **severe** compaction hazard rating, and floodplains with frequent or occasional flooding hazard only during the months of July through November. Operations during December through June are allowed with the use of methods or equipment that do not cause excessive soil compaction. This standard does not apply to areas dedicated to intensive use, including but not restricted to administrative sites, roads, primary skid trails, log decks, campgrounds, and special use areas.
- SW002 Allow heavy equipment operations on soils that have a **high** compaction hazard rating only during the months of April through November. Operations during December through March are allowed with the use of methods or equipment that do not cause excessive soil compaction. This standard does not apply to areas dedicated to intensive use, including but not restricted to administrative sites, roads, primary skid trails, log decks, campgrounds, and special use areas.
- SW003 Soils will be managed to maintain a minimum of 85 percent of a treatment area in a condition of acceptable soil productivity following land management activities. This standard does not apply to lands dedicated to administrative sites, roads, ponds, recreation trails, campgrounds, and special use areas. If more than 15 percent of a treatment area exceeds one or more of the five following thresholds, then future management must have no additional detrimental effect unless natural recovery or mitigation measures have taken place:
  - (1) Bulk density will not increase more than 15 percent over the undisturbed level in the upper eight inches of soil.
  - (2) Soil organic matter will remain at least 85 percent of the natural or undisturbed total in the upper six inches of the soil.
  - (3) Soil loss from management actions will not exceed the estimated Forested T-factor for each soil or soil map unit, based on the cumulative time period between soil disturbing management actions.

- (4) Soil puddling (tire track rutting) will not exceed six inches deep.
- (5) Soil displacement will not exceed two inches or one-half the humus-enriched "A" horizon, whichever is less, over a surface area greater than 100 square feet that is more than ten feet wide.

SW004 Erosion control measures will be applied within 30 days of completion of soil disturbing activities and within 15 days or less if such activities are conducted within Streamside Management Areas (SMAs) adjacent to river reaches designated as Critical Habitat for leopard darter. Temporary erosion control measures will be applied prior to completion of activities during December through February and during other times if operations are suspended for periods exceeding 30 days or when expected weather conditions indicate the need to control sediment. Disturbed areas shall be seeded, if needed to control erosion, when they will not be used for a period of 60 days or more during the seeding season(s).

SW005 Areas of exposed soil must be stabilized. Where natural stabilization (such as needle and leaf fall, or natural vegetative establishment) is not expected to stabilize the area within 30 days of completion of soil disturbing activities and within a seeding season, use either native and/or non-invasive, non-native vegetation as a temporary protective cover until native vegetation occupies the site.

SW006 Maintain rehabilitated areas until stabilized with a minimum effective ground cover of 60 percent on slope gradients up to 15 percent, 70 percent on slopes from 15 to 35 percent gradients, and 80 percent on slopes greater than 35 percent gradient.

SW007 During temporary disturbance activities in which the soil is altered and displaced (through excavation averaging two feet deep or greater) over an area of one-tenth acre or more, the topsoil will be stockpiled for later use as a top dressing during reclamation or similarly redistributed through project design. The surface six inches of soil will be stockpiled. This standard applies to projects such as oil and gas exploration, surface mining, and pond construction.

SW008 For erosion control, plan, install, and maintain drainage structures in roads, skid trails, and firelines using spacing guidelines from state Best Management Practices and/or Forest Service directives. For waterbar (surface drain) spacing guidelines use Table 3.1 (also see standards under Transportation and Timber Harvest Administration).

**Table 3.1 Guidelines for Waterbar Spacing**

Grade (percent)	Maximum Distance Between Surface Drains or Natural Drainage Breaks (feet) <sup>1</sup>
0 - 2	296
>2 - 4	192
>4 - 6	154
>6 - 8	134
>8 - 10	120
>10 - 12	109
>12 - 14	97
>14 - 20	90
>20 - 25	66

<sup>1</sup>Site specific stabilization/cross drainage measures prescribed by a watershed specialist on these or steeper slopes may supercede these distance criteria.

SW009 Provide protection for public water source areas when pesticide applications or soil disturbing activities are proposed within designated public water source areas as shown in Appendix E. The public water supply manager/operator will be notified during the scoping process.

### **Threatened, Endangered, and Sensitive Species and their Habitats**

The Endangered Species Act of 1973 requires that all threatened and endangered species and their habitats be protected on federal land. The standards in this section apply Forest-wide to species listed or proposed for listing by the U.S. Fish and Wildlife Service as Threatened or Endangered. Four of the standards also apply to Sensitive species listed by the Regional Forester for the Southern Region of the USDA Forest Service and occurring or thought to occur on the Ouachita National Forest. Sensitive species are listed because of concerns about their long-term viability; they are not listed or proposed for listing by the U.S. Fish and Wildlife Service. The Forest Service Manual (FSM 2600) and standards for the following MAs supply additional guidance for managing habitats of federally listed and sensitive species and protecting their populations: Wilderness (MA 1), Rare Upland Communities (MA 6), Water and Riparian Communities (MA 9), and Renewal of the Shortleaf Pine-Bluestem Grass Ecosystem and Red-cockaded Woodpecker Habitat (MA 22).

#### *Red-cockaded Woodpecker Outside of Management Area 22*

TE001 If Red-cockaded Woodpecker clusters become established naturally on National Forest lands outside of, but within five miles, of the current boundaries of MA 22 (Renewal of the Shortleaf Pine-Bluestem Grass Ecosystem and Red-cockaded Woodpecker Habitat), such lands will be added to MA 22. Consultation with the U.S. Fish and Wildlife Service will be initiated if a new cluster appears in wilderness or other areas within five miles of MA 22 that limit management or in any other area five miles beyond MA 22. See MA 22 for additional design criteria related to the Red-cockaded Woodpecker.

#### *Mine and Cave Habitat*

TE002 Proposed mining operations affecting abandoned mine adits and shafts or natural dens and caves that could be considered suitable habitat for federally Threatened and Endangered species or Southern Region Sensitive species must include conservation measures to protect the species and habitat.

#### *Aquatic Proposed, Endangered, Threatened, Sensitive Species*

TE003 As part of project planning within sixth level watersheds where aquatic Proposed, Endangered, Threatened, Sensitive (PETS) species occur or are anticipated to occur downstream from proposed ground-disturbing management activities, consider additional measures (e.g., wider SMAs) to conserve habitat for these species.

#### *Bald Eagle Habitat*

TE004 Protection areas will be delineated and maintained around all bald eagle nests and communal roost sites. Restrictions on certain activities during critical periods for nesting will be as specified in the current guidelines for bald eagle habitat management from the U.S. Fish and Wildlife Service, unless exempted or modified by that agency.

#### *American Burying Beetle Habitat*

TE005 Potential project level impacts on individual American Burying Beetles (ABBs) will be reduced by using the U.S. Fish and Wildlife Service's current bait-away or trap-and-relocate protocols.

#### *Indiana Bat Habitat (Bear Den Cave)*

TE006 Maintain the cave gate to protect hibernating bats. The known hibernaculum and any other hibernacula that may be discovered will be protected by maintaining a buffer having a radius of 2 miles. Within this buffer, proposed ground-disturbing management projects and prescribed burning will be evaluated to determine their direct, indirect, and cumulative effects on Indiana bats and the hibernaculum.

TE007 When planning and conducting prescribed burns inside or near the Bear Den Cave buffer, avoid inundating the cave with smoke.

#### *Ozark Chinquapin*

TE008 Herbicides will not be applied to Ozark chinquapin, and stems of this species will be individually flagged or otherwise marked in the field by qualified personnel prior to herbicide application within the stand. Use of soil active, mobile herbicides should not be applied where they might move to the root system of this species.

#### *Sensitive Bat Species*

TE009 Before a structural modification is initiated to the roof of a building, bridge, mine, or well, a bat survey will be conducted for sensitive bat species. If evidence of sensitive roosting bats is present, habitat will be protected or an alternative roost will be provided (bat boxes).

## **Wildlife Habitat**

See Management Area 9 for Fisheries Design Criteria.

WF001 On a project-by-project basis, provide grass-forb or shrub-seedling habitats (include regeneration areas 0-10 years in age, areas of recent heavy storm or insect damage, and woodland conditions) at a rate of:

- a minimum of 6 percent of the suitable acres in MAs 14, 15, 16, 17, and 19 (Ouachita Mountains Habitat Diversity Emphasis, West Gulf Coastal Plain Habitat Diversity Emphasis, Lands around Lakes, Semi-primitive Areas, and Winding Stair Mountain National Recreation Area and Associated Non-Wilderness Designations, respectively)
- a minimum of 3 percent of the suitable acres in MA 21, Old Growth
- a minimum of 4 percent of the suitable acres in MA 22, Shortleaf Pine/Bluestem Grass/RCW

WF002 Limit even-age regeneration cutting in each project area to no more than 14 percent of the suitable acres managed under even-aged prescriptions, per 10-year entry except for the following:

- 6-10 percent in Semi-primitive Areas, MA 17
- 6 percent in Old Growth, MA 21
- 8.3 percent in Shortleaf Pine/Bluestem Grass/RCW, MA 22

WF003 Provide for and designate areas for mast production at the approximate rate of 20 percent of each project area. Hardwood and hardwood-pine forest types, age 50 and older, comprise this component.

WF004 Retain clumps of deciduous trees at a rate of one-half acre clump per 20 acres of regeneration cutting by even-aged methods in order to create den trees. Retain clumps around existing den trees. In addition, existing den trees will not be felled unless necessary for insect or disease control or to provide for safety.

WF005 Where timber is harvested, retain or create at least two snags per acre, minimum 12-inch diameter at breast height (dbh) with an objective of 16-inch dbh or larger. Where naturally occurring snags of this size are unavailable or cannot be created, retain or create snags near the required size. Standing snags will not be felled, unless necessary for insect or disease control or to provide for safety.

WF006 Retain or develop mature growth pine habitats (80 years old or greater) and mature growth hardwood habitats (100 years old or greater) at a rate of five percent of each broad cover type within each project analysis area.

WF007 Where available, retain or develop 50 linear feet of pine logs (12-inch or greater diameter) and 50 linear feet of hardwood logs (12-inch diameter or greater) per acre as wood debris on the forest floor within harvest areas. Felled logs will be oriented along contours.

WF008 Where open area habitats are not provided by other conditions, develop one permanent wildlife opening, one to five acres per 160 acres of habitat.

- WF009 Provide nest structures where suitable natural cavities do not occur and when needed to accomplish wildlife objectives.
- WF010 Where there is no existing water source, provide at least one wildlife pond per 160 acres where needed to accomplish wildlife objectives.
- WF011 Wildlife ponds less than one-half surface acre will be managed for native amphibian habitat and not stocked with fish.
- WF012 Where possible, seasonally close roads during critical periods for wildlife (March–August).

## Vegetation Management

Vegetation is managed for many different purposes: to control insect outbreaks, invasive species, and other pests; to reduce the risks of insect and disease outbreaks; to maintain or enhance wildlife habitat and visual quality; to mitigate the effects of catastrophic events; to enhance ecosystem health and restore native species' habitats; and/or to maintain or restore forest vigor.

### General

- VM001 Intentional establishment of non-native plant species included on the Regional Forester's invasive species list is prohibited.
- VM002 As part of the regular forest inventory cycle, verify or modify the existing inventory of possible old growth as needed. Consider both system type and stand age. Where proposed management actions could have a direct effect on areas of inventoried “possible old growth,” consider opportunities to maintain or enhance old growth characteristics through active or custodial management; use the most current research as a guide to the old growth characteristics of each system. Table D.1 in Appendix D summarizes the inventory of possible old growth by major terrestrial system type and management area as of September 2005.
- VM003 Whenever proposed projects may affect a recreation trail, consult with the Forest landscape architect (or his/her designated representative) to determine how best to minimize impacts on the trail, minimize future vegetation encroachment on the trail and meet the assigned Scenic Integrity Objective. Retain sufficient overstory vegetation above and immediately adjacent to the trail to reduce encroachment of blackberry vines and other vegetation that impede non-motorized travel.
- VM004 Within managed pine stands, maintain or develop a component of 10 to 30 percent of the total basal area in hardwood trees in dominant or co-dominant crown classes. Favor oaks and hickories in meeting this objective.

## Prescribed Fire

- PF001 Select appropriate burning parameters (season, flame length, firing method, etc.) to achieve desired condition, based on site-specific environmental analysis. Consider likely effects to hardwood and pine trees and regeneration in this analysis.
- PF002 When conducting prescribed burns, mineral soil will not be exposed on more than 20 percent of the burn area (except for site preparation burns, where mineral soil will not be exposed on more than 30 percent of the burn area) nor will soil structure and color of the surface three inches of mineral soil be altered on more than five percent of the area. Use Table 3.1 as guidance for spacing between waterbars.
- PF003 On severely eroded forest soils, or on forest soils with a severe erosion hazard, do not burn any area with an average duff depth of less than one-half inch. An exception may be made for restoration of glades.
- PF004 Areas that have received herbicide treatment will not be treated with prescribed burning for at least 30 days after the herbicide treatment.
- PF005 Minimize fireline construction. Use natural and existing man-made fuel breaks such as streams, rock slides, roads, and trails where available.
- PF006 If necessary to cross a stream with a fireline, see standard 9.24.

## Forest Regeneration

- FR001 Maintain pines and hardwoods throughout the life of each stand in which timber harvesting takes place unless project-level concerns dictate a need for change.
- FR002 During the regeneration of pine stands, retain large overstory hardwoods distributed throughout the stand at the rate of 5 sq. ft. of basal area per acre where available.
- FR003 During the regeneration of pine stands, base the hardwood sprout/seedling component objective (10 to 30 percent of stems in hardwoods, primarily oaks and hickories), on the composition of the stand prior to regeneration cutting.
- FR004 In mixed pine-hardwood forests subject to timber harvesting, maintain between 30 and 50 percent hardwood in each stand, including large overstory hardwoods distributed throughout the stand.
- FR005 Keep a minimum distance of one-eighth mile between regeneration areas that are still considered openings. An even-aged regeneration area will no longer be considered an opening when the re-established stand has reached approximately 20 percent of the height of the tallest adjacent stand. Normally, this would occur at 10 years of age.

FR006 Regeneration cuts must be completed only where adequate stocking of desired species (based on management objective) is expected to occur within five years after the final cut. In two-aged systems, the final cut is the establishment cut that leaves a residual overstory. The newly established regeneration must meet the minimum stocking levels of 150 trees per acre for hardwoods and pine. This standard applies to both artificial and natural means of stand regeneration and applies to all silvicultural systems.

FR007 For mixed forest types, use natural regeneration and emphasize modified seed tree and shelterwood harvest methods. Planting may be used on a case-by-case basis to accomplish desired stocking levels.

FR008 In pine-hardwood mixed management type, desired hardwood species will be managed to accomplish specific project-level objectives. If existing hardwood trees are adequate in size, quality, and spacing, they may be used to support hardwood component goals. Otherwise, regenerate hardwood by coppice. Follow-up vegetation management treatments may be used to control species composition and density and to meet other resource needs.

FR009 The following tables will be used when implementing even-aged and/or uneven-aged management to obtain regeneration.

**Table 3.2 Even-Aged Management**

Management Area		Maximum Size of Regeneration Area (Acres) <sup>1, 2</sup>		Approximate Harvest Age <sup>3</sup>	
		Pine, Pine-Hardwood	Hardwood, Hardwood-Pine	Pine, Pine-Hardwood	Hardwood, Hardwood-Pine
14		40	10	70-100	70-100 100-130
15		40	10	50-100	70-100 100-130
16		20	10	70-100	70-100 100-130
17		20	10	70-100	70-100 100-130
19	a, f, g	10	10	70-100	70-100 100-130
21		80	N/A	70-160	70-100 100-130
22	a	25	10	70-120	70-100 100-130
	b	80	10	70-120	70-100 100-130

<sup>1</sup> Maximum size of regeneration opening may be exceeded in MA22 under the circumstances described in standards for that MA (22.11, 22.12); elsewhere, maximum opening sizes may be exceeded with approval of the Forest Supervisor up to a maximum of 80 acres for pine and pine/hardwood types and 40 acres for hardwood and hardwood/pine.

<sup>2</sup> Acreage limitations for regeneration harvest cuts do not apply within areas affected by severe natural catastrophic events nor are they applicable where acquired lands have been cut-over prior to Forest Service acquisition.

<sup>3</sup> Approximate regeneration harvest age will be 35 years in loblolly pine stands when completing a final harvest cut intended for plant community restoration.

FR010 Clearcutting may be utilized only in the following instances:

- to rehabilitate stands damaged by storm, insects/disease, fires, or other natural events
- to rehabilitate newly acquired lands
- to restore native forests on lands that currently support non-native tree species
- to aid the recovery of threatened or endangered species

FR011 When using the seedtree method of regeneration cutting, the seed trees will be retained indefinitely.

FR012 When using the shelterwood method of regeneration cutting, a portion of the overwood may be removed if deemed necessary to promote growth and development of reproduction, but a portion of the overwood equivalent to a seedtree basal area will be retained indefinitely.

**Table 3.3 Group Selection**

Management Area	Approximate Harvest Age			Gap Size Opening (Acre) <sup>1</sup>	
	Pine, Pine/Hardwood	Hardwood, Hardwood/Pine			
		Site Index < 80	Site Index > 80		
14	50-100	70-100	100-130	1/4-2	
15	50-100	70-100	100-130	1/4-2	
16	First 1/4 mile + seen area	50-100	70-100	≤ 1/2	
	Unseen Area	50-100	70-100	1/4-2	
17	70-100	70-100	100-130	1/4-2	
19 a, f, g	70-100	70-100	100-130	≤ 1/2	
20	50-100	70-100	100-130	≤ 1/2	

<sup>1</sup>Acreage limitations do not apply within areas affected by severe natural catastrophic events, nor are they applicable to acquired land in need of regeneration.

**Table 3.4 Single-Tree Selection**

Management Type	Residual Basal Area	D-Max DBH Inches	Q Factor	Cut Cycle Years	Gap Size Opening (Acres)
Pine	55-65	16-20	1.2-1.6	7-10	1/20-1/4
Pine/Hardwood Hardwood/Pine	55-65	16-18	1.2-1.6	7-10	1/10-1/4
Hardwood	55-65	18-20	1.2-1.6	20	1/10-1/4

FR013 Following a regeneration harvest cut, a site preparation treatment will be implemented if needed to control competing vegetation sufficiently to ensure the survival and establishment of desired regeneration at an adequate level of stocking.

FR014 The following stocking table will be used to determine the number of stems per acre necessary for adequate stand establishment.

**Table 3.5 Stocking—Number of Desired Stems per acre by Management Type**

Management Type	Lower Level	Target Level	Upper Level
Loblolly Pine	150	250-500	700
Shortleaf Pine	150	250-500	700
Pine/Hdwd	150	250-350	500
Hdwd/Pine	150	250-350	500
Hardwood	150	250-350	500

## **Forest Resource Improvement**

- FI001 Release approximately 200 pine trees per acre on pine-hardwood management type.
- FI002 Release approximately 100 desirable hardwoods per acre on pine-hardwood management type.
- FI003 During the implementation of release, pre-commercial thinning, and commercial thinning treatments, retain all fruiting shrubs that are not overtopping desired trees.
- FI004 During the implementation of release, pre-commercial thinning and commercial thinning treatments, retain a diverse hardwood component in hard mast producing species such as oaks and hickories.

FI005 Use the basal areas (BA) given in Table 3.6 as approximate guides to desired conditions by broad Community Groups. Deviations from these guides are allowable if site-specific conditions warrant, subject to approval by the project Responsible Official.

**Table 3.6 Thinning Guide by Community Group**

Community Groups*		Pine Residual BA	Hardwood Residual BA	Total Residual BA
Predominantly Pine ≤30 yrs old	Pine forest	60-70	5-15	75
	Mixed pine-hardwood forest	35-50	20-35	70
	Pine woodland	50-55	5-10	60
Predominantly Pine >30 yrs old	Pine forest	70-75	10-15	85
	Mixed pine-hardwood forest	35-50	20-35	70
	Pine woodland	50-55	5-10	60
Predominantly Hardwood ≤40 yrs old	Hardwood forest	0-20	50-70	70
	Mixed hardwood-pine forest	20-35	35-50	70
	Hardwood woodland	0-15	35-50	50
Predominantly Hardwood >40 yrs old	Hardwood forest	0-20	50-70	70
	Mixed hardwood-pine forest	20-35	35-50	70
	Hardwood woodland	0-15	35-50	50

\*Pine Forest Community Types: Ouachita Pine-Oak Forest, West Gulf Plain Pine-Hardwood Forest (Flatwoods)

Pine Woodland Community Types: Ouachita Pine-Oak Woodland, Ouachita Pine/Bluestem Woodland w/RCW

Hardwood Community Type: Ouachita Dry-Mesic Oak Forest

Hardwood Woodland Community Type: Ouachita Dry Oak Woodland

FI006 Forest regeneration harvests, site preparation, and release will be implemented following the slope limitations in Table 3.7. Some of these techniques, especially those that include shearing, are not likely to be commonly applied; the limited use of clearcutting is described in Forest-wide standard FR009.

**Table 3.7 Slope Guidelines for Regeneration Harvest Methods, Site Preparation, and Release**

Practice	0-20%	21-35%	35%+
Shear	Yes	Yes	No
Shear and Pile	Yes <sup>1</sup>	No	No
Shear and Burn	Yes	No	No
Shear, Pile, and Burn	Yes	No	No
Chop or Mulch	Yes	Yes	No
Chop and Burn	Yes	Yes	No
Scarify	Yes	Yes	No
Rip on contour	Yes	Yes	No
Burn	Yes	Yes	Yes
Cut and Stump Spray	Yes	Yes	Yes
Cut and Burn	Yes	Yes	Yes
Clearcut	Yes	Yes	No
Seedtree	Yes	Yes	Yes <sup>2</sup>
Shelterwood	Yes	Yes	Yes <sup>2</sup>
Uneven-aged Management	Yes	Yes	Yes <sup>2</sup>

<sup>1</sup> No piling on slopes over 15%.

<sup>2</sup> Uncommon

## Timber Harvest Administration

TH001 Normal operating season is nine months (March 1–November 30), except for the Tiak Ranger District, where the operating season is six months (June 1–November 30).

TH002 Timely erosion control measures will be used to prevent soil erosion following a shutdown, closure, or temporary suspension (see SW004). For shutdowns exceeding 60 days, treatment described for timber sale closures will apply.

TH003 Construct roads to minimum standards required to meet resource management needs and to protect environmental resources. Ensure good road drainage with a combination of properly constructed and well spaced wing ditches, broad-based dips, rolling dips, culverts, and/or bridges. Road diversion ditches (lead off ditches and wing ditches) and gradients will be designed to minimize off-site erosion and sedimentation from runoff. Outlets will be located on undisturbed forest soil or otherwise treated to minimize erosion and sedimentation. Outlets must not connect directly with defined stream channels. Road diversion ditches should be constructed so water will be dispersed and not cut channels across

the SMA. Provide out-fall protection if cross drains, relief culverts, wing ditches, and leadoff ditches discharge onto erodible soils or over erodible fill slopes. Use adequate sized culverts to carry the anticipated flow of water.

- TH004 Prevent debris from entering streams during timber harvesting. If any debris enters streams, it will be removed within 48 hours unless otherwise agreed upon by the Forest Service.
- TH005 Suspend harvest operations during and after storm events, or expected storm events that could result in unacceptable levels of sediment production.
- TH006 Do not use unscoured drainageways upstream of defined channels for temporary roadways, landings, or skid trails. Crossings are allowed.
- TH007 Except where fords have been authorized, use culverts, bridges, or reinforced crossings on temporary roads at all points where it is necessary to cross protected stream channels. Ford crossings may be permitted with written authorization in locations containing exposed bedrock or rock-fragment bottoms, or where streams can be protected with clean rock aggregate or other suitable treatment measures. In no case will temporary culverts involving the placement of fill material in stream courses be allowed on streams identified as important for fisheries unless the forest or state fisheries biologist determines washed rock fill may be safely used.
- TH008 Prior to construction, the Forest Service will approve the location of all temporary roads and landings, and skid trails that require blading. Temporary roads will follow the general contour of the land. Road grades should not exceed 14 percent. Grades up to 20 percent for short distances should not exceed 200 feet, unless approved by the Forest Supervisor. Temporary road width will not exceed 12 feet except at turnouts and landings with clearing width not to exceed 20 feet. Provide for drainage of both travel surface and ditches. Refer to SW004 and SW008 for erosion control measures.
- TH009 Upon termination of management activity, decommission and revegetate temporary roads. Effectively block them to normal vehicular traffic within 50 feet of the beginning of the road and include dips and/or waterbars for erosion control. See Table 3.1 for recommended spacing of waterbars. Remove all temporary crossings. Restore the natural contours and slope on temporary road segments that have grades of 14 percent or greater.
- TH010 The cleared or excavated size of landings will not exceed that needed for safe and efficient skidding and loading operation.

TH011 Timber harvests located near recreation trails will be conducted with mitigation measures appropriate for the trail Concern Level and the Scenic Integrity Objective of the area. Where skid trails or skidders must cross the recreation trail, the number of crossings will be minimized, and crossings will be made at right angles unless doing so would result in greater damage to the trail than crossing at another angle. The affected trail tread will be restored when the timber harvest is completed.

## Herbicide Use

HU001 Herbicides will be used only where necessary to achieve the desired condition in the treatment area, and then only when site specific analysis shows no unacceptable negative effects to human or wildlife health or the ecosystem as defined in HU002.

HU002 Herbicides will be applied at the lowest rate effective in meeting project objectives and according to guidelines for protecting human and wildlife health. Application rate and work time must not exceed levels that pose an unacceptable level of risk to human or wildlife health. Site specific risk assessments are required prior to herbicide application and must be calculated using the procedure developed by Syracuse Environmental Research Associates (SERA). Should contractor or methodology change, a standard at least equally restrictive will be imposed to define acceptable risk.

HU003 To minimize potential effects of herbicide use, whenever possible, use individual stem treatments, directed spraying, and crop tree release rather than broadcast or grid applications. Do not use broadcast or grid applications within SMAs (see MA 9 for other restrictions).

HU004 Herbicides and application methods are chosen to minimize risk to human and wildlife health and the environment. Herbicides that are not soil-active will be used in preference to soil-active ones when the vegetation management objectives can be met.

HU005 Diesel oil or kerosene will not be used as a carrier for herbicides, except as it may be a component of a formulated product when purchased from the manufacturer. Vegetable oils will be used as the carrier for herbicides when available and compatible with the application proposed.

HU006 Buffers, as specified in the following standards, will be clearly marked before applying herbicides so that applicators can easily see and avoid them. Herbicides will not be applied within the designated buffers unless HU001 can be met.

HU007 Soil-active herbicides will not be used within a 50-foot buffer of the dripline of trees that are located within the SMA except for treatments designed to control invasive and/or exotic species within the SMA.

HU008 With the exception of treatments designed to release designated vegetation selectively resistant to the herbicide proposed for use or to prepare sites for planting with such vegetation, no soil-active herbicide will be applied within 30 feet of the drip line of non-target vegetation specifically designated for retention (e.g., den trees, hardwood inclusions, adjacent untreated stands) within or next to the treated areas. Chemical side pruning of trees is allowed, but movement of herbicide to the root systems of non-target plants must be avoided.

HU009 With the exception of permittee treatment of right-of-way corridors that are continuous into or out of private land and through Forest Service managed areas, no herbicide is broadcast within 100 feet of private land or 300 feet of private residence, unless the landowner agrees to closer treatment.

HU010 The use of herbicides is prohibited in the immediate vicinity of Proposed, Endangered, or Threatened plants. In areas occupied by Sensitive plant species, use herbicides only where site-specific environmental analysis and biological evaluation conclude that there would be no negative effects or that the potential benefits of herbicide use significantly outweigh the potential negative effects.

HU011 Within a 300-foot buffer from any source waters (public water supply), do not apply herbicide treatments unless a site-specific analysis supports use within the designated buffer to prevent more serious environmental damage than is predicted if pesticides are used.

HU012 No herbicide mixing, loading, or cleaning areas will occur within a 300-foot buffer of private land, open water, source waters (public water supply), wells, or other sensitive areas.

HU013 Application equipment, empty herbicide containers, clothes worn during treatment, and skin will not be cleaned in open water or wells. Mixing and cleaning water must come from a public water supply and be transported in separately labeled containers.

HU014 Soil applied herbicides are not used within 30 feet of undefined channels (unscoured drainageways upstream of defined channels), nor are they used on soils less than 20 inches deep to bedrock or on other soils with more than 35 percent rock content that are 20-40 inches deep to bedrock.

HU015 Weather will be monitored, and the project will be suspended if temperature, humidity, or wind exceeds a threshold for herbicide use in Table 3.8.

**Table 3.8 Thresholds for Herbicide Use**

<b>Ground Application</b>	<b>Temperatures Higher Than</b>	<b>Humidity Less Than</b>	<b>Wind Greater Than</b>
Hand Cut Surface	N.A.	N.A.	N.A.
Hand Other	98°F	20%	15 mph
Mechanical Liquid	95°F	30%	10 mph
Mechanical Granular	N.A.	N.A.	10 mph

HU016 Nozzles that produce large droplets (mean droplet size of 50 microns or larger) or streams of herbicide will be used. Use of nozzles that produce fine droplets of an herbicide mix will be permitted only for hand treatment where the distance from the nozzle to a target does not exceed eight feet.

HU017 Picloram may only be used to control kudzu.

HU018 A certified pesticide applicator will administer all pesticide application contracts and will supervise any Forest Service personnel involved with the application of pesticides on the Forest.

## Heritage Resources

### General

HR001 Known historic properties will be protected from project impacts. Where historic properties cannot be protected, written mitigation plans will be developed in consultation with State Historic Preservation Office (SHPO)/Tribal Historic Preservation Office (THPO).

HR002 Sites will be evaluated for their eligibility for inclusion on the National Register of Historic Places at the survey level. Eligible sites will be nominated.

HR003 Sites that previously have been determined potentially eligible for the National Register, but have not yet been evaluated, will be protected until such time that an evaluation can be made.

HR004 If previously undocumented cultural resources are encountered during ground disturbing activities, halt activities until site significance is determined, regardless of whether the area has been previously disturbed.

## Public Use and Enjoyment/Infrastructure

### Recreation and Scenery Management

RS001 Use of bolts, pitons, and other similar manufactured devices designed to be driven into rock cracks to aid in climbing and/or rappelling cannot be left in place unattended unless authorized in writing by the Responsible Official.

RS002 Resource management activities such as timber harvests, timber stand improvement, prescribed burns, and wildlife habitat improvements will be conducted in a manner that promotes Scenic Integrity Objectives (SIO). Exceptions for short periods of time (one growing season or less) may be allowed to achieve important resource management goals on a case-by-case basis after consultation with and approval of the Forest Supervisor.

RS003 Exclude, where practicable, all special uses with negative visual effects, such as borrow pits, transmission lines, mining, or oil and gas developments in foreground areas along roads and trails in areas that have a very high or high SIO.

RS004 Locate log decks and borrow areas out of sight of roads and trails in areas that have very high or high SIOs.

RS005 Identify appropriate timing, burning parameters, and follow-up work to mitigate visual impacts of prescribed burns and mechanical vegetation treatments.

RS006 SIO of very high is assigned to all wilderness areas and designated, recommended, or eligible wild and scenic river corridors. SIO of high will be assigned to all Scenic Class I areas. SIO of moderate is assigned to all Scenic Class II areas. SIO of low is assigned to all Scenic Class III and below areas.

### Transportation

TR001 Construct roads to standards required to meet resource management needs and to protect environmental resources. Ensure good road drainage with a combination of properly constructed and well spaced wing ditches, broad-based dips, rolling dips, culverts, and/or bridges. Road diversion ditches (lead off ditches and wing ditches) and gradients will be designed to minimize off-site erosion and sedimentation from runoff. Outlets will be located on undisturbed forest soil or otherwise treated to minimize erosion and sedimentation. Outlets must not connect directly with defined stream channels. Road diversion ditches will be constructed so water will be dispersed and not cut channels across the SMA. Provide out-fall protection if cross drains, relief culverts, wing ditches, and leadoff ditches discharge onto erodible soils or over erodible fill slopes. Use adequate sized culverts to carry the anticipated flow of water.

TR002 Permanent road grades with outsloped templates will not exceed eight percent unless approved by the Forest Supervisor. Permanent road grades with ditched templates will not exceed eight percent, with pitches up to 10 percent not exceeding 200 feet, unless approved by the Forest Supervisor.

- TR003 All new stream crossings will be constructed so that aquatic organism passage is not impaired and so that the natural flow regime is not significantly altered. Reconstruction of all stream crossings will consider aquatic organism passage and incorporate structures to aid such passage, where practicable.
- TR004 Close intermittent service roads after construction until access is needed for resource activity and between entries for resource management. When closing intermittent service roads, scarify, waterbar (or install other suitable cross drainage measures), and revegetate the roadbed.
- TR005 As part of roads analyses conducted at the watershed or compartment scale, calculate open road density for wildlife purposes by including all open roads (permanent, local arterial and collector roads, regardless of jurisdiction) and designated Off-Highway Vehicle (OHV) trails. In calculating road density for wildlife purposes, a seasonally (March to August) closed road will be treated as a closed road. Where the current total open road density is greater than wildlife objectives call for (see Part 2 of the Plan), use roads analysis to identify opportunities to reduce the density of open roads and OHV trails under Forest Service jurisdiction.
- TR006 In analysis areas or subwatersheds where the current open road density is 1.0 mile per square mile or less, do not exceed 1.0 mile per square mile (do not exceed 0.75 mile of open road per square mile in MAs 2, 16, 17, 19, and 21 where that density of open roads currently exists).
- TR007 When a road is needed to provide access, base the road type (permanent or temporary) on such factors as soil and water protection needs, the severity and permanence of the road template on the landscape, future access needs, and right-of-way needs.
- TR008 Road locations in habitats of Proposed, Endangered, Threatened and Sensitive species, woodland seeps, glades, and other identified specific natural plant communities will be avoided. When road location outside of these areas is infeasible, consultation with the USFWS will be initiated for PET species.
- TR009 Do not locate roads and trails within or immediately adjacent to SMAs unless alternative routes have been reviewed and rejected as more environmentally damaging or if such location would clearly not be in the best public interest.
- TR010 Design permanent roads to carry total traffic expected to occur during design life.
- TR011 Design and manage permanent roads as constant or intermittent service based on resource management objectives and as specified in project plans.
- TR012 Locate all permanent roads to optimize resource accessibility and protection.
- TR013 Avoid areas where soils and geologic conditions indicate potential for slides. Avoid areas with side slopes greater than 40 percent.

TR014 When designing roads in the semi-primitive motorized Recreation Opportunity Spectrum (ROS) setting, minimize adverse impacts to that ROS setting.

TR015 Avoid known archeologically significant areas.

TR016 Locate fords where substrate conditions will support the designed use. Maintain stream pattern and channel geometry when modifying a crossing.

TR017 If crossings and culverts are removed, stream banks and channels will be restored to a natural size and shape.

TR018 Structures such as fences, trails, and roads will be designed and built so that they minimize movement barriers and hazards for wildlife.

## **Rights-of-Way**

RW001 Where needed, acquire right-of-way at least one year prior to planned road construction.

RW002 Obtain a temporary right-of-way when a resource activity requires a one-time need for access or where the foreseeable need does not justify the expenditures necessary to provide a permanent road. The temporary road will be obliterated immediately upon completion of the activity (exceptions may occur based on an agreement with landowner).

## **Land Administration**

LA001 Lands acquired and added to the Ouachita National Forest will be assigned to appropriate MAs based on the MAs in the Forest Plan, as adjusted where needed for any special features or characteristics (such as uncommon natural communities) that they may contain; Forest Plan amendments to assign acquired lands to MAs are not required unless the lands are isolated tracts.

LA002 Landownership adjustments:

- will not dispose of habitat for Proposed, Threatened or Endangered species within the boundaries of the National Forest except with another agency with equivalent responsibility for Proposed, Threatened or Endangered species or unless a net gain for the particular affected species is made in habitat acreages or habitat quality;
- will not dispose—or will result in net gains of—habitat for (or populations of) Southern Region sensitive species and unique or rare natural communities on National Forest lands; and
- will not dispose of significant historical or archeological sites within the boundaries of the National Forest except with another federal or state agency or a tribal government with equivalent responsibility for heritage resources.

## Commodity, Commercial, and Special Uses

### Livestock Grazing

- LG001 Livestock grazing may utilize up to 50 percent of the annual forage growth, but will not exceed this amount.
- LG002 Management measures (e.g. salting and dusting stations, corrals) will be prescribed in Range Allotment Plans to divert grazing away from designated, recommended, or eligible Wild and Scenic River corridors.
- LG003 Livestock grazing is limited to April 15–October 15 (the growing season when adequate forage is available).
- LG004 No livestock distribution facilities or convenience structures (i.e. salting and dusting stations, corrals) will be constructed or placed in riparian areas, streamside management areas, or floodplains.
- LG005 Grazing Allotment Plans will be designed to minimize effects on water quality, recreation opportunities, and timber production. Grazing will be restricted if adverse impacts on water quality, recreation use, or timber production is evident.

### Minerals and Geology

- MG001 District Rangers are the Responsible Officials for approving locatable minerals operations under 36 CFR 228A. No mining operation can commence until approved in writing by the Responsible Official.
- MG002 Only written mining proposals will be considered by the Responsible Official for review, consent, and approval.
- MG003 Operations will be planned and conducted in a manner to reasonably reduce the visibility of the operation as specified in the operating plans.
- MG004 In locatable mineral cases and where appropriate for common variety mineral material cases, Responsible Official approval of significant surface impacts will be based on reasonable proof that the Forest Service can verify through sampling and analysis that the mineral values are present to justify the proposed significant surface impacts. In leasable hardrock and energy minerals cases, the Forest Service may recommend that the USDI Bureau of Land Management apply this as well.
- MG005 Permittee will commence reclamation on any mining or drilling related site within 30 days after impacts on any part of the site are completed, including completion of mining operations. A restoration and reclamation plan that details full site reclamation at operation completion will be developed by the operator and made part of the operating plans for review and approval of the Responsible Official. When developing the reclamation plan, consider opportunities to enhance the desired condition of the MA.

MG006 Mechanized and other mining or drilling related equipment needed to conduct authorized operations must be removed if authorized operations have not been conducted during a 30-day period. Operators may request additional time to store equipment on the Forest with a written request to the Responsible Official. The Responsible Official will collect an additional reclamation bond and require additional safety measures in such cases.

MG007 All mines authorized for rockhounding must have safety plans approved by the Responsible Official as part of the operating plan with the Forest Service. Active, commercially operated mines must have personnel on site to supervise guests and rockhounds and must have all vertical walls and mine hazards clearly marked and fenced to prevent public entry to hazards and mine equipment.

MG008 The operator of an active mining operation approved by the Responsible Official must have a USDI Mine Safety and Health Administration Mine Identification Number on file with the Responsible Official.

MG009 Before the Responsible Official will approve significant surface impacting activities, the mining claimant must provide proof of the existence of the mining claim and that the claim has been filed with the USDI Bureau of Land Management.

MG010 Mine or drilling surface disturbances will be insloped for water control. Pits and trenches will be constructed to self-drain, and/or mechanical methods of draining water will funnel water through water impoundments or otherwise be disposed of in an appropriate manner as directed by the Responsible Official.

MG011 Mineral fees and reclamation bond sufficient to cover the cost of reclamation will be collected from the operator before any mining related activity can commence (fees and bond collected may include administrative costs).

MG012 Mine spoils cannot be deposited on 35 percent or greater slopes. Where mine spoils are proposed to be deposited on less than 35 percent slopes (including 0 percent) during reclamation, the spoils must be able to be replaced in the excavated site, contoured to near natural slope conditions, and/or otherwise removed from the slope and deposited in a site approved by the Responsible Official (including use in the construction of an onsite wildlife pond or other beneficial uses).

MG013 Mining or drilling operations on 35 percent or greater slopes are not encouraged. Proposed operations on such slopes must be able to be conducted in a manner that will not degrade long-term soil productivity and watershed condition. Slope stability must be maintained through the course of the operations. The reclamation bond collected from the operator by the Responsible Official will reflect additional costs incurred from reclamation on steep ground.

MG014 Timber that will be impacted by a mining or drilling operation will be sold using the most appropriate method of disposal. Timber slash should be lopped and scattered or otherwise disposed of by the mine or drill operator to reduce fire hazards.

MG015 For all approved mineral material sites, a pit development plan must be developed and approved by the authorized Forest Service Official. Pit and trench walls will be sloped or vertical walls fenced. Fencing material and hazard warning signs are required (signs spaced at least 1 per 50 feet) around vertical walls ("high-walls") to block free access to the edge of hazardous working faces; fencing should be 10 horizontal feet from high wall edge or from surface cracks, or other indicators of ground instability, near high walls. Pit, trench, and vertical or high wall edges will be kept clear of loose material for at least 10 horizontal feet from the edge; stockpiled tailings must not be within 20 horizontal feet of the edge.

MG016 Mineral operations will comply with environmental protection standards from the following sources: Forest Plan design criteria for the management prescription where the operations will occur; lease terms and conditions; federal Onshore Oil and Gas Orders; Oil and Gas Resources regulations (36 CFR 228E); Conditions of Approval in Applications for Permits to Drill; and federal and state requirements, and regulations promulgated to establish performance standards for protecting soil, water, riparian, and aquatic resources and for reclamation of areas affected by oil and gas activities.

MG017 No explosives, blasting caps, or hazardous materials can be stored on the Forest without appropriate plans and approvals from the Responsible Official. Set explosive charges cannot be left unattended on the Forest, and charges left unexploded overnight must first be approved in writing by the Responsible Official.

MG018 Where common variety mineral materials are removed through pit excavations, a pit development plan must be developed and approved by the Responsible Official for each pit or each approved operating plan. Free Use for common variety mineral materials on the Ouachita National Forest is only issued to government entities.

MG019 Hand collecting of exposed surface mineral specimens, such as surface exposures of quartz crystal, for personal purposes is allowed on the Ouachita National Forest provided collection is by hand or with a small trowel, and subject to the MA limitations specified in Part 2 of the Forest Plan.

MG020 Quartz Contracts: Administer quartz minerals on the Ouachita National Forest in accordance with Section 323 of PL 100-446, 36 CFR 228C and Regional Forest Service Supplemental 2850 manual direction.

MG021 Quartz crystal surface mining operations proposed to take place on consistent 35 percent or greater slopes should be conducted with hand tools only.

MG022 Locate, design, and maintain trails, roads, other facilities, and management activities to avoid, minimize, or mitigate potential geologic hazards.

- MG023 Require reclamation bonds for all proposed mineral activities that will potentially cause significant surface disturbance and require rehabilitation. Energy leasable minerals bonds are usually held by the Bureau of Land Management (BLM) (personal, statewide, and nationwide), although additional Forest Service bonds may be required when BLM will not increase the bond held by them for reclamation. Bonds should be of sufficient amount to ensure the full costs of reclamation. Existing bonds should be reviewed for adequacy annually.
- MG024 Access to mining claims shall be authorized where necessary for mineral development.
- MG025 Any mineral operation undertaken on National Forest land where minerals are outstanding and reserved, will be administered in strict accordance with the terms of the deed of separation, and comply with applicable state and federal laws.

## **Special Use and Special Forest Products Permits**

- SU001 Road locations, utility corridors, or oil and gas pipelines in habitats of Proposed, Endangered, Threatened, or Sensitive species and/or identified, specific (rare) natural plant communities such as woodland seeps and glades will be avoided.
- SU002 A special forest product permit (not a special use permit) is required for scientific collection of plants, and the permit must be approved by the Forest Supervisor.
- SU003 Permits/contracts will not be issued for ginseng or moss/lichens. A sustainability assessment must be completed before a permit or contract can be issued for other special forest products in amounts beyond personal use.
- SU004 New communication towers will be self-supporting and will be designed to mitigate collision impacts to bats and migratory birds. When authorized towers are reconstructed or replaced, the replacement tower will be self-supporting and designed to mitigate collision impacts to bats and migratory birds.
- SU005 Height of towers will be less than 200 feet above natural ground level. When authorized towers are reconstructed or replaced, the replacement tower will be less than 200 feet above natural ground level. An exception to the height limitation may be granted by the Forest Supervisor, if allowing an increase in height would result in placement of fewer towers or if a greater height is necessary for emergency services or homeland security. The applicant must prove that the requested height is the minimum necessary to provide communication service.
- SU006 Designate existing transportation and utility routes and rights-of-way capable of accommodating such facilities as right-of-way corridors. Subsequent right-of-way grants will be confined, to the extent practicable, to designated corridors.

## **Firewood**

FW001 Hardwood will be made available for firewood as identified through project level analysis.

FW002 In areas where trees have been treated with herbicide, use of treated trees for firewood will not be allowed.

## **Wildland Fire Suppression**

A wildland fire is a fire resulting from an unplanned ignition, requiring an appropriate management response to control its spread. The response to unplanned, natural ignitions may include fire use, which is managing the ignition to accomplish specific resource management objectives in predefined areas. The Fire Management Plan (<http://www.fireplan.gov>) guides the fire management program for the Ouachita National Forest and provides comprehensive guidelines for the suppression of wildland fire. Any community within one-half mile of the Forest is considered a community at risk; there are 24 communities in this category located near the Ouachita National Forest. Additionally, there are six state parks located within one-half mile of the Forest.

FS001 The full range of wildland fire suppression tactics (from immediate suppression to monitoring) may be used, consistent with Forest and resource management objectives and direction.

FS002 Suppress wildfires at minimum cost, considering firefighter and public safety, benefits, and values to be protected, consistent with resource objectives. All human-caused wildland fires will be suppressed.

# Management Area Design Criteria

In addition to Design Criteria that are applied Forest-wide to all Management Areas (MAs), some standards are specific to individual MAs. The MAs and the standards associated with them are presented in this section. See Part 2 (preceding Forest-wide Standards) for descriptions and desired conditions for each Management Area.

## Management Area 1. Wilderness

### 1a. Designated Wilderness

#### Trails

- 1a.01 When conflicts develop between wilderness activities, they will be resolved in favor of those activities (1) that will least alter the wilderness environment and (2) that are most dependent upon the wilderness environment. Some activities may be restricted or controlled to preserve the opportunities for solitude and primitive recreation experiences.
- 1a.02 Trails will be designed and maintained to emphasize the wilderness experience and not intrude upon it.
- 1a.03 Fell snags adjacent to wilderness trails only when they pose a definite and immediate safety hazard.

#### Visual Resources

- 1a.04 Management activities in wilderness will meet the Scenery Integrity Objectives (SIO) of very high for all concern levels, distance zones, and scenic attractiveness regardless of the mapped SIO of the general Forest overlay.
- 1a.05 Resource management activities adjacent to wilderness will be planned and conducted to protect essential wilderness values.

#### Water Resources

- 1a.06 Maintain all water resources without developed improvements, impoundments, or other modifications.
- 1a.07 Restrict wilderness use if unacceptable impacts to water quality or associated beneficial uses occur.

#### Wildlife and Fisheries

- 1a.08 Habitat manipulation essential to the survival of a Proposed, Threatened, and Endangered species is allowed with approval by the Chief of the Forest Service.
- 1a.09 Allow stocking of wildlife species when wilderness values are not impaired, but only to enhance the status of Threatened or Endangered native species or to reintroduce extirpated species native to the wilderness.

1a.10 Provide for hunting and fishing consistent with state game laws and wilderness values (including no motorized access).

### **Special Use Permits**

1a.11 Permits for scientific studies, research, and educational programs will not include activities that degrade wilderness values. Only those studies and programs that require a wilderness environment will be permitted.

### **Transportation Activities**

1a.12 Road construction or reconstruction to improve wilderness access and manage existing use will be completed outside wilderness boundaries.

1a.13 Locate trailheads outside wilderness boundaries, considering effects of location and size on levels and patterns of use within the wilderness.

### **Fire Management**

1a.14 Prescribed fire (ignited by lightning and allowed to burn under prescribed conditions and fires ignited by a qualified Forest Service officer) may be used in wilderness to reduce fuels if necessary to meet wilderness management objectives.

### **Pest Management**

#### *Southern Pine Beetle (SPB), Ips Beetle, and Other Pest Control*

1a.15 Control measures for insect and other pest outbreaks will be taken only in the case of epidemic pest population buildup and only to protect human health and safety, adjacent land values, and/or wilderness attributes; such measures will be designed to have the least adverse impact possible on the wilderness resource.

1a.16 No SPB control action will be taken in wilderness unless:

- an infestation threatens an essential RCW cluster.
- the infestation occurs within one-fourth mile of susceptible host trees and is predicted to spread, causing unacceptable damage to those resources.

1a.17 Integrated Pest Management (IPM) control methods for SPB are modified for use in wilderness as follows:

- a. Cut and Remove—use helicopter, draft animals, or cable skidding from public roads or other access to remove infested logs. In visually sensitive areas such as along hiking trails, remove entire tree if feasible; otherwise, remove slash from visual zone. Helicopter flight lines will avoid trails where possible.
- b. Cut and Leave—cut slash to lie close to the ground or remove slash if feasible in visually sensitive zones to mitigate visual impact.
- c. Cut and Hand Spray—same modifications as cut and leave method.
- d. Pile and Burn—this method will not be used in wilderness.

1a.18 Within MA 1, monitoring, ground checking, and tree felling crews will travel to infestations by non-motorized methods. Only under the conditions described in the next two standards will vehicles be allowed.

1a.19 Within MA 1, in extenuating circumstances, such as an intense outbreak or lack of adequate resources to implement the preceding control methods, use of motorized ground vehicles may be necessary to protect essential RCW clusters or adjacent lands as described under previous design criteria. This option, which would require approval by the Regional Forester, is to be used only as a last resort when destruction of an essential RCW cluster or unacceptable damage on adjacent lands is imminent.

1a.20 When the use of motorized ground vehicles is permitted in wilderness for SPB control, search and rescue, or other management activities, the following requirements apply:

- a. Use only existing roads or access ways. Limit road improvements to a standard no higher than required for safe passage of equipment and workers, and to protect soil and water.
- b. Return existing roads to as near their pre-use condition as possible as soon as they have served their purpose.
- c. Close all roads and access ways needed for SPB control to motorized public use. Only use associated with the control of the SPB and administrative use will be allowed.
- d. Use fords (no structure) where possible, but only under conditions that will not visibly change physical stream characteristics. These conditions are:
  - (1) bedrock stream substrate and lower banks
  - (2) rock or gravel stream substrate and lower banks
- e. Install temporary stream crossing structures using the largest fill materials available. Crossings will be removed completely after control operations are completed. Stream banks and substrates will be reclaimed to approximately the original conditions.

1a.21 Aerial detection will be used to identify and locate, for ground checking, all infestations in wilderness within one-fourth mile of susceptible hosts on state, private, or high-value federal forests.

1a.22 Infestation located within one-fourth mile immediately outside the wilderness will be ground checked as soon as possible (generally two days) following detection to determine the direction of spread.

*Protection of Essential RCW Clusters during SPB Treatment*

1a.23 Only essential RCW clusters and foraging area (approximately 125 acres per site) will be protected from SPB in wilderness (in the event that RCWs become established). Essential clusters are defined by the U.S. Fish and Wildlife Service as:

- a. not located on the periphery of the species range
- b. located where viable population levels have not been met in the general forest area surrounding wilderness, according to the RCW Recovery Plan

1a.24 An essential RCW cluster in wilderness must be occupied or have been occupied during the previous breeding season to receive protection during treatment for SPB. Colonies vacated prior to the previous breeding season will not be protected in wilderness.

## **1b. Poteau Mountain Management Area**

### **General**

Apply the standards and other design criteria for Wilderness (MA 1a) to the Poteau Mountain MA, with the exception that motorized vehicles may be used in this area on designated routes.

### **Transportation**

1b.01 Do not locate facilities, except trails, in this area.

## **1c. Recommended Wilderness**

The standards of MA 1a (Designated Wilderness) apply.

## **Management Area 2. Special Interest Areas**

### **Transportation**

2.01 No new system roads will be constructed within these areas.

### **Fire and Fuels**

2.02 Prescribed fire and wildland fire may be used to maintain, restore, and enhance native forest communities, including park-like settings with open understories, and to reduce fuel buildup.

### **Vegetation Management**

2.03 Within Watchable Wildlife Areas and the South Fourche Botanical Area, thinning and stand regeneration activities, including clearcutting (up to 30 acres) in loblolly pine plantations (and replanting), may be implemented to restore and maintain native ecological systems or, prior to restoration, to thin existing pine plantations.

2.04 In the Rich Mountain Recreation Area, uneven-aged or even-aged management may be used within areas considered suitable for timber production. Even-aged treatments (irregular shelterwood or seedtree) cannot exceed 10 acres in any vegetation type. Vegetation manipulation, including the cutting of trees, is permitted to protect unique plant species and plant communities, control insect or disease outbreaks, protect public safety, or create or maintain scenic vistas.

2.05 In the Rich Mountain Botanical Area, vegetation manipulation, including the cutting of trees, is permitted only when necessary to protect unique plant species and plant communities, control insect or disease outbreaks, or protect public safety.

2.06 Within Scenic Areas, vegetation manipulation necessary to control insect and disease outbreaks and to maintain public safety is allowed as is prescribed burning to reduce fuels and restore a natural process.

## **Management Area 3. Developed Recreation Areas**

### **Pest Management**

3.01 For safety and aesthetic reasons, conduct aggressive insect and disease control within developed recreation areas.

### **Fire and Suppression**

3.02 To protect the public and recreation facilities, all wildland fires in this management area will be suppressed.

## **Management Area 4. Research Natural Areas and National Natural Landmarks**

### **Pest Management**

4.01 Except when epidemic pest populations threaten timber resources on adjacent non-national forest lands, no control measures will be undertaken for insect and disease control.

## **Management Area 5. Experimental Forests**

### **Prescribed Fire**

5.01 Prescribed fire is used solely to meet experimental forest objectives.

### **Vegetation Management**

5.02 Vegetation management activities are used to meet experimental forest objectives as outlined in research study plans, demonstration study plans, special use permits, and/or applicable environmental assessments and decision memos.

## **Management Area 6. Rare Upland Communities**

### **General**

6.01 Where mesic hardwood stands are included in large burning blocks or anywhere within Management Area 21, use techniques that either avoid or result in low-intensity fires within these communities. Direct firing techniques should not be used in mesic hardwoods, unless needed to secure wildfire control lines.

6.02 Project planning will include a comparison of existing and desired conditions for these communities where they appear within project analysis areas.

## Management Area 7. Ouachita Seed Orchard

### Minerals and Geology

7.01 Quartz or other hardrock mining operations can have no more than one-half acre of surface in an unreclaimed condition during the course of the operation and must not affect the integrity of the Seed Orchard nor interfere with prescribed resource treatment practices.

### Pest Management

7.02 Special emphasis is to be placed on detecting, monitoring, and control of insect and disease pests.

## Management Area 8. Administrative Sites/Special Uses

### Fish Habitat

8.01 Maintain and enhance pond access for public use with emphasis on accessibility for users with disabilities where appropriate.

## Management Area 9. Water and Riparian Communities

### General

9.01 Table 3.9 provides minimum widths of protected areas adjacent to bodies of water and on each side of perennial streams and other streams with defined channels that are at least one foot wide and three inches deep. The minimum width adjacent to edges of perennial streams, woodland seeps/springs and the banks of lakes and ponds equal to or greater than  $\frac{1}{2}$ -acre is 100 feet measured horizontally. The minimum width adjacent to other streams with defined channels and ponds less than one-half acre is 30 feet measured horizontally.

**Table 3.9 Minimum Width of Streamside Management Areas (SMA), by Slope Class<sup>1</sup>**

Type of SMA	0-5% slope	5-15% slope	15-35% slope	35%+ slope
<i>Horizontal distance from both sides of stream bank or from banks of spring/lake/pond is shown. Distances are shown in feet.</i>				
Perennial stream; woodland seep/spring; lakes and ponds equal to or greater than $\frac{1}{2}$ acre	100	100	125 <sup>2</sup>	150 <sup>3</sup>
Other defined channel; ponds less than $\frac{1}{2}$ acre	30	50	75 <sup>4</sup>	100 <sup>5</sup>

<sup>1</sup> Include only the area to the top of the slope when the slope adjacent to the stream is shorter than the width shown; however, always protect at least 100 feet on either side of perennial streams and 30 feet on either side and above other streams with defined channels.

<sup>2</sup> Approximate slope distance is 129 feet.

<sup>3</sup> Approximate slope distance is 159 feet.

<sup>4</sup> Approximate slope distance is 77 feet.

<sup>5</sup> Approximate slope distance is 106 feet.

9.02 Table 3.10 describes permitted and prohibited activities within SMAs. The Forest Supervisor may approve exceptions following a case-by-case evaluation with appropriate public involvement. **Primary Buffer** = first 100 feet adjacent to perennial drainages and waterbodies  $\geq \frac{1}{2}$  acre, first 30 feet adjacent to other defined drainages or ponds  $< \frac{1}{2}$  acres, and defined water supply use areas (see Appendix E) surrounding Lake Winona, Irons Fork, and South Fork Reservoir (Cedar Creek). **Secondary Buffer** = remaining distance within SMA dependent upon slope class additions (see Table 3.09). All distances are horizontal distances, not slope distances. Where cable skidding is permitted, it must be conducted in a manner to minimize soil disturbance and from a set-up outside of SMAs.

**Table 3.10 Management Activities Permitted or Prohibited within Streamside Management Areas (SMAs)**

Activity	Primary Buffer	Secondary Buffer
Log loading areas	No	No
Mechanical site preparation or ripping	No	No
Livestock distribution and convenience structures (salting and dusting facilities, corrals etc.) and feeding areas	No	No
Prescribed burns except for certain site preparation burns <sup>1</sup>	Yes	Yes
Felling of individual trees for safety	Yes	Yes
Felling individual trees or creating snags for habitat enhancement for riparian-dependent or Proposed/Endangered/Threatened/Sensitive species <sup>2</sup>	Yes	Yes
Creating snags and thinning to accomplish wildlife stand improvement with tree removal permitted by cable skidding as deemed necessary to meet objectives	No	Yes
Control of southern pine and/or Ips beetle infestation - tree felling permitted; removal permitted with cable skidding within primary buffer only if necessary for infestation control	Yes	Yes
Thinning in offsite loblolly pine plantations to reduce vulnerability to southern pine and/or Ips beetle and/or restore native vegetation; felling and removal by cable skidding of this timber	Yes	Yes
Thinning to reduce vulnerability to insect and diseases and/or restore native vegetation; felling and removal by cable skidding of this timber	No	Yes
Wheeled or crawler vehicles outside of designated crossings (with exceptions <sup>3</sup> )	No	No
Road construction, reconstruction and maintenance <sup>4</sup>	Yes	Yes
Temporary roads and skid trails to designated crossings	Yes	Yes
Designated OHV routes crossing SMAs	Yes	Yes
Construction and maintenance of non-motorized trails, boat and fishing docks, launching ramps/areas and swimming beaches	Yes	Yes
Use of aquatic approved pesticides <sup>5</sup> for treatment of invasive non-native and nuisance species	Yes	Yes
Felling of individual trees and brush removal to enhance visual quality within administrative sites, developed recreation areas and recreational lakes – subject to landscape architect, hydrologist, and fisheries biologist concurrence	Yes	Yes

<sup>1</sup> Site preparation burns allowed only where backing fires are used so that not all surface litter is burned or vegetation killed.

<sup>2</sup> Including vegetation management treatments (e.g., basal area reduction, midstory reduction) within the SMA for improvement of Red-cockaded Woodpecker nesting habitat in the vicinity of cavity trees (see Standard 22.05).

<sup>3</sup> Exceptions are for wildfire suppression, stream habitat enhancement, and prescribed burning (for control line construction criteria, see Standard 9.24 and any PETS special provisions).

<sup>4</sup> Road construction, reconstruction and maintenance is permitted when there is no alternative route that is less environmentally damaging or where other routes would involve prohibitive cost or would clearly not be in the best public interest. Roads and crossings are to be located and designed to avoid unacceptable environmental impacts and to maintain or restore aquatic organism passage.

<sup>5</sup> Limited use of terrestrial vegetation control herbicides is also permitted; see Standard 9.13.

## **Fisheries**

- 9.03 Ponds less than one-half acre in size will not be stocked with fish to provide predator-free breeding habitat for amphibians, except at developed recreation and designated areas.
- 9.04 Lakes and ponds equal to or greater than one-half acre may be fertilized on a case-by-case basis when it has been determined that the overflow from the waterbody will not negatively impact stream fisheries, Lake Ouachita, or Broken Bow Lake and that state water quality criteria are not exceeded.
- 9.05 Stocking of any non-native aquatic species requires Forest Supervisor approval and appropriate state agency approval/permits. Non-native species stocking guidelines of appropriate professional societies will also be consulted.
- 9.06 Stocking of rainbow trout in the Little Missouri River system will be evaluated on an annual basis. No more than 15,000 trout per year will be stocked in this planning period.
- 9.07 With the exception of situations covered by 9.05 and 9.06, streams will be managed for native fish populations.

## **Livestock Grazing**

- 9.08 Restrict grazing in the Streamside Management Area where resource damage is occurring.
- 9.09 Develop range watering sources outside of the riparian area.
- 9.10 Permit grazing of areas where a usable forage resource exists and negative impacts on water quality are within allowable limits.

## **Water Resources**

- 9.11 Avoid adverse impacts (long-term and short-term) associated with the occupancy and modification of floodplains. Destruction, loss, or degradation of wetlands will be avoided to the extent practicable, minimized or appropriately mitigated (EO 11988 and 11990).
- 9.12 Water will not be diverted from streams or lakes, and perennial streams will not be impounded on National Forest System lands when an instream flow needs or water level assessment indicates the diversion or impoundment would adversely affect stream processes, aquatic and riparian habitats and communities, and/or recreation and aesthetic values.

## **Pesticide Use (also see Forest-wide Herbicide Use Standards)**

- 9.13 Pesticide use within MA 9 will be approved on a case-by-case basis by the Forest Supervisor, following site-specific analysis and a monitoring plan. Terrestrial vegetation control using herbicides within MA 9 may only be conducted on dams or for control of invasive and/or exotic species and will only be with an appropriately labeled formulation for both aquatic and terrestrial site use. Aquatic application of herbicide for control of invasive or nuisance aquatic vegetation/algae may occur, providing biological controls have failed, are not available, and/or other means of control are not suitable or practicable.
- 9.14 Rotenone and other aquatic approved pesticides may be used for fish sampling or monitoring.

## **Minerals and Geology**

- 9.15 Common variety minerals operations (quartz minerals, gravel, and building/landscaping stone) must be designed and implemented so that no mining or mining-related activity takes place within water and riparian areas (MA 9). For high quality, industrial-grade quartz, see Standard 9.16.
- 9.16 The Forest Supervisor has final approval authority for all minerals operations in MA 9. Surface impacting, mining-related activities (including high quality, industrial-grade quartz mining) and operations proposed in MA 9 other than common variety minerals (see Standard 9.15) must be designed and implemented so that no activity is conducted within 200 feet (horizontal distance) of streams and lakes; activities are appropriately mitigated through all stages of the operation; and, where public water supplies (see Appendix E) may be affected, are approved only in cases where the appropriate water management agency or organization concurs with the proposed mining operation, including any additional needed mitigation measures.
- 9.17 The design and operation of oil and gas drilling operations will include stipulations that avoid activities within MA 9 and that appropriate mitigation measures are applied throughout all stages of activity.

## **Timber Harvest Administration**

- 9.18 Prevent debris from entering streams during timber harvesting. If any debris enters streams, it will be removed within 48 hours unless otherwise agreed upon by the Forest Service.
- 9.19 Culverts, bridges, or reinforced crossings may be required on temporary roads at all points where it is necessary to cross protected stream courses. Ford crossings may be permitted with written authorization in locations containing exposed bedrock or rock-fragment substrates, or where streams can be protected with clean rock aggregate or other suitable treatment measures. In no case will temporary culverts involving the placement of fill material in stream courses be allowed on streams identified as important for fisheries unless the forest or state fisheries biologist determines washed rock fill may be safely be used.

## **Transportation**

9.20 Do not locate roads and trails within or immediately adjacent to SMAs unless alternative routes have been reviewed and rejected as more environmentally damaging or if such location would clearly not be in the best public interest.

9.21 Where road location in riparian areas is necessary, design roads and crossings to minimize impacts on streams and associated aquatic habitats in order to protect the natural and beneficial values of these areas. Do not parallel streams except where an analysis of the alternatives shows such a location is environmentally preferred. Stabilize roads and fills at road crossings and culverts by utilizing rip-rap, plantings, mats, etc. Create sediment trap buffers by installing barriers, fences, etc. when required for soil stability or sediment control.

9.22 All new stream crossings will be constructed so that aquatic organism passage is not impaired and so that the natural flow regime is not significantly altered. Reconstruction of all stream crossings will consider aquatic organism passage and incorporate structures to aid such passage, where practicable.

9.23 Roads that cross riparian areas will be stabilized with rip-rap, vegetation establishment, or other appropriate methods.

## **Prescribed Fire**

9.24 Minimize firelines for prescribed burns within SMAs. Where firelines must cross SMAs, use the following design criteria:

- Cross streams and associated SMAs at right angles (or as close to right angles as possible).
- Follow temporary road/skid trail standard for slope restrictions.
- Use hand tools and/or back blade firelines away from streams.
- Ensure bank integrity.
- Construct firelines at minimum effective widths; width should not exceed 10 feet.
- Place waterbars at the edge of the SMA and at appropriate intervals (use Table 3.1 guidelines or shorter intervals) along the fireline as it crosses the SMA.
- Do not create entrenched firelines (those with prominent berms or banks).
- Rehabilitate any existing, entrenched firelines by pulling the berms back into the fireline to restore grade and eliminate water channeling effects.

## **Recreation**

9.25 Manage recreational activities to ensure shoreline stability and protection of water quality. Ensure 90 percent of shoreline is well-vegetated or otherwise stabilized.

## **Timber**

9.26 Logging equipment will be kept out of perennial and other stream channels with defined channels except on approved, designated crossings. Crossings will be at right angles to the stream or riparian area.

9.27 For proposed vegetation management treatments within the designated source water areas as shown in Appendix E, the public water supply manager/operator will be notified during the scoping process and prior to project implementation.

## Management Area 14. Ouachita Mountains-Habitat Diversity Emphasis

Although this Management Area has few specific standards, readers should be guided by Forest-wide standards, which apply to all MAs.

**Table 3.11 Even-Aged Management in MA 14**

Maximum Size of Regeneration Area (Acres) <sup>1,2</sup>		Approximate Harvest Age <sup>3</sup>		
Pine, Pine-Hardwood	Hardwood, Hardwood-Pine	Pine, Pine-Hardwood	Hardwood, Hardwood-Pine	
			Site Index < 80	Site Index > 80
40	10	70-100	70-100	100-130

<sup>1</sup> Maximum size of regeneration opening may be exceeded with approval from the Forest Supervisor up to a maximum of 80 acres for pine, pine/hardwood and 40 acres for hardwood and hardwood/pine.

<sup>2</sup> Acreage limitations for regeneration harvest cuts do not apply within areas affected by severe natural catastrophic events nor are they applicable where acquired lands have been cut-over prior to Forest Service acquisition.

<sup>3</sup> Approximate regeneration harvest age will be 35 years in loblolly pine stands when completing a final harvest cut intended for plant community restoration.

**Table 3.12 Group Selection in MA 14**

Approximate Harvest Age			Gap Size Opening (Acre) <sup>1</sup>	
Pine, Pine/Hardwood	Hardwood, Hardwood/Pine			
	Site Index < 80	Site Index > 80		
50-100	70-100	100-130	1/4-2	

<sup>1</sup> Acreage limitations do not apply within areas affected by severe natural catastrophic events, nor are they applicable to acquired land in need of regeneration.

See Tables 3.4, 3.5, and 3.6 for Forest-wide specifications for single-tree selection, stocking and thinning, respectively.

## Management Area 15. West Gulf Coastal Plain-Habitat Diversity Emphasis

Although this Management Area has few specific standards, readers should be guided by Forest-wide standards, which apply to all MAs.

**Table 3.13 Even-Aged Management in MA 15**

Maximum Size of Regeneration Area (Acres) <sup>1,2</sup>		Approximate Harvest Age <sup>3</sup>		
Pine, Pine-Hardwood	Hardwood, Hardwood-Pine	Pine, Pine-Hardwood	Hardwood, Hardwood-Pine	
			Site Index < 80	Site Index > 80
40	10	50-100	70-100	100-130

<sup>1</sup> Maximum size of regeneration opening may be exceeded with approval from the Forest Supervisor up to a maximum of 80 acres for pine, pine/hardwood and 40 acres for hardwood and hardwood/pine.

<sup>2</sup> Acreage limitations for regeneration harvest cuts do not apply within areas affected by severe natural catastrophic events nor are they applicable where acquired lands have been cut-over prior to Forest Service acquisition.

<sup>3</sup> Approximate regeneration harvest age will be 35 years in loblolly pine stands when completing a final harvest cut intended for plant community restoration.

**Table 3.14 Group Selection in MA 15**

Approximate Harvest Age			Gap Size Opening (Acre) <sup>1</sup>	
Pine, Pine/Hardwood	Hardwood, Hardwood/Pine			
	Site Index < 80	Site Index > 80		
50-100	70-100	100-130	1/4-2	

<sup>1</sup> Acreage limitations do not apply within areas affected by severe natural catastrophic events, nor are they applicable to acquired land in need of regeneration.

See Tables 3.4, 3.5, and 3.6 for Forest-wide specifications for single-tree selection, stocking and thinning, respectively.

## Management Area 16. Lands Surrounding Lake Ouachita and Broken Bow Lake

### Visual Resources

16.01 Except for property lines, tree marking paint will not be visible from the lake.

### Vegetation Management

16.02 Manage vegetation to complement species composition of adjacent natural stands in first one-fourth mile and seen area from lake surface.

16.03 In first one-fourth mile and seen area from lake surface, management actions will meet high SIO.

16.04 Utilize vegetation management practices (manual cutting, prescribed burning) that do not entail use of herbicides to accomplish cultural work needed within one-fourth mile of lake.

16.05 Use vegetation management to enhance visual quality and species composition (e.g., hardwood for fall color and flowering species such as dogwood).

**Table 3.15 Even-Aged Management in MA 16**

Maximum Size of Regeneration Area (Acres) <sup>1, 2</sup>		Approximate Harvest Age <sup>3</sup>		
Pine, Pine-Hardwood	Hardwood, Hardwood-Pine	Pine, Pine-Hardwood	Hardwood, Hardwood-Pine	
			Site Index < 80	Site Index > 80
20	10	70-100	70-100	100-130

<sup>1</sup> Maximum size of regeneration opening may be exceeded with approval from the Forest Supervisor up to a maximum of 80 acres for pine, pine/hardwood and 40 acres for hardwood and hardwood/pine.

<sup>2</sup> Acreage limitations for regeneration harvest cuts do not apply within areas affected by severe natural catastrophic events nor are they applicable where acquired lands have been cut-over prior to Forest Service acquisition.

<sup>3</sup> Approximate regeneration harvest age will be 35 years in loblolly pine stands when completing a final harvest cut intended for plant community restoration.

**Table 3.16 Group Selection in MA 16**

SubArea	Approximate Harvest Age			Gap Size Opening (Acre) <sup>1</sup>	
	Pine, Pine/Hardwood	Hardwood, Hardwood/Pine			
		Site Index < 80	Site Index > 80		
First 1/4 mile + seen area (from lake)	50-100	70-100	100-130	≤ 1/2	
Unseen Area	50-100	70-100	100-130	1/4-2	

<sup>1</sup> Acreage limitations do not apply within areas affected by severe natural catastrophic events, nor are they applicable to acquired land that is in need of regeneration.

See Tables 3.4, 3.5, and 3.6 for Forest-wide specifications for single-tree selection, stocking and thinning, respectively.

## Minerals and Geology

16.06 Minerals operations may be conducted where they are not visible from lake and will not have more than two acres of unreclaimed surface impact during active mining. Impact area must be reclaimed during inactive operating periods that will exceed 30 days.

## Land Administration

16.07 No National Forest System lands will be disposed of within three-quarters mile of the lake shoreline or adjacent to Corps of Engineers lands unless otherwise identified on the Landownership Adjustment Map. Consolidation of Forest Service ownership around the lakes will continue.

## Infrastructure

- 16.08 Only temporary roads will be constructed within one-fourth mile of the lake. After management activities are completed, roads will be closed and rehabilitated. All temporary roads and any existing road that could be managed as intermittent service will be closed, seeded, and managed as linear wildlife openings.
- 16.09 In the area beyond one-fourth mile from the lake, emphasize the management of roads for intermittent and high clearance vehicle use.

## Management Area 17. Semi-Primitive Areas

- 17.01 When reconstructing system roads or building temporary roads in semi-primitive areas, blend them with the existing landscape (i.e., by reducing use of culverts and minimizing cuts and fills).
- 17.02 Road construction or reconstruction on areas with side slopes of greater than 30 percent will be avoided.
- 17.03 Road construction slash will be scattered, removed, or burned. Cut and fill banks will be seeded and/or mulched to meet the SIO of the area.
- 17.04 Lop and scatter slash so that it does not exceed two feet in height above the ground along foreground area of concern level I and II travelways.
- 17.05 Semi-Primitive Areas in which most timber harvesting and road construction are deferred are shown in the tabulation below.

Area Name	Approximate Acres
Black Fork Mountain	406
Blue Mountain	11,678
Brush Heap	8,353
Cedar Mountain	3,428
Flood Mountain	4,915
Fourche Mountain	2,403
Irons Fork Mountain	8,303
Leader Mountain	9,185
Little Missouri Area	1,226
Statehouse Mountain	5,042

**Table 3.17 Even-Aged Management in MA 17**

Maximum Size of Regeneration Area (Acres) <sup>1, 2</sup>		Approximate Harvest Age <sup>3</sup>		
Pine, Pine-Hardwood	Hardwood, Hardwood-Pine	Pine, Pine-Hardwood	Hardwood, Hardwood-Pine	
			Site Index < 80	Site Index > 80
20	10	70-100	70-100	100-130

<sup>1</sup> Maximum size of regeneration opening may be exceeded with approval from the Forest Supervisor up to a maximum of 80 acres for pine, pine/hardwood and 40 acres for hardwood and hardwood/pine.

<sup>2</sup> Acreage limitations for regeneration harvest cuts do not apply within areas affected by severe natural catastrophic events nor are they applicable where acquired lands have been cut-over prior to Forest Service acquisition.

<sup>3</sup> Approximate regeneration harvest age will be 35 years in loblolly pine stands when completing a final harvest cut intended for plant community restoration.

**Table 3.18 Group Selection in MA 17**

Approximate Harvest Age			Gap Size Opening (Acre) <sup>1</sup>	
Pine, Pine/Hardwood	Hardwood, Hardwood/Pine			
	Site Index < 80	Site Index > 80		
70-100	70-100	100-130	1/4-2	

<sup>1</sup> Acreage limitations do not apply within areas affected by severe natural catastrophic events, nor are they applicable to acquired land that is in need of regeneration.

See Tables 3.4, 3.5, and 3.6 for Forest-wide specifications for single-tree selection, stocking and thinning, respectively.

## Management Area 19. Winding Stair Mountain Recreation National Area and Associated Non-Wilderness Designations

### General (apply to all of Management Area 19)

- 19.01 Design criteria for Developed Recreation Areas (MA 3) apply to the Robert S. Kerr Memorial Arboretum and to any other recreation sites that may be developed within this MA.
- 19.02 Permanent roads will be constructed or reconstructed if needed for recreational development and interpretation of the area.
- 19.03 Other roads needed for resource management will be temporary or intermittent service, built to the lowest standard, and rehabilitated and closed after use.
- 19.04 Reclamation must be completed within 90 days from commencement on oil and gas wells that are non-producing or uneconomical. For producing wells, reclamation of areas no longer needed must be consistent with standard 19.05 and must be completed within 90 days from commencement.
- 19.05 Mining related operations can have no more than one-half acre of surface impact unreclaimed during the course of the operation.

19.06 Livestock grazing levels will be maintained or reduced, but not increased. In the Robert S. Kerr and Beech Creek Botanical Areas, current allotments will be phased out.

19.07 No new special uses or permits for utility or transmission lines will be considered unless no reasonable alternative exists, and scenic, recreational, fish and wildlife values have been evaluated.

19.08 Where compatible with congressional intent, reduce the risks and consequences of wildfire to an acceptable level.

**Table 3.19 Even-Aged Management in MA 19a, f, or g**

Maximum Size of Regeneration Area (Acres) <sup>1,2</sup>		Approximate Harvest Age <sup>3</sup>		
Pine, Pine-Hardwood	Hardwood, Hardwood-Pine	Pine, Pine-Hardwood	Hardwood, Hardwood-Pine	
			Site Index < 80	Site Index > 80
10	10	70-100	70-100	100-130

<sup>1</sup> Maximum size of regeneration opening may be exceeded with approval from the Forest Supervisor up to a maximum of 80 acres for pine, pine/hardwood and 40 acres for hardwood and hardwood/pine.

<sup>2</sup> Acreage limitations for regeneration harvest cuts do not apply within areas affected by severe natural catastrophic events nor are they applicable where acquired lands have been cut-over prior to Forest Service acquisition.

<sup>3</sup> Approximate regeneration harvest age will be 35 years in loblolly pine stands when completing a final harvest cut intended for plant community restoration.

**Table 3.20 Group Selection in MA 19a, f, or g**

Management Area	Approximate Harvest Age			Gap Size Opening (Acre) <sup>1</sup>	
	Pine, Pine/Hardwood	Hardwood, Hardwood/Pine			
		Site Index < 80	Site Index > 80		
19 a, f, g	70-100	70-100	100-130	≤ 1/2	

<sup>1</sup> Acreage limitations do not apply within areas affected by severe natural catastrophic events, nor are they applicable to acquired land that is in need of regeneration.

See Tables 3.4, 3.5, and 3.6 for Forest-wide specifications for single-tree selection, stocking and thinning, respectively.

## 19a. Winding Stair Mountain National Recreation Area (NRA)

**Standards from Public Law 100-499.** Within the Act that created this NRA, the following specific standards were set out:

19a.01 Management and utilization of natural resources within the recreation area will be permitted to the extent that such management and utilization is compatible with, and does not impair, the purpose for which the recreation area is established.

19a.02 Any sales of timber from within the recreation area will be designed so as to not detract from the scenic values of the recreation area.

- 19a.03 Management practices that would detract from the scenic quality and natural beauty within view from the Talimena Scenic Drive or the Holson Valley Road will not be conducted in the recreation area.
- 19a.04 Uneven-aged timber management will be the timber management practice in the recreation area, except that the Secretary [of Agriculture] may use even-aged management practices in order to promote public safety, to mitigate the effects of fire, insects, and disease, to allow scenic vistas and recreational development, or if such practices result in irregular cuts behind geographic barriers blocking the view from the Talimena Scenic Drive or the Holson Valley Road.

## **19c. Robert S. Kerr Memorial Arboretum, Nature Center and Botanical Area and 19e. Beech Creek Botanical Area**

### **Standards from Public Law 100-499:**

- 19c.01 Vegetative manipulation, including the cutting of trees, will be permitted in such areas only when necessary for the protection and interpretation of the unique plant species and unique plant communities with the area.
- 19c.02 The Secretary [of Agriculture] may permit expansion of roads, improvements, and other facilities in the vicinity of the Robert S. Kerr Nature Center.

## **19f . Beech Creek National Scenic Area**

### **Standards from Public Law 100-499:**

- 19f.01 Timber management practices within the area will promote a mixed hardwood and conifer forest with species and age class diversity approximating natural succession and with significant mast production and den trees for wildlife.
- 19f.02 Uneven-aged management will be the timber management practice in the area, except that the Secretary [of Agriculture] is authorized to use even-aged management practices in order to promote public safety or to mitigate the effects of fire, insects, and disease.

## **19g. Indian Nations National Scenic and Wildlife Area**

### **Standards from Public Law 100-499:**

- 19g.01 Management practices within the National Scenic and Wildlife Area that would detract from the scenic quality and natural beauty within view from the Talimena Scenic Drive or the Holson Valley Road viewsheds will be prohibited.
- 19g.02 Timber management practices within the National Scenic and Wildlife Area will promote a mixed hardwood and conifer forest with species and age class diversity approximating natural succession and with significant mast production and den trees for wildlife.
- 19g.03 Uneven-aged timber management will be the timber management practice in the National Scenic and Wildlife Area, except that the Secretary [of Agriculture] may use even-aged management practices in order to promote public safety, to

mitigate the effects of fire, insects, and disease, or if such practices result in irregular cuts behind geographic barriers blocking the view from the Talimena Scenic Drive or the Holson Valley Road.

## **Management Area 20. Wild and Scenic River Corridors and Recommended Wild and Scenic River Corridors**

### **General**

- 20.01 Until designation decisions are made or additional river studies are completed, National Forest System lands associated with eligible river corridors (see 20.b and 20.c within Management Area 20) will be managed to perpetuate their eligibility for designation. Management activities that enhance conditions consistent with maintaining the eligibility of the subject river corridors may be allowed.
- 20.02 Projects must not include development of hydroelectric power facilities or other impoundments.
- 20.03 Livestock grazing levels will not be increased. Measures will be taken to minimize livestock use of the rivers themselves, including construction of alternative water sources outside the corridors. No livestock distribution facilities or convenience structures (i.e. salting and dusting stations, corrals) will be constructed or placed in MA 20.
- 20.04 Minimize visual impacts from prescribed burns, insect and disease control activities, enhancement plantings, salvage operations, trail construction, and maintenance activities.
- 20.05 No new special uses or permits for utility or transmission lines will be considered unless there is no reasonable alternative, and scenic, recreational, and fish and wildlife values have been evaluated.
- 20.06 Insect and disease control actions will be limited to outbreaks that threaten the scenic character of the corridor or resources values of adjacent federal or non-federal lands. Selected control measures will be those that have the least possible impact on the “outstandingly remarkable” features of the river corridor while still effectively limiting the outbreak.

### **20a. Wild River Segment - Segment III, Little Missouri (designated)**

- 20a.01 Eliminate user-defined campsites, and designate suitable campsites.
- 20a.02 No recreation resource management activities, except for necessary development and maintenance of trails and primitive camping sites, will take place within the wild segment of the river corridor.
- 20a.03 Construct major public use areas and facilities outside the river corridor.

## 20b. Scenic River Segments

Cossatot River Segments B and C; congressionally designated	Segment B: From where NFS Road 31 leaves the river to the Forest proclamation boundary. Segment C: A 4.4 mile section of the Brushy Creek tributary
Little Missouri River Segment I; congressionally designated	Headwaters, T3S, R28W, Section 32, to NFS Road 512, T4S, R27W, Section 21
Ouachita River Segment IV; eligible	From Hwy. 298 bridge to backwaters of Lake Ouachita
North Fork of the Saline River Segment II; eligible	From NFS Road 132C to NFS Road 179
Glover River; recommended for designation	Confluence of East and West Forks, T3S, R23E, Sec 7 south to the Forest boundary, T4S, R23E, Sec 32
Mountain Fork River; eligible	That part of the river from the Oklahoma Highway 4 bridge downstream to the upper end of Broken Bow Lake (600-foot elevation level)
Alum Fork of the Saline River; eligible	From Lake Winona Dam to the forest boundary at the South side of T2N

Eligible = eligible for consideration as components of the National System, but suitability studies are deferred to the respective States due to the very limited extent of National Forest (or other federal) lands within the corridors of these rivers.

- 20b.01 Construction of structures to improve fish and game habitat; river access; grazing; protection from fire, insects, or disease; fuels management (as specified in the Fire Management Plan); and rehabilitation or stabilization of damaged resources must be carried out in such a manner that the outstandingly remarkable values of the river corridor are not impaired. Make no substantial additions to existing improvements or structures, unless necessary for safety or to improve environmental conditions.
- 20b.02 Mining related operations can have no more than one-half acre of surface impact unreclaimed during the course of the operation.
- 20b.03 Construct no major public use areas. Design simple recreation facilities to protect the values of the river area and provide for the safety and convenience of the users in keeping with a natural setting.
- 20b.04 Road construction not associated with recreation development will be limited to temporary roads built to the minimum level to meet resource management needs.

## 20c. Recreational River Segments

Cossatot River Segment A; congressionally designated	From confluence with Mine Creek to where NFS Road 31 breaks away from river in T4S, R30W, Section 12
Little Missouri River Segment II; eligible	From Road 512, T4S, R27W, Section 21 to property line between USFS and Lowery property in T4S, R27W, section 28
Ouachita River Segment I; eligible	Headwaters, T1S, R31W, Section 8, to the Forest boundary at Acorn
Ouachita River Segment III; eligible	From Pine Ridge boundary to the bridge on Hwy. 298, near Sims
North Fork of the Saline River Segment I; eligible	From the headwaters T2N, R18W, Section 2 to NFS Road 132C
North Fork of the Saline River Segment III; eligible	From NFS Road 179 to the east line of the NW $\frac{1}{4}$ , Section 22, T2N, R17W
North Fork of the Saline River Segment IV; eligible	From Segment III at the east line of the NW $\frac{1}{4}$ , Section 22, T2N, R17W, to the Forest boundary at the west side of Section 26, T2N, R17W
Middle Fork of the Saline River; eligible	From the headwaters in T1N, R20W, Section 2, to the Forest boundary in T1N, R19W, Section 7
Caddo River; eligible	The Caddo River begins in southwestern Montgomery County (T3S, R27W, Section 30). It flows east past the community of Black Springs, then turns southeast near Norman, then past Caddo Gap. Approximately 1 mile downstream from Caddo Gap, the river leaves the Forest proclamation boundary (T4S, R24W Section 19). Total length inside Forest boundary is 25.2 miles (1.9 National Forest and 23.3 private).

Eligible = eligible for consideration as components of the National System, but suitability studies are deferred to the respective States due to the very limited extent of National Forest (or other federal) lands within the corridors of these rivers.

- 20c.01 Any new public use areas or additions to existing improvements or structures that are needed to protect the values of the river area and/or to provide for the safety and convenience of users will adhere to individual river management plans and classifications.
- 20c.02 Mining related operations can have no more than one-half acre of surface impact unreclaimed during the course of the operation.
- 20c.03 New special use permits for compatible uses such as fencing to control livestock or temporary roads may be issued.
- 20c.04 Existing permits will be modified to ensure that existing structures and improvements are maintained in a manner compatible with the river environment.
- 20c.05 Construction and reconstruction of roads and bridges are prohibited except for uses that are permitted by the Wild and Scenic River Act and as needed to meet public safety objectives.

20c.06 Road construction not associated with recreation development will be limited to temporary roads built to the minimum level for resource management needs.

## **Management Area 21. Old Growth Restoration**

### **Wildlife Habitat**

21.01 Treatments for midstory reduction should be used where necessary in core and replacement stands to return these areas to open, fire-maintained conditions. Trees cut in midstory treatments may be made available for firewood.

21.02 Retain all snags and den trees during timber harvest, site preparation, and wildlife habitat improvements. Standing snags will not be felled, unless necessary for safety.

### **Livestock Grazing**

21.03 Restrict livestock, except where grazing is necessary, based on site-specific analysis, to mimic the ecological role formerly played by elk and bison. When livestock are in use on surrounding lands, consider their impacts on vegetation on a site-specific basis; in general, fencing should not be necessary. Livestock will not be physically excluded from MA 21.

### **Vegetation Management**

21.04 Emphasize regeneration of fewer, larger blocks (as opposed to many smaller openings), in order to minimize edge and maximize the continuity of future old growth conditions within the management area.

21.05 During thinning (core stands and replacement stands) and regeneration harvests (replacement stands), where feasible, maintain 10 to 30 percent of the basal area of pine stands, and 30 to 50 percent of the basal area of mixed pine-hardwood stands, in dominant or co-dominant hardwoods. Favor oaks and hickories. During regeneration, retain large overstory hardwoods distributed throughout the stand at a minimum rate of 5 sq. ft. of basal area per acre where available.

21.06 Commercial and pre-commercial thinning will be used in replacement stands and initially in core stands to shape them toward open, fire-maintained conditions.

21.07 In replacement stands, maintain total stocking to 50-90 square feet basal area through thinning. Emphasize irregular spacing of leave trees; some areas of each stand may have much higher or much lower densities.

21.08 Regenerate replacement stands through natural seeding, using irregular seedtree or irregular shelterwood reproduction cutting methods. In general, pine-grass conditions (large trees with an open canopy and sparse midstory maintained by fire) should be conducive to natural regeneration without extraordinary efforts. Use thinning and burning before and following regeneration harvest to develop advanced reproduction.

21.09 Desired species composition and structure within old growth areas will be established and maintained by applying silvicultural practices and regular prescribed fire, including growing season burns. Limit mechanical site preparation (shear, chop, rip) to sites where fire and hand tools have proven inadequate.

**Table 3.21 Even-Aged Management in MA 21**

Maximum Size of Regeneration Area (Acres) <sup>1,2</sup>		Approximate Harvest Age <sup>3</sup>		
Pine, Pine-Hardwood	Hardwood, Hardwood-Pine	Pine, Pine-Hardwood	Hardwood, Hardwood-Pine	
80	N/A	70-160	Site Index < 80	Site Index > 80
			70-100	100-130

<sup>1</sup> Maximum size of regeneration opening may be exceeded with approval from the Forest Supervisor up to a maximum of 80 acres for pine, pine/hardwood and 40 acres for hardwood and hardwood/pine.

<sup>2</sup> Acreage limitations for regeneration harvest cuts do not apply within areas affected by severe natural catastrophic events nor are they applicable where acquired lands have been cut-over prior to Forest Service acquisition.

<sup>3</sup> Approximate regeneration harvest age will be 35 years in loblolly pine stands when completing a final harvest cut intended for plant community restoration.

## Minerals and Geology

21.10 Common variety mineral-related operations can have no more than one-half acre of surface impact unreclaimed during the course of the operation.

## Transportation

21.11 New road construction will be kept to a minimum. All new roads constructed for access to timber sales will be temporary or intermittent service and closed after use.

## Fire and Fuels

21.12 Burn on an irregular, one- to four-year cycle to achieve desired conditions. Timing, season, and intensity of burning should vary in order to maximize the diversity of ecological conditions, and to mimic the role of stochastic events.

## Pest Management

21.13 Control active SPB infestations using approved protocols.

21.14 Trees vacated by the SPB will not be cut unless necessary to insure public and employee safety.

## **Management Area 22. Renewal of the Shortleaf Pine-Bluestem Grass Ecosystem and Red-cockaded Woodpecker (RCW) Habitat**

### **Cavity Tree Clusters**

22.01 An active RCW cavity tree cluster is defined as the minimum convex polygon containing all cavity trees in use by a group of RCWs and at least a 200-foot wide buffer of continuous forest; each minimum convex polygon plus its buffer is at least 10 acres in size. Active RCW clusters, recruitment stands, and recruitment clusters are all unsuitable for timber production. Active RCW clusters will be protected from disturbance by thinning, tree skidding, or midstory reduction treatments during nesting, which occurs on the Ouachita National Forest from approximately April 1 to July 1. These general dates will be used unless there is more specific nesting season information for the group involved. All trees within a cluster that has cavities actively used or suitable for use by RCWs will be protected insofar as possible from damage.

22.02 Replacement stands will be designated and managed for each active RCW cavity tree cluster and its associated potential breeding group as future nesting habitat. The selection criteria for these replacement stands include stands that: 1) are at least 10 acres in size; 2) are suitable for nesting, considering stand age, forest type and availability of relicts; 3) are adjacent to or within one-half mile of the active cluster; and 4) are 20 to 30 years younger than the cavity tree cluster to be replaced. Replacement stands are not required to have additional designated foraging acres. Inactive RCW clusters may be designated as replacement stands.

22.03 Recruitment clusters will be established at the rate of at least 10 percent of the total number of active clusters in the ONF population. These recruitment clusters will be provisioned with serviceable cavities. Inactive or abandoned cavity tree clusters may be designated as recruitment clusters.

22.04 Recruitment stands will be designated within  $\frac{1}{4}$  to  $\frac{1}{2}$  mile from an active cluster, recruitment cluster or other recruitment stand when the RCW population is below the population objective. These stands will occur at a rate determined by subtracting the sum of the number of active clusters and recruitment clusters from the population objective (400 clusters in Arkansas, 50 in Oklahoma). Recruitment stands would be designated but would not have to be provisioned with serviceable cavities. Recruitment stands would otherwise have to meet nesting habitat requirements, including adequate associated foraging habitat.

22.05 Consistent with Management Area 9 direction, vegetation management treatments (e.g., basal area reduction, midstory reduction) may be performed within streamside management areas to the extent that nesting habitat in the vicinity of cavity trees needs to be improved. The intent of this standard is NOT to treat all streamside areas, only those of critical value as RCW nesting habitat.

## Foraging Habitat

22.06 MA 22 will be managed to provide “good quality foraging habitat,” as defined in the Revised Recovery Plan for the Red-cockaded Woodpecker (see Appendix F).

22.07 For RCW clusters on National Forest (NF) land in which the one-half mile foraging zone overlaps with non-NF land, 100 percent of the foraging habitat will be provided on NF land unless there is an agreement with the landowner(s) (which may include state government agencies).

## Livestock Grazing

22.08 Livestock grazing may utilize up to 25 percent of the annual forage growth, but will not exceed this amount.

## Silviculture

22.09 For any planned timber harvest, the following priorities will be used to select pine trees for retention:

- 1) Relict trees
- 2) Potential cavity trees
- 3) Trees 9.6 inches and greater dbh
- 4) Trees less than 9.6 inches dbh

22.10 To minimize fragmentation of RCW habitat, no more than 20 percent of the area within one-fourth mile radius of an active RCW cluster (45 of 220 acres), including non-NF land, can be less than 30 years old. If the acreage of undesirable RCW habitat condition exceeds 20 percent, regeneration must be deferred.

22.11 Within RCW management areas (HMAs), a modified (irregular) shelterwood or modified seedtree method of harvest will be used periodically to regenerate native shortleaf pine (and, typically, a hardwood component), retaining from 10 to 30 square feet of residual pine basal area. Stands selected for such regeneration harvests will not exceed 25 acres in MA22a or 80 acres in MA22b except under the circumstances specified in Table 3.22 and standard 22.12.

**Table 3.22 Even-Aged Management in MA 22**

Management Area		Maximum Size of Regeneration Area (Acres) <sup>1</sup>		Approximate Harvest Age <sup>2</sup>		
		Pine, Pine-Hardwood <sup>3</sup>	Hardwood, Hardwood-Pine <sup>4</sup>	Pine, Pine-Hardwood	Hardwood, Hardwood-Pine	Site Index < 80
22	a	25	10	70-120	70-100	100-130
	b	80	10	120	70-100	100-130

<sup>1</sup> Acreage limitations for regeneration harvest cuts do not apply within areas affected by severe natural catastrophic events nor are they applicable where acquired lands have been cut-over prior to Forest Service acquisition.

<sup>2</sup> Approximate regeneration harvest age will be 35 years in loblolly pine stands when completing a final harvest cut intended for plant community restoration.

<sup>3</sup> Maximum size of regeneration openings may be exceeded under the circumstances specified in standard 22.12.

<sup>4</sup> Maximum size of regeneration openings may be exceeded with approval from the Forest Supervisor up to a maximum of 40 acres for hardwood and hardwood/pine.

- 22.12 Within RCW HMAs and consistent with Forest-wide direction, clearcutting may be used to remove off-site loblolly pine and regenerate shortleaf pine-dominated forests. Such clearcut restoration areas will not exceed 40 acres if they occur within one mile of an active RCW cavity tree cluster, or 80 acres otherwise.
- 22.13 Conduct modified even-aged regeneration cutting in at least 4 percent and no more than 8.3 percent of the suitable pine forest acreage within project areas per 10-year entry cycle. The goal of this standard is to insure long-term perpetuation of suitable habitat.
- 22.14 Regeneration will not occur in the oldest one-third of the age classes unless they contain more acres than needed for a balanced age-class distribution or they exceed the rotation age of 120 years.
- 22.15 Active RCW clusters, replacement stands, recruitment stands, and recruitment clusters are unsuitable for timber production.
- 22.16 Thin stands to increase their suitability as RCW habitat, to reduce SPB risk, and to promote other species or attributes associated with open understories.
- 22.17 In active, inactive, and recruitment clusters, retain no more than 10 square feet of basal area per acre in overstory hardwoods. Remove all hardwoods within 50 feet of cavity trees.

## **Other Sources of Design Criteria**

Part 3 of the Forest Plan contains the design criteria that are essential to plan or implement projects. Additional project guidance is contained in Additional Guidance, Appendix F.

# Glossary of Commonly Used Terms

## A

**accessibility:** The relative ease or difficulty of getting from or to someplace, especially the ability of a site, facility, or opportunity to be used by persons of varying physical and mental abilities.

**activity:** A measure, course of action, or treatment that is undertaken to directly or indirectly produce, enhance, or maintain forest and rangeland outputs or achieve administrative or environmental quality objectives.

**adit:** A horizontal or nearly horizontal passage driven (excavated) from the surface to access the ore body for mining purposes. Sometime referred to as a tunnel; however, a tunnel is technically different in that it is open to the surface at both ends.

**affected environment:** The relationship of the physical environment to the changes that will or may take place as a result of human activity.

**age-class distribution:** An age-class is a distinct aggregation of trees originating from a single natural event or regeneration activity, or a grouping of trees, e.g., a 10-year age class, as used in inventory or management. An age-class distribution is the location and/ or proportionate representation of different age classes in a forest.

**air pollution:** The presence of substances in the atmosphere, particularly those that do not occur naturally. The substances are generally contaminants that substantially alter or degrade the quality of the atmosphere. The term is often used to identify undesirable substances produced by human activity, that is, anthropogenic air pollution. Air pollution usually designates the collection of substances that adversely affect human health, animal, and plants; deteriorates structures; interferes with commerce; or interferes with the enjoyment of life.

**air quality (PSD) class:** Three broad classifications established by the Clean Air Act to help prevent significant deterioration of air quality for all areas of the country that are known (or assumed) to be attaining National Ambient Air Quality Standards.

**Class I:** Geographic area designated for the most stringent degree of air quality protection from future degradation of air quality. These congressionally-designated areas include wilderness areas over 5000 acres in size that were established as of August 7, 1977.

**Class II:** Geographic area designated for a moderate degree of protection from future air quality degradation. Any area that is not a Class I area is considered Class II.

**Class III:** Geographic areas designated for the least protection from future air quality degradation. No Class III areas have been designated to date.

**allocation:** The assignment of management prescriptions or combination of management practices to a particular land area to achieve the goals and objectives of the alternative.

**allowable sale quantity (ASQ):** The quantity of timber that may be sold from the area of suitable land covered by the Forest Plan for a time period specified by the Forest Plan. This quantity is usually expressed on an annual basis as the "average annual allowable sale quantity."

**alternative:** In forest planning, a mix of policies, plans, or projects proposed for decision making designed in response to public issues or management concerns.

**analysis area:** A collection of lands, not necessary contiguous, sufficiently similar in character, that they may be analyzed at the forest plan level.

**aquatic ecosystem:** System that includes: streams, lakes, the stream channel, lake and estuary beds, water, biotic community, and associated habitat features.

**aquatic habitat types:** The classification of instream habitat based on location within channel, patterns of water flow, and nature of flow controlling structures. Habitat is classified into a number of types according to location within the channel, patterns of water flow, and nature of flow controlling structure. Riffles are divided into three habitat types: low gradient riffles, rapids, and cascades. Pools are divided into seven types: secondary channel pools, backward pools, trench pools, plunge pools, lateral scour pools, dammed pools, and beaver ponds. Glides, the third habitat type, are intermediate in many characteristics between riffles and pools. It is recognized that as aquatic habitat types occur in various parts of the country, additional habitat types may have to be described. If necessary, the regional fishery biologist will describe and define the additional habitat types.

**arterial roads:** Roads that provide service to large land areas and usually connect with public highways or other forest arterial roads to form an integrated network of primary travel routes. The location and standard are often determined by a demand for maximum mobility and travel efficiency rather than specific resource management service. They are usually developed and operated for long-term land and resource management purposes and constant service. These roads generally serve areas more than 40,000 acres.

**authorized use:** Specific activity or occupancy, including a ski area, historical marker, or oil and gas lease, for which a special authorization is issued.

## B

**basal area (BA):** the area, in square feet, of the cross section of a single tree measured at 4.5 feet above ground, usually expressed as square feet per acre.

**best management practice (BMP):** A practice, or a combination of practices determined to be the most effective and practical means of preventing or reducing the amount of pollution generated by non-point sources to a level compatible with water quality goals.

**biodiversity:** The variety of life, including the variety of gene pools, species, plant and animal communities, ecosystems, and the processes through which individual organisms interact with one another, and their environments.

**biological control:** The use of natural means, or agents, to control unwanted pests. Examples include introduced or naturally occurring insects, bacteria, or fungi that act as predators, parasites, or disease agents of pests. Biological controls may sometimes be alternatives to mechanical or chemical means.

## C

**canopy cover:** The percent of a fixed area covered by the crown of an individual plant species or delimited by the vertical projection of its outermost perimeter. Small openings in the crown are included. Used to express the relative importance of individual species within a vegetation community, or to express the canopy cover of woody species. Canopy cover may be used as a measure of land cover change or trend. Often used for wildlife habitat evaluations.

**canopy:** The cover of branches and foliage formed collectively by the crown of adjacent trees and other woody growth.

**capability:** The potential of a land area to produce resources, supply goods and services, and allow resource uses under an assumed set of management practices and a given level of management intensity. Note: capability depends upon the current condition and site conditions including climate, slope, land form, soil and geology, and the application of management practices and protection from fire, insects, and disease.

**clearcutting:** The harvesting in one cut of all trees on an area for the purpose of creating a new stand. The area harvested may be a patch, stand, or strip large enough to be mapped or recorded.

**collector road:** Roads that serve smaller land areas and are usually connected to a forest arterial or public highway. They collect traffic from forest local roads or terminal facilities. The location and standard are influenced by long-term multi-resource service needs, and travel efficiency. Forest collector roads may be operated for constant or intermittent service, depending on land-use and resource management objectives for the area served by the facility. These roads generally have two or more local roads feeding into them and generally serve an area exceeding 10,000 acres.

**commercial thinning:** Any type of thinning producing merchantable material at least equal to the value of the direct cost of harvesting.

**commodity:** Tangible or physical output, such as timber, livestock, minerals, water, etc.

**common variety minerals:** Common Variety Mineral Materials (CVMM) - Authority for the disposal of mineral materials is provided by the Materials Act of July 31, 1947 (30 U.S.C. 601 et seq.), as amended. Common variety mineral materials include sand, gravel and building stone. On the Ouachita National Forest in Arkansas, per Section 323 of P.L. 100-446 (10=9/27/1988) it also includes deposits of quartz mineral. This includes quartz crystal used for esthetic purposes, high quality chemically pure quartz used for high-tech industrial purposes, novaculite, Tripoli, and other forms of quartz mineral. Common variety mineral materials are also referred to as "Salable" minerals and are available for sale by the Forest Service under contracts and permits issued by District Rangers.

**concern level:** A particular degree or measure of viewer interest in the scenic qualities of the landscape as viewed from travelways and use areas, rated level 1 (highest concern) to 3 (lowest concern).

**construction:** The displacement of vegetation, soil and rock, and the installation of man-made structures involved in the process of building a facility.

**Continuous Inventory of Stand Conditions (CISC):** the USDA Forest Service, Southern Region's forest stand database containing descriptive and prescriptive data about mapped stands of forest land.

**conversion (forest management):** A change from one forest type to another in a stand on land that has the capability of both forest types.

**coppice:** A method of regenerating a stand in which all trees in the previous stand are harvested and the majority of regeneration is from stump sprouts or root suckers.

**critical habitat:** Habitat as defined by the U.S. Fish and Wildlife Service to be essential to meet the needs of an endangered species.

**cultural resources:** Physical remains of districts, sites, structures, buildings, networks or objects that were used by humans. They may be historic, prehistoric, archaeological, architectural or spiritual in nature. Cultural resources are non-renewable.

## D

**decommission:** To stabilize or restore a road to a more natural state without any further maintenance. The entrance is obscured and the wheel tracks or pathway is no longer continuous and suitable for travel. The travel way has been removed from the transportation system. Decommissioning may include one or more of the following:

- a. Reestablishing former drainage patterns, stabilizing slopes, and restoring vegetation
- b. Blocking the entrance to a road; installing water bars
- c. Removing culverts, reestablishing drainage-ways, removing unstable fill, pulling back road shoulders, and scattering slash on the roadbed
- d. Completely eliminating the roadbed by restoring natural contours and slopes
- e. Other methods designed to meet the specific conditions associated with the unneeded road

**defined stream channel:** A channel which exhibits evidence of annual scour and that is at least one foot wide and three inches deep.

**demand:** The amount of an output that users are willing to take at specified price, time period and condition of sale.

**den trees:** Living or dead trees with cavities used by wildlife.

**desired condition:** An expression of resource goals that have been set for a unit of land. Written as a narrative description of the landscape as it appears when goals have been achieved.

**developed recreation area:** Relatively small, distinctly defined area where facilities are provided for concentrated public use. Examples include campgrounds, picnic areas, and swimming areas.

**developed recreation:** Recreation that requires facilities that in turn result in concentrated use of an area. Examples of recreation areas are campgrounds and ski areas; facilities in these areas might include roads, parking lots, picnic tables, toilets, drinking water, and buildings.

**diameter at breast height (dbh):** the standard method for measuring tree diameter at 4.5 feet from the ground.

**dispersed recreation:** A general term referring to recreation use outside a developed recreation site, this includes activities such as scenic driving, rock climbing, boating, hunting, fishing, backpacking, and recreation in primitive environments.

**disturbance (ecology):** Any relative discrete event in time that disrupts the ecosystem, community, or population structure and changes resources, substrate availability, or the physical environment.

**diversity:** The distribution and abundance of different plant and animal communities and species within the area covered by a land and resource management plan.

**dominant:** Trees with crowns extending above the general level of the main canopy of even-aged groups of trees. They receive full light from above, and partly from the sides.

## E

**early seral:** Typically denotes age class; used interchangeably with early successional habitat and grass/forb/shrub stage. Vegetative condition typically characterized by low density to no canopy cover and an abundance of herbaceous ground cover. May include forest 0 to 10 years of age, maintained openings, pastures, or open woodlands.

**early successional:** Typically denotes structural class; used interchangeably with early seral habitat and grass/forb/shrub stage. Vegetative condition typically characterized by low density to no canopy cover and an abundance of herbaceous ground cover. May include forest 0 to 10 years of age, maintained openings, balds, or open woodlands.

**ecosystem management:** An ecological approach to natural resource management to assure productive, healthy ecosystem by blending social, economic, physical and biological needs and values.

**ecosystem:** A complete interacting system of organisms and their environment.

**effects:** Results expected to be achieved, or actually achieved, relative to physical, biological and social (cultural and economic) factors resulting from the achievement of outputs. Examples of effects are tons of sediment, pounds of forage, person-years of employment, income, etc. There are direct effects, indirect effects and cumulative effects.

**endangered species:** Any species of animal or plant that is in danger of extinction throughout all or a significant portion of its range. Plant or animal species identified by the Secretary of the Interior as endangered in accordance with the 1973 Endangered Species Act.

**endemic:** Species restricted to a particular geographic area. Usually limited to one or a few small streams or a single drainage.

**environment:** All the conditions, circumstances, and influences surrounding and affecting the development of an organism, or group of organisms.

**environmental analysis:** An analysis of alternative actions and their predictable short and long-term environmental effects, which include physical, biological, economic, social and environmental design factors and their interaction. (36 CFR 219.3)

**environmental impact statement:** A disclosure document revealing the environmental effects of a proposed action, which is required for major federal actions under Section 102 of the National Environmental Policy Act, and released to the public and other agencies for comment and review. Final Environmental Impact Statement (FEIS) is the final version of the statement disclosing environmental effects required for major federal actions under Section 102 of the National Environmental Policy Act.

**environmental impact:** Used interchangeably with environmental consequence or effect.

**epidemic:** Applied to a population of pests that build up, often rapidly, to highly abnormal and generally injurious levels.

**erosion:** The wearing away of the land surface by the action of wind, water, or gravity.

**essential habitat:** Habitat in which threatened and endangered species occur, but which has not been declared as critical habitat. Occupied habitat or suitable unoccupied habitat necessary

for the protection and recovery of a federally designated threatened or endangered species.

**evapotranspiration:** The transfer of water vapor to the atmosphere from soil and water surfaces (evaporation), and from living plant cells (transpiration).

**even-aged management:** The application of a combination of actions that results in the creation of stands in which trees of essentially the same age grow together. Managed even-aged forests are characterized by a distribution of stands of varying ages (and, therefore, tree sizes) throughout the forest area. The difference in age between trees forming the main canopy level of a stand usually does not exceed 20 percent of the age of the stand at harvest rotation age. Regeneration in a particular stand is obtained during a short period at or near the time that a stand has reached the desired age or size for regeneration and harvested. Clearcut, shelterwood, or seed tree cutting methods produce even-aged stands. (36 CFR 211.3)

**even-aged:** A forest (stand) composed of trees having no, or relatively small, differences in age.

**existing road:** Roads, owned or administered by various agencies, which are wholly or partly within or adjacent to and serving the National Forests and other areas administered by the Forest Service, or intermingled private lands (ref: FSM 7705.21). These roads may or may not be included on the current Forest transportation inventory, but are evident on the ground as meeting the definition of a road.

**existing wilderness:** Those areas already designated as wilderness by Congress.

## F

**facility:** A single or contiguous group of improvements that exists to shelter or support Forest Service Programs. The term may be used in either a broad or narrow context; for example, a facility may be a ranger station compound, lookout tower, leased office, work center, separate housing area, visitor center, research laboratory, recreation complex, utility system, or telecommunications site.

**federally listed:** Any plant or animal species listed as threatened or endangered under the Endangered Species Act.

**felling:** The cutting down of trees.

**Final Environmental Impact Statement (FEIS):** The statement of environmental effects required for major Federal actions under Section 102 of the National Environmental Policy Act and released to the public and other agencies for comment and review.

**fire condition class:** Based on coarse scale national data, classes measure general wildfire risk:

**Class One:** Fire regimes are usually within historical ranges. Vegetation composition and structure are intact. The risk of losing key ecosystem components from the occurrence of fire is relatively low.

**Class Two:** Fire regimes on these lands have been moderately altered from their historical range by increased or decreased fire frequency. A moderate risk of losing key ecosystem components has been identified.

**Class Three:** Fire regimes on these lands have been significantly altered from their historical return interval. The risk of losing key ecosystem components from fire is high. Fire frequencies have departed from historical ranges by multiple return intervals. Vegetation composition, structure, and diversity have been significantly altered.

**fire regime:** A generalized description of the role a fire plays in the ecosystem. It is characterized by fire frequency, predictability, seasonality, intensity, duration, scale (patch size), and regularity or variability. Five combinations of fire frequency exist.

**fire use:** The combination of wildland fire use and prescribed fire application to meet resource objectives.

**firewood:** Wood that is used for fuel. Synonymous with fuelwood.

**floodplains:** The lowland and relatively flat area adjoining inland waters, including at a minimum, that area subject to a one percent or greater chance of flooding in any given year, and soil inundated by the 100-year flood.

**forage:** All browse and non-woody plants that are available to livestock or game animals used for grazing or harvested for feeding.

**foreground:** The area between the viewer and the middle ground in a landscape; generally from 0 to 1/2 mile distance.

**Forest and Rangeland Renewable Resources Planning Act of 1974:** An act of Congress requiring the preparation of a program for the management of the national forests' renewable resources, and of land and resource management plans for units of the National Forest System. It also requires a continuing inventory of all National Forest System lands and renewable resources.

**forest health:** The perceived condition of a forest derived from concerns about factors as its age, structure, composition, function, vigor, presence of unusual levels of insects or disease, and resilience to disturbance.

**forest land:** Land at least 10 percent occupied by forest trees of any size, or formerly having had such tree cover, and not currently developed for non-forest use. Lands developed for non-forest use including areas for crops, improved pasture, residential, or administrative areas, improved roads of any width, adjoining road clearing, and power line clearing of any width.

**Forest Service Handbook (FSH):** A handbook that provides detailed instructions for proceeding with specialized phases of programs or activities for Forest Service use.

**Forest Service Manual (FSM):** Agency manuals that provide direction for Forest Service activities.

**Forest Supervisor:** The official responsible for administering the National Forest System lands in a Forest Service administrative unit. This may consist of two or more national forests or all the forests within a state. The Supervisor reports to the regional forester.

**forest type:** A descriptive term used to group stands of similar composition and development because of given ecological factors, by which they may be differentiated from other groups of stands.

**forest:** an area of trees with overlapping crowns.

**forest-wide standard:** A performance criterion indicating acceptable norms, specification, or quality that actions must meet to maintain the minimum considerations for a particular resource. This type of standard applies to all areas of the forest regardless of the other management prescriptions applied.

**fuel break:** Any natural or constructed barrier used to segregate, stop, and control the spread of fire, or to provide a control line from which to work.

**fuel loading:** The amount of fuel (flammable natural materials) expressed quantitatively in terms of weight of fuel per unit area.

**fuels management:** The planned treatment of fuels to achieve or maintain desired fuels conditions.

**fuels:** Any materials that will carry and sustain a forest fire, primarily natural materials, both live and dead.

## G

**goal:** A concise statement that describes a desired condition to be achieved. It is expressed in broad, general terms and is timeless in that it has no specific date by which it is to be completed. Goal statements form the principal basis from which objectives are developed. (36 CFR 219.3)

**goods and services:** The various outputs, including on-site uses, produced from forest and rangeland resources. (36 CFR 219.3)

**grassland:** Areas on which vegetation is dominated by grasses, grass-like plants, forbs, and/or cryptogams (mosses, lichens, and ferns), provided these areas do not qualify as built-up land or cultivated cropland. Examples include tall grass and short grass prairies, meadows, marshes, pasturelands, and areas cut for hay.

**grazing:** Consumption of range or pasture forage by animals.

**ground water:** Subsurface water in a saturated zone or geologic stratum.

**group selection:** An uneven-aged regeneration method in which trees are removed periodically in small groups. Uneven age classes for trees are established in small groups. The width of groups is about twice the height of the mature trees, with small opening providing microenvironments suitable for tolerant regeneration, and the larger openings providing conditions suitable for more intolerant regeneration.

**growing season:** The months of the year a species of vegetation grows, from leaf emergence to leaf fall.

## H

**habitat:** The native environment of an animal or plant in which all the essentials for its development, existence, and reproduction are present.

**harvest method:** A procedure by which a stand is logged. Emphasis is on meeting logging requirements rather than silvicultural objectives.

**herbicide:** A pesticide used for killing or controlling the growth of plants.

**hydric soils:** Soils developed in conditions where soil oxygen is limited by the presence of saturated soil for long periods during the growing season.

**I**

**infestation:** The attack by macroscopic organisms in considerable concentration. Examples are infestations of tree crowns by gypsy moth, timber by termites, soil or other substrates by nematodes or weeds.

**instream flow:** The volume of surface water in a stream system passing a given point at a given time.

**integrated pest management (IPM):** The maintenance of destructive agents, including insects at tolerable levels, by the planned use of a variety of preventive, suppressive, or regulatory tactics and strategies that are ecologically and economically efficient and socially acceptable.

**intermediate stand treatments:** 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. Types include thinning, release and improvement cuttings.

**intermittent service road:** A road developed and operated for periodic service and closed for more than one year between periods of use.

**interpretive services:** Visitor information services designed to present inspirational, educational, and recreational values to forest visitors in an effort to promote understanding, appreciation, and enjoyment of their forest experience.

**invasive species:** A species that can move into an area and become dominant either numerically or in terms of cover, resource use, or other ecological impacts. An invasive species may be native or non-native.

**L**

**land acquisition:** Obtaining full landownership rights by donation, purchase, exchange, or condemnation.

**land exchange:** The conveyance of non-federal land or interests in the land in exchange for National Forest System land or interests in land.

**landing:** A cleared area in the forest to which logs are yarded or skidded for loading onto trucks for transport.

**land line location:** Legal identification and accurate location of national forest property boundaries.

**landscape character:** Particular attributes, qualities, and traits of a landscape that give it an image and make it more identifiable or unique. Levels include Natural Evolving, Natural Appearing, Pastoral/Agricultural, Historic, Transitional, Suburban, and Urban.

**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 that are determined by interacting ecosystems.

**leasable minerals:** See minerals (leasable).

**lease:** A contract between the landowner and another granting the latter the right to search for and produce oil, gas, or other mineral substances (as specified in the document) on payment of an agreed rental, bonus, or royalty. This right is subject to the terms, conditions, and limitations specified in the document.

**leave tree:** A tree (marked to be) left standing for wildlife, seed production, etc, in an area where it might otherwise be felled.

**logging:** The cutting and removal of trees from a forest.

## M

**management action:** A set of management activities applied to a land area to produce a desired output.

**management area:** An area with similar management objectives and a common management prescription.

**management direction:** A statement of multiple-use goals, objectives, and standards for attaining them. Management direction is expressed forest-wide, by management prescription, and by management area.

**management emphasis:** The multiple-use values to be featured or enhanced within a given management prescription or management area.

**management indicator species (MIS):** An animal or plant selected for use as a planning tool in accordance with 1982 NFMA regulations (36 CFR 219.19). These species are used to help set objectives, analyze effects of alternatives, and monitor Forest Plan implementation. They are chosen because their population changes are believed to indicate the effects of management on selected biological components.

**management practice:** A specific action, measure, course of action, or treatment undertaken on a forest.

**management prescription:** Management practices and intensity selected and scheduled for application on a specific area to attain multiple use and other goals and objectives. (36 CFR 219.3)

**management type:** The tree species or species group that should be grown on a specific site, whether or not it presently occupies the site that best suits the particular site soil, aspect, elevation, and moisture provided by the area and the forest plan's objectives.

**mast:** The fruit of trees such as oak, beech, sweet chestnut and also the seeds of certain pines; for example, shortleaf and loblolly pines, particularly where considered as food for livestock and certain kinds of wildlife.

**mature forest:** A broad term for the stage at which most forest components have attained full development, particularly in height and seed production.

**mesic:** Sites or habitats characterized by intermediate moisture conditions, i.e., neither decidedly wet or dry.

**mineral entry:** All National Forest System lands which (1) were formerly public domain lands subject to location and entry under the U.S. mining laws, (2) have not been appropriated, withdrawn, or segregated from location and entry, and (3) have been or may be shown to be mineral lands, are open to prospecting for locatable, or hardrock, minerals.

**mineral exploration:** The search for valuable minerals on lands open to mineral entry.

**mineral materials:** Materials such as road aggregate, landscaping rock, rip-rap, and other earthen construction materials. These materials are used to build and maintain trails, roads, and campgrounds; to restore riparian and aquatic habitat; to repair flood damage, etc.

**mineral resource:** A known or undiscovered concentration of naturally occurring solid, liquid, or gaseous material in or on the earth's crust in such form and amount that economic extraction of a commodity is currently or potentially feasible.

**mineral soil:** Weathered rock materials without any vegetative cover.

**minerals, leasable:** Coal, oil, gas, phosphate, sodium, potassium, oil shale and geothermal steam on public domain and acquired status lands, and hard rock minerals on acquired lands.

**minerals, locatable:** Hard rock minerals on public domain status land. May include certain nonmetallic minerals and uncommon varieties of mineral materials.

**minimum level:** The minimum level of management which complies with applicable laws and regulations, including prevention of significant or permanent impairment of the long-term productivity of the land, and which would be needed to maintain the land as a National Forest, and to manage uncontrollable outputs, together with associated costs and inputs.

**mining claims:** That portion of the public estate held for mining purposes in which the right of exclusive possession of locatable mineral deposits is vested to the locator of a deposit.

**mitigation:** Actions to avoid, minimize, reduce, eliminate, or rectify the impact of a management practice.

**modified seed tree:** A timber harvest cut designed to obtain natural regeneration from seed trees left for that purpose. Approximately 10-20 sq. ft. of pine and hardwood basal area per acre are retained in the overstory. Seed trees are retained indefinitely. This cut will establish a two-aged stand. This treatment differs from a traditional seedtree by retaining a mix of hardwoods and pines in the overstory after regeneration.

**modified shelterwood:** A timber harvest cut designed to establish natural regeneration and develop a two-aged stand. Approximately 20-40 sq. ft. of pine and hardwood basal area per acre are retained in the overstory. After seedlings are established, the overstory may be thinned again, to a density that will provide for the development of regeneration. The remaining large trees are retained indefinitely. This treatment differs from a traditional shelterwood by retaining a mix of hardwoods and pines in the overstory after regeneration.

**monitoring and evaluation:** The evaluation on a sample basis of Forest Plan management practices to determine how well objectives have been met, as well as the effects of those management practices on the land and environment.

**monitoring:** The periodic evaluation on a sample basis of Forest Plan management practices to determine how fully objectives have been met, how closely management standards have been applied, and what effects those practices had on the land and environment.

**motorized equipment:** Machines that use a motor, engine, or other non-living power source. This includes, but is not limited to such machines as chain saws, aircraft, generators, motor boats, and motor vehicles. It does not include small battery or gas powered hand carried devices such as shavers, wristwatches, flashlights, cameras, stoves, or other similar small equipment.

**multiple use:** Management of all the various resources of the National Forest system so that they are utilized in the combination that will best meet needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; that some lands will be used for less than all of the resources and services; and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of the uses that will give the greatest dollar return or the greatest unit output. (36 CFR 219.3)

## N

**National Environmental Policy Act (NEPA):** An Act, to declare a National policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the nation; and to establish a Council on Environmental Quality.

**National Forest Land and Resource Management Plan (Forest Plan):** A plan developed to meet the requirements of the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended, that guides all natural resource management activities and establishes management standards and guidelines for the National Forest System lands of a given national forest.

**national forest land:** Ouachita National Forest lands for which the Forest Service is assigned administrative responsibility.

**National Forest Management Act (NFMA):** A law passed in 1976 amending the Forest and Rangeland Renewable Resources Planning Act that requires the preparation of Regional and Forest Plans, and regulations to guide that development.

**national forest system (NFS):** All national forest lands reserved or withdrawn from public domain of the United States and acquired through purchase, exchange, donation, or other means. National Grasslands and land utilization projects administered under Title III of the Bankhead-Jones Farm Tenant Act (50 Stat. 525, 7 U.S.C. 1010–1012), and other lands, waters, or interests that are administered by the Forest Service, or are designated for administration through the Forest Service as a part of the system.

**national forest system land:** Federal land that has been legally designated as national forests or purchase units, and other land under the administration of the Forest Service, including experimental areas and Bankhead-Jones Title III land.

**National Recreation Trails:** Trails designated by the Secretary of the Interior or the Secretary of Agriculture as part of the national system of trails authorized by the National Trails System Act. National recreation trails provide a variety of outdoor recreation uses, in or reasonably accessible, to urban areas.

**National Register of Historic Places:** The National Register of Historic Places is the Nation's official list of cultural resources worthy of preservation. Authorized under the National Historic Preservation Act of 1966, the National Register is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect our historic and archaeological resources. Properties listed in the National Register include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology, engineering, and culture. The National Register is administered by the National Park Service, which is part of the US Department of the Interior.

**National Wild and Scenic Rivers System:** Rivers with scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values designated by Congress under the Wild and Scenic Rivers Act of Oct. 2, 1968, for preservation of their free-flowing condition.

**National Wilderness Preservation System:** All lands covered by the Wilderness Act and subsequent wilderness designations, irrespective of the department or agency having jurisdiction.

**natural plant community:** an association of plant species which are endemic to an area and whose characteristics have not been adversely affected by human disturbance.

**natural regeneration:** Renewal by self-sown seed or by vegetative means (regrowth).

**net public benefits:** An expression used to signify the overall long-term value to the nation of all outputs and positive effects (benefits) less all associated inputs and negative effects (costs) whether they can be quantitatively valued. Net public benefits are measured by quantitative and qualitative criteria rather than a single measure or index. The maximization of net public benefits to be derived from management of units of the National Forest System is consistent with the principles of multiple use and sustained yield.

**no surface occupancy (NSO):** Use or occupancy of the land surface for fluid mineral exploration or development is prohibited to protect the identified resource values.

**non-commercial thinning:** The thinning of commercial-size trees without a subsequent sale of associated wood products. Also called a pre-commercial thinning.

**non-motorized recreation:** A recreational opportunity provided without the use of any motorized vehicle. Participation in these activities is accomplished through the use of foot, or horseback travel. Motorized vehicle equipment may be authorized for administrative purposes of resource management.

## O

**objective:** A concise, time-specific statement of measurable planned results that respond to pre-established goals. An objective forms the basis for further planning to define the precise steps to be taken and the resources to be used in achieving identified goals. (36 CFR 219.3)

**obligate species:** a plant or animal species which occurs naturally only in a specific type of habitat.

**obliterate (road):** Eliminate transportation features and reclaim the land occupied by such facilities by restoring as nearly as practicable the natural hydrologic function of the watershed and the natural productive potential of the soil.

**occupancy trespass:** The illegal occupation or possession of National Forest land or property.

**off-highway vehicle (OHV):** Any vehicles capable of being operated off established roads.

**old growth forests:** an ecosystem distinguished by old trees and related structural attributes. Old growth encompasses the later 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.

**old growth:** A stand of trees that is usually well past the age of maturity as defined by the culmination of mean annual increment and often exhibit characteristics of decadence. These characteristics may include, but are not limited to: low growth rates, dead and dying trees, snags, and down woody material.

**open road density:** Calculated by converting the acres within the allocation of a contiguous block into square miles (total acres/640 acres) and then dividing that figure into the linear measure of open roads within the block. Open roads forming the boundary of a contiguous management prescription block contribute half of their length to open road density calculations. An open road is a motorized travelway (including designated motorized trails) used on a regular basis.

**operating plan:** A written plan, prepared by those engaged in mining activity on the forests, and approved by a forest officer for prospecting, exploration, or extraction activities that are slated to take place on National Forest System land.

**outstanding mineral rights:** Instances in which the minerals in federally owned lands were severed prior to the transaction in which government acquired the land. Such rights are not subject to the Secretary of Agriculture's rules and regulations. Removal or extraction of these minerals must be allowed in accordance with the instrument severing the minerals from the surface and under applicable state and local laws and regulations. See also Reserved Mineral Right.

**overstory:** That portion of trees in a two- or multi-layered forest stand that provides the upper crown cover.

## P

**partnership:** Voluntary, mutually beneficial and desired arrangement between the Forest Service and another or others to accomplish mutually agreed-on objectives consistent with the agency's mission and serving the public's interest.

**personal use:** The use of a forest product, such as firewood, for home use as opposed to commercial use or sale.

**persons-at one-time (PAOT):** A recreation capacity measurement term indicating the number of people that can use a facility or area at one time.

**person-year:** About 2,000 working hours that may be filled by one person working during the course of one year or several people working a total of 2,000 hours.

**planning period:** One decade. The time interval within the planning horizon that is used to show incremental changes in yields, costs, effects, and benefits.

**policy:** A guiding principle upon which is based a specific decision or set of decisions.

**possible old growth:** areas with the highest probability of being existing or future old growth based on the preliminary inventory criteria.

**precommercial thinning:** The selective felling or removal of trees in a young stand primarily to accelerate diameter increment on the remaining stems, maintain a specific stocking or stand density range, and improve the vigor and quality of the trees that remain.

**preferred alternative:** The alternative recommended for implementation as the Forest Plan based on the evaluation completed in the planning process.

**prescribed burning:** Controlled application of fire to wildland fuels in either their natural or modified state, under such conditions of weather, fuel moisture, soil moisture, etc. as allow the fire to be confined to a predetermined area and at the same time to produce the intensity of heat and rate of spread required to further certain planned objectives of silviculture, wildlife management, grazing, fire hazard reduction, etc. NOTE: It seeks to employ fire scientifically to realize maximum net benefits with minimum damage and at acceptable cost.

**prescribed fire:** Any fire ignited by management actions to meet specific objectives including disposal of fuels, and controlling unwanted vegetation. The fires are conducted in accordance with prescribed fire plans, and are also designed to stimulate grasses, forbs, shrubs, or trees for range, wildlife, recreation, or timber management purposes.

**prescription:** See Management Prescription, and Silvicultural Prescription.

**proclamation boundary:** The boundary contained within the presidential proclamation that established the national forest.

**program:** Sets of activities or projects with specific objectives, defined in terms of specific results and responsibilities for accomplishments.

**project:** A work schedule prescribed for a project area to accomplish management prescriptions. An organized effort to achieve an objective identified by location, activities, outputs, effects, time period, and responsibilities for execution.

**proposed action:** In terms of the National Environmental Policy Act, the project, activity, or decision that a federal agency intends to implement or undertake. The proposed action described in the Environmental Impact Statement is the Forest Plan.

**public access:** Usually refers to a road or trail route over which a public agency claims a right-of-way for public use.

**public water supply:** A system for the provision to the public of piped water for human consumption if the system serves 15 or more service connections or which regularly serves 25 or more individuals.

**public:** The people of an area, state or nation that can be grouped together by a commonality of interests, values, beliefs or lifestyles.

## R

**range allotment:** A designated area of land available for livestock grazing upon which a specified number and kind of livestock may be grazed under a range allotment management plan.

**range management:** The art and science of planning and directing range use to obtain sustained maximum animal production, consistent with perpetuation of the natural resources.

**Ranger District:** Administrative subdivision of the Forest, supervised by a District Ranger who reports to the Forest Supervisor.

**reconstruction:** Work that includes, but is not limited to, widening of roads, improving alignment, providing additional turnouts, and improving sight distance that improve the standard to which the road was originally constructed. Also undertaken to increase the capacity of the road or to provide greater traffic safety.

**record of decision:** A document separate from, but associated with an environmental impact statement that publicly and officially discloses the responsible official's decision on the alternative assessed in the environmental impact statement chosen to implement.

**Recreation Opportunity Spectrum (ROS):** A method for classifying types of recreation experiences available, or for specifying recreation experience objectives desired in certain areas. Classes include:

**Primitive (P):** An area characterized by having essentially unmodified natural environment of 5,000 or more acres. Interaction between users is very low; evidence of other users is minimal. The area is managed to be essentially free from evidence of human-induced restrictions and controls. Motorized use within the area is not permitted. There is a high probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquility, and self-reliance through the application of outdoor skills in an environment that offers a high degree of challenge and risk.

**Semi-Primitive Non-Motorized (SPNM):** Area characterized by a predominantly natural or natural-appearing environment of 2,500 or more acres. Interaction between users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present but are subtle. Motorized use is not permitted. There is a moderately high probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquility, and self-reliance through the application of woodsman and outdoor skills in an environment that offers challenge and risk.

**Semi-Primitive Motorized (SPM):** Area characterized by a predominantly natural or natural-appearing environment of 2,500 or more acres, with a moderately high probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquility, and self-reliance through the application of woodsman and outdoor skills in an environment that offers challenge and risk. Motorized use is permitted.

**Roaded Natural (RN):** Area characterized by a predominantly natural or natural-appearing environment with a low probability of experiencing isolation from the sights and sounds of man. Interaction between users may be low to moderate, but with evidence of other users prevalent. Conventional motorized use is provided for in construction standards and design of facilities. Opportunities for both motorized and non-motorized forms of recreation may be provided.

**Rural (R):** Area characterized by a substantially modified natural environment with a low probability of experiencing isolation from the sights and sounds of man. A considerable number of facilities are designed for use by a large number of people. Facilities for intensified motorized use and parking are provided.

**Urban (U):** Area characterized by a substantially urbanized environment, although the background may have natural-appearing elements. Vegetative cover is often manicured. Sights and sounds of humans, on-site, are predominant. Facilities for highly intensified motorized use and parking are available with forms of mass transit often available to carry people throughout the site.

**recreation:** Any socially desirable leisure activity in which an individual participates voluntarily and from which he derives satisfaction.

**recreational opportunity:** Availability of a real choice for a user to participate in a preferred activity within a preferred setting, in order to realize those satisfying experiences which are desired.

**reference condition:** The characteristic composition, structure, and disturbance regime of an ecosystem under its historic range of variability. For terrestrial ecosystems, reference conditions may be used to calculate Fire Regime Condition Class (FRCC); reference conditions can be also used for baseline measurements for both terrestrial and aquatic systems.

**reforestation:** The natural or artificial restocking of an area with forest trees.

**regeneration cutting:** Any removal of trees intended to assist regeneration already present or to make regeneration possible.

**regeneration:** The re-establishment of forest cover by seeding, planting, and natural means (also called reforestation). Also used as a noun referring to the young trees themselves.

**region:** An administrative unit within the National Forest system. The United States is divided into nine geographic regions. Each region has a headquarters office and is supervised by a Regional Forester. Within each region are located National Forests and other lands of the Forest Service.

**Regional Forester:** The official responsible for management of National Forest land within a USDA Forest Service region.

**release:** release treatments are used to reduce stem density, remove non-native species, and improve species competition.

**research natural area:** An area set aside by the Forest Service specifically to preserve a representative sample of an ecological community, primarily for scientific and educational purposes. Commercial exploitation is not allowed and general public use is discouraged.

**reserved mineral rights:** Refers to those cases wherein the minerals were severed from the surface during the transaction whereby the government acquired the land. These rights are subject to the Secretary of Agriculture's rules and regulations that were applicable at the time of the transaction.

**resource:** An aspect of human environment which renders possible, or facilitates the satisfaction of, human wants, and the attainment of social objectives.

**restoration:** The process of modifying an ecosystem or repairing damage, such that natural processes will again function in the repaired system to achieve a desired, healthy and functioning condition.

**retention:** A visual quality objective in which human activities are not evident to the casual forest visitor.

**revision:** To make the plan new or up-to-date. Plan revision must be considered and approved in accordance with the requirements for the development and approval of a forest plan. Revisions take place every 10-15 years, but may occur more frequently if conditions or public demands change significantly.

**right-of-way:** A right of use across the lands of others. It generally does not apply to absolute purchase of ownership.

**riparian areas:** Areas with three-dimensional ecotones of interaction that include terrestrial and aquatic ecosystems that extend down into the groundwater, up above the canopy, outward across the floodplain, up the near-slopes that drain to the water, laterally into the terrestrial ecosystem, and along the watercourse at a variable width.

**riparian ecosystem:** A transition between the aquatic ecosystem and the adjacent terrestrial ecosystem identified by soil characteristics (alluvial soils inundated by a 100-year flood, wetland soils) and distinctive vegetative communities that require free and unbound water.

**riparian:** Land areas directly influenced by water. They usually have visible vegetative or physical characteristics showing this water influence. Streamside, lake borders, and marshes are typical riparian areas.

**ripping:** A process where the soil is mechanically sliced or broken to improve tilth, aeration, and permeability.

**road construction:** Activity that results in the addition of forest system or temporary road miles.

**Road Maintenance Levels:** Levels are described as follows:

- a. Level 1: Road normally closed to vehicle traffic.
- b. Level 2: Road open for limited passage of traffic but not normally suitable for passenger cars.
- c. Level 3: Road open for public traffic including passenger cars, but may not be smooth or comfortable.
- d. Level 4: Road suitable for all types of vehicles, generally smooth to travel and dust may be controlled.
- e. Level 5: Road is smooth and dust free, and the surface is skid resistant, if paved.

**road reconstruction:** Activity that results in improvement or realignment of an existing system road defined as follows:

**road improvement:** Activity that results in an increase of an existing road's traffic service level, expansion of its capacity, or a change in its original design function.

**road realignment:** Activity that results in a new location of an existing road or portions of an existing road, and treatment of the old roadway.

**road:** A motor vehicle path more than 50 inches wide, unless classified and managed as a trail. It may be classed as a system or non-system road.

**roads analysis process (RAP):** Roads analysis is an integrated ecological, social, and economic science based approach to transportation planning that addresses existing and future road management options. The intended effects are to ensure that decisions to construct, reconstruct, or decommission roads will be better informed by using a roads analysis. Roads analysis may be completed at a variety of different scales, but generally begins with a broad forest-scale analysis to provide a context for future analyses.

**runoff:** The total stream discharge of water from a watershed including surface and subsurface flow, but not groundwater. Usually expressed in acre-feet.

**rural:** A recreation opportunity spectrum classification for areas characterized by a substantially modified natural environment. Sights and sounds of man are evident. Renewable resource modification and utilization practices enhance specific recreation activities or provide soil and vegetative cover protection.

## S

**sapling:** A usually young tree that is larger than a seedling, but smaller than a pole. Size varies by region.

**Scenery Management System (SMS):** A system for the inventory and analysis of the aesthetic values of the National Forest Lands. It replaces the Visual Management System (VMS) as defined in Agricultural Handbook #462.

**scenic attractiveness:** The scenic importance of a landscape based on human perceptions of the intrinsic beauty of landform, rockform, waterform, and vegetation pattern. Classified as A (Distinctive), B (Typical or Common), or C (Undistinguished).

**scenic integrity objective (SIO):** A desired level of excellence based on physical and sociological characteristics of an area. Refers to the degree of acceptable alterations to the valued attributes of the characteristic landscape. Objectives include Very High, High, Moderate, and Low.

**Very High (VH):** Generally provides for only for ecological changes in natural landscapes and complete intactness of landscape character in cultural landscapes.

**High (H):** Human activities are not visually evident to the casual observer. Activities may only repeat attributes of form, line, color, and texture found in the existing landscape character.

**Moderate (M):** Landscapes appear slightly altered. Noticeable human-created deviations must remain visually subordinate to the landscape character being viewed.

**Low (L):** Landscapes appear moderately altered. Human-created deviations begin to dominate the valued landscape character being viewed but borrow from valued attributes such as size, shape, edge effect, and pattern of natural openings, vegetative type changes, or architectural styles outside the landscape being viewed.

**scenic integrity:** A measure of the degree to which a landscape is visually perceived to be "complete." The highest scenic integrity ratings are given to those landscapes which have little or no deviation from the character valued for its aesthetic appeal. Scenic integrity is used to describe an existing situation, standard for management, or desired condition.

**sediment:** Solid mineral and organic material that is in suspension, is being transported, or has been moved from its site of origin by air, water, gravity, or ice.

**sedimentation:** The deposition of detached soil and rock material transported by or suspended in water.

**seed tree:** An even-aged regeneration method where in a single cut, the removal of all merchantable trees in a stand, except for a small number of widely dispersed trees retained for seed production, and to produce a new age class in a fully-exposed microenvironment.

**seep:** A wet area where a seasonal high water table intersects with the ground surface. Seeps that meet the definition of a wetland are included in the Riparian Corridor.

**sensitive species:** Those species that are placed on a list by the Regional Forester for which population viability is a concern.

**seral stage:** a developmental, transitory stage in the ecological succession of a biotic community.

**shaft:** A vertical excavation from the surface or within a mine, of limited area compared with its depth; made for finding or mining ore, lowering and hoisting miners, ventilation, and other purposes in an underground mining operation.

**shelterwood:** A regeneration method of regenerating an even-aged stand in which a new age class develops beneath the partially shaped microenvironment provided by the residual trees. The sequence of treatments can include three distinct types of cuttings: (1) an optional preparatory harvest to enhance conditions for seed production; (2) an establishment harvest to prepare the seed bed, and to create a new age class; and 3) a removal harvest to release established regeneration from competition with the overwood.

**silvicultural system:** A management process whereby forests are tended, harvested, and replaced, resulting in a forest of distinctive form. Systems are classified according to the method of carrying out the fellings that remove the mature crop, and provide for regeneration and according to the type of forest thereby produced.

**silviculture:** The art and 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 landowners and society on a sustainable basis.

**single-tree selection:** A regeneration method of creating new age classes in uneven-aged stands in which individual trees of all size classes are removed uniformly throughout the stand to achieve desired stand structural characteristics.

**site index:** A numerical evaluation of the quality of land for plant productivity.

**site preparation:** The removal of competition and conditioning of the soil to enhance the survival and growth of seedlings or to enhance the germination of seed.

**site:** An area considered in terms of its physical and/or biological environment, e.g., riparian zone, a homogenous stand of vegetation, a campground, etc.

**skid trail:** A temporary pathway through the woods formed by loggers dragging (skidding) logs from the stump to a log landing or skid road, without dropping a blade and without purposefully changing the geometric configuration of the ground over which they travel.

**skidding:** A term for moving logs by dragging from stump to roadside, deck, or other landing.

**slash:** The residue left on the ground after harvesting, sanitation operations, windstorm or fire. It includes unutilized logs, uprooted stumps, broken or uprooted stems, tops, branches, leaves, etc.

**snag:** A dead or partially dead (more than 50 percent) hardwood or pine tree which is used by many species for perching, feeding, or nesting.

**soil productivity:** The capacity of a soil to produce a specific crop such as fiber, forage, etc., under defined levels of management. It is generally dependent on available soil moisture and nutrients and length of growing season.

**source water:** Untreated water from streams, rivers, lakes, or underground aquifers which is used to supply private wells and public drinking water.

**southern pine beetle:** One of the many species of pine bark beetles that are present in the forest at all times. When environmental and forest conditions become favorable, the beetle populations can increase and cause substantial timber losses over extensive areas in a relatively short period of time.

**Southern Region:** The Forest Service organizational unit consisting of thirteen Southeastern states and Puerto Rico.

**special interest area:** Areas supporting some unique biological element(s) such as novaculite glades, acid seeps, etc., that have been or will be protected.

**special use authorization:** A permit, term permit, or easement that allows occupancy, use, rights, or privileges of National Forest System land.

**special-use permits:** Special uses are permits issued by the Forest Service for various land uses.

**spring:** A water source located where water begins to flow from the ground due to the intersection of the water table with the ground surface. Generally flows throughout the year. Springs that are the source of perennial or intermittent streams are included in the Riparian Corridor.

**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.

**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.

**standard:** A principle requiring a specific level of attainment, a rule to measure against.

**stocking:** The degree of occupancy of land by growing stock trees, measured by basal area or number of trees per unit area and spacing compared with a minimum standard: which varies by tree size and species or species group: to the occupancy that is required to fully utilize the growth potential of the land.

**stream:** A water course having a distinct natural bed and banks; a permanent source which provides water at least periodically; and at least periodic or seasonal flows at times when other recognized streams in the same area are flowing.

**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. A unit of land may be suitable for a variety of individual or combined management practices.

**suitable for timber production:** National Forest System land allocated by a Forest Plan decision to be managed for timber production on a regulated basis. *Regulated basis* means a systematic relationship between tree growth and timber harvest such that a specific timber volume objective level can be sustained indefinitely.

**suitable:** Land that is to be managed for certain resource values on a regulated basis.

**suppression (fire suppression):** Any act taken to slow, stop or extinguish a fire. Examples of suppression activities include line construction, backfiring, and application of water or chemical fire retardants.

## T

**temporary road:** A road authorized by contract, permit, lease, other written authorization, or emergency operation, not intended to be part of the forest transportation system and not necessary for long-term resource management.

**ten (10)-year entry:** This is the average length of time between regeneration harvests. This is considered only an average, with actual entries allowed to vary from 8 to 12 years. Entry is defined as when the timber is sold.

**tentatively suitable:** Forest land that is producing or is capable of producing crops of industrial wood and (a) has not been withdrawn by Congress, the Secretary, or the Chief; (b) existing technology and knowledge is available to ensure timber production without irreversible damage to soils, productivity, or watershed conditions; (c) existing technology and knowledge, as reflected in current research and experience, provides reasonable assurance that adequate restocking can be attained within 5 years after final harvest; and (d) adequate information is available to project responses to timber management activities.

**terrestrial:** of, or pertaining to, land as distinct from water.

**thinning:** A cutting made to reduce stand density of trees primarily to improve growth, enhance forest health, or to recover potential mortality.

**threatened species:** Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. Designated as a threatened species in the Federal Register by the Secretary of Interior.

**timber production:** The purposeful growing, tending, harvesting, and regeneration of regulated crops of trees to be cut into logs, bolts, or other round sections for industrial or consumer use. For purposes of forest planning, timber production does not include the production of fuelwood or harvests from unsuitable lands. (36 CFR 219.3, 1982 rule)

**timber stand improvement:** A term comprising all intermediate cuttings made to improve the composition, constitution, condition, and increment of a timber stand.

**timber:** A general term applied to tree stands that provide a wood fiber product, specifically sawed lumber five by five inches or more in width and depth.

**topography:** The configuration of a land surface including its relief, elevation, and the position of its natural and human-made features.

**trail:** A general term denoting a way for purposes of travel by foot, stock or trail vehicle. (A trail vehicle is one which is 40 inches or less in width and is designated for trail use.)

**trailheads:** The parking, signing, and other facilities available at the terminus of a trail.

**transportation system:** All roads needed to manage and administer the Forest resources. A road network.

**trespass:** The invasion of the property or rights of another without owner's consent.

**two-aged stand:** A stand composed of two distinct age classes that are separated in age by more than 20 percent of rotation.

## U

**undefined channel:** upper stream reach characterized by not being scoured to produce a channel at least one foot wide and three inches deep

**understory:** The trees and other vegetation growing under a more or less continuous cover of branches and foliage formed collectively by the upper portion (overstory) of adjacent trees and other woody growth.

**uneven-aged management:** The manipulation of a forest for a continuous high-forest cover, recurring regeneration of desirable species, and the orderly growth and development of trees through a range of age or diameter (size) classes to provide a sustained yield of forest products. Managed uneven-aged forests are characterized by trees of many ages, or sizes intermingled singly or in groups. Trees are harvested singly or in small groups with the process of regeneration of the desirable species occurring either continuously or at each harvest. Each harvest usually includes thinning and cultural treatments to promote growth and maintain or enhance stand structure. The basic method for control (regulation) is some expression of volume (such as basal area), stand structure, and maximum tree size.

**uneven-aged:** a stand of trees in which the individual trees originated over a long period of time and, thus, differ widely in age; a regeneration system designed to produce such a stand.

**unsuitable forest land (not suited): Primary** - 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 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 5 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 to responses 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.

**Secondary** – Forest land that is not capable of sustaining a particular use without environmental, cultural and/or visual degradation beyond acceptable levels or land that has been withdrawn by Congress, the Secretary or the Chief.

## V

**viable population:** Population of plants or animals that has the estimated numbers and distribution of reproductive individuals to ensure its continued existence is well distributed in the planning area.

**viewshed:** The total landscape seen, or potentially seen, from all or a logical part of a travel route, use area, or waterbody.

**visual resource:** The composite of basic terrain, geological features, water features, vegetative patterns, and land-use effects that typify a land unit and influence the visual appeal the unit may have for visitors.

## W

**waterbars:** A change in the grade of a roadbed, trail surface, or fireline used to divert water off the surface to prevent it from eroding ruts and possibly carrying sediment to a stream.

**watershed:** The entire area that contributes water to a drainage system or stream.

**wetlands:** Those areas that are inundated by surface or ground water with a frequency sufficient to support, and under normal circumstances do or would support, a prevalence of vegetation or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, river overflows, mud flats and natural ponds.

**wild and scenic river:** A river or section of river designated as such by congressional action under the Wild and Scenic Rivers Act of Oct. 2, 1968, as supplemented and amended, or those sections of a river designated as wild, scenic, or recreational by an act of the legislature of the state or states through which it flows. A river can be classified under the following three categories:

**wild river:** Free of impoundments and generally inaccessible except by trail, and within watersheds or shorelines that are essentially primitive.

**scenic river:** Free of impoundments but accessible by roads, and within watersheds or shorelines that are still largely primitive and undeveloped.

**recreational river:** Readily accessible by roads, with some development along their shorelines and may have undergone some impoundment or diversion in the past.

**wilderness:** Area designated by congressional action under the 1964, 1975, 1980 and 1983 Wilderness Acts. Wilderness is defined as undeveloped Federal land retaining its primeval character and influence without permanent improvements or human habitation. Wilderness areas are protected and managed to preserve their natural conditions, which generally appear to have been affected primarily by the forces of nature with the imprint of human activity substantially unnoticeable; have outstanding opportunities for solitude or for a primitive and confined type of recreation; include at least 5,000 acres or are of sufficient size to make practical their preservation, enjoyment, and use in an unimpaired condition; and may contain features of scientific, educational, scenic, or historical value as well as ecologic and geologic interest.

**wildland fire:** Any non-structural fire on wildlands other than one intentionally set for management purposes. Confined to a predetermined area. Not to be confused with "fire use," which includes prescribed fire.

**wildland-urban interface:** The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.

**wildlife habitat improvement:** The manipulation or maintenance of vegetation to yield desired results in terms of habitat suitable for designated wildlife species or groups of species.

**wildlife stand improvement (WSI):** Habitat improvements involving the manipulation of either the overstory or understory crown canopy which benefit wildlife, fish, or threatened and endangered animals and plants.

**wildlife:** All non-domesticated mammals, birds, reptiles, and amphibians living in a natural environment, including game species and non-game species. Animals, or their progeny (i.e., feral animals: including horses, burros, and hogs), that once were domesticated, but escaped captivity, are not considered wildlife.

**withdrawal:** An order removing specific land areas from availability for certain uses.

**withdrawn:** National Forest System lands segregated or otherwise withheld from settlement, sale, location, or entry under some or all of the general land laws.

**woodlands:** an open stand of trees with crowns not usually touching (generally forming a 25 to 60 percent cover).

# Glossary of Commonly Used Acronyms and Abbreviations

## Scientific

µg/m<sup>3</sup> Microgram(s) per cubic meter

## A

AGFC Arkansas Game and Fish Commission  
AQI Air Quality Index  
AQRV Air Quality Related Values  
ARPA Archaeological Resources Protection Act  
ASQ Allowable Sale Quantity

## B

BA Basal Area  
BMP Best Management Practice

## C

CCF Hundred Cubic Feet  
CFR Code of Federal Regulations  
CSU Controlled Surface Use  
CUS Control of Undesirable Species

## D

DBH Diameter at Breast Height  
DEIS Draft Environmental Impact Statement

## E

EF Experimental Forest  
EIS Environmental Impact Statement  
EPA Environmental Protection Agency

## F

FIA Forest Inventory and Analysis  
FEIS Final Environmental Impact Statement  
FY Fiscal Year

**H**

HMA      Habitat Management Areas

**I**

IMR      Implementation Monitoring Review

IPM      Integrated Pest Management

**M**

MA      Management Area

MIS      Management Indicator Species

**N**

NAAQS      National Ambient Air Quality Standards

NEPA      National Environmental Policy Act

NF      National Forest

NFMA      National Forest Management Act

NFS      National Forest System

NRA      National Recreation Area

**O**

ODWC      Oklahoma Department of Wildlife and Conservation

OHV      Off-Highway Vehicle

ONF      Ouachita National Forest

**P**

PET      Proposed, Endangered, and Threatened (Species)

PETS      Proposed, Endangered, Threatened, and Sensitive Species

**R**

RCW      Red-cockaded Woodpecker

RD      Ranger District

RNA      Research Natural Area

ROS      Recreation Opportunity Spectrum

ROW      Right-of-Way

**S**

SERA	Syracuse Environmental Research Associates
SHPO	State Historic Preservation Officer
SIO	Scenic Integrity Objective
SMA	Streamside Management Area
SMS	Scenery Management System
SPB	Southern Pine Beetle
SPM	Semi-Primitive Motorized
SPNM	Semi-Primitive Non-Motorized

**T**

THPO	Tribal Historic Preservation Office
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**U**

USDA	U.S. Department of Agriculture
USDI	U.S. Department of Interior
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

**W**

WUI	Wildland Urban Interface
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## Appendix A – Approved Communication Sites

Approved Communication Sites for the Forest and sites for which plans are under development:

Bee Mountain Electronic Site  
Mena RD, Polk County, AR  
NW1/4 of SE1/4 Section 13, T3S R31W  
This site is unoccupied and may be abandoned.

Buck Knob  
Oden RD, Scott County AR  
T1S. R28W, Sec. 1

Cove Mountain  
Fourche RD. Perry, Co. AR  
T3N, R21W, Sec. 14

Crystal Mountain  
Winona RD, Saline County, AR  
T2N, R18W, Sec. 8  
This site is unoccupied and may be abandoned.

Danville Electronic Site  
Fourche RD, Yell Co. AR  
T 4N, R23W, Sec. 12

Dutch Creek  
Fourche RD, Yell County, AR, 2.3 Ac.  
T4N, R23W, Sec. 12  
Microwave, mobile radio

Eagle Mountain  
Mena RD, Polk Co. AR  
SW1/4 Sec. 30 T3S, R29W

High Peak  
Caddo RD. Montgomery Co. AR  
T3S, R24W, Sec. 19

Kiamichi Mountain (Three Sticks Historical Monument)  
Kiamichi RD, LeFlore Co. OK  
T2N, R25E, Sec. 29

Federal Aviation Agency, VORTAC Site  
Choctaw RD, LeFlore Co. OK  
Sect. 6, T2N, R26E

Ouachita Pinnacle  
Jessieville RD, Garland Co. AR  
T1N, R21W, Sec. 15

Paron Elec. Site  
Winona RD, Saline Co, AR  
T2N, R18W, Sec. 11

Poteau Mtn. (Bates)  
Poteau RD. Sebastian Co. AR  
T4N, R32W, Sec. 34

Rich Mtn. #1  
Mena RD, Polk Co. AR  
NW1/4 Sec. 17, T1S, R31W

Rich Mtn. #2  
Mena RD, Polk Co. AR  
NW1/4 Sec. 6, T2S, R30W

Tall Peak  
Mena RD, Polk Co. AR  
SE1/4 SE1/4, Sec. 24, T4S, R28W

Tiak Tower  
Oklahoma RD, McCurtain Co., OK  
T8S, R25E, NWNE, Sec. 29  
Site plan under development

Union Hill  
Cold Springs RD, Scott Co. AR  
T4N, R27W, NWNE, Sec. 36

White Oak Mtn.  
Cold Springs RD., Scott Co. AR  
T4N, R28W, Part of the NE NW, Sec. 26

Sycamore  
Choctaw RD, LeFlore Co. OK  
T3N, R23E, Sec. 33

Slatington Peak  
Caddo RD. Montgomery Co. AR  
NW1/4 NW1/4 Sec. 4, and NE1/4 NE1/4 Sec. 5, T4S, R27W  
Currently unoccupied, but will be retained for future development.

Hodgen  
Choctaw RD, Leflore Co. OK  
T3N, R25E, Sec. 2  
Site plan under development.

# Appendix B – Minerals

## **Oil and Gas Lease Stipulations:**

Stipulations are applied by the Forest Service during the formal consent process to evaluate the National Forest lands under lease consideration by the Bureau of Land Management. A uniform format for oil and gas lease stipulations was developed by the Rocky Mountain Regional Coordinating Committee comprised of the USDI Bureau of Land Management (BLM), USDA Forest Service and various representatives from the legal, industry, and environmental communities. The stipulations attached by the Forest Service are based on the management objectives established through the Forest Plan. Stipulations developed by the Committee and adopted by the BLM and Forest Service are as follow:

- No Surface Occupancy (NSO): Use or occupancy of the land surface for fluid mineral exploration or development is prohibited to protect identified resource values. The NSO stipulation includes stipulations which may have been worded as "No Surface Use/Occupancy," "No Surface Disturbance," "Conditional NSO" and "Surface Disturbance or Surface Occupancy Restriction (by location)."
- Controlled Surface Use (CSU): Use and occupancy is allowed (unless restricted by another stipulation), but identified resource values require special operational constraints that may modify the lease rights. CSU is used for operating guidance, not as a substitute for the NSO or Timing stipulations.
- Timing Limitation (Seasonal Restriction): Prohibits surface use during specified time periods to protect identified resource values. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project specific mitigation measures would be insufficient.
- Lease Notice: Provides more detailed information concerning limitations that already exist in law, lease terms, regulations, or operational orders. A Lease Notice also addresses special items the lessee should consider when planning operations, but does not impose new or additional restrictions. Lease Notices attached to leases should not be confused with Notices to Lessees (43 CFR 3160.0-5). Standard Lease Notices made part of all leases:
  - 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 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.

## **Minerals Operational Guidance**

### **All Minerals**

- Administer federal mineral resource program to meet demands for energy and non-energy minerals consistent with management prescription, multiple use objectives and in accordance with Washington Office policies and existing laws.
- Facilitate orderly and environmentally sound exploration, development, and production of mineral and energy resources.
- For non-energy mineral resources, and mineral material authorizations, emphasize authorizations of minerals needed for environmental protection, public infrastructure, flood protection, erosion control, and watershed restoration.
- Require appropriate mitigation and reclamation of environmental disturbance for all mineral exploration and development proposals to achieve the planned uses specified in the Forest Plan, when those lands are no longer needed for mineral operations. Reduce environmental effects from past mineral-related activity.

### **Federal Leasable Minerals – General**

- Following exploration and production operations, the permittee is responsible for reclaiming disturbed sites in accordance with an approved reclamation plan. Reclamation shall meet the requirements of 36 CFR 228. Plans will consider opportunities to enhance the desired condition of the particular management prescription.

### **Federal Leasable Minerals - Oil and Gas**

- The Regional Forester consents to lease those lands on the Forest, which have not been statutorily withdrawn, subject to standard lease terms. This consent is valid until the Forest Service provides the Bureau of Land Management written notification that consent is withdrawn or amended.
- Operations will comply with environmental protection standards from several sources: Forest Plan standards for the management prescription where the operations will occur; lease terms and conditions; federal Onshore Oil and Gas Orders; Oil and Gas Resources regulations (36 CFR 228 E); Conditions of Approval in Applications for Permits to Drill; and Federal and State requirements and regulations promulgated to establish performance standards for protecting soil, water, riparian, and aquatic resources and for reclamation of areas affected by oil and gas activities.

### **Federal Leasable Minerals – Coal**

- Operations will follow federal and state rules and regulations promulgated to establish performance standards for protecting soil, water, riparian, and aquatic resources and values; and for restoration and reclamation of areas affected by mining activities. Such rules and regulations include requirements for protection of surface and groundwater quantity and quality; prevention and control of acid mine

drainage, erosion, and sediment deposition; and protection of streams and hydrologic balance.

#### **Federal Leasable Minerals – Other**

- Unless statutorily withdrawn, other Federal hardrock leasable minerals are available for lease.

#### **Mineral Materials**

- Mineral materials are available for commercial, personal, free, and administrative uses, except as specified by the individual management prescription. For all approved mineral material sites, a pit development plan must be developed and approved by the authorized Forest Service Official.

#### **Reserved and Outstanding Mineral Rights**

- On National Forest System tracts where mineral rights are outstanding or where reserved, the exercise of private mineral rights to explore and develop mineral resources will be respected.
- Operations proposed under outstanding and reserved mineral rights are processed within 60 days and 90 days, respectively.
- Any mineral operation undertaken on National Forest land where minerals have been reserved, will comply with applicable state and federal laws, and the Secretary's rules and regulations.
- Any mineral operation undertaken on National Forest land where minerals are outstanding, will be administered in strict accordance with the terms of the deed of separation, and comply with applicable state and federal laws.
- Management Prescriptions, Management Area direction, and Forest-wide direction are subject to outstanding and reserved mineral rights. The government should pursue acquiring private mineral rights through purchase, exchange, or donation in the following areas (if appropriate): designated Wilderness; designated Wild Rivers; designated Rare Communities and Special Biological Areas. Unless, and until such, private rights are acquired, the exercise of reserved and outstanding mineral rights to explore and develop mineral resources will be respected.
- All projects (mineral or non-mineral) or consideration of special designations shall include a review of the status of private mineral rights. Where private mineral rights could be negatively affected, the public involvement process will inform and seek comments from the current owners of private mineral rights. The potential effects on private mineral rights will be assessed.
- Where reserved or outstanding mineral rights are involved, the mineral owner is encouraged to implement all surface-disturbing activities outside riparian areas.

#### **Geologic Resources**

- Manage geologic resources to provide multiple public benefits.
- Manage geologic hazards to protect public safety and facilities while integrating the keystone role of these natural disturbances in riparian and watershed management.
- Integrate geologic components (processes, structures, and materials) in management of riparian areas, watersheds, and ecosystems.
- Locate and design facilities and management activities to avoid, minimize, or mitigate negative effects on geologic resources with identified values (scientific, scenic, paleontological, ecological, recreational, drinking water, etc.).

### **Geologic Hazards**

- Complete appropriate order of geologic inventory and as appropriate geotechnical investigation in areas where proposed activities or uses could be endangered by geologically related hazards such as land instability, earthquakes, subsidence, etc., or increase risks of subsidence, land instability, ground water pollution, or diversion.

### **Locatable Minerals**

- Areas not withdrawn from locatable minerals location would be open and available for prospecting, location, and development of the locatable mineral resource.
- Surface disturbing mining claim exploration and development activities would be evaluated and approved subject to site-specific environmental analyses.
- Administer active mineral operations in accordance with approved plans of operation, current NEPA analysis, and adequate reclamation bonds.
- Require reclamation bonds for all proposed mineral activities that will potentially cause significant surface disturbance and require rehabilitation. Bonds should be of sufficient amount to ensure the full costs of reclamation. Existing bonds should be reviewed for adequacy annually.
- Inspection and monitoring results should be evaluated and applied to modify plans and permits as needed to minimize negative effects to other resources.

### **Withdrawal Review – Ouachita NF Minerals Withdrawals**

The review of existing withdrawals and potential future minerals withdrawals is required per Section 204 of the Federal Land Policy and Management Act of 1976. Determination to recommend maintaining or revoking an existing mineral withdrawal, or initiate action to approve a new mineral withdrawal is based on the need to protect the resource or administrative values of the lands in question. Where it is determined that full protection from the provisions of the 1872 mining law is necessary and that existing regulatory controls applied to a mining related activity would not be sufficient to secure this protection, then it is appropriate to recommend removing the lands from mineral entry. Where it is determined that existing regulatory controls would be sufficient then the lands should be made available for entry under the mining laws.

#### **1. LAKE OUACHITA**

Public Land Order 628 (PLO 628) dated 2/13/50 withdrew 26,146.32 acres of public domain lands for use by the Department of the Army for flood control purposes. In 1987, lands around Lake Ouachita were formally interchanged between the Corps of Engineers and the Forest Service. The lands around Lake Ouachita are chiefly valuable to maintain high water quality standard and recreation for the lake. The 16,795.74 acres of land around Lake Ouachita currently withdrawn from mineral entry are recommended to remain so withdrawn. An additional 2,000 acres of public domain lands within the Lake Ouachita Management Area chiefly valuable for similar purposes are recommended to be withdrawn from mineral entry, are identified as such:

- T1N R22: Sec. 35 - 80 acres
- T2S R21: Sec. 19 - 160 acres
- T2S R22: Sec. 23 - 520 acres; Sec. 24 - 160 acres; Sec. 30 - 120 acres; Sec. 31 - 80 acres; Sec. 32 - 240 acres; Sec. 33 - 120 acres
- T2S R23: Sec. 04 - 40 acres; Sec. 23 - 280 acres; Sec. 25 - 40 acres; Sec. 26 - 160 acres.

## 2. POTEAU MOUNTAIN

Because of its proximity to the Poteau Mountain Wilderness and Congress' stated intent to confer a special protective status to these lands, it is recommended that the following public domain lands within the Poteau Management Area be withdrawn from mineral entry (3,400 acres):

- T4N R30: Sections 19, 20, 21(SWSW), 28 (SWNW, S2SW), 29, 30, partials 31&32
- T4N R31: partial Sections 25, 36

## 3. LAKE WINONA

Lake Winona furnishes approximately 46 percent of the water needs for the 300,000 people in the city of Little Rock, the State capital of Arkansas. The Forest Service and the city of Little Rock have a cooperative agreement to establish a public use area and various management practices that will be followed to protect this valuable water source. Certain types of mining practices may be incompatible with the need to maintain high-quality standards for the Lake Winona watershed. A withdrawal is necessary to prevent mining related activities that could adversely impact the watershed and affect the water quality of Lake Winona, and to prevent the potential loss of government control of surface resources that could result from a transfer of lands to the private sector as a result of key provisions of the general mining law. The following public domain lands around Lake Winona are recommended to be withdrawn from mineral entry (1,120 acres):

- T2N R17W: partial Sections 19 (SW, E2E2), 20 (W2W2), 30 (NW)
- T2N R18W: partial Sections 15 (SW), 22(NW and S2), 23 (S, NE), 24 (S2), 25 (N2N2)

## 4. LOOKOUTS AND OTHER SITES

Twenty-four sites have been withdrawn from mineral entry as lookouts, guard stations, warden stations and warehouses, under authority of public land orders (PLO) 13358/27/56. The following 11 sites are no longer in use for specific administrative purposes. It is recommended that the withdrawals on these sites be lifted (230 acres):

- Paul Mountain Lookout, Vanderslice Lookout, Allen Peak Lookout, Shady Warehouse, Muddy Mountain Lookout, Bear Knob Lookout, Eagle Gap Guard Station, Slatington Lookout, Cold Springs Guard Station, Pigeon Creek Warden Station, and North Fork Pinnacle Lookout

The following 13 sites are still in use for specific administrative purposes. It is recommended that the withdrawals remain in effect on these sites (220 acres):

- These nine sites originally were used as lookouts but are now needed for electronic sites: White Oak, Eagle Mountain, High Peak, Dutch Creek, Poteau Mountain, Tall Peak, Bee Mountain, Ouachita Pinnacle, and Wolf Pinnacle
- These four sites remain in use for their original purpose: Jessievile Guard Station, Oden Ranger Station, Fiddlers Creek Game Warden Station, Hickory Nut Lookout

In addition, the following site is now in use as an electronic site. It is recommended that the site be withdrawn from mineral entry (10 acres):

- Kingdoodle Knob Electronic Site (Union Hill Site) T4N, R27W Section 36

## 5. RECREATION AREAS

The following recreation areas have been withdrawn by the PLO as noted, and are currently being used for the purpose of the withdrawal. It is recommended that the withdrawals for these lands remain in effect (566.60 acres):

- South Fourche (PLO 725, 6/4/51); Crystal Campground (PLO 725, 6/4/51); Shady Lake (PLO 725, 6/4/51); Jack Creek (PLO 1335, 8/27/56 and PLO 1447, 7/18/57); Knoppers Ford (PLO 1335, 8/27/56 and PLO 2439, 7/18/61); Iron Springs (PLO 1335, 8/27/56); Charlton (PLO 1335, 8/27/56); Bard Springs (PLO 1335, 8/27/56 and PLO 1447, 7/18/57); Collier Springs (PLO 1335, 8/27/56); Queen Wilhelmina State Park (PLO 2597, 1/29/62)
- The Mine Creek site was withdrawn from mineral entry under authority of PLO 1560 on 12/6/57 and is no longer needed. It is recommended that the withdrawal for Mine Creek be removed (504.22 acres).

## 6. SCENIC AREAS

The following scenic areas have been withdrawn by the PLO as noted, and are currently being used for the purpose of the withdrawal. It is recommended that the withdrawals for these lands remain in effect (1,926 acres)

- Ouachita Lake Visitor Center (PLO 5053; 5/07/71) 920.0 acres, Womble RD, T2S R23W Sec 23-26
- Dutch Creek Mtn Scenic Area (PLO 2436; 7/18/61) 320.5 acres, Fourche RD, T3N R26W Sec 1&2
- Choctaw Trail (Skyline Drive) (PLO 4103; 9/29/66) 685.4 acres, Mena RD, T1S R30 thru 32W

The following scenic areas are to be managed in a manner to protect the scenic characteristics of the areas. This may be incompatible with minerals related activities. Further review of these areas is necessary to consider a recommendation of withdrawing them from mineral entry (2,700 acres):

- Blowout Mountain: Oden RD; T1 S R26W Sec. 4, 5 (526 acres)
- Dutch Creek: Cold Springs & Fourche RD's; T3N R25 & 26W (624 acres)
- Crystal Mountain: Caddo & Womble RD's; T3S R24W Sec. 8 (100 acres)
- Irons Fork: Jessieville RD; T1 N R23W Sec. 5-9 (1,450 acres)

The following area was managed as a scenic area under the 1990 Amended Forest Plan and is recommended to be expanded and managed as a botanical area under the 2005 Revised Forest Plan. This may be incompatible with minerals related activities. Further review of this area is necessary to consider a recommendation of withdrawing it from mineral entry (2,580 acres):

- South Fourche: Winona RD; T3N R19W Sec. 19, 20, 30 (2,850 acres)

## 7. RESEARCH NATURAL AREAS

Five research natural areas are identified on the Forest and four are withdrawn (ore recommended for withdrawal) from mineral entry. The Roaring Branch Research Natural Area was withdrawn from mineral entry by PLO 5114 on 9/10/71. The Lake Winona Research Natural Area was designated as an RNA by the Chief on 11/7/77; however, the lands were not withdrawn from mineral entry. Gap Creek RNA was established in 1990 and is withdrawn from mineral entry. R.R. Reynolds RNA is established within the Crossett Experimental Forest, which is already withdrawn from mineral entry. The need to protect the RNAs as unique research sites that will not be directly affected by human-caused impacts has led to the following recommendations:

- Retain withdrawal - Roaring Branch RNA: Caddo RD, T4S, R28W- 330 acres
- Withdraw Lake Winona RNA: Winona RD, T2N, R18W - 280 acres
- Withdraw Gap Creek RNA: Caddo RD T4S, R24W - 65 acres
- Retain withdrawal – R. R. Reynolds RNA

Roaring Branch and Lake Winona have dual status as Research Natural Areas (RNA) and National Natural Landmarks. Designated under 36 CFR 251.23, RNAs provide continued opportunity for studies of ecological succession and other research interests in a setting where disturbance by humans is very limited. Administration and protection are supplied by the National Forest, with scientific and educational uses coordinated through the Southern Research Station.

## 8. EXPERIMENTAL FORESTS

The Alum Creek Experimental Forest was established by PLO 3647 on 4/15/65, and is currently being used for the purposes for which it was withdrawn. It is recommended that the withdrawal for Alum Creek be retained (4,590 acres):

- Alum Creek Experimental Forest (Winona RD): T1 N, R19W: partial Sections 4 and 5; T2N, R19W: partial Sections 21-23, 26-30,32-35
- Crossett Experimental Forest – retain withdrawal
- Irons Fork Experimental Forest (Mena RD, T1S R28W - PLO 1055, 1/18/55) is no longer in use. It is recommended that the withdrawal be rescinded

## **Minerals Potential on the Ouachita National Forest**

The minerals potential for quartz, hard rock minerals, gas, and coal, on the Ouachita National Forest is displayed in Table B.1. Geologic formations by percent occurrence on each Ranger District are included as well. The areas of known mineral potential are based on current information and may change due to further exploration, technological advances, and geologic evaluations. The USDI Bureau of Land Management (BLM) in cooperation with the Forest Service developed the Reasonable Foreseeable Development Scenario for oil & gas on the Ouachita National Forest from which the potential for gas is based. The Reasonably Foreseeable Development Scenario was developed with best scientific and historical information available up to and through December 2004. These numbers can change dramatically if a new oil and gas discovery is made or if current projections of known discoveries are found, through production, to be over-estimated. Hardrock minerals potential is based on minerals and geology

reports primarily from the State of Arkansas Geological Commission, USDI Bureau of Mines, USDI Geological Survey, and USDA Forest Service.

**Table B.1 Minerals Potential for the Ouachita National Forest**

Ranger District	Formations <sup>1</sup> (% of Total Formations on each Ranger District)	Minerals Potential			
		Quartz	Other Hardrock <sup>2</sup>	Gas <sup>3</sup>	Coal (Coal Bed Methane)
Choctaw	Pa 90% PMs/Pj/Pjv/Phs 10%	Low	Low	Med to Med-High	Med to Med-High
Caddo	Ms 40%, Mda 15%, Ob 15%, Ow 15%, Oc 5% Pj/Smb/Ocm/Obp 10%	High	High	Low	Low
Cold Springs	North of Highway 80: Pau 35%, Pam 15%, Pma 15%, Phs 5%, Psv 30%	Low	Low	Med	Med-Low
	South of Highway 80: Pal 95%, Pam 5%	Low	Low	Low	Low
Fourche	North of Highway 28: Pal/Pam 75%, Pau 25%	Low	Low	Med	Med-Low
	South of Highway 28: Pal/Pam 95%, Pjv/Pj 5%	Low	Low	Med	Low
Jessieville	MS 25%, Pal 3%, Pj 30%, Pjv 15% (North 2/3 from Highway 298)	High	Med	Low	Low
	Ob 7% Ow 10%, Om 5%, Mda/Smb/Obf/Obp 5% (South 1/3 from Hwy 298)	High	Med	Low	Low
Kiamichi	Pj 60%, Pjv 5%, Pa 20%, Pms 15%	Med	Med	Med	Low
Mena	North of Mena, AR: Pj 50%, Pjv 10%, Ms 20%, Pal 20%	Med	Med	Low	Low
	South of Mena, AR Ms 50%, Mda 25%, Smb 15%, Obp 10%	Med	Med	Low	Low
Oden	Pam/Pal 30%, Pj 30% Obp/Smb 5%, Ms 30%, Pjv 5%	High	Med	Low	Low

Ranger District	Formations <sup>1</sup> (% of Total Formations on each Ranger District)	Minerals Potential			
		Quartz	Other Hardrock <sup>2</sup>	Gas <sup>3</sup>	Coal (Coal Bed Methane)
Poteau	North of Poteau River: Phs 10%, Pau 10% Pma/Psv 80%	Low	Low	Med	High
	South of Poteau River: Pal/Pam 90% Pjv/Pj 10%	Low	Low	Med	Low
Womble	Ow 15%, Mda 5%, Oc 15%, Ocm 20%, Ob 10%, Om 15%, Ms/Obp/Smb 20%	High	High	Low	Low
Winona	Pj 50%, Ms 15%, Pal/Pam 30%, Pjv/Mda/Ow/Obp 5%	High	Med	Low	Low
Tiak - Idabel	Qt/Qal 45%, Kto 40%, Kk 7%, Kw 7%, Ka/Kgw/Kbr 1%	Low	Low	Med	Low
Tiak -Broken Bow	Mst 55% Sb30%, MDSa 8%, Pjf/Ob/Op/Obf/Ow/ Oc/Sm/Kh/Qal 7%	Low	Low	Med	Low

<sup>1</sup>Geologic formations and approximate percent of the formation within the Ranger District

<sup>2</sup> Hardrock: metallic and valuable non-metallic minerals (excludes sand, gravel building stone)

<sup>3</sup>Gas: Potential from USDI Bureau of Land Management

### **Projected Minerals Activity**

Projected minerals activity in the planning period will be from coal bed methane exploration and possible development, possible natural gas exploration, existing hardrock minerals operations (quartz, novaculite, gravel and building stone), and with new proposed hardrock minerals operations. It is projected that there will be 7 to 16 gas wells drilled on the Forest, with 7 being commercially productive. The rest would be dry holes and the sites would be reclaimed. For each of the producing well sites, the area needed for production would be less than was needed for the drilling phase. The size of the drill pad would decrease from two acres of disturbance down to about one-fourth acre, with the unneeded portion being reclaimed.

In the next 10-year planning period, five new quartz operations are expected to occur. Most case sites are operated intermittently. The nature of hardrock mining operations on the Ouachita National Forest requires that they proceed at a slow and methodical pace. These are all surface operations. New common variety mineral material operations are expected to occur at the rate of at least 40 to 60 per year. These are small tonnage, short duration removals primarily from within the existing 22 pits and the primary building stone site on the Forest. Operations outside of existing pits are small tonnage (generally several pickup loads), hand removals of surface-exposed building stone. Site-specific environmental analysis is conducted on all new sites.

Gravel pits on the Forest are long-term impact sites that allow controlled centralized access to essential pit-run aggregate resources. Pits are designed to prevent water runoff and consequent siltation from leaving the pit site and impacting adjacent Forest resources. All pits on the Ouachita National Forest are worked intermittently by counties and Forest Service contractors removing material for public projects (roads, etc) as needed.

There are positive economic impacts resulting from oil and gas exploration and development activities. Lessees/operators usually contract locally for road and drill pad construction. They purchase food, fuel, lodging, and other supplies from local sources and may subcontract certain parts of the operation to local well servicing companies. Most of the salaries paid to workers are spent in the local area. The estimated dollars that an average drill rig generates per day is over \$200 per worker. A typical well drilling operation will have an average of 10 to 20 workers. This translates into about \$2,000 to \$4,000/day spent in the local area. Since the average gas well in this area takes 2 to 4 weeks to complete, \$28,000 to \$112,000 per well goes into the economy. There are 59 hardrock mining cases for quartz crystal, novaculite, wavellite, aggregate (gravel), and building stone, and 1 energy case for coal bed methane. The accumulated total existing surface impacts from these operations located across the Forest is approximately 120 acres. Average surface impact is less than 2 acres per case. This represents less than one-tenth of 1 percent of the total Forest land base.

## Appendix C – Proposed and Probable Activities

**Table C.1 Proposed and Probable Activities (Including Timber Sale Program)**

Activity	Unit of Measure	Range of Proposed/Probable Annual Activity
Allowable Sale Quantity	Million cubic feet/year	27
Timber offered for sale	Million cubic feet/year	20-30
Regeneration harvest (by modified seedtree/shelterwood methods)	Acres	5,000-6,000
Management Area 14	Acres	4,000-4,700
Management Area 15	Acres	140
Management Area 17	Acres	250
Management Area 21	Acres	160
Management Area 22	Acres	1,000-1,200
Other MAs	Acres	250
Uneven-aged management	Acres	9,000-12,500
Management Area 14	Acres	7,200-7,850
Management Area 16	Acres	1,000-1,300
Management Area 19	Acres	800-850
Commercial Thinning	Acres	20,000-28,500
Management Area 14	Acres	10,000-13,700
Management Area 15	Acres	1,000
Management Area 17	Acres	400-500
Management Area 21	Acres	1,500-1,600
Management Area 22	Acres	7,000-8,200
Midstory reduction	Acres	4,325-5,000
Management Area 21	Acres	500-600
Management Area 22	Acres	3,500-3,725
Other MAs	Acres	325-500

<b>Activity</b>	<b>Unit of Measure</b>	<b>Range of Proposed/ Probable Annual Activity</b>
Watershed improvement and maintenance	Acres	30-60
Arterial/collector roads reconstructed	Miles	15-20
Local roads constructed	Miles	5-10
Roads decommissioned	Miles	10-20
Trail maintenance (non-motorized)	Miles	300-350
Heritage resource survey	Acres	9,000-10,000
Active range allotments	Number	≤17
Prescribed burning	Acres	80,000-250,000
Management Area 6	Acres	5,000-10,000
Management Area 14	Acres	25,000-110,000
Management Area 17	Acres	8,000-22,000
Management Area 21	Acres	8,000-25,000
Management Area 22	Acres	27,000-70,000
Other MAs	Acres	7,000-13,000

## Appendix D – Old Growth

**Table D.1. Preliminary Inventory of Possible Old Growth (Approximate Acres Meeting Minimum Age Criteria<sup>a</sup>) by Ecological System Type and Management Area**

Management Area	Dry-Mesic Hardwood System (Age 120+)	Pine-Oak System (Age 100+)	Dry Oak Woodland System (Age 120+)	Montane Oak System (Age 120+)	Mesic Hardwood System (Age 140+)
1. Wilderness	—	10,988	—	—	—
2. Special Interest Areas	—	1,168	—	—	—
4. Research Natural Areas	0 <sup>b</sup>	226			
5. Experimental Forests	—	1,110	—	—	—
6. Rare Upland Communities	—	NA	189 <sup>c</sup>	224 <sup>d</sup>	303 <sup>e</sup>
9. Water and Riparian Communities	—	455	—	—	—
14 Ouachita Mountains, Habitat Diversity Emphasis	3,489	33,335	188	195	—
15. West Gulf Coastal Plain Habitat Diversity Emphasis	—	—	—	—	—
16. Lands Surrounding Lake Ouachita and Broken Bow Lake	—	9,606	—	—	—
17. Semi-Primitive Areas	1,826	6,088	—	—	—
19. Winding Stair Mountain NRA	—	1,700	—	—	—
20. Wild and Scenic River Corridors	222	3,264	—	—	—
21. Old Growth Restoration	375	6,100	—	—	—
22. Renewal of the Shortleaf Pine-Bluestem Grass Ecosystem	296	54,129	—	—	—
Total	6,208	128,169	377	419	303

<sup>a</sup> Acreages are from an existing inventory based upon the CISC database of September 2003; areas less than 100 acres are not reported in this table but are preserved in the inventory data.

<sup>b</sup> At least 303 acres is 100+ years of age.

<sup>c</sup> At a minimum, an additional 367 acres is 100+ years of age.

<sup>d</sup> At a minimum, an additional 305 acres is 100+ years of age

<sup>e</sup> At a minimum, an additional 556 acres is 100+ years of age.

Each of the major terrestrial ecological systems in the Ouachita Mountains is well represented in management areas in which active or passive (“custodial”) development and perpetuation of patches or large areas of old growth are strongly featured (Table D.2).

**Table D.2. Minimum Area in which Restoration of Old Growth Characteristics in Primary Terrestrial Ecological Systems will be Featured**

Management Area		Land Base in which Restoration of Old Growth Conditions will be Featured <sup>a</sup>	Active Management to Restore Old Growth Conditions, Custodial Management or Both?	Primary Ecological Systems Represented			
				SP-Oak Forest	Pine-Oak Woodland	SP-Bluestem	Dry-Mesic Hardwood
		Acres (approximate)		----- Acres (approximate) -----			
1	Wilderness	70,000	Custodial	35,000	18,800	0	16,084
2	Special Interest Areas	18,000	Both	10,600	2,080	0	9,358
4	Research Natural Areas/ National Natural Landmarks	2,000	Custodial	714	257	0	501
20	Wild and Scenic River Corridors	26,000	Primarily custodial	19,200	3,330	0	4,037
21	Old Growth Restoration	79,000	Active	53,800	10,700	0	5,850
22	Renewal of the Shortleaf Pine-Bluestem Grass Ecosystem/RC W Habitat	36,600	Active	0	0	29,000	7,600
Total		224,000		119,314	35,167	29,000	43,430

<sup>a</sup> Old growth conditions eventually will be featured prominently in landscapes within the land base shown. “Featured prominently” does not necessarily mean that old growth will be the predominant condition of the landscape, because, even within the management areas where old growth conditions develop without active management, natural disturbances are likely to generate patches of younger growth and help maintain a mix of forest stands differing in age and composition.

In addition to old growth characteristics likely to develop in the primary terrestrial systems [Table D.2], much of the 270,000+ acres assigned to Management Area 9 (Riparian Communities and Water) already has and is also likely to develop patches of old growth naturally, because, although thinning and single tree selection are permitted under certain very limited circumstances (e.g., to restore native forests in off-site loblolly pine plantations or to control insect infestations), few native trees in this management area are subject to cutting. Much of this future old growth would be representative of the Ouachita Riparian subsystem, and smaller areas would be representative of the Ouachita Mountain Seep System, but

large portions would be more characteristic of upland Shortleaf Pine-Oak and Dry-Mesic Hardwood systems. Although old growth conditions should be common within Management Area 9 in the future, natural disturbances are likely to generate patches of younger growth and help maintain a mix of forest ages and different mixes of species. As an example of the kind of forces likely to influence the development or perpetuation of old growth over time, the major ice storms of December 2000 that greatly affected an extensive area of the Ouachita National Forest had a noticeably greater impact on riparian areas than any others (due perhaps to the steepness of the slopes above many riparian areas and/or the shallowness of trees roots in and immediately above the riparian area); in many places near streams, great volumes of trees were felled by ice. In short, although the development of old growth in Management Area 9 will be strongly supported, long term persistence of such conditions cannot be guaranteed.

Several other types of old growth conditions should develop in Management Area 6, Rare Upland Communities, at least in Mesic Hardwood Forest and Dry Oak Woodland Systems, which cover at least 31,000 acres (Table D.3). Although “old growth” conditions could be described for the glade/barren and cliff/talus systems, the desired conditions of these rare communities are more appropriately described in terms of vegetation cover and fire regime (see Part 1 of the Revised Forest Plan). These communities will be managed under mixes of active and custodial management needed to achieve the desired conditions described in Part 1 of the Revised Forest Plan.

**Table D.3. Potential Old Growth and Other Rare Upland Communities in MA 6**

MA	Land Base in which Restoration of Old Growth Conditions will be Featured <sup>a</sup>	Ecological Systems Represented					
		Mesic Hardwood Forest	Dry Oak Woodland	Novaculite Glade and Woodland	Dry Acidic Glade and Barrens	Acidic Cliff and Talus	
----- Acres (approximate) -----							
6	Rare Upland Communities	48,000	27,700	3,574	1,315	2,912	4,418

<sup>a</sup> Old growth conditions eventually will be featured prominently in the Mesic Hardwood Forest and Dry Oak Woodland Systems. “Featured prominently” does not mean that old growth will be the only condition of the landscape, however, because natural disturbances are likely to generate patches of younger growth and help maintain a mix of stands differing in age and composition.

Finally, patches having old growth characteristics and varying in size from 10 to 100 or more acres are also likely to develop in each of the additional management areas listed in Table D.4, particularly on steeper slopes. In these management areas, there are more than 100,000 acres of dry-mesic hardwood forest (mostly oak-hickory forest) or woodland that are unlikely to receive much active management in the form of tree cutting or forest regeneration (Table D.4). Periodic prescribed fire is likely to be the most common treatment most of these stands would receive. Under these circumstances, old growth characteristics could develop in many hardwood stands over time; trends toward old growth conditions are likely to be counterbalanced, though, by episodes of oak decline and other drought-, disease-, and/or insect outbreak-related phenomena that periodically thin hardwood stands and initiate phases of natural regeneration.

**Table D.4. Estimated Maximum Potential Future Old Growth Acres of Dry-Mesic Forest and Woodland by Selected Management Area**

<b>Management Area</b>		<b>Estimated Acres of Dry-Mesic Hardwood Forest or Woodland</b>
14	Ouachita Mountains, Habitat Diversity Emphasis	78,700
16	Lands Surrounding Lake Ouachita & Broken Bow Lake	6,200
17	Semi-Primitive Areas	40,800
19	Winding Stair Mountain National Recreation Area (and Associated Non-Wilderness Designations)	14,100
Total		139,800

## Appendix E – Designated Source Waters

As part of the 1998 Clean Water Action Plan, each state identified source waters that are the contributing areas above municipal or public water sources. These areas are generally separated into ground waters and surface waters. Forty-seven surface sources that intersect National Forest System lands are found in Arkansas, and one is found in Oklahoma. Sixty-two Arkansas wells and springs and six Oklahoma wells fall within the influence of lands managed by the Ouachita National Forest. Figure E.1 identifies the approximate locations of source waters on or near the Ouachita National Forest. A map is available in color at [www.aokforests.com](http://www.aokforests.com).

Public water supply surface sources that have lands on or near the Ouachita National Forest include Broken Bow and Wister Lakes in Oklahoma and the following source areas in Arkansas: South Fork Reservoir (Cedar Creek), Iron Forks, and James Fork Reservoirs; Hamilton, Nimrod, Ouachita, Waldron, Winona, and Square Rock Lakes; and the Caddo, Middle Fork Saline, Ouachita, Petit Jean, and Saline (eastern) Rivers.

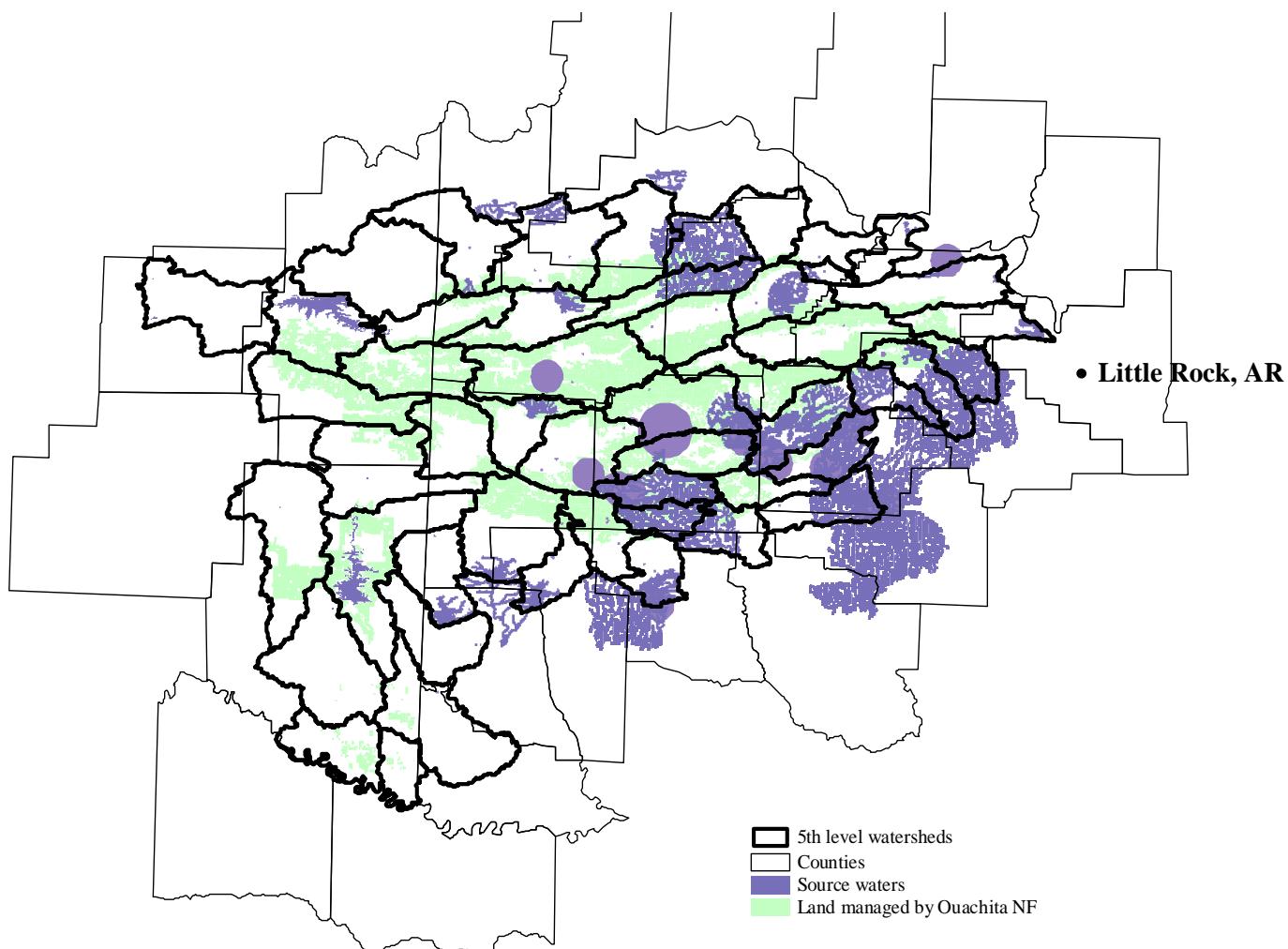


Figure E.1 Approximate Locations of Source Waters on or near the Ouachita National Forest

# Appendix F – Additional Guidance

The following additional sources of design criteria include administrative, program and project guidance. Some are legal requirements, while others are policies, procedures, and manuals that are used as guidance in project-level analysis and decision-making. For ease of use, these other sources of design criteria are arranged under headings that represent the most common use of the reference, although the reference may provide guidance in several areas. This is not intended to be an all-inclusive list, because management direction to federal agencies changes periodically. Some of these references may be amended or deleted, while others may be added.

## **General**

- National Forest Management Act. 1976
- Organic Act, 1897

## **Air Quality**

- 40 CFR Part 51. Vol. 64. No. 126. Regional Haze Regulations – Final Rule. July 1, 1999.
- Clean Air Act of 1970, 1977 and 1990
- Forest Service Manual 2500 Watershed and Air Management
- Forest Service Manual 5140 Fire Use
- U.S. Environmental Protection Agency (U.S. EPA) 1998, Interim Air Quality On Wildland and Prescribed Fires
- Wilderness Act, 1997

## **Soil and Water Resources**

- Federal-State Cooperation for Soil Conservation Act of 1944  
Soil Management Handbook 2509.18
- Best Management Practices for the states of Arkansas and Oklahoma
- Federal Water Pollution Control Act and Amendments of 1972 (Clean Water Act)
- Executive Orders 11988 (Floodplain Management) and 11990 (Protection of Wetlands)
- Joint Surveys of Watershed Areas Act of 1962
- Safe Drinking Water Act, as Amended, 1977
- Clean Water Act, as Amended
- Water Resources Planning Act of 1965
- Watershed Protection and Flood Prevention Act of 1954
- Discharge of Dredged or Fill Material into Waters of the US, 33 CFR 323
- Water Resource Inventory Handbook 2509.16
- Forest Service Manual 2500 Watershed and Air Management
- Water Programs 40 CFR 121-135

## **Wildlife, Fish, and Plant Habitat**

- Forest Service Manual 2600 Wildlife, Fish, and Sensitive Plant Habitat Management
- Fish and Wildlife Coordination Act of 1934
- Migratory Bird Treaty Act of 1918
- Fish and Wildlife Conservation Act of 1960
- Federal Noxious Weed Act of 1975
- USDA Forest Service, General Report SA-GA7, Endangered, Threatened, or Sensitive Species of the Southeastern United States
- Wildlife Game Refuges Act of 1916
- Fish and Wildlife 36 CFR 241
- Wildlife and Fisheries Program Management Handbook 2609.13

## **Threatened, Endangered, and Sensitive Species and their Habitats**

- Recovery Plans for Threatened or Endangered Species
- Endangered Species Act of 1973, as amended

## **Vegetation Management**

### **General**

- Timber Resource Planning Handbook 2409.13
- Forest Service Manual 2400 Timber Management
- Forest Service Manual 3400 Forest Pest Management

### **Prescribed Fire**

- Forest Service Manual 5100 Fire Management
- Fire Management Analysis and Planning Handbook 5100

### **Forest Regeneration**

- Knutson-Vandenberg Act of 1930
- Supplemental National Forest Reforestation Fund Act of 1972
- Timber Management Planning 36 CFR 221

### **Forest Resource Improvement**

- Anderson-Mansfield Reforestation and Revegetation Act of 1949

### **Timber Harvest Administration**

- Sale and Disposal of National Forest System Timber 36 CFR 223

### **Herbicide Use**

- Federal Insecticide, Rodenticide, and Fungicide Act of 1972
- FSM 2150 - Pesticide-Use Management and Coordination
- FSH 2109.14 – Pesticide-Use Management and Coordination Handbook
- FSH 6709.11– Health and Safety Code Handbook

## **Heritage Resources**

- Historic Sites Act of 1935
- National Historic Preservation Act of 1966
- National Historic Preservation Act of 1980, as amended
- Native American Graves Protection and Repatriation Act of 1990, 43 CFR 10
- Preservation of Historical and Archaeological Data Act of 1974
- National Register of Historic Places 36 CFR 60
- Antiquities Act of 1906
- American Indian Religious Freedom Act of 1978
- Archaeological Resources Protection Act of 1979, as amended
- Protection of Archaeological Resources 36 CFR 296
- Protection of Historic Properties 36 CFR 800
- Protection and Enhancement of Cultural Environment EO 11593
- Indian Sacred Sites, EO 13007

## **Public Use and Enjoyment/Infrastructure**

### **Recreation and Scenery Management**

- National Trails System Act of 1968
- Occupancy and Use of Developed Sites and Areas of Concentrated Public Use 36 CFR 291
- National Recreation Areas 36 CFR 292
- Special Areas 36 CFR 294
- Forest Service Manual 2300 Recreation, Wilderness, and Related Resource Management
- Forest Service Handbook No. 701, "Landscape Aesthetics, A Handbook for Scenery Management"

### **Transportation and Infrastructure**

- Forest Highways Act of 1958
- National Forest Road and Trails Act of 1964
- Forest Development Transportation System 36 CFR 212
- Forest Service Manual 7700 Transportation System
- Forest Service Handbook 7709.55 Transportation Planning

### **Lands**

- Land Acquisition Act of 1925
- Land Acquisition – Declaration of Taking Act of 1931
- Land Acquisition – Title Adjustment Act of 1943
- Leases Around Reservoirs Act of 1962
- Land and Water Conservation Fund Act of 1964
- Granger-Thye Act of 1950
- Public Land Surveys Act of 1899
- Right of Eminent Domain Act of 1888
- Small Tracts Act of 1983
- Landownership Adjustment 36 CFR 254
- Title Adjustment Act of 1930
- Forest Service Manual 5400 Landownership
- Federal Land Policy and Management Act of 1976

- Weeks Act of 1911

## **Commodity, Commercial, and Special Uses**

### **Livestock Grazing**

- Public Rangelands Improvement Act of 1978
- Range Management 36 CFR 222
- Forest Service Manual 2200 Range Management

### **Minerals and Geology**

- Mineral Leasing Act of 1920
- Mineral Leasing Act for Acquired Lands Act 1947
- Mineral Resources on Weeks Law Land Act of 1917
- Common Varieties of Mineral Materials Act of 1947
- Mining Claims Rights Restoration Act of 1955
- Mining and Minerals Policy Act of 1970
- Oil and Gas Leasing Reform Act of 1987
- Surface Mining Control and Reclamation Act of 1977
- U.S. Mining Laws (Public Domain Lands) Act of 1872
- Minerals 36 CFR 228
- Minerals 36 CFR 251.15
- Minerals 36 CFR 219.22
- Forest Service Manual 2800 Minerals and Geology
- Public Law 100-446, Section 323, enacted 1988
- The Federal Onshore Oil and Gas Leasing Reform Act of 1987
- The National Materials and Minerals Policy Research and Development Act of 1980
- The Energy Security Act of 1980, Section 262
- Surface Mining Control and Reclamation Act of 1977
- The Federal Land Policy and Management Act of 1976
- Mineral Leasing Act of 1960
- Multiple Use Mining Act of 1955

### **Special Use and Special Forest Products Permits**

- Occupancy Permits Act of 1915
- Interagency Agreement between participating agencies and the Department of Energy dated May 2002, for interstate natural gas pipelines projects certified by the Federal Energy Regulatory Commission (FERC)
- AR-OK Construction and Use Agreement for reciprocal granting of R-O-W easements or permits to serve the needs of the cooperating parties
- Multiple-Use Sustained-Yield Act of 1960, as amended (36 CFR 223.1 Subpart A for the law on plant collection permits)
- Pipelines Act of 1920
- Forest Service Manual 2700 Special Uses Management
- Master Agreement between the Department of Defense and Department of Agriculture

## **Management Area 1 (Wilderness)**

- Wilderness Act of 1964
- Eastern Wilderness Act of 1975
- Arkansas Wilderness Act of 1984
- Winding Stair Mountain National Recreation and Wilderness Area Act of 1988
- Wilderness-Primitive Areas 36 CFR 293
- Individual wilderness implementation plans

## **Management Area 2 (Special Interest Areas)**

- Establishment reports for RNAs

## **Management Area 16 (Lakes)**

- Lake Ouachita Joint Management Agreement signed between the Forest Service and Corps of Engineers

## **Management Area 20 (Wild and Scenic River Corridors and Recommended Wild and Scenic River Corridors)**

- Wild and Scenic Rivers Act of 1968, as amended
- Wild and Scenic Rivers 36 CFR 297

## **Management Area 22. Renewal of the Shortleaf Pine-Bluestem Grass Ecosystem and Red-cockaded Woodpecker Habitat**

- Red-cockaded Woodpecker Revised Recovery Plan.  
See [http://rcwrecovery.fws.gov/recovery\\_plan.htm](http://rcwrecovery.fws.gov/recovery_plan.htm).