

# 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**

<b>Grade (percent)</b>	<b>Maximum Distance Between Surface Drains or Natural Drainage Breaks (feet)<sup>1</sup></b>
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		
				Site Index < 80	Site Index > 80	
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	100-130	≤ 1/2
	Unseen Area	50-100	70-100	100-130	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**

<b>Management Type</b>	<b>Lower Level</b>	<b>Target Level</b>	<b>Upper Level</b>
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
<b>Predominantly Pine ≤30 yrs old</b>	Pine forest	60-70	5-15	75
	Mixed pine-hardwood forest	35-50	20-35	70
	Pine woodland	50-55	5-10	60
<b>Predominantly Pine &gt;30 yrs old</b>	Pine forest	70-75	10-15	85
	Mixed pine-hardwood forest	35-50	20-35	70
	Pine woodland	50-55	5-10	60
<b>Predominantly Hardwood ≤40 yrs old</b>	Hardwood forest	0-20	50-70	70
	Mixed hardwood-pine forest	20-35	35-50	70
	Hardwood woodland	0-15	35-50	50
<b>Predominantly Hardwood &gt;40 yrs old</b>	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 rockhounders 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.

## **Ib. 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.

## **Ic. 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 ½-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 ½ acre	100	100	125 <sup>2</sup>	150 <sup>3</sup>
Other defined channel; ponds less than ½ 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**

Pine, Pine/Hardwood	Approximate Harvest Age		Gap Size Opening (Acre) <sup>1</sup>
	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**

Pine, Pine/Hardwood	Approximate Harvest Age		Gap Size Opening (Acre)
	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	¼-2

<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 NW¼, Section 22, T2N, R17W
North Fork of the Saline River Segment IV; eligible	From Segment III at the east line of the NW¼, 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	
			Site Index < 80	Site Index > 80
80	N/A	70-160	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	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.