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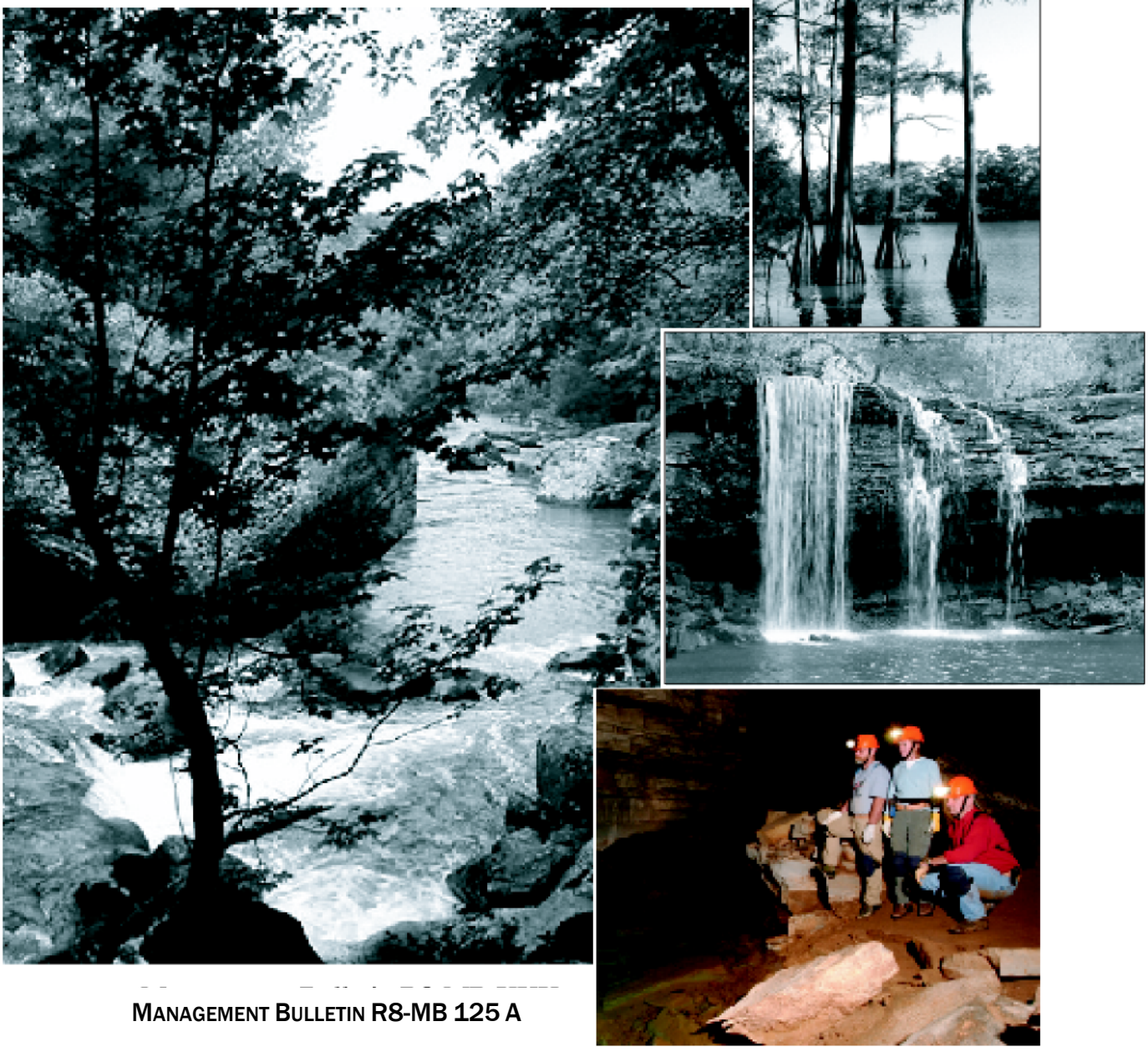
DEPARTMENT OF
AGRICULTURE

FOREST SERVICE
SOUTHERN REGION

SEPTEMBER 2005

REVISED LAND AND RESOURCE MANAGEMENT PLAN

OZARK-ST. FRANCIS NATIONAL FORESTS



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REVISED LAND AND RESOURCE MANAGEMENT PLAN

OZARK-ST. FRANCIS NATIONAL FORESTS

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PART 1–VISION

INTRODUCTION

The Revised Land and Resource Management Plan[1] (LRMP) for the Ozark-St. Francis National Forests (OSFNFs) describes the strategic direction and broad program-level direction for managing the land and resources. Land management plans do not make project-level decisions, nor do they contain commitments to implement specific projects. Those decisions are made after more detailed analysis and further public comment. Site-specific project decisions must be consistent with the LRMP unless the plan is modified by amendment. This LRMP was prepared according to the requirements of the National Forest Management Act (NFMA), the National Environmental Policy Act (NEPA), and other applicable laws and regulations. The current LRMP for the Ozark-St. Francis National Forests was approved in 1986. NFMA regulations require that forest plans be revised every 10 to 15 years (36 CFR 219.10). This revised plan has been prepared to meet that requirement.

The Revised Forest Plan was developed to implement the management alternative (Alternative E) that, when compared with the other management alternatives, comes nearest to maximizing net public benefits consistent with resource integration management requirements of 36 CFR 219.13 through 219.27. The accompanying Final Environmental Impact Statement (FEIS) describes the analysis used in formulating the management alternatives and determining which alternative was the preferred alternative for management of the OSFNFs.

ORGANIZATION OF THE FOREST PLAN

Part 1 is the vision for the OSFNFs. It describes the national forests' roles and contributions; the desired conditions (36 CFR 219.11[b]) for the various landscapes within the Forests; and the evaluation/monitoring indicators (36 CFR 219.11 [d]) that will be used to assess progress made toward accomplishing the desired conditions. Part 1 includes:

- Distinctive roles and contributions of the Forests. The vision document begins with a description of the Forests, including their distinctive roles and contributions to the local area, states, region, and nation.
- Government Performance and Results Act (GPRA) Goals (36 CFR 219.12 [f][6]). In 1993, Congress passed the GPRA to increase the accountability of federal agencies by measuring progress toward achieving agency goals and objectives. This legislation requires preparing periodic strategic plans. The

[1] Revised Forest Plan, Forest Plan, Plan, and LRMP are used interchangeably throughout this document all meaning the Revised Forest Plan

Forest Service (FS) issued the Strategic Plan for Fiscal Years 2004-2008 on February 11, 2004 (www.fs.fed.us/publications/strategic/fs-sp-fy04-08.pdf). These long-term goals and objectives help guide the current actions and future plans of the Forest Service.

- Desired Conditions. Desired conditions describe how the Forests are expected to look and function in the future when land management plan direction has been successfully implemented. Desired conditions are described using the ecological, economic, and social attributes that characterize or exemplify the outcomes of land management. The degree to which the Forests achieve the desired conditions will be measured through monitoring. Desired conditions are not commitments and may be achievable only over the long term; however, movement toward achieving desired forest conditions is expected to be consistent with movement toward achieving the GPRA goals.
- Evaluation/Monitoring Elements: Evaluation/Monitoring elements are used to evaluate progress toward the desired conditions.

Part 2 is the strategy. The strategy describes the objectives (36 CFR 219.11 [b]) that the Forest Service intends to implement in order to move the Forests toward the vision described in Part 1. Part 2 identifies suitable uses through management areas (36 CFR 219.11[c]) that show allowable uses and opportunities by area, including existing and recommended wilderness and other special area designations (36 CFR 219.17). Part 2 also presents a prospectus that describes past program performance, program priorities and objectives, a discussion of performance risks, recent trends, and expectations regarding the levels of experiences, goods, and services supplied by the Forests. Geographic areas or places that would respond similarly to management practices have been identified for planning purposes as management areas. The desired condition and the multiple-use management focus for each management area are described in this part of the LRMP.

Part 3 is the design criteria. The design criteria include the laws, the management standards (36 CFR 219.11 [c], 219.13 through 219.27), and references to other applicable guidance that specify the requirements for Forest Service projects. Standards are mandatory requirements that apply to site-specific activities. Design criteria are intended to ensure that projects protect resources and are designed to be consistent with achieving the priorities, objectives, and desired conditions for the Ozark-St. Francis National Forests, and the desired conditions and strategies for each management area.

PURPOSE

The LRMP articulates broad strategic direction for management of the OSFNFs This Revised Plan increases emphasis to on-the-ground forest conditions achieved over time (desired conditions) in addition to the outputs (products, goods, and services), which were the primary focus of the current Forest Plan.

The Forest Plan guides all natural resource management activities for the Ozark-St. Francis National Forests. To accomplish this, the Forest Plan:

- Establishes long-range goals (desired conditions) and short-range objectives (generally for the next 10 to 15 years).
- Specifies management areas and associated priorities and objectives.
- Establishes monitoring and evaluation requirements that provide a basis for periodic determination and evaluation of the effects of implementing the Forest Plan.

The purpose of a LRMP is to set the framework for project development. Projects may be proposed to respond to demands by the public as part of a Forest Service program priority, or to meet LRMP objectives (see Part 2-Strategy). A project might be needed because of a discrepancy between current conditions and desired conditions as described in the LRMP.

When a project is proposed, it is first checked against the suitable uses and desired conditions for the area in which it is proposed (see Parts 1-Vision and 2-Strategy). If the project is compatible with those conditions, appropriate and relevant design criteria (see Part 3-Design Criteria) are incorporated. If the project is inconsistent with plan direction, the project may be redesigned, may be rejected, or may require a plan amendment.

The LRMP is intended to be an adaptable framework for guiding future management decisions and actions. As such, a plan does not create, authorize, or execute any ground-disturbing activity. A plan in and of itself does not grant, withhold, or modify any contract, permit, or other legal instrument; does not subject anyone to civil or criminal liability; and creates no legal rights. A plan by itself is not an action-forcing document and, therefore, is not a major federal action having a significant effect on the quality of the human environment.

This LRMP is intended to be dynamic over time in response to feedback from monitoring and evaluation. Monitoring and evaluation focuses on accomplishment of desired conditions and plan objectives, activity levels and outputs, and implementation and effectiveness of design criteria at the project level. Results of monitoring and evaluation are typically reported annually, and include recommendations for changes to the plan.

LOCATION

The Ozark-St. Francis National Forests include approximately 1.2 million acres of federally managed public land. The Ozark National Forest is located primarily in Northwest Arkansas; the St. Francis National Forest is located in eastern Arkansas next to the St. Francis and Mississippi Rivers, about 50 miles southwest of Memphis, Tennessee (Figure 1-1).

The Ozark National Forest was established on March 6, 1908, by presidential proclamation. The Ozark National Forest is located within Baxter, Benton, Conway, Crawford, Franklin, Johnson, Logan, Madison, Marion, Newton, Pope, Searcy, Stone,

Van Buren, Washington, and Yell Counties. Diverse flora in the region includes more than 500 species of trees and woody plants. Hardwoods occupy approximately 72 percent of the Forest with oak-hickory types being dominant.

The St. Francis National Forest takes its name from the St. Francis River, one of the rivers forming the Forest's eastern boundary. The discoverer of the river is unknown, as is the origin of the name St. Francis. Most of the Forest is situated in the hilly Crowley's Ridge section, but some is in low bottomlands along the rivers. The St. Francis National Forest was established November 8, 1960. The St. Francis National Forest is located in Lee and Phillips Counties. Vegetation in this area grows on high quality sites and includes bottomland hardwood forests in low areas, and an upland hardwood forest that is similar to Appalachian Mountain forests.

Although two separate national forests, the Ozark-St. Francis National Forests are managed by one Supervisor's Office, located in Russellville, Arkansas.

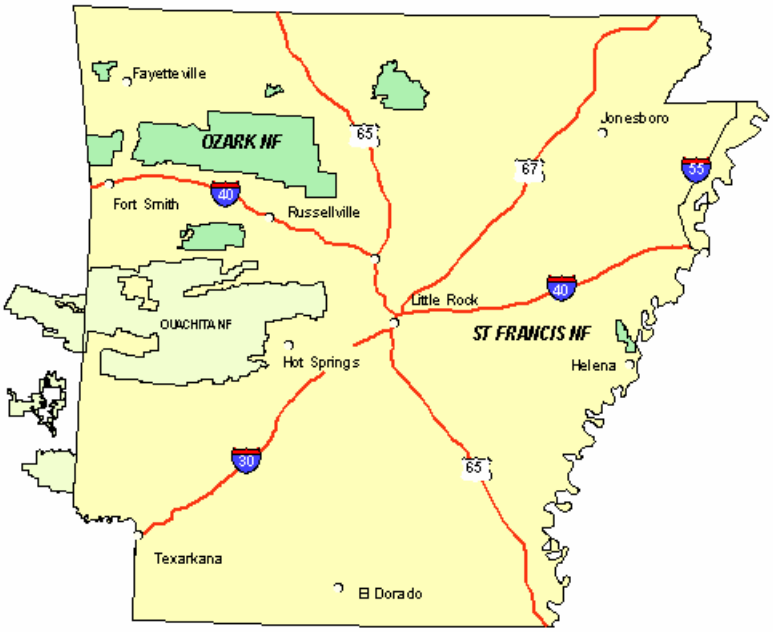

Figure 1-1. Vicinity Map of the Ozark-St. Francis National Forests.

NATIONAL STRATEGIC PRIORITIES

This LRMP is developed within the framework of priorities set for the Forest Service at a national level. Guidance within the LRMP is designed to contribute to these national priorities while addressing additional local issues, challenges, and opportunities.

The Forest Service Chief has identified "Four Threats" to conservation on national forests across the country. Keeping America's forests and grasslands healthy will require restoring and rehabilitating damaged areas to: (1) prevent severe wildfires;

(2) stop the introduction, establishment, and spread of invasive species; (3) reduce the conversion of forest and grasslands that leads to fragmentation of rural landscapes through subdivision; and (4) manage impacts of motorized recreation vehicles by restricting use to designated roads and trails.

Actions needed to address the "Four Threats" include:

- **Fire and fuels**—Restore healthy, disturbance-resilient ecosystems on lands at risk from catastrophic fire, improving the condition and function of critically important watersheds, and sustaining critical wildlife habitat nationwide.
- **Invasive species—**Protect forest and rangeland ecosystems by preventing the release of non-native species and by controlling the spread or eradicating invasive species.
- **Loss of open space—**Conserve the nation's forests and rangelands most at risk due to subdivision and land conversion by working with partners, communities, and landowners to balance development with sustaining ecosystem services and viable working landscapes.
- **Unmanaged recreation—**Work with partners to develop travel management plans that regulate the use of off highway vehicles (OHVs) on designated roads and trails in an appropriate manner.

The USDA Forest Service Strategic Plan for Fiscal Years 2004-08 incorporates and expands on these "Four Threats" to provide a framework for accomplishing the Agency's mission. It identifies six national goals.

Goal 1: Reduce the risk from catastrophic wildland fire.

Outcome: Reduced risk to communities and the environment from catastrophic wildland fire by improving the health of the nation's forests and grasslands. "*A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: 10-Year Comprehensive Wildland Fire Strategy*" (Department of Interior and Department of Agriculture, 2001) describes the need to reduce the risk of wildland fire to communities and the environment because:

- Increased population growth in the wildland urban interface places more citizens and property at risk.
- Many of the traditional approaches to land management and suppression of wildland fire have resulted in dense, diseased, or dying forests, which have contributed to severe fires and increased threats to communities and ecosystems.
- Post-fire ecosystem health problems from insects, pathogens, and invasive species are increasing.

Miles of rural landscape once buffered urban areas from the effects of wildland fire. Now forests are increasingly part of the wildland urban interface, creating a greater challenge for fire protection. Recent research has identified 73 million acres of National Forest System lands and 59 million acres of privately owned forestland at

high risk of ecologically destructive wildland fire (Fire Regime Condition Classes 2 and 3, Fire Regime I and II).

Goal 2: Reduce the impacts from invasive species.

Outcome: Improve the health of the nation's forests and grasslands by reducing the impacts from invasive species.

Invasive species, particularly insects, pathogens, plants, and aquatic pests, pose a long-term risk to the health of the nation's forests and grasslands. These species interfere with natural and managed ecosystems, degrade wildlife habitat, reduce the sustainable production of natural resource-based goods and services, and increase the susceptibility of ecosystems to other disturbances such as fire and flood. Rampant population growth and impact often occur when new organisms are introduced into ecosystems and their natural enemies do not follow. Habitat fragmentation (the division of forest and grassland habitat into smaller, more isolated patches) limits containment and eradication of invasive species.

Economic impacts to forests and grasslands from invasive species currently exceed $4 billion nationally per year without considering the cost of environmental consequences, such as loss of native fauna and flora in large areas. The best defense against invasive species is either preventing their introduction or aggressively eradicating newly detected pest species. The Forest Service accomplishes both courses of action by implementing the National Invasive Species Management Plan in cooperation with other USDA agencies, other federal departments, states, tribes, and private sector partners.

Goal 3: Provide outdoor recreation opportunities.

Outcome: Provide high-quality outdoor recreational opportunities on forests and grasslands, while sustaining natural resources, to help meet the nation's recreation demands.

By mid-century, our nation's population is projected to increase by nearly 50 percent. Simultaneously, public access to privately owned forestland is expected to continue to decline. This situation will increase the pressure on public lands to provide additional recreation opportunities. If public lands are to continue to provide additional recreation benefits without experiencing unacceptable impacts to resources, emphasis must be placed on effective management solutions. In particular, it is critical that we improve management of OHV access and use on National Forest lands to preserve high-quality experiences for all recreational users.

Goal 4: Help meet energy resource needs.

Outcome: Consider opportunities for energy development and the supporting infrastructure on forests and grasslands to help meet the nation's energy needs.

The nation's forests and grasslands play a significant role in meeting America's need for producing and transmitting energy. Unless otherwise restricted, National Forest lands are available for energy exploration, development, and the supporting infrastructure on forests and grasslands to help meet the nation's energy needs (e.g., well sites, pipelines, and transmission lines).

Goal 5: Improve watershed condition.

Outcome: Increase the area of forest and grassland watersheds in fully functional and productive condition.

An estimated 3,400 towns and cities currently depend on national forest watersheds for their public water supplies. Our national forests and grasslands contain more than 3,000 public water supplies for campgrounds, administrative centers, and similar facilities. Communities that draw source water from national forests and grasslands provide water to 60 million people, or one-fourth of the nation's people. Although most forested watersheds are in fully functioning or satisfactory condition, many streams on National Forest System lands do not meet state water quality standards. Some municipal watersheds, especially in the West, are at risk from catastrophic wildland fire and from impacts due to excessive use. These problems are compounded when land is subdivided into smaller and smaller parcels. The loss of valuable corridors connecting National Forest System lands with other undisturbed tracts of land increases the difficulty of effectively managing watershed conditions. Sustaining functional watershed conditions over time maintains the productive capacity of our land and water.

Goal 6: Mission-related work in addition to that, which supports the Agency goals.

Outcome: Improve the productivity and efficiency of other mission-related work and support programs.

FOREST NICHE, MANAGEMENT CHALLENGES, AND VISION

Forest Niche

The "niche" of the Ozark-St. Francis National Forests is the unique role that these forests play in providing benefits to the American public.

The Ozark National Forest provides the majority of public outdoor dispersed recreation opportunities in northern Arkansas. The St. Francis National Forest, while smaller in overall size, is a significant block of public land in eastern Arkansas, which also provides important outdoor recreational opportunities. No other entity in these regions provides the large natural landscapes that contribute to the following:

- The quality of many types of outdoor recreational activities,
- Diverse habitats important to maintaining well-distributed viable wildlife populations,

- An important source of high-quality wood products for local and regional economies,
- Recharge areas for numerous reservoirs and groundwater basins that provide water for numerous communities, and
- Best examples of native ecosystems.

The recreation role is enhanced by the Ozark National Forest's adjacency to the Buffalo National River corridor, which is managed by the National Park Service. The Ozark-St. Francis National Forests are within one day's drive of approximately 58 million people, and are a common destination for outdoor recreation participants from the growing major metropolitan areas of Little Rock, Fort Smith, and Fayetteville, Arkansas, and Memphis, Tennessee. Visitation from across the country is also significant.

The large blocks of natural habitats found on the Ozark-St. Francis National Forests represent some of the last and best examples of native ecosystems in their respective regions. For this reason, they are havens for native plant and animal species including many that are rare and declining. These lands are especially important to species requiring large areas of undeveloped habitat (such as black bear), species requiring large blocks of mature forest (such as some forest songbirds), and ecosystems and species dependent on appropriate kinds of ecological disturbance (such as periodic fire). Especially in the Ozark region of northern Arkansas, no other entity is capable of providing the abundance and quality of habitat needed to support viable populations of some native species of wildlife. The OSFNFs provide habitat for 8 federally listed threatened and endangered species, 10 Forest Service sensitive species, 21 Forest Service sensitive plants, and numerous species of local rarity. Biologists estimate approximately 20 of these rare species are moderately to highly dependent on national forest land for persistence across their range or within the region. These include species that occur nowhere else, like the endangered Magazine Mountain shagreen (a land snail), and wider ranging species such as the endangered Ozark big-eared bat. Maintaining these species for the current and future enjoyment and use of the American public is a critical part of these Forests' niche.

On a local, regional, and national scale, the Forests assets include:

- A variety of high-quality recreation experiences for the approximately 58 million people that live within a 1-day drive of the outdoor recreational opportunities within the Ozark-Ouachita Highlands, which includes the Ozark-St. Francis National Forests.
- A wide variety of outdoor recreational opportunities for four rapidly growing major metropolitan areas (Little Rock, Fort Smith, and Fayetteville, Arkansas, and Memphis, Tennessee).
- High quality recreation settings for hiking, mountain biking, and horseback riding on more then 650 miles of trail, 146 miles of trail for motorized recreation use, and approximately 2,700 miles of high clearance open roads.

- Blanchard Caverns, one of the most carefully developed caves in the nation. This living cave includes glistening speleothems, stalactites, stalagmites, columns, and flowstones.
- Five nationally designated wilderness areas, covering approximately 66,000 acres.
- Six nationally designated wild and scenic rivers, totaling approximately 160 miles, and providing excellent whitewater opportunities.
- Scenic driving on over 200 miles of national forest scenic byways, and a wealth of open forest roads.
- Twenty-one special interest areas, each with its own unique features.
- Thirty-three developed campgrounds, some with bathhouses and electric hookups.
- Fishing in hundreds of miles of clear streams and dozens of lakes and ponds.
- Free public access for excellent opportunities to hunt populations of wild turkey, whitetail deer, gray squirrel, and black bear.
- Contributions to local communities with economic returns-to-counties, employment, and wildfire protection.
- An important source of high-quality wood products, including pine and oak, for local and regional economies.
- Opportunities for research and education in two research natural areas and two experimental forests.
- Water recharge for numerous reservoirs and groundwater basins that provide water for numerous communities in addition to agricultural and industrial uses.
- Sixty-six producing gas wells in areas that have a high potential for additional exploration and development.
- Habitat for 8 federally listed threatened and endangered species, 10 Forest Service sensitive species, and 21 Forest Service sensitive plants.

MANAGEMENT CHALLENGES

Recreation

The Forests will face a number of challenges in managing the Forests' recreation program in the future. Meeting these challenges will require a highly adaptive and business-like approach that takes advantage of the Forests' niche in the market area they serve.

The Ozark National Forest is experiencing significant population growth in some of the counties around the Forest. Trends indicate that Northwest Arkansas can expect a 40 to 50 percent population growth by the year 2020. Also, the State of Arkansas is constructing two state parks on national forest lands (Mount Magazine State Park located on the Ozark NF near Paris, Arkansas, and the Mississippi River State Park located on the St. Francis NF near Marianna, Arkansas). These State Parks are expected to significantly increase visitor use on portions of the Forests.

As a large segment of the American population ages, the demand is growing for less physically-challenging activities such as viewing wildlife and driving for pleasure. The desire for easier access to facilities and forest settings is increasing as the physical abilities of the aging population decreases. The changes in ethnic populations across the Nation are also reflected in forest visitation. Hispanic use of developed recreation sites hardly existed 10 to 15 years ago. Today, Hispanic use is growing rapidly, especially at developed sites. The demographic profile of forest visitors is also changing. Forest managers need to recognize and be prepared to accommodate the needs of a changing population of recreation users.

Recreation surveys and trends indicate a need to shift toward more day-use activities in the future. This includes activities such as driving for pleasure, sightseeing, picnicking, and trail use. Traditional recreation activities on the Forests are expected to continue to be popular. These include camping at developed sites, hunting/fishing, gathering forest products such as firewood, and visiting areas that provide solitude such as wilderness areas. Other emerging activities to be addressed include mountain biking, rock-climbing, and water activities.

Lack of funds to maintain and repair aging recreation sites may necessitate closing some areas. In order to maintain and operate recreation sites, the Forests depend on the Fee Program. Forest managers will need to make some decisions on which developed sites will remain open based on sound business practices.

Public Access

Access to the Forests is a complex problem. Closing roads can be viewed by some as an infringement on the public's right to access public lands. Others view roads as a negative impact on the environment or wildlife, and believe road closures should increase. Forest managers struggle with providing a road system that meets management goals for wildlife, soil, and water protection as well as other resource needs while meeting public access and motorized recreation needs. Currently, road density across the Forests varies, but the majority of the OSFNFs are easily accessible. Early homesteaders, the Civilian Conservation Corps (CCC) program in the early 1930s, and the white oak stave bolt market that occurred between the 1940s and the 1960s developed the majority of the forest road system. Roads have been constructed and reconstructed to a much higher standard in the past 30 years to accommodate larger timber hauling trucks and gas well activities. Approximately 70 percent of the lands within the Forests are within a quarter mile of an open road.

Another issue facing forest transportation planners is insufficient budget to reconstruct or maintain the current road system. Maintenance dollars in recent years have been inadequate to keep up with maintenance backlog. This problem is especially compounded during the fall hunting season and rainy weather when vehicular traffic causes rutting or sedimentation problems.

Cross-country OHV travel (travel off open roads and trails) is prohibited on the OSFNFs. Even though the general forest area is closed to public use, many areas receive heavy illegal off-road use. Some people want areas to be managed for non-

motorized use to increase opportunities for solitude. Others want to continue to use the backcountry roads the way they have always used them. Other concerns include lack of budgets to maintain the current road system, impacts to the soil and water resources, and impacts to wildlife populations and habitat. Recreation trends indicate that OHV use will continue to increase in popularity during the next decade. The role of the Forests in addressing this demand will be a major challenge for forest managers.

Watershed Function

One of the primary missions of the Forest Service is to provide high-quality water in sufficient quantities to meet all needs of natural resource and human requirements. The Federal government originally acquired the lands within the boundaries of the OSFNFs under the authority of the 1911 Weeks Act. The Weeks Act authorized the Secretary of Agriculture to purchase lands within the watersheds of navigable streams to maintain their normal stream flows, and to provide a supply of timber. Conservation measures were installed to stop the loss of valuable topsoil, and stabilize sediment choked stream channels.

Because many of the streams and river systems within north and central Arkansas originate within National Forest boundaries, it is imperative that the Forests emphasize proper watershed management to ensure that these needs are meet. Water bodies within Arkansas currently vary from relatively undisturbed conditions to those that do not meet state water quality standards. The main source for these impairments includes recreation, road construction, timber harvesting, agriculture, and urban development, as well as disturbances associated with natural processes, such as wildfire.

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

The Ozark-St. Francis National Forest land base supplies water to feeder streams for the following five major rivers in Arkansas: the White, Buffalo, Little Red, Illinois, and Arkansas rivers. These major rivers and their tributary streams offer habitat to numerous aquatic and riparian dependent species-at-risk, in addition to providing water for municipal, commercial, and agricultural uses off the Forests. Watershed conditions vary depending on the amount of disturbance (mostly driven by land uses) that has occurred within the watershed. Generally, portions of larger watersheds that are found on the Forests have had fewer disturbances than others across the state.

An assessment of the 50 watersheds on the Ozark-St. Francis National Forests was conducted using the *East-Wide Watershed Assessment Protocol for Forest Plan Revision* (EWAP; R8 guidance issued 2620, 1/26/2001). This assessment provided an overall summary of watershed health based on quantitative indicators about land use, road density, hydrology, soils, and geology. Professional judgment indicators

such as floodplain connectivity, water quality and quantity, and riparian vegetation were also considered. Characteristics of healthy watersheds include: high percentage of forestland use, lower road densities, and forested floodplains or riparian corridors. Twenty of the fifth level watersheds (25,000 to 220,000 acres) were identified as having the highest relative levels of watershed integrity. The remaining watersheds identify areas where the Forest Service would have the greatest potential to work in partnership to improve or maintain the overall integrity of the aquatic and riparian environments.

Water stresses documented for Arkansas which are important indicators of future trends or potential issues within the boundaries of the National Forests include:

- The northern portion of the state's growing population must meet the water supply needs of a rapidly in an area with relatively low stream flow rates and limited groundwater reserves. This growth has increased the amount of treated wastewater released into waterways, along with an increasing amount of non-point source pollution related to development.
- Agriculture Uses and Confined Animal Operations require an intensively managed landscape, which includes both ground disturbance and chemical use. Confined animal operations in Arkansas have rapidly grown over the past two decades, resulting in challenges for managing the waste byproducts. Together these two agricultural practices potentially result in non-point source pollution problems such as increased sedimentation and nutrient loading.
- Droughts of 1998-2002 have resulted in profound negative impacts on agricultural and municipal water systems. During the summer of 2000, Arkansas faced critical water supply shortages.
- Land development impacts include the loss of healthy aquatic habitat and reduction in water quality from non-point pollution sources. Proper land use and water management practices will be required to sustain water quality and protect aquatic habitat.

Ecosystem Health and Sustainability

Ecosystem sustainability is a concept of natural resources management wherein national forest activities are considered within the context of economic, ecological, and social interactions within a defined area or region over both the short and long term. Ecosystem management shifts the emphasis from managing for outputs of ecosystems to maintaining the structure and function of ecosystems through time and for the benefit of present and future generations.

Addressing ecosystem health and sustainability may be the biggest challenge facing forest managers in the coming decades. When the Forest Plan was approved in 1986, the Forest Service's current management philosophy, known as ecosystem management had not yet been adopted.

Oak Management

The oak dominated forests occupy about 66 percent of the Ozark-St. Francis National Forests, approximately 760,000 acres. These communities are commonly found in the northern two-thirds of the Ozark NF and on almost all the St. Francis NF. Red oak, white oak, and hickories are the major trees in the overstory. Numerous other species within these types include gums, elms, red maple, dogwood, sassafras, ash, cherry, and pine. Approximately 91 percent of the acreage is greater than 40 years of age with over 50 percent being over 100 years of age. Due to advanced age, overstocked stands of trees, and weather related factors (primarily drought); there has been an increase in oak decline events causing severe mortality. Due to the abundance of overstocked stands and lack of fire, there is a lack of oak regeneration. Because of this and without active management, it is likely that some oak stands will convert to shade tolerant forest types.

Oak regeneration efforts over the life of the current plan have focused on even and uneven systems. Clearcutting in the 1980s resulted in some oak dominated stands. Shelterwood systems, which leave a percentage of the overstory in place, have been successful where adequate advanced oak regeneration was in place prior to harvest. Group selection harvest (uneven-aged) has been mostly unsuccessful at getting adequate oak regeneration, resulting in many small openings occupied by light seeded species such as maple.

The challenge for forest managers is deciding what combination of regeneration cutting methods and silvicultural tools such as prescribed burning, thinning, planting, and herbicides, will be used to sustain oak forests.

Prescribed Fire

In pine and oak ecosystems of the Interior Highlands, natural fires were once relatively frequent and mostly low intensity. There is a general consensus among scientists that the pre-settlement forest structure and fire regime in the Interior Highlands was much different than today. Descriptions of the pre-settlement forests indicate that a high percentage of the Ozark forests were most often open woodlands with widely spaced trees, grassy or herbaceous ground cover, and a distinct "park-like" appearance. There were also savannas, glades, and some prairies.

Ecologists believe that current pine and oak ecosystems are threatened because of the long absence of fire. From early 1900s to 1950s, fire was viewed as a danger that was kept out of the Forests. As an ecological process, prescribed fire is an essential tool for creating and maintaining functional ecosystems. However, in the last 100 years, as human populations and resource demands have grown, the Forests' landscape has become dissected with roads, urban development, and other man-made features. These features reduce the impact of natural fires and require that most unplanned fires be controlled. Today, restoring fire's role to the Forests requires purposeful and well-planned prescribed burning.

Wildland and prescribed fires produce smoke. Smoke from prescribed burning is a problem when it creates an annoyance or nuisance, and when it negatively affects human health and safety. Ideally, fire managers should be able to predict smoke production and movement before they ignite a fire. However, emission modeling is not an exact science. Modeling problems most often occur when either predicted wind direction, mixing heights, transport winds, or humidity do not match the actual conditions during a burn. Minimizing the atmospheric impacts of prescribed fires will be one of the biggest challenges for fire managers.

As the private lands within and adjacent to the Forests become subdivided and settled with more people, the likelihood of wildfire spreading onto national forest lands or vice versa increases. This wildland-urban interface zone where homes exist among flammable fuels is increasingly becoming an issue. The challenge for forest managers is working with communities and our partners to protect homes, buildings, and community resources (watersheds, communication lines, and roads) from wildfire while maintaining healthy ecosystems. Prescribed fire, used to reduce fuel loads, can be an important tool in fire protection efforts.

Residential Communities

The OSFNFs are a mosaic of federal land intermingled with tracts of private and industrial land and rural communities. Due to this large amount of private ownership, many communities, private landowners, and forest users are directly affected by forest management decisions.

Today, local governments develop land use plans to reduce conflicts resulting from incompatible uses and to exercise some control over growth and expansion. Local governments are increasingly attuned to the need for economic diversity. During the comment period, the Forest Service received a number of comments from local residents about increasing revenues from recreation and tourism and focusing on the sale of wood products to benefit the economy and improve forest health. One of the management challenges is addressing the concerns of local governments.

VISION

The Ozark-St. Francis National Forests are a model of sustainable ecosystem management, featuring healthy ecosystems that provide a balanced and sustainable flow of goods and services for a growing, diverse population. The OSFNFs landscapes are characterized by healthy ecosystems, clean water, scenic beauty, and biological diversity. Forest watersheds are managed to provide many benefits including flood protection and quality drinking water for downstream communities, as well as protection of wildland urban interface areas from wildfire. They offer a haven for native plants and animals and provide irreplaceable habitat for threatened, endangered, and sensitive species. The National Forests provide a wide variety of recreation opportunities. The approximately 1.2 million acres within the OSFNFs serve as an outdoor classroom, a "living laboratory" for learning about our natural and cultural heritage and the importance of conservation.

The Forests in 10 Years

Significant changes may be apparent in those areas where projects have been implemented to meet the Forest Plan priorities and objectives, but the overall character and appearance of the Forests will change only slightly over the first decade.

- Developed recreation sites are managed using sound business principles to provide the public with a variety of opportunities in a safe, well maintained, and visually appealing setting. Some high cost, low use sites are closed, or converted to day-use or other forest uses.
- Visitors are able to choose from a wide variety of safe, high quality dispersed recreation opportunities that minimize user conflicts and at the same time provide for other Forest uses and products demanded by other segments of the public.
- Blanchard Springs Caverns is promoted and managed as a destination site for tourists. Mount Magazine State Park and Mississippi River State Park are fully operational and serve as "gateways" to the wide diversity of recreation opportunities on the remainder of the Forests.
- The Indian Creek and Upper Buffalo Dispersed Recreation Areas are managed in a setting that provides quality scenery, non-motorized and limited motorized trails, and limited facilities.
- The Wedington Unit is managed as an "urban forest" and provides numerous recreation opportunities for recreation users in the Fayetteville metropolitan area.
- Existing cultural resources will be evaluated, protected, and enhanced, while inventories will continue with other sites being identified.
- The North Fork of the Illinois Bayou receives Congressional designation as a wild and scenic river.
- The Forest road system balances the needs of wildlife habitat, the need to provide both motorized and non-motorized recreational opportunities, the need to protect the soil and water resources, and the need to have management access.
- The Forest road system provides visitors ample opportunity for "driving for pleasure." Numerous vistas and overlooks enhance the driving experience.
- Timber stand improvement, regeneration harvest methods, and uneven-aged management are applied in ways that move forests toward desired conditions while providing for growth and harvest of valuable sawtimber that is most in demand in the marketplace. Additional forest products such as pulpwood, fuelwood, and the establishment of a small Roundwood market have begun to utilize products from timber stand improvement and ecosystem management activities.
- Progress is made to improve age class distribution and overstocking in oak forest types.
- Progress is made in reducing forest health threats including oak decline, native insects, non-native insects, non-native invasive plants, exotic diseases, and the risk of catastrophic fires.

- Progress is made toward restoring open, fire-maintained, dry oak and pine woodland ecosystems based on the ecological potential and capability of the land. Natural processes are mimicked to create landscape patterns that resemble historic reference conditions.
- Prescribed burning to manage vegetation for restoration, wildlife habitat improvement, fuel reduction, and health and safety for employees and the public is a common and accepted practice.
- Progress is made in implementing threatened and endangered species recovery plans.
- Progress is made in conserving and maintaining rare and special ecological communities, and habitat for threatened, endangered, and sensitive species.
- Progress is made in controlling invasive non-native species.
- Large and medium sized blocks of old growth are provided on both suitable and unsuitable lands.
- Vegetative communities within riparian corridors are diverse, productive, and provide for a rich variety of organisms and habitat types.
- Soils remain productive except where facilities have been constructed. Erosion, compaction, nutrient loss, and displacement will remain minimal.
- Water quality in streams and rivers meets or exceeds state and federal standards and is within a range that ensures survival, growth, reproduction, and migration of aquatic and riparian associated wildlife species.
- Forest managers actively support the leasing, exploration, and development of energy resources in an orderly, efficient, and environmentally sound manner.
- Forest managers facilitate the development of non-energy mineral resources needed for environmental protection, public infrastructure, flood protection, erosion control, and watershed restoration.
- Forest managers actively facilitate the reclamation of disturbed sites at the appropriate state of development.
- Geological resources are managed to provide multiple public benefits.
- Forest ownership within the proclamation boundary is more consolidated as a result of an active lands adjustment program.
- Forest managers have a close working relationship with research scientists and benefit from research conducted on the Forests' research natural areas, experimental forests, and the general forest.
- Forest managers are actively engaged in providing information and environmental education to the public through brochures, electronic media, interpretative signs, and educational programs both on and off the Forests. Information about recreational opportunities, the natural settings, and the environment is readily accessible.
- Forest managers actively involve local governments and communities in the decision-making process related to national forest management issues.
- The Buffalo River elk herd is expanded into the wildlife emphasis Management Area 3.K.
- Habitat conditions for game animals are improved leading to quality hunting opportunities.
- Maintain a proven track record of sound management of OHV recreation on a safe and enjoyable designated system of roads and trails. OHV trespass off designated routes is infrequent.

- Rare Community locations are mapped and sites are managed to provide for the rare community and species associated with the community type.

The Forests in the Long Term

The Forest Plan, by law, must be revised every 10 to 15 years. However, if the direction in this Plan were continued, unchanged over the next 50 years, many changes would be readily apparent.

- The Forests have the capacity across the landscape for renewal, for recovery from a wide range of disturbances, and for retention of its ecological resiliency, while meeting current and future needs of people for desired levels of values, uses, products, and services.
- Populations of native species, once rare or declining, are stable and increasing. Non-native invasive species outbreaks are infrequent and controlled.
- Populations of threatened, endangered, or sensitive species and other species of viability concern will be above the levels necessary for viability and habitat will be available to maintain these species.
- Fire adapted ecosystems have been restored across the Forests. Ongoing prescribed fire programs for habitat manipulation and fuel reduction have also reduced the risk of wildland fire. Working with other agencies, communities, and property owners, vegetative treatments have been completed to defend at risk communities, private homes, and property from wildfires.
- The individual values and ecological functions of floodplains, karst, groundwater, lakes, riparian areas, springs, streams, and wetlands are protected and enhanced. Water quality will be high. Forested riparian areas will remain in a forested land use.
- Changes in management have maintained or improved soil productivity.
- Visual corridors along major roads, some forest roads, and rivers will appear natural or near natural. Vistas and overlooks provide opportunities for forest visitors to view the Forests' scenic landscape.
- Construction of additional developed recreation sites is done in support of dispersed recreation activities. Decisions on where and what types of recreation facilities are built are based on sound business principles. Dispersed recreation opportunities will be enhanced. An extensive network of well-maintained trails is developed that traverse a variety of landscapes across the Forests.
- As wilderness use continues to grow, areas with higher user impacts will be protected from degradation or rehabilitated as necessary through a combination of site recovery projects, user education, and user management.
- The demand for semi-primitive motorized and non-motorized recreation use is addressed.

Employees' Vision for the Ozark-St. Francis National Forests

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

DESIRED CONDITIONS OF THE OZARK-ST. FRANCIS NATIONAL FORESTS

Terrestrial, Riparian, and Aquatic Ecosystems

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

Riparian and aquatic-associated terrestrial communities are managed (within designated Streamside Management Areas) to protect and maintain water quality, productivity, bank stability, and habitat for riparian-dependent or aquatic species. Properly functioning systems support healthy populations of native and desired non-native species.

Species composition for all native plant communities falls within the natural range of variation described by NatureServe. Where native species have been displaced by non-native or off-site species, systems will be restored over time to native species composition. The mix of ecological conditions, including a range of structural conditions in the major community types, will be adequate to support viable populations of all native plant and animal species.

The following section paints a more detailed picture of what national forest conditions are desired in order to achieve the Vision for the forest and to contribute to goals from the national strategic plan. Projects proposed for the Ozark-St. Francis National Forests should be consistent with and contribute to achieving these conditions. Desired conditions descriptions are organized by resource area. Following each of these desired condition descriptions are lists of elements that will be monitored to evaluate progress at achieving these conditions.

VEGETATION AND FOREST HEALTH

Major Forest Communities

Major forest communities are defined as those forest communities that together comprise the majority of the ecological landscape on the national forest. They include abundant community types, as well as those uncommon types that are not considered Rare or Special Communities. Major forest communities are managed at a variety of intensities across the Ozark-St. Francis National Forests to achieve desired conditions specific to management areas. Following a general description of desired conditions for all major forest communities, each major forest community is defined and overall forest-wide desired conditions for each are described. More specific desired conditions for some major forest communities are included under management area direction, where appropriate.

Table 1-1 Major Forest Communities for the Ozark-St. Francis National Forests:

Major Communities on the Ozark NF	
Community Name	**Percent**
Dry Oak Forest and Woodland	32%
Shortleaf Pine-Oak Forest and Woodland	26%
Dry-Mesic Oak Forest	40%
Mesic Hardwood Forest	<1%
Riparian Forest	1%
Loblolly Pine Forest	1%
Major Communities on the St. Francis NF	
Community Name	**Percent**
Loess Slope Forest	86%
Bottomland and Floodplain Forest	13%
Loblolly Pine Forest	1%

General Desired Conditions for Major Communities

Forests of the Ozark-St. Francis National Forests are healthy and diverse. They are relatively resistant to major outbreaks of insects and disease that cause widespread tree mortality. They are also at low risk from catastrophic wildfire because historic vegetation structure and fuel loading has been restored.

Age-class distributions are relatively balanced, providing a stable and sustained flow of habitat conditions, recreational settings, and timber products. Mature (> 70 years of age) forest and woodland conditions predominate, but forest age classes are diverse. Regenerating (0 to 10 years old) and young (11 to 40 years old) forests are common, as are old growth conditions (minimum age varies by forest type).

Diversity of tree species within each forest community type is reflective of native forests of that type. Snags, downed wood, and large hollow den trees, important for many wildlife species, are abundant and well distributed across the forest.

Monitoring

For major forest communities in general, monitor and evaluate trends in:

- Abundance of mature forest across all forest types.
- Abundance of old growth forest across all forest types.
- Abundance of regenerating forest across all forest types.
- Abundance of regenerating and young forest across all forest types.

DRY OAK FOREST AND WOODLAND

The Dry Oak Forest and Woodland community is comprised of forest and woodland with canopies dominated (> 50%) by post oak, blackjack oak, and/or black oak. It also includes forests and woodlands dominated (> 50%) by other oaks and/or hickories (typically white oak or northern red oak) where they occur on xeric and dry sites. Minor components (< 30% of canopy) of shortleaf pine may also be present.

This community is commonly found on xeric and dry sites, typical of ridges and steep south and west aspects. It may also be found on gentler slopes and flats where soil types result in xeric and dry conditions. This community may also occupy mesic sites where frequent fire has influenced community composition, resulting in dominance by post, blackjack, or black oaks.

Historically, open woodland structure, created and maintained by periodic fire and grazing, was the predominate condition within this community. Due to fire suppression, denser closed-canopy forests are now typical. This community has been impacted by significant oak mortaility, thought in large part to be due to susceptability of these overly-dense forests to forest health threats.

This community is synonymous with the *Ouachita-Ozark Dry Oak Woodland Ecological System* (CES202.707) of NatureServe's International Ecological Classification Standard. For planning purposes, it has been defined as:

1. CISC Forest Types 11, 35, 43, 57 on all sites;
2. CISC Forest Types 53, 54, 55, 44, 47, 48, 49 where on:
    - Lower South Aspect, Middle South Aspect, and Upper South Aspect with site indices of 0 to 60,
    - Lower North Aspect, Middle North Aspect, and Upper North Aspect with site indices of 0 to 50,
    - Ridgetops,
    - Flat land type with site indices of 0 to 60.

Desired Condition

Dry Oak Forest and Woodland is dominated by oaks in the overstory. The midstory is sparse and the understory supports a diversity of herbaceous and woody species. Fire intolerant species, such as red maple, comprise a small component of species composition. Advanced oak regeneration is common in the understory. In mature

forest stands, advanced oak regeneration exceeds 300 oak sprouts per acre greater than 2 feet tall. This advanced regeneration maintains oak dominance within the community as regeneration events occur. Invasive non-native species are absent or present in insignificant levels.

Abundance and distribution of this community remains similar to current abundance and distribution; conversions to or from this type are not common. This community is found on a high proportion of xeric and dry sites, especially so on the northern portions of the forest. It shares these sites with the Shortleaf Pine-Oak Forest and Woodland community on southern portions of the forest.

Forests and woodlands of this type are present in wide range of age classes, from regenerating forest to old growth. Forests and woodlands typically occur in even-aged or two-aged patches. Mixes of age classes within given areas of the landscape vary widely across the forest, ranging from those favoring younger forests to those favoring older forests. Averaged across the forest, mature forests and woodlands (older than 70 years of age) predominate, comprising more than 50 percent of the total community acreage. Within this mature component, old growth conditions are common, comprising more than 25 percent of total community acreage. Old growth conditions are concentrated within management areas with low emphasis on active vegetation management, but are also present in variously sized patches scattered throughout other management areas. Patches of regenerating forest and woodland (0 to 10 years old) are present across the forest at sustained rates of at least 6 percent of total community acreage; with percentages varying widely to meet local desired conditions. Forest-wide percent of regenerating forest may be higher in the short-term in order to address current age-class imbalance and forest health threats. Over time, the forest-wide percent of this community in regenerating (0 to 10 years old) and young forest (11 to 40 years old) is approximately 25 percent. Patches of regeneration are the result of both natural disturbances (e.g., windthrow, ice storms, insects, and wildfire) and management activities (e.g., timber harvest).

Most mature (older than 70 years) and mid-aged forests (41 to 70 years old) are in an open forest condition (60 to 80% canopy closure), with sparse midstory, allowing development of herbaceous understories and advanced oak regeneration. Forest-wide, open woodland conditions (10 to 60% canopy closure) comprise approximately 30-40 percent of the total community acreage. Woodland conditions are concentrated within the Oak Woodland MA (3.B), Pine Woodland MA (3.A), the Wedington Unit Urban Recreational Area MA (2.E), and the Wildlife Emphasis Area MA (3.K), but may also be found less frequently throughout other management areas. Patches of woodland are predominately found on ridges and upper slopes of south and western aspects where fire frequency and intensity are typically the highest. These patches are intermixed with forests of this and other community types creating a mosaic of structural conditions with indistinct edges. Restored woodlands connect existing glades and barrens where practicable, especially those supporting populations of collared lizard; these connections enhance dispersal of this and other rare species associated with glades and barrens.

Snags, large den trees, and downed wood are abundant at all successional stages, but especially so in mature and old growth patches. Abundance of these elements is regulated in large part by the effects of fire.

Fire is an important factor for maintaining open conditions and stimulating understory development within both forests and woodlands of this community type. Fire return intervals average 2 to 7 years, with every third burn, on average, occurring during the growing season (April 1 through October 15). Fire frequencies and intensities are generally highest in woodland areas because of their topographic location and higher loading of flashy fuels (grasses).

This community is enjoyed by the visiting public for its depth of view, abundant wildflowers and butterflies, and wildlife viewing opportunities. Popular game species, such as wild turkey, whitetail deer, and northern bobwhite, are common within this community, making it a popular place to hunt. Management of vegetation to create and maintain open conditions and desired age class diversity frequently yields timber that is bought by local businesses, contributing to the vitality of local economies. Evidence of these management activities in the form of stumps, logging areas, and harvest operations may occasionally be seen within some areas of this community.

Monitoring

For Dry Oak Forest and Woodland, monitor and evaluate trends in:

- Total abundance of the community.
- Abundance of mature forest and woodland.
- Abundance of old growth.
- Abundance of regenerating forest.
- Abundance of regenerating and young forest.
- Abundance of woodland.
- Proportion of the community burned at desired intervals and seasons.
- Abundance of mature and mid-aged forest that is in an open canopy condition.

Shortleaf Pine-Oak Forest and Woodland

The Shortleaf Pine-Oak Forest and Woodland community is comprised of forest and woodland with canopies dominated (> 50%) by shortleaf pine. A variety of oaks, including post, blackjack, black, white, and northern red oaks, often also are found within the canopy. *Vaccinium* and bluestem grasses are typical understory components.

This community is commonly found on xeric and dry sites, typical of ridges and steep south and southwest aspects. It may also be found on gentler slopes and flats where soil types result in xeric and dry conditions. This community may also occupy mesic sites where periodic fire has influenced community composition, resulting in dominance by shortleaf pine and fire-tolerant oak species. This community is most abundant on the southern portions of the forest.

Historically, open woodland structure, created and maintained by periodic fire and grazing, was the predominate condition within this community. Due to fire suppression, denser closed-canopy forests are now typical. These dense forests are generally more susceptable to forest health threats such as southern pine beetle.

This community is synonymous with the Ouachita-Ozark Shortleaf Pine-Oak Forest and Woodland Ecological System (CES202.313) of NatureServe's International Ecological Classification Standard. It is defined as:

- ClSC Forest Types 12, 25 and 32 on all sites.

Desired Condition

Shortleaf Pine-Oak Forest and Woodland is dominated by shortleaf pine in the overstory. Its midstory is generally sparse, and its understory is characterized by a well-developed grass and herbaceous component. Fire intolerant species, such as red maple, comprise a small component of species composition. Because shortleaf pine seedlings can resprout following fire, it (along with oak regeneration) is often present in the understory. Abundance and influence of invasive non-native plants is low.

Abundance and distribution of this community remains similar to current abundance and distribution; conversions to or from this type are not common. This community is found on a high proportion of xeric and dry sites on the southern portions of the forest. It shares these sites with the Dry Oak Forest and Woodland community.

Forests and woodlands of this type are present in wide range of age classes, from regenerating forest to old growth. Forests and woodlands typically occur in even-aged or two-aged patches. Mixes of age classes within given areas of the landscape vary widely across the forest, ranging from those favoring younger forests to those favoring older forests. Averaged across the forest, mature forests and woodlands (older than 70 years of age) predominate, comprising more than 40 percent of the total community acreage. Within this mature component, old growth conditions are common, comprising more than 15 percent of total community acreage. Old growth conditions are concentrated within management areas with low emphasis on active vegetation management, but are also present in variously sized patches scattered throughout other management areas. Patches of regenerating forest and woodland (0-10 years old) are present across the forest at sustained rates of at least 8 percent of total community acreage; with percentages varying widely to meet local desired conditions. Forest-wide percent of regenerating forest may be higher in the short-term in order to address current age class imbalance and forest health threats. Over time, the forest-wide percent of this community in regenerating (0 to 10 years old) and young forest (11 to 40 years old) is approximately 30 to 35 percent. Patches of regeneration are the result of both natural disturbances (e.g., windthrow, ice storms, insects, and wildfire) and management activity (e.g., timber harvest).

Most mature (older than 70 years) and mid-aged forests (41 to 70 years of age) are relatively open canopied (60 to 80% canopy closure), allowing development of herbaceous understories. Forest-wide, open woodland conditions (10 to 60% canopy closure) comprise approximately 30 to 40 percent of the total community acreage. Woodland conditions are concentrated within the Pine Woodland MA (3.A), Oak Woodland MA (3.B), the Wedington Unit Urban Recreational Area MA (2.E), and the Wildlife Emphasis Area MA (3.K). Patches of woodland are predominately found on ridges and upper slopes of south and western aspects where fire intensities are typically the highest. These patches are intermixed with forests of this and other community types creating a mosaic of habitat conditions with indistinct edges.

Fire is an important factor for maintaining open conditions and stimulating understory development within both forests and woodlands of this community type. Fire return intervals average 2 to 5 years, with every third burn, on average, occurring during the growing season (April 1 through October 15). Fire frequencies and intensities are generally highest in woodland areas because of their topographic location and higher loading of flashy fuels (grasses).

This community is enjoyed by the visiting public for its depth of view, abundance of wildflowers and butterflies, and wildlife viewing opportunities. Popular game species, such as wild turkey, whitetail deer, and northern bobwhite are common within this community, making it a popular place to hunt. Management of vegetation to create and maintain open conditions and desired age class diversity frequently yields wood that is bought by local businesses, contributing to the vitality of local economies. Evidence of these management activities in the form of stumps, logging areas, and harvest operations may occasionally be seen within some areas of this community.

Monitoring

For Shortleaf Pine-Oak Forest and Woodland, monitor and evaluate trends in:

- Total abundance of the community.
- Abundance of mature forest and woodland.
- Abundance of old growth.
- Abundance of regenerating forest.
- Abundance of regenerating and young forest together.
- Abundance of woodland.
- Proportion of the community burned at desired intervals and seasons.
- Abundance of mature and mid-aged forest that is in an open canopy condition

Dry-Mesic Oak Forest

The Dry-Mesic Oak Forest community is defined as forests with canopies dominated (> 50%) by oak species, but which are not on xeric or dry sites, and which are not dominated (> 50%) by post, blackjack, or black oaks (indicators of Dry Oak Forest and Woodland). Shortleaf pine comprises less than 50 percent of the canopy. Midstory and understory associates vary widely, but frequently include maple,

dogwood, and hickory. This community is commonly found on a variety of sites, ranging from dry to mesic. It may be found in a variety of topographical positions, including riparian areas.

The presence of oak dominance within this community suggests that at least moderate levels of ecological disturbance are characteristic of this community. Historically, this disturbance likely was caused predominately by periodic fire that created open midstory conditions favorable to establishment of oak regeneration. However, because of the variety of sites occupied by this community, the frequency and intensity of fire was variable, with corresponding variability in forest density. Ecological disturbances sufficient to maintain oak dominance may be regular or episodic. Due to fire suppression during much of last century, denser closed-canopy forests are now typical, and adequate oak regeneration is not present on many sites, especially mesic ones. These dense forest conditons are believed to have been an important factor in the susceptibility of this community to recent forest health threats, which have resulted in significant mortality of mature oak trees.

This community is synonymous with the Ouachita-Ozark Dry-Mesic Oak Forest Ecological System (CES202.708) of NatureServe's International Ecological Classification Standard. It is defined as:

- CISC Forest Types 53, 54, 55, 42, 44, 47, 48, 49, 52 when on Lower North Aspect, Middle North Aspect, and Upper North Aspect with site indices > 50, and when on Lower South Aspect, Middle South Aspect, and Upper South Aspect with site indices of > 60. These CISC Forest Types are also considered Dry-Mesic Oak Forest when found on floodplain sites.

Desired Condition

The Dry-Mesic Oak Forest community is dominated by oaks in the overstory. Its midstory is often sparse, but may be complex, especially on more mesic sites. Understories may be sparse or well-developed, depending on site quality, overstory density, and fire history. Fire intolerant species, such as red maple, generally comprise a small component of species composition, but are more abundant on mesic sites. Advanced oak regeneration is common in the understory across all sites, exceeding 300 oak sprouts per acre greater than 2 feet tall. This advanced regeneration maintains oak dominance within the community as regeneration events occur. Abundance and influence of invasive non-native plants is low.

Abundance and distribution of this community remains similar to current abundance and distribution; conversions to or from this type are not common. This community is abundant and well-distributed across the forest, and found on a high proportion of dry-mesic sites.

Forests of this type are present in wide range of age classes, from regenerating forest to old growth. Forests typically occur in even-aged or two-aged patches. Mixes of age classes within given areas vary widely across the forest, ranging from those favoring younger forests to those favoring older forests. Averaged across the forest, mature

forests (older than 70 years) predominate, comprising more than 50 percent of the total community acreage. Within this mature component, old growth conditions are common, comprising approximately 20 percent of total community acreage. Old growth conditions are concentrated within management areas with low emphasis on active vegetation management, but are also present in variously sized patches scattered throughout other management areas. Patches of regenerating forest (0 to 10 years old) are present across the forest at sustained rates of at least 6 percent of total community acreage; with percentages varying widely to meet local desired conditions. Forest-wide percent of regenerating forest may be higher in the short-term in order to address current age-class imbalance and forest health threats. Over time, the forest-wide percent of this community in regenerating (0 to 10 years old) and young forest (11 to 40 years old) is approximately 25 percent. Patches of regeneration are the result of both natural disturbances (e.g., windthrow, ice storms, insects, and wildfire) and management activity (e.g., timber harvest).

Most mature (older than 70 years) and mid-aged forests (41 to 70 years old) are relatively open canopied (60-80% canopy closure), allowing development of herbaceous understories and advanced oak regeneration. Woodland conditions (10 to 60% canopy closure) are not common.

Fire is an important factor for maintaining open forest conditions and stimulating understory development within this community type. Fire return intervals average two to seven years, with every third burn, on average, occurring during the growing season (April 1 through October 15). Fire frequencies and intensities are generally highest on drier sites and upper slopes. Fire typically occurs across large landscapes within which this community occurs. Although most acreage of the type within the burn block is affected by fire, some acres may not be burned during any given fire, effectively lengthening the fire return interval on these sites.

This community is the most abundant and typical forest community on the Ozark National Forest. It is recognized and enjoyed by the visiting public as a natural setting for hunting, hiking, and sight-seeing. Acorn production provides abundant food for wildlife, including popular game species, such as wild turkey, whitetail deer, and gray squirrel. These species are common within this community, making it a popular setting for hunting. Management of vegetation to create and maintain open forest conditions and desired age class diversity frequently yields wood that is bought by local businesses, contributing to the vitality of local economies. Evidence of these management activities in the form of stumps, logging areas, and harvest operations may occasionally be seen within some areas of this community.

Monitoring

For Dry-Mesic Oak Forest, monitor and evaluate trends in:

- Total abundance of the community.
- Abundance of mature forest and woodland.
- Abundance of old growth.
- Abundance of regenerating forest.

- Abundance of regenerating and young forest together.
- Proportion of the community burned at desired intervals and seasons.
- Abundance of mature and mid-aged forest that is in an open canopy condition.

MESIC HARDWOOD FOREST

The Mesic Hardwood Forest community is comprised of forests with canopies dominated (> 50%) by American beech, magnolia, maple, and/or walnut. It also includes forests dominated by sweetgum, when not on floodplain sites. It may include a significant component of mesic oak species. This community is commonly found on lower slopes and north aspects, but may also be found on riparian or floodplain sites.

Historically, this community was subject to long fire return intervals. It regenerated through a combination of gap phase dynamics, which favors shade tolerant species such as beech and maple, and less frequent larger disturbances that provided for persistence of less shade-tolerant species such as oaks.

This community is synonymous with the Ouachita-Ozark Mesic Hardwood Forest Ecological System (202.043) of NatureServe's International Ecological Classification Standard. It is defined as:

- CISC Forest Types 50, 56, 69, 81, 82, and 88 wherever they occur on the Ozark National Forest. It also includes CISC Forest Type 58 everywhere except on floodplain sites.

Desired Condition

The Mesic Hardwood Forest community often supports a significant component of American beech, with a diversity of associated tree species. Its midstory is often dense and diverse. Understories may be sparse or well-developed, depending on site quality, overstory density, and disturbance history. Abundance and influence of invasive non-native plants is low.

Abundance and distribution of this community remains similar to current abundance and distribution; conversions to or from this type are not common.

Forests of this type typically occur in uneven-aged patches, with regeneration occurring primarily as a result of tree fall gaps. Some larger patches of regeneration may be created by natural disturbances (e.g., windthrow, ice storms, insects, and wildfire). This community is not typically regenerated as a result of management activity; evidence of active vegetation management is uncommon, but may occur where needed to provide for sustainability of this community. Although patches of this community may occur within landscape burn blocks, they are not typically affected by fire. Because of their topographic position, mesic condition, and vegetation composition, fire rarely enters this community, or does so at very low intensities.

Monitoring

- For Mesic Hardwood Forest, monitor and evaluate trends in total abundance of the community.

RIPARIAN FOREST

The Riparian Forest community is comprised of forests with canopies dominated (> 50 percent) by ash, elm, sycamore, river birch, sugarberry, cottonwood, willow, and/or other trees typical of riverfront or floodplain forests. It includes forests dominated by sweetgum when on floodplain sites. Willow oak, laurel oak, and water oak may be components.

This community is commonly found on floodplains of larger streams and rivers. The forest community type of Riparian Forest should not be confused with the riparian ecological site type or riparian management area. Other community types, such as Dry-Mesic Oak Forest, and Mesic Hardwood Forest, also may occur on riparian sites or in riparian management areas.

Historically, this community was subject to relatively long fire return intervals. It regenerated primarily through a combination of gap phase dynamics, and disturbance caused by wind storms and flooding. However, canebrakes, a native community frequently imbedded within the Riparian Forest, is enhanced by moderate fire return intervals. The prevalance of flooding as a regenerative disturbance accounts for the abundance of shade intolerant species associated with riverfronts within this community.

This community is includes the forested vegetation associations within the Ouachita-Ozark Riparian Ecological System (CES202.703) of NatureServe's International Ecological Classification Standard. It is defined as:

- CISC Forest Types 46, 62, 64, 65, 68, 71, 72, 73, 75, and 78 wherever they occur on the Ozark National Forest. It also includes CISC Forest Type 58 when it occurs on floodplain sites.

Desired Condition

The Riparian Forest community is dominated by a variety of species indicative of bottomlands, floodplains, and riverfronts. Its midstory composition is variable. Understories may be sparse or well-developed, depending on site quality, overstory density, and disturbance history. Where bottomland oaks are present, they are sustained through time by appropriate disturbance regimes. Patches of native cane are present, especially in areas of low overstory density. Abundance and influence of invasive non-native plants is low.

Abundance and distribution of this community remains similar to current abundance and distribution; conversions to or from this type are not common.

Forests of this type are present in wide range of age classes, from regenerating forest to old growth. Forests typically occur in even-aged, two-aged, or uneven-aged patches. Mixes of age classes within given areas vary widely across the forest, ranging from those favoring younger forests to those favoring older forests. Patches of regeneration are the result of both natural disturbances (e.g., windthrow, ice storms, insects, and wildfire) and management activity (e.g., timber harvest).

Many areas of mature (older than 70 years) forest exhibit complex canopy structure, characterized by canopy gaps. These gaps result in development of herbaceous understories and/or layers of midstory. Woodland densities (10 to 60% canopy closure) are not common, but may occur in frequently flooded areas and in areas occupied by canebrakes. Fire is relatively infrequent within this community, but occurs at 7 to 10 year intervals where high quality examples of canebrakes are present.

This community is enjoyed by the visiting public as a natural setting for hunting, hiking, and sight-seeing. Management of vegetation to create and maintain desired structural conditions sometimes yields wood that is bought by local businesses, contributing to the vitality of local economies. Evidence of these management activities in the form of stumps, logging areas, and harvest operations may occasionally be seen within this community.

Monitoring

- For Riparian Forest, monitor and evaluate trends in total abundance of the community.

LOBLOLLY PINE FOREST

The Loblolly Pine Forest community is comprised of forests with canopies dominated by loblolly pine. Loblolly pine is not native to the Ozark or St. Francis National Forests; these forests are plantations established outside of the natural range of this species. Although they are plantations, they have not typically been managed as monocultures; therefore, diversity of other canopy species may range from low to high and include a variety of species.

This community is synonymous with the Loblolly Pine Planted Forest Association (CEGL007179) of NatureServe's National Vegetation Classification Standard. It is defined as:

- CISC Forest Types 13 and 31, wherever they occur.

Desired Condition

Existing Loblolly Pine Forest is maintained at densities that provide for vigorous growth and resistance to forest health threats. Diversity and abundance of native tree species within this community increases over time as these forests mature. Once mature, they are harvested for wood products and restored to native forest communities appropriate to site conditions. As a result, abundance of this community decreases over time.

Monitoring

- For Loblolly Pine Forest monitor and evaluate trends in total abundance of the community on each national forest.

LOESS SLOPE FOREST

The Loess Slope Forest community is found on the St. Francis National Forest, within the Crowley's Ridge ecological region. It is comprised of forests with canopies dominated (> 50%) by one or more of the following species: American beech, white oak, cherry bark oak, southern red oak, northern red oak, post oak, black oak, southern sugar maple, yellow poplar, or magnolia. It also includes forests dominated by sweetgum and red maple when occurring on upland sites. This community encompasses most forests on upland sites on the St. Francis National Forest, but may also sometimes be found on mesic lowland sites.

Historically, this community was subject to variable distrubance regimes. Some portions, typically dominated by oaks, were subject to moderate fire return intervals (approximately 10 years on average), while others, typically dominated by beech and maple, experienced longer fire return intervals. Management emphasis is primarily on maintaining an oak component and limiting the proportion of yellow poplar, which aggressively regenerates in areas of open canopy that are not subject to fire.

This community includes the forested associations within the Mississippi River Alluvial Plain Loess Slope Forest Ecological System (CES203.037) of NatureServe's International Ecological Classification Standard. It is defined as:

- CISC Forest Types 50, 53, 56, 58, 69, 81, 82, and 88 wherever they occur on the St. Francis National Forest.

Desired Condition

The Loess Slope Forest community is typically dominated by oaks, with various mixtures of beech, maple, and yellow poplar. Some sites are dominated by beech or other representative tree species. Its midstory is often open, but may be complex, especially on more mesic sites. Understories may be sparse or well-developed, depending on site quality, overstory density, and fire history. Advanced oak regeneration is common in the understory across all sites, exceeding 300 oak

sprouts per acre greater than two feet tall. This advanced regeneration maintains oak dominance within the community on most sites as regeneration events occur. Examples of the community that are dominated by sweetgum, maple, or yellow poplar are uncommon. Abundance and influence of invasive non-native plants is low.

Abundance and distribution of this community remains similar to current abundance and distribution (conversions to or from this type are not common.).

Forests of this type are present in wide range of age classes, from regenerating forest to old growth. Forests typically occur in even-aged or two-aged patches, but also include some uneven-aged patches. Mixes of age classes within given areas vary widely across the forest, ranging from those favoring younger forests to those favoring older forests. Averaged across the forest, mature forests (older than 70 years) predominate, comprising approximately 60 percent of the total community acreage. Within this mature component, old growth conditions are common, comprising approximately 20 percent of total community acreage. Old growth conditions are concentrated within management areas with low emphasis on active vegetation management, but are also present in variously sized patches scattered throughout other management areas. Patches of regenerating forest (0 to 10 years old) are present across the national forest at sustained rates of at least 5 percent of total community acreage, with percentages varying widely to meet local desired conditions. Forest-wide percent of regenerating forest may be higher in the short-term in order to address current age class imbalance and forest health threats. Over time, the forest-wide percent of this community in regenerating (0 to 10 years old) and young forest (11 to 40 years old) is approximately 20 percent. Patches of regeneration are the result of both natural disturbances (e.g., windthrow, ice storms, insects, and wildfire) and management activity (e.g., timber harvest).

Many areas of mature (70-year age class and older) and mid-aged forests (41 to 70 years old) are relatively open canopied (60 to 80% canopy closure), allowing development of herbaceous understories and advanced oak regeneration. Woodland conditions (10-60 percent canopy closure) are absent or uncommon.

Fire is an important factor for maintaining open forest conditions and stimulating understory development within this community type. Fire return intervals average 5 to 10 years, with every third burn, on average, occurring during the growing season (April 1 through October 15). Fire frequencies and intensities are generally highest on drier sites and upper slopes. Fire typically occurs across large landscapes within which this community occurs. Although most acreage of the type within the burn block is affected by fire, some acres may not be burned during any given fire, effectively lengthening the fire return interval on these sites.

This community is enjoyed by the visiting public as a natural setting for hunting, hiking, and sight-seeing. Acorn production provides abundant food for wildlife, including popular game species, such as wild turkey, whitetail deer, and gray squirrel. These species are common within this community, making it a popular setting for hunting. Management of vegetation to create and maintain open forest conditions and desired age class diversity frequently yields wood that is bought by local

businesses, contributing to the vitality of local economies. Evidence of these management activities in the form of stumps, logging areas, and harvest operations may occasionally be seen within this community.

Monitoring

For Loess Slope Forest, monitor and evaluate trends in:

- Total abundance of the community.
- Abundance of mature forest.
- Abundance of old growth.
- Abundance of regenerating forest.
- Abundance of regenerating and young forest together.
- Proportion of the community burned at desired intervals and seasons.
- Abundance of mature and mid-aged forest that is in an open canopy condition.

BOTTOMLAND AND FLOODPLAIN FOREST

The Bottomland and Floodplain Forest community is comprised of forests on the St. Francis National Forest (commonly known as the bottomland hardwood area) with canopies dominated (> 50%) by one or more of the following species: ash, elm, sugarberry, Nutall oak, overcup oak, willow oak, pecan, sycamore, river birch, silver maple, water hickory, honey locust, and/or other species indicative of floodplains and bottomlands. It also includes forests dominated by sweetgum and red maple when occurring on bottomland and floodplain sites. This community encompasses most forests on bottomland and floodplain sites on the St. Francis National Forest.

Historically, this community was subject to relatively long fire return intervals. It regenerated primarily through a combination of gap phase dynamics, and disturbance caused by wind storms and flooding. However, canebrakes, a native community frequently imbedded within the Bottomland and Floodplain Forest, is enhanced by moderate fire return intervals. The prevalance of flooding as a regenerative disturbance accounts for the abundance of shade intolerant species associated with riverfronts within this community.

This community includes the forested vegetation associations within the Lower Mississippi River Bottomland and Floodplain Ecological System (CES203.196) of NatureServe's International Ecological Classification Standard. It is defined as:

- CISC Forest Types 61, 62, 63, 64, 65, 67, 68, 71, 72, 73, 75, and 78 wherever they occur on the St. Francis National Forest.

Desired Condition

The Bottomland and Floodplain Forest community is dominated by a variety of species indicative of bottomlands, floodplains, and riverfronts. Its midstory composition is variable. Understories may be sparse or well-developed, depending on

site quality, overstory density, and disturbance history. Where bottomland oaks are present, they are sustained through time by appropriate disturbance regimes. Patches of native cane are not uncommon, especially in areas of low overstory density. Abundance and influence of invasive non-native plants is low.

Abundance and distribution of this community remains similar to current abundance and distribution; conversions to or from this type are not common.

Forests of this type are present in wide range of age classes, from regenerating forest to old growth. Forests typically occur in even-aged, two-aged, or uneven-aged patches. Mixes of age classes within given areas vary widely across the forest, ranging from those favoring younger forests to those favoring older forests. Averaged across the forest, mature forests (older than 70 years) predominate, comprising approximately 65 percent of the total community acreage. Within this mature component, old growth conditions are common, comprising approximately 45 percent of total community acreage. Old growth conditions are concentrated within management areas with low emphasis on active vegetation management, but are also present in variously sized patches scattered throughout other management areas. Patches of regenerating forest (0 to 10 years old) are present across the forest at sustained rates of at least five percent of total community acreage; with percentages varying widely to meet local desired conditions. Forest-wide percent of regenerating forest may be higher in the short-term in order to address current age class imbalance and forest health threats. Over time, the forest-wide percent of this community in regenerating (0 to 10 years old) and young forest (11 to 40 years old) is approximately 20 percent. Patches of regeneration are the result of both natural disturbances (e.g., windthrow, ice storms, insects, and wildfire) and management activity (e.g., timber harvest).

Many areas of mature (older than 70 years) forest exhibit complex canopy structure, characterized by canopy gaps. These gaps result in development of herbaceous understories and/or layers of midstory. Woodland densities (10 to 60% canopy closure) are not common, but may occur in frequently flooded areas and in areas occupied by canebrakes. Fire is relatively infrequent within this community, but occurs at 7 to 10 year intervals where high quality examples of canebrakes are present.

This community is enjoyed by the visiting public as a natural setting for hunting, hiking, and sight-seeing. Management of vegetation to create and maintain desired structural conditions and age class diversity yields wood that is bought by local businesses, contributing to the vitality of local economies. Evidence of these management activities in the form of stumps, logging areas, and harvest operations may occasionally be seen within this community.

Monitoring

For Bottomland and Floodplain Forest, monitor and evaluate trends in:

- Total abundance of the community.
- Abundance of mature forest.
- Abundance of old growth.
- Abundance of regenerating forest.
- Abundance of regenerating and young forest together.

Rare and Special Communities

Rare and special communities are assemblages of plants and animals that typically occupy a small proportion of the landscape, but which contribute significantly to plant and animal diversity because of the number of rare species associated with them. They typically are limited in number of occurrences, are small in size, and have relatively discrete boundaries. Management of rare and special communities under this plan emphasizes enhancing their contribution to providing for diversity of plant and animal communities, recovering threatened and endangered species, and maintaining species viability.

Table 1-2 Rare and Special Communities on the Ozark-St. Francis National Forests

Rare and Special Communities on the Ozark NF
Glades and Barrens
Montane Oak Forest
Cliff and Talus
Sinkhole and Depression Ponds
Seeps and Fens
Canebrakes
Caves, Mines, and Karst
Emergent Wetlands
Native Grasslands
Rare and Special Communities on the St. Francis NF
Bottomland Depression
Canebrakes
Emergent Wetlands

Desired Condition

Rare communities exhibit the composition, structure, and function necessary to support vigorous populations of species characteristic of the community, including associated federally-listed threatened and endangered species, and species at risk of losing viability. Characteristics of composition include the mix of native species found within a given occurrence of the community, as well as the variation of vegetation associations that occur across the forest within the community type. Characteristics of structure include the height, density, and distribution of vegetation within a given occurrence of the community, as well as the patch sizes and distribution of

occurrences across the forest. Characteristics of function include patterns of ecological disturbance, cycling of water and nutrients, and immigration and emigration of plants and animals among patches. Detailed descriptions of desired characteristics of rare and special communities are found in definitions of the NatureServe's Ecological Systems and/or Associations referenced in the descriptions of each community.

Where appropriate, ecological disturbances (such as fire) are at the frequency and intensity needed to maintain characteristic composition, structure, and function. Generally, natural forces are sufficient to maintain these conditions; however, in some cases environmental factors have changed to the extent that natural processes are prevented or hindered from maintaining the community. In these cases, management activities used to restore or maintain desired conditions, such as prescribed burning or vegetation cutting, may be evident.

Beyond restoration and maintenance activities, human-caused alteration of rare communities is not evident. Recreational access may be limited by signs and barriers where necessary to protect community integrity. Interpretive signs or other information may be made available where it is likely to promote public knowledge of rare communities and improve community protection. Non-native invasive species are rare or absent and do not substantially affect community composition, structure, or function.

Monitoring

For Rare Communities, monitor and evaluate trends in:

- Number of occurrences and acreage of each rare community type.
- Percent of occurrences or acreage at desired conditions.

GLADES AND BARRENS

These communities are characterized by thin soils and exposed parent material that result in localized complexes of bare soil and rock, herbaceous and/or shrubby vegetation, and thin, often stunted woods. During wet periods they may include scattered shallow pools or areas of seepage. They vary in species composition depending on the type of underlying parent material. Field delineations of these communities include the entire complex of characteristic vegetation composition and structure, and where practicable connecting woodlands. Primary management needs are protection from non-target management disturbance and recreational impacts. Periodic vegetation management, especially prescribed fire, may be necessary to maintain or restore desired herbaceous and/or shrubby composition. These communities are comprised of the following Ecological Systems as defined by NatureServe: Central Interior Highlands Calcareous Glades and Barrens (CES202.691) and Central Interior Highlands Dry Acidic Glades and Barrens (CES202.692).

MONTANE OAK FOREST

This system represents hardwood forests of the highest elevations of the Ouachita Mountains, including Mount Magazine. It is found on the Ozark National Forest only on Mount Magazine. Vegetation consists of either forests or open woodlands dominated by post oak, blackjack oak, white oak, and northern red oak. It differs from Dry Oak Forest and Woodland in that canopy trees are often stunted due to the effects of ice, wind and cold conditions, in combination with fog, shallow soils over rock, and periodic severe drought. Some stands form almost impenetrable thickets. This community is defined by NatureServe's Montane Oak Forest (CES202.306).

CLIFF AND TALUS

Sandstone, limestone, and dolomite outcrops and talus distinguish these communities. Examples range from moist to dry. Cliff communities are characterized by steep rocky bluffs and slopes, often above streams or rivers. They are typically sparsely vegetated, although some may be moderately well vegetated. Talus communities occur at the bases of steep cliffs, often along larger streams and rivers, or in strongly dissected valleys; soils are generally absent and vegetation is sparse to absent. Wind and water erosion, along with fire around the margins, are the primary natural dynamics influencing these communities. Field delineation of these communities includes zones at the top and base of cliffs. Primary management needs are protection from non-target management disturbance and recreational impacts. Periodic vegetation management, especially prescribed fire, may be necessary to limit encroachment by uncharacteristic vegetation. These communities are comprised of the following Ecological Systems as defined by NatureServe: Central Interior Acidic Cliff and Talus (CES202.689) and Central Interior Calcareous Cliff and Talus (CES202.690).

SINKHOLE AND DEPRESSION PONDS

These communities are naturally-occurring, upland ponds and wetlands. They occur in basins of sinkholes or other isolated depressions on uplands. Soils are very poorly drained, and surface water may be present for extended periods of time, rarely becoming dry. Water depth may vary greatly on a seasonal basis, and may be a meter deep or more in the winter. Some examples become dry in the summer. Soils may be deep (100 cm or more), consisting of peat or muck, with parent material of peat, muck or alluvium. Many of these ponds have their geologic origin as a more-or-less complete karst collapse feature. Some of them may display this geologic origin in a more explicit manner, with definite walls and exposed limestone or dolomite at the surface ("sinkholes"). Others are more subtle, and exist as more gentle depressions, with no exposed surface geology ("depression ponds"). Ponds vary from open water to herb-, shrub-, or tree-dominated systems. Tree-dominated examples typically contain various oaks including overcup and pin oak, sycamore, ash, silver maple, sweetgum, or black gum, or a combination of these. Buttonbush is a typical shrub component. Field delineation of these communities includes sufficient buffers to maintain hydrology. These systems maintain a fishless environment that provides breeding

habitat for amphibian species. Connections with mature forested uplands are maintained to allow migration to and from the ponds by breeding amphibians; roads do not create barriers or cause high levels of mortality to migrating amphibians. Primary management needs are protection from non-target management disturbance and recreational impacts. Periodic vegetation management, especially prescribed fire during dry periods, may be necessary to limit encroachment by uncharacteristic vegetation in herb- and shrub-dominated examples. This community is defined by NatureServe's Central Interior Highlands and Appalachian Sinkhole and Depression Pond (CES202.018).

SEEPS AND FENS

These communities are typically found on side or lower slopes, bases of bluffs, rock ledges, and terraces of streams and rivers. They are characterized by soils that are semi-permanently to permanently saturated as a result of groundwater seepage, and by the presence of wetland-associated species such as sedges, ferns, and sphagnum. Dominant vegetation may be herbs, shrubs, trees, or some complex of the three. Field delineation of these communities includes sufficient buffers to maintain hydrology. Buffer zones provide abundant downed wood as cover for associated animals. Primary management needs are protection from non-target management disturbance and recreational impacts. Periodic vegetation management, especially prescribed fire during dry periods, may be necessary to limit encroachment by uncharacteristic vegetation in herb- and shrub-dominated examples. These communities are comprised of the following Ecological Systems as defined by NatureServe: Ouachita Mountain Forested Seep (CES202.321) and Ozark-Ouachita Fen (CES202.052).

CANEBRAKES

This community is characterized by almost monotypic stands of giant or switch cane (*Arundinaria gigantea*), usually with no or low densities of overstory tree canopy. It is typically found in bottomlands or stream terraces. Although cane is found commonly as an understory component on these sites, treatment as a rare community is reserved only for larger patches (generally greater than 0.25 acres) exhibiting high densities that result in nearly monotypic conditions, or to areas selected for restoration of such conditions. Primary management needs are restoration and maintenance through overstory reduction and prescribed fire on approximately 5 to 10 year intervals. Although several Associations described by NatureServe (2001a, 2001b) include cane as a major component, this community most closely corresponds to Floodplain Canebrake (CEGL003836).

CAVES, MINES, AND KARST

These communities are characterized by natural and human-made openings in the ground that extend, for the most part, beyond the influence of sunlight and weather, creating habitats buffered from the surface environment. Included and inseparable from caves are karst features including sinkholes and sinking streams that lead to subterranean environments, and springs that flow from them. Surfaces of karstlands

are directly linked to subterranean cave water systems and aquifers. Caves in carbonate rocks are formed by a solution process that dissolves away rock by weak acid carried in groundwater as it seeps and flows through the subsurface rock. Underground aquatic systems contain their own community of organisms. Caves may contain a variety of microhabitats including streams, pools, wet stone, and mudflows along with dry rock and mud banks. Cave faunal assemblages vary widely within and between caves depending on microhabitats and history of connectivity between and within cave systems. Many bats are dependant on caves, both seasonally and year-round. Field delineation to the extent practicable includes buffers necessary to maintain subsurface hydrology, and quality of springs within the vicinity of spring sources. Primary management needs are protection from non-target management disturbance and recreational impacts, and maintenance of subsurface water quality and flow.

EMERGENT WETLANDS

These communities include areas that maintain standing water throughout the year, or the majority of the year and which are not covered under other wetland rare communities described in this section. They include beaver impoundments, human-made ponds and waterholes, and shallows surrounding lakes and larger ponds that support emergent wetland vegetation. These communities are classified as special because of their limited occurrence on the landscape and their value in providing for diversity of plants and animals. They are maintained as wetlands where practicable, but may be modified as needed to meet multiple-use objectives. Where they serve as important amphibian breeding areas, connections with mature forested uplands are maintained to allow migration to and from the ponds; roads do not create barriers or cause high levels of mortality to migrating amphibians. Downed wood is common in surrounding areas to provide cover for associated animals.

NATIVE GRASSLANDS

These communities are defined as areas greater than 2 acres in size with less than 10 percent canopy closure in trees, and dominated by a grassy ground layer that is comprised of more than approximately 50 percent cover in native plant species. This community may be imbedded within pine and oak woodland, or occur as permanent openings within forest, or as maintained fields or pastures. They are typically maintained with fire, but may also be maintained by other methods such as mowing and herbicide application. These communities are rich in wildlife supporting an abundance of native grasses and wildflowers, insects, ground-nesting birds, small mammals, and raptors and other predators. Primary management needs are restoring native species composition, and efficient maintenance in an open condition.

BOTTOMLAND DEPRESSION

These communities include the swamps of the Mississippi River floodplain. They are characterized by semi permanently flooded to saturated depressional areas within bottomland and floodplain sites. Typical dominant species include bald-cypress,

water tupelo, and black willow. Primary management needs are maintenance of hydrologic regimes. These communities are defined by NatureServe's Lower Mississippi River Bottomland Depression (CES202.490).

FISH AND WILDLIFE

Desired Condition

Fish and wildlife habitats are diverse and of high quality, supporting well-distributed and viable populations of all native and desired non-native plants and animals, including those currently listed as sensitive or of local viability concern. Abundance and quality of habitats for federally-listed threatened and endangered species are stable or improved, supporting recovery of these species. Many species of migratory birds find high quality habitats for migration stopover; others find optimal breeding habitats.

Disturbance regimes within terrestrial habitats provide a relatively stable and sustained flow of both early- and late-successional habitats over time. Fire-dependent communities, such as oak and pine woodlands, are common on appropriate sites and maintained by recurring fire at appropriate intervals. Rare communities, such as glades, seeps, caves, and wetlands exhibit high levels of ecological integrity, supporting healthy populations of characteristic species, including rare species tied closely to these habitats. Riparian forests are especially rich in wildlife and are primarily dominated by mature forests, but also support areas of openings and dense understories. Snags, downed wood, and den trees are abundant and well distributed across the forest

Stream flow and water quality is sufficient to support all components of native aquatic communities. Fish communities include fish species, species groups and guilds, and trophic structures characteristic of healthy streams. Aquatic habitat types are diverse. Large woody debris is abundant, at 75 to 200 pieces per stream mile including 7 to 20 pieces per stream mile (10% of total) in size classes greater than 5 meters long and 55 centimeters in diameter.

Species commonly hunted, such as whitetail deer, wild turkey, northern bobwhite, gray squirrel, and black bear are abundant and support high levels of quality hunting opportunity. The Buffalo River elk herd has expanded onto the Ozark National Forest as a result of targeted habitat improvement. Species commonly fished, such as smallmouth bass, largemouth bass, and sunfish also are abundant, supporting high levels of quality fishing.

Open roads and trails provide relatively easy access to many areas of the Forest for wildlife viewing, hunting, and fishing. Other areas, including some large blocks, are maintained without motorized access and more than 0.25 miles from open roads to provide habitats for those species sensitive to human disturbance, and to provide opportunity for more remote wildlife-related recreation opportunities.

Non-native invasive species are rare and do not highly impact native species or the ecological integrity of native communities.

Monitoring

For the Fish and Wildlife Resource, monitor and evaluate trends in:

- Abundance and distribution of selected non-native invasive species.
- Abundance of remote habitat.
- Habitat and status of federally-listed threatened and endangered species, and of selected sensitive and locally rare species.
- Habitat and population trends for management indicator species (Table 1-3).
- Relative abundance of all species in stream communities focusing on feeding and breeding groups as part of an index to biotic integrity (IBI).

Other monitoring elements related to fish and wildlife habitats are found under Forest-wide Desired Conditions for Major Forest Communities, Rare Communities, and Fire Management.

Table 1-3 Management Indicator Species (MIS) Selected For Use In The Revised Forest Plan And Primary Reason(s) For Their Selection.

Common Name	Ozark	St. Francis	Primary Reason(s) for Selection
Rufous-crowned Sparrow	X		To indicate effects of management on maintaining viability of this species through active maintenance of glades along bluff-lines on Mt. Magazine.
Pileated Woodpecker	X	X	To help indicate effects of management on large snags and snag-dependent wildlife on both forests.
Scarlet Tanager	X		To help indicate effects of management on forest interior bird communities and mature Dry-Mesic Oak Forest communities on the Ozark NF.
Acadian Flycatcher	X	X	To help indicate effects of management on forest interior bird communities on the St. Francis NF, and on mature mesic hardwood forest communities on both forests.
Prairie Warbler	X		To help indicate effects of management on regenerating forest communities on the Ozark NF.
Yellow-breasted Chat		X	To help indicate effects of management on regenerating forest communities on the St. Francis NF.

Table 1-3 Management Indicator Species (MIS) Selected For Use In The Revised Forest Plan And Primary Reason(s) For Their Selection (Continued).

Common Name	Ozark	St. Francis	Primary Reason(s) for Selection
Cerulean Warbler	X	X	To help indicate effects of management on communities associated with mature hardwood forest with complex canopy structures, and dry-mesic oak Forest communities on the Ozark NF.
Northern Parula	X	X	To help indicate effects of management on communities associated with forests in riparian areas.
White-tail Deer	X	X	To help indicate management effects on meeting hunting demand for this species.
Wild Turkey	X	X	To help indicate management effects on meeting hunting demand for this species.
Black Bear	X		To help indicate management effects on meeting hunting demand for this species.
Largemouth Bass	X	X	To help indicate effects of management on meeting fishing demand for this species.
Smallmouth Bass	X		To help indicate effects of management on meeting fishing demand for this species, and on cool-water stream communities.
Northern Bobwhite	X		To help indicate effects of management on restoration of pine and oak woodland and native grasslands.
Red-headed Woodpecker	X		To help indicate effects of management on oak woodland overstories.
Brown-headed Nuthatch	X		To help indicate effects of management on open pine forest and woodland.
Ovenbird	X		To help indicate effects of management on dry-mesic oak forests.

SOIL AND WATER AND AIR

National Forests are very important for clean water. About 66 percent of the Nation's freshwater resources originate on forests, which cover one-third of the Nation's land area. The forested land absorbs rain, refills underground aquifers, cools and cleanses water, slows storm runoff, reduces flooding, sustains watershed stability and resilience, and provides critical habitat for fish and wildlife.

Desired Condition

National forest watersheds are healthy and productive units of land. The landscapes are capable of responding to natural and human caused disturbances while maintaining the integrity of their biological and physical processes as evident in the production of high quality water.

Streams, groundwater recharge areas, springs, wetlands, aquifers, and entire landscapes are managed to assure the sustainability of high quantity and quality water. Where water extraction or diversion is allowed, those facilities are located as close to the boundary of the Forests as possible in order to avoid long-term adverse impacts to forest water and riparian resources. The Forest Service protects water rights when necessary to support resource management and healthy forest conditions. Ecosystems are protected from hazardous materials.

Monitoring

- Annually report the level of BMP compliance as a percent of the number of projects investigated.
- Annually track the acres of watershed restoration/ improvement and soil/water conservation projects.
- Conduct stream condition surveys during watershed analysis and report combined results every five years.
- Conduct five year trend analysis based on the above monitoring.

LANDS AND SPECIAL USES

Lands

Desired Condition

Land adjustment contributes to the reduction of the complexity of land ownership and consolidates the National Forest System land base; reduces administrative problems and costs; enhances public access and use; supports resource management objectives, including the protection and improvement of habitat condition and linkage.

Strategic easements for access and species conservation are acquired. Clear title to National Forest System land is retained. Occupancy trespass is eliminated and National Forest boundaries are clearly posted.

Monitoring

- Annually report acres of land adjustment (purchase, easements, etc) and the reasons for that adjustment.
- Report annually miles surveyed to establish clear boundaries and the number of occupancy trespasses resolved.
- Every fifth year, an evaluate land ownership complexity and determine progress in reducing the amount of interface with private lands and the number of occupancy trespasses.

Special Uses

Desired Condition

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

Monitoring

- Every fifth year evaluate to determine if resource values in permitted areas are being sustained and being used efficiently (minimizing acres encumbered) in harmony with other uses and resources.

RECREATION

Recreation Use

Desired Condition

Abundant opportunities exist for the public to use and enjoy the Ozark-St. Francis National Forests. Areas or facilities include developed recreation sites, wilderness areas, trails (motorized and non-motorized), wild and scenic rivers, and special interest areas. Activities include boating, hunting, fishing, rock hounding, and sightseeing. Recreation participation, activities, and services contribute to visitors' physical and mental well-being and represent a variety of skill levels, needs, and desires in partnership with permit holders, private entities, nonprofit/volunteer groups, state, federal, and tribal partners. Forest access and quality habitat for hunting and fishing are available to the public. Facilities and infrastructure are high quality, well maintained, safe, accessible, and consistent with visitors' expectations.

Monitoring

- Annually report the number of recreation sites maintained to standard and occupancy/use rates.
- Maintain a facility condition and maintenance backlog index.
- Every fifth year, evaluate trends in annual indicators and visitor satisfaction surveys to determine if the Forest has provided quality recreational experiences that result in increased visitor satisfaction (currently through NVUM process).

Conservation Education

Desired Condition

People connect to the land and to each other through expanded public information, interpretive services, and environmental education programs/activities, with well-supported nonprofit partners in a lead role. Proactive efforts reach both traditional and nontraditional users and lead to a greater citizen understanding, appreciation, advocacy, and participation in forest stewardship and ecosystem conservation. Connections are made with the American people on the importance of public land heritage stewardship through public involvement programs. Recreation and natural resource management as well as conservation education is improved through increased knowledge of social science. The role heritage resources play in the ecosystem management including the role of socio-cultural values within an environmental context, past, present, and future, is recognized. Better services are supplied to forest visitors through the use of current knowledge of who is using the forests and how.

Monitoring

- Each year document the number of certificates for appreciative behavior, number of non-government organizations, groups, and volunteers involved in activities.
- Each year document the number and type of educational programs developed and the number of students reached.
- Every fifth year, evaluate the interdisciplinary conservation education program and its effectiveness.

Scenery Management

Desired Condition

The biological, physical, and cultural features of landscapes that provide for a "sense of place" as defined in the Landscape Character descriptions are intact. Landscapes possess a vegetation pattern and species mix that is natural in appearance. Built elements and landscape alterations complement the lines, forms, colors, and textures found in the landscape. Fifty percent of projects undertaken on the Ozark-St. Francis National Forests within High Scenic Integrity Objective (SIO) areas will attain a high SIO, 65 percent of projects undertaken in Moderate SIO areas will attain Moderate SIO rating, and 100 percent of projects located in Low SIO areas will attain that rating.

Monitoring

- Report whether a landscape architect was consulted in each case where project implementation was likely to affect scenic integrity, and if applicable, to what degree SIOs were maintained/achieved.

- Report annually the number and type of management projects conducted in areas having a high SIO.
- During implementation monitoring reviews, determine if the project under review adequately considered SIOs.

Heritage Resources

Desired Condition

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

Monitoring

- Annually report sites managed to standard (sites inventoried, evaluated, protected, promoted, preserved, restored, rehabilitated, monitored, or enhanced).
- Every fifth year, evaluate progress in increasing the number of heritage resources protected and managed to standard.
- Every decade update the Heritage Resource Overview.

Tribal and Native American Interests

Desired Condition

The Forests are maintained in a condition that allows tribes and other Native American groups and individuals to retain traditional connections to the land and to foster both traditional and contemporary cultural uses of the Forests. The Forests have active agreements (e.g., Native American Firefighting Program) and protocols to facilitate consultation and government-to-government relationships.

Monitoring

- Annually report the number and acres of resources protected, conserved or restored; agreements and protocols executed; and number of consultations.
- Every fifth year, evaluate Native American feedback and satisfaction as an indicator of progress toward the desired condition.
- Annually participate in the leadership of the "To Bridge a Gap" conference.

LAW ENFORCEMENT

Desired Condition

A safe environment for the public and agency employees is provided while on National Forest System land. Natural resources and other property under the Agency's jurisdiction are protected.

Monitoring and Evaluation

- Annually report on the number of accidents, citations, acres, and type of impact of each illegal activity.
- Every fifth year evaluate trends in unlawful or criminal behaviors including cumulative impacts to natural resources.

FACILITIES

Desired Condition

Facilities and infrastructure are high quality, well maintained, safe, accessible, and consistent with visitor expectations and support the built environment image guide principles. Facility maintenance meets established national standards. Structures are well integrated into the landscape and advanced environmentally sensitive technology.

Monitoring

- Annually report numbers of facilities maintained to standard.
- Maintain a facility condition and maintenance backlog index.
- Every fifth year, evaluate trends in the facility condition index and maintenance backlog to determine progress toward the desired condition.

TRANSPORTATION AND PUBLIC ACCESS

Desired Condition

The transportation system of roads and trails is safe, affordable, and environmentally sound. It responds to public needs, and is efficient to manage. The network of open roads is the minimum needed for public access for recreation, special uses, fire protection activities, vegetation management, as well as supporting all forest-management objectives. The system is well maintained proportionate with levels of use and available funding. The system is connected to state, county, or local public roads and trails. Unnecessary roads and trails are removed and the landscape restored. Rights-of-way to access National Forest System lands satisfy public needs and facilitate planned resource activities. Over the planning period, the number of inventoried unclassified roads and trails are reduced.

An environmentally sustainable, integrated system of backcountry and rural non-motorized trails is maintained. The system can accommodate a range of experience in high-quality settings, and is managed to minimize conflicts while providing opportunities for partnerships, learning, and stewardship for a diverse visitor population. The availability of day use "loop hikes" is improved.

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

Monitoring

- Annually report the number of miles of road and trails maintained and operated to meet the objective maintenance level and class.
- Annually report the number of miles of unclassified roads removed or classified into the system.
- Every fifth year, evaluate trends in miles of road and trail facilities and trends in number of accidents per year.

Off Highway Vehicles

Desired Condition

Off highway vehicle (primarily ATVs and motorcycles) systems provide a range of recreation opportunities, experiences, and challenges for OHV enthusiasts through the development of an integrated system of roads and trails. Few, if any, trails are developed for four-wheel drive vehicles. Some suitable closed or low maintenance roads are available for four-wheel drive vehicle use. OHV use is occurring on designated roads and trails. High use areas are managed within capacities in order to maintain the quality of experiences. Facilities that provide access to the OHV system are developed in conjunction with the development of the overall OHV system. Conflicts between OHV enthusiasts and other recreation users, with private lands and homeowners adjacent to National Forest land, and with resource issues are addressed and resolved in a timely manner. Resolutions are consistent with area objectives and management direction. Recreational OHV visitors are informed where designated routes are, what types of vehicles are allowed, and what seasons they are allowed.

Monitoring

- Report annually the total miles of roads and trails available for use by off highway vehicles.

- Every fifth year, evaluate visitor satisfaction surveys, including the number of conflicts identified by field staff or reported by the public and the resolution of the complaints to determine if progress is being made toward the desired condition.
- Annually review off-road vehicle management plans and temporary designations implemented since the last annual review. OHV plan revisions will be subject to public participation as stated in 36 CFR Section 295.3.
- Review every three to five years the OHV use strategy and designations to determine whether the open or closed OHV use designations, location of the trails, vehicle types, and seasons of use are still valid.

MINERALS

Desired Condition

Minerals and energy developments are administered to facilitate production of mineral and energy resources as well as to minimize adverse impacts to surface and groundwater resources and protect or enhance ecosystem health.

Monitoring

- Annually report the number of operating plans managed to standard including the number and type of mitigation standards implemented.
- Every fifth year, evaluate the percentage of mineral developments that reduce the surface disturbance footprint and reduce siltation or other sources of environmental degradation.

RANGE

Desired Condition

Permanent pastures provide optimal forage and cover for wildlife species that benefit from early successional conditions or a mixture of habitat conditions. Livestock grazing occurs on some of these pastures; helping to maintain desired conditions. Existing woodland grazing allotments are phased out as permits terminate, or if range conditions deteriorate. No new woodland allotments are considered.

Monitoring

- Each year document the number of acres in allotments managed to standard.
- Every fifth year, evaluate rangeland condition and trends to determine progress toward the desired condition.

FIRE MANAGEMENT

Each year Arkansas experiences hundreds of wildfires. Many of these threaten rural homes and structures. Federal, state, and local rural fire departments are primarily responsible for controlling these wildfires.

Firefighting forces suppress most wildfires in Arkansas while they are small. These fires often occur at times of the year and under conditions when fire intensities are low or moderate resulting in little damage. These fires are most often springtime events. Although infrequent, when summer and fall droughts occur, wildfires in Arkansas can be very destructive.

There are nine communities listed as "communities at risk" on the OSFNFs. Of the communities at risk, there are about 794 acres of federal land within the half-mile of those communities. In addition to the communities at risk, steps will be made to reduce the condition class rating within the Wildland/Urban Interface (WUI).

Desired Condition

Vegetation is treated to enhance community protection and reduce the risk of loss of human life, structures, improvements, and natural resources from wildland fire and subsequent floods. Firefighters have improved opportunities for tactical operations and safety near structures, improvements, and high resource values. By providing for defensible space, public and firefighter safety is enhanced. Local jurisdictional authorities, citizen groups, and the Forest Service act together to mitigate hazardous fuel conditions in areas surrounding urban interface, urban intermix, and/or outlying improvements.

Monitoring

- Annually report the number of acres of hazardous fuel reduction in WUI including those implemented through cooperative agreements.
- Document the number of communities or facilities protected by treatments.
- Every fifth year, evaluate progress toward the desired condition through an analysis of the status of high hazard and high-risk areas.

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PART 2-STRATEGY

INTRODUCTION

This document is the second of the three parts of the LRMP for the OSFNFs and describes the strategy to be used over the next three to five years to realize the desired conditions described in Part 1 (the Vision) of the LRMP. This part includes a description of a prospectus describing past performance history, anticipated performance over the next three to five years, and the suitable uses for each of the land use zones.

PROSPECTUS

The prospectus describes recent trends and expectations regarding the levels of experiences, goods and services, or other outcomes that are supplied by the Forests as well as anticipated resource improvements planned over the next three to five years. The prospectus indicates the future course or direction of change in programs, rough estimates of the magnitude of change, and the timeframes surrounding such change.

Past performance is generally a good indicator of what is expected in the near future. Annual monitoring and evaluation of trends in performance indicators determine if there is a need to shift program emphasis to more effectively move toward the desired conditions. Annually, the OSFNFs review and evaluate programs and projects to determine if these activities meet the Forest Plan direction. The annual Monitoring and Evaluation (M&E) Report also includes, if necessary, recommendations for remedial action to make management activities and their effects consistent with the Forest Plan.

Trends in past performance are evaluated for the past five years using performance history and budget history.

RESOURCE PROGRAMS

The management of the OSFNFs is guided by the expertise of the people working in all of its program areas. To achieve the vision of a healthy forest, the required funding must be available and directed toward the correct tasks. Table 2-1 shows the actual expenditures for the past five years. Funding information is compiled annually in the Ozark-St. Francis National Forests' Monitoring and Evaluation Report. The Forests fund the following program areas:

Resource Management: The mission of the Forest Service is to "sustain the health, diversity, and productivity of the nation’s forests and grasslands to meet the needs of

present and future generations." The resource management function is responsible for the long term health and sustainability of the forest, providing goods and services from the land, the quality of the water running on and under the land, air quality above the land, habitat for wildlife, and protecting species of plants and animals from extinction. These programs also include the geographical information databases and monitoring and inventorying databases that allow forest personnel to analyze and store all data collected as a part of program activities. The primary resource management functions include:

- Recreation
- Vegetation Management
- Wildlife/Fish/Proposed, Endangered, Threatened, and Sensitive Species (PETS)
- Soil/Water/Air

Engineering: The OSFNFs have a high road density. There are over 5,900 miles of FS roads and 900 miles of state and county roads. Maintaining the Forests' road system requires cooperation between the State of Arkansas and the 18 counties that lie within the boundaries of the Forests. The engineering function is also responsible for the capital improvements and maintenance of the facilities on the Forests. This ranges from restroom facilities at campgrounds to administrative facilities.

Recreation/Scenery Management/Heritage: This functional area includes the management of the developed and dispersed recreation areas, heritage resources, and scenery management. Developed recreation includes trash collection, cleaning, monitoring of water systems, and other associated activities to keep campgrounds and picnic areas clean, safe, and in good repair. Dispersed activities include maintaining over 700 miles of trail, 66,000 acres of wilderness, 180 miles of wild and scenic rivers, and Blanchard Springs Caverns. Scenery Management is the art and science of planning and designing landscape attributes relative to the appearance of places and expanses in outdoor settings. Scenery Management involves administering the use of National Forest System lands within the context of multiple-use ecosystem management to ensure high quality scenery for the overall well-being and psychological welfare of society and future generations. Heritage resource strives to protect significant resources found on the Forests that tie us to the past, to share their values with the American people, and to contribute relevant information and perspectives to natural resource management.

Range: While many forests in the National Forest System have large grazing programs, the OSFNFs focus more on maintaining existing pastures. There are no large-scale grazing operations on the Forests at this time.

Fire and Aviation Management: Fire and aviation management includes all activities involved with wildland fire preparedness, suppression, safety, training, wildland fire use as it is developed, planning, prescribed fire, and hazard reduction in the wildland urban interface (WUI). This program includes on-forest and national wildfire/ emergency incident response. Current emphasis of the fire program is to support

prescribed burning for ecosystem restoration goals, improve condition class, and implement the healthy forest initiative including the Healthy Forest Restoration Act.

Lands: The Lands program is responsible for maintaining the Forests' property records, completing lands transactions, and surveying and protecting the boundaries. In addition, this functional management program takes advantage of opportunities to purchase private lands to further protect critical forest resources, and investigate encroachment by private landowners that degrades the quality of forestlands.

Minerals: Forest Service policy regarding minerals management includes ensuring "the integration of mineral resource programs and activities with the planning and management of renewable resources through the land and resource management planning process, recognizing that mineral development may occur concurrently or sequentially with other resource uses." Further information can be found at: (**http://www.fs.fed.us/geology/minerals_policy.html**). Consistent with federal law, including the U.S. Mining Laws Act of May 10, 1872, and the Mining and Minerals Policy Act of 1970, Forest Plans *do not* make decisions to withdraw National Forest System lands from mineral exploration or development.

The Forest Plan includes recommendations for making or removing withdrawals, based on an evaluation of the compatibility of mineral development with the objectives of individual management areas. The Withdrawal Review for the Ozark-St. Francis National Forest is in Appendix H.

Ecosystem Inventory, Monitoring, and Planning: This program includes expenditures for forest-wide monitoring of soil, water, air, ecosystems, wildlife, range, recreation, and land management planning.

Management and Administration (Cost Pools): The management and administration program includes forest leadership, management, and administrative support activities, communications, external affairs, planning, human resources, information technology, and financial management. The LRMP primarily affects two of these programs, general and district management.

- **General Management:** Vision, leadership, performance reporting, legislative contacts, and priority setting are the tasks of the Supervisor and the immediate support staff. From the Supervisor's Office in Russellville, Arkansas, human resources, engineering, recreation, resources, public relations, information technology, and other staff functions provide technical and administrative support to the districts.
- **District Management:** The Ozark St.-Francis National Forests are divided into six ranger districts on the Ozark National Forest (Bayou, Boston Mountain, Buffalo, Mt. Magazine, Pleasant Hill, Sylamore) and the St. Francis National Forest. Each district ranger and staff is directly responsible for developing, conserving, and using the natural resources of the Forests and the associated land of the ranger district, while maintaining relationships with local communities and organizations.

Budget Trends

Appropriations for the OSFNFs reached their highest in FY 2003. Recreation budgets have remained flat overtime and declined significantly in FY 2003. Other budgets that have changed little over time include range, wildlife/fish/PETS, soil, water, air, and minerals. Table 2-1 provides the actual expenditure for fiscal years 1999-2003 by functional areas.

Table 2-1: Expenditures of Appropriated Dollars by Fiscal Year 1999-2003.

Functional Area	Actual Expenditures of Appropriated Dollars by Fiscal Year (1,000s of dollars)				
	1999	2000	2001	2002	2003
Timber	4,220	4,261	4,452	5,253	4,621
Wildlife/Fish/PETS Species	707	678	971	884	674
Soil/Water/Air	135	107	267	160	204
Recreation/Wilderness/Heritage	1,622	2,471	2,231	2,376	1,247
Fire	1,424	1,439	2,167	1,973	2,071
Lands	352	404	475	565	536
Minerals	195	209	306	272	226
Engineering	1,685	3,423	3,502	3,199	*5,456
Range	168	118	180	138	69
Ecosystem Inventory, Monitoring, Planning	811	961	1,363	1,555	1,010
Cost Pools	1,598	1,363	472	4,225	4,137
Total	12,984	15,494	16,482	20,718	20,751

Source: Annual Monitoring & Evaluation Report.
***Also includes recreation construction (CMFC and CMII).**

PERFORMANCE HISTORY

Table 2.2 displays the performance history for fiscal years 1997-2003. It includes annual objectives of the current plan to the actual accomplished objectives. Accomplishment trends are evaluated periodically to determine if the Forests need to shift program strategies. These data are reported in the annual Monitoring and Evaluation Report as part of the Forests' implementation monitoring efforts.

Table 2-2: Performance History for Fiscal Years 1997-2003.

Activities	Units	LRMP Objective	FY 97	FY 98	FY 99	FY 2000	FY 2001	FY 2002	FY 2003
Timber									
Timber Volume Offered	MCF	96	100	82	71	70	82	113	114
Timber Volume Sold	MCF	96	82	103	66	48	54	105	112
Pine Reforestation	acres	3,150	2,727	2,946	2,769	3,379	2,243	2,101	1,773
Hardwood Reforestation	acres	2,200	1,028	1,086	1,712	132	485	1,201	1,675
Pre-Commercial Hardwood Timber Stand Improvement	acres	1,600	869	1,146	1,425	1,171	1,468	1,580	1,426
Pre-Commercial Pine Timber Stand Improvement	acres	5,000	1,943	1,253	1,073	1,951	1,807	1,877	1,748
Thinning	acres	6,200	7,011	6,026	4,784	5,974	4,647	3,673	5,502
Wildlife /Fish/PETS									
Prescribed Burning	acres	1,110	1,738	3,583	5,860	7,579	225	2,883	2,789
Wildlife Opening Maintenance	acres	290	78	320	384	240	665	500	920
Food Plot Maintenance	acres	33	308	60	538	520	1,012	800	989
Wildlife Opening Development	acres	36	34	38	59	0	12	80	90
Food Plot Development	acres	8	61	21	7	22	0	27	25
Wildlife Stand Improvement	acres	150	225	447	812	553	228	124	363
Seeding and Planting	acres	28	1,661	170	461	122	265	261	182
Pond Construction	structures	45	30	18	25	6	47	14	35
Fish Cover Development	structures	14	7	12	15	25	0	40	110
Pond Fertilization	acres	167	30	200	375	911	0	220	240

Source: Annual Forest Monitoring and Evaluation Reports.
***Fee demo program began in 1998.**

Table 2-2: Performance History for Fiscal Years 1997-2003. (Continued)

Activities	Units	LRMP Objective	FY 97	FY 98	FY 99	FY 2000	FY 2001	FY 2002	FY 2003
Soil/Water/Air									
Watershed Improvement	acres		20	27	48	30	42	21	53
Engineering									
Road Construction & Reconstruction	miles		62	38	37	11	33	48	30
Recreation/Wilderness/Heritage									
*Fee Demo Program	dollars/ thousands			689	643	741	692	689	748
Trail Construction & Reconstruction	miles	12	10	2	4	4	4	9	14
Cultural Resource Inventory	acres	186,080	20,384	25,464	19,722	19,722	19,722	38,835	40,901
Range									
Prescribed Burning	acres	2,800	66	30	295	0	0	0	0
Brush Hog Pastures	acres	2,800	800	160	500	2,000	690	1,340	713
Fertilization	acres	1,400	800	0	500	1,500	490	1,390	925
Seeding	acres	1,400	20	40	65	80	105	0	0
Pond Construction	structures	14	0	7	3	2	0	5	0
Fuel Treatment									
Prescribed Burning	acres	7,000	8,025	11,123	20,266	22,583	27,786	35,454	46,871
Lands									
Land Exchange	acres	600	334	143	1,074	329	0	0	0
Land Acquisition	acres	1,100	557	769	1,361	529	60	80	2,240
Minerals									
Mineral Leases	leases	360	60	31	42	32	10	24	22

Source: Annual Forest Monitoring and Evaluation Reports.
***Fee demo program began in 1998.**

The OSFNFs participated in the first round of the National Visitor Use Monitoring surveys in 2001 (Table 2-3). Recreation use on the Forests for FY 2001 at the 80 percent confidence level was 2.7 million national forest visits plus or minus (+/-) 17 percent. There were 2.87 million site visits, an average of 1.1 site visits per national forest visit. Included in the site visit estimate are 4,359 wilderness visits.

Table 2-3: Ozark-St. Francis National Forest Annual Recreation Use Estimate, 2001.

National Forest Visits	Site Visits	Wilderness Visits
2,700,794	2,874,907	4,359

Another reflection of recreation use of the Forests is the fees collected at our fee sites under the Fee Demonstration Program initiated by Congress in 1997. All of the developed recreation sites on the Forests were submitted as one project under this program. Table 2-4 shows the fees collected by districts for the years 1998-2004. Note that the collections on the Sylamore Ranger District/St. Francis NF are elevated due to Blanchard Caverns, which has many visitors each year. Ninety-five percent of the fees collected are used for maintenance at the site where they are collected. The fees collected forest-wide from 1998-2003 are included in Table 2-4.

Table 2-4: Collections from the Fee Demo Program from 1998-2004.

Districts	FY 98	FY 99	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
	Unit of Measurement-Dollars/Thousands						
Sylamore/ St. Francis	632	578	504	494	495	532	488
Buffalo/ Bayou	17	25	21	18	35	33	30
Pleasant Hill	17	16	12	12	15	15	13
Boston Mtn./ Magazine	24	23	52	29	25	27	17
*Pool	129	120	111	104	107	115	102

***Pool is a forest-wide account from fee demo program for use on special projects related to fee sites.**

PROGRAM PRIORITIES AND OBJECTIVES

The following sections list program priorities and objectives for achieving the desired conditions set forth in Part 1 of the Revised Forest Plan.

Many variables that influence the degree to which objectives are achieved cannot be fully assessed when a plan is revised or amended. Legal mandates, congressional intent as expressed in annual budgets, natural disturbance events, and other issues or factors over which the Forest Supervisor has little or no control all influence performance. The actual mix and level of activities to be conducted will be determined each year, utilizing every opportunity to move toward the desired conditions and to contribute to the Forest Service's national strategic goals.

Based on expected management priorities, the Forest Service will emphasize the following program emphases, objectives, and strategies in each program area over the planning period. Management area emphases and desired conditions are also described in this section.

LAND MANAGEMENT PLANNING

Forest Plan Monitoring and Evaluation

Priorities

- Amend the land and resource management plan as necessary in response to monitoring and evaluation.
- Publish a monitoring and evaluation report annually that evaluates progress in meeting Forest Plan direction and makes recommendations to redirect budget or management direction to meeting changed conditions.
- The comprehensive evaluation reports called for by the 2005 NFMA planning rule (36 CFR 219) will be prepared every five years.

Objectives

OBJ.1 Complete an Environmental Management System (EMS) within the first five years of the planning cycle. **Performance Indicator**: Completed EMS.

Forest-Wide Inventories

Priorities

- Develop the capacity to use all Forest Service corporate databases for the purposes of project planning, forest-wide monitoring and evaluation, and responding to regional and national reporting requests.
- Adjust vegetation inventory protocols to meet national and regional standards, and to reflect vegetation types and conditions used for forest planning including rare and special communities.
- Work with appropriate agencies and academic sources to identify natural resource research needs. Implement research as opportunities occur.
- Complete invasive non-native plant and animal inventories based on national and regional protocols in the planning cycle.
- Develop a schedule for conducting watershed assessments at the scale appropriate to need in the planning cycle.
- Inventory the habitat of federally listed and Forest Service sensitive species, update all maps and databases as information is obtained.
- Complete and inventory of old growth in MA 3.F to determine old growth conditions.
- Maintain an inventory of the soils with highly erosive hazards across the Forests.

Research

Priorities

- Continue to seek and promote research opportunities that are consistent with identified information needs.
- Identify research needs and opportunities for research programs for qualified persons or groups by developing cooperative agreements.
- Benefit from research information by maintaining a close, continuous relationship with scientists from the Southern Research Station, and other universities and colleges conducting research on the OSFNFs.

COOPERATIVE RELATIONS

Local Communities

Priorities

- Promote area economic well-being by using the Forests' resources to generate revenues for local counties and to provide direct or indirect employment opportunities.
- Recognize the socio-economic effects of natural resource management planning and activities on other federal, state, and local governments; private landowners; and various community organizations.
- Reduce risk of catastrophic wildland fire around communities at risk by decreasing hazardous fuel conditions.
- Within this planning cycle, manage the Forests' timber, recreational, and scenic resources in a manner that enables local communities to capitalize on the potential of these resources to contribute to economic well-being.
- Within this planning cycle, provide or facilitate technical and financial assistance to rural communities that are dependent on forest-generated commerce and natural resources.
- Within this planning cycle, provide opportunities for use of Forests' resources by disadvantaged persons.
- Use human resource programs to provide employment, skills, training, work experience, and education for young and elderly citizens.
- Maintain steady flow of goods and services to prevent changes in local social and economic conditions.
- Provide full and timely information regarding impending Forests' decisions and to give ample opportunities for the public and cooperating agencies to be involved in the Forest decision-making process.

Governmental Agencies

Priorities

- Support agreement with Arkansas Tech University to provide wildland fire training to students in the natural resources fields and Federal Emergency Management program. The objectives are to provide additional resources to assist the Forests in both wildland fire suppression and prescribed fire, and to enhance the students' employment opportunities with agencies that have wildland and/or prescribed fire programs.
- Maintain cooperative training efforts with state and federal agencies.
- Maintain cooperative agreements with state and federal agencies for aid and detection of wildland or prescribed fires, and in dispatching of suppression resource.

VEGETATION AND FOREST HEALTH

Major Forest Communities

Priorities

- Manage major forest communities to achieve desired conditions and sustained flows of goods and services.
- Restore oak and pine woodland conditions using growing season fire where possible, especially on lands where commercial timber sales are not feasible.
- Apply appropriate silviculture prescriptions to convert loblolly pine plantations to native forest types when loblolly pine stands reach rotation age.

Objectives

OBJ.2 Follow silviculture allocation direction for management areas outlined in Appendix F of this LRMP. **Performance Indicator:** Through FACTS, annually report the acres allocated by management area and silviculture prescription.

OBJ.3 Across all community types, maintain more than 50 percent of the total forest and woodland acreage in a mature condition. Over time, develop old growth conditions on approximately 20 percent of forested acres. **Performance Indicator**: Percent of mature forest and old growth forest.

OBJ.4 Restore and maintain at least 22,000 acres of oak woodland over the first decade, with a long-term objective of 110,000 acres of oak woodland. **Performance Indicator**: Acres of oak woodland restored annually.

OBJ.5 Restore at least 20,000 acres of pine woodland over the first decade, with a long-term objective of 100,000 acres of pine woodland. **Performance Indicator**: Acres of pine woodland restored annually.

OBJ.6 Across all community types, maintain a range of 3.8 to 6.8 percent of the total forest and woodland acreage in regenerating forest conditions (0 to 10 years old). **Performance Indicator**: Percentage of forest in regenerating conditions.

OBJ.7 Across all community types, annually burn an average of 120,000 acres under prescribed burn conditions. Burn approximately one-third of this acreage within the growing season (April 1 through October 15) **Performance Indicator**: Acres burned under prescription per year, and acres burned within the growing season.

Rare and Special Communities

Priorities

- Protect, maintain, and restore the composition, structure, and function of rare communities found on National Forest System lands.
- Inventory and map rare communities. Identify and prioritize restoration and maintenance needs.

Caves, Mines, and Karst

Priorities

- Allow for the continuation of natural karst processes. Maintain the productivity of the karst landscape while providing protection of sensitive karst resources.
- Manage lands in a manner that protects significant caves and their associated resources.

Old Growth

Priorities

- A variety of large, medium, and small old growth patches will be managed (through restoration, protection, or maintenance activities) to meet biological and social needs. These patches could include stands of either "existing old growth" or "future old growth."

Insect and Disease Management

Priorities

- Protect the natural resource values at risk due to insect or disease loss at levels outside of the desired range of variability or where needed to improve habitat. Reduce the susceptibility (risk) to insect and disease losses on the Forests.

- Continue to work toward a balanced age class distribution in hardwood and pine stands.
- Take steps to improve forest health by reducing the likelihood of insect infestations, disease outbreaks, and establishment of non-native, invasive species on National Forest System lands.
- Use an integrated pest management approach to prevent or reduce damage to forest resources from pest organisms including non-native, invasive species.
- Streamline coordination among partners and landowners to provide optimal early detection and treatment of pest outbreaks.

Objectives

OBJ.8 Reduce the risk of oak and pine mortality events by thinning and regenerating at least 150,000 acres within the first decade. **Performance Indicator**: Acres thinned and regenerated annually.

Non-Native Invasive Species

Priorities

- Follow the direction set forth in the *Regional Strategy for Non-Native Invasive Species*. Develop protocols for survey, detection, evaluation, suppression, and prevention of infestations of non-native invasive species.
- Coordinate with Arkansas Heritage Commission and other state and federal agencies on prevention, suppression, and eradication efforts.

Objectives

OBJ.9 Treat at least 200 acres per year for reduction or elimination of non-native, invasive species. **Performance Indicator:** Acres treated.

FISH AND WILDLIFE

Demand Species

Priorities

- Provide for an optimal, sustained yield of game animals by perpetuating a mix of early-, mid-, and late-successional forest and woodland conditions.
- Provide additional boat ramps on the OSFNFs.
- Provide additional handicapped accessible opportunities to lakes and ponds on the OSFNFs.
- Provide for an optimal, sustained yield of sport fish populations through structural and nonstructural habitat improvements.
- Develop lake-fishery management plans on major lakes in cooperation with the Arkansas Game and Fish Commission.

Objectives

OBJ.10 Improve and then maintain bobwhite quail habitat on 5,000 acres per year for the first decade. **Performance Indicator**: Acres improved through oak or pine woodland restoration, or acres in early seral stages.

OBJ.11 Improve and then maintain habitat for whitetail deer on 10,000 acres per year for the first decade. **Performance Indicator**: Acres improved annually.

OBJ.12 Improve and then maintain habitat for eastern wild turkey on 10,000 acres per year for the first decade. **Performance Indicator**: Acres improved annually.

OBJ.13 Improve and then maintain habitat for black bear on 8,000 acres per year for the first decade. **Performance Indicator**: Acres improved annually.

OBJ.14 Improve winter forage grounds and maintain high grass and forb plant communities for elk on 480 acres over the first decade. **Performance Indicator**: Acres improved.

OBJ.15 Maintain habitat at 2004 levels for largemouth and smallmouth bass during the next 3 to 5 years. **Performance Indicator**: Acres maintained.

OBJ.16 Increase the amount of fish structures in large lakes by 100 acres over the first decade. **Performance Indicator**: Acres of structural improvement annually.

Threatened, Endangered, and Sensitive Species

Priorities

- Provide diverse habitats that will support viable populations of all native and desirable nonnative species.
- Work with the U.S. Fish and Wildlife Service (USFWS) to develop recovery plans for federally listed species. Implement Forest Service actions as recommended in recovery plans for federally listed species. In the absence of an approved recovery plan, implement interim Forest Service objectives.
- Manage habitat to move species toward recovery and de-listing. Prevent the listing of proposed and sensitive species. Coordinate with partners to implement measures to resolve conflicts with all threatened and endangered species and habitats.
- Develop monitoring plans to evaluate the effectiveness of canopy density control treatments in primary and secondary Indiana bat zones. Use adaptive management in making adjustments based on results of monitoring.

- When opportunities arise in the secondary Indiana bat zones to thin inclusions or stand size areas where shagbark hickory is the dominant species, the objectives of this thinning will be to enhance health and longevity of the residual trees. The target residual basal area for these areas is site index minus 10. Designated leave trees should be the largest stems with the greatest potential for crown development and longevity.
- Encourage reintroduction of extirpated or declining native species when technologically feasible. Develop partnerships with universities, groups, and other agencies to facilitate reintroduction of native species.

Objectives

OBJ.17 Improve roosting and foraging conditions in secondary buffers around Indiana Bat hibernacula on 750 acres per year for the first decade. **Performance Indicator**: Acres improved annually.

SOIL, WATER, AND AIR

The Forest Services utilizes Arkansas' Best Management Practices (BMPs) as tools for ensuring the maintenance of proper watershed functioning and for complying with the Clean Water Act. In particular, the use of streamside management zones limits erosion and sedimentation from upland management activities from entering the streams and watercourses of the Forests. Streamside management zones (SMZs) are defined for all the stream courses and surface waters found on the Forests.

Priorities

- Control and reduce smoke to protect human health, improve safety, and to moderate or eliminate environmental impacts. Incorporate visibility and smoke management requirements into fire management plans.
- Prevent exceeding the regulatory particulate matter ($PM_{2.5}$) standards through monitoring prescribed burning. Plan for resource management emissions to fall within the current state implementation plan (SIP). SIP inventories establish levels of air pollution that meet the long-term federal air quality attainment goals of the permitting Air Pollution Control District.
- Meet federal and state standards concerning air and water quality (e.g., National Ambient Air Quality Standard [NAAQS], Environmental Protection Agency [EPA], and state water quality standards).
- Minimize air pollution impacts to the Air Quality Related Values (AQRV) of the Class I Area, Upper Buffalo Wilderness, through a cooperative working relationship with agencies managing air quality.
- Ensure that smoke is not adversely affecting Indiana bats by not permitting active combustion and smoldering phase smoke from prescribed burns to enter hibernacula. Develop monitoring plans to evaluate residual smoldering phase and drift smoke entry into primary and secondary zones. Consider all weather perimeters, intra-cave airflow dynamics, burn duration, elevation, and topography in developing burn prescriptions.

- Protect, maintain, and restore natural watershed functions including slope processes, surface water, groundwater flow, retention, and riparian area sustainability. Restore, maintain, and improve watershed conditions. Ensure that approved and funded rehabilitation and emergency watershed treatments are implemented in an effective and timely manner.
- Contribute to meeting designated beneficial uses of water by providing water of appropriate quality and quantity.
- Protect municipal and other potable water supplies and ensure that management activities do not cause permanent deterioration in water quality or quantity.
- Include erosion and sediment control measures in all ground-disturbing project plans.
- Identify roads and trails that should be reconstructed or decommissioned to reduce sediment and improve watershed condition.
- Monitor compliance with Forest Plan design criteria intended to protect soil, air, and water quality.
- Utilize a landscape-level watershed assessment process for assisting in the project level planning process, forest level monitoring, and organizing resource information.
- Maintain an inventory of the highly erodible soils across the Forests.
- Manage groundwater and surface water to maintain or improve water quantity and quality.
- Assess impacts of existing and proposed groundwater extractions to ensure that developments will not adversely affect aquatic, riparian, or upland ecosystems and other uses, resources, or rights.
- Protect and improve water quality by implementing Arkansas BMPs and other project-specific water quality protection measures for all Forest Service and authorized activities.
- Conserve and protect high quality water sources in quantities adequate to meet National Forest needs.
- Comply with State water quality standards. Take corrective actions when necessary to eliminate the conditions leading to State of Arkansas listing of 303 (d) impaired waters on National Forest System land. For those waters off National Forest System land, ensure that Forest Service management does not contribute to listed water quality degradation.
- Cooperate with federal, tribal, state, and local governments and private entities to secure the in-stream flow needed to maintain, recover, and restore riparian-dependent resources, channel conditions, and aquatic habitat.

Objectives

OBJ.18 Protect and improve the Air Quality Related Values of the Class I Area (Upper Buffalo Wilderness). **Performance Indicator:** Number of AQRV monitoring sites, number of PSD (air quality- Prevention of Significant Deterioration) permits reviewed, and number of regional air quality planning committees participated in.

OBJ.19 Conduct watershed improvements on 20 acres per year. **Performance Indicator:** Acres treated.

OBJ.20 Fence out livestock from SMZs and riparian areas as identified. **Performance Indicator:** Miles of SMZ fenced.

OBJ.21 Maintain or restore between 30 to 70 percent of the total perennial stream/river surface area of the NHD (National Hydrography Dataset) reaches as pool habitat in the first decade. **Performance Indicator**: Percentage of NHD stream pool habitat.

OBJ.22 Maintain or restore LWD (Large Woody Debris) levels in perennial streams/rivers at 75 to 200 pieces/mile for all LWD larger than 3.3 feet long and 3.9 inches in diameter in the first decade. **Performance Indicator**: LWD composition in perennial streams after 10 years.

OBJ.23 Maintain or restore LWD levels in perennial streams/rivers at 8 to 20 pieces/mile for all LWD larger than 16.4 feet long and 19.7 inches in diameter in the 1 first decade. **Performance Indicator**: LWD composition in perennial streams after 10 years.

Hazardous Materials

Priorities

- Manage known hazardous materials risks.
- Coordinate with federal, tribal, state, city, and county agencies and local landowners to develop emergency response guidelines for hazardous spills on National Forest System land or on adjacent land with potential to affect Threatened, Endangered, or Sensitive (TES) species habitat.
- Develop a hazardous materials response plan that addresses risk and standard cleanup procedures.
- In the event of hazardous material spills in known TES habitat on National Forest System land, the Forest Service will contact the USFWS within 24 hours. The Forest Service will quickly contact resource personnel and use them as consultants to minimize impacts to habitat and to initiate emergency consultation with the USFWS, if necessary.

LANDS AND SPECIAL USES

Acquisition

Priorities

- Consolidate forestland ownership to facilitate management efficiency, reduce fragmentation, enhance public benefits, and meet resource management needs through acquisition.

- Consolidate the National Forest System land base to support resource management objectives, improve management effectiveness, enhance public benefits, and/or to improve habitat condition and linkage.
- Acquire lands or interest in lands by purchasing, receiving donations, exchanging, acquiring rights-of-way, transferring, interchanging, or adjusting boundaries to address the issues associated with complex ownership patterns including urban interface fire protection and occupancy trespass.
- Work with land conservancies, local government, and others to secure long-term habitat linkages.
- Actively participate with local government, developers, and other entities to protect forest values in the urban interface zones.
- Continue to work with the Bear Creek Lake Home Owners Association on the proposed land exchange on the St. Francis National Forest. The St. Francis National Forest has 52 recreation "summer" home residences under land use authorizations within its boundaries. The Bear Creek Lake Homeowner's Association has proposed a land exchange with the St. Francis National Forest where they would acquire the peninsula where their recreation residences are located. The non-federal tracts they have offered to date do not satisfy the criteria or values for land exchange. The forest service owns all the property surrounding Bear Creek Lake. Site specific analysis of any proposal would be required which shows whether or not it would meet the laws and regulations governing such a conveyance, and that the exchange would clearly be in the public's interest.

Administrative Access

Priorities

- Ensure that legal access is secured for National Forest System lands for present and future resource management needs.
- Acquire land or rights-of-way for road and trail access to support appropriate National Forest activities and public needs.

Boundary Corners and Lines

Priorities

- Re-establish the Public Land Survey System (PLSS) in the most cost effective manner possible (to the extent that funding is available) in order to provide for NF boundary lines needed for management of the National Forest System lands. This work shall be done in accordance with (1) Bureau of Land Management (BLM) survey procedures as stated in the most current *BLM Manual of Surveying Instructions* and (2) Arkansas State boundary survey standards as per the handbook for Arkansas Land Surveyors and the Arkansas Minimum Standards for property boundary surveys.

Objectives

OBJ.24 Maintain existing known survey corner monuments. **Performance Indicator:** Number of known survey corners maintained.

OBJ.25 Survey and monument lost/obliterated or found corners on a township basis (the basic PLSS unit that is also the most cost effective). **Performance Indicator:** Number of lost/obliterated or found survey corners monumented and/or restored.

OBJ.26 Establish new (heretofore not marked to FS standard) on-the-ground boundary lines to the extent funding is available. **Performance Indicator:** Number of new boundary lines established.

OBJ.27 Maintain existing (heretofore marked to FS standard) on-the-ground boundary line to the extent funding is available. **Performance Indicator:** Miles of line maintained.

RECREATION

Developed Recreation

Priorities

- Maintain and protect existing and potential recreation sites consistent with public demand through operation, maintenance, and rehabilitation activities.
- Improve the cost effectiveness of operating recreational facilities by decommissioning underused sites, using concessionaire agreements, entering into management partnerships, and other measures.
- Make financial investment decisions by utilizing a "business-principles-based" process, which analyzes strengths, weaknesses, opportunities, threats, cost vs. use, alignment action plan, and five-year development plans for the districts and the Forests.

Dispersed Recreation

Priorities

- Provide a range and amount of dispersed recreation opportunities that are consistent with public demand for a variety of activities and settings.
- Provide abundant and diverse opportunities for enjoying scenery, streams, lakes, rivers, heritage sites, geological features, and wildlife.
- Emphasize water-related day-use, scenic and wildlife viewing, and trail activities such as hiking, biking, horseback riding, and OHV riding. Overnight facilities will only be developed in support of the niche activities.
- Utilize dispersed recreation programs that support minimal impacts to help prevent and mitigate resource damage. (“Leave No Trace” and MIST).

- Employ "Pack it in - Pack it out" policy for solid waste, except where disposal facilities are available.

Trails

Priorities

- Maintain a network of hiking, biking, equestrian, and multiple-use trails in good condition, relying on partnerships as much as possible.
- Construct and maintain the trail network to levels appropriate with management area objectives, sustainable resource conditions, and the type and level of use.
- Consider opportunities to construct or join trails that link Maintenance Level 1 Roads (closed roads) and other roads that meet the need for trail-based recreation to lengthen the trail systems.
- Maintain and/or develop access points and connecting trails linked to the surrounding communities to create opportunities for non-motorized trips of short duration.
- Develop and operate a system of OHV routes that satisfies some public demands for motorized recreation and protects environmental quality.
- Work with organized horse enthusiasts to maintain existing trails, and develop additional trails.
- Convert ecologically sustainable Maintenance Level 1 Roads (closed roads) and other roads that meet the need for trail-based recreation.

Objectives

OBJ.28 In conjunction with designating low-maintenance, standard roads develop a system of motorized trails that addresses the needs of OHV enthusiasts. **Performance Indicator:** Miles of new motorized trails.

OBJ.29 Within the first five years of the planning period, provide maps that show OHV route systems using designated roads. **Performance Indicator:** Number of maps completed.

OBJ.30 Conduct maintenance on at least 100 miles of trails (non-motorized use) per year. **Performance Indicator:** Annually, the miles of trail maintained to standard.

Recreation Special Uses

Priorities

- Incorporate the management and monitoring of all concession and recreational land use authorizations. The Forest Service manages 60 recreational special use authorizations including 4 concession campground complexes, 3 special use authorizations with Arkansas State Parks, 1 agreement with the University of Arkansas, and 52 summer homes.

- Screen land use authorizations using the 36 CFR 251 screening process before a decision is made to authorize the special use.
- Improve relationships with concessionaires, outfitters and guides, and other land use authorization holders to give customers fast and effective delivery of information and services.

Conservation Education

Priorities

- Build intellectual and personal connections between people and their natural and cultural heritage. The program focuses on public service information regarding recreational opportunities, stewardship responsibilities, and resource education.
- Emphasize partnership and volunteer programs to improve visitor services and to increase opportunities for interpretation and environmental education.
- Develop conservation education programs for major restoration sites during the planning cycle.

Objectives

OBJ.31 Increase partnerships by approximately 20 percent during the planning cycle. **Performance Indicator:** Percent increase in partnerships.

Scenery Management

Priorities

- Maintain or enhance the visual character of the Forests by using the Scenery Management System (SMS) to achieve scenic integrity objectives.
- Manage landscapes and build elements in order to achieve scenic integrity objectives.
- Promote the planning and improvement of infrastructure along scenic travel routes. Use the best environmental design practices to harmonize changes in the landscape and to advance environmentally sustainable design solutions.
- Restore landscapes to reduce visual effects of nonconforming features.
- Manage scenic restoration to be consistent with other management area objectives.
- Maintain the integrity of the expansive, natural landscapes, and traditional cultural features that provide the distinctive character of places. Maintain the character of key places in order to maintain their valued attributes.

Objectives

OBJ.32 Within three years, the Forests will map the existing scenic integrity levels to compare with the proposed scenic integrity objectives for each management area. **Performance Indicator:** Inventory of existing scenic integrity levels.

OBJ.33 Within one year, update the scenery treatment guide for the Forests. **Performance Indicator:** Completion of an updated guide.

OBJ.34 Improve or maintain all designated scenic overlooks at least once per decade. **Performance Indicator:** Number of scenic overlooks improved or maintained per year; percent maintained or improved per decade.

Heritage Resources

Priorities

- Protect heritage resources for cultural and scientific value and public benefits.
- Use partnerships to implement site management plans for heritage resource sites, focusing on those sites with recognized significance or that are at risk from public or land use effects.
- Work with the local communities to understand, document, preserve, and interpret the forest history. Develop opportunities for partnerships with the public to maintain and re-use historic heritage resources.
- Increase knowledge of the occurrence, distribution, and diversity of site types for heritage resources on the Forests.
- Identify research needs and opportunities for research programs by qualified persons or groups by developing cooperative agreements.

Objectives

OBJ.35 Evaluate historic sites for appropriate management. Develop site management plans for noteworthy heritage resources wherever they occur. **Performance Indicator**: Number of management plans developed.

OBJ.36 Provide public involvement programs with opportunities for people to partner in the stewardship of heritage resource sites. **Performance Indicator:** Number of implemented programs (PIT, AAS digs, etc.).

OBJ.37 Develop public involvement programs to foster partnership in heritage resource stewardship to aid in identifying and evaluating heritage sites. **Performance Indicator**: Number of partnerships.

OBJ.38 Increase the heritage resource database by surveying non-project acreage. **Performance Indicator**: Acres of non-project surveys.

TRIBAL NATIVE AMERICAN RELATIONSHIPS

Priorities

- Emphasize developing relationships with tribal governments, working together to resolve issues, and facilitating continued traditional or cultural use of the

Forests. Management intends to establish effective relationships with federally recognized tribes.

- Develop protocols to promote collaborative partnerships for managing heritage resources, ecosystem restoration, comprehensive fire planning, and recognizing historic Native American access rights to the Forests and resources.
- Allow traditional use access to traditionally used areas as well as contemporary use and needs by tribal and other Native American interests.
- Protect, conserve, and restore traditionally or contemporarily used resources. Opportunities for traditional use of the Forests and forest resources are improved and provisions are made to offer access to sites with cultural significance. Use opportunities during project planning and implementation to identify, enhance, and protect traditionally or contemporarily used resources.
- Establish effective partnerships to address issues of mutual concern (plant material propagation, etc.)
- Work collaboratively with tribes to determine appropriate locations and levels for gathering traditional plant materials.

Objectives

OBJ.39 Within this planning cycle, develop government-to-government programmatic agreements, which define protocols with all local recognized tribes and organized groups of interested Native Americans. **Performance Indicator:** Number of programmatic agreements developed.

OBJ.40 During the next three to five years, expand the Native American Wildland Firefighting Training program. **Performance Indicator:** Number of Native American fire fighters trained annually.

LAW ENFORCEMENT

Priorities

- Provide law enforcement services for safety and resource protection.
- Provide law enforcement services in relationship to available staffing levels, the number of incidents recorded annually, and the ability of the public to access forestlands.
- Conduct criminal and civil investigations in a timely manner.
- Develop, update, or revise Forest Orders to implement the orders applicable to specific needs of the Forests.
- Annually provide investigative services commensurate with available staffing levels, the degree of severity and impact of an incident, and the number of incidents recorded.

FACILITIES

Priorities

- Reduce the backlog of facilities that do not meet the desired condition or complement the recreation setting by replacing outdated substandard facilities with safe, efficient, durable, environmentally sensitive facilities.
- Reduce the facility maintenance backlog, giving priority to health and safety and accessibility compliance.
- Increase the operating efficiency of existing buildings.
- Upgrade site utilities for efficient operation. Remodel or construct new buildings to conform to approved facility master plans.
- Maintain all buildings to health and safety standards.

Objectives

OBJ.41 Identify and evaluate applicable property or buildings of potential historic value in support of the facility master plan. Remove the facilities that have been abandoned or no longer needed, and restore the sites to natural conditions. **Performance Indicator:** Number of facilities removed.

OBJ.42 Construct new facilities to accommodate supplementary fire employees and equipment. **Performance Indicator:** Number of facilities constructed.

OBJ.43 Eliminate two leased facilities by 2015. **Performance Indicator**: Number of leases eliminated by 2015.

OBJ.44 Eliminate 10 percent of other non-essential administrative facilities by 2015. **Performance Indicator**: Number of non-essential facilities remaining as a percentage of the FY 2005 baseline (to be determined).

OBJ.45 Upgrade all identified publicly accessible facilities to Architectural Barriers Act standards as appropriate. **Performance Indicator**: percentage of publicly accessible facilities upgraded.

OBJ.46 Complete energy efficiency upgrades on all administrative buildings and complete identified work on 10 percent of administrative buildings needing upgrades by 2015. **Performance Indicator**: Percentage of administrative buildings needing work with energy efficiency upgrades completed by 2015.

OBJ.47 Inspect all buildings to determine compliance with health and safety standards and address all identified health and safety issues. **Performance Indicator**: Percentage of inspected buildings that meet health and safety standards.

TRANSPORTATION AND PUBLIC ACCESS

Transportation System

Priorities

- Plan, design, construct, and maintain the road and trail system to meet those objectives established to implement the LRMP, to promote sustainable resource conditions, and to safely accommodate anticipated levels and types of use.
- Develop and operate the minimum road system, including all bridges and culverts, maintained to standards needed to meet requirements of proposed actions, protect the environment, and provide for reasonable public access.
- Strive to reduce roads to a density of three miles/square mile in sixth level watersheds based on watershed assessments, the roads analysis process (RAP), and budget constraints.
- Strive to reduce road density in SMZs based on watershed assessment and the roads analysis process (RAP).
- Use the completed forest-wide roads analysis process (RAP) to plan project level roads analysis during watershed assessments to provide safe, efficient routes for public and administrative access, and to determine if additional roads analysis is needed for small scale projects.
- Enhance user safety and offer adequate parking at popular destinations on high traffic passenger car roads while minimizing adverse resource effects.

Objectives

OBJ.48 Add unclassified roads to the Forest Service Road System when site-specific road analysis determines there is a need for the road. **Performance Indicator:** Number of roads added.

OBJ.49 Decommission roads and trails unnecessary for conversion to either the road or trail system through the roads analysis process (RAP). **Performance Indicator:** Number of roads decommissioned.

OBJ.50 Reduce the number of unnecessary or redundant unclassified roads. **Performance Indicator:** Number of roads removed from the Forest Service Road System.

OBJ.51 Identify by the first decade all system roads that should be obliterated. **Performance Indicator**: Miles of system roads decommissioned.

OBJ.52 Obliterate 15 percent of roads identified under the previous objective by the second decade. **Performance Indicator**: Miles of road obliterated.

OBJ.53 Reduce miles of road under Forest Service maintenance. **Performance Indicator**: Miles of system roads eliminated from road maintenance inventory per year.

OBJ.54 Improve aquatic organism passage on an average of no less than six stream crossings per year (where there are road-related barriers to passage). **Performance Indicator**: Number of stream crossings where aquatic organism passage is improved.

RANGE

Priorities

- Focus the livestock-grazing program on administering existing permits and allotments.
- Phase out existing woodland allotments as permits are terminated, or if range conditions dictate.
- Design new grazing allotments to prevent negative impacts from cattle grazing.

FIRE MANAGEMENT

Fire Prevention

Priorities

- Reduce the number of human-caused wildfires and associated human and environmental impacts.
- Continue with the annual environmental and fire prevention education effort, including presentations to local schools, communities, and civic groups in addition to the dissemination of fire prevention materials at Forest Service Offices.
- Cooperate and participate annually with local, state, tribal, and federal agencies in fire prevention programs such as Fire Wise. Demonstrate Fire Wise practices at the Forests' recreation areas, administrative sites, and other agency developments.

Community Protection

Priorities

- Prioritize vegetation treatments to reduce condition class (lowering the risk of damaging wildfires) near communities at risk, and in the wildland urban interface (WUI)/intermix area.

- Promote the removal of snags/dead trees and reduction of tree density adjacent to structures as the first step in reducing threats to human life and investments.

Objectives

OBJ.55 Improve condition class in all WUI areas within five years. **Performance Indicator**: Acres of improved condition class per year and cumulative percent of all WUI acres with improved condition class.

OBJ.56 Within 15 years, restore 15 to 20 percent of all ecological communities into Fire Regime Condition Class 1. **Performance Indicator**: Acres restored into Fire Regime Condition Class (FRCC) 1 annually.

OBJ.57 Annually complete 50,000 to 100,000 acres of hazardous fuel reduction. **Performance Indicator**: Acres burned, mechanically or chemically treated, for fuels reduction per year.

Fire Suppression

Priorities

- Suppress wildfire at a minimum cost consistent with resource management objectives. Consider firefighter and public safety as well as benefits and values to be protected when calculating the cost. All human-caused fires will be suppressed.
- Use a full range of wildland suppression tactics (from immediate suppression to monitoring) consistent with forest and resource management objectives and direction.
- Manage natural ignition to accomplish specific resource management objectives in predefined areas as outlined in the Fire Management Plan except in wilderness.

Prescribed Burning

Priorities

- Lower the risk of catastrophic fire and restore fire-adapted ecological communities through a combination of prescribed burning, mechanical, and chemical vegetation management treatments. Cooperate with partners to address needs across ownerships.
- Implement the Healthy Forest Initiative and utilizing authorities in the Healthy Forest Restoration Act and other legislation to meet National Fire Plan goals and objectives.
- Manage a fire program that will improve condition class, forest health, and ecosystem sustainability over the long term.

- Plan prescribed fires under an approved fire management plan (FMP). FMPs are strategic plans that define a program to manage wildland and prescribed fires based on the local approved Forest Plan.

Objectives

OBJ.58 Priority 1 - Treat approximately 3,500 acres of Federal lands adjacent (within 1/2 mile) of Communities at Risk over the next 5 years. Emphasize mechanical treatments designed specifically to lower condition class and associated wildfire risk. In concert with the Arkansas Forestry Commission, over the next 5 years, treat approximately 55,000 acres of private and Federal lands in the wildland urban interface/intermix (WUI) areas as identified in http://silvis.forest.wisc.edu/projects/WUI_Main.asp. **Performance Indicator**: Acres treated within one-half mile of communities at risk.

OBJ.59 Priority 2 – Expand treatments applied Priority 1 to improve condition class ratings in WUI areas that are within 1.5 miles of private ownerships with structures. Treat approximately 100,000 to 150,000 acres over the next 5 to 10 years. Identify and treat areas where snag hazards pose safety problems to firefighters and/or the public (particularly in oak mortality areas). **Performance Indicator**: Acres treated within 1.5 miles of communities at risk.

OBJ.60 Priority 3 - Over the next 5 to 10 years, treat approximately 100,000 to 150,000 acres with resource objectives combining hazardous fuel reduction with the restoration of fire-adapted ecosystems. Focus on restoration of habitat for threatened, endangered, or sensitive species where periodic fire and reference conditions are expected to promote species viability. Prioritize work to take full advantage of partnerships with non-government organizations (NGOs) and other state and federal agencies. **Performance Indicator**: Acres burned annually.

OBJ.61 Across all community types, annually burn under prescribed conditions an average of 120,000 acres. **Performance Indicator**: Acres burned under prescription conditions per year.

COMMODITIES

Timber

Priorities

- Provide a stable supply of wood products within the historic national forest market area. Provide supplies of those wood products where the Forest Service is in a unique position to make an impact on meeting the demand, particularly high-quality raw material for specialty uses.
- Provide a non-declining yield of forest products consistent with land capability, suitability, protection needs, and other resource values.
- Contribute to the economic base of local communities by providing a sustained yield of high quality wood products at a level consistent with sound

economic principles, local market demands, and desired ecological conditions.
- Develop local economy marketing opportunities to improve utilization of hardwood products.

Objectives

OBJ.62 Provide 731 MMBF (146 MMCF) per decade of sawtimber and pulpwood. **Performance Indicator**: Volume of timber sold per year and a running annual average.

OBJ.63 In Management Area 3.E (High Quality Forest Products) and appropriate portions of other MAs, apply appropriate silviculture prescriptions to provide the following forest products: 18" to 20" sawtimber with grade 1 or 2 butt logs and/or yellow pine 18" sawtimber. **Performance Indicator:** During inventory, determine average DBH.

OBJ.64 In Management Area 3.C (Mixed Forest) and appropriate portions of other MAs, apply appropriate silviculture prescriptions to provide the following forest products: 14" to 16" sawtimber with grade 2 butt logs and/or yellow pine 18" sawtimber. **Performance Indicator:** During inventory, determine average DBH.

Other Forest Products

Priorities

- Allow use of various forest products at appropriate levels to sustain resource values.
- Monitor forest product removal permits to analyze the magnitude of the removals and changes in product demands.

Minerals

Priorities

Authorities for minerals permitting are as follows:

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

- The USDI, Bureau of Land Management (BLM) is the federal agency responsible for issuing and administering leasable mineral permits and leases once Forest Service consent is granted.
- Unless statutorily withdrawn, federal hardrock leasable minerals are available for lease in all management areas.
- Oil and gas lease access is most restrictive in No Surface Occupancy (NSO) stipulated management areas. See Table 2-5, Oil and Gas Leasing Consent Decisions.

Administer minerals program to:

- Encourage and facilitate the orderly exploration, development, and production of mineral and energy resources in order to promote self-sufficiency in those mineral and energy resources necessary for economic growth and national defense.
- Ensure that exploration, development, and production of mineral and energy resources are conducted in an environmentally sound manner and that these activities are integrated with the planning and management of other national forest resources.
- Ensure that lands disturbed by mineral and energy activities are reclaimed for other productive uses.
- Administer removal of common variety mineral materials on minerals contracts, free use permits, or forest products permits in areas where development does not conflict with other resource objectives.
- Administer the federal mineral resource program to meet demands for energy and non-energy minerals consistent with management areas, multiple use objectives, and in accordance with agency policies and existing laws.
- For non-energy mineral resources and mineral material authorizations, emphasize authorizations of minerals needed for environmental protection, public infrastructure, flood protection, erosion control, and watershed restoration.
- On National Forest System tracts where mineral rights are outstanding or reserved, respect the exercise of private mineral rights to explore and develop mineral resources.
- Where reserved or outstanding mineral rights are involved, encourage the mineral owner to implement all surface-disturbing activities outside riparian areas.
- Manage geologic resources to protect public safety and facilities.
- Locate and design facilities and management activities to avoid, minimize, or mitigate negative effects on geologic resources with identified values (scientific, scenic, paleontological, ecological, recreational, drinking water, etc.).
- Review existing mineral withdrawals to determine if continuation is consistent with the statutory objectives of the programs for which the lands were withdrawn.

Objectives

OBJ.65 Process all applications for federal mineral leases, licenses, and permits within 120 days. **Performance Indicator:** Number and percent of applications processed in 120 days.

OBJ.66 Process all operations proposed under outstanding and reserved mineral rights within 60 days and 90 days. **Performance Indicator:** Number and percent of operations proposed within 60 to 90 days.

Consent to Lease

The Regional Forester consents (acquired lands) or has no objection (public domain lands) to lease those lands available for oil and gas leasing subject to standard lease terms or subject to additional constraints (stipulations such as NSO and CSU) as required for a specific management area. This consent/no objection decision is valid until the Forest Service provides the Bureau of Land Management written notification that consent is withdrawn or amended. Table 2-5 displays gas leasing stipulations, whether lands are available or closed for oil and gas exploration, and leasing according to the consent decision. Table 2-5 shows acres of lands subject to the stipulations.

Table 2-5: Oil and Gas Leasing Consent Decisions by Management Area.

Management Area	Oil and Gas Exploration and Leasing	Oil and Gas Leasing Stipulation	Stipulation Acres
1.A Designated Wilderness	Withdrawn	Withdrawn	66,728
1.B Recommended Wilderness Additions	Withdrawn	Withdrawn	471
1.C Designated Wild and Scenic Rivers (wild sections)	Withdrawn	Withdrawn	2,063
1.C Designated Wild and Scenic Rivers (scenic sections)	Available	CSU/NSO*	13,380
1.C Designated Wild and Scenic Rivers (recreational sections)	Available	CSU	4,416
1.D Recommended Wild and Scenic Rivers (sections all scenic)	Available	CSU/NSO*	6,219
1.E Experimental Forests	Available	CSU	5,071
1.F Research Natural Areas	Available	NSO	2,682
1.G Special Interest Areas	Available	NSO	23,243
1.H Scenic Byway Corridors	Available	CSU	41,344
2.A Ozark Highlands Trail	Available	NSO	6,176
2.B State Parks	Available	NSO	3,806
2.C Developed Recreation Areas	Available	NSO	3,110
2.D Upper Buffalo Dispersed Recreation Area	Available	CSU	6,115
2.E Wedington Unit Urban Recreation Area	Available	CSU	10,467
2.F Indian Creek Dispersed Recreation Area	Available	CSU	17,100

Table 2-5: Oil and Gas Leasing Consent Decisions by Management Area. (Continued)

Management Area	Oil and Gas Exploration and Leasing	Oil and Gas Leasing Stipulation	Stipulation Acres
3.A Pine Woodland	Available	CSU	97,629
3.B Oak Woodland	Available	CSU	154,704
3.C Mixed Forest	Available	Standard	360,401
3.D Oak Decline Restoration Areas	Available	CSU	67,691
3.E High Quality Forest Products	Available	Standard	214,358
3.F Old Growth Area	Available	CSU	5,062
3.G Crowley's Ridge Upland Hardwood	Available	CSU	11,443
3.H Mississippi River Bottomland Hardwood	Available	CSU	3,573
3.I Riparian Corridors	Available	CSU	11,484
3.J Pastures and Large Wildlife Openings	Available	CSU	7,072
3.K Wildlife Emphasis Area	Available	CSU	15,712

(NSO) – No surface occupancy Used when surface occupancy of certain lands is prohibited.
(CSU) – Controlled surface use Used when restrictions will apply to occupancy such as requiring additional mitigation to resolve potential conflicting uses, or to meet visual quality objectives.

MANAGEMENT AREAS

The 1982 planning regulations guiding implementation of the National Forest Management Act (NFMA) call for lands and waters to be assigned to "management areas" (36 CFR 219.11), which are areas within a National Forest having desired conditions, suitable uses, management objectives, and design criteria in common. This section describes the 25 management areas (MAs) identified on the Ozark-St. Francis National Forests. Table 2-6 gives the names and acreages of the 25 MAs. Acreages are approximate and are subject to change based on land adjustments (purchases, exchanges) and updated inventories. Following Table 2-6, there is a description of each management highlighting its emphasis, priorities, objectives, and monitoring criteria, as applicable.

Management areas (MAs) on the Ozark-St. Francis National Forests were designed to be easily located. This was done to make it easier for the public to find the management areas and to give districts definite boundaries making administration of the areas easier. They generally have identifiable boundaries such as roads, streams, or well-defined ridges. Each management area contains an emphasis and desired future condition statement, which describes the primary focus of the MA. They also contain standards or design criteria (Chapter 3) providing managers with specific management direction as they work toward reaching desired future conditions. Some of them also contain specific objectives and monitoring elements that provide managers with measures to determine if they are achieving the desired future conditions.

Desired Conditions

Desired conditions are the primary focus of management areas and provide a snapshot of what the management area will look like when priorities, objectives, and standards are implemented. Desired conditions:

- Can apply to the present or the future, and do not consider costs.
- Include descriptions of ecological, economic, and social attributes.
- Have different time frames, but accomplishment should occur within 10 to 50 years.
- Are driven by priority and budget.

Table 2-6. Management Areas.

Management Area Name and Number	Acres
1.A Designated Wilderness	66,728
1.B Recommended Wilderness Additions	471
1.C Designated Wild and Scenic Rivers	19,859
1.D Recommended Wild and Scenic Rivers	6,219
1.E Experimental Forests	5,071
1.F Research Natural Areas	2,682
1.G Special Interest Areas	23,243
1.H Scenic Byway Corridors	41,344
2.A Ozark Highlands Trail	6,176
2.B State Parks	3,806
2.C Developed Recreation Areas	3,110
2.D Upper Buffalo Dispersed Recreation Area	6,115
2.E Wedington Unit Urban Recreation Area	10,467
2.F Indian Creek Dispersed Recreation Area	17,100
3.A Pine Woodland	97,629
3.B Oak Woodland	154,704
3.C Mixed Forest	360,401
3.D Oak Decline Restoration Areas	67,691
3.E High Quality Forest Products	214,358
3.F Old Growth Area	5,062
3.G Crowley's Ridge Upland Hardwood	11,443
3.H Mississippi River Bottomland Hardwood	3,573
3.I Riparian Corridors	11,484
3.J Pastures and Large Wildlife Openings	7,072
3.K Wildlife Emphasis Area	15,712

Note: Acreages are Estimates based on GIS Analyses.

1.A Designated Wilderness

Emphasis

Congress has designated five wilderness areas on the Ozark NF; no wilderness areas exist on the St. Francis NF. These include: the East Fork, Hurricane Creek, Leatherwood, Richland Creek, and Upper Buffalo Wilderness Areas. These areas

encompass approximately 66,728 acres of the Ozark NF. This MA is unsuitable for timber production. Mineral extraction or prescribed fires are not allowed.

The emphasis is to allow ecological and biological processes to progress naturally with little to no human influence or intervention, except for the minimum impacts made by those who seek the wilderness as a special place offering opportunities to experience solitude and risk in as primitive surroundings possible. Management focuses on protecting and preserving the natural environment from human influences.

Desired Condition

The Wilderness Act describes wilderness as "an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain." Wilderness is an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed to preserve its natural conditions. Wilderness generally appears to have been affected primarily by the forces of nature with the imprint of man's work substantially unnoticeable. Wildernesses on the Ozark NF have outstanding opportunities for solitude or a primitive and unconfined type of recreation. They are of sufficient size as to make practicable preservation and use in an unimpaired condition, and may contain ecological, geological, or other features of scientific, educational, scenic, or historic value.

They contain a natural, forested appearance shaped primarily by natural processes. Rare communities and associated species not dependent upon disturbances such as fire exist in the wilderness areas. Disturbance-dependent communities continue to decline across this MA, confined to small brushy and herbaceous gaps and occasional large openings from natural disturbance events. Insects and diseases such as red oak borer and oak decline play a major role in shaping future species composition and successional stages across these areas. Cavity trees, cull trees, standing dead trees, and down logs are common throughout the area as a result of natural mortality.

Recreation management provides solitude and remoteness in the most primitive and natural recreation setting possible; access to wilderness areas is limited. Trailheads located on surrounding roads are designed with sensitivity to scale and character setting the tone for experiencing a primitive recreation experience. Once in the wilderness, visitors on foot or horseback must rely, to varying degrees, on their own personal physical abilities and primitive recreation skills. Wilderness recreation includes inherent risks. Visitors are isolated from the sights and sounds of others and encounters with other visitors are rare. Travel within wilderness is strictly non-motorized and non-mechanized. Mountain bikes or game carts are not allowed in wilderness areas.

Most visitor information is dispensed outside the wilderness at trailheads and through off-site public information and education efforts. Wilderness visitors are encouraged to "pack-it-in and pack-it-out" and to "leave no trace." Most of the

wilderness trails on the Ozark NF are located on old logging roads that were present prior to designation. These roads are slowly reverting back to trails that lie lightly on the land. Typically, narrow footpaths or horse trails that blend well with the natural surroundings are present.

Structures including signs, bridges, and waterbars are minimal. The few structures appearing in wilderness are generally for the protection of resources or were present prior to wilderness designation. Some of the wildernesses have existing roads accessing private in-holdings. The Federal Government owns most of the lands within the boundaries of designated wilderness areas, both surface and subsurface, with no encumbrances.

Priorities

- Protect and manage wilderness to improve the capability to sustain a desired range of benefits and value so that changes in ecosystems are primarily a consequence of natural processes. Protect and manage the areas recommended for wilderness designation to maintain their wilderness values.
- Update all wilderness management plans, including monitoring components, wilderness education, and restoration needs by 2008.
- Prohibit mining claim locations under the General Mining Law of 1872 in Designated Wildernesses (MA 1.A)

Objectives

MAOBJ.1 Conduct inventories to determine the presence and extent of non-native invasive species in wildernesses by 2010. Based on results of these inventories, develop and implement appropriate monitoring and treatment programs. **Performance Indicators:** Number of inventories completed, monitoring plans completed, and acres treated for invasive species control.

Monitoring

Within the Designated Wilderness MA (1.A), monitor and evaluate trends in:

- Visitor use and resource damage using the Limits of Acceptable Change (LAC) process.
- Old roads and trails reverting back to a natural appearance.

1.B Recommended Wilderness Additions

Emphasis

Proposed wilderness additions include lands that have been acquired adjacent to existing wilderness areas (approximately 471 acres) or are boundary adjustments that will help manage wilderness values. Until and after Congress designates them as wilderness, these areas will be managed like MA 1.A. Table 2-7 displays the additional acres to each exiting wilderness.

Table 2-7. Acres Added to Existing Wilderness Areas.

Wilderness	Additional Acres
Leatherwood	334
Richland Creek	16
East Fork	121
Totals	471

Priorities

- Complete land line surveys on new recommended wilderness boundaries for boundary posting after congressional designation.

1.C Designated Wild and Scenic Rivers

Emphasis

In April 1992, Congress designated six Wild and Scenic Rivers on the Ozark NF. These rivers include: Big Piney Creek, the Buffalo River, Hurricane Creek, Mulberry River, North Sylamore Creek, and Richland Creek. These areas include approximately 19,859 acres of the Ozark-St. Francis National Forests. This MA is unsuitable for timber production. The total miles of Wild and Scenic River designation is 162.5 miles shown in Table 2-8 as follows:

Table 2-8: Total miles of Wild, Scenic, and Recreational Sections of Rivers.

River	Wild Sections	Scenic Sections	Recreational Sections
Big Piney Creek		45.2	
Buffalo River	9.4	6.4	
Hurricane Creek	2.4	14.2	
Mulberry River		19.4	36.6
North Sylamore Creek		14.5	
Richland Creek	5.3	11.2	
Totals	15.0	110.9	36.6

This MA is managed to enhance and protect the outstandingly remarkable values and unique qualities of each river and its surroundings. The rivers will be preserved in a free-flowing condition for the benefit, use, and enjoyment of present and future generations. Each one of these rivers has a comprehensive Wild and Scenic River Plan, which was completed in 1996.

WILD SECTIONS

Desired Condition

Of all of the river designations, this one offers the most primitive and remote settings. All the wild sections of the Wild and Scenic Rivers on the Ozark NF (15 miles) are located in wilderness areas (see Table 2-8). Management of the river corridors is

focused on protecting and preserving the natural environment and natural processes from human influences. Recreation management is designed to provide solitude and remoteness in the most primitive and natural recreation setting possible. Access to the wild sections is limited to access points outside the wilderness areas. Trailheads at perimeter roads are designed with sensitivity to scale and character to set the tone for a primitive experience.

This portion of the MA is primitive non-motorized; however, activities outside the wilderness boundaries may occasionally intrude on the sights and sounds within the corridors providing a less-primitive recreation experience. Once in the corridors, visitors hiking, fishing, or floating must rely to varying degrees on their own personal physical abilities and primitive recreation skills. Trails are designed to accommodate use and river access while protecting the wilderness and wild and scenic river's outstandingly remarkable values. Visitor information is provided outside of the wilderness boundaries at trailheads and through off-site public information and education efforts. Wild river visitors are encouraged to "pack-it-in and pack-it-out" and to "leave no trace." Outfitter and guide permits provide river tours and equipment outside the wilderness boundaries.

The landscape character is naturally evolving; only the linear swath of the river breaks the continuous forest canopy. Occasional gaps in the canopy may occur from the results of natural disturbances. The mature forest is comprised primarily of large stemmed hardwoods on slopes and a mixture of hardwoods and pines along the rivers' banks. Understory plants provide a lush vegetative understory visible from the river. Old-growth riparian forest communities will increase over the decades, except where significant natural disturbances occur.

There are good to optimal habitat conditions for mid- to late-successional deciduous forest associates; area-sensitive, mid- to late-successional deciduous associates; bottomland hardwood associates; mixed mesic forest associates; and basic mesic forest associates. These linear travel ways of relatively remote habitat provide migration corridors for a wide variety of species. The protection of rare communities and species associates is provided along with protection measures for population occurrences for threatened, endangered, sensitive, and locally rare species.

SCENIC SECTIONS

Desired Condition

Scenic rivers and their surroundings are slightly more developed than their "wild" counterparts. The rivers' shorelines are largely undeveloped; however, occasional roads may reach or bridge the rivers and there may be designated parking areas and trailheads. Trail users may include hikers, mountain bikers, horseback riders, and motorized vehicle enthusiasts. The scenic sections of the Forests' Wild and Scenic Rivers total 110.9 miles (see Table 2-8).

Portions of the river corridor that currently meet the criteria for semi-primitive, non-motorized recreational opportunities will be maintained; however, the majority of

these corridors will be managed as semi-primitive, motorized, or roaded-natural. Visitors enjoy a natural setting although sights and sounds of human activity and motorized vehicles may be present. Visitors' physical abilities and primitive recreation skills are challenged moderately. The opportunity to encounter other visitors is moderate to high depending on the location and time of year. Visitors seeking solitude may find it by hiking some distance from roads and parking areas or by visiting during non-peak seasons or midweek. Outfitter and guide permits provide river tours and equipment at access points within the corridors.

The landscape character is "naturally appearing" or "pastoral" with high scenic integrity. A visitor may see some evidence of human disturbance reminiscent of early America including rural structures such as barns, grazing animals, meadows, fields, rustic campgrounds, and occasional roads. Facilities are minimized and are primarily for visitor safety and access and to protect river resources. Facilities may include parking areas, trailheads, interpretive kiosks, rest rooms, trails, and signs. Facilities are understated in appearance and are designed to complement the natural environment in scale, character, and color. Trails are designed to accommodate use and river access while protecting the resources and the rivers' outstanding resource values.

Natural processes (floods, windstorms, and fires) would be the primarily cause of disturbances. Lands are classified as unsuitable for timber production, although management of vegetation is permitted within the river corridor to maintain outstandingly remarkable values. Vegetation management may be used for scenic enhancement or rehabilitation to provide wildlife viewing opportunities; maintain developed recreation facilities; improve threatened, endangered, sensitive, and locally rare species habitat; restore native vegetative communities; restore riparian ecosystems; reduce unnatural fuel buildups; or control non-native invasive vegetation. Naturally-ignited wildland fires are permitted to play a natural role when external risks such as private land, weather, or terrain allow.

There are good to optimal habitat conditions for mid- to late-successional deciduous forest associates, bottomland hardwood associates, mixed mesic forest associates, and basic mesic forest associates. These linear travel ways of relatively remote habitat provide migration corridors for a wide variety of species. Where the forested canopy is at least 70 percent closed across the landscape, good to optimal habitat conditions for area-sensitive, mid- to late-successional habitat associates is provided. Management or protection of rare communities and species associates is provided, along with management or protection measures for population occurrences for threatened, endangered, sensitive, and locally rare species.

RECREATIONAL SECTIONS

Desired Condition

The recreational river corridors provide outstanding opportunities for people to enjoy a wide variety of river-oriented recreation opportunities in an attractive setting. The

rivers are readily accessible by roads. Transportation facilities may parallel the river for long stretches.

There is a low need for visitors to rely on their personal physical abilities and primitive recreation skills within these areas. The sights and sounds of other visitors are evident, and opportunities to encounter other visitors are moderate to high. Visitors seeking solitude may find that difficult to achieve, particularly in peak-use seasons. Trails may be highly developed including hardened trails for a high level of accessibility for persons of all abilities. Off-highway vehicle (OHV) use is only allowed on trails designated for OHV use.

The landscape character may range from naturally appearing to transitional-mixed use. There is substantial evidence of human activity along the shores of some of these rivers, possibly including modern residential development, commercial structures, and a full range of various agricultural and forestry uses. On National Forest System lands, visitors enjoy a natural appearing setting with a range of human-made recreational developments. Utility transmission corridors, electronic or communication facilities, or signs of mineral development activity may be seen within these river corridors. The goal, however, is to blend these facilities into the background so that they remain visually subordinate to the natural landscape. Existing scenic integrity may range from high to very low, but the objectives on National Forest System lands will be moderate or higher.

With continued population growth and the popularity of these recreational river sections, there is the potential for large numbers of visitors at peak-use seasons. In the future, regulations may be necessary for protection of the resources and visitors. Information is provided at bulletin boards or kiosks at the river, off-site Forest Service visitor centers, and in brochures. Visitors are encouraged to practice minimum impact techniques while recreating. Trash receptacles may be provided at parking areas and high-use areas. Facilities of a modern nature may be present to provide for visitor safety and comfort and to protect the river resources. Facilities are designed to fit the character of the specific sites where they are located. This could range from semi-primitive to rural. Facilities might include parking areas, trailheads, bulletin boards, interpretive kiosks, signs, rest rooms, canoe/raft launches, fishing platforms, and picnic sites. Outfitter and guide permits provide river tours and equipment at access points within the corridors.

These linear corridors provide a mix of habitats and successional stages for a wide variety of species that favor, or are tolerant of, habitat edges and human disturbance. Habitat associations being emphasized include mid- to late-successional deciduous associates and bottomland forest associates. Habitat conditions beneficial to mixed mesic associates and mixed xeric associates (primarily xeric oak and xeric oak-pine habitats) are provided. These conditions provide suitable habitat for eastern wild turkey and marginal habitat for ruffed grouse. Management and protection of rare communities and species associates is provided along with management and protection measures for population occurrences for threatened, endangered, sensitive, and locally rare species.

Vegetation is influenced both by natural processes and humans. Lands are classified as unsuitable for timber production, although management of vegetation is permitted within the river corridor to maintain outstandingly remarkable values. Prescribed fire, commercial, and non-commercial felling of trees may be used for scenic enhancement or rehabilitation to provide wildlife viewing opportunities; maintain developed recreation facilities; improve threatened, endangered, sensitive, and locally rare species habitat; restore native vegetative communities; restore riparian ecosystems; reduce unnatural fuel buildups; or control non-native invasive vegetation. Naturally-ignited wildland fires are permitted to play a natural role when external risks such as private land, weather, or terrain allow.

Priorities

- Manage designated wild and scenic river sections to perpetuate their free-flowing condition and designated classifications, and to protect and enhance their outstandingly remarkable values and water quality.
- Manage designated wild and scenic rivers according to their Comprehensive River Management Plan.
- Review public access needs.
- Prohibit mining claim locations under the General Mining Law of 1872 in designated wild sections of the Designated Wild and Scenic Rivers (MA 1.C).

Objectives

MAOBJ.2 Review and revise Wild and Scenic River Plans the first decade. **Performance Indicator:** Number of plans revised.

Monitoring

Within the Designated Wild and Scenic Rivers MA (1.C), monitor and evaluate trends in:

- Visitor use in wild sections.
- Visitor satisfaction.
- Changes in outstandingly remarkable values for both scenic and recreational sections.

1.D Recommended Wild and Scenic Rivers

Emphasis

The North Fork of the Illinois Bayou is recommended as part of the Wild and Scenic River System. The river is 22.6 miles long, and is classified as scenic; a one-quarter (1/4) mile buffer is managed under the same conditions as the scenic section of MA 1.C. This area includes approximately 6,219 acres of the Ozark NF. This area is unsuitable for timber production.

- For the newly recommended Wild and Scenic River (North Fork of Illinois Bayou River), a Comprehensive River Management Plan and boundary declaration will be prepared and implemented within three years of congressional designation as required in the designation language.

1.E Experimental Forests

Emphasis

Experimental forests are congressionally authorized and have been designated by Forest Service Chiefs over the last 90 years. The national network of experimental forests provides much of the scientific basis for the management of forest ecosystems, including public and private lands. The Southern Research Station (SRS) manages experimental forests on the Ozark NF. These lands help provide the current and future research needs of the SRS and provide scientific information to understand, manage, and sustain the ecological processes, structures, and benefits of loblolly pine, shortleaf pine, mixed pine-hardwood, and hardwood forests in the uplands of the mid-South. They demonstrate common forestry practices for non-industrial private forest landowners. Appropriate management tools include timber harvest, prescribed fire, and other research-related activities.

The Ozark National Forest has two experimental forests: the Henry Koen Experimental Forest (designated in 1950) and the Sylamore Experimental Forest (designated in 1934). MA 1.E is allocated to approximately 5,071 acres on the Ozark NF. There are no experimental forests on the St. Francis NF. This area is unsuitable for timber production.

Desired Condition

Tree species composition varies within the experimental forests. Active management due to research activities is obvious. The landscape character is natural appearing. Lands are classified as unsuitable for timber production and are dedicated to experimentation and education by implementing national and international research programs. General forest visitors are encouraged to visit and learn about ongoing research and its potential benefits.

Management or protection of rare communities and species associates is provided, along with management or protection measures for population occurrences for threatened, endangered, sensitive, and locally rare species.

These areas provide a variety of motorized and non-motorized recreation opportunities depending on the purposes for which the experimental forests were established. Human activities may be evident in some places. Visitors will likely see other people.

Priorities

- Protect and manage experimental forests to maintain them as a resource to be used to develop and disseminate scientific knowledge and silvicultural techniques needed to provide a full range of benefits to the OSFNFs and other Southern forests.
- Continue to cooperate and assist the Southern Research Station to provide to forest managers research data related to timber harvest, ecosystem management, prescribed burning, soil, water, and other related forestry activities.

1.F Research Natural Areas

Emphasis

Research natural areas (RNAs) are part of a national network of ecological areas designated in perpetuity for research and education and/or to maintain biological diversity on National Forest System lands. Research natural areas are for non-manipulative research, observation, and study. In addition, they may assist in implementing provisions of special acts such as the Endangered Species Act and the monitoring provisions of the National Forest Management Act.

These areas are managed for scientific research in an undisturbed state as a baseline for comparison with other forest environments. The RNAs on the Ozark-St. Francis National Forests include approximately 2,682 acres, and are unsuitable for timber production.

DISMAL HOLLOW RESEARCH NATURAL AREA

Desired Condition

This RNA is located on the Ozark NF in Newton County, Arkansas. This RNA and its ecosystems continue to furnish ecological information of value to the Forest Service and society at large. The Dismal Hollow RNA was established to represent the mixed mesophytic forest ecosystem. The landscape character is naturally evolving. Human uses do not cause detectable and significant ecological changes.

Vegetation is entirely influenced by natural processes. Predominately old-growth forest communities develop throughout the area with small canopy gaps and occasional large openings of early successional habitat created through natural disturbance. Non-native species occur only as transients and are not self-perpetuating. The protection of rare communities and species associates is provided, along with the protection measures for population occurrences for threatened, endangered, sensitive, and locally rare species.

This RNA is used as a collection area of information for scientific research, a research area for graduate student theses, and a subject area for environmental education. All users, including Forest Service researchers, are subject to use limitations. Other compatible uses such as individual nature study, not including

specimen collection, are permissible unless the use threatens the ecological integrity of the area. Infrastructures, such as trails or parking areas are minimal. There is little or no interaction among visitors. People must rely heavily on primitive recreation skills.

TURKEY RIDGE RNA

Desired Condition

This RNA is located on the St. Francis NF in Philips County, Arkansas. The RNA and its ecosystems continue to furnish ecological information of value to the Forest Service and society at large. The area is representative of upland oak forest ecosystems containing white oak/red oak-hickory and swamp oak/cherrybark oak timber stands. The landscape character is natural evolving. Human uses are not causing detectable and significant ecological changes.

Vegetation is entirely influenced by natural processes. Predominately old-growth forest communities develop throughout the area with small canopy gaps and occasional large openings of early successional habitat created through natural disturbance. Non-native species occur only as transients and are not self-perpetuating. The protection of rare communities and species associates is provided, along with the protection measures for population occurrences for threatened, endangered, sensitive, and locally rare species. This will provide a high likelihood that species within these habitats will continue to persist on National Forest System lands.

This area is primarily used as a collection area of information for scientific research, a research area for graduate student theses, and a subject area for environmental education. All users, including Forest Service researchers, are subject to use limitations. Other compatible uses such as individual nature study, not including specimen collection, are permissible unless the use threatens the ecological integrity of the area. Infrastructures, such as trails or parking areas are minimal. People must rely heavily on primitive recreation skills such as orienteering. Infrastructures such as trails or parking areas are minimal. There is little or no interaction among visitors.

Priorities

- Protect and manage research natural areas to maintain natural processes. Identify a sufficient range of opportunities to meet research needs. Compatible uses and management activities are allowed

Monitoring

Within the Research Natural Areas MA (1.F), monitor and evaluate trends in:

- Ecological communities conditions to be used as a baseline to compare against other forest ecosystems.

1.G Special Interest Areas

Emphasis

The OSFNFs have 21 Special Interest Areas (SIAs) totaling approximately 23,243 acres. Each SIA has its own unique qualities outlined in Table 2-9.

Table 2-9. Special Interest Areas on the OSFNFs.

SIA	Acres	Unique Qualities
Alum Cove	230	Geologic/Scenic
Blue hole	2,190	Geologic/Scenic
Buzzard Roost	62	Geologic/Scenic
City Rock Bluff	370	Geologic/Scenic
Clifty Canyon	5,486	Botanical/Biological
Devils Canyon	1,827	Geologic/Scenic
Devils Eyebrow	364	Geologic/Scenic
Dismal Creek	245	Botanical
Eagles Gap	225	Geologic/Scenic
Fern Gully	306	Botanical, Geologic, Scenic
Hare Mountain	88	Geologic/Scenic
Jack's Creek	1,895	Geologic/Scenic
Mt. Magazine	4,319	Geologic/Scenic
North Twin	1,219	Botanical/Zoological/Scenic
Pedestal Rocks	1,016	Scenic/Geologic
Penhook	628	Geologic/Botanical
Sams Throne	621	Geologic/Scenic
Sandstone Hollow	512	Geologic/Scenic
Stack Rocks	339	Geologic/Scenic
Waldo/Wainscott	407	Botanical
White Rock	895	Geologic/Scenic

SIAs are managed for their unique geological, botanical, biological, zoological, scenic, or cultural features. The features are unique enough that they are not found on large areas anywhere else on the Forests, or they provide the best representation of similar areas on the Forests. These areas are designated as SIAs because of their unique features, complexity, and degree of interest. They are managed for their unique recreational and educational values, and are intended for public use and interpretation. Each SIA will have a comprehensive management plan completed before capital investments are implemented. These areas are unsuitable for timber production.

Desired Condition

The unique qualities of the SIAs of the Ozark-St. Francis National Forests are predominately geologic, scenic, or botanical. They provide outstanding opportunities to learn about the natural history of the Forests, and to enjoy a variety of recreation

opportunities in an attractive setting. Public access is designed to protect sensitive resources; access to some SIAs may be limited in order to protect resources.

Recreational use of some SIAs requires extreme physical ability; others are similar to developed recreation areas where less skill is needed. Education and interpretation is strongly emphasized; school groups are encouraged to visit the sites. The sights and sounds of other visitors are evident, and opportunities to encounter other visitors are moderate to high. Visitors seeking solitude may find it difficult to achieve in peak-use seasons. Trails may be highly developed including hardened trails and boardwalks to protect the resource and to provide for a high level of accessibility for persons of all abilities. Other appropriate recreational activities include bird watching, photography, and hunting.

Visitors enjoy natural appearing landscapes featuring structurally diverse forest communities of continuously forested canopy with the exception of occasional gaps created by storms, insects, diseases, or fire. Infrequent pastoral and historic/cultural enclaves may also exist. Road corridor improvements and interpretive facilities are evident changes to the natural environment, but these man-made alterations fit well with the character of the surrounding landscape. Road and trail construction occurs in SIAs to provide access for recreational uses and other resource needs. Other management activities are not evident to the average visitor and the valued character of these landscapes appears intact with no noticeable deviations.

Prescribed fire, use of wildland fire, integrated pest management, and commercial or non-commercial tree removal may be used to promote and maintain the qualities of the SIAs, sustain forest health and safety, maintain recreation facilities (including roads and trails), maintain wildlife habitat, maintain rare communities and species dependent on disturbances; reduce fuel buildups; or control non-native invasive vegetation. SIAs are unsuitable for timber production.

Priorities

- Protect and manage each special interest area (SIA) for its unique qualities and features. Allow uses and management activities, including access, that complement or are subordinate to the unique qualities and features.
- Within the planning cycle, develop management plans and monitoring protocols for existing SIAs. Management plans for SIAs will be developed before implementing project work.

Monitoring

Within the Special Interest Area MA (1.G), monitor and evaluate trends in:

- Public interpretation of unique SIA values.
- Completion of management plans.

1.H Scenic Byway Corridors

Emphasis

The Ozark-St. Francis National Forests have nine scenic byways, approximately 222 miles. These byways include Highway 123, Mt. Magazine Scenic Byway, Mulberry River Road, Ozark Highlands Byway, Pig Trail Byway, Scenic 7 Byway, St. Francis Scenic Byway, Sylamore Creek Scenic Byway, and the Sylamore Scenic Byway Extension.

Scenic byway corridors are managed to offer visitors the opportunity to enjoy viewing outstanding natural and cultural landscapes along a well-maintained road. These areas may contain recreational and interpretive trails. The visible area during dormant seasons (up to 1/2 mile from either side of the road) defines the byway corridors, unless other criteria are established in the specific scenic byway management plan. Management is focused on protecting and showcasing the unique and scenic natural and cultural resources, and increasing tourism.

Desired Condition

The areas provide exceptional opportunities for motorized recreation, especially scenic driving. The views along the different byways vary, and include a variety of landscape characters, ranging from natural appearing to pastoral, historic, and cultural. They provide colorful accents and interesting textures, which change with the seasons. Visitors enjoy viewing wildlife in the occasional openings scattered throughout the Forests. Water or geographic features as well as cultural landscapes (such as hay fields, grazing livestock, and the occasional rustic cabin) provide scenic diversions to the predominately-forested landscape. Road corridor improvements and interpretive facilities are evident changes to the natural environment. These man-made alterations fit well with the character of the surrounding landscape. Other management activities are not evident to the average visitor.

The management area is easily accessed. A good road surface and providing informational signs for protection of the natural and cultural resources as well as the safety and comfort of visitors minimizes impacts of visitors within the MA.

The potential for encounters with other forest visitors is moderate to high, especially at byway facilities, (pullouts, overlooks, interpretive kiosks, trails, restrooms, and picnic sites). Scenic, historic, and natural resources are interpreted for the benefit of visitors. These recreation and interpretive facilities are designed and constructed to blend well and complement the natural or cultural environment surrounding the byway. There are limited opportunities for remoteness, although visiting the byway in the winter (if not seasonally closed) or mid-week improves opportunities for achieving solitude. There is low risk and little need for visitors to rely on personal physical abilities or primitive outdoor recreation skills. Most, if not all, facilities are designed to accommodate persons with disabilities.

Vegetation is influenced both by natural processes and humans. Biological communities are maintained or improved to provide an attractive setting for visitors while providing for the protection of rare communities and threatened, endangered, sensitive, and locally rare species. Forest management activities maintain the natural characteristics that make the area scenic. Commercial timber harvest is appropriate to maintain the long-term goals of a diverse and vigorous forest with sensitivity to dispersed recreation and scenic values. Timber harvesting operations focus on what is retained in the stand, not on wood fiber production. Timber harvest practices are visually subordinate to the surrounding landscape. The MA is suitable for timber production. Prescribed fire and other management treatments are appropriate vegetative management tools available to be used to enhance the byway corridors in conjunction with other resource values.

These areas are characterized by a predominance of mid- and late-successional forests. Forest structure varies according to ecological factors, but largely consists of a mature overstory; a fairly open midstory; and a well-developed herbaceous and shrubby understory. Understory vegetation includes a variety of native deciduous and evergreen flowering trees, shrubs, and wildflowers. Even-aged, two-aged, and uneven-aged forest communities along with medium and small patches of late-successional to old-growth forest communities continue to develop throughout the area.

Priorities

- Preserve viewshed quality when accomplishing other resource activities.
- Develop public view points and interpretive opportunities.
- Promote and manage the scenic byways within the Forests for the traveling public and the benefit of local communities.
- Work toward state or national scenic byway designation for all byways
- Within one year of the approval of the LRMP revision, establish a schedule to complete corridor plans for all scenic byways. Complete all plans in the first planning period.

Objectives

MAOBJ.3 Improve or maintain all designated scenic overlooks at least once per decade. **Performance Indicators:** Number of scenic overlooks improved or maintained per year; percent maintained or improved per decade.
MAOBJ.4 Complete one scenic byway management plan each year: **Performance indicator**: Number of management plans completed annually.

Monitoring

Within the Scenic Byway Corridors MA (1.H), monitor and evaluate trends in:

- Meeting scenic integrity objectives.

2.A Ozark Highlands Trail Corridor

Emphasis

The Ozark National Forest's Ozark Highlands Trail (OHT) Corridor includes approximately 6,175 acres and is 165 miles long from Lake Fort Smith State Park to the Buffalo River. The trail is a designated National Recreation Trail, the only one on the Forests. The corridor width is 198 feet on either side of the centerline of the trail center and was established to provide visual enhancement, protect the trail, and minimize maintenance by keeping a canopy over the trail.

Management practices are designed to protect the OHT experience; preserve and strengthen the role of volunteers and volunteer organizations; provide opportunities for high quality outdoor recreation experiences; and provide for the conservation and enjoyment of the nationally significant scenic, historic, natural, and cultural qualities of the land through which the OHT passes. This area is unsuitable for timber production.

Desired Condition

The OHT traverses the Ozark National Forest for travel on foot through the wild, scenic, wooded, pastoral, and culturally significant lands of the Ozark Mountains. The OHT is a combination of simple footpath and old roads favoring the heights of land, and located for minimum reliance on construction for protecting the resource. Views from the OHT are predominantly forested, sporadically intermixed with old fields, pastoral valleys, and cultural landscapes. The OHT offers a diversity of topography and a variety of vegetation and animal life exposing the hiker to the entire range of land forms, water features, history, and uses of the land that are found in the Ozark Mountains.

Facilities include the OHT footpath itself, trailhead parking areas, and information boards at road crossings and developed recreation areas. The footpath (designed, constructed, and maintained for foot travel only) wears lightly on the land. Recreation management is designed to provide a variety of opportunities in the most primitive and natural recreation setting possible. Motorized recreation, bicycles, horses, and pack stock are not allowed on the OHT trail.

Roads, utility transmission corridors, communication facilities, or signs of mineral development activity exist or may be seen within the MA. However, the goal is to avoid these types of facilities to the greatest extent possible and blend facilities that cannot be avoided into the landscape so that they remain visually subordinate.

This MA retains a natural, forested, or pastoral appearance shaped by both natural processes and humans. Management practices are modified to recognize the nationally significant aesthetic and recreational values of these lands. This area is classified as unsuitable for timber production, however low intensity vegetation management is appropriate to maintain the long-term goals and stewardship objectives of the OHT. Prescribed fire is an appropriate vegetative management tool

available to be used in the corridor to enhance or improve trail qualities, and to be used with other resource activities. Management activities needed to preserve or create vistas and desirable open areas are a high priority. Activities are planned and carried out in cooperation with appropriate OHT management partners.

A predominance of mid- and late-successional forests with multiple canopy layers, which provide a variety of habitat niches as well as thermal and protective cover for wildlife, characterizes this MA. Small to medium patches of old-growth forest communities continue to develop throughout this area. Some of these patches may be early-successional habitat including; old fields and openings, wind damage, wildfire, insect or disease infestations, or vegetation management activities. Occasional large openings of early-successional habitat may be maintained as old fields and pastoral landscapes or may be created through natural disturbance.

Priorities

- Maintain a forest trail system across the Ozark NF.
- Manage the Ozark Highland Trail to protect the trail experience, and to provide for the conservation and enjoyment of its nationally important scenic, historic, natural, and cultural qualities.

Monitoring

Within the Ozark Highlands Trail MA (2.A), monitor and evaluate trends in:

- Completion of trail maintenance.

2.B State Parks

Emphasis

This management area is allocated to approximately 3,806 acres across the Ozark-St. Francis National Forests. There are three recreation areas on the Forests managed by the State of Arkansas as state parks. They are Devils Den, Mount Magazine State Park, and the Mississippi River State Park. The emphasis is slightly different than the developed recreation MA.

State parks are destination area recreation sites managed under special use authorizations or other agreements with the State of Arkansas. They are managed to provide the public with a high level of recreational opportunities in visually appealing and environmentally healthy settings. Facilities are provided to enhance the quality of the recreational experience and/or to mitigate damage to the affected ecosystems. These areas also serve as "gateways" to the wide diversity of recreation opportunities on the remainder of the forests. The terms and conditions of the land use authorizations serve as the underlying management direction for managing these parks. This area is unsuitable for timber production.

Desired Condition

Visitors are able to choose from a wide variety of recreation opportunities in high quality, well-maintained settings. Campgrounds, picnic sites, boat ramps, river-access sites, swimming beaches, interpretive sites, primitive vehicle camps, and trailheads for walkers, horseback riders, and bicycle riders are all examples of facilities found in these state parks. Other facilities consistent with the mission and complimentary to the ecosystem may also be provided. Constructed facilities are normally very visually evident, depending on the development scale needed. Facilities outside the parks are provided to protect resources. Outdoor skills are generally of low importance except where knowledge of specialized activities (e.g., boating, hang gliding, rock climbing, or horseback riding) is critical. Trails associated with these areas are well marked and may include loop systems, interpretive programs, and features for visitors with special access needs. Roads provide access to the support facilities (e.g., roads, parking lots, water access, cabins, lodge, and visitor centers) while non-motorized experiences (e.g., walking and viewing nature) are available.

Recreation information and regulations are provided to make the visitor's experience more enjoyable. Interpretive programs may also be offered to enhance the visitor's educational and recreational experience.

The landscape character is a natural appearing, visually appealing landscape emphasized by providing open park-like settings featuring special attractions like rock outcroppings and waterfalls. Management activities maintain a healthy mid-successional forest of mixed hardwoods and pines. Understory vegetation includes a variety of native deciduous and evergreen flowering trees, shrubs, and wildflowers. These areas may also include natural appearing open areas or pastoral landscapes.

Due to the high level of recreational use and the management for aesthetics and safety, vegetation is greatly influenced by humans. Vegetative management for forest health is appropriate to maintain the long-term goals of a diverse and vigorous forest emphasizing recreation, scenery, and visitor safety. It is also an appropriate management tool to provide improved threatened, endangered, sensitive, and locally rare species habitat; to reduce fuel buildups; or to control non-native invasive vegetation and pests. Integrated pest management is used to eradicate or suppress insects, diseases, and non-desirable invasive vegetation. Use of prescribed fire may be used, but is carefully managed due to high visitor use and the infrastructure investments throughout the area. Wildland fires are suppressed.

These areas are characterized by a predominance of mid- and late-successional forests. Forest structure varies according to ecological factors, but largely consists of a mature overstory, a fairly open midstory, and a well-developed herbaceous and shrubby understory. Understory vegetation includes a variety of native deciduous and evergreen flowering trees, shrubs, and wildflowers. Even-aged, two-aged, and uneven-aged forest communities continue to develop throughout the area along with medium and small patches of late-successional to old growth forest communities. Wildlife viewing opportunities are maintained and expanded through cultivation, mowing, and burning of openings and pastoral areas.

Priorities

- Work with the State Parks to provide interpretive information about forest management activities.

Monitoring

Within the State Parks MA (2.B), monitor and evaluate trends in:

- Visitor satisfaction related to the partnership.
- Public health and safety through the permit.

2.C Developed Recreation Areas

Emphasis

This management area is allocated to approximately 3,110 acres across the Ozark-St. Francis National Forests. Developed recreation areas are managed to provide the public with a variety of recreational opportunities in visually appealing and environmentally healthy settings. Facilities are provided to enhance the quality of the recreational experience and to mitigate damage to the affected ecosystems. These areas also serve as "gateways" to the wide diversity of recreation opportunities on the remainder of the Forests. This area is unsuitable for timber production

Desired Condition

Visitors are able to choose from a wide variety of recreation opportunities in high quality, well-maintained settings. Campgrounds, picnic sites, boat ramps, river-access sites, swimming beaches, interpretive sites, and trailheads for hikers, horseback riders, and bicycle riders are all examples of facilities found in these recreation areas. In addition, other facilities consistent with the mission and complimentary to the ecosystem may be provided. Constructed facilities blend into the landscape. Facilities outside the developed recreation sites are provided to protect resources. Facilities that provide for user convenience and resource protection are constructed and/or maintained in the developed recreation areas. Outdoor skills are generally of low importance except where knowledge of specialized activities (e.g., boating or horseback riding) is critical. Trails associated with these areas are well marked and may include loop systems, interpretive programs, and/or features for visitors with special access needs. Roads provide access to the support facilities (e.g., roads, parking lots, or water access) while non-motorized experiences (e.g., walking, viewing nature, water related and other day-use activities) are emphasized. OHV use is allowed only in developed recreation sites that are in direct support of motorized trails.

Recreation information and regulations are provided to make the visitor's experience more enjoyable. Interpretive programs may also be offered to enhance the visitor's educational and recreational experience. Access to fishing, hunting, and nature study are emphasized. Fish stocking is appropriate for developed recreation sites.

The landscape character is a natural appearing landscape emphasizing open forest settings, highlighting large diameter trees, and featuring special attractions like rock outcroppings and waterfalls. Management activities maintain a healthy mid-successional forest of mixed hardwoods and pines. Understory vegetation includes a variety of native deciduous and evergreen flowering trees, shrubs, and wildflowers. These areas may also include natural appearing open areas or pastoral landscapes. The scenic integrity objectives are in the upper values of high to moderate.

Due to the high level of recreational use and the management for aesthetics and safety, vegetation is greatly influenced by humans. Vegetative management for forest health is appropriate to maintain the long-term goals of a diverse and vigorous forest emphasizing recreation, scenery, and visitor safety. It is also an appropriate management tool to provide improved threatened, endangered, sensitive, and locally rare species habitat; to reduce fuel buildups; or to control non-native invasive vegetation and pests. Integrated pest management is used to eradicate or suppress insects, diseases, and non-desirable invasive vegetation. Prescribed fire is used to enhance recreational settings and to reduce fuels for protection of infrastructure investments. Wildland fires are suppressed.

These areas are characterized by a predominance of mid- and late-successional forests. Forest structure varies according to ecological factors, but largely consists of a mature overstory of hardwoods occasionally mixed with pines, a fairly open midstory, and a well-developed herbaceous and shrubby understory. Understory vegetation includes a variety of native deciduous and evergreen flowering trees, shrubs, and wildflowers. Even-aged, two-aged, and uneven-aged forest communities continue to develop throughout the area along with medium and small patches of late-successional to old growth forest communities. Wildlife viewing opportunities are maintained and expanded through cultivation, mowing, and burning of openings and pastoral areas.

Priorities

- Supply a variety of recreational facilities that are responsive to user demands.
- Operate developed recreation sites including campsites and picnic areas. Activities included in this endeavor are trash collecting, cleaning, maintaining equipment, monitoring water systems, and other activities associated with keeping the facilities clean, safe, and in good repair. These will continue to be managed utilizing meaningful measures standards or the appropriate Agency standards while stressing health and safety.
- Focus investments and improve the cost effectiveness of operating recreational facilities by using one or more of the following techniques where feasible: decommissioning underused sites, maintaining concessionaire agreements, entering into management partnerships, and investigating other measures.

- Focus developed recreation on the niche statement written during the recreation alignment process, which emphasizes water related day-use activities, scenic and wildlife viewing, and trail activities such as hiking, biking, horseback riding, and OHV riding. Overnight facilities will only be developed in support of the niche activities.

Objectives

MAOBJ.5 Reduce the recreation facilities maintenance backlog by approximately 10 percent within 3 to 5 years. **Performance Indicator**: Number of backlog sites maintained.

MAOBJ.6 Improve accessibility within at least one recreation site per year. **Performance Indicator**: Annual number of sites improved for accessibility.

MAOBJ.7 Maintain all recreation facilities to standard. **Performance Indicator:** Annual number of facilities maintained to standard.

Monitoring

Within in the Developed Recreation Areas MA (2.C), monitor and evaluate trends in:

- Visitor satisfaction.
- Public health and safety.

2.D Upper Buffalo Dispersed Recreation Area

Emphasis

This management area is located in Newton County on the Buffalo Ranger District of the Ozark NF. It is allocated to approximately 6,115 acres. This area is suitable for timber production. This is an area of dispersed recreational use with no developed campgrounds. This area is managed to provide the public a variety of recreational opportunities in a setting that provides quality scenery, non-motorized trails, and limited facilities.

Desired Condition

Visitors are able to choose from a wide variety of non-motorized dispersed recreation opportunities such as hiking, mountain bike riding, horseback riding, nature study, hunting, and fishing. Public motorized access is not allowed in this area except on roads not under Forest Service jurisdiction. Visitors will see other people in some parts of this area. Trails are maintained and improved as needed. Outdoor skills are of moderate importance for visitors except where knowledge of specialized activities such as horseback riding, mountain biking, or rock climbing is critical.

Management in this area includes prescribed fire, integrated pest management, wildlife management, and commercial timber harvest. Vegetative management is used to manage for forest health and desired recreation settings. Integrated pest management is used to eradicate or suppress insects, diseases, and non-desirable, invasive vegetation. Prescribed fires are used to restore and maintain historic fire regimes. Wildlife viewing opportunities are maintained through openings, cultivation, mowing, and burning of openings and pastoral areas.

This area is managed under a mixed forest vegetation management emphasis, characterized by a predominance of early-, mid- and late-successional pine and hardwood forests. The valued character of these landscapes appears intact with some deviations such as vistas created for viewing opportunities. Structural diversity within mixed mesophytic and dry-to-mesic oak forest communities is enhanced through commercial and non-commercial vegetation management activities.

Priorities

- Maintain semi-primitive non-motorized management of activities.

Monitoring

Within the Upper Buffalo Dispersed Recreation Area MA (2.D), monitor and evaluate trends in:

- Visitor satisfaction.

2.E Wedington Unit Urban Recreation Area

Emphasis

This management area is allocated to approximately 10,467 acres on the Ozark NF. The area is located 13 miles from Fayetteville on the Boston Mountain Ranger District, and is commonly know as the Wedington Unit. Because of its proximity to one of the fastest growing communities in Arkansas, it is managed as an urban forest with a recreational emphasis. The Lake Wedington Developed Campground will be managed similar to sites in MA 2.C. The Wedington Unit Urban Recreation Area is closed to OHV use. This area is suitable for timber production.

Desired Condition

Visitors are able to choose from a wide variety of recreational opportunities in high quality, well-maintained settings. Campgrounds, picnic sites, boat ramps, swimming beaches, interpretive sites, and trailheads for hikers, horseback riders, and bicycle riders are all examples of facilities found in this recreation area. Constructed facilities are normally visually subordinate to the land and depend on the development scale appropriate to the recreational opportunity spectrum class. Facilities outside the developed recreation sites are provided to protect resources. Facilities that provide for user convenience and resource protection are constructed and/or maintained in

the developed recreation areas. Outdoor skills are generally of low importance except where knowledge of specialized activities (e.g., boating or horseback riding) is critical. Trails associated with the area are well marked and may include loop systems, interpretive programs, and/or features for visitors with special access needs. Roads provide access to the support facilities (e.g., roads, parking lots, or water access) while non-motorized experiences (e.g., walking and viewing nature) are emphasized. No motorized trails are located in the Wedington Unit Urban Recreation Area.

Recreation information and regulations are provided to make the visitor's experience more enjoyable. In addition, interpretive programs may be offered to enhance the visitor's educational and recreational experience. Access to fishing, hunting, and nature study are emphasized. Fish stocking is appropriate for developed recreation sites.

The landscape character is a natural appearing landscape emphasizing open forest settings, highlighting large diameter trees, and featuring special attractions like rock outcroppings. Management activities maintain a healthy mid-successional forest of mixed hardwoods and pines managed under an oak or pine woodland vegetative prescription. The forest is dominated by grass and herbaceous understories with widely spaced large oaks and pines. The open park-like woodlands result in open forest conditions suitable for trail use and wildlife viewing.

Due to the high level of recreational use and the management for aesthetics and safety, vegetation is greatly influenced by humans. Vegetative management for forest health is appropriate to maintain the long-term goals of a diverse and vigorous forest emphasizing recreation, scenery, and visitor safety. It is also an appropriate management tool to provide improved threatened, endangered, sensitive, and locally rare species habitat; to reduce fuel buildups; and to control non-native invasive vegetation and pests. Integrated pest management is used to eradicate or suppress insects, diseases, and non-desirable invasive vegetation. Prescribed fire is used throughout the Wedington Unit. Wildland fires are suppressed.

Priorities

- Provide urban recreation opportunities.

Monitoring

Within the Wedington Unit Urban Recreation Area (2.E), monitor and evaluate trends in:

- Visitor satisfaction.

2.F Indian Creek Dispersed Recreation Area

Emphasis

This management area is allocated to approximately 17,100 acres, located on the Pleasant Hill Ranger District, of the Ozark NF. This is an area managed for dispersed recreational use, with no developed recreation sites. This area is managed to provide the public a variety of dispersed recreation opportunities in a setting that provides quality scenery and dispersed recreation opportunities with limited facilities. Motorized recreation opportunities are provided through the access established to dispersed recreation opportunities are added through the Forests' trails strategic plan. This area is suitable for timber management.

Desired Condition

Visitors are able to choose from a wide variety of dispersed recreation opportunities such as hiking, mountain bike riding, horseback riding, rock climbing, nature study, hunting and fishing. Public motorized access is limited to designated Forest Service roads and trails, which are primarily designed as access to the dispersed recreation opportunities. These designated routes may be considered for development as motorized opportunities if they fit with the Forests' trails strategy. All trails are maintained, and improved as needed. Outdoor skills are of moderate importance for visitors except where knowledge of specialized activities such as horseback riding, mountain biking, or rock climbing is critical.

Management in this area includes prescribed fire, integrated pest management, wildlife management, and commercial timber harvest. Access for management activities other than recreation will be provided on the few open Forest Service roads and by temporary roads, which will be closed to motorized use once management activities are completed, unless the Forests' trails strategy determines that they are appropriate for motorized recreation opportunity. Vegetative management is used to manage for forest health and desired recreation settings. Integrated pest management is used to eradicate or suppress insects, diseases, and non-desirable, invasive vegetation. Prescribed fires are used to restore and maintain historic fire regimes. Wildlife viewing opportunities are maintained through openings, cultivation, mowing, and burning of openings and pastoral areas.

This area is managed under a mixed forest vegetation emphasis; characterized by a predominance of early-, mid-, and late-succession pine and hardwood forests. The valued character of these landscapes appears intact with some deviations such as vistas created for viewing opportunities. Structural diversity within mixed mesophytic and dry-to-mesic oak forest communities is enhanced through commercial and non-commercial vegetation management activities.

Priorities

- Provide a combination of semi-primitive, non-motorized, and motorized management activities.
- Maintain two major motorized routes through the Indian Creek Dispersed Recreation Area as the primary access with secondary routes supporting dispersed recreation opportunities. This includes access to trailheads for horseback riding, hiking, biking, rock climbing activities, local historic points of interest, interpretive opportunities, and administrative uses including timber harvest for forest health. Development of motorized recreation opportunities will not be a priority in this area although they will exist due to motorized access to other recreational opportunities.
- Determine where motorized access will be allowed by considering support of dispersed recreation activities, disturbance of solitude of large blocks of land, public health and safety, forest health, and local economic and administrative considerations.
- The Forests' Trails Strategy Team will consider motorized opportunities in this area utilizing roads and trails developed for access to other dispersed recreation opportunities.

Objectives

MAOBJ.8 Closure or obliteration of roads that do not meet the above criteria will be a priority in this MA. **Performance Indicator:** Miles of road not meeting criteria that are closed.

MAOBJ.9 Inventory current and potential dispersed recreation activities and develop a motorized access plan to support them. **Performance Indicator:** Completion of inventory and access plan.

Monitoring

Within in the Indian Creek Dispersed Recreation Area MA (2.F), monitor and evaluate trends in:

- Visitor satisfaction.

3.A Pine Woodland

Emphasis

This management area is allocated to approximately 97,629 acres across the Ozark NF. This area is suitable for timber production. The primary emphasis in this management area is to restore and maintain a landscape mosaic of open pine woodland that approximates historical conditions. The purpose is to provide habitat for associated plants and animals, some of which are rare and declining, and to create a setting for recreation that is different, uncommon, visually appealing, and rich in wildlife. Restoration and maintenance of pine woodland occur primarily on

xeric and dry sites within this management area. This management area differs from MA 3.B. because its primary emphasis is restoring pine woodland rather than oak woodland. Where oak dominates on oak-appropriate sites, however, restoration and maintenance of oak woodland is also emphasized. On more mesic sites, management emphasis varies as needed to provide for other multiple uses and values that are compatible with the primary emphasis of this area.

Lands within this management area are predominately classed as suitable for timber production. Silvicultural prescriptions applied are primarily those for pine woodland restoration with a variety of other prescriptions applied in areas not suited for woodland restoration.

Restoration and maintenance of pine woodland is accomplished through application of a variety of forest management practices. Thinning of trees is often needed to create initial open-canopy conditions, and may be achieved through manual, mechanical, or chemical methods including use of commercial timber sales. Frequent prescribed fire (often applied at landscape scales) may be used to thin trees, and is the predominate method used to maintain open conditions and well-developed understory communities. Regeneration of woodland occurs on a scheduled basis to diversify age class distribution to ensure a sustained supply of this habitat over time.

Desired Condition

This area is characterized by a mosaic of woodland and forest with pine woodland occupying approximately 60 percent of the total community acreage, and typically occurring on ridges and south- to-west facing aspects. Generally, patches of pine woodlands are well connected in networks of ridges and other suitable sites incorporating other fire-dependent communities such as glades and barrens. Forests (> 60% canopy closure) are present on lower slopes and drains, with most being in an open condition (60 to 80% canopy closure).

Pine woodlands have open canopies (10 to 60% canopy closure), sparse midstories, and well-developed understories that are typically dominated by grasses and forbs, but also may have a significant woody component. The density of the overstory and midstory and the woody component of the understory generally increase as one moves down slope and onto north and east aspects, gradually merging with more typical forest conditions.

Where pine woodland restoration efforts have just begun, evidence of management activities used to thin forests is common and may include downed trees, tree branches, and stumps. Within a few years, these elements are much less evident as they are obscured by well-developed understories and are reduced through the effects of fire and decay.

Evidence of fire is common at all stages of the pine woodland restoration process in the form of charred bark and top-killed woody sprouts. Occasionally, freshly burned areas are encountered with large areas of blackened ground and scorched

vegetation. These areas typically green-up quickly through the sprouting of fire-adapted vegetation. Fire often occurs over large areas (up to several thousand acres) in blocks surrounded to the extent practicable by existing permanent fire breaks such as roads and streams. Typically, blocks are burned every two to five years with every third burn, on average, occurring within the growing season (April 1 through October 15). Fire intensity varies with topographic condition resulting in a variety of vegetation conditions across the landscape. Some areas, especially the most mesic sites, do not typically burn, or burn at very low intensities with minimal effects on vegetation and litter layers.

Age classes of pine woodland patches are diverse and generally balanced from regenerating up to mature and old growth with overstory ages up to 120 to 150 years or more. Woodland above the minimum old growth age (100 years) is common. Regenerating and young woodland (0 to 40 years old) may have higher levels of canopy closure (> 60%) than that which defines the woodland condition (< 60% canopy closure).

The abundance of pine woodlands within this area provides optimal habitat conditions for many species including management indicator species brown-headed nuthatch and northern bobwhite, rare species, and species in demand for hunting such as wild turkey and whitetail deer.

Forest communities other than pine woodland are present in a variety of conditions and ages. Evidence of vegetation management may be present in these communities. Where rare communities are present within this area, they support healthy populations of associated species, and are free from threats that would degrade their integrity. Water quality in stream systems is excellent, and aquatic communities reflect native diversity.

These areas are used by the public for a variety of motorized and non-motorized recreational opportunities. The sights and sounds of human activities, especially motorized uses along main travel corridors, are evident in many parts of these areas. Visitors may frequently see other people in these areas. Motorized access is usually available. Non-motorized trails may also be available. The road system is of high quality and well maintained. Forest products produced by achieving desired conditions within this area contribute to the social and economic well being of the people living in surrounding areas. Evidence of timber harvest including active harvest operations may be encountered.

Monitoring

Within the Pine Woodland MA (3.A), monitor and evaluate trends in:

- Abundance of pine woodland.
- Proportion of the Shortleaf Pine-Oak Forest and Woodland Community burned at desired intervals and seasons.

3.B Oak Woodland

Emphasis

This MA is allocated to approximately 154,704 acres across the Ozark NF. This area is suitable for timber production. The primary emphasis in this management area is to restore and maintain a landscape mosaic of open oak woodland that mimics historical conditions. The purpose is to provide habitat for associated plants and animals, some of which are rare and declining, and to create a setting for recreation that is visually appealing, rich in wildlife, and not commonly encountered elsewhere. Restoration and maintenance of oak woodland occurs primarily on xeric and dry sites within this management area. This management area differs from MA 3.A because its primary emphasis is restoring oak woodland rather than pine woodland. Where pine dominates on pine-appropriate sites, however, restoration and maintenance of pine woodland is also emphasized. On more mesic sites, management emphasis varies as needed to provide for other multiple uses and values compatible with the primary emphasis of this area.

Lands within this management area are predominately classed as suitable for timber production. Silvicultural prescriptions applied are primarily those for oak woodland restoration with a variety of other prescriptions applied in areas not suited for woodland restoration.

Restoration and maintenance of oak woodland is accomplished through application of a variety of forest management practices. Thinning of trees is often needed to create initial open-canopy conditions, and may be achieved through manual, mechanical, or chemical methods including use of commercial timber sales. Frequent prescribed fire (often applied at landscape scales) may be used to thin trees, and is the predominate method used to maintain open conditions and well-developed understory communities. Regeneration of woodland occurs on a scheduled basis to diversify age class distribution to ensure a sustained supply of this habitat over time.

Desired Condition

This area is characterized by a mosaic of woodland and forest with oak woodland occupying approximately 60 percent of xeric and dry sites, and typically occurring on ridges and south- to-west facing aspects. Patches of oak woodland are generally well connected in networks of ridges and other suitable sites incorporating other fire-dependent communities such as glades and barrens.

Oak woodlands are primarily comprised of the Dry Oak Forest and Woodland community. They have open canopies (10 to 60% canopy closure), sparse midstories, and well-developed understories that are typically dominated by grasses and forbs, but also may have a significant woody component. The density of the overstory and midstory and the woody component of the understory generally increase as one moves down slope and onto north and east aspects, gradually merging with more typical forest conditions.

Where oak woodland restoration efforts have just begun, evidence of management activities used to thin forests is common, and may include downed trees, tree branches, and stumps. Within a few years, these elements are much less evident as they are obscured by well-developed understories, and are reduced through the effects of fire and decay.

Evidence of fire is common at all stages of the oak woodland restoration process in the form of charred bark and top-killed woody sprouts. Occasionally, freshly burned areas are encountered with large areas of blackened ground and scorched vegetation. These areas typically green-up quickly through the sprouting of fire-adapted vegetation. Fire often occurs over large areas (up to several thousand acres) in blocks surrounded to the extent practicable by existing permanent fire breaks such as roads and streams. Typically, blocks are burned every two to seven years with every third burn, on average, occurring within the growing season (April 1 to October 15). Fire intensity varies with topographic condition resulting in a variety of vegetation conditions across the landscape. Some areas, especially the wettest sites, do not typically burn, or burn at very low intensities with minimal effects on vegetation and litter layers.

Age classes of oak woodland patches are diverse and generally balanced from regenerating up to mature and old growth with overstory ages up to 140 to 200 years or more. Woodland above the minimum old growth age (110 years) is common. Regenerating and young woodland (0 to 40 years old) may have higher levels of canopy closure (> 60%) than that which defines the woodland condition (< 60% canopy closure).

The abundance of oak woodlands within this area provides optimal habitat conditions for many species including management indicator species prairie warbler and northern bobwhite, rare species, and species in demand for hunting such as wild turkey and whitetail deer.

Forest communities other than oak woodland are present in a variety of conditions and ages. Evidence of vegetation management may be present in these communities. Where rare communities are present within this area, they support healthy populations of associated species, and are free from threats that would degrade their integrity. Water quality in stream systems is excellent, and aquatic communities reflect native diversity.

These areas are used by the public for a variety of motorized and non-motorized recreational opportunities. The sights and sounds of human activities, especially motorized uses along main travel corridors, are evident in many parts of these areas. Visitors may frequently see other people in these areas. Motorized access is generally available. Non-motorized trails may also be available. There is a high quality road system that is well maintained. Forest products resulting from achieving desired conditions within this area contribute to the social and economic well being of the people living in surrounding areas. Evidence of timber harvest including active harvest operations may be encountered.

Monitoring

Within the Oak Woodland MA (3.B), monitor and evaluate trends in:

- Abundance of oak woodland.
- Proportion of potential Dry Oak Forest and Woodland acreage burned at desired intervals and seasons.

3.C Mixed Forest

Emphasis

This management area is allocated to approximately 360,401 acres across the Ozark-St Francis National Forests. These lands are managed to ensure the health and sustainability of the pine, pine/hardwood, hardwood/pine, and hardwood forest types across the landscape. Timber will be a by-product of vegetation management aimed at maintaining sustainable ecosystems. This area is suitable for timber production.

Light levels to the forest floor are managed to develop an assemblage of desirable regeneration and to maintain a moderate herbaceous component. This is accomplished through silvicultural activities including prescribed fire as well as mechanical and chemical vegetation control. The difference between this management area and woodland MAs is that stocking levels of trees in this MA are denser than the stocking levels in the woodland MAs.

Desired Condition

The character of the land is predominately natural appearing with a diversity of forest successional classes and ecological community types. Thinning, prescribed fire at regular intervals, and regeneration harvests are common silvicultural treatments. Stands are regularly thinned to reduce stress as trees age. Fire is common, typically as a result of prescribed burning. Evidence of fire in the form of charred bark and occasional freshly burned areas may be encountered. Fires occur approximately every 3 to 10 years, during both the dormant and growing seasons. Growing season fires generally occur on lower sites appropriate for woodland conditions. Pine and oak woodlands are found throughout the area on appropriate sites. Late-successional to old growth characteristics are provided on suitable lands within this area. High quality, well-maintained roads through the area are designed to facilitate vegetative management and protect water quality. Although a mixed forest is the overriding emphasis of this MA, a variety of silvicultural prescriptions can be used (depending on site conditions) to meet other secondary desired conditions.

Other communities that occur on low productivity sites (e.g., glades) typically comprise a small proportion of the area. Where they occur; however, they exhibit high levels of ecological integrity and diversity of characteristic species. Rare communities within the management area are maintained at desired composition, structure, and function. They support characteristic associations of species. Occurrences for

threatened and endangered species are stable or expanding as are those for sensitive and locally rare species, which are needed to provide for their viability.

While the landscape character will appear natural, the management activities are visually evident and may occasionally dominate the natural landscape. These areas will provide a variety of motorized and non-motorized recreation opportunities including hunting, fishing, hiking, bicycling, berry picking, dispersed camping, driving for pleasure, and viewing scenery and wildlife. Visitors will likely see other people in the parts of these areas with motorized access. The trail and access emphasis will depend on the specific conditions of each area. Outdoor skills are of moderate importance to visitors in these areas except where knowledge of specialized activities such as hiking, hunting, mountain biking, or OHV use is necessary.

Priorities

- Manage for pine and oak woodlands on lower sites.
- Managed for medium density or balanced age classes on medium to high sites.

Objectives

MAOBJ.10 Apply appropriate silviculture prescriptions to provide the following forest products on medium to high sites: 14" to 16" sawtimber with grade 2 butt logs and/or yellow pine 18" sawtimber. **Performance Indicator:** Determine DBH during inventories.

Monitoring

Within the Mixed Forest MA (3.C), monitor and evaluate trends in:

- Number of acres harvested.

3.D Oak Decline Restoration Areas

Emphasis

This MA is allocated to approximately 67,691 acres on the Ozark-St. Francis National Forests. These areas range from low to high sites and occur on south as well as north facing aspects. These are areas where red oak and white oak trees suffered severe mortality due to general oak decline, repeated insect outbreaks (red oak borer), and disease. Fuel loadings in these areas are high and wildlife mast producing capabilities are greatly reduced from what was present the last 50 years. while present in some areas, red oak and white oak regeneration is at risk from being overtopped by competitors, which will rapidly respond to the increased light. Other areas are completely devoid of oak regeneration and the oak overstory has died leaving no possible future seed source. This area is suitable for timber production.

The emphasis of this MA is to restore and maintain a healthy white oak group, red oak group, and hickory forest that is resistant to large-scale insect and disease attacks and provides for regeneration of oak into the future. Currently, the red oak ecotype is all but gone from these acres due to recent massive outbreaks of red oak borer, other pathogens, and general oak decline. The replacement forest in the absence of management will likely succeed to shade tolerant species such as dogwood and gum. Most of the area has suffered heavy mortality with red oak mortality ranging from 70 to 100 percent. Red oak regeneration is absent or, if it exists, is in a shaded condition from shade tolerant competitors and may soon die. Fuel loading is extremely high creating a serious fire hazard for the next few years. The primary objective of this MA is to return mast-producing trees to the area for wildlife and to repopulate the forest stands with desirable species of commercial value to assist local economies. Management to achieve the desired future condition of these areas is accomplished through various forest management practices including prescribed fire and manual, mechanical, and chemical vegetation control.

Desired Condition

The desired future condition is to have a well-balanced age class scattered over the landscape. Prescribed fire every 3 to 10 years will effectively release the existing red and white oak seedlings on much of the area. On high sites, oak planting may occur where no existing advanced regeneration is present. Pine, a pioneer species, will capture some of these sites. Because it is commercially viable and desirable for wildlife, pine is managed where it exists.

A series of regular thinning maintains quality oaks in a stress-free environment. This thinning will help prevent serious outbreaks of pathogens. The species mix of the restored forest is diverse, resisting pathogens that target individual tree species or species groups.

Evidence of forest management activities (e.g., tree stumps, logging roads) is seen as a result of forest management. Rare communities and associated species continue to exist in the area including disturbance dependent communities requiring active management. Although oak restoration is the overriding theme of this management area, other silvicultural prescriptions can be used depending on site conditions. High quality, well-maintained roads through the area are designed to facilitate timber removal and protect water quality.

Habitat associations emphasized include both xeric and mesic oak habitats, and some species (fire dependent species) in the early-successional habitat. The conditions are suitable for wild turkey and whitetail deer. The management and protection of rare communities and species habitats is provided along with the management and protection for population occurrences of threatened, endangered, and sensitive (TES) and locally rare species.

The landscape character is of a forest with closed overstory canopies except where thinned to promote oak regeneration. Herbaceous vegetation is created through repeated prescribed fire, but will not be the primary objective of this prescription. In

order to balance age classes and to prevent the recurrence of an over mature landscape regeneration, harvests are prescribed. Evidence of man's involvement is moderately evident. These areas provide a variety of motorized and non-motorized recreation opportunities. The sights and sounds of human activities, especially motorized uses along main travel corridors, are evident in many parts of these areas. Visitors will frequently see other people. Motorized access is available to many places. Outdoor skills are of moderate or low importance for visitors except where knowledge of specialized activities such as mountain biking, horseback riding, or driving OHVs is critical.

Priorities

- Restore pine and oak woodlands on lower sites.
- Restore a red oak/white oak/hickory forest type in heavily damaged hardwood areas.

Monitoring

Within the Oak Decline Restoration Areas MA (3.D), monitor and evaluate trends in:

- Number of acres restored to a red oak/white oak/hickory forest type.

3.E High Quality Forest Products

This MA is allocated to approximately 214,358 acres across the Ozark-St Francis National Forests. This area is suitable for timber production.

Emphasis

This MA includes lands capable of producing valuable, high quality sawtimber and is allocated to areas with high site productivity where maximum economic return for investment can be achieved. This prescription maintains forest densities in accordance with published yield tables and regional guidelines to produce trees with clear boles (trunks) and smaller crowns than would occur in areas of more open forests and woodlands. Timber stand improvement and regeneration harvest methods are applied that best provide for the growth and harvest of high quality sawtimber that is most in demand in the marketplace. Emphasis is on producing 14" to 16" sawtimber with grade 2 butt logs and/or yellow pine 18" sawtimber. Other forest products such as pulpwood, fuelwood, and low value sawtimber are provided as a result of timber stand improvement to cultivate high quality, valuable sawtimber. Product objectives are accomplished through various forest management practices including prescribed fire and manual, mechanical, and chemical vegetation control.

Management activities are applied in ways that maintain appropriate conditions for wildlife habitat, soil productivity, water quality, recreational opportunity, and scenic beauty. Opportunities are also provided for utilization of other high-value forest

products. Although production of high quality forest products is the overriding emphasis of this management area, a variety of silvicultural prescriptions can be used depending on site conditions to meet other secondary desired conditions.

Desired Condition

These lands support a balanced age class distribution of forest stands containing native tree species capable of sustained, high-value timber production. Tree growth rates and vigor are high. Incidence of insect and disease outbreaks is low.

The landscape character is naturally appearing with mixtures of hardwood, mixed hardwood/pine and pine/hardwood, and pine forest communities. Management activities may be visually evident in portions of these areas. Evidence of management activity may include active timber harvest operations, tree stumps, temporary roads, skid trails, and log landings. Layout of timber sale boundaries, retention of individual trees and clumps, and seeding of exposed soil reduce visual impacts. Large stemmed trees interspersed with canopy gaps and 10- to 80-acre transitional openings provide moderate to high scenic diversity.

Fire is common, typically as a result of prescribed burning. Evidence of fire in the form of charred bark and occasional freshly burned areas may be encountered. Fires occur approximately every 3 to 10 years on a given site. As long as the quality of forest products is maintained, both dormant and growing season fires occur. Maximum stand ages are typically from 60 to 110 years for pine, and 90 to 110 years for hardwoods. A mix of forest successional stages characterizes these areas. Regenerating forest patches may be 10 to 80 acres in size, and may be clustered or scattered across the landscape. Some characteristics of older-aged forests are provided toward the end of the rotations, but younger forest conditions predominate.

Other communities that occur on low productivity sites (e.g., glades) typically comprise a small proportion of the area. Where they occur; however, they exhibit high levels of ecological integrity and diversity of characteristic species. Rare communities within the management area are maintained at desired composition, structure, and function. They support characteristic associations of species. Occurrences for threatened and endangered species are stable or expanding as are those for sensitive and locally rare species, which are needed to provide for their viability.

Forest products contribute to the social and economic well-being of people and help maintain a way of life long associated with those living within the area. Evidence of timber harvesting is apparent; however, and innovative harvesting techniques use sale layout and design to accommodate visual considerations.

High quality, well-maintained roads through the MA are designed to facilitate timber removal and protect water quality. Designated roads through the area also provide recreation opportunities for OHV and passenger-vehicle travel. These areas provide a variety of motorized and non-motorized recreation opportunities including hunting, fishing, hiking, bicycling, berry picking, dispersed camping, driving for pleasure, and viewing scenery and wildlife.

Priorities

Objectives

MAOBJ.11 Apply appropriate silviculture prescriptions to provide the following forest products on medium to high sites: 18" to 20" sawtimber with grade 1 or 2 butt logs and/or yellow pine 18" sawtimber. **Performance Indicator:** Determine DBH during inventories.

Monitoring

Within the High Quality Forest Products MA (3.E), monitor and evaluate:

- Number of acres harvested.

3.F Old Growth Areas

Emphasis

This management area is allocated to approximately 5,062 acres across the Ozark-St Francis National Forests. This area is suitable for timber production.

Emphasis of this management area is to restore old growth conditions as part of a forest-wide network of large (2,500+ acres), medium (100 to 2,499 acres), and small (< 100 acres) old growth patches following guidance in the Region 8 Old Growth Report (*Guidance for Conserving and Restoring Old Growth Forest Communities on the National Forests in the Southern Region,* Forestry Report R8-FR 62, published in June 1997). Management of these areas emphasizes protection, restoration, and management of old growth forests and their associated wildlife, botanical, recreational, scientific, educational, and cultural values. Within this MA, forest management activities occur in order to restore or maintain old growth conditions. These activities may include small amounts of forest regeneration where needed to ensure a long-term sustained supply of old growth conditions. Prescribed fire is a critical management activity for maintaining desired conditions for some old growth types.

This management area is not intended to encompass all old growth forest conditions on the OSFNFs. Additional patches meeting old growth criteria may be scattered throughout other management areas.

Desired Conditions

Desired conditions for old growth forest community types are provided in the Region 8 Old Growth Report. There is a crosswalk to the major forest community types used in this plan in Table 2-10. Desired conditions are described in terms of four defining

characteristics: age, disturbance history, basal area, and tree size (Table 2 in Region 8 Old Growth Report). Additional characteristics such as number of snags, volume of downed wood, and percentage of the canopy in gaps are also described for some forest community types.

Table 2-10: Major Forest Communities for the OSFNFs and their Corresponding Old Growth Community Types from the Region 8 Old Growth Report (1997).

Major Communities Ozark NF	Old Growth Community Type
Ozark National Forest	
Dry Oak Forest and Woodland	Dry and Xeric Oak Forest, Woodland, and Savanna
Shortleaf Pine-Oak Forest and Woodland	Xeric Pine and Pine-Oak Forest and Woodland Dry and Dry-Mesic Oak-Pine Forest (in part)
Dry-Mesic Oak Forest	Dry-Mesic Oak Forest Dry and Dry-Mesic Oak-Pine Forest (in part)
Mesic Hardwood Forest	Mixed Mesophytic and Western Mesophytic Forests
Riparian Forest	Eastern Riverfront Forest
Loblolly Pine Forest	Not applicable
St. Francis NF	
Loess Slope Forest	Mixed Mesophytic and Western Mesophytic Forests
Bottomland and Floodplain Forest	River Floodplain Hardwood Forest
Loblolly Pine Forest	Not applicable

In general, desired conditions include presence of old-aged forests, big trees, abundant snags, downed wood, and diverse canopies with frequent gaps. Some evidence of management activities such as charred bark from prescribed fires and stumps from timber sales may be seen, but these are generally subordinate to naturally appearing conditions. Wildlife associated with older forests is abundant. Some patches of regenerating forest are present, but occupy a small proportion of the landscape.

The landscape character is natural appearing. These areas provide a variety of recreation opportunities. Human activities may be evident in some places. Visitors will occasionally see other people, especially near the few open roads in these areas. A non-motorized trail system will provide the predominant means of access. Closed roads are available for non-motorized uses. Outdoor skills are important for visitors in the more remote portions of these areas. Hiking, backpacking, hunting, and fishing are typical activities available.

3.G Crowley's Ridge Upland Hardwood–St. Francis NF

This management area is allocated to approximately 11,443 acres on the St. Francis NF. It includes the upland sites on the St. Francis National Forest. This area is suitable for timber production.

Emphasis

Emphasis in this MA is primarily on maintaining and, where necessary, restoring the oak component within the Loess Slope Forest community, which occupies most of this management area. Limiting the abundance and influence of non-native invasive species such as kudzu is another important area of emphasis. Silvicultural practices such as prescribed fire, herbicides application, pre-commercial thinning, and timber sales are used to encourage oak regeneration and to maintain oak dominance.

Desired Condition

Desired conditions for this MA are essentially the same as the forest- wide desired conditions described for the Loess Slope Forest community in Chapter 1.

The Loess Slope Forest or Crowley's Ridge Community is typically dominated by oaks with various mixtures of beech, maple, and yellow poplar. Some sites are dominated by beech or other representative tree species. Its midstory is often open, but may be complex, especially on more mesic sites. Understories may be sparse or well-developed depending on site quality, overstory density, and fire history. Advanced oak regeneration is common in the understory across all sites, exceeding 300 oak sprouts per acre greater than two feet tall. This advanced regeneration maintains oak dominance within the community on most sites as regeneration events occur. Examples of the community that are dominated by sweetgum, maple, or yellow poplar are uncommon. Abundance and influence of invasive non-native plants is low.

Abundance and distribution of this community remains similar to current abundance and distribution (conversions to or from this type are not common.).

Forests of this type are present in a wide range of age classes from regenerating forest to old growth. Forests typically occur in even-aged or two-aged patches, but also include some uneven-aged patches. Mixes of age classes within given areas vary widely across the St. Francis NF ranging from those favoring younger forests to those favoring older forests. Averaged across the Forest, mature forests (older than 70 years) predominate, comprising approximately 60 percent of the total community acreage. Within this mature component, old growth conditions are common comprising approximately 20 percent of total community acreage. Old growth conditions are concentrated within management areas with low emphasis on active vegetation management, but are also present in variously sized patches scattered throughout other management areas. Patches of regenerating forest (0 to 10 years old) are present across the St. Francis NF at sustained rates of at least five percent of total community acreage with percentages varying widely to meet local desired conditions. Forest-wide percentage of regenerating forest may be higher in the short-term in order to address current age class imbalance and forest health threats. Over time, the forest-wide percentage of this community in regenerating (0 to 10 years old) and young forest (11 to 40 years old) is approximately 20 percent. Patches of regeneration are the result of both natural disturbances (e.g., windthrow, ice storms, insects, and wildfire) and management activity (e.g., timber harvest).

Many areas of mature (70-year age class and older) and mid-aged forests (41 to 70 years old) are relatively open canopied (60 to 80% canopy closure) allowing development of herbaceous understories and advanced oak regeneration. Woodland conditions (10 to 60% canopy closure) are absent or uncommon.

Fire is an important factor for maintaining open forest conditions and stimulating understory development within this community type. Fire return intervals average 5 to 10 years with every third burn, on average, occurring during the growing season (April 1 through October 15). Fire frequencies and intensities are generally highest on drier sites and upper slopes. Fire typically occurs across large landscapes within which this community occurs. Although most acreage of the type within the burn block is affected by fire, some acres may not be burned during any given fire, effectively lengthening the fire return interval on these sites.

This community is enjoyed by the visiting public as a natural setting for hunting, hiking, and sight-seeing. Acorn production provides abundant food for wildlife including popular game species such as wild turkey, whitetail deer, and gray squirrel. These species are common within this community making it a popular setting for hunting. Management of vegetation to create and maintain open forest conditions and desired age class diversity frequently yields wood that is bought by local businesses, contributing to the vitality of local economies. Evidence of these management activities in the form of stumps, logging areas, and harvest operations may occasionally be seen within this community.

Rare communities within the management area are maintained at desired composition, structure, and function. They support characteristic associations of species. Occurrences for threatened and endangered species are stable or expanding as are those for sensitive and locally rare species that are needed to provide for their viability.

Forest product outputs contribute to the social and economic well being of people and help maintain a way of life long associated with those living within the area. Timber harvesting is evident and uses sale layout and design along with innovative harvesting techniques to accommodate visual considerations.

Roads through the area provide recreation opportunities for passenger-vehicle travel. These areas provide a variety of motorized and non-motorized recreation opportunities including hunting, fishing, hiking, bicycling, berry picking, dispersed camping, driving for pleasure, and viewing scenery and wildlife.

Monitoring

For monitoring items within the Crowley's Ridge Upland Hardwood MA (3.G), see the "Loess Slope" section of "Major Forest Communities" in Chapter 1.

3.H Mississippi River Bottomland Hardwoods - St. Francis NF

This management area is allocated to approximately 3,573 acres on the St. Francis NF. This MA encompasses a narrow band along the floodplains of the St Francis and Mississippi Rivers and their tributaries, serving as important ecological corridors along the major river systems for numerous wildlife species. This area is suitable for timber production.

Emphasis

Emphasis of this MA is primarily on the maintenance of the Bottomland and Floodplain Forest Community with special emphasis given to encouraging oak reproduction. Silvicultural practices including hand planting native oak species, thinning, and forest regeneration cutting are used to sustain this community and to encourage oak regeneration.

Desired Condition

Desired conditions for this MA are essentially the same as the forest- wide desired conditions described for the Bottomland and Floodplain Forest Community in Chapter 1.

The Bottomland and Floodplain Forest Community is dominated by a variety of species indicative of bottomlands, floodplains, and riverfronts. Its midstory composition is variable. Understories may be sparse or well-developed depending on site quality, overstory density, and disturbance history. Where bottomland oaks are present, they are sustained through time by appropriate disturbance regimes. Patches of native cane are not uncommon, especially in areas of low overstory density. Abundance and influence of invasive non-native plants is low.

Abundance and distribution of this community remains similar to current abundance and distribution. Conversions to or from this type are not common.

Forests of this type are present in a wide range of age classes from regenerating forest to old growth. Forests typically occur in even-aged, two-aged, or uneven-aged patches. Mixes of age classes within given areas vary widely across the St. Francis NF ranging from those favoring younger forests to those favoring older forests. Averaged across the Forest, mature forests (older than 70 years) predominate comprising approximately 65 percent of the total community acreage. Within this mature component, old growth conditions are common comprising approximately 45 percent of total community acreage. Old growth conditions are concentrated within MAs with low emphasis on active vegetation management, but are also present in variously sized patches scattered throughout other management areas. Patches of regenerating forest (0 to 10 years old) are present across the St. Francis NF at sustained rates of at least five percent of total community acreage with percentages varying widely to meet local desired conditions. Forest-wide percentages of regenerating forest may be higher in the short-term in order to address current age class imbalance and forest health threats. Over time, the forest-wide percentage of

this community in regenerating (0 to 10 years old) and young forest (11 to 40 years old) is approximately 20 percent. Patches of regeneration are the result of both natural disturbances (e.g., windthrow, ice storms, insects, and wildfire) and management activity (e.g., timber harvest).

Many areas of mature (older than 70 years) forest exhibit complex canopy structure characterized by canopy gaps. These gaps result in development of herbaceous understories and/or layers of midstory. Woodland densities (10 to 60% canopy closure) are not common, but may occur in frequently flooded areas and in areas occupied by canebrakes. Fire is relatively infrequent within this community, but occurs at 7- to 10-year intervals where high quality examples of canebrakes are present.

This community is enjoyed by the visiting public as a natural setting for hunting, hiking, and sight-seeing. Management of vegetation to create and maintain desired structural conditions and age class diversity yields wood that is bought by local businesses contributing to the vitality of local economies. Occasionally, evidence of these management activities in the form of stumps, logging areas, and harvest operations may be seen within this community.

Rare communities within the MA are maintained at desired composition, structure, and function. They support characteristic associations of species. Occurrences for threatened and endangered species are stable or expanding as are those for sensitive and locally rare species that are needed to provide for their viability.

Forest product outputs contribute to the social and economic well being of people and help maintain a way of life long associated with those living within the area. Timber harvesting is apparent and uses sale layout and design along with harvesting techniques to accommodate visual considerations.

Monitoring

See the "Bottomland Hardwood" section of "Major Forest Communities" in Chapter 1 for monitoring items within the Mississippi River Bottomland Hardwood MA (3.H).

3.I Riparian Corridors

Emphasis

This MA is allocated to approximately 11,484 acres across the Ozark-St. Francis National Forests. Riparian corridors are managed to retain, restore, and enhance the inherent ecological processes and functions of the associated aquatic, riparian, and upland components within the corridors. Primarily, natural processes (floods, erosion, seasonal fluctuations, etc.) modify most of the areas within the riparian corridors. However, management activities may be used to provide terrestrial or aquatic habitat improvement, favor recovery of native vegetation, control insect infestation and disease, comply with legal requirements (e.g., Endangered Species Act, Clean Water Act), provide for public safety, and meet other riparian functions and values.

Silvicultural treatments including timber and vegetation removal may occur to restore and/or enhance riparian resources such as water, wildlife, and natural communities.

Riparian areas are defined as areas that include both terrestrial and aquatic ecosystems. They extend down into the groundwater, up above the tree canopy, outward across the floodplain, laterally into the terrestrial ecosystem, and along the watercourse at a variable width (Ilhardt, 2000). A riparian corridor is a MA designed to include much of the riparian area. Within the Riparian Corridors MA, management practices are specified to maintain riparian functions and values. As a management area, this includes, at a minimum, a 100-foot corridor along perennial stream channels, natural ponds, lakeshores, wetlands, springs, and seeps.

For the purpose of land allocation, the perennial streams were identified from a National Hydrographic Dataset produced from a U.S. Geological Survey. A corridor width of 100 feet was applied to each side of the identified streams as an estimation of the extent of the riparian area. At the time of LRMP revision, this was the best available process for determining the potential locations of these areas and is subject to the limitations associated with this dataset.

Due to the extent of their spatial distribution, this operational definition does not capture the entirety of riparian areas in existence. The riparian corridors MA designation is designed to encompass the riparian area defined on the basis of soils, vegetation, and hydrology. Field surveys, inventory/mapping, and landscape modeling are appropriate methods for further refining the Riparian Corridors MA boundaries during project level assessments, project level planning, and site specific investigations. If a resource specialist or ID team for a project area does not conduct one of these methods, the minimum width of 100 feet from the defining riparian feature should be applied as the riparian corridor width.

Due to the extent of their spatial distribution, riparian areas are best defined functionally based on a variety of characteristics. This MA is designed to encompass these characteristics based on the landforms, soils, vegetation, and hydrology of the landscape. More than one of the following characteristics is necessary to identify the riparian area:

- **Landforms**- Floodplains, toe slope to toe slope, natural breaks in the landscape, or manmade features.
- **Vegetation-** Plants dependent on riparian or wetland habitats. Plants are identified by the PLANTS database (USDA, NRCS. 2004) as indicators or obligates of wetlands.
- **Soils-** Soils formed from alluvial parent material, soils identified as occasionally flooded by the NRCS soil survey, and anaerobic (wetland) soils.
- **Hydrology-** Rivers, streams, springs, wetlands, karst features, ponds, and lakes.

Riparian corridor widths are measured in on-the-ground surface feet perpendicular from the edge of the channel or bank (stream, water body, etc.) and extend out from each side of a stream. For ponds, lakes, sloughs, and wetlands (including seeps or

springs associated with wetlands), the measurement would start at the ordinary high water mark and go around the perimeter. For braided streams, the outermost braid is used as the water's edge. An interrupted stream (a watercourse that goes underground and then reappears) is treated as if the stream were above ground. A riparian corridor includes human-created reservoirs, wildlife ponds, wetlands, and waterholes connected to or associated with natural water features. In addition, those areas not associated with natural water features, but supporting riparian associated flora or fauna will have a riparian corridor designation. The Riparian Corridors MA does not apply to human-made ditches, gullies, or other features that are maintained or in the process of restoration.

Desired Condition

Riparian corridors reflect the physical structure, biological components, and ecological processes that sustain aquatic, riparian, and associated upland functions and values. The preferred management for riparian corridors is one that maintains, or moves toward, the restoration of processes that regulate the environmental and ecological components of riparian areas. However, due to the high value that these areas have for many uses, evidence of human activity (developed recreation areas, roads and trails, dams and reservoirs, and pastoral areas) may be present.

The soils of riparian corridors have an organic layer (including litter, duff, and/or humus) of sufficient depth and composition to maintain the natural infiltration capacity, moisture regime, and productivity of the soil (recognizing that floods may periodically sweep some areas within the floodplain of soil and vegetation). Trees within the corridors are managed to provide sufficient amounts and sizes of woody debris to maintain habitat complexity and diversity for aquatic and riparian-associated wildlife species. Woody debris may be purposefully introduced to enhance aquatic and terrestrial habitat. In-stream woody debris includes 75 to 200 pieces per stream mile of which 7 to 20 pieces per mile are in a size class greater the 5 meters long and 55 centimeters in diameter.

The riparian corridor functions as a travel way for aquatic and terrestrial organisms. The corridor serves as a connector of habitats and various aquatic species, thus keeping populations genetically viable. Stream structures (such as bridges, culverts, and aquatic habitat improvement structures) may be evident in some streams and water bodies. With the exception of some dams, most structures do not decrease in-stream connectivity.

Suitable habitat is provided in riparian areas and, where applicable, in the associated uplands for riparian-associated flora and fauna, especially threatened, endangered, sensitive (TES), and locally rare species. Vegetation (dead and alive) reflects the potential natural diversity of plant communities with appropriate horizontal and vertical structure needed to provide the shade, food, shelter, and microclimate characteristics for aquatic and terrestrial species. Rehabilitation of past and future impacts (both natural and human-caused) may be necessary to protect resource values and facilitate recovery of riparian structure and functions.

Vegetative communities within the riparian corridor are productive and diverse providing for a rich variety of organisms and habitat types. The vegetative community within the riparian corridor is predominately forested.

The forest contains multiple canopy layers, which provide diverse habitat structure as well as thermal and protective cover for wildlife. Snags used by birds, bats, and other small animals are abundant. Dying and down trees are common, often in naturally occurring patches. Non-forest communities and open forest canopies (created by flooding, wind damage, wildland fire, insect infestation, disease, restoration, and vegetation management) may be seen.

These areas are suitable for timber management. Vegetation management activities take place to maintain, restore, and/or enhance the diversity and complexity of native vegetation; rehabilitate both natural and human-caused disturbances; provide habitat improvements for aquatic- and riparian- associated wildlife species (including migratory birds); provide for visitor safety; or accommodate appropriate recreational uses. Silvicultural treatments including timber and vegetation removal may occur within the riparian corridor. Prescribed fire can be used within the corridor to create or maintain the composition and vitality of fire-dependent vegetative communities (e.g., canebrakes).

The landscape character is naturally evolving or natural appearing, but occasional enclaves of a "rural" landscape character may occur with pastoral settings and recreation developments (such as a swim beach at a campground). Livestock grazing may occur. Where livestock grazing currently exists, efforts are taken to minimize impacts on stream banks, water quality, and other riparian resources through the use of Arkansas' BMPs and forest standards.

Both dispersed and developed recreation opportunities are present within these corridors. Although recreational areas and facilities may create long-term impacts on riparian corridors, allowances are made in this MA since a majority of recreation within the national forests occurs in or near water bodies. Hiking, dispersed camping, hunting, and fishing are typical activities available within the corridors. Visitors may encounter developed camping areas, boat launches, and fishing piers. Current recreation areas and facilities are managed to minimize impacts on stream banks, shorelines, and water quality. New recreation facilities are developed in accordance with Executive Orders 11988 and 11990 to minimize impacts on the riparian resource. Environmental education and interpretation about the aquatic component and riparian corridors may be provided to increase awareness of the value of riparian dependent resources.

Desired conditions for aquatic systems within the riparian corridor stream systems are dynamic in nature; that is, stream systems normally function within natural ranges of flow, sediment movement, temperature, and other variables. The geomorphic condition of some channels may reflect the process of long-term adjustment from historic watershed disturbances. The combination of geomorphic and hydrologic processes creates a diverse physical environment, which in turn fosters biological diversity. The physical integrity of aquatic systems, stream banks,

and substrate (including shorelines and other components of habitat) is intact and stable. Where channel shape is modified (e.g., road crossing), the modification preserves channel stability and function and is implemented in a manner that produces the least impact to the riparian corridor.

The range of in-stream flows is maintained to support channel function, aquatic biota and wildlife habitat, floodplain function, and aesthetic values. Water uses and other modifications of flow regimes are evaluated in accordance with the National Forest Service In-Stream Flow Strategy and site-specific analysis.

Water quality remains within a range that ensures survival, growth, reproduction, and migration of aquatic- and riparian-associated wildlife species. It contributes to the biological, physical, and chemical integrity of aquatic ecosystems. Water quality meets or exceeds state and federal standards. Water quality (e.g., water temperatures, sediment reduction, dissolved oxygen, and pH) is improved where necessary to benefit aquatic communities.

Floodplains properly function as retention storage areas for floodwaters, sources of organic matter to the water column, and habitat for aquatic- and riparian-dependent species. Modification of the floodplain is infrequent but may be undertaken to protect human life and property or to meet other appropriate management goals (e.g., restoration). There may be evidence of some roads, trails, and recreation developments. Some wetland habitats may show signs of restoration.

The biological integrity of aquatic communities is maintained, restored, or enhanced. Aquatic species distributions are maintained or are expanded into previously occupied habitat. The amount, distribution, and characteristics of aquatic habitats for all life stages are present to maintain populations of indigenous and desired non-native species. Habitat conditions contribute to the recovery of species under the Endangered Species Act. Species composition, distribution, and relative abundance of organisms in managed habitats are comparable to reference streams of the same region. However, the Arkansas Natural Resource Agency may stock some streams with non-native fish.

Relationship with Other Management Areas

Where riparian area functions and values are found to occur in areas allocated to other management areas through the previously mentioned methods, the direction for Riparian Corridors MA should take precedence. Any area that meets the riparian area definition on Page 2-71 is mapped and managed as Riparian Corridors MA (3.I). These areas are reallocated to Riparian Corridors MA (3.I) in subsequent LRMP amendments.

Streamside management zones (SMZs) are administrative areas surrounding surface water features designated to comply with Arkansas' BMPs and reduce the potential for sedimentation of aquatic habitats because of erosion from land management activities. Guidelines for SMZs may require designated areas that correspond to

riparian corridors. When these overlap, the management activities should be determined by the riparian prescription in conjunction with the protection objectives of the SMZs' designations.

Priorities

- Identify roads and trails that should be reconstructed or decommissioned to reduce sediment and improve watershed condition within corridors.
- Include erosion and sediment control measures in all ground-disturbing project plans.

Objectives

MAOBJ.12 Map acres of other land meeting riparian definitions to incorporate in MA 3.I. **Performance Indicator:** acres mapped annually.

MAOBJ.13 Treat up to 300 acres per decade to meet the habitat needs of riparian area species groups. **Performance Indicator:** Number of acres treated per decade.

Monitoring

Within the Riparian Corridors MA (3.I), monitor and evaluate:

- Number of acres harvested.

3.J Pastures and Large Wildlife Openings

Emphasis

This management area is allocated to approximately 7,072 acres across the Ozark-St Francis National Forests. This area is unsuitable for timber production. The objective is to provide permanent forage and cover for livestock and wildlife.

Desired Condition

The desired future condition for pastures is to provide optimal forage and cover for livestock and wildlife species. Pastures should be in a grass/forb condition with little woody encroachment. The desired condition for pastures is that soil productivity is maintained and optimum forage is provided. Where it is practical, native forage is favored over exotic improved pasture. The reduction of invasive species and those of poor forage quality is desirable.

The landscape character will range from natural appearing to pastoral/agricultural. Wildlife openings and fields will provide for non-motorized recreation opportunities. Improved pastures generally do not provide for recreation opportunities although they may provide scenic interest in the landscape. Human activities may be evident

in some places. Some methods to keep pastures open include the use of a prescribed fire interval of one to three years, grazing, bush hogging, and haying. These lands are classified as unsuitable for timber production.

3.K Wildlife Emphasis Area

Emphasis

This MA is allocated to approximately 15,712 acres on the Buffalo Ranger District of the Ozark National Forest adjacent to the Gene Rush Wildlife Management Area. This area is suitable for timber production.

This management area is established to provide optimal wildlife habitat to benefit both game and non-game wildlife species (e.g., elk, deer, turkey, quail, Neotropical migrant birds, and small mammals), and to enhance consumptive and non-consumptive recreational opportunities as they relate to these and other wildlife species that benefit from a mix of early- and late-successional habitat management.

In addition to providing for quality habitat for such mammals as deer and black bear, this MA would expand the range of the Arkansas' population of elk from adjoining Arkansas Game and Fish Commission lands (Gene Rush Wildlife Management Area) onto Ozark National Forest lands. This expansion is encouraged by managing for oak and pine woodlands, creating medium-sized openings and pastures, and providing additional water sources where needed.

Oak and pine woodlands are prescribed on appropriate sites through thinning and prescribed fire to maintain widely spaced trees. On north and east slopes with high site indices, appropriate forest prescriptions are used. These prescriptions are aimed at providing optimal habitats to support populations of the plant and animal species associated with these communities, and to provide a very high likelihood that all species within these habitats continue to persist on National Forest System lands.

Improved pastures and wildlife openings composed of native species and other non-invasive species are created and maintained to provide year-round forage and to reduce wildlife impacts on private lands. Travel corridors mostly made up of fire lines and roads are used to connect opening where appropriate.

Desired Condition

The area is dominated by grass and herbaceous understories with widely spaced large oaks or pines. Light reaching the forest floor is ample to support a widely diverse and abundant herbaceous component. Stand densities are reduced through repeated thinning to achieve the desired light levels, and repeated fires including growing season burns to control hardwood understories. Prescribed fire is used in the establishment phase until desired objectives are met. Regeneration will occur in this type by withholding fire for a number of years and allowing oak advanced regeneration to become established. A final removal of the overstory may or may not occur.

This oak community type is an oak overstory with herbaceous/shrub understory providing high species diversity. It is shaped primarily by the use of frequent fires and thinning with open areas occurring from natural events and constructed and maintained openings and pastures. Evidence of forest management activities (e.g., tree stumps, logging roads) may be seen as a result of thinnings. Pine forest community types may comprise a portion of this area and will receive the same treatments as the hardwood areas. Rare communities and associated species would continue to exist in the area including disturbance dependent communities requiring active management.

Improved pastures are constructed and maintained to provide year-round forage for wildlife. They will consist of cool and/or warm season grasses and a variety of forbs. Lime and fertilizer are used to improve vigor and nutrition in pastures. Ponds are constructed to provide water for wildlife. These treatments will provide improved habitat condition for a variety of wildlife including elk, bear, deer, turkey, rabbits and a variety of non-game species.

Habitat associations being emphasized include xeric oak associates, fire dependent species, and early-successional habitat associates. The conditions provided are suitable for elk, prairie warbler, quail, wild turkey, and whitetail deer. This will provide a high likelihood that species within these habitats will continue to persist on National Forest System lands.

Scattered within the Wildlife Emphasis MA are small vegetative communities more applicably managed with pine, oak, and mixed forest woodland types with high quality forest products prescriptions. Although wildlife management is the overriding theme of this management area, these other management prescriptions may be utilized.

The landscape character is open with a prairie-like ground cover with sparse overstory intermixed with openings, pastures, and ponds with closed canopy forest mainly on north and east slopes. Evidence of man's involvement is moderately evident. These areas will provide a variety of recreational opportunities, mostly non-motorized. The sights and sounds of human activities along main travel corridors is evident in many parts of these areas. Visitors are able to choose from a wide variety of non-motorized dispersed recreation opportunities such as hiking, mountain bike riding, horseback riding, rock climbing, enjoying nature study, hunting, and fishing.

Priorities

- Work with Arkansas Game and Fish Commission (AGFC) and other partners to provide elk habitat.

MONITORING

Monitoring and Evaluation

The concept of adaptive management is foundational for planning and forest plan implementation in a dynamic environment. Regulations require that forest plans be revised periodically [36 CFR 219.10(g)]. However, forest plans may need to be more dynamic to account for changed resource conditions (such as large storms or insect outbreaks), new information, new findings of science, and/or new regulations or policies. An effective monitoring and evaluation (M&E) program is essential for determining when these needs may exist and leading to quick resolution of a need for change. M&E provide information to determine whether programs and projects are meeting forest plan direction, and whether the cost anticipated to implement the forest plan coincides with actual costs. M&E is required by NFMA implementing regulations [36 CFR 219.12(k)] to determine whether requirements of the regulations and Forest Plan are being met.

M&E are separate, sequential activities. Monitoring involves collecting data by observation or measurement. Evaluation involves analyzing and interpreting monitoring data. The information gained from M&E is used to determine how well the desired conditions, priorities, objectives, and outcomes of the Forest Plan have been met. M&E keeps the Forest Plan up-to-date and responsive to changing conditions and issues. This process provides the feedback mechanism for adaptive management. The results are used to identify when changes are needed to either the Forest Plan itself or the way it is implemented.

Monitoring Strategy

Mandatory monitoring is included first in the monitoring summary tables (Appendix I) followed by specific forest plan monitoring. Forest Plan M&E measures accompany many plan components in Chapters 1 and 2. This includes actions, outcomes, or resources to monitor, the frequency of monitoring, and reporting timelines. Chapter 1 includes monitoring items for monitoring of desired conditions. Chapter 2 includes performance indicators to measure Forest Plan objectives, desired conditions, and monitoring for management areas. Chapter 3 includes Forest Plan standards.

Some monitoring requires a high degree of precision and reliability, usually within ten percent. Other monitoring may be moderate (within 30%) or low (within 50%). Most of the performance measures tied to objectives (Chapter 2 of the Plan) are derived from corporate databases (e.g., those that track timber sales, prescribed burning, and other vegetation management activities) that have a high level of precision and reliability. Initially, the precision and reliability of some of the monitoring data concerning the major forest communities listed in Chapter 1 of the Plan will not be optimal, due to the transition from a long-standing vegetation inventory protocol (Continuous Inventory of Stand Conditions or CISC) to a new one that incorporates these newly-recognized ecological communities.

Monitoring adherence to the design criteria (standards) in Chapter 3 includes many diverse activities such as contract compliance inspections, implementation monitoring reviews of selected projects, individual specialist reviews of project compliance with particular sets of standards, health and safety inspections (of buildings, bridges, etc), and interdisciplinary reviews of selected environmental assessments (EAs). Two or more of these means will monitor implementation of some standards. The primary means of reporting and evaluating compliance with design criteria will be the results of implementation monitoring reviews and individual specialist reviews. Both types of reviews will have moderate to high degrees of precision and reliability.

This Forest Plan does not specify particular protocols for each element of the monitoring program. Such protocols are well established for most monitoring elements; however, protocols are subject to change as new findings emerge, new technologies become available, and/or partnerships with other agencies and organizations produce improved methods or procedures for monitoring. Each specialist responsible for one or more monitoring elements maintains and, as needed, appropriately adjusts the monitoring protocol(s). Specific monitoring protocols are defined in the task sheets, which are detailed and specific. Monitoring elements and task sheets may be modified and prioritized to guide monitoring activities over the course of Forest Plan implementation.

An annual evaluation report that summarizes monitoring results and findings will be prepared and made available to the public. The emphasis of this report will be on those results of monitoring that indicate how well objectives have been met, how well standards have been followed, what progress is being made toward desired conditions, what expenditures have been made to implement the Forest Plan, and what changes to the Plan may be needed. This report will not present information every year about each monitoring element in the Forest Plan because some monitoring activities are not conducted every year, and others may not yield results that need to be reported annually. The comprehensive evaluation reports called for by the 2005 NFMA planning rule (36 CFR 219) will be prepared every five years.

The monitoring summary tables located in Appendix I show the relationships between Forest Plan priorities, objectives, standards, and desired conditions. The tables indicate the nature of monitoring elements and monitoring details. The monitoring summary tables are for information only and may be modified as needed to address changes in needs, priorities, availability of personnel, and funding.

Monitoring Framework

Many approaches to Forest Plan monitoring are currently being used throughout the Agency. However, each monitoring chapter must 1) meet the legal requirements of the planning regulations, 2) be consistent with corporate data standards and protocols, and 3) be developed by an interdisciplinary team that addresses the ecological, social, and economic dimensions of forest management in an integrated manner.

To meet these objectives, the Ozark-St. Francis National Forests monitoring framework has four components:

- Forest Plan (Chapters 1, 2, and 3) provides desired conditions, strategies, and design criteria (standards) that provide broad, strategic guidance.
- Monitoring and Evaluation Task Sheets that provide specific, technical guidance.
- An Annual Monitoring Schedule that outlines specific tasks for the current year.
- An Annual Monitoring Evaluation Review that provides a forum to review current year findings and identify specific modifications, if necessary.

These components are explained in Table 2-11.

Table 2-11: Explanation of Monitoring Framework.

Description of Forest Plan Monitoring Summary Tables (Appendix I)	Monitoring Task Sheets	Annual Monitoring Schedule	Annual Monitoring Evaluation Review
Broad and Strategic. Provide the monitoring requirements in the Forest Plan. Focus on what needs to be monitored. Provide Overall Monitoring Strategy (What will be monitored, Estimated time frames for reporting, and Precision and Reliability)	Focused and Technical. Describe how, where, and when to achieve the monitoring. Provide the specific methods, protocols and analytical procedures. Intended to be flexible/can be modified in response to new information, updated procedures, emerging issues, and budgetary factors without amending the Forest Plan.	Specific, Technical, and Prescriptive. Identifies precisely what will be monitored, where, when, and by whom for the current or upcoming year. (usually prepared by the Forest ID Team).	Specific, Technical, and Prescriptive. Forest ID Team will review the current year's monitoring and evaluation results at the end of each calendar year. Based on these findings, they will recommend to the Forest Leadership Team necessary changes (if any) to the Forest Plan, or Forest Service Manual or Handbook.

Information Management

There will be a tremendous amount of monitoring information collected over time. Information will be handled using the following criteria to ensure that information can be easily retrieved, shared with publics and/other stakeholders, or used by agency managers to make improved decision: (1) Management of the collection and storage of data (2) Evaluation and interpretation of data (3) Sharing of information internally and externally.

Manage the Collection and Storage of Data

The interdisciplinary team review will work with Forest Service employees and cooperators to see that data is collected using standard methods and is entered into the appropriate databases. Data will be designed and collected according to appropriate data standards and entered into corporate databases such as Automated Lands Program (ALP), Natural Resource Inventory System (NRIS), or Geographic Information System (GIS). The information can then be accessed and analyzed to generate products such as monitoring reports that would be available for internal and external review.

Evaluation and Interpretation of Data

Evaluation is the process of transforming data into information. It is a process of synthesis that brings together value, judgment, and reason with monitoring information to answer selected questions. Successful adaptive management depends on this information in moving the Forest toward desired conditions.

The Forests' ID team will review the current year's monitoring and evaluation results at the end of each calendar year. Based on these, findings they will recommend to the Forest Leadership Team necessary changes (if any) to the Forest Plan, Monitoring Guide, or Forest Service Manual or Handbook.

Sharing of Monitoring Information and Findings

Information gathered through monitoring will be summarized in various reports (most notably the annual Monitoring and Evaluation Report) and publication to share internally and externally with cooperating agencies and organizations, interest groups, policy makers, and the public.

Annual Monitoring and Evaluation Report

The annual M&E report provides an opportunity to track progress toward the implementation of the Revised Forest Plan decisions and the effectiveness of specific management practices. The focus of the evaluation is to provide short- and long-term guidance to ongoing management. The M&E report should include components such as:

- Forest accomplishments toward desired conditions and outputs of goods and services.
- Forest Plan Amendment Status.
- Status of other agency/institution cooperative monitoring.
- Summary of available information on MIS or comparable species.
- Summary of large scale or significant projects or programs.
- Update of research needs.
- Public participation/disclosure plan.

Monitoring Summary Table

The Monitoring Summary Table in Appendix I lists the major items to be monitored. The focal point for each monitoring item is the monitoring need. Each monitoring item comes from one or more monitoring needs (legal requirements, desired conditions or objectives. See Table I-1 for definitions.

SUITABLE AND UNSUITABLE LAND USES

As provided for in 36 CFR 219.4(a)(4), the national forests and grasslands are suitable for a variety of uses except when specific areas are determined not to be suitable. Table 2-12 shows where specific uses are "suitable" or "not suitable" on the OSFNFs. Suitable uses are subject to standards and other direction in the design criteria portion of the Plan.

Table 2-12: Suitable Uses on the Ozark-St. Francis National Forests.

Management Area	Timber Suitability	OHV Use	Motorized Trail Construction	Livestock Grazing	Mineral Leases
1.A Designated Wilderness	Not Suitable	Not Allowed	Not Allowed	Not Suitable	Withdrawn
1.B Wilderness Additions	Not Suitable	Not Allowed	Not Allowed	Not Suitable	Withdrawn
1.C Designated Wild and Scenic Rivers	When Justified	Not Allowed in Wild Sections Allowed in Rec. and Scenic-Designated Roads and Trails	Not Allowed in Wild Sections Allowed in Rec. and Scenic Sections	Suitable No New	Withdrawn from Wild Sections. CSU/NSO for Scenic Sections. CSU for Recreational Sections*
1.D Recommended Wild and Scenic Rivers (sections all scenic)	When Justified	Allowed-All sections are Scenic	Allowed-All sections are Scenic	Suitable No New	CSU/NSO for Scenic Sections
1.E Experimental Forests	When Justified	Designated Roads and Trails	Not Allowed	Not Suitable	Controlled Surface Use
1.F Research Natural Areas	Not Suitable	Not Allowed	Not Allowed	Not Suitable	No Surface Occupancy
1.G Special Interest Areas	When Justified	Designated Roads and Trails	Allowed When Justified in SIA Plans	Not Suitable	No Surface Occupancy
1.H Scenic Byway Corridors	Suitable	Designated Roads and Trails	Allowed	Suitable No New	Controlled Surface Use
2.A Ozark Highlands Trail	When Justified	Not Allowed	Not Allowed	Not Suitable	No Surface Occupancy

Table 2-12: Suitable Uses on the Ozark-St. Francis National Forests. (Continued)

Management Area	Timber Suitability	OHV Use	Motorized Trail Construction	Livestock Grazing	Mineral Leases
2.B State Parks	When Justified	Designated Roads and Trails	Subject to terms in Special Use permit	Not Suitable	No Surface Occupancy
2.C Developed Recreation Sites	When Justified	Allowed in Designated Areas	Allowed when in support of adjacent trail systems	Not Suitable	No Surface Occupancy
2.D Upper Buffalo Dispersed Recreation Area	Suitable	Not Allowed	Not Allowed	Suitable No New	Controlled Surface Use
2.E Wedington Unit Urban Recreation Area	Suitable	Not Allowed	Not Allowed	Suitable	Controlled Surface Use
2.F Indian Creek Dispersed Recreation Area	Suitable	Designated Roads and Trails	Allowed	Suitable No New	Controlled Surface Use
3.A Pine Woodland	Suitable	Designated Roads and Trails	Allowed	Suitable	Controlled Surface Use
3.B Oak Woodland	Suitable	Designated Roads and Trails	Allowed	Suitable	Controlled Surface Use
3.C Mixed Forest	Suitable	Designated Roads and Trails	Allowed	Suitable	Controlled Surface Use
3.D Oak Decline Restoration Areas	Suitable	Designated Roads and Trails	Allowed	Suitable	Controlled Surface Use
3.E High Quality Forest Products	Suitable	Designated Roads and Trails	Allowed	Suitable	Controlled Surface Use
3.F Old Growth Area	Suitable	Designated Roads and Trails	Allowed	Suitable No New	Controlled Surface Use
3.G Crowley's Ridge Upland Hardwood	Suitable	Not Allowed	Not Allowed	Suitable	Controlled Surface Use
3.H Mississippi River Bottomland Hardwood	Suitable	Not Allowed	Not Allowed	Suitable	Controlled Surface Use

Table 2-12: Suitable Uses on the Ozark-St. Francis National Forests. (Continued)

Management Area	Timber Suitability	OHV Use	Motorized Trail Construction	Livestock Grazing	Mineral Leases
3.I Riparian Corridors	Suitable	Designated Roads and Trails	When Justified	Suitable	Controlled Surface Use
3.J Pastures and Large Wildlife Openings	When Justified	Designated Roads and Trails	Allowed	Suitable	Controlled Surface Use
3.K Wildlife Emphasis Area	Suitable	Designated Roads and Trails	Allowed	Suitable	Controlled Surface Use

Note: "When Justified" is used to identify a management area that is neither "exclusively suitable" nor "exclusively not suitable." The suitable use designation is made at the project level and is subject to laws, regulations, plan direction, and standards.

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PART 3-DESIGN CRITERIA

This section is the third of the three parts of the land management plans for the Ozark-St. Francis National Forests. Part 3 contains the design criteria or standards. Design criteria are used in combination with the description of desired conditions, objectives, and lists of actions or activities to guide the management of the Ozark-St. Francis National Forests.

FOREST-WIDE (FW) STANDARDS

Vegetation Management

FW01 Water control structures necessary for the control of surface water movement from soil-disturbing activities will be constructed for temporary use roads, skid trails, and fire lines concurrent with construction operations.

FW02 Maximum even-aged or two-aged regeneration stand size will be limited to 80 acres for pine and 40 acres for hardwood. These acreage limits do not apply to areas treated as a result of natural catastrophic conditions such as fire, insect or disease attack, or windstorm. Areas managed as permanent openings (e.g., meadows, pastures, food plots, rights-of-way, and savannas) are not subject to these standards and are not included in calculations of opening size, even when within or adjacent to created openings.

FW03 Openings created by even-aged and two-aged regeneration treatments will be separated from each other by fully stocked stands of at least 10 acres in size with a minimum of 330 feet in width. A regeneration area will no longer be considered an opening when the certified reestablished stand has reached an age of five years.

FW04 Regeneration areas will be distributed so that no more than 30 percent of 1,000 acres is in the 0 to 20-year age class.

FW05 Use logging systems that meet silvicultural prescription objectives. Use cable-yarding systems on sustained grades above 35 percent. Limit excavated skid trails to protect other resource values. Separate skid trails by at least 200 feet unless drainage patterns prevent separation. Keep excavated skid trails below 30 percent grade.

FW06 When artificially regenerating pine, use genetically improved seedlings from selective breeding programs (when available).

FW07 In stands designated for pine management, use silvicultural treatments that allow a hardwood component up to 30 percent.

FW08 In stands designated for hardwood management, use silvicultural treatments that allow a conifer component up to 30 percent.

FW09 On hardwood stands where desired oak regeneration cannot be established naturally or artificially, pine planting will be appropriate to help reach stocking standards. Supplemental pine stocking in these stands will not exceed 30 percent of the total stocking.

FW10 Group selection method of cut may be used to encourage natural regeneration of oak species or to provide ample sunlight for planted oak seedlings. Group sizes will range from two to five acres.

FW11 Timber harvesting on lands suitable for timber production must be done under a regeneration harvesting method where adequate stocking of desirable trees is expected to occur within five years of final harvest cut. (Five years after final harvest means five years after clearcutting, five years after final overstory removal in shelterwood cutting, five years after the seed tree removal cut in seed tree cutting, or five years after selection cutting.) These standards apply to both artificial and natural means of stand regeneration. Where natural means are used and stand re-establishment has not been accomplished within three years after committing a stand to regeneration, the stand is re-examined for further treatment needs. Table 3-1 shows the adequate stocking levels following the third year.

Table 3-1: Adequate Stocking Levels Following the Third Year.

Site Index	Trees Per Acre			
	Lower Level	Target Level	Upper Level	Woodland
Pine				
50	150	500-700	900	75
60	200	500-700	900	75
70+	300	500-700	900	75
Hardwood				
All	150	250-350	500	75

Levels are guides to determine correct stocking for a given site. Acceptable stocking for hardwood stands is met by achieving stocking levels in the following species: oak, hickory, ash, cherry, walnut, and pine. Pine stocking is limited to 30 percent of the stand composition.

FW12 Any stand that meets Region 8 Old Growth Guidelines and is identified as existing old growth will be managed as old growth. These stands will be reallocated to the "Old Growth Area" (MA 3.F) in subsequent LRMP amendments. An analysis process will be developed to provide guidance for this reallocation and to help ensure that this allocation only applies up to 12 percent of OSFNFs' land base (138,000 acres).

FW13 Stands will not be regenerated before the culmination of their mean annual increments (CMAI).

FW14 Clearcutting is limited to areas where it is essential to meet forest plan objectives and involve one or more of the following circumstances:

- To establish, enhance, or maintain habitat for threatened, endangered, or sensitive species.
- To enhance wildlife habitat or water yield values, or to provide for recreation, scenic vistas, utility lines, road corridors, facility sites, reservoirs, or similar development.
- To rehabilitate lands adversely impacted by events such as fires, windstorms, or insect or disease infestations.
- To preclude or minimize the occurrence from adverse impacts of insect or disease infestations, windthrow, logging damage, or other factors affecting forest health.
- To provide for the establishment and growth of desired trees or other vegetative species that are shade intolerant.
- To rehabilitate stands poorly stocked due to past management practices or natural events.
- To meet research needs.

RARE COMMUNITIES

FW15 As they are discovered, catalog, inventory, and classify wild caves according to the Cave Resources Protection Act (CRPA) guidelines and determine significance using established protocols. Management direction of cave resources will be made following the CRPA guidelines and will allow for input from interested outside agencies and the public. Known or suspected threatened or endangered species occupancy and/or use is adequate to define a cave or mine as significant.

FW16 Districts will be responsible for maintaining inventory records for caves on their district. Districts that permit wild cave use will maintain permit records to be used to document visitor use and aid in the safety of permitted cave users. Master copies of inventory and permit records will be kept at the Supervisor's Office.

FW17 Manage cave significance and public use on the basis of the Cave Resources Protection Act (CRPA) guidelines as either:

- Permitted open with year-round use.
- Permitted seasonally.
- Open with interpretation.
- Closed year-round.

FW18 Mature forest cover is maintained within 100 feet slope distance from the top of bluffs and 200 feet slope distance from the base to provide wildlife habitat associated with unique landform. Within this zone, activities are limited to those needed to ensure public safety or to maintain and improve habitat for federally listed species or other species whose viability is at risk.

INTEGRATED PEST MANAGEMENT

FW19 Aquatic pesticides for use as a sampling tool or for removal of exotic species will be permitted in OSFNFs' lakes and ponds except for areas used as public or domestic water sources.

FW20 Herbicides and application methods are chosen to minimize risk to human and wildlife health and the environment. Diesel oil 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 a carrier for herbicides when available and compatible with the application proposed.

FW21 Herbicides are 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. If the rate or exposure time being evaluated causes the Margin of Safety or the Hazard Quotient computed for a proposed treatment to fail to achieve the current Forest Service Region 8 standard for acceptability (acceptability requires a MOS > 100 or, using the SERA Risk Assessments found on the Forest Service website, a HQ of < 1.0), additional risk management must be undertaken to reduce unacceptable risks to acceptable levels or an alternative method of treatment must be used.

FW22 Fuelwood sales will not be made for a minimum of 30 days after treatment in areas where pesticide treatments have been made. Should injection of trees be done, effected trees will not be sold as fuelwood.

FW23 Weather is monitored and the project is suspended if temperature, humidity, and/or wind do not meet the criteria shown in Table 3-2.

Table 3-2: Necessary Criteria for Herbicide Application.

Application Techniques	Temperatures Higher Than	Humidity Less Than	Wind (at Target) Greater Than
Ground			
Hand (cut surface)	NA	NA	NA
Hand (other)	98°	20%	15 mph
Mechanical (liquid)	95°	30%	10 mph
Mechanical (granular)	NA	NA	10 mph

FW24 Each Contracting Officer's Representative (COR), who must ensure compliance on contracted herbicide projects, is a certified pesticide applicator.

FW25 A certified pesticide applicator supervises each Forest Service application crew and trains crew members in personal safety, proper handling in application of herbicides, and proper disposal of empty containers.

FW26 With the exception of treatment by permittees of right-of-way corridors that are continuous into or out of private lands and through Forest Service managed areas, no herbicide is broadcast within 100 feet of private land or 300 feet of a private residence unless the landowner agrees to closer treatment. Buffers are clearly marked before treatment so applicators can easily see and avoid them.

FW27 No soil-active herbicide is ground 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 area. However, chemical side pruning is allowed in this buffer if necessary, but movement of herbicide to the root systems of non-target plants must be avoided. Buffers are clearly marked before treatment so applicators can easily see and avoid them.

FW28 No herbicide is ground broadcast within 60 feet of any known threatened, endangered, proposed, or sensitive species except for endangered bats. Selective applications may be done closer than 60 feet, but only when supported by a site-specific analysis. Selective herbicide treatments using a non-soil active herbicide may be used closer than 60 feet to protect TES plants from encroachment by invasive plants.

FW29 Application equipment, empty herbicide containers, clothes worn during treatment, and skin are not cleaned in open water or wells. Mixing and cleaning water must come from a public water supply and be transported in separate labeled containers.

FW30 Herbicide mixing, loading, or cleaning areas in the field are not located within 300 feet of private lands, open water or wells, or other sensitive areas.

FW31 Pine straw or any other mulching material will not be sold (as mulch or for any other purpose) from areas treated with clopyralid.

FW32 Herbicide will not be used within the appropriate SMZs or within 300 feet of any public or domestic water intake. Selective treatments may occur within SMZs only when a site-specific analysis of actions to prevent significant environmental damage such as noxious weed infestations supports a "Finding of No Significant Impact" (FONSI), and then using only herbicides labeled for both terrestrial and aquatic use within these areas.

Fish and Wildlife

FW33 Maintain the following average standing dead, existing, and potential hollow den and loose bark trees per acre forest wide:

- Primary and Secondary Indiana Bat Zones – 9 snags per acre
- All other areas:
  - 2 snags per acre greater than 12" dbh; plus
  - 4 snags per acre

  Total 6 snags per acre

Unless necessary for insect/disease control or to provide for public safety, standing dead and den trees will not be cut during salvage operations.

Snags will be left from the largest size classes and maybe clumped.

FW34 In the absence of glades, sufficient woodland condition, closed day-lighted roads, utility corridors, or non-fescue openings on adjacent private lands, establish at least four well-distributed 1- to 5-acre openings per square mile. When establishing openings, use non-invasive improved or native forage species.

FW35 Provide up to four permanent water sources per square mile in upland sites.

FW36 Provide nest structures where suitable natural cavities do not occur and when needed to accomplish wildlife objectives.

FW37 Wildlife water holes (ponds) less than one-half surface acre will be managed for native amphibian habitat and not stocked with fish.

FW38 All new permanent culverts and stream crossings structures on streams and rivers will be designed to allow for aquatic community species passage at base flows.

FW39 Add large woody debris (LWD) to streams and rivers where natural levels are inadequate, except in wilderness areas.

FW40 Manipulate lake levels, manage fertility levels, and control aquatic vegetation to improve fish habitat in coordination with recreation, soil, and water management goals.

FW41 Install fish cover structures in lakes and ponds where natural cover is inadequate.

THREATENED, ENDANGERED, AND SENSITIVE SPECIES

FW42 Karst features will be recognized and documented when they are found to occur across the landscape; these features include caves, springs, sinkholes, and losing streams.

FW43 Karst management zones (KMZs) will be applied in a manner similar to that of streamside management zones (SMZs). Where karst features are identified, the boundaries of the KMZs will be delineated according to significance of karst features or potential risks. For karst features that are of significance or where the potential risks to water resources are great, a KMZ of 100 feet will be applied. For karst features that are less significant or where minimal potential risks to water resources exist, a KMZ of 50 feet will be applied. Karst management zones are mitigation measures primarily for the protection and conservation of groundwater resources and cave dependent species. These buffer designations are minimums and can be increased as necessary to provide appropriate mitigation measures as deemed necessary. Activities prohibited within these areas include:

- Use of motorized wheeled or tracked equipment (except on existing roads and trails).
- Mechanical site preparation.
- Recreational site construction.
- Tractor constructed fire lines for prescribed fire.
- Herbicide application.
- Construction of new roads, skid trails, and log landings.
- Slash disposal.

FW44 Management activities within KMZs will be planned to use practices that result in minimal surface disturbance; this will be measured as less than five percent soil disturbance over the entire KMZ within the project area

FW45 Within KMZs, there will be no mechanical entry during management activities; low impact vegetation management is appropriate.

FW46 Exceptions to established KMZ guidelines can be made through site specific analysis and consultation with the US Fish & Wildlife Service (USFWS).

FW47 Optimal overstory density within the primary zone around Indiana bat hibernacula is a range of 60 to 80 percent canopy closure. Use timber harvest, non-commercial thinning, and prescribed fire to regulate and maintain this optimal density.

During normal order of entry for compartments within Indiana bat primary conservation zones, do landscape scale analysis of existing forest stand conditions. This analysis should be used to determine commercial and non-commercial treatments needed to shift percent canopy closure toward the optimal overstory density. The long-term goal of treatments is to adjust

canopy closure so that 80 to 90 percent of the primary conservation zone is within the 60 to 80 percent canopy closure range. This will not be fully accomplished during this planning period. Annually report canopy cover adjustments accomplished with commercial and non-commercial treatments within Indiana bat conservation zones to the Arkansas Field Office , USFWS.

When designating trees to be cut to regulate overstory density, two approaches are recommended for equating canopy density to target leave basal area. A simple rule of thumb is to use site index plus 10 as the target leave basal area. Another option is the use of canopy density/basal area conversion charts defined by tree diameter classes.

FW48 Optimal overstory density within the secondary zone around Indiana bat hibernacula is a range of 50 to 70 percent canopy closure. Use timber harvest, non-commercial thinning, and prescribed fire as needed to regulate and maintain this optimal density.

During normal order of entry for compartments within Indiana bat secondary conservation zones, do landscape scale analysis of existing forest stand conditions. This analysis should be used to determine commercial and non-commercial treatments needed to shift percent canopy closure toward the optimal overstory density. The long-term goal of treatments is to adjust canopy closure so that 80 to 90 percent of the primary conservation zone is within the 50 to 70 percent canopy closure range. This will not be fully accomplished during this planning period. Annually report canopy cover adjustments accomplished with commercial and non-commercial treatments within Indiana bat conservation zones to the Arkansas Field Office, USFWS.

When designating trees to be cut to regulate overstory density, two approaches are recommended for equating canopy density to target leave basal area. A simple rule of thumb is to use site index minus 10 as the target leave basal area. Another option is the use of canopy density/basal area conversion charts defined by tree diameter classes.

FW49 For projects inside ABB (American burying beetle) areas where major ground disturbing activities will occur, the Forests will utilize currently accepted protocols and use bait-away or trap and relocate methods to move or draw beetles away for those sites.

FW50 A 1,500-foot radius protection zone will be established around any bald eagle nest or communal roost site found on the Forests. Within this protection zone, vegetation management that would affect the forest canopy, or other activities that may disturb eagles, will be prohibited during periods of eagle use.

FW51 Prescribed burn plans will identify, as smoke sensitive targets, areas where active eagle nests with eggs or chicks are present. Mitigation will be done to avoid putting heavy accumulations of smoke into those areas. Prescribed burns should not be planned closer than 1,500 feet from active nest sites during nesting season.

FW52 Prescribed burn plans for areas containing caves or for areas near significant caves or mines will identify these sites as smoke sensitive targets. The prescribed burn plans will be written to avoid active combustion and smoldering phase smoke from entering these sites when bats are present.

FW53 No commercial timber harvest may be used in KMZs up to 200 feet from cave entrances except for habitat protection or enhancement for threatened and endangered species.

FW54 Prohibit camping and campfires within 200 feet from the entrance to caves, mines, and rock shelters used by TES species.

FW55 Close or restrict access to caves where disturbance or vandalism of critical resources may occur.

FW56 Sensitive species site records and databases that include the Arkansas Natural Heritage Commission database will be maintained and updated periodically. This information along with other information sources will be used to determine future management decisions.

FW57 Identify caves or abandoned mines that contain significant populations of TES species as smoke-sensitive targets.

FW58 If significant bat roosting is found, these structures will be maintained or alternative roosts suitable for the species and colony size will be provided prior to adverse modification or destruction.

FW59 Do not issue permits for the collection of TES species except for approved scientific purposes. Permits are also required from U.S. Fish and Wildlife Service and Arkansas Game and Fish Commission.

FW60 The use of caves for disposal sites or the alteration of cave entrances is prohibited except for the construction of cave gates or similar structures to ensure closure.

FW61 Before old buildings, wells, cisterns, and other man-made structures are structurally modified or demolished, they will be surveyed for bats. If significant bat roosting is found (TES species), these structures will be maintained or alternative roosts suitable for the species and colony size will be provided prior to adverse modification or destruction.

FW62 Watershed boundaries and recognizable landmarks such as roads, streams, and bluff lines are used to identify primary and secondary conservation zones that extend out 0.25 (1/4) mile and 5 miles, respectively, surrounding Indiana bat hibernacula.

FW63 All known Indiana bat hibernacula should be evaluated for gates. If additional hibernacula are found, the caves should be evaluated for gating to protect Indiana bats during the critical hibernation period.

FW64 Project specific informal consultation will be done for all activities proposed within primary conservation zones. No disturbance that will result in the potential taking of an Indiana bat will occur.

FW65 In the primary conservation zone for the Indiana bat, the following new improvements and treatments are not permitted: permanent road construction, trails, grazing or hay allotments, wildlife openings, special uses, and integrated pest management using biological or species-specific controls. Other activities that create permanent openings are prohibited within the primary conservation zone.

FW66 Tree cutting and prescribed fires are prohibited in primary and secondary Indiana bat zones between May 1 and November 30. Adjustments to these dates may be made on a project-specific basis through coordination with the Arkansas Field Office, USFWS. Site-specific inventories are good for two calendar years from the date of survey completion.

FW67 Tree cutting and salvage operations can occur between December 1 and March 15 without a site-specific inventory. Additional coordination with USFWS is not required.

FW68 In the secondary zone buffer around Indiana bat hibernacula, a minimum of 60 percent of all forested acreage is maintained in nine inch or greater size classes. Of this total, about 40 percent will be trees in a mature condition. The 0 to 10 age class does not exceed 10 percent of the forested acreage of the secondary buffer at any time.

FW69 In the secondary zone buffer around Indiana bat hibernacula, live trees or snags, buildings, and other structures known to have been used as roosts by Indiana bats are protected from cutting and/or modification until they are no longer suitable as roost trees, unless their cutting or modification is needed to protect public or employee safety. Where roost tree cutting or modification is deemed necessary, it occurs only after consultation with the USFWS.

FW70 Shagbark hickory, because of its high value as roost/maternity sites, should receive special attention during sale layout and cultural treatments. In areas where shagbark hickory is uncommon, retain all shagbark hickory over six inches dbh (6" dbh) except those that are immediate hazards. If multiple 6-inch or greater stems are encountered, which are competing for moisture,

nutrients, and growing space, thin to retain the largest shagbark trees with potential for crown development and longevity. Where shagbark hickory is common within the treatment stand and the surrounding landscape, retain the largest individual shagbark stems in the treatment stand as part of the 20 basal area (overstory) and allow smaller stems, which might be in excess of six inches dbh (6" dbh) to be removed during regeneration treatments.

FW71 A 200-foot buffer of undisturbed forest will be maintained around gray bat maternity and hibernation colony sites, Ozark big-eared bat maternity sites, bachelor sites, or winter colony sites. Prohibited activities within this buffer include cutting of overstory vegetation; construction of roads, trails, or wildlife openings or development of pastures; and prescribed burning. Exceptions may be made where coordination with USFWS determines these activities to be compatible with recovery of these species.

Soil, Water, and Air

FW72 Promote and implement current Best Management Practices (BMPs) for forestry as recommended by the Arkansas Forestry Commission to all management activities in order to control non-point source pollution and comply with state water quality standards.

FW73 Concurrent with temporary road construction, install silt barriers at the base of the cut and fill slopes within 50 feet of a stream course.

FW74 At stream crossings, seed and mulch cut and fill slopes within 50 feet slope distance within 5 days after construction of temporary roads.

FW75 Apply gravel at temporary road crossings for 35 feet on both sides of the stream channel, when the risk of soil erosion is present and where the crossing substrate requires hardening.

FW76 On temporary roads, apply gravel on steep grades exceeding 10 percent slope.

FW77 Reestablish native cane species along streams and rivers during native grass restoration activities.

FW78 Soil disturbances within SMZs will be treated with erosion control measures within five days.

FW79 Use only native or non-persistent nonnative species when seeding temporary openings from soil disturbing activities.

FW80 No mechanical site preparation (excluding mulching) is done on sustained slopes over 35 percent or on slopes over 20 percent when soil erosion hazard is classified as "severe."

FW81 Streamside management zones (SMZs) will be identified and designated during the appropriate stages of project planning for all defined channels, perennial streams, and springs. Minimum SMZs will be as described in Table 3-3 based on the percent of the adjacent slope:

Table 3-3: Minimum Streamside Management Zones.

Stream Type	Slope Adjacent to the Channel		
	0-15%	16-35%	36%+
Description	Horizontal Distance from Both Sides of Stream Bank or Lake/Pond		
Perennial & Springs	100'	125'	150'
Defined Channels	50'	75'	100'

- Vegetation within 20 feet of the bank of a perennial stream and 5 feet of a defined channel will not be removed.
- Retain at least 50 square feet per acre of basal area within the SMZs when available.
- No mechanical site preparation is allowed within the SMZs.
- Within SMZs, only non-motorized trails are allowed. Motorized trails are prohibited except at designated crossings or where the trail location requires some encroachment for safety.
- No more than five percent of the mineral soil within the SMZs will be exposed during ground disturbing activities.
- Exceptions to SMZ standards are only allowed after site-specific determinations and with consultation/approval by the appropriate Staff Officer.

FW82 To limit soil compaction, no mechanical equipment is used on plastic soils when the water table is within 12 inches of the surface or when soil moisture exceeds the plastic limit. Soil moisture exceeds the plastic limit if the soil can be rolled to pencil size without breaking or crumbling.

FW83 Mechanical equipment for site preparation is operated so that furrows and soil indentations are aligned perpendicular to the contour.

FW84 Windrows and piles are spaced no more than 200 feet apart to limit soil exposure, soil compaction, and nutrient loss from piling and raking. When piling, brush rakes must be used and will not expose more than 15 percent of the mineral soil. Windrows are aligned on the contour.

FW85 On all soils dedicated to growing vegetation, the organic layers, topsoil, and root mat will be left intact over at least 85 percent of an activity area.

FW86 Removal of natural debris from streams will only be allowed where it poses a significant risk to public safety or threatens private property or Forest Service infrastructure.

FW87 Within the SMZs, cross only at designated crossings identified during planned activities. Cross at a 90-degree angle and utilize temporary structures to maintain bank stability.

FW88 When temporary culverts or other approved structures are used, they must be removed upon completion of the activity. Streamside management zones disturbances will be restored to a stable, natural condition.

FW89 Design, locate, and construct new system roads or other improvements to avoid floodplains and riparian areas in order to minimize impacts on water quality, flood flows, and riparian habitat.

FW90 Soil and debris will not be deposited in wetlands, springs, or seeps.

FW91 Any area that meets the riparian area definition (Page 2-71) will be managed as Riparian Corridors MA (3.I). These stands will be mapped and reallocated to Riparian Corridors MA (3.I) in subsequent LRMP amendments.

FW92 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 Area (Upper Buffalo Wilderness).

FW93 Prescribed burning will 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.

FW94 Conduct all National Forest management activities 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 the State Implementation Plan.

Lands and Special Uses

FW95 New, reconstructed, or replaced communication towers will be self-supporting (no guy wires) and will be designed to mitigate collision impacts to migratory birds excluding maintenance activities.

FW96 Height of new towers will be less than 200 feet above the natural ground level. When authorized towers are reconstructed or replaced, the replacement tower will be less than 200 feet above the natural ground level. The Forest Supervisor may grant an exception to the height limitation, if the lease proponent/holder is able to show good sound technical reasoning for requesting a taller tower.

FW97 New communications equipment will be co-located on existing towers or other structures, where possible. Any new or replacement towers will be constructed to accommodate co-location from other communication providers.

FW98 When towers are decommissioned from use, the last remaining communication tower owner shall be responsible for dismantling and removing all traces of the equipment from the leased site and the site will be restored to original or better condition.

FW99 National Forest land will be disposed in accordance with manual direction. A site-specific analysis will be conducted for each proposal. It must clearly show that the proposal meets the laws and regulations governing conveyances, and that it is clearly in the public's best interest to complete this proposal.

FW100 Land exchanges will clearly benefit the American public. Lands offered to the FS must be evaluated by a qualified silviculturist to determine potential cost to the FS for revegetation to desirable species. These costs will help guide the FS in the decision to make an exchange.

Recreation

FW101 All dispersed and developed recreation management activities will be managed according to Recreation Opportunity Spectrum (ROS) classifications found in Appendix G.

FW102 Rehabilitate, relocate, or close sites or trails when vegetation loss or excessive soil compaction occurs to prevent sedimentation and loss of water quality.

FW103 All areas of the Ozark-St. Francis National Forests except designated open roads (subject to applicable State laws) and trails are closed to OHV use in order to minimize disturbance, environmental damage, and other user conflicts.

FW104 Vegetation along trails is treated to maintenance levels identified in the publication "Trails South." Priority is given to correcting unsafe conditions, preventing resource damage, and providing for intended recreation experience level.

Scenery Management

FW105 Projects will be designed to meet the assigned scenic integrity objectives (SIO) as defined in Appendix G.

FW106 Resource management activities will be conducted in a manner that promotes 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 under consultation with and approval of the Forest Landscape Architect or the Forest Supervisor.

FW107 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 high or very high SIOs.

FW108 Where possible, locate log decks and borrow areas out of sight of roads and trails in areas that have high or very high SIOs.

FW109 In the foreground of scenic roads and trails, prescribed burns will meet SIO criteria. (See Treatment Guide)

FW110 In very high or high SIO areas, a landscape architect will be involved in the site selection process and development of plans and specifications for projects. In medium SIO areas, project planning will be coordinated with a landscape architect. In low SIO areas, as long as the objective for the area is met, projects may proceed without the involvement of a landscape architect

FW111 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 opportunities for blackberry vines and other vegetation that impede non-motorized travel to flourish.

FW112 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 should be minimized and crossings should 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.

FW113 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 opportunities for blackberry vines and other vegetation that impede non-motorized travel to flourish.

HERITAGE RESOURCES

FW114 Close access to caves where there are sites listed on the National Register of Historic Places.

FW115 Coordinate management direction with the State Historic Preservation Office, federally recognized tribes, and other appropriate state and federal agencies pursuant to Programmatic Agreement.

Facilities

FW116 Prohibit common variety and mineral exploration and development. Evaluate sites on lands reserved from the Public Domain for withdrawal from mineral entry and leasing.

FW117 Fuels treatment is allowed through prescribed burning or mechanized means while meeting well-defined risk mitigation objectives.

Transportation and Public Access

FW118 Close or obliterate all temporary roads.

FW119 Temporary roads should have a grade which does not exceed 20 percent for lengths more than 200 feet.

FW120 Erosion control will be applied to all newly disturbed road cut and fill embankments before closing roads with native-bed surfaces that exceed a 10 percent grade.

FW121 All recreation trails, system roads, and associated improvements in project areas will be kept free of logs, slash, and debris. Any road, trail, ditch, or other improvement damaged by operations will be promptly repaired.

Minerals

FW122 Mineral operations will be planned and conducted in a manner to reasonably reduce the visibility of the operation as specified in the operating plans.

FW123 Mechanized and other mining 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 Forests 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.

FW124 The operator of an active mining operation approved by the Responsible Official must have a USDI Mine Safety and Health Administration Mine ID Number on file with the Responsible Official.

FW125 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.

FW126 Reclamation on any mining related site will commence within 30 days after impacts on any part of the site are completed including completion of 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.

FW127 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 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 management area.

FW128 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.

FW129 Locate, design, and maintain trails, roads, other facilities, and management activities to avoid, minimize, or mitigate potential geologic hazards.

FW130 Require reclamation bonds for all proposed mineral activities that will potentially cause significant surface disturbance and require rehabilitation. The Bureau of Land Management (BLM) usually holds energy leasable minerals bonds (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 or reclamation. Existing bonds will be reviewed for adequacy annually.

FW131 Access to mining claims will be authorized where necessary for mineral development.

FW132 The operator will pay at appraised rates for merchantable timber that is cut, removed, or damaged during mining or drilling operations. Timber slash should be lopped and scattered or otherwise disposed of by the mine or drill operator to reduce fire hazards.

FW133 Drilling surface disturbances or mines will be in-sloped for water control. Mine pits and trenches will be constructed to self-drain, and/or mechanical methods of draining water will funnel water through water impoundment or otherwise dispose of in an appropriate manner as directed by the District Ranger. Mud pits used in drilling operations must be lined and constructed in a manner that fully contains all fluids and materials throughout the course of the operations.

FW134 No explosives, blasting caps, or hazardous materials can be stored on the Forests without appropriate plans and approvals from the Responsible Official. Set explosive charges cannot be left unattended on the Forests. The Responsible Official must approve in writing before an unexploded charge can be left overnight.

FW135 Soil disturbed from mining and drilling activities will be stockpiled and protected for final reclamation.

FW136 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.

FW137 Mineral operations will comply with environmental protection standards from the following sources: Forest Plan standards for the management prescription where the operations will occur; lease terms and conditions; federal Onshore Oil and Gas Orders; Oil and Gas Resources regulations (36 CFR228 E); Conditions of Approval in Applications for Permits to Drill; and Federal and State requirements and regulations promulgated to establish performance standards for protecting soil, water, riparian, and aquatic resources and for reclamation of areas affected by oil and gas activities.

FW138 Require special use or road use permits for off-lease use.

FW139 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%) 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 on-site wildlife pond or other beneficial uses).

FW140 Mining or drilling operations proposed to take place on 35 percent or greater slopes must be able to be conducted in a manner that will not degrade long-term soil productivity and watershed condition, and can have no off-site soil loss. Slope and spoils 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.

FW141 Allow groups, organizations, and agencies to remove mineral specimens for educational and scientific purposes in accordance with appropriate review and as approved by the Responsible Official.

FW142 Hand collecting of exposed surface mineral specimens for personal purposes is allowed on the Ozark-St. Francis National Forests provided only hand and/or small trowel is used.

FW143 Drilling operations will not be allowed in karst KMZs.

FW144 Any mineral operations undertaken on National Forest land where minerals have been reserved or are outstanding will comply with the Secretary's rules and regulations (reserved) or will be administered in strict compliance with the terms of the severance deed (outstanding), and will comply with applicable state and federal laws

Range

FW145 No new woodland allotments will be considered.

FW146 Existing permitted woodland allotments will be phased out as permit holders terminate, or if range condition dictates.

FW147 Provide structural and non-structural improvements that meet overall management goals and objectives to obtain even livestock distribution and proper forage utilization throughout grazing allotments.

FW148 When seeding to establish or maintain range forage in pastures and openings, use native or non-invasive non-native species, which are beneficial to wildlife to the extent practicable and where soil conditions are favorable. Intentional establishment of invasive non-native plant species is prohibited. Prohibited species are defined by the Regional Forester's invasive species list.

Fire Management

FW149 The Fire Management Plan (FMP) will guide and formally document the Fire Management Program for the Ozark-St. Francis National Forests. The FMP will provide comprehensive guidelines for both the suppression and prescribed fire programs in relation to other management activities and resource objectives.

FW150 All prescribed burning will be fully coordinated with all resources and documented in Silvicultural Prescriptions signed by a certified Silviculturist and approved by the District Ranger.

FW151 Do not burn through planted plantations less than three years old.

FW152 Except when firefighter safety and/or life and human property are compromised, fire line construction within 20 feet of a perennial stream and five feet of a defined channel will be done using hand tools.

FW153 Herbicide treatment areas will not be prescribed burned for at least 30 days after application.

FW154 Prescribed fire in areas managed for timber commodity value will consider potential impacts to crop trees.

FW155 In any prescribed burning, the duff layer will remain present on 80 percent of the burn area.

FW156 Appropriate erosion control strategies will be applied to fire lines in order to minimize soil erosion.

FW157 The use of aerial fire retardant on the north face of Mt. Magazine is prohibited to protect endangered species except when firefighter or public safety is threatened.

FW158 In talus sites on the north face of Mt. Magazine, fire line needed for the control of prescribed burning or fire suppression activities will be constructed by hand and will be done with input from the district or forest wildlife biologist.

FW159 Prescribed burning on the north face of Mt. Magazine can be done only between December 1 and April 15.

FW160 If necessary to cross a stream with a fire line, the crossings will be as close to right angles as possible and be stabilized as soon after the fire is controlled as possible.

FW161 The full range of wildland suppression tactics (from immediate suppression to monitoring) may be used consistent with Forest and resource management objectives and direction.

FW162 The response to unplanned, natural ignitions may include fire use, which is managing the ignition to accomplish specific resource management objectives in predefined areas as outline in the Fire Management Plan.

MANAGEMENT AREA STANDARDS

1.A Designated Wilderness

Standards

MA1.A-1 Current wilderness implementation plans will be reviewed, updated, and incorporated into the Forest Plan by amendment within the first five years of the planning cycle.

MA1.A-2 The scenic integrity objective (SIO) is very high.

MA1.A-3 Wildlife openings and structural habitat improvements for fish and wildlife are not allowed.

MA1.A-4 Allow fish stocking only to reestablish or maintain native species.

MA1.A-5 No new utility corridors or communication sites will be authorized in these areas.

MA1.A-6 Forest insect and disease outbreaks are controlled only if necessary to prevent unacceptable damage to resources on adjacent land, prevent an unnatural loss to the wilderness resource due to exotic plant and animal pests, or protect threatened, endangered, and sensitive species.

MA1.A-7 No permits for commercial use of any forest products will be issued.

MA1.A-8 Helicopters, air tankers, other aircraft, and hand-held motorized devices for wildfire management require Forest Supervisor approval. Tractor-plow units or bulldozers require Regional Forester approval.

MA1.A-9 Following a catastrophic natural occurrence, chainsaw use to reopen trails is permitted with Regional Forester approval.

MA1.A-10 Commercial and organized group size is limited to 12 (includes people and animals).

MA1.A-11 No new permits for special uses except for research and commercial outfitter-guide operations will be issued.

MA1.A-12 Subject to valid existing rights or leases, road construction is prohibited.

MA1.A-13 Prescribed fire is not allowed in wilderness areas.

MA1.A-14 Monitoring instrumentation is designed to be unnoticeable to wilderness visitors. Use Minimum Impact Suppression Technique (MIST) for wildfire suppression and related activities.

MA1.A-15 With the exception of fire lines, only allow rehabilitation of a burned area if necessary to prevent an unnatural loss of wilderness resources or to protect resources outside the wilderness. Re-vegetate with plant species native to the wilderness area.

MA1.A-16 Construction of trails will only occur when necessary to protect wilderness values. East Fork's established trail system will be maintained to minimum standards using hand tools and native materials.

MA1.A-17 Trail bridges are constructed, re-constructed, and maintained using only native materials and primitive skills.

MA1.A-18 Any trail markings or signs will follow wilderness trail guidelines. When reprinted, forest wilderness maps will show designated trails.

MA1.A-19 Public motorized or mechanical access is prohibited except where valid rights exist.

MA1.A-20 Forest Supervisor approval is required for administrative use of motorized vehicles for transport of equipment for emergencies involving inescapable urgency such as (a) fire suppression, (b) health and safety, (c) law enforcement involving serious crimes or fugitive pursuit, (d) removal of deceased persons, and (e) aircraft accident investigation.

MA1.A-21 Subject to valid existing rights, the federal minerals in lands designated under the Wilderness Act of September 3, 1964, are withdrawn from all forms of disposition under the mining and leasing laws and regulations. Mineral material authorizations will not be allowed.

MA1.A-22 These areas are closed to OHV use.

1.B Recommended Wilderness Additions

Standards for 1.A apply in their entirely.

1.C Designated Wild and Scenic Rivers

Standards

MA1.C-1 Any project proposals which could affect a Wild and Scenic River will be evaluated against the appropriate river's management plan to ensure that the proposal does not conflict with characteristics or classification that qualified the river for inclusion in the Wild and Scenic River System.

MA1.C-2 No management activities will be proposed that may compromise the outstandingly remarkable value(s), potential classification, or free-flowing character until designated or released from consideration.

MA1.C-3 A management plan is completed and followed for all Wild and Scenic Rivers.

WILD SECTIONS

Standards

MA1.C-4 Issue no grazing permits.

MA1.C-5 Management will provide semi-primitive, non-motorized recreation opportunities.

MA1.C-6 Trails allowed in the corridor for resource protection.

MA1.C-7 The scenic integrity objective (SIO) is very high (preservation) for all inventoried scenic classes.

MA1.C-8 Use native materials for any soil and water rehabilitation work.

MA1.C-9 Conduct no wildlife or fish habitat improvements. Instead, allow wildlife species to reach populations associated with a "natural forest."

MA1.C-10 Prescribed burning will not be used.

MA1.C-11 Use Minimum Impact Strategies and Techniques (MIST) for wildfire suppression and related activities.

MA1.C-12 Federal Minerals: Subject to valid existing rights, the minerals in federal lands, which constitute the bed or bank, or are situated within ¼ mile of the high water mark of any river designated a "Wild River" under this Act, are withdrawn from operation of the mining and mineral leasing laws.

MA1.C-13 Private Mineral Rights: The Government will seek to acquire private mineral rights through purchase, exchange, or donation. Until such private rights are acquired, the exercise of reserved and outstanding mineral rights to explore and develop mineral resources will be respected.

MA1.C-14 The wild sections are closed to OHV use.

ADDITIONAL STANDARD FOR NORTH SYLAMORE CREEK

MA1.C-15 Manage the riparian buffer for late seral conditions.

SCENIC AND RECREATIONAL SECTIONS

Standards

MA1.C-16 Issue no new grazing permits.

MA1.C-17 Facility development reflects ROS classification.

MA1.C-18 The scenic integrity objective is high for all inventoried scenic classes.

MA1.C-19 Ensure new wildlife or fish habitat improvements contribute to maintaining or improving the outstandingly remarkable values.

MA1.C-20 Acquire desirable tracts within the corridor only from willing sellers, when the opportunity exists.

MA1.C-21 Prohibit removal of mineral materials as per state regulations for extraordinary resource waters.

MA1.C-22 Permits will not be issued for activities on National Forest lands that are inconsistent with the management goals for the river corridor.

MA1.C-23 Use minimal tool rule when doing maintenance on roads within scenic sections that are within the wilderness. Apply only the minimum tools, equipment, device, force, regulation, or practice that will bring the desired result.

MA1.C-24 Motorized vehicles may only cross at designated crossings. They may not travel up and down the river channel.

MA1.C-25 Prescribed fire is allowed to reduce a buildup of fuels to an acceptable level and to decrease the risks and consequences of wildland fire escaping from the wild river corridor.

MA1.C-26 Prescribed fire can be used for control of exotic pests and to create, enhance, or maintain threatened, endangered, sensitive and locally rare species habitat necessary to perpetuate these flora or fauna.

MA1.C-27 Federal Minerals: Federal leases are allowed in the recreational sections with controlled surface use (CSU) stipulations. For scenic sections, use no surface occupancy (NSO) along the river corridor (¼ mile) unless operations can be properly screened to not affect the visual quality of the section, and then use CSU. A CSU stipulation can be used in those areas that lie outside the river corridor (¼ mile).

1.D Recommended Wild and Scenic Rivers

Standards for 1.C apply in their entirely.

1.E Experimental Forests

Standards

MA1.E-1 All research activities are permissible on this area. The Southern Research Station Director will prescribe or approve all management activities.

MA1.E-2 Manage for roaded natural ROS experiences that are compatible with research activities.

MA1.E-3 Prohibit OHV use, recreation development, and dispersed recreation activities that conflict with research.

MA1.E-4 Conduct wildlife habitat improvement only for research.

MA1.E-5 Allow livestock use only for research.

MA1.E-6 Federal Minerals: Leases will be issued with a Controlled Surface Use (CSU) stipulation. Mineral material authorizations with conditions to protect the area may be permitted.

MA1.E-7 Management activities are designed to meet or exceed the assigned Scenic Integrity Objectives.

1.F Research Natural Areas

Standards

MA1.F-1 These areas are closed to OHV use by their establishment documentation.

MA1.F-2 Insect, disease, and native, non-native invasive plant outbreaks will be controlled where necessary to protect the values for which the area was established.

MA1.F-3 No new utility corridors or communication sites will be authorized within this area

MA1.F-4 Federal Minerals: Leases will be issued with a No Surface Occupancy (NSO) stipulation. Mineral material authorizations will not be allowed.

MA1.F-5 Management activities are designed to meet or exceed the assigned Scenic Integrity Objectives.

1.G Special Interest Areas

Standards

MA1.G-1 No management activities will be allowed until a management plan is developed and approved.

MA1.G-2 Use Minimum Impact Strategy and Techniques (MIST) for wildfire suppression.

MA1.G-3 No management activities will be implemented which will compromise the characteristics that qualified an area for designation as a special interest area.

MA1.G-4 Federal Minerals: Leases will be issued with a No Surface Occupancy (NSO) stipulation. Mineral material authorizations will not be allowed.

1.H Scenic Byway Corridors

Standards

MA1.H-1 Management activities are designed to meet or exceed the assigned Scenic Integrity Objectives.

MA1.H-2 Within 300 feet of Scenic Class 1 designated road, the following silvicultural prescriptions are allowed:

- Group selection in hardwoods.
- Oak woodland prescription.
- Single tree selection.
- Shelterwood with reserves.
- Pine woodland.

MA1.H-3 Vegetation management will be accomplished with management-ignited prescribed fire, wildland fire use, chemical, and mechanical treatments as an appropriate method of reducing costs associated with these activities.

MA1.H-4 Larger scale public use facilities such as public information centers and administrative headquarters are allowed with structures that complement the desired landscape character and ROS setting and blend into the natural and cultural environment.

MA1.H-5 Short-term Scenic Integrity Objectives of rehabilitation and enhancement may be used.

MA1.H-6 This area is available for federal mineral leasing using the controlled surface use (CSU) stipulations to help protect the scenic resources and values.

MA1.H-7 These areas are unsuitable for designation of new utility corridors, utility rights-of-way, or communication sites. Continue existing uses. Require necessary mitigation techniques including screening, feathering, and other vegetation management techniques to mitigate the visual and other impacts of upgraded utility corridors or communication sites.

MA1.H-8 Wildlife and fisheries habitat improvements are allowed to enhance wildlife viewing, hunting, and fishing opportunities in accordance with scenic integrity objectives. Watchable wildlife species habitat improvements are encouraged.

MA1.H-9 Allow vegetation management activities to

- Enhance or rehabilitate scenery including creating aesthetically desired stand structure and species composition including a pleasing mosaic of tree species of various densities and stem sizes, park-like effects, and enhancement of fall color species.
- Maintain natural mix of plant species.
- Maintain open areas, old field habitats, pastoral settings, and vistas that enhance the scenic qualities of the corridor.
- Maintain developed recreation facilities including roads and trails.
- Enhance both game and non-game wildlife habitat.
- Improve threatened, endangered, sensitive, and locally rare species habitat.
- Maintain rare communities and species dependent on disturbance.
- Reduce fuel buildups.
- Minimize impacts from insect or disease outbreaks and rehabilitate damaged areas.
- Control non-native invasive vegetation.
- Provide for public health and safety.
- Improve forest health.
- Allow salvage for scenic rehabilitation, fuels reduction, and economic value.

MA1.H-10 Federal Minerals: Leases will be issued with a Controlled Surface Use (CSU) stipulation. Mineral material authorizations with conditions to protect the area will be permitted

2.A Ozark Highlands Trail

Standards

MA2.A-1 The Ozark National Forest designates a corridor at least three chains (198 feet) on either side of the centerline of the trail for its entire length including designated spurs unless topographically impractical.

MA2.A-2 The Ozark National Forest may expand this corridor to accommodate user experience. Project level analysis will establish management requirements for other trail loops and spurs.

MA2.A-3 Issue no grazing permits within the trail corridor.

MA2.A-4 Management activities in the corridor will be to improve or protect the trail, enhance the recreational experience, and provide for visitor safety.

MA2.A-5 Vehicular traffic, riding, and pack stock are prohibited on trail except where trail location coincides with system roads.

MA2.A-6 The Ozark National Forest will locate road, skid road, and skid trail crossings to minimize impact to the trail corridor and other resources. Where the trail is located on an existing road or is on the only feasible location for a road needed to access NF lands, the Forest may relocate short segments of the trail or a road after interdisciplinary review with public input in advance of construction.

MA2.A-7 The Ozark National Forest will use control strategy for all wildfire. Prescribed burning through the trail corridor may occur with other fire management activities.

MA2.A-8 Vegetation is managed to enhance the trail environment. Allow timber harvest, prescribed burning, wildland fire use, hand tools, power tools, mowing, herbicides, biological controls, and grazing to manage vegetation as appropriate. Vegetation management activities are limited to:

- Maintain open areas, old field habitats, and vistas that enhance the scenic qualities of the OHT.
- Control insects and diseases.
- Maintain or improve threatened, endangered, sensitive, and locally rare species habitat.
- Maintain rare communities, species dependent on disturbance, and wildlife viewing opportunities.
- Meet trail construction and maintenance needs.
- Manage fuels.

- Restore, enhance, or mimic historic fire regimes.
- Control non-native invasive vegetation.
- Provide for public safety or resource protection.

MA2.A-9 The lands in this MA are classified as unsuitable for timber production. Hauling or skidding along the OHT footpath itself or using the OHT for landings or temporary roads is prohibited. Hauling and skidding within this MA will be allowed only if the environmental analysis indicates that this is the only feasible and prudent alternative.

MA2.A-10 Wildland fire suppression and prescribed fire strategies will minimize impact on OHT values. Prohibit heavy equipment line construction on the OHT footpath unless necessary for emergency protection of public property and safety.

MA2.A-11 Implement restorative measures in areas damaged by fire suppression efforts after fire suppression efforts have ceased.

MA2.A-12 Motorized, horse, pack stock, and bicycle use on the OHT are prohibited. Exceptions include where the OHT crosses or is located on open Forest Service System roads or other federal, state, county, or other public roads.

MA2.A-13 Other uses within the MA including crossings of the OHT, may be considered following coordination with appropriate OHT partners. Locate authorized uses crossing the OHT to minimize impacts to the OHT environment, preferably where impacts already exist.

MA2.A-14 Overnight camping will be allowed unless prohibited by Forest Supervisor's order. Identify the OHT through standard signs and blazes.

MA2.A-15 Locate and maintain campsites and privies (toilets) where there is a demonstrated need for overnight use.

MA2.A-16 Reconstruct or relocate existing portions of the OHT as needed to enhance the recreation experience; protect threatened, endangered, sensitive, and locally rare species; protect the health of the ecosystem; or protect heritage resources. Such relocations provide a reasonable level of public safety.

MA2.A-17 This area is unsuitable for designation of new OHV routes or use areas.

MA2.A-18 All management activities will meet or exceed a Scenic Integrity Objective of "High."

MA2.A-19 Allow agricultural special use authorizations to maintain open and pastoral spaces. Locate new public utilities and rights-of-way to areas of this MA where major impacts already exist.

MA2.A-20 Require mitigation measures including screening, feathering, and other visual management techniques to mitigate visual and other impacts of new or upgraded utility rights-of-way. Mitigation measures apply to facilities as well as vegetation.

MA2.A-21 The MA is available for oil and gas leasing with A No Surface Occupancy (NSO) stipulation. The area is not available for other Federal leasable minerals. When existing leases terminate or expire, new leases are changed to reflect this standard. Mineral material authorizations with conditions to protect the area may be permitted

MA2.A-22 These areas are closed to OHV use.

2.B State Parks

Standards

MA2.B-1 Management activities are designed to meet or exceed the assigned Scenic Integrity Objectives.

MA2.B-2 Manage ROS as roaded natural to urban.

MA2.B-3 Manage at same or higher standards as Forest Service developed recreation sites as stipulated in *Special Use Permit Maintenance and Operation Plan*.

MA2.B-4 Federal Minerals: Leases will be issued with a No Surface Occupancy (NSO) stipulation. Mineral material authorizations with conditions to protect the area may be permitted.

MA2.B-5 On sites where talus slopes occur, no timber management, road construction, or recreational development should take place unless it is needed to promote habitat needs for threatened, endangered, or sensitive species.

MA2.B-6 These areas are closed to OHV use.

2.C Developed Recreation Areas

Standards

MA2.C-1 Wildlife and fish habitat improvements are allowed to enhance wildlife viewing and fishing opportunities in a manner complimentary to the area.

MA2.C-2 Existing wildlife openings, pastoral areas, or old fields may be maintained. Expansion of existing openings and/or creation of new openings may occur when enhancing the recreation experience.

MA2.C-3 Maintenance methods may include cultivation, mowing, burning, and pesticide treatments. Improvements should appear natural and remain subordinate to the landscape.

MA2.C-4 Hunting and/or shooting is prohibited within developed recreation sites or within 400 feet from any recreation facility.

MA2.C-5 Vegetation management activities will:

- Maintain open areas, old field habitats, pastoral settings, and vistas that enhance the scenic qualities of the recreation area.
- Enhance or rehabilitate scenery.
- Encourage flowering trees, character trees, and shrub species.
- Reduce potential for insect or disease outbreaks and rehabilitate damaged areas.
- Reduce fuel buildups.
- Control non-native invasive vegetation.
- Provide for public health and safety.
- Improve forest health.

MA2.C-6 Prepare vegetation management plans that emphasize damage prevention practices and health and safety for developed recreation areas.

MA2.C-7 Vegetation management may be accomplished with commercial timber sales as an appropriate method of reducing costs associated with these activities.

MA2.C-8 Prescribed fire is permitted for vegetation management to meet scenery, landscape character and hazard fuels reduction objectives. In developed recreation areas, evidence of fire lines is obliterated as soon as practicable. Use control strategy for all wildfires. The use of fuel breaks at or near the recreation site boundary is recommended.

MA2.C-9 Developed sites and concentrated-use areas are inspected annually and high-risk conditions are corrected, mitigated, and identified to the public or the area is closed.

MA2.C-10 Recreation sites should follow Forest Niche objectives and maintenance will meet minimum meaningful measure critical standards.

MA2.C-11 All developments and improvements will be consistent with ROS guidelines.

MA2.C-12 Management activities are designed to meet or exceed the assigned Scenic Integrity Objectives.

MA2.C-13 Rifle ranges are managed to meet or exceed a Scenic Integrity Objective of "High" across all scenic classes.

MA2.C-14 All roads, facilities, and signing are designed to blend in with surroundings.

MA2.C-15 The standard of road is commensurate with the recreation development level.

MA2.C-16 Federal Minerals: Leases will be issued with a Controlled Surface Use (CSU) stipulation. Mineral material authorizations with conditions to protect the area may be permitted

MA2.C-17 These areas are unsuitable for new linear rights-of-way or communication sites with the exception that local electrical distribution lines are allowed. All lines and utilities will be underground with the recreation development area. Other special uses are authorized if consistent and compatible with the goals and objectives of these areas.

2.D Upper Buffalo Dispersed Recreation Area

Standards

MA2.D-1 Recreational opportunities are managed as semi-primitive non-motorized.

MA2.D-2 No new motorized trails are allowed.

MA2.D-3 Management activities are designed to meet or exceed the assigned Scenic Integrity Objectives.

MA2.D-4 Federal Minerals: Leases will be issued with a Controlled Surface Use (CSU) stipulation. Mineral material authorizations with conditions to protect the area may be permitted.

MA2.D-5 Existing old fields, pastoral areas, wildlife openings, and other wildlife habitat improvements may be present and maintained.

MA2.D-6 No new grazing permits.

2.E Wedington Unit Urban Recreation Area

Standards

MA2.E-1 Management activities are designed to meet or exceed the assigned Scenic Integrity Objectives.

MA2.E-2 This area is closed to OHV use.

MA2.E-3 Use control strategy for wildland fire suppression.

MA2.E-4 Manage as urban ROS setting.

MA2.E-5 Wildlife and fisheries habitat improvements are allowed to enhance wildlife viewing, hunting, and fishing opportunities in accordance with scenic integrity objectives. Watchable wildlife species habitat improvements are encouraged.

MA2.E-6 Developed recreation site of the Lake Wedington Unit will be managed using the standards in 2.C (Developed Recreation Areas).

MA2.E-7 Federal Minerals: Leases will be issued with a Controlled Surface Use (CSU) stipulation. Mineral material authorizations with conditions to protect the area may be permitted

2.F Indian Creek Dispersed Recreation Area

Standards

MA2.F-1 Recreational opportunities are managed as semi-primitive non-motorized.

MA2.F-2 The public process of designating motorized routes and trails will be used to determine which motorized trails are allowed.

MA2.F-3 Management activities are designed to meet or exceed the assigned Scenic Integrity Objectives.

MA2.F-4 Federal Minerals: Leases will be issued with a Controlled Surface Use (CSU) stipulation. Mineral material authorizations with conditions to protect the area may be permitted.

MA2.F-5 Existing old fields, pastoral areas, wildlife openings, and other wildlife habitat improvements may be present and maintained.

MA2.F-6 No new grazing permits.

3.A Pine Woodland

Standards

MA3.A-1 Federal Minerals: Leases will be issued with a Controlled Surface Use (CSU) stipulation. Mineral material authorizations with conditions to protect the area may be permitted.

3.B Oak Woodland

Standards

MA3.B-1 Federal Minerals: Leases will be issued with a Controlled Surface Use (CSU) stipulation. Mineral material authorizations with conditions to protect the area may be permitted.

3.C Mixed Forest

Standards

MA3.C-1 Federal Minerals: Leases will be issued with a Controlled Surface Use (CSU) stipulation. Mineral material authorizations with conditions to protect the area will be permitted.

3.D Oak Decline Restoration Areas

Standards

MA3.D-1 Federal Minerals: Leases will be issued with a Controlled Surface Use (CSU) stipulation. Mineral material authorizations with conditions to protect the area will be permitted.

3.E High Quality Forest Products

Standards

MA3.E-1 In stands managed for high quality forest products, prescribed burning will only be done to promote the development of high quality sawtimber or to establish regeneration.

MA3.E-2 Federal Minerals: Leases will be issued with standard lease stipulations. Mineral material authorizations with conditions to protect the area will be permitted.

3.F Old Growth Areas

Standards

MA3.F-1 No new OHV trails will be developed.

MA3.F-2 Management activities are designed to meet or exceed the assigned Scenic Integrity Objectives.

MA3.F-3 Only current livestock grazing is permitted. No new grazing permits will be allowed.

MA3.F-4 These areas are available for federal oil and gas leasing with controlled surface use (CSU) to protect old growth resources and values. Other Federal minerals may be available on a case-by-case basis after full consideration of effects on the old growth community.

MA3.F-5 Federal Minerals: Leases will be issued with a Controlled Surface Use stipulation. Mineral material authorizations with conditions to protect the area will be permitted.

MA3.F-6 Do not increase current open system road density levels.

3.G Crowley's Ridge Upland Hardwoods, St. Francis NF

Standards

MA3.G-1 Federal Minerals: Leases will be issued with a Controlled Surface Use (CSU) stipulation. Mineral material authorizations with conditions to protect the area may be permitted.

3.H Mississippi River Bottomland Hardwood, St. Francis NF

Standards

MA3.H-1 Federal Minerals: Leases will be issued with a Controlled Surface Use (CSU) stipulation. Mineral material authorizations with conditions to protect the area may be permitted.

3.I Riparian Corridors

Standards

MA3.I-1 Feeding troughs or water troughs will not be placed in riparian zones or defined channels. Salt blocks and mineral blocks will be placed in boxes or containers to control leaching into soils and will be placed on allotments to encourage forage utilization away from riparian zones or defined channels.

MA3.I-2 Issue no new grazing permits.

MA3.I-3 Thinning and shelterwood with reserves are the acceptable silvicultural treatments.

MA3.I-4 Federal Minerals: Leases will be issued with a Controlled Surface Use (CSU) stipulation. Mineral material authorizations with conditions to protect the area will be permitted.

MA3.I-5 No log landings are allowed within 100 feet of riparian corridors.

MA3.I-6 Skid trails must use designated crossing within 100 feet of riparian corridors.

3.J Pastures and Large Wildlife Openings

Standards

MA3.J-1 Pasture or field systems currently in non-native plant species such as fescue or Bermuda grass will be converted to native cool or warm season grasses as opportunities and budgets allow.

MA3.J-2 Where grazing is currently allowed and under permit, control livestock and mitigate negative effects to restore, enhance, or maintain the integrity of stream channels and banks.

MA3.J-3 Livestock grazing may not expose mineral soil or displace soil by trampling on more than 10 percent of a grazing allotment

MA3.J-4 Fence out livestock from SMZ and riparian areas as identified and funded.

MA3.J-5 Feeding troughs or water troughs will not be placed in riparian zones or defined channels. Salt blocks and mineral blocks will be placed in boxes or containers to control leaching into soils and will be placed on allotments to encourage forage utilization away from riparian zones or defined channels.

MA3.J-6 Federal Minerals: Leases will be issued with a Controlled Surface Use (CSU) stipulation. Mineral material authorizations with conditions to protect the area may be permitted.

3.K Wildlife Emphasis Area

Standards

MA3.K-1 Provide native and improved pastures sufficient to provide for year-round elk habitat.

MA3.K-2 Provide wildlife routes that connect pastures.

MA3.K-3 Provide ponds sufficient to allow for even dispersal of wildlife.

MA3.K-4 Federal Minerals: Leases will be issued with a Controlled Surface Use (CSU) stipulation. Mineral material authorizations with conditions to protect the area may be permitted.

APPENDIX A-GLOSSARY

Abbreviations and Acronyms

A

ABB – American burying beetle
ADA - Americans with Disabilities Act
ADEQ – Arkansas Department of Environmental Quality
AGFC – Arkansas Game & Fish Commission
AHC – Arkansas Heritage Commission
AMS - Analysis of the Management Situation
ANH – Arkansas Natural Heritage
APCEC – Arkansas Pollution Control and Ecology Commission
AQRV – Air Quality Related Values
ASQ - allowable sale quantity
ATV – all-terrain vehicle

B

BA - basal area
BBS – Breeding Bird Survey
BF - board foot
BLM – Bureau of Land Management
BMP - best management practice
BSS - base sale schedule

C

°C – degree Celsius
ca. - approximately
CCC – Civilian Conservation Corps
CEQ - Council on Environmental Quality
CFR - Code of Federal Regulations
CFS - cubic feet per second
CIP - Capital Investment Program
CISC - Continuous Inventory of Stand Conditions
COMPATS - Computerized Project Analysis of Timber Sales
CUA – Concentrated Use Area
CVMM – Common Variety Mineral Materials
CWS – coarse woody debris

D

DBH - diameter at breast height
DFC - desired future condition

E

EA – Environmental Assessment
EF – Experimental Forest
EIS - Environmental Impact Statement
EPA - Environmental Protection Agency
et al. – and others

F

°**F** – Fahrenheit
FDR - forest development road
FRP - Forest Road Program
FEIS - Final Environmental Impact Statement
FIA - Forest Inventory and Analysis
FLPMA – Federal Land Policy and Management Act
FMAP - Fire Management Action Plan
FONSI – Finding of No Significant Impact
FRCC – Fire Regime and Condition Classes
FRI – fire return interval
FSH - Forest Service Handbook
FSM - Forest Service Manual
FY - fiscal year

G

GIS - Geographic Information System
GLO – General Land Office

H

HUC – Hydrologic Unit Codes

I

IDT - Interdisciplinary Team
IPM - integrated pest management

K

L

LE - law enforcement
LRMP – Land and Resource Management Plan
LTA - landtype association
LTSYC - long-term sustained-yield capacity
LWCF - Land and Water Conservation Fund

LWD – large woody debris

M

m - thousand
M$ - thousands of dollars
MA - management area
MAV – Mississippi Alluvial Valley
MBF - thousand board feet
MCF - thousand cubic feet
MIS - management indicator species
MM - million
MM$ - millions of dollars
MMBF - million board feet
MMCF - million cubic feet
MMRVD – million-recreation visitor-day
MOA – memorandum of agreement
MOU - memorandum of understanding
MRVD - thousand-recreation visitor-day
MWFUD - thousand wildlife and fish user-day

N

NEPA - National Environmental Policy Act
NF - National Forest
NFMA - National Forest Management Act
NFP – National Fire Plan
NFS – National Forest System
NPS – National Parks Service
NRCS - Natural Resources Conservation Service
NSO – no surface occupancy
NTMB - Neotropical migratory birds
NVUM – National Visitor Use Monitoring
NWF – National Wildlife Federation

O

OHV - off-highway vehicle
OOHA – Ozark-Ouachita Highlands Assessment
OSFNF – Ozark-St. Francis National Forests

P

P - Primitive
PETS - proposed, endangered, threatened, or sensitive
$PM_{2.5}$ – particulate matter, 2.5 microns and smaller
PNV - present net value
PNW - present net worth
ppm – parts per million

R

RAP – Roads Analysis Process or Procedure
RARE I - Roadless Area Review and Evaluation
RARE II - the second Roadless Area Review and Evaluation
RD - Ranger District
RN – Roaded Natural
RNA - research natural area
ROD - record of decision
ROS - Recreation Opportunity Spectrum
ROW - right-of-way
RVD - recreation visitor-day

S

SHPO – State Historic Preservation Office
SIA – Special Interest Area
SIO – Scenic Integrity Objective
SIP - State Implementation Plan
SMS – Scenery Management System
SMZ – Streamside Management Zone

T

TES – threatened, endangered, and sensitive species
TNC - The Nature Conservancy
TSI - timber stand improvement

U

USC - United States Code
USDA - U.S. Department of Agriculture
USFS – U. S. Forest Service
USFWS - U.S. Fish and Wildlife Service
USGS - U.S. Geological Survey

V

VMS – Visual Management System

W

WMA – Wildlife Management Areas
WUI – Wildland Urban Interface

****Y****

YPIN – yellow pine

****Z****

Definitions

Definitions were taken from the following sources:

Code of Federal Regulations (CFR) Title 36, *Parks, Forests, and Public Property,* Chapter II, Forest Service, Department of Agriculture; Part 219, Planning, Section A—National Forest System Land and Resource Management Planning; Section 219.3, Definitions and Terminology, Revised July 1, 1998. (Referred to as 36 CFR 219.3)

Forest IDT is the Interdisciplinary Team on the Ozark-St. Francis National Forests. (Referred to as Forest IDT)

Society of American Foresters. 1998. *The Dictionary of Forestry*. Edited by John A. Helms. 210 p. (Referred to as SAF)

Timber Staff is the Timber Staff on the Ozark-St. Francis National Forests. (Referred to as Timber Staff)

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Forest Service Handbook (FSH) 2090.11, *Ecological Classification and Inventory Handbook*, WO Amendment 2090.11-91-1, Effective 4/26/91, 05 - Definitions. (Referred to as FSH 2090.11-05)

FSH 2409.13, *Timber Resource Planning Handbook*, WO Amendment 2409.13-92-1, Effective 8/3/92, 05 - Definitions. (Referred to as FSH 2409.13-05)
FSH 2409.15, *Timber Sale Administration Handbook*, Amendment No. 2409.15-96-2, Effective Sept. 19, 1996, 05 - Definitions. (Referred to as FSH 2409.15-05)

FSH 2409.17, Silvicultural Practices Handbook, 1/85 WO, Chapter 9 - Timber Stocking Guides and Growth Predictions, 9.05 - Definitions. (Referred to as FSH 2409.17-9.05)

FSH 2609.13, *Wildlife and Fisheries Program Management Handbook*, WO Amendment 2609.13-92-1, Effective 8/3/92, Chapter 70 - Analysis of Economic Efficiency of Wildlife and Fisheries Projects, 70.5 - Definitions. (Referred to as FSH 2609.70.5)

FSH 2709.12, *Road Rights-of-Way Grants Handbook*, 9/85 WO, Zero Code, 05 - Definitions. (Referred to as FSH 2709.12-05)

Forest Service Manual (FSM) 1900 - Planning, Amendment No. 1900-91-3, Effective March 15, 1991, 1905 - Definitions. (FSM 1905)

FSM 2163, *Hazardous Waste Management*, Chapter 2163.05, Definitions. (Referred to as FSM 2163)

FSM 2200, *Range Management*, WO Amendment 2200-91-1 Effective 3/1/91, Chapter 2230, Grazing and Livestock Use Permit System, 2230.5 - Definitions. (Referred to as FSM 2230)

FSM 2300, *Recreation, Wilderness, and Related Resource Management*, Amendment No. 2300-91-3 Effective March 12, 1991. Chapter 2355, Off-Road Vehicle Use Management, Executive Order 116-44, as amended by Executive Order 11989, Use of Off-Road Vehicles on the Public Lands 37 FR 2877 (Feb. 9, 1972), 42 FR 26959 (May 25, 1977). (Referred to as FSM 2355)

FSM 2300, *Recreation, Wilderness, and Related Resource Management*, WO AFSM 2300 - Recreation, Wilderness, and Related Resource Management, WO Amendment 2300-90-1, Effective 6/1/90, Chapter 2310 - Planning and Data Management - 2312 - Recreation Information Management (RIM). (Referred to as (FSM 2312)

FSM 2400, Timber Management, WO Amendment 2400-96-6 Effective 9/24/96. Chapter 2435 - Salvage Sales. 2435.05, Definitions. (FSM 2435)

FSM 2500, *Watershed and Air Management*, Amendment No. 2500-94-4, Effective Dec. 20, 1994. Chapter 2520, Watershed Protection and Management. 2521 - Watershed Condition Assessment. 2521.05 - Definitions. (Referred to as FSM 2521)

FSM 2500, *Watershed and Air Management*, Amendment No. 2500-94-4, Effective Dec. 20, 1994. Chapter 2520, Watershed Protection and Management. FSM 2526 - Riparian Area Management. 2526.05 - Definitions. (Referred to as FSM 2526)

FSM 2600, *Wildlife, Fish, and Sensitive Plant Habitat Management*, Amendment No. 2600-91-8 Effective Oct. 22, 1991, Chapter 2605, Definitions. (Referred to as FSM 2605)

FSM 2600, *Wildlife, Fish, and Sensitive Plant Habitat Management*, WO Amendment 2600-95-7, Effective 6/23/95, Chapter 2670, Threatened, Endangered, and Sensitive Plants and Animals, 2670.5 - Definitions. (Referred to as FSM 2670)

A User's Guide to Forest Information Retrieval (FIR), Southeastern Forest Experiment Station, Forest Inventory and Analysis Unit, Asheville, NC, 1988. (Referred to as FIR)

Interim Resource Inventory Glossary, File 1900, Washington, DC, 96 p., June 14, 1989. (Referred to IRIG)

A

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

acquisition of land - Obtaining full landownership rights by donation, purchase, exchange, or condemnation.

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

administrative unit - All the National Forest System lands where one forest supervisor has responsibility. The basic geographic management area within a Forest Service Region, station, or area.

advance regeneration (reproduction) - Seedlings or saplings that develop, or are present, in the understory.

age class - A grouping of living things based on their age.

air pollution - Any substance or energy form (heat, light, noise, etc.) that alters the state of the air from what would naturally occur.

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

- **Class I:** Geographic area designated for the most stringent degree of air quality protection from future degradation of air quality. These congressionally-designated areas include wilderness areas over 5000 acres in size that were established as of August 7, 1977.
- **Class II:** Geographic area designated for a moderate degree of protection from future air quality degradation. Any area that is not a Class I area is considered Class II.
- **Class III:** Geographic areas designated for the least protection from future air quality degradation. No Class III areas have been designated to date.

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

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

all-terrain vehicle - Any motorized, off-highway vehicle 50 inches or less in width, having a dry weight of 600 pounds or less that travels straddled by the operator. Low-pressure tires are six inches or more in width and designed for use on wheel rim diameters of 12 inches or less, utilizing an operating pressure of 10 pounds per square inch (psi) or less as recommended by the vehicle manufacturer.
alternative - In forest planning, a mix of resource outputs designed to achieve a desired management emphasis as expressed in goals and objectives, and in response to public issues or management concerns.
amendment - A formal alteration of the Forest Plan by modification, addition, or deletion. Forest Plan amendment requires an environmental analysis. Significant findings require an environmental impact statement and the amendment will follow the same procedure used for plan preparation. Insignificant findings allow the changes to be implemented following public notification. Amendments can take place at any time following plan approval.
appropriated fund - Funds available for obligation or outlay by Congress to a given agency.
aquatic ecosystem - Components that include: the stream channel, lake and estuary beds, water, biotic community, and associated habitat features. Also included are streams and lakes with intermittently, semi-permanently, and seasonally flooded channels or streambeds. In the absence of flowing water, intermittent streams may have pools or surface water.

B

bald - An early successional opening generally above 4,000 feet, characterized by grassy or heath vegetation.
basal area - The area of the cross-section of a tree inclusive of bark at breast height (4.5 feet or 1.37 meters above the ground) most commonly expressed as square feet per acre or square meters per hectare. Used to measure the density of a stand of trees. For shrubs and herbs it is used to determine phytomass. Grasses, forbs, and shrubs usually measured at or less then 1 inch above soil level. Trees—the cross-section area of a tree stem in square feet commonly measured at breast height (4.5' above ground) and inclusive of bark, usually computed by using diameter at breast height (DBH), or tallied through the use of basal area factor angle gauge.
best management practice (BMP) - A practice, or a combination of practices determined to be the most effective and practical means of preventing or reducing the amount of pollution generated by non-point sources to a level compatible with water quality goals.
biological assessment - A "biological evaluation" conducted for major federal construction projects requiring an environmental impact statement, in accordance with legal requirements under Section 7 of the Endangered Species Act (16 U.S.C. 1536[c]). The purpose of the assessment and resulting document is to determine whether the proposed action is likely to affect an endangered, threatened, or proposed species.
biological evaluation - A documented Forest Service review of its programs or activities in sufficient detail to determine how an action or proposed action may affect any proposed, endangered, threatened, or sensitive species.

bladed skid road - A travel way through the woods formed by loggers to facilitate dragging (skidding) logs from the stump to a log landing. Skid roads are generally used in steep terrain and are cut into mountainsides with a bulldozer.
board foot - A unit of timber measurement equaling the amount of wood contained in an unfinished board 1 inch thick, 12 inches long, and 12 inches wide. Commonly, 1,000 board feet is written as 1 MBF, and 1,000,000 board feet is written as 1MMBF.

C

canopy cover - The percent of a fixed area covered by the crown of an individual plant species or delimited by the vertical projection of its outermost perimeter. Small openings in the crown are included. Used to express the relative importance of individual species within a vegetation community, or to express the canopy cover of woody species. Canopy cover may be used as a measure of land cover change or trend. Often used for wildlife habitat evaluations.
chopping - Method used to prepare areas for reforestation. Large drums with cutting blades attached are pulled over areas by vehicles that include crawler-type tractors and rubber-tired skidders.
commercial thinning – Any type of thinning producing merchantable material at least equal to the value of the direct cost of harvesting.
Continuous Inventory of Stand Condition (CISC) - A system that continuously reflects an up-to-date description of timber stands. It tells what and when actions are planned for stands and gives some information about actions that have taken place. It is also the name of the data base management computer system used for the storage and retrieval of data.
corridor - A linear strip of land identified for the present or future location of transportation or utility rights-of-way within its boundaries. It can also be identified for wildlife habitat connecting, or protecting forest resources.
critical habitat – Habitat, determined by the Secretary of Interior, essential to the conservation of the endangered or threatened species.
cubic foot - A unit of measure reflecting a piece of wood 12 inches long, 12 inches wide, and 12 inches thick.
cultural resources - Physical remains of districts, sites, structures, buildings, networks or objects that were used by humans. They may be historic, prehistoric, archaeological or architectural in nature. Cultural resources are non-renewable.

D

den trees - Trees having rainproof, weather- tight cavities used by wildlife.
defined channels – This category takes the place of previous direction for intermittent and ephemeral stream. A defined channel is a feature that clearly exhibits most of the following characteristics: Signs of water flow velocity sufficient to move soil material, litter and fine debris, defined bands and stream beds, shows accumulated deposits of sands and gravels, and is continuously connected with other hydrologic features. This includes channels, which may only support water flow

immediately following a precipitation event, bedforms that can include large, stable rocks, may support riparian dependant plants and animals, and does not usually support aquatic organisms.

desired condition - An expression of resource goals that have been set for a unit of land. It is written as a narrative description of the landscape as it will appear when the goals have been achieved. The condition also includes a description of physical and biological processes, the environmental setting, and the human experience.

developed recreation - Recreation use or opportunities occurring at developed sites.

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

diameter at breast height (dbh)– A tree's diameter measured at about 4.5 feet (1.37m) above the forest floor on the uphill side of the tree. For the purposes of determining breast height, the forest floor includes the duff layer that may be present, but does not include unincorporated woody debris that may rise above the ground line.

dispersed recreation – Recreation opportunities or use occurring in the general forest area. Does not take place in developed sites. Examples are camping and picnicking.

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

E

ecosystem - A complete interacting system of organisms and their environment.

endangered species - Any species that is in danger of extinction throughout all or a significant portion of its range, other than members of the class Insecta that have been determined by the Department of Interior to constitute a pest whose protection under the provisions of this (Endangered Species Act of 1973) act would present an overwhelming and overriding risk to humans. It must be designated in the *Federal Register* by the appropriate secretary.

on. It must be adequate for the maintenance of long-term sustained yield.

environment - All the conditions, circumstances, and influences surrounding and affecting the development of an organism, or group of organisms.

Environmental Impact Statement - A disclosure document revealing the environmental effects of a proposed action, which is required for major federal actions under Section 102 of the National Environmental Policy Act, and released to the public and other agencies for comment and review. Final Environmental Impact Statement (FEIS) is the final version of the statement disclosing environmental effects required for major federal actions under Section 102 of the National Environmental Policy Act.

environmental impact - Used interchangeably with environmental consequence or effect.

even-aged stand - A stand of trees containing a single age class in which the range of tree ages is usually less than 20 percent of rotation.

existing wilderness - Those areas already designated as wilderness by Congress. There are five such areas on the forests—East Fork, Hurricane Creek, Leatherwood, Richland Creek, and Upper Buffalo.

F

Federal Register - The designated document that notifies the public of federal actions and includes Notice of Intent, calls for public involvement, etc. It also publishes the regulations needed to implement those federal actions.

fire condition class – Based on coarse scale national data, classes measure general wildfire risk:

> **Class One –** Fire regimes are usually within historical ranges. Vegetation composition and structure are intact. The risk of losing key ecosystem components from the occurrence of fire is relatively low.
>
> **Class Two –** Fire regimes on these lands have been moderately altered from their historical range by increased or decreased fire frequency. A moderate risk of losing key ecosystem components has been identified.
>
> **Class Three –** Fire regimes on these lands have been significantly altered from their historical return interval. The risk of losing key ecosystem components from fire is high. Fire frequencies have departed from historical ranges by multiple return intervals. Vegetation composition, structure and diversity have been significantly altered.

fire management plan – Strategic plans that define a program to manage wildland fires based on an area's approved land management plan. They must address a full range of fire management activities that support ecosystem sustainability, values to be protected, protection of firefighter and public safety, public health and environmental issues, and must be consistent with resource management objectives and activities of the area.

fire regime – A generalized description of the role a fire plays in the ecosystem. It is characterized by fire frequency, predictability, seasonality, intensity, duration, scale (patch size), and regularity or variability. Five combinations of fire frequency exist.

> **Groups One** and **Two** include fire return intervals in the 0-35 range. One includes Ponderosa Pine, other long needle pine species, and dry site Douglas Fir. Group Two includes the drier grassland types - tall grass prairie, and some Pacific chaparral ecosystems.
>
> **Groups Three** and **Four** include fire return intervals in the 35-100+ year range. Three includes interior dry site shrub communities including sagebrush and chaparral ecosystems. Group Four includes Lodgepole and Jack Pine.
>
> **Group Five** is the long interval (infrequent), stand replacement fire regime and includes temperate rain forest, boreal forest, and high elevation conifer species.

fire use – The combination of wildland fire use and prescribed fire application to meet resource objectives.

floodplains - Lowland or relatively flat areas joining inland and coastal water including, at a minimum, that area subject to a 1-percent (100-year return period) or greater chance of flooding in any given year. Although floodplains and wetlands fall within the riparian area, they are defined here separately as described in the Forest Service Manual.

forage - All browse and non-woody plants that are available to livestock or game animals used for grazing or harvested for feeding.
forest - An area managed for the production of timber and other forest products, or maintained under woody vegetation for indirect benefits as protection of a watershed, recreation, or wildlife habitat.
forest health – The perceived condition of a forest derived from concerns about factors as its age, structure, composition, function, vigor, presence of unusual levels of insects or disease, and resilience to disturbance.
forest land - Land at least 10 percent occupied by forest trees of any size, or formerly having had such tree cover, and not currently developed for non-forest use. Lands developed for non-forest use including areas for crops, improved pasture, residential, or administrative areas, improved roads of any width, adjoining road clearing, and power line clearing of any width.
Forest Service Handbook (FSH) - A handbook that provides detailed instructions for proceeding with specialized phases of programs or activities for Forest Service use.
Forest Service Manual (FSM) - Agency manuals that provide direction for Forest Service activities.
forest trail system - Trails that are part of the forest transportation system. A designated path commonly used and maintained for hikers, horse riders, bicycles, or two-wheeled motorized vehicles.
forest type - A descriptive term used to group stands of similar composition and development because of given ecological factors, by which they may be differentiated from other groups of stands.
forest supervisor - The official responsible for administering the National Forest System lands in a Forest Service administrative unit. It may consist of two or more national forests or all the forests within a state. The supervisor reports to the regional forester.
forest-wide standard - A performance criterion indicating acceptable norms, specification, or quality that actions must meet to maintain the minimum considerations for a particular resource. This type of standard applies to all areas of the forest regardless of the other management prescriptions applied.
fuels management - The planned treatment of fuels to achieve or maintain desired fuels conditions.
fuelwood - Wood used for conversion to some form of energy.

G

game species - Any species of wildlife or fish for which seasons and bag limits have been prescribed, and which are normally harvested by hunters, trappers, and fishermen under state or federal laws, codes, and regulations.
General Forest Area - National forest lands not categorized as developed recreation sites, trails or wilderness. It can be a logical working area, (i.e., a drainage, geographic area, forest district, etc.) Typically containing a wide spectrum of settings and opportunities, facilities and sites located inside the boundary of a GFA are sometimes considered *concentrated use areas* (CUA), that may include dispersed front- and/or backcountry campsites, parking areas, pullouts and landings, river and

road corridors, lake surfaces, and day use areas including OHV areas, climbing areas, target shooting areas, etc. Amenities or constructed features inside GFAs are primarily for resource protection.

geologic features - Landforms or other features of significant geologic interest that may require special management to protect the special qualities, or provide interpretation to the public.

Geographic Information System (GIS) - An information processing technology to input, store, manipulate, analyze, and display spatial resource data to support the decision-making processes of an organization. Generally, an electronic medium for processing map information, typically used with manual processes to affect specific decisions about land base and its resources.

grassland - Areas on which vegetation is dominated by grasses, grass-like plants, forbs, and/or cryptogams (mosses, lichens, and ferns), provided these areas do not qualify as built-up land or cultivated cropland. Examples include tall grass and short grass prairies, meadows, cordgrass marshes, sphagnum moss areas, pasturelands, and areas cut for hay.

grazing - Consumption of range or pasture forage by animals.

grazing permit - Official, written permission to graze a specified number, kind, and class of livestock for a specific period on a defined range allotment.

groundwater - Water in a saturated zone in a geologic stratum. Water stored below the water table where the soil (or other geologic material) is saturated.

H

habitat - The native environment of an animal or plant.

herbicide – A pesticide used for killing or controlling the growth of plants.

I

improved pasture - Fenced, fertilized pastures intensively managed for livestock grazing.

in-stream flow - The presence of adequate stream flow in channels necessary to maintain the integrity of the stream channel, and protection of downstream beneficial uses including fish and wildlife needs, outdoor recreation uses of water, and livestock watering needs.

integrated pest management (IPM) – A decision making and action process incorporating biological, economic, and environmental evaluations of pest-host systems to manage pest populations.

Interdisciplinary Team - A group of resource specialists (e.g.: forester, wildlife biologist, hydrologist, etc.) responsible for developing the Forest Plan/Environmental Statement, and for making recommendations to the forest supervisor.

J

K

L

land exchange - The conveyance of non-federal land or interests in the land in exchange for National Forest System land or interests in land.
landline location - Legal identification and accurate location of national forest property boundaries.
land management planning – A formal process of management planning involving four interactive steps: monitoring, assessment, decision making, and implementations as described in the Federal Code of Regulations.
landscape - An area composed of interacting ecosystems that are repeated because of geology, land form, soils, climate, biota, and human influences throughout the area. Landscapes are generally of a size, shape, and pattern that are determined by interacting ecosystems.
large woody debris (LWD) (coarse woody debris) (CWD) – Any piece(s) of dead woody material, e.g., dead boles, limbs, and large root masses, on the ground in forest stands, or in streams.

long-term sustained-yield capacity - The highest uniform wood yield from lands being managed for timber production that may be sustained under a specified management intensity, consistent with multiple-use objectives.

M

management action – A set of management activities applied to a land area to produced a desired output.
management area - A selected grouping of capability or analysis areas selected through evaluation procedures used to locate decisions, and resolve issues and concerns. An area with similar management objectives, and a common management prescription.
management indicator species - A particular type of plant or animal whose presence in a certain location or situation is a sign or symptom that particular environmental conditions are also present. Any species, group of species, or species habitat element selected to focus management attention for the purpose of resource production, population recovery, maintenance of population viability, or ecosystem diversity.
management prescription - Management practices and intensity selected and scheduled for application on a specific area to attain multiple-use and other goals and objectives.
mast tree - Generally hardwood trees of the heavy seeded variety including oaks, hickories, walnut, beech—25 years and older capable of producing frequent seed crops to feed a variety of wildlife species.
mechanical site preparation - Soil disturbance by mechanical chopping, furrowing, dozing, or disking to prepare areas for reforestation. Objective is to reduce plant competition for trees to be planted.
mesic – Sites or habitats characterized by intermediate moisture conditions, i.e., neither decidedly wet or dry.
mineral exploration - The search for valuable minerals on lands open to mineral entry.

mineral soil - Weathered rock materials without any vegetative cover.
mineral resource - A known or undiscovered concentration of naturally occurring solid, liquid, or gaseous material in or on the earth's crust in such form and amount that economic extraction of a commodity from the concentration is currently or potentially feasible.
minerals (leasable) - Coal, oil, gas, phosphate, sodium, potassium, oil shale, sulphur, and geothermal steam. All hard-rock minerals that occur on acquired lands, as opposed to public domain lands, are leasable.
minerals (salable) - Common variety deposits that—although they may have value or use in trade, manufacture, the sciences, or in the mechanical or ornamental arts—do not possess a distinct, special economic value for such use over and above the normal uses of the general sum of such deposits. These may include sand, stone, gravel, pumicite, cinders, pumice (except that occurring in pieces more than two inches on a side), clay, and petrified wood.
minimum management requirement - Any constraint imposed to comply with 36 CFR 219.27 and other legal restrictions that must be met by benchmark solutions as noted in 36 CFR 219.11(e)(1). These include requirements including conserving soil productivity, maintaining minimum viable populations of wildlife, preserving the habitat of endangered species' habitat, dispersing openings, and limiting cut size. It also includes any other standards and guidelines, including best management practices that serve to define management prescriptions and resource response.
mitigation - Actions to avoid, minimize, reduce, eliminate, or rectify the impact of a management practice.
modification - A visual quality objective in which human activity may dominate the characteristic landscape but must, at the same time, use naturally established form, line, color, and texture appearing as a natural occurrence when viewed in foreground or middle ground.
monitoring - The periodic evaluation on a sample basis of Forest Plan management practices to determine how fully objectives have been met, and how closely management standards have been applied.
motorized equipment - Machines that use a motor, engine, or other non-living power source. This includes, but is not limited to such machines as chain saws, aircraft, snowmobiles, generators, motorboats, and motor vehicles. It does not include small battery or gas powered hand carried devices that include+ shavers, wristwatches, flashlights, cameras, stoves, or other similar small equipment.
multiple use - The management of all the various renewable surface resources of the National Forest System so that they are used in a manner that will best meet the needs of the American people. Making the most judicious use of the land for these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in the use to conform to changing needs and conditions.

N

National Forest Land and Resource Management Plan (LRMP) - A plan developed to meet the requirements of the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended, that guides all natural resource management activities and establishes management standards and guidelines for the National Forest System lands of a given national forest.

National Forest System (NFS) - All national forest lands reserved or withdrawn from public domain of the United States and acquired through purchase, exchange, donation, or other means. National Grasslands and land utilization projects administered under Title III of the Bankhead–Jones Farm Tenant Act (50 Stat. 525, 7 U.S.C. 1010–1012), and other lands, waters, or interests that are administered by the Forest Service, or are designated for administration through the Forest Service as a part of the system.

National Forest System Land - Federal land that has been legally designated as national forests or purchase units, and other land under the administration of the Forest Service, including experimental areas and Bankhead-Jones Title III land.

National Recreation Trails - Trails designated by the Secretary of the Interior or the Secretary of Agriculture as part of the national system of trails authorized by the National Trails System Act. National recreation trails provide a variety of outdoor recreation uses, in or reasonably accessible, to urban areas.

National Visitor Use Monitoring - A systematic process to estimate annual recreation and other uses of National Forest lands through user surveys.

National Wild and Scenic Rivers System - Rivers with scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values designated by Congress under the Wild and Scenic Rivers Act of Oct. 2, 1968, for preservation of their free-flowing condition.

National Wilderness Preservation System - All lands covered by the Wilderness Act and subsequent wilderness designations, irrespective of the department or agency having jurisdiction.

non-declining yield - A level of timber production planned so that the planned sale and harvest for any future decade is equal to, or greater than the planned sale and harvest for the preceding decade.

non-forest land - Land that has never supported forests and lands formerly forested where use for timber utilization is precluded by development for other use. Lands that never have had, or that are incapable of having 10 percent or more of the area occupied by forest trees; or lands previously having such cover and currently developed for non-forest use.

O

objective - A concise, time-specific statement of measurable planned results that respond to pre-established goals. It forms the basis for further planning to define the precise steps to be taken and the resources to be used in achieving identified goals.

off-highway vehicle (OHV)- Any motorized vehicle designed for or capable of cross county travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other natural terrain; except that term excludes (A) any registered motorboat; (B) any fire, military, emergency or law enforcement vehicle when used for emergency purposes, and any combat or combat support vehicle\when used for national defense purposes; and (C) any vehicle whose use is expressly authorized by the respective agency head under a permit, lease, license, or contract.

offstream use – Water withdrawn or diverted from a ground or surface-water source for public water supply, industry, irrigation, livestock, thermoelectric power generation, and other uses.

old growth forests – An ecosystem distinguished by old trees and related structural attributes. Old growth encompasses the later stages of stand development that typically differ from earlier stages in a variety of characteristics including tree size, accumulation of large dead woody material, number of canopy layers, species composition, and ecosystem function. Old growth is not necessarily virgin or primeval. It can develop over time following human disturbances, just as it does following natural disturbances. Old growth encompasses older forests dominated by early seral species, and forests in later successional stages dominated by shade tolerant species.

on-site - A term referring to species normally found on a site under natural conditions. The same or contiguous property that may be divided by a public or private right-of-way, provided that the entrance and exit between the properties is at a crossroads intersection, and that access is by crossing, as opposed to going along the right-of-way.

operating plan - A written plan, prepared by those engaged in mining activity on the forests, and approved by a forest officer for prospecting, exploration, or extraction activities that are slated to take place on National Forest System land.

outstanding mineral rights - Instances in which the minerals in federally- owned lands were severed prior to the transaction in which government acquired the land. Such rights are not subject to the Secretary of Agriculture's rules and regulations. Removal or extraction of these minerals must be allowed in accordance with the instrument severing the minerals from the surface and under applicable state and local laws and regulations.

overstory - That portion of trees in a two- or multi-layered forest stand that provides the upper crown cover.

overstory removal - The cutting of trees comprising an upper canopy layer in order to release trees or other vegetation in an understory.

P

partial retention - A visual quality objective which in human activities may be evident, but must remain subordinate to the characteristic landscape.

partnership - Voluntary, mutually beneficial and desired arrangement between the Forest Service and another or others to accomplish mutually agreed-on objectives consistent with the agency's mission and serving the public's interest.

perennial streams and rivers – These features support water flow, and/or water pools through the greater part of the year, or otherwise provide year round aquatic organism habitat. These features have well defined stream channels and bands. Many times these features will be associated with riparian dependant ecosystems at what time the riparian prescription will determine the management guidelines.

planning period - One decade. The time interval within the planning horizon that is used to show incremental changes in yields, costs, effects, and benefits.

prescribed fire – Any fire ignited by management actions to meet specific objectives including disposal of fuels, and controlling unwanted vegetation. The fires are conducted in accordance with prescribed fire plans, and are also designed to stimulate grasses, forbs, shrubs, or trees for range, wildlife, recreation, or timber management purposes.

present net value - The difference between the discounted value (benefits) of all outputs to which monetary values or established market prices are assigned and the total discounted costs of managing the planning area.

preservation - A visual quality objective that provides for ecological change only.

presuppression - Activities required in advance of fire occurrence to ensure effective suppression action, including: (1) recruiting and training fire forces, (2) planning and organizing attack methods, (3) procuring and maintaining fire equipment, and (4) maintaining structural improvements necessary for the fire program.

primitive road - Roads constructed with no regard for grade control or designed drainage, sometimes by merely repeated driving over an area. These roads are single lane, usually with native surfacing and sometimes passable with four-wheel drive vehicles only, especially in wet weather.

process records - A system that records decisions and activities that result from the process of developing a forest plan, revision, or significant amendment.

proclamation boundary - The boundary contained within the presidential proclamation that established the national forest.

productive deferred - Productive (capable) forest land which has been legislatively designated or administratively designated by the Secretary of Agriculture or Chief of the Forest Service for wilderness study or possible additions to the Wilderness System. This classification includes RARE II area designated as wilderness, but does not include RARE II areas designated as "further planning."

project - A work schedule prescribed for a project area to accomplish management prescriptions. An organized effort to achieve an objective identified by location, activities, outputs, effects, time period, and responsibilities for execution.

proposed action - In terms of the National Environmental Policy Act, the project, activity, or decision that a federal agency intends to implement or undertake. The proposed action described in the Environmental Impact Statement is the Forest Plan.

proposed wilderness – Areas recommended for wilderness by the Forest Service as a result of the RARE II study, but which have yet to be acted on by Congress.

prospecting permit - A written instrument or contract between the landowner and another conveying to the latter the right to enter the former's property and search for mineral materials. Two types of permits are used: (1) a BLM Prospecting Permit is issued by the Bureau of Land Management upon recommendation of the Forest Service. In most cases, these are preference right permits in which the prospector has the first opportunity, to the exclusion of all others, to lease any minerals discovered, and (2) a Forest Service Prospecting Permit issued by the Forest Service. No preference rights are conveyed under Forest Service permits, except in some cases of common varieties on acquired lands.

public domain land - Original holdings of the United States that were never granted or conveyed to other jurisdictions or reacquired by exchange for other public domain lands.

public issue - A subject or question of widespread public interest relating to management of the National Forest System.

public participation activities - Meetings, conferences, seminars, workshops, tours, written comments, survey questionnaires, and similar activities designed or held to obtain comments from the general public and specific publics.

public roads - Roads across national forest land which were in place as public ways when these lands were acquired. These roads may be a part of the forest, state, or county system, and may be maintained by any of these agencies.
public supply – Water withdrawn by public and private water suppliers and delivered to users.

Q

R

raking - A term used in land clearing whereby crawler tractors, or other types of similar heavy equipment, with a large rake device attached to the front end, are used to push clearing debris into piles or windrows.
range allotment - A designated area of land available for livestock grazing upon which a specified number and kind of livestock may be grazed under a range.
range management - The art and science of planning and directing range use to obtain sustained maximum animal production, consistent with perpetuation of the natural resources. Two types of range management are:

1. **extensive -** To control livestock numbers within present capacity of the range, but little or no attempt is made to achieve uniform distribution of livestock. Range management investments are minimal and only to the extent needed to maintain stewardship of the range in the presence of grazing. Past resource damage is corrected and resources are protected from natural catastrophes.

2. **intensive -** To maintain full plant vigor and to achieve full livestock utilization of available forage. This goal is achieved through implementation of improved grazing systems and construction and installation of range improvements. Cultural practices, (seeding and fertilizing), to improve forage quality and quantity may be used.

ranger district - Administrative subdivisions of the forest supervised by a District Ranger who reports to the Forest Supervisor.
rare species – Any native or once-native species of wild animal which exists in small numbers, and has been determined to need monitoring. May include peripheral species.
reconstruction - Work that includes, but is not limited to, widening of roads, improving alignment, providing additional turnouts, and improving sight distance that improve the standard to which the road was originally constructed. Also undertaken to increase the capacity of the road or to provide greater traffic safety.
Record of Decision - A document separate from, but associated with an environmental impact statement that publicly and officially discloses the responsible official's decision on the alternative assessed in the environmental impact statement chosen to implement.
recreation - Leisure time activity including swimming, picnicking, camping, boating, hiking, hunting, and fishing.

Recreation Opportunity Spectrum - A method for classifying types of recreation e xperiences available, or for specifying recreation experience objectives desired in certain areas. Classes are: Primitive, Semi-Primitive Non-Motorized, Semi-Primitive Motorized, Roaded Natural, Rural, and Urban.

- Primitive ROS An area characterized by having essentially unmodified natural environment of fairly large size. Interaction between users is very low and evidence of other users is minimal. The area is managed to be essentially free from evidence of human-induced restrictions and controls. Motorized use within the area is not permitted. The recreation experience opportunity level provided would be characterized by the extremely high probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquility, and self-reliance through the application of woodsmen and outdoor skills in an environment that offers a high degree of challenge and risk.
- Semi-Primitive Non-Motorized (ROS) An area characterized by a predominantly natural or natural-appearing environment of moderate-to-large size. Interaction between users (or concentration of users) is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present but are subtle. The recreation experience opportunity level provided would be characterized by the high, but not extremely high (or moderate) probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquility, and self-reliance through the application of woodsman and outdoor skills in an environment that offers challenge and risk. (The opportunity to have a high degree of interaction with the natural environment.) Motorized use is not permitted.
- Semi-Primitive Motorized (ROS) An area characterized by a predominantly natural or natural-appearing environment of moderate-to-large size. Interaction between users (or concentration of users) is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present but are subtle. The recreation experience opportunity level provided would be characterized by the high, but not extremely high (or moderate) probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquility, and self-reliance through the application of woodsman and outdoor skills in an environment that offers challenge and risk. (The opportunity to have a high degree of interaction with the natural environment.) Motorized use is permitted.
- Roaded Natural (ROS) An area characterized by predominantly natural-appearing environments with moderate evidences of the sights and sounds of man. Such evidences usually harmonize with the natural environment. Interaction between users may be low to moderate, but with evidence of other users prevalent. Resource modification and utilization practices are evident, but harmonize with the natural environment. Conventional motorized use is provided for in construction standards and design of facilities. The recreation opportunity experience level provided would be characterized by the probability for equal experiencing of affiliation with individuals and groups and

for isolation from sights and sounds of humans. Opportunities for both motorized and non-motorized forms of recreation may be provided.

- Rural (ROS) A classification for areas characterized by a substantially modified natural environment. Resource modification and utilization practices are to enhance specific recreation activities and to maintain vegetative cover and soil, but harmonize with the natural environment. A considerable number of facilities are designed for use by a large number of people. Moderate densities are provided away from developed sites. Facilities for intensified motorized use and parking are provided. The recreation opportunity experience level provided would be characterized by the probability for experiencing affiliation with individuals and groups is prevalent, as is the convenience of sites and opportunities. These factors are generally more important than the setting. Opportunities for wildland challenge, risk taking, and testing of outdoor skills are generally unimportant.
- Urban (ROS) An area characterized by a substantially urbanized environment, although the background may have natural-appearing elements. Renewable resources modification and utilization practices are to enhance specific recreation activities. Vegetative cover is often exotic and manicured. Sights and sound of humans, on-site, are predominant. Large numbers of users can be expected, both on-site and in nearby areas. Facilities for highly intensified motor use and parking are available with forms of mass transit often available to carry people throughout the site. The recreation opportunity experience level provided would be characterized by the probability for experiencing affiliation with individuals and groups is prevalent, as is the convenience of sites and opportunities. Experiencing natural environments, having challenges and risk afforded by the natural environment, and the use of outdoor skills is relatively unimportant. Opportunities for competitive and spectator sports and for passive uses of highly human-influenced parks and open spaces are common.

reforestation – The re-establishment of forest cover by seeding, planting, and natural means.

regeneration - The act of renewing of a tree crop by establishing young trees by naturally or artificially. The young crop itself.

regeneration cutting - Any removal of trees intended to assist regeneration already present or to make regeneration possible.

regeneration (reproduction) method - A cutting procedure by which a new age class is created. The major methods are clearcutting, seed-tree, shelterwood, selection, and coppice.

regeneration (reproduction) period - The time between the initial regeneration cutting and the successful re-establishment of a new age class by natural means, planting, or direct seeding.

Region 8 - The states that make up the Southern Region of the USDA Forest Service.

Regional Forester - The official responsible for management of National Forest land within a USDA Forest Service region.

regulated harvest – Includes any volume scheduled in calculations of the allowable sale quantity which is harvested from suitable forest land.

research natural area - An area set aside by the Forest Service specifically to preserve a representative sample of an ecological community, primarily for scientific and educational purposes. Commercial exploitation is not allowed and general public use is discouraged.

reserved mineral rights - Refers to those cases wherein the minerals were severed from the surface during the transaction whereby the government acquired the land. These rights are subject to the Secretary of Agriculture's rules and regulations that were applicable at the time of the transaction.

resource - An aspect of human environment which renders possible, or facilitates the satisfaction of, human wants, and the attainment of social objectives.

resource allocation model - A mathematical model using linear programming that will allocate land to prescriptions and schedule implementation of those prescriptions simultaneously. The end purpose of the model is to find a schedule and allocation that meets the goals of the forest and optimizes some objective function including minimizing costs. The model used for this planning is called SPECTRUM.

resource use and development opportunities - A possible action, measure, or treatment and corresponding goods and services identified and introduced during the scoping process. It may subsequently be incorporated into and addressed by the land and resource management plan in terms of a management prescription.

retention - A visual quality objective in which man's activities are not evident to the casual forest visitor.

revegetation - The re-establishment and development of a plant cover. This may take place naturally through the reproductive processes of the existing flora or artificially through the direct action of humans (e.g.: afforestation and range reseeding).

revision - To make the plan new or up-to-date. Plan revision must be considered and approved in accordance with the requirements for the development and approval of a forest plan. Revisions take place every 10-15 years, but may occur more frequently if conditions or public demands change significantly.

right-of-way - A right of use across the lands of others. It generally does not apply to absolute purchase of ownership. Land authorized to be used or occupied for the construction, operation, maintenance, and termination of a project or facility passing over, upon, under, or through such land.

riparian – Land areas directly influenced by water. They usually have visible vegetative or physical characteristics showing this water influence. Streamside, lake borders, and marshes are typical riparian areas.

riparian areas - Areas with three-dimensional ecotones of interaction that include terrestrial and aquatic ecosystems that extend down into the groundwater, up above the canopy, outward across the floodplain, up the near-slopes that drain to the water, laterally into the terrestrial ecosystem, and along the watercourse at a variable width.

riparian corridor - An administrative zone applied to both sides of a stream or along side a pond, lake, wetland, seep or spring. It is a fixed width by stream type that may fall within or beyond the true riparian area.

riparian functions - Activities that occur in a riparian area without the influence of management activities. Functions include erosion and deposition by the streams, nutrient cycling, movement and storage of water, vegetative succession, etc.

ripping - A process where the soil is mechanically sliced or broken to improve tilth, aeration, and permeability.

river classifications

(1) wild – Rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.

(2) scenic – Rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.

(3) Recreational – Rvers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

road – A motor vehicle path more than 50 inches wide, unless classified and managed as a trail. It may be classed as a system or non-system road.

road closure - A technique used by management to regulate and control the use of facilities to achieve transportation economy, user safety, protection of the public investment, and accomplishment of forest resource objectives. It may be intermittent or long term.

road density - A measure of the total length of road in any given unit of area (e.g.: 4 miles/square mile.)

road maintenance levels - A formally established set of objectives that describes the conditions necessary to achieve the planned operation of a road. The levels vary from Level I, basic custodial care, to Level V, which is assigned high use roads in which user safety and comfort are important considerations.

roadless area - Undeveloped federal land within which there are no improved roads or roads maintained for travel by means of motorized vehicles intended for highway use.

Roadless Area Review and Evaluation (RARE) II - The assessment of "primitive" areas within the national forests as potential wilderness areas as required by the Wilderness Act. This refers to the second such assessment that was documented in the final environmental impact statement of the Roadless Area Review and Evaluation, January 1979.

RARE II area - An area of land identified during the RARE II and the re-evaluation process as having potential for inclusion in the National Wilderness Preservation System.

RARE II inventory boundary - A boundary established with public input surrounding large areas of primarily Forest Service lands for the purpose of evaluation during the RARE II process. These lands meet minimum Forest Service criteria for potential wilderness.

rollover - A maximum PNV solution with an individual good or service production constrained at its maximum potential level. It provides an economically efficient basis for comparing all benchmark levels.

rotation - The number of years required to establish, including the regeneration period and grow timber crops, to a specified condition or maturity for harvest. Even- and two-aged management prescriptions in the Forest Plan use a rotation.

runoff - The total stream discharge of water from a watershed including surface and subsurface flow, but not groundwater. Usually expressed in acre-feet.

rural - A recreation opportunity spectrum classification for areas characterized by a substantially modified natural environment. Sights and sounds of man are evident. Renewable resource modification and utilization practices enhance specific recreation activities or provide soil and vegetative cover protection.

S

sale schedule - The quantity of timber planned for sale by time period from an area of suitable land covered by a forest plan. The first period (usually a decade) of the selected sale schedule provides the allowable sale quantity. Future periods are shown to establish that long-term sustained yield will be achieved and maintained.
salvage cutting - The removal of dead trees or trees being damaged or killed by injurious agents other than competition. To recover value that would otherwise be lost.
sapling - A usually young tree that is larger than a seedling, but smaller than a pole. Size varies by region.
sawtimber - Trees suitable in size and quality for producing logs that can be processed into dimension lumber.
Scenery Management System (SMS) - A system for the inventory and analysis of the aesthetic values of the National Forest Lands. It replaces the Visual Management System (VMS) as defined in Agricultural Handbook #462.
scenic integrity objective - A desired level of excellence based on physical and sociological characteristics of an area. Refers to the degree of acceptable alterations of the characteristic landscape. Objectives include Very High, High, Moderate, and Low.
scoured channel - A definable channel of flow where surface water converges with enough energy to remove soil, organic matter, and leaf litter.
sediment - Solid mineral and organic material that is in suspension, is being transported, or has been moved from its site of origin by air, water, gravity, or ice.
seep - A wet area where a seasonal high water table intersects with the ground surface. Seeps that meet the definition of a wetland are included in the Riparian Corridor.
sensitive species - Those species that (1) have appeared in the *Federal Register* as proposals for classification, and are under consideration for official listing as endangered or threatened species; (2) are on an official state list, or (3) are recognized by the Regional Forester to need special management to prevent the need for their placement on federal or state lists.
sensitivity level - A particular degree or measure of viewer interest in the scenic qualities of the landscape.
shearing - A method used in land clearing whereby tree stems are severed at ground line by large bladed mechanisms mounted on crawler tractors (e.g.: serrated tooth V-blade or KG blade).

shelterwood - A regeneration method of regenerating an even-aged stand in which a new age class develops beneath the partially shaped microenvironment provided by the residual trees. The sequence of treatments can include three distinct types of cuttings: (1) an optional preparatory harvest to enhance conditions for seed production; (2) an establishment harvest to prepare the seed bed, and to create a new age class; and 3) a removal harvest to release established regeneration from competition with the overwood.

shelterwood with reserves - A two-aged regeneration method in which some or all of the shelter trees are retained, well beyond the normal period of retention, to attain goals other than regeneration.

silvicultural system - A management process whereby forests are tended, harvested, and replaced, resulting in a forest of distinctive form. Systems are classified according to the method of carrying out the fellings that remove the mature crop, and provide for regeneration and according to the type of forest thereby produced.

silviculture - The art and science of controlling the establishment, growth, composition, health, and quality of forests and woodlands. Silviculture entails the manipulation of forest and woodland vegetation in stands and on landscapes to meet the diverse needs and values of landowners and society on a sustainable basis.

silvics – The study of the life history and general characteristics of forest trees and stands, with particular reference to environmental factors, as a basis for the practice of silviculture.

single-tree selection - A regeneration method of creating new age classes in uneven-aged stands in which individual trees of all size classes are removed uniformly throughout the stand to achieve desired stand structural characteristics.

site preparation - The preparation of the ground surface prior to reforestation. Various treatments are applied as needed to control vegetation that will interfere with the establishment of the new crop of trees or to expose the mineral soil sufficiently for the establishment of the species to be reproduced.

site index – A series-specific measure of actual or potential forest productivity (site quality, usually for even-aged stands), expressed in terms of the average height of trees included in a specified stand component (defined as a certain number of dominants, co-dominants, or the largest and tallest trees per unit area) at a specified index or base age.

skid trails - A travel way through the woods formed by loggers dragging (skidding) logs from the stump to a log landing without dropping a blade and without purposefully changing the geometric configuration of the ground over which they travel.

skidding - A term for moving logs by dragging from stump to roadside, deck, or other landing.

slash - The residue left on the ground after felling, silvicultural operations, or as a result of storm, fire, girdling, or poisoning. All vegetative debris resulting from the purchaser's operations. Slash associated with construction of roads is subject to treatment according to construction specifications, all other is subject to the terms of contract provision B/BT6.7.

snag - A dead or partially dead (more than 50 percent) hardwood or pine tree which is used by many bird species for perching, feeding, or nesting.

social analysis - An analysis of the social (as distinct from the economic and environmental) effects of a given plan or proposal for action. It includes identification and evaluation of all pertinent desirable and undesirable consequences to all segments of society, stated in some comparable quantitative terms, including persons or percent of population in each affected social segment. In addition, social analysis also includes a subjective analysis of social factors not expressible in quantitative terms.

special concern species – Species that is federally listed as Category 2 or ranked as globally rare by state heritage programs and The Nature Conservancy. Also used by some states for any species of wild animal native or once-native to the state which is determined by the state to require monitoring.

special-use authorization - A permit, term permit, or easement that allows occupancy, use, rights, or privileges of National Forest System land.

special use permit – A permit issued under established laws and regulations to an individual, organization, or company for occupancy or use of National Forest land for some special purpose.

spring - A water source located where water begins to flow from the ground due to the intersection of the water table with the ground surface. Generally flows throughout the year. Springs that are the source of perennial or intermittent streams are included in the Riparian Corridor.

stand - A contiguous group of trees sufficiently uniform in age-class distribution, composition, and structure, and growing on a site of sufficiently uniform quality, to be a distinguishable unit.

stand density - A quantitative measure of stocking expressed either absolutely per unit of land in terms of number of trees, basal area, volume per unit area, or relative to some standard condition.

stand improvement - A term comprising all intermediate cuttings made to improve the composition, structure, condition, health, and growth of even-aged, two-aged, or uneven-aged stands.

standard - Requirement that precludes or imposes limitations on resource management practices and uses. Usually for resource protection, public safety, or addressing an issue.

stocking - The degree of occupancy of land by growing stock trees, measured by basal area or number of trees per unit area and spacing compared with a minimum standard - which varies by tree size and species or species group - to the occupancy that is required to fully utilize the growth potential of the land.

Streamside Management Zones - Land areas adjacent to natural streams, lakes, ponds, and seeps. These zones are typically designed to reduce, minimize or prevent non-point source pollution from entering a stream system (e.g.: sediment from a road or timber harvesting activity). Specific SMZ buffer widths are often defined in State Best Management Practice handbooks.

successional stage - A stage or recognizable condition of a plant community that occurs during its development from bare ground to climax: grass, forb, shrub seedling, pole-sapling, immature, mature, old growth.

suitable use - The appropriateness of applying certain resource management practices to a particular area of land, as determined by an analysis of the economic

and environmental consequences and the alternative uses foregone. A unit of land may be suitable for a variety of individual or combined management practices.

suitable forest land (suitability) - National Forest System land allocated by a Forest Plan decision to be managed for timber production on a regulated basis. Regulated basis means a systematic relationship between tree growth and timber harvest such that a specific timber volume objective level can be sustained indefinitely.

sustained yield of the products and services - The achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the National Forest System without impairment of the productivity of the land.

T

tentatively suitable forest land - National Forest System land that meets specific criteria in the implementing regulations of the National Forest Management Act (36 CFR 219.14 for further consideration during the planning process for timber production on a regulated basis. Note that "tentatively suitable land" is not the same as the allocation of the existing Forest Plan, as amended since 1985, but is identified by a reanalysis. (Also called "Phase 1 suitability" or "Stage 1 suitability" because its designation as Part "A" of a three-part process described by the text of the National Forest Management Act.) (Timber Supply/Demand).

term permit - A special-use authorization to occupy and use National Forest System land, other than rights-of-way, for a specified period. It is revocable and compensable according to its terms.

thinning - A cutting made to reduce stand density of trees primarily to improve growth, enhance forest health, or to recover potential mortality.

threatened species - Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. Designated as a threatened species in the *Federal Register* by the Secretary of Interior.

timber - Wood retaining many of the recognizable characteristics of a tree: round, bark covered, and tapering, but without the limbs and leaves. In wood-industry usage, it may be "standing timber"- that portion of living trees with characteristics of value to the wood-using industry, or cut trees not yet processed beyond removing limbs and tops.

timber demand - A relationship between stumpage or delivered log price and the quantity of timber produced.

timber product market area - The geographic area enclosed within a polygon drawn by connecting those mills buying forest timber that are the farthest away from the forest.

timber sale program quantity - The volume of timber planned for sale during the first decade of the planning horizon. It includes the allowable sale quantity (chargeable volume), and any additional material (non-chargeable volume), planned for sale. The timber sale program quantity is usually expressed as an annual average for the first decade.

timber stand improvement - A term comprising all intermediate cuttings made to improve the composition, constitution, condition, and increment of a timber stand.

timber supply - The amount of wood raw material available to be harvested within specified parameters of time and geographic area.
timberland - Forest land that is producing or capable of producing in excess of 20 cubic feet per acre per year of industrial wood crops under natural conditions. Not withdrawn from timber utilization, and not associated with urban or rural development. Currently, inaccessible and inoperable areas are included.
trailheads - The parking, signing, and other facilities available at the terminus of a trail.
two-aged stand - A stand composed of two distinct age classes that are separated in age by more than 20 percent of rotation.

U

understory - The trees and other vegetation growing under a more or less continuous cover of branches and foliage formed collectively by the upper portion (overstory) of adjacent trees and other woody growth.
uneven-aged regeneration methods - Methods of regenerating a forest stand, and maintaining an uneven-aged structure by removing some trees in all size classes either singly, in small groups, or strips. The methods are single-tree or group selection.
uneven-aged silvicultural system - A planned sequence of treatments designed to maintain and regenerate a stand with three or more age classes.
urban – An area characterized by a substantially urbanized environment. The background may have natural-appearing elements.

V

values, market - Prices of market goods and services measured in real dollars in terms of what people are willing to pay as evidenced by market transactions.
values, non-market - Prices of non-market goods and services imputed from other economic values.
variety class - A classification system for establishing three visual landscape categories according to the relative importance of the visual features. This classification system is based on the premise that all landscapes have some visual values, but those with the most variety or diversity of visual features have the greatest potential for high scenic value.
viable population - Population of plants or animals that has the estimated numbers and distribution of reproductive individuals to ensure its continued existence is well distributed in the planning area.
viewshed - The total landscape seen, or potentially seen from all or a logical part of a travel route, use area, or water body.
visual quality objective - A desired level of excellence based on physical and sociological characteristics of an area under the Visual Management System. Refers to the degree of acceptable alterations of the characteristic landscape. Objectives include Preservation, Retention, Partial Retention, Modification, and Maximum Modification. Except for “preservation,” each goal describes a different degree of acceptable alteration of the natural landscape based on the importance of esthetics.

visual resource - The composite of basic terrain, geological features, water features, vegetative patterns, and land-use effects that typify a land unit and influence the visual appeal the unit may have for visitors.

W

water supply area - Areas that serve present and future municipal water supply and trout hatching or rearing operations.

watershed - The total area above a given point on a stream that contributes water to the flow at that point.

wetlands - (pursuant to the Federal Clean Water Act) - Areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances, support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas, and are found primarily within palustrine systems; but may also be within riverine, lacustrine, estruarine, and marine systems.

wild and scenic river - A river or section of river designated as such by congressional action under the Wild and Scenic Rivers Act of Oct. 2, 1968, as supplemented and amended, or those sections of a river designated as wild, scenic, or recreational by an act of the legislature of the state or states through which it flows.

wilderness - All national forest lands included in the National Wilderness Preservation System. An area where the earth and its community of life are untrammeled and only visited by humans.

wildland fire - Any non-structural fire on wildlands other than one intentionally set for management purposes. Confined to a predetermined area. Not to be confused with "fire use," which includes prescribed fire.

wildland urban interface (WUI)– The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.

wildlife - All non-domesticated mammals, birds, reptiles, and amphibians living in a natural environment, including game species and non-game species. Animals, or their progeny (i.e., feral animals - including horses, burros, and hogs), that once were domesticated, but escaped captivity, are not considered wildlife.

wildlife habitat improvement - The manipulation or maintenance of vegetation to yield desired results in terms of habitat suitable for designated wildlife species or groups of species.

wildlife tree - A den tree, snag, or mast or food tree.

withdrawal – Water removed from the ground or diverted from a surface water source for use.

woodland grazing - Grazing livestock on the grass-forbs existing under forested stands, mainly southern yellow pine types.

X

xeric – Pertaining to sites or habitats characterized by decidedly dry conditions.

Y

yield table - A tabular statement of outputs expected to be produced under a specific set of conditions.

APPENDIX B – LAWS, POLICIES, AND OTHER SOURCES OF DESIGN CRITERIA

INTRODUCTION

This appendix supplements the Key Laws Providing Direction for Ozark-St. Francis National Forests Land Management Plans section found in Part 3 of the LRMP with a list of federal and state statutes, regulations (Code of Federal Regulations or CFR), Executive Orders (EO), and national and regional Forest Service policy relevant to the Land Resource and Management Plan.

The list of national and regional policy is partial. A complete listing can be found in the Forest Service Manual (FSM) and Forest Service Handbook (FSH). The Forest Service Directives System is available on the national website at http://www.fs.fed.us/im/directives.

KEY LAWS PROVIDING DIRECTION FOR OZARK-ST. FRANCIS NATIONAL FORESTS

U.S. Mining Laws (Public Domain land) Act of May 10, 1872: Provides that all valuable mineral deposits in land belonging to the United States, both surveyed and unsurveyed, are free and open to exploration and purchase, and the land in which they are found to occupation and purchase by citizens of the United States and those who have declared their intention to become such, under regulations prescribed by law, and according to the local customs or rules of miners, so far as the same are applicable and not inconsistent with the laws of the United States. There are a number of Acts which modify the mining laws as applied to local areas by prohibiting entry altogether or by limiting or restricting the use which may be made of the surface and the right, title or interest which may pass through patent.

Organic Administration Act of June 4, 1897: Authorizes the President to modify or revoke any instrument creating a National Forest; states that no National Forest may be established except to improve and protect the forest within its boundaries, for the purpose of securing favorable conditions of water flows, and to furnish a continuous supply of timber for the use and necessities of citizens of the United States. Authorizes the Secretary of Agriculture to promulgate rules and regulations to regulate the use and occupancy of the National Forests.

The Migratory Bird Treaty Act (1918): Controls the taking, killing, possessing, transportation, and importation of migratory birds.

The Clean Water Act, a series of Acts from 1948 to 1987: Passed to maintain and restore the chemical, physical, and biological integrity of the nation's waters. It requires compliance with State and federal pollution control measures; no degradation of instream water quality needed to support designated uses; control of non-point sources of water pollution through conservation or best management practices; federal agency leadership in controlling non-point pollution from managed land; and rigorous criteria for controlling pollution discharges into waters of the United States.

Multiple-Use Sustained-Yield Act of June 12, 1960: States that it is the policy of Congress that the National Forests are established and shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes, and authorizes and directs the Secretary of Agriculture to develop and administer the renewable surface resources of the National Forests for the multiple use and sustained yield of the products and services obtained there from.

Wilderness Act of September 3, 1964: Established a National Wilderness Preservation System to be composed of federally owned areas designated by Congress as "wilderness areas" and administered for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness. Provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness. States that no federal land shall be designated as "wilderness areas" except as provided for in the act or by a subsequent act.

Land and Water Conservation Fund Act of September 3, 1964: Authorizes the appropriation of funds for federal assistance to States in planning, acquisition, and development of needed land and water areas and facilities and for the federal acquisition and development of certain land and other areas for the purposes of preserving, developing, and assuring accessibility to outdoor recreation resources.

The National Historic Preservation Act (1966), as amended: States that it shall be the policy of the Federal Government to provide leadership in the administration of the National Preservation program in partnership with States, tribes, Native Hawaiians, and local governments. It requires agencies to take into account the affect of management activities on significant heritage resources (Section 106). It also requires development of long-term management plans that locate and protect sites, and then integrate sites and information into overall agency programs and goals (Section 110). The implementing regulations for Section 106 (36 CFR 800) were amended in 1999 (and revised in 2000). It also established the National Register of Historic Places (36 CFR 60, 36 CFR 63), and the Advisory Council on Historic Preservation whose purpose is to advise the President and the Congress on matters relating to historic preservation.

Wild and Scenic Rivers Act of October 2, 1968: Instituted a National Wild and Scenic Rivers System by designating the initial components of that system, and by prescribing the methods by which and standards to which additional components may be added to the system from time to time. Designated rivers have requirements with time frames for preparing and implementing a Comprehensive River Management Plan and a boundary declaration.

National Environmental Policy Act of January 1, 1970: Directs all federal agencies to consider and report the potential environmental impacts of proposed federal actions, and established the Council on Environmental Quality.

Endangered Species Act of December 28, 1973: Authorizes the determination and listing of species as endangered and threatened; prohibits unauthorized taking, possession, sale, and transport of endangered species; provides authority to acquire land for the conservation of listed species, using Land and Water Conservation Funds; authorizes establishment of cooperative agreements and grants-in-aid to States that establish and maintain programs for endangered and threatened wildlife and plants; authorizes the assessment of civil and criminal penalties for violating the act or regulations; and, authorizes the payment of rewards to anyone furnishing information leading to arrest and conviction for any violation of the act or any regulation issued there under. Section 7 of the act requires federal agencies to insure that any action authorized, funded or carried out by them is not likely to jeopardize the continued existence of listed species or modify their critical habitat. Section 7(a)(1) of the act identifies the affirmative conservation duties of agencies and requires all federal agencies to carry out programs aimed at recovery of listed species.

Federal Noxious Weed Act of January 3, 1975: Authorizes the Secretary of Agriculture to designate plants as noxious weeds by regulation; to prohibit the movement of all such weeds in interstate or foreign commerce except under permit; to inspect, seize and destroy products, and to quarantine areas, if necessary to prevent the spread of such weeds; and to cooperate with other federal, State and local agencies, farmers associations, and private individuals in measures to control, eradicate, prevent, or retard the spread of such weeds.

Federal Land Policy and Management Act of October 21, 1976: Requires that public land be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public land in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use. Also states that the United States shall receive fair market value of the use of the public land and their resources unless otherwise provided for by law.

National Forest Management Act of October 22, 1976: The National Forest Management Act reorganized, expanded and otherwise amended the Forest and Rangeland Renewable Resources Planning Act of 1974, which called for the management of renewable resources on National Forest land. The National Forest Management Act requires the Secretary of Agriculture to assess forestland, develop a management program based on multiple-use, sustained-yield principles, and implement a resource management plan for each unit of the National Forest system. It is the primary statute governing the administration of National Forests.

Clean Air Act of August 7, 1977, as amended (1977 and 1990): Enacted to protect and enhance the quality of the nation's air resources; to initiate and accelerate a national research and development program to achieve the prevention and control of air pollution; to provide technical and financial assistance to State and local governments in connection with the development and execution of their air pollution

prevention and control programs; and, to encourage and assist the development and operation of regional air pollution prevention and control programs.

Soil and Water Resources Conservation Act of November 18, 1977: Provides for a continuing appraisal of the United States' soil, water and related resources, including fish and wildlife habitats, and a soil and water conservation program to assist landowners and land users in furthering soil and water conservation.

Surface Mining Control and Reclamation Act of August 3, 1977: Authorizes the Secretary of Agriculture to enter into agreements with landowners, providing for land stabilization, erosion, and sediment control, and reclamation through conservation treatment, including measures for the conservation and development of soil, water, woodland, wildlife, and recreation resources, and agricultural productivity of such land.

Public Rangelands Improvement Act of October 25, 1978: Establishes and reaffirms the national policy and commitment to inventory and identify current public rangeland conditions and trends; manage, maintain and improve the condition of public rangelands so that they become as productive as feasible for all rangeland values in accordance with management objectives and the land use planning process; charge a fee for public grazing use which is equitable; continue the policy of protecting wild free-roaming horses and burros from capture, branding, harassment, or death, while at the same time facilitating the removal and disposal of excess wild free-roaming horses and burros which pose a threat to themselves and their habitat and to other rangeland values.

Healthy Forests Restoration Act of 2003: Improves the capacity of the Secretary of Agriculture and the Secretary of the Interior to plan and conduct hazardous fuels reduction projects on National Forest System land and Bureau of Land Management land aimed at protecting communities, watersheds, and certain other at-risk land from catastrophic wildfire, to enhance efforts to protect watersheds and address threats to forest and rangeland health, including catastrophic wildfire, across the landscape, and for other purposes.

Resources Conservation and Recovery Act (RCRA)

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) (1996)

Management and Administration

Social and Economic

Twenty-five Percent Fund (1905)

Government Performance and Results Act (1993)

The National Environmental Policy Act (1969)

The National Forest Management Act (1976) EO 12898

Environmental Justice (1994)

Tribal Relations and Interests

The **American Indian Religious Freedom Act of 1978** makes it policy for the Federal Government to protect and preserve American Indians' inherent right of freedom to believe, express, and exercise traditional religions of American Indians, Eskimo, Aleut and Native Hawaiians, including but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonial and traditional rites. It directs federal agencies to assess their policies and procedures, in consultation with tribes, on ways to ensure this use.

EO 13007 Indian Sacred Sites (May 26, 1996) requires each executive branch agency with statutory or administrative responsibility for the management of federal lands, to the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions, to accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and to avoid adversely affecting the physical integrity of such sacred sites. Where appropriate, agencies shall maintain the confidentiality of sacred sites.

EO 13084 Consultation (May 14, 1998) provides direction regarding consultation and coordination with Indian Tribes relative to regulatory policy. Executive Memorandum for Heads of Executive Departments and Agencies: Government-to-Government Relations (April 29, 1994) states that each executive department and agency shall consult with tribal governments prior to taking actions that affect federally recognized tribal governments on a government-to-government basis. All such consultations are to be open and candid so that all interested parties may evaluate for themselves the potential impact of proposals.

American Indian/Alaska Native Policy Statement (USDA Forest Service) promulgates Executive Memorandum of April 29, 1994. It states that the Forest Service will maintain a governmental relationship with federally recognized tribal governments, implement programs and activities honoring Indian treaty rights and fulfill legally mandated trust responsibilities to the extent they are applicable to National Forest System lands as well as to address and be sensitive to traditional native religious beliefs and practices; and provide research, transfer of technology, and technical assistance to Indian governments.

Memoranda of Understanding

1989 Arkansas Museum Science and History, Loan of Camp Boss Kit
Signed by Gary Knudsen

14 Nov 2002 Submission of NAGPRA Inventory to NPS
Signed by Charles Richmond FS
Francis McManamon NPS

12 Dec 2002 MOU Government to Government Relationships
Signed by Charles Richmond FS
Gregory Pyle, Chief, Choctaw Nation of Oklahoma
LaRue Parker, Chairman, Caddo Nation of Oklahoma

Memoranda of Agreement

19 Mar 1993 Reconstruction of FSR 1800 (ccc Culverts), Pope Co, AR
Signed by Lynn Neff FS
Cathy Buford AR SHPO

16 Jun 1993 Wedington Prairie Restoration
Signed by Lynn Neff FS
Cathy Buford AR SHPO

9 Sept 1993 Reuse Road on 3ST135, Stone Co, AR
Signed by Lynn Neff FS
Cathy Buford AR SHPO

1 Aug 1997 MOA for Certain Undertakings Handled as Categorical Exclusions betweek Ozark-St. Francis and Ouachita NFs and AR SHPO, OK SHPO, and Ok State Archeologist
Signed by D. Hammond Ouachita Acting FS, Lynn Neff OZ FS
Cathy Slater AR SHPO
Blake Wade OK SHPO
Robert Brooks OK State Arch

Etchieson, Meeks, Gary D. Knudsen, Barbara Williams and Michael Pfeiffer (1993). *Guidelines For Completing Heritage Resource Surveys On The National Forests In Arkansas And Oklahoma*. Ouachita and Ozark-St. Francis National Forests.
Concurrence received by AR SHPO
OK SHPO
OK State Arch

15 Apr 2003 Categorical Exclusion Agreement OZSF-Ouachita NFs, AR SHPO OK SHPO, OK State Arch, ACHP, Choctaw Nation, Chickasaw Nation, Caddo Nation, Quapaw Tribe, Osage Nation, Cherokee Nation
Signed by A. Newman Oua FS, C. Richmond OZST FS
Chad Smith Chief Cherokee Nation
LaRue Parker Caddo Nation
Gregory Pyle Choctaw Nation
OK SHPO, OK State Arch
Not signed by AR SHPO

Programmatic Agreements

19 Nov 1992 PA USDAFS Southern Region and SHPOs AL, AR, FL, GA, KY, LA, MS, NC, OK, PR, SC, TN, TX, VA, WVA; ACHP concerning Management of Historic Properties
Signed by Marvin Meier FS Regional Forester
RL Harper ACHP
Not signed by AR SHPO

22 Sept 1995 Categorical Exclusions USDA, ACHP, and National Council of SHPOs
Signed by Grey Reynolds, Chief FS
Ray Luce NC SHPOs
Stephan Hand ACHP

20 Feb 2002 PA Regarding the Treatment of Cultural Resources within the Red Oak Borer Infestation Areas in the Ozark-St. Francis NFs, Arkansas
signed by Charles Richmond FS
Ken Grunewald AR SHPO
LaRue Parker, Chairman, Caddo Nation of Oklahoma
ACHP did not sign, due to similarity with Ouachita Ice Storm PA, acknowledged compliance 2 Jan 2004

20 Dec 2004 Pending Signatories 03-MU-11080901-01A PA between USDAFS Ozark_St. Francis and Ouachita NFs, SHPOs AR/OK, OK State Archeologist, ACHP, and Federally Recognized Tribes.
Concurrence received OK SHPO, AR SHPO, Caddo Nation, Absentee Shawnee Tribe

FSM 1563 provides the management direction for American Indian Tribe and Alaska Native Relations.

Resource Management

Biological Resources

The **Migratory Bird Treaty Act (1918)** controls the taking, killing, possessing, transportation, and importation of migratory birds.

The **Bald and Golden Eagle Protection Act (1940)** provides protection to bald and golden eagles.

The **Sikes Act (1960)** provides for carrying out wildlife and fish conservation programs on federal lands including authority for cooperative State-Federal plans and authority to enter into agreements with States to collect fees to fund the programs identified in those plans.

The **Clean Water Act Amendments of 1977 and 1990,** on maintaining biological diversity, 404 B-1 guidelines.

36 CFR 219.19 directs the Forest Service to maintain habitat for viable populations of existing native and desired nonnative vertebrate species, to select management indicator species, to consult with biologists from other agencies, consider access and dispersal problems of hunting, fishing, and other uses, and evaluate the effects of pest and fire management.

36 CFR 241 Fish and Wildlife.

Departmental Regulation 9500-4 provides USDA policy on wildlife, fish, and plant habitat management pertinent to public lands on 1) National Forest System land, 2) threatened and endangered species and 3) economic losses from plant and animal pests.

FSM 2600 Wildlife, Fish, and Sensitive Plant Habitat Management.

Threatened, Endangered, Sensitive Species

The Endangered Species Act of 1973.

FSM 2670 Threatened, Endangered and Sensitive Plants and Animals

FSM 2672 governs the protection of sensitive species. The Regional Forester identifies sensitive species, requires that management decisions do not result in a trend towards federal listing and loss of viability, and requires that a biological evaluation be prepared for all Forest Service activities to address potential impacts to sensitive species.

Invasive Species

Lacey Act (1900) as amended 1981

Animal Damage Control Act (1931)

Federal Seed Act (1939)

Fish and Wildlife Conservation Act of 1960

The **Federal Noxious Weed Act (1974)**, as amended, requires cooperation with State, local and other federal agencies in the application and enforcement of all laws and regulations relating to the management and control of noxious weeds.

Public Rangelands Improvement Act (1978)

Forest and Rangeland Renewable Resources Research Act (1978)

Plant Protection Act (1990)

The **Non-indigenous Aquatic Nuisance Prevention and Control Act (1990)**, which was subsequently amended by the National Invasive Species Act of 1996.

EO 13112, **Invasive Species (1999).**

40 CFR 1500-1508

Pulling Together: A National Strategy for Invasive Plant Management (1998).

National Guide to Noxious Weed Prevention Practices (2001).

Vegetation Management

The National Forest Management Act (1976) requires identification of areas suitable and available for timber harvest and determination of the allowable sale quantity (ASQ) from those lands.

The Healthy Forest Restoration Act (2003) strengthens public participation in developing high priority forest health projects; reduces the complexity of environmental analysis allowing federal land agencies to use the best science available to actively manage land under their protection, provides a more effective appeals process encouraging early public participation in project planning, and issues clear guidance for court action against forest health projects.

FSM 3400 Forest Pest Management and handbook FSH 3409.11.

FSM 4500 Integrated Pest Management.

Physical Resources

Air Resources

The **Wilderness Act (1964)** directs the Forest Service to preserve and protect the natural condition of wilderness, including the intrinsic wilderness value of air quality.

The **Clean Air Act amendments of 1977 and 1990.** Areas of the country were designated as Class I, II, and III airsheds for the prevention of significant deterioration purposes. Class I areas include National Parks and wilderness areas designated before 1977 and over 5000 acres in size. Class I provides protection to pristine lands by severely limiting the amount of additional human-caused air pollution that can be added to these areas.

The **EPA's Natural Events Policy** includes a provision to prevent an area from being re-designated as "non-attainment" for particulates when high concentrations result from wildfires.

The **EPA's Interim Air Quality Policy on Wildland and Prescribed Fires(1998)** provides guidance on mitigating air pollution impacts caused by wildland and prescribed fires while recognizing the current role of fire in wildland management.

Soil Resources

The **Forest and Rangeland Renewable Resources Planning Act (RPA)(1974),** as amended by the **National Forest Management Act (1976),** gives direction to "...recognize the fundamental need to protect and, where appropriate, improve the quality of soil, water and air resources."

The **National Forest Management Act** minimum management requirement states, "Conserve soil and water resources and not allow significant or permanent impairment of the productivity of the land."

Soil and Water Resources Conservation Act (1977).

Water Resources

The Organic Administration Act (1897).

The Clean Water Act, a series of Acts from 1948 to 1987.
The Safe Drinking Water Act of 1974 as amended (1986, 1996) requires federal agencies having jurisdiction over any federally owned or maintained public water system to comply with all authorities respecting the provision of safe drinking water. The State of California has primary enforcement responsibility through its drinking water regulations.

The National Forest Management Act of 1976 directs National Forests to protect watershed conditions from irreversible damage and to protect streams and wetlands from detrimental impacts.

Executive Orders 11988 Floodplan Management (1977) and 11990 Protection of Wetlands (1977) direct federal agencies to avoid to the extent possible the impacts associated with the destruction or modification of floodplains and wetlands. Agencies are directed to avoid construction and development in flood plains and wetlands whenever there are any feasible alternatives.

Executive Order 12088 Federal Compliance with Pollution Control Standards (1978). Revoked in part by **EO 13148 Greening the Government Through Leadership in Environmental Management (2000).**

Executive Order 12113 Independent Water Project Review.

36 CFR 323 Permits for Discharges of Dredged or Fill Material into Waters of the United States.

FSM 2500. Watershed and Air Management.

Forest Service Handbook 2509.18 Soil Management Handbook.

Arkansas Forestry State Best Management Practices for Water Quality Protection Watershed Conservation Practices Handbook (FSH - Forest Supplement 2509.25)

Geologic Resources and Hazards

The **Organic Administration Act of 1897** established the National Forests, and the specific uses thereof and initial regulations. The law authorizes the use of National Forest System lands to qualified parties for collection of vertebrate and invertebrate fossil resources.

Archeological Protection Act of 1979 authorizes the use and protection of National Forest System lands for paleontological resources associated with archeological resources. The Act allows collection of rocks, minerals and fossils for non-commercial use without a permit.

The **Federal Cave Resources Protection Act of 1988** requires the Secretary of Agriculture to consider significant caves in the preparation of any land management plan and keep the locations of significant caves confidential unless it is determined that disclosure will not create a risk of harm, theft, or destruction to cave resources.

36 CFR 251, Subpart B provides direction for managing special uses including paleontological resources.

FSM 2800 Geology.

Special Designations

The **Wilderness Act of 1964** established a National Wilderness Preservation System to be administered in such a manner as to leave these areas unimpaired for future use and enjoyment as wilderness.

Endangered American Wilderness Act of 1978.

The **Alaska National Interest Lands Conservation Act of 1980** directs the Secretary of Agriculture to provide adequate access to non-federal land within the boundaries of the National Forest System including Congressionally designated areas.

36 CFR 293 Wilderness and Primitive Areas.

36 CFR Part 294, the Roadless Area Conservation Rule, establishes prohibitions on road construction, road reconstruction, and timber harvesting in inventoried roadless areas on National Forest System lands.

36 CFR 219.17(a) states that: "... roadless areas within the National Forest System shall be evaluated and considered for recommendation as potential Wilderness during the forest planning process."

Congressional Grazing Guidelines (Sec. 108, P.L. 96-560, H.R. Report 96-617 dated 11/14/79) clarify the Congressional intent that livestock grazing will be permitted to continue in National Forest wilderness areas, when such grazing was established prior to classification of an area as wilderness. This policy is reiterated in **FSM 2323.22.**

FSM 2320 Wilderness

FSH 1909.12.7.1 directs National Forests to: "... identify and inventory all roadless, undeveloped areas that satisfy the definition of Wilderness found in section 2 (c) of the 1964 Wilderness Act**." FSH 1909.12.7** also details the means by which the capability, availability, and need for potential wilderness areas is assessed.

Wild and Scenic Rivers

The **Wild and Scenic Rivers Act of 1968** establishes objectives, goals, and procedures for designation of wild, scenic, and recreational rivers, making it national policy to "preserve selected rivers or sections thereof in their free-flowing condition, to protect water quality of such rivers and to fulfill other vital national conservation measures.

Interagency National Wild and Scenic Rivers System: Final Revised Guidelines for Eligibility (1982) (USDA and USDI) provides additional guidance to agencies on how to consider Wild and Scenic Rivers eligibility, suggesting that Wild and Scenic rivers be considered during forest planning.

FSM 2354 Wild and Scenic Rivers.

FSH 1909.12 directs the Forest Service to evaluate rivers for inclusion in the National Wild and Scenic River System during the forest planning process.

Research Natural Areas

36 CFR 219.25 states that forest planning shall provide for the establishment of Research Natural Areas. To be identified are examples of important forest, shrub land, grassland, alpine, aquatic, and geologic types that have special or unique characteristics of scientific interest and importance and that are needed to complete the national Research Natural Area network.

FSM 4060 provides specific direction concerning establishment and management of Research Natural Areas.

National Strategy of July 19, 1993.

Special Interest Areas

36 CFR 294.1 states that if under 100,000 acres, a Regional Forester may designate certain suitable areas other than wilderness or wild areas, which should be managed principally for recreation use.

FSM 2360 provides specific direction concerning establishment and management of Special Interest Areas. Forest planning may be one means for establishment.

FSM 2370 discusses special recreation designations.

FSM 2372 provides specific direction concerning establishment and management of Special Interest Areas. Forest planning may be one means for establishment.

Lands Management

The **Transfer Act (1905)** transferred the forest reserves to the Department of Agriculture.

The **Weeks Act (1911**) provides for land acquisition, exchange, condemnation and rights of way easements. Land acquired by the United States under this act are reserved and not subject to appropriation under mineral law except as provided by the Secretary of Agriculture.

The **General Exchange Act (1922)** authorizes land adjustments within National Forest boundaries.

Clarke-McNary Act (1924) authorized cooperative agreements with the states and expanded on the Weeks Act land purchase authority.

Land Acquisition (1925).

The **Color of Title Act (1928)** authorizes the Secretary of Agriculture to recognize an adverse possession of public land under claim or color of title based on designated conditions.

The **Land Acquisition - Declaration of Taking Act (1931)** provides condemnation authority to the United States.

Receipts Act of 1938 (52 Stat. 699), as amended in 1944 (58 Stat. 46).

Receipts Act of 1940 (54 Stat. 299 and 54 Stat. 297). Land Acquisition - Title Adjustment (1943).

The **Organic Act (1956**) provides additional land purchase authority.

The **Land and Water Conservation Fund Act (1964**) provides for funds for the acquisition of land and interests in land.

National Forest Roads and Trails Act (1964).

The **Sisk Act (1967)** provides for the exchange of land with States and local governments. **Federal Land Policy and Management Act (1976).**

Acceptance of Gifts Act (1978) This Act authorizes Forest Service acceptance of cash, as well as donations of real personal property.

The **Small Tracts Act (1983**) provides for the sale, exchange or interchange of certain parcels of minimal size.

Educational Land Grant Act (2000) provides for conveyance of National Forest System lands for educational USDA Forest Service purposes.

36 CFR 254 Landownership Adjustments.

FSM 5400 Lands.

Heritage Resources

The Antiquities Act (1906), as implemented by the Uniform Rules and Regulations, has the purpose of protecting any historic or prehistoric ruin or monument, or any object of antiquity on Federal lands. It authorizes the President to designate historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest as national monuments; regulates public archaeological activities; and provides penalties for people who damage these sites and ruins. Includes both heritage resources and paleontological resources.

Historic Sites, Buildings, Objects and Antiquities Act (1935).

Reservoir Salvage Act (1960).

National Historic Preservation Act (1966) as amended through 1992 (and as implemented by 36 CFR 800 # Protection of Historic and Cultural Properties).

National Environmental Policy Act (1969).

Archaeological and Historic Preservation Act (1974), as amended.

The **Archaeological Resources Protection Act (1979),** as amended (as implemented by **36 CFR 296** # Protection of Archaeological Resources), secures the protection of archaeological resources and sites on public and Indian lands and to foster increased cooperation and exchange of information between governmental authorities, the professional archaeological community and private individuals having access to and information related to these resources. It provides civil and criminal penalties for the unauthorized excavation, removal, damage, alteration, or defacement of archaeological resources.

Native American Graves Protection and Repatriation Act of 1990 (as implemented by 43 CFR 10 # Native American Graves Protection and Repatriation Act Regulations) directs the recovery, treatment, and repatriation of human remains, sacred objects, and objects of cultural patrimony to appropriate Tribes. It also calls for consultation with tribes to develop procedures for use in the event that human remains are discovered either by intentional excavation or inadvertent discovery.

Religious Freedom Restoration Act (1993).

EO 11593 Protection and Enhancement of Cultural Environment (1971) states that the Federal Government shall provide leadership in preserving, restoring and maintaining the historic and cultural environment of the Nation, and that federal agencies shall administer the cultural properties under their control in a spirit of stewardship and trusteeship for future generations; initiate measures necessary to direct their policies, plans and programs in such a way that federally owned sites, structures, and objects of historical, architectural or archaeological significance are preserved, restored and maintained for the inspiration and benefit of the people; and, in consultation with the Advisory Council on Historic Preservation, institute procedures to assure that federal plans and programs contribute to the preservation and enhancement of non-federally owned sites, structures and objects of historical, architectural or archaeological significance.

EO 13287 Preserve America (2003) states that it is the policy of the Federal Government to provide leadership in preserving America's heritage by actively advancing the protection, enhancement, and contemporary use of the historic properties owned by the Federal Government, and by promoting intergovernmental cooperation and partnerships for the preservation and use of historic properties. The Federal Government shall recognize and manage the historic properties in its ownership as assets that can support department and agency missions while contributing to the vitality and economic well-being of the Nation's communities and fostering a broader appreciation for the development of the United States and its underlying values.

36 CFR 219.24 states that forest planning shall provide for the identification, protection, interpretation, and management of significant cultural resources on National Forest System lands.

FSM 2360 Heritage Resources.

Public Use and Enjoyment

Federal Lands Recreation Enhancement Act, 2005

Granger-Thye Act (1950) authorizes special-use permits for the use of structures or improvements under the administrative control of the Forest Service and for the use of land in connection therewith.

The **Multiple-Use Sustained-Yield Act (1960)** adds outdoor recreation as a use for which National Forest s were established.

The **Land and Water Conservation Fund Act (1964)** provides continuing access to National Forests and funding for recreation, and defines admission and recreation fee collection guidelines.

The **Architectural Barriers Act (1968)** establishes that buildings, facilities and vehicles meet standards suitable for persons with disabilities.

The **National Trails System Act (1968)** establishes that trails be provided to meet increasing recreation needs.

Volunteers in the National Forest Act of 1972 authorizes Forest Service acceptance of an individual's services without compensation, other than perhaps for incidental expenses.

The **Forest and Rangeland Renewable Resource Act (1974)** includes recreation among resources for which forest planning is required.

The Americans with Disabilities Act (1990) provides additional standards so that disabled persons will not be discriminated against and have opportunities for access and use of facilities.

EO 12862 Setting Customer Service Standards.

36 CFR 291 Occupancy and Use of Developed Sites and Areas of Concentrated Public Use. 36 CFR 261 Prohibitions.

FSM 2300 Recreation.

Landscape Management

Scenic Treatment Guide for the Ozark-St. Francis National Forests

Wilderness Act of 1964.

Wild and Scenic Rivers Act of 1968.

The **National Environmental Policy Act (1969**) states that it is the continuing responsibility of the federal government to use all practicable means to assure for all Americans, aesthetically and culturally pleasing surroundings.

Federal Land Policy and Management Act (1976) states that it is the policy of the United States to manage public lands in a manner that will protect the quality of scenic, ecological, and environmental values.

Landscape Aesthetics Handbook, U.S. Forest Service Agriculture Handbook No. 701, 1995. This handbook replaced the Visual Management System, Agriculture Handbook No. 462.

The **Scenery Management System (SMS)** presents a vocabulary for managing scenery and a systematic approach for determining the relative value and importance of scenery on National Forest land.

The Visual Management System, U.S. Forest Service Agriculture Handbook No. 462. This publication provided direction under which landscape management for the current forest plans were developed.

Law Enforcement

The Organic Administration Act (16 USC 472, 551) directs the Secretary of Agriculture to execute, or cause to be executed, all laws affecting the National Forest System. It authorizes the Secretary to make rules and regulations to preserve the National Forest and to regulate their occupancy and use, and establishes penalties for violating those rules and regulations.

7 CFR 2.7 and 2.60 delegates these authorities to the Chief of the Forest Service.

16 USC 559 authorizes Forest Officers to make arrests for violations of Federal laws and regulations relating to the National Forest System.

FSM 5300 Law Enforcement.

Facilities Operations and Maintenance

The **Americans with Disabilities Act (1990)** establishes additional requirements to ensure that buildings and facilities are accessible, in terms of architecture and design, transportation, and communication, to individuals with disabilities.

FSM 7300 Facilities.

FSM 7400 Public Health and Pollution Control Facilities

Roads and Trails

Forest Highways Act (1958).

National Forest Roads and Trails Act (1964) provides the principal authorities for financing forest road construction and maintenance.

Land and Water Conservation Fund (1964).

National Historic Preservation Act (1966); 36 CFR 800.

The **National Trails System Act (1968)** established procedures for the official designation of national scenic trails.

Architectural Barriers Act (1968) as amended through 1984.

Rehabilitation Act of 1973, as amended 1974, 1986, 1992, 1993.

Office of Federal Procurement Policy Act (1974).

Federal Land Policy and Management Act (1976).

National Energy Conservation Policy Act (1978)

.

Surface Transportation Assistance Act (1978).

Americans with Disabilities Act (1990).

Intermodal Surface Transportation Efficiency Act of 1991.

Energy Policy Act (1992).

Executive Order 11644 (1972) and EO 11989 (1977) Off-Road Vehicles on Public Lands establishes direction for the management of off-road vehicle use and provides for closing areas to off-road vehicles where resources would, or are, being negatively impacted.

Executive Order 12512 Federal Real Property Management (1985).

Executive Order 12902 Energy Efficiency and Water Conservation at Federal Facilities(1994).

Executive Order 12699, Seismic Safety of Federal and Federally Assisted or Regulated New Building Construction (1993). 23 CFR 1230 makes the Highway Safety Act of 1966 applicable to all federal agencies that control roads.

29 CFR 1910 Occupational Safety and Health Standards and **29 CFR 1960** Basic Program Elements for Federal Employee Occupational Safety and Health Programs.

36 CFR 212 provides the principle regulations for administration of the forest development transportation system.

36 CFR 251 Land Uses.

36 CFR 261.13 establishes prohibitions for vehicle use off roads.

36 CFR 261.54 establishes prohibitions for vehicle use of National Forest System roads for safety purposes.

36 CFR 261.55 establishes prohibitions for vehicle use on National Forest System trails for safety purposes.

36 CFR 261.56 establishes prohibition for vehicle use off National Forest System roads for resource protection purposes.

36 CFR 295 establishes direction for the management and monitoring of off-road vehicle use on National Forest System land.

49 CFR 1.48 Delegations to Federal Highway Administrator.

The National Forest System Road Management and Transportation System; Final Rule and Policy, approved January 12, 2001, provides direction for a road system that is safe, responsive to public needs, environmentally sound, and affordable and efficient to manage. The purpose is to help ensure that additions to the National Forest System network of roads are those deemed essential for resource management and use; that construction, reconstruction, and maintenance of roads minimize adverse environmental impact; and that unneeded roads are decommissioned and restored.

The **Roadless Area Conservation Rule, January 12, 2001**, prohibits road construction and reconstruction in inventoried roadless areas on National Forest System lands, unless certain exceptions are met.

Roads Analysis: Informing Decisions About Managing the National Forest Transportation System (USDA Forest Service 1999), is an integrated ecological, social and economic approach to transportation planning based on science that provides a process to analyze existing and future road needs and management.

Memorandum of Understanding between Federal Highway Administration and the Forest Service (10/17/75) identifies those safety standards that are applicable to the Forest Service. Amendment #1 (11/16/82) defines roads open to public travel and passable by four-wheel standard passenger cars.

USDA Forest Service Trail Accessibility Guidelines, March 2003 (Draft).

USDA Standard Specifications for Construction and Maintenance of Trails, September 1996. FSH 2309.18 Trails Management Handbook.

FSM 7700 Transportation Systems.

Commodity and Commercial Uses

Special Forest Products

36 CFR 223 Sale and disposal of National Forest System timber.
FSM 2460 Uses of Timber Other Than Commercial Timber Sales.

Special Uses

American Antiquities Act (1906).

Occupancy Permits Act (1915).

Mineral Leasing Act (1920).

Granger-Thye Act (1950).

Act of September 3, 1954, Permits for Public Buildings and Other Public Works. National Forest Roads and Trails Act (1964).

National Historic Preservation Act (1966).

The Federal Land Management and Policy Act (FLMPA)(1976) provides authority for the majority of non-recreation special use authorizations on National Forest System lands.

The Ditch Bill (1976) amended FLPMA to provide for free, non-expiring easements for certain qualifying agriculture-type water facilities.

American Indian Religious Freedom Act (1978). Archaeological Resource Protection Act (1979).

The Alaska National Interest Lands Conservation Act (1980) gives direction for providing access to non-federally owned land within the boundaries of the Forest.

Telecommunication Act (1996).

Act of May 26, 2000 **Photographic Activities on Federal Lands (PL106-206).**

36 CFR 251 (Land Uses) streamlines the process for obtaining special use authorizations.

36 CFR 261 Prohibitions.

FSM 2700 Special Use Administration

Special Use Administration Handbook and Supplements.

Livestock Grazing

The Granger-Thye Act (1950) provides for the issuance of grazing up for up to 10 years. It also provides for the use of grazing receipts for range improvement work.

The Wilderness Act (1964) provides that livestock grazing, and the activities and facilities needed to support it, are allowed to continue in wilderness when such grazing was established before designation.

The Public Rangelands Improvement Act (1978) recognizes the need to correct unsatisfactory conditions on public rangelands by increasing funding for maintenance and management of these lands.

The Rescission Bill (1995) directs the Forest Service to complete site-specific NEPA analyses and decisions on allotments on a scheduled basis.

36 CFR 222 Range Management.

36 CFR 219.3 provides detailed definitions and terminology of capability and suitability.

FSM 2200 Range Management.

Minerals

The General Mining Law (1872) allows prospecting and development of valuable minerals on public lands. This includes locating various types of claims, assessment work required, and patenting under specific circumstances.

The Organic Administration Act (1897) established the national forests, and the specific uses thereof and initial regulations. It extended the right to conduct mining activities under the General Mining Law of 1872 if in compliance with rules and regulations covering National Forest System land.

The Mineral Leasing Act (1920) authorizes the Secretary of the Interior to lease various minerals on land administered by the government, including National Forests and grasslands. This act also gives the conditions of leases, and the procedures under which leasing occurs.

The **Mineral Materials Act (1947)** gives the Secretary of the Interior the authority to dispose of mineral materials (common variety minerals) by sale or free use.

Multiple Use Mining Act (1955) requires the disposal of common varieties of sand, gravel, stone, and other mineral materials under provisions of the Mineral Materials Act of 1947.

The Wilderness Act (1964) withdrew wilderness areas from all forms of appropriation and disposition under the mining and mineral laws.

Mining and Minerals Policy Act (1970) states that the continuing policy of the federal government is to foster and encourage private enterprise in the development of economically sound and stable domestic mining and minerals industries and the orderly and economic development of domestic mineral resources.

Geothermal Steam Act of 1970.

36 CFR Part 228, Subpart A describes how locatable mineral activity will be managed on lands open to operations under the **General Mining Law of 1872.**

36 CFR Part 228, Subpart C describes how the Forest Service will manage salable minerals. **FSM 2800** Minerals. WO Amendments, Region 8 Supplements.

Oil and Gas Leasing

The Energy Security Act (1980) directs the Secretary of Agriculture to process applications for leases and permits to explore, drill, and develop resources on National Forest System lands, notwithstanding the current status of any management plan being prepared.

The **Federal Onshore Oil And Gas Leasing Reform Act (1987)** expands the authority of the Secretary of Agriculture in the management of oil and gas resources on National Forest System (NFS) lands. Without the Forest Service's approval, the BLM cannot issue leases for oil and gas on NFS lands. The Forest Service must also approve all surface-disturbing activities on NFS lands before operations commence.

National Energy Plan, May 2001.

36 CFR Parts 228 and 261 (1990) are the regulations and procedures to implement the 1987 Reform Act. These regulations establish a staged decision process designed to accommodate the nature of oil and gas exploration and development.

Fire and Aviation Management

The **Organic Administration Act (1897)** authorizes the Secretary of Agriculture to make provisions for the protection of National Forests against destruction by fire.

The **Bankhead-Jones Farm Tenant Act (1937)** authorizes and directs the Secretary of Agriculture to develop a program of land conservation and land utilization to protect the public lands.

The **Wilderness Act (1964)** authorizes the Secretary of Agriculture to take such measures as may be necessary in the control of fire within designated wilderness.

The **National Forest Management Act (1976)** directs the Secretary of Agriculture to specify guidelines for land management plans to ensure protection of forest resources.

The **Clean Air Act (1977)** provides for the protection and enhancement of the nation's air resources.

The **Federal Wildland Fire Policy (1995, 1998, and reviewed in 2001)** outlines policies on fire suppression and integrating fire on the landscape. The policy is being integrated into **FSM 5100.**

The **National Fire Plan (2000)** provides guidance and direction for firefighting, restoration, and rehabilitation of burned lands, hazardous fuels reduction, and community assistance.

Arkansas State Fire Law is applicable to facilities on National Forest System lands.

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APPENDIX C–MINIMUM IMPACT SUPPRESSION TECHNIQUES (MIST)

Minimum Impact Suppression Techniques (MISTs) are used for wildfire suppression and related activities in wilderness areas.

Fuel Management

- Hot-line/Ground Fuels.
- Allow fire to burn to natural barriers.
- Use cold-trail, wet line, or combination when appropriate.
- If constructed fire line is necessary, use only width and depth to check fire spread.
- Constantly re-check cold trailed fire line.
- Hot-line/Aerial Fuels.
- Limb vegetation adjacent to fire line only as needed to prevent additional fire spread.
- During fire line construction, cut shrubs or small trees only when necessary. Make all cuts flush with the ground.
- Minimize felling of trees and snags unless they threaten the fire line or seriously endanger workers.
- In lieu of felling, identify hazard trees with a lookout or flagging.
- Scrape around tree bases near fire line if it is likely they will ignite.

Mop up/Ground Fuels

- Do minimal spading; restrict spading to hot areas near fire line.
- Cold-trail charred logs near fire line; do minimal tool scarring.
- Minimize bucking of logs near fire line or to check for hot spots; roll the logs instead if possible.
- Return logs to original position after checking and when ground is cool.
- Refrain from making bone yards; burned and partially burned fuels that were moved should be returned to a natural arrangement.
- Consider allowing large logs to burnout. Use a lever rather than bucking to manage large logs, which must be extinguished.
- Use gravity socks in stream sources and/or a combination of water blevets and fold-a-tanks to minimize impacts to streams.
- Consider using infrared detection devices along perimeter to reduce risk.

Mop up/Aerial Fuels

- Remove or limb only those fuels which if ignited have potential to spread fire outside the fire line.
- Before felling, consider allowing ignited tree/snag to burn itself out. Ensure adequate safety measures are communicated if this option is chosen.
- Identify hazard trees with a lookout or flagging.
- Align saw cuts to minimize visual impacts from more heavily traveled corridors. Slope cut-away from line of sight where possible.

Logistics

- Campsite Considerations.
- Locate facilities outside of wilderness whenever possible.
- Coordinate with the Resource Advisor in choosing a site with most reasonable qualities of resource protection and safety concerns.
- Evaluate short-term low impact camps such as cyote or spike versus use of longer-term higher impact camps.
- New site locations should be on impact resistant and naturally draining areas such as rocky or sandy soils, or openings.
- Avoid camps in meadows, along streams or on lakeshores. Locate at least 200 feet from lakes, streams, trails, or other sensitive areas.
- Consider impacts on both present and future users. An agency commitment to wilderness values will promote those values to the public.
- Lay out the camp components carefully from the start. Define cooking, sleeping, latrine, and water supply.
- Minimize the number of trails and ensure adequate marking.
- In NFS wilderness use brief relief portable toilet system.
- Do not use nails in trees.
- Constantly evaluate the impacts which will occur, both short and long term.
- Personal Camp Conduct.
- Use "leave no trace" camping techniques.
- Minimize disturbance to land when preparing bedding site. Do not clear vegetation or trench to create bedding sites.
- Use stoves for cooking, when possible. If a campfire is used, limit to one site and keep it as small as reasonable. Build either a "pit" or "mound" type fire. Avoid use of rocks to ring fires.
- Use down and dead firewood. Use small diameter wood, which burns down cleaner.
- Don't burn plastics or aluminum- "pack it out" with other garbage.
- Select travel routes between camp and fire and define clearly.
- Carry water and bathe away from lakes and streams. Personnel must not introduce soaps, shampoos, or other personal grooming chemicals into waterways.

Aviation Management

- One of the goals of wilderness managers is to minimize the disturbance caused by air operations during an incident.

Aviation Use Guidelines

- Maximize back haul flights as much as possible.
- Use long line remote hook in lieu of constructed helispots for delivery or retrieval of supplies and gear. (Promote the use of llamas.)
- Take precautions to insure noxious weeds are not inadvertently spread through the deployment of cargo nets and other external loads.

- Use natural openings for helispots and paracargo landing zones as far as practical. If construction is necessary, avoid high visitor use areas.
- Consider maintenance of existing helispots over creating new sites.
- Obtain specific instructions for appropriate helispot construction prior to the commencement of any groundwork.
- Consider directional falling of trees and snags so they will be in a natural appearing arrangement.
- Buck and limb only what is necessary to achieve safe/practical operating space in and around the landing pad area.

Retardant Use

- During initial attack, fire managers must weigh the non-use of retardant with the probability of initial attack crews being able to successfully control or contain a wildfire. If it is determined that use of retardant may prevent a larger, more damaging wildfire, then the manager might consider retardant use even in sensitive areas. This decision must take into account all values at risk and the consequences of larger firefighting forces' impact on the land.
- Consider impacts of water drops versus use of foam/retardant. If foam/retardant is deemed necessary consider use of foam before retardant use.

Hazardous Materials Flammable/Combustible Liquids

- Store and dispense aircraft and equipment fuels in accordance with National Fire Protection Association (NFPA) and Health and Safety Handbook requirements.
- Avoid spilling or leakage of oil or fuel, from sources such as portable pumps, into water sources or soils.
- Store any liquid petroleum gas (propane) downhill and downwind from fire camps and away from ignition sources.

Flammable Solids

- Pick up residual fuses debris from the fire line and dispose of properly.
- Fire Retardant/Foaming Agents.
- Do not drop retardant or other suppressants near surface waters.
- Use caution when operating pumps or engines with foaming agents to avoid contamination of water sources.

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APPENDIX D-LAND ACQUISITION CRITERIA

Lands acquired through purchase, exchange, or donation will be guided by the following criteria (not listed in any order of priority):

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

Only lands offered by a willing seller, exchange proponent or donor will be considered.

Lands conveyed from Forest Service ownership by exchanging away, or granting through the Small Tracts Act, Title Claims, or other law will be guided by the following criteria: (not listed in any order of priority):

- Lands inside or adjacent to communities or intensively developed private land, which are determined by the Forest Service to be chiefly valuable for non-National Forest System purposes.

- Parcels that will serve a greater public need in state, county, city, or other federal agency ownership.

- Inaccessible parcels isolated from other National Forest System lands. Parcels surrounded by or intermingled with private lands which are judged by the Forest Service to be suitable for exchange.

- Parcels within major blocks of private land, the use of which is substantially for non-National Forest System purposes.

- Parcels having boundaries, or portions of boundaries, which cannot be efficiently managed (examples: projecting necks or long, narrow strips of land, etc.).

- A site-specific analysis will be conducted, and must clearly show that any proposed conveyance meets the laws and regulations governing such conveyance, and that it is in the public interest.

APPENDIX E-TIMBER ANALYSIS PROCESS

Introduction

This appendix describes the analysis of lands suitable and not suitable for timber production, the Allowable Sale Quantity (ASQ), total timber sale program, and the first decade analysis of the SPECTRUM model.

Timber Suitability Analysis

During forest LRMP revision, the Forest Service is required to identify lands unsuited for timber production (16 USC 1604[k]; 36 CFR 219.14). This identification process involves three stages of analysis. Stage I analysis identifies lands tentatively suitable for timber production. Stage II analysis is designed to explore the financial aspect of varying intensities of timber management on lands identified as tentatively suitable for timber production from Stage I. Stage III analysis identifies lands as unsuited for timber production under the alternatives selected in the revised Forest Land and Resource Management Plan. The National Forest Management Act (NFMA) of 1976 identifies "suitability" as "the appropriateness of applying certain resource management practices to a particular area of land, as determined by an analysis of the economic and environmental consequences and the alternative uses foregone. A unit of land may be suitable for a variety of individual or combined management practices." A more detailed description of the Forests' suitability analysis can be found in Appendix B of the Final Environmental Impact Statement (FEIS).

Stage I: Physical Suitability

The first stage of the timber suitability analysis addresses the administrative and physical suitability of the land administered by the OSFNFs. The primary outcome of the Stage I analysis are the acres remaining after analysis is complete. These acres are considered "tentatively suitable." Stage I lands unsuitable for timber production include:

- Non-Forest lands.
- Lands that have been administratively or congressionally withdrawn from timber production by an act of Congress, the Secretary of Agriculture, or the Chief of the Forest Service.
- Forest lands incapable of producing industrial wood.
- Lands where technology is not available to ensure timber production from the land without irreversible soil and water resource damage.
- Lands where there is not reasonable assurance that they can be adequately restocked.
- Lands where there is inadequate information.

Table E-1 displays the acres that were deducted for the OSFNFs during Stage I analysis.

Table E-1 – Acres Deducted for Stage I Analysis

Classification	Acres
Total OSFNFs Land	1,161,012
Non-Forest Land	-43,218
Administratively Withdrawn	-91,817
Physically Incapable	-66,526
Technologically Restricted	-19,046
Not Adequately Restocked	-0
Inadequate Response Information	-283
Tentatively Suitable	940,122

Stage II: Financial Analysis

The Stage II analysis is designed to explore the financial efficiency of different timber intensities on the lands identified as tentatively suitable for timber production in Stage I. It does not identify any lands as unsuitable for timber production. Stage III analysis considers the results of these financial efficiencies in making the final determination of lands suited for timber production.

Stage III: Identification of Suitable Acres

Lands for which planned periodic timber harvest would preclude the achievement of other non-timber management objectives are subtracted from the tentatively suited acres (Stage I). During alternative formulation, the following lands (Table E-2) were determined to be "not appropriate for timber production."

Table E-2. Stage III Suitability by Alternative.

Deduction Criteria – Stage III	Acres
Tentatively Suited Acres from Stage I Analysis	940,122
Management Areas	
1.B. Wilderness Additions	-268
1.D. Rivers Recommended for Wild & Scenic Rivers	-4,487
1.G Special Interest Areas	-15,937
2.A Ozark-Highlands Trail Corridor	-5,039
2.B. State Parks	-2,251
2.C. Developed Recreation Areas	-2,004
Any 1.H. with an above sub-code (Scenic Byways)	-0
Other	
Cable Ground: % slope ≥ 35%*	-102,108
Remaining Land – "unsuitable" CISC codes	-47,448
Total Suitable Acres	760,580

***35% slope was chosen as the break between tractor and cable ground because it is accepted as the industry standard for the area.**

Timber Sale Program

The Allowable Sale Quantity (ASQ) is defined as the maximum amount of timber that may be sold on lands suitable for timber production during a decade of implementing the Forest Plan (FSH 2409.13). The ASQ plus volume produced on lands unsuitable for timber production through achievement of desired condition or salvage operation comprise the total Timber Sale Program. Table E-3 displays a breakdown of the ASQ and total timber sale program for the first decade of the revised Forest Plan. The ASQ is a decadal ceiling; there are no constraints on the amount of volume that can be sold annually on the Forests.

Table E-3. Average Annual ASQ and Total Timber Sale Program for the First Decade.

Timber Sale Program	Volume
Total Allowable Sale Quantity	15 MMCF
Total Non-Scheduled Volume	1.2 MMCF
Total Timber Sale	16.2 MMCF

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APPENDIX F-VEGETATION MANAGEMENT PRACTICES

This appendix evaluates the general appropriateness of various vegetation management practices, with a major focus on silvicultural systems and prescriptions. This appendix recommends practices that meet NFMA regulations for manipulating vegetation to regenerate stands to desirable native species, usually of the pre-harvest forest types. This appendix was prepared for compliance with 36 CFR 219.15

Silvicultural Systems

There are three silvicultural systems used to created desired conditions and provide regulated and sustainable yield of wood products.

The EVEN-AGED SILVICULTURAL SYSTEM is a planned sequence of treatments for tending, harvesting, and re-establishing a stand designed to maintain trees composed of a single age class in which the range of tree ages is usually 20 percent of rotation. This system creates a mosaic of single age class stands across the forestlands suitable for producing forest products, where collectively on the suitable forest land, all age classes are present and maintained. When a stand reaches the desired product objective, usually expressed as the rotation (the time frame for growing the product objective for a given set of environmental conditions) or the specific wood product(s), harvesting is scheduled to remove all or most all of the merchantable trees (from which the desired wood products can be produced) in a stand. Whether all or some of the merchantable trees are harvested is dependent upon the regeneration method chosen to accomplish the management area objectives. Regeneration, designed to replace desirable tree species, takes place within five years after the final harvest.

The TWO-AGED SILVICULTURAL SYSTEM is a planned sequence of treatments for tending, harvesting, and re-establishing a stand and maintaining trees of two distinct age classes. The trees in each distinct age class could have tree ages that span up to 20 percent of the rotation. This system creates a mosaic of two-age class stands across the forestlands suitable for timber production, where collectively on the suitable forestland, all age classes are present and maintained. When one age class of the stand reaches the desired product objective, usually expressed as a rotation, harvesting is scheduled to remove that age class, usually the older age class. In a stand, all merchantable trees (from which wood products can be produced) in the older age class are scheduled for harvest. The resulting stand may be two-aged or tend toward an uneven-aged condition as a consequence of both an extended period of regeneration established and the retention of reserve (green) trees that may represent older age classes. When trees in one of the age classes have reached the desired product objective or rotation, that part of the stand is harvested. This harvest regenerates a new age class of desirable tree species to perpetuate the two-aged stand structure within five years of the removal of an age class.

The UNEVEN-AGED SILVICULTURAL SYSTEM is a planned sequence of treatments for tending, harvesting, and re-establishing a stand and maintaining trees of three or more

distinct age classes. Because this system creates a multi-aged stand structure, rotations are not applicable as a management tool. Instead, periodic inventories of the multi-aged stands provide information about the site's productivity, the species present, their size and growth. From this inventory information, product objectives can be determined, as well as the period of time it takes to grow a marketable volume on a sustainable basis. Additionally, the periodic inventory provided information about the distribution of age classes in the uneven-aged stand. This distribution information is used to plan needed stand improvement practices that adjust the number of trees in each age class to a desired distribution, thus permitting the sustainable production of the product objective. Trees selected for harvest can be dispersed individual trees (i.e., single tree selection) or small groups of trees (i.e.; group selection). The system generally maintains a high forest cover across the land while providing a sustained yield of forest products and the orderly growth and development of desired trees with a variety of diameter and ages.

Application of Silvicultural Systems

The selection of which silvicultural system and regeneration method to use is based on the condition of the existing forest stand and the desired condition of the management area of which the stand is a part.

During the period from about 1880 through 1930, much of the lands now managed as the OSFNFs were logged and sometimes burned or badly eroded. Some of the Forests were created from abandoned farmland. Today, these lands have healed and been rejuvenated as a result of Federal investments in tree planting, fire suppression, timber stand improvement, and time. The resultant growth of oak dominated and southern yellow pine forests consist of essentially even-aged stands. Since becoming National Forest System lands, some stands have been managed for wood production.

The National Forest Management Act (NFMA) and its Federal Regulation require the identifying of forestlands to be used for producing sustainable yields of wood products, thus the need to identify 1) which lands and 2) which silvicultural system are to be used. Although conceptually possible, the random application of mixing uneven-aged, two-aged, and even-aged stands is not practical over the present predominantly even-aged forest. Even though the production of wood products is an objective, equally important objectives are wildlife habitats, water quality, and aesthetics. Even-aged, two-aged, and uneven-aged management practices each create different vegetation conditions and stand structures, and have different practices and objectives which have limitations when protecting the forest resources is of primary concern. Likewise, each species of tree has unique requirements insofar as light requirements, site productivity, and soil moisture in order to regenerate adequately and grow to maturity. Thus, the silvicultural system chosen must also consider the needs of the desirable tree species occupying the site or the species we wish to regenerate. This revised Forest Plan operates under the principle of management area and silviculture prescriptions, where portions of the Forests have similar environmental conditions, management emphasis, and/or specific multiple resource objectives. Therefore, uneven-aged, two-aged, and even-aged silvicultural system practices will not be applied

individually to intersperse the silviculture systems, but rather to portions of management area where they simultaneously contribute to accomplishing other renewable resource objectives and are appropriate for the desirable tree species to be regenerated or tended.

Prescription Applications

When management alters vegetation, the methods, timing, and intensity of the practices determine the level of benefits that can be obtained from the affected resources. It is not practical to attempt to describe all the conditions and reasons for manipulating vegetative conditions. Reasons range from improving forest health to eliminating hazards for public safety. Site-specific implementation of the forest plan is the appropriate place for determining which management practice(s) to use for achieving a specific project objective.

The desired future condition description for each management area should be used as the primary objective; however, there is some flexibility of silviculture prescription application based on site index values. Table F-1 identifies which silviculture prescriptions are appropriate for use in each management area based on site indices. Table F-2 gives a brief description of those silviculture prescriptions. A detailed description of each silviculture prescription follows Table F-2. On lands with site indices 50 and below, savanna and woodland prescriptions will be used. On lands with site indices ranging from 60 to 70 the emphasis of the management area will guide prescription selection. On lands with site indices greater than 80, prescriptions that allow for higher basal area densities will be used.

Table F-1: Silviculture Prescription Allocation by Management Area.

Management Areas	Site Index 50 and below	Site Index 60-70	Site Index 80 and above	All Site Indices
1.A Designated Wilderness				
1.B Recommended Wilderness Additions				
1.C Designated Wild and Scenic Rivers				
1.D Recommended Wild and Scenic Rivers				
1.E Experimental Forests				
1.F Research Natural Areas				
1.G Special Interest Areas				
1.H Scenic Byway Corridors	103,104,114	104,105,106, 108, 114	104,105,106, 108, 114	

***Silviculture Rx #110 should be the only Rx used in primary and secondary Indiana Bat Zones regardless of site index values.**
***Silviculture Rx #115 should be used under Forest-wide Standard FW14 guidance and only on a limited basis.**

Table F-1: Silviculture Prescription Allocation by Management Area. (Continued)

Management Areas	Site Index 50 and below	Site Index 60-70	Site Index 80 and above	All Site Indices
2.A Ozark Highlands Trail				
2.B State Parks				
2.C Developed Recreation Areas				
2.D Upper Buffalo Dispersed Recreation Area	103,104,114	100,101,105, 107, 108,113	100,101,105,107, 108,109,113	
2.E Wedington Unit Urban Recreation Area	103,104,114	104,114	100,101,105, 107, 108,109,113	
2.F Indian Creek Dispersed Recreation Area	103,104,114	100,101,105, 107, 108,113	100,101,105,107, 108,109,113	
3.A Pine Woodland	103,104,114	104,114	100,101,105,107, 108,109,113	
3.B Oak Woodland	103,104,114	104,114	100,101,105,107, 108,109,113	
3.C Mixed Forest	103,104,114	100,101,105, 107, 108,113	100,101,105,107, 108,109,113	
3.D Oak Decline Restoration Areas	103,104,114	108	108,109	
3.E High Quality Forest Products	103,104,114	109	109	
3.F Old Growth Area	103,104,114	102	100,102,108,109	
3.G Crowley's Ridge Upland Hardwood, St. Francis NF				111
3.H Mississippi River Bottomland Hardwood, St. Francis NF				112
3.I Riparian Corridors				106
3.K Wildlife Emphasis Area	103,104,114	100,101,104, 105,107,113, 114	100,101,105,107, 108,109,113	

***Silviculture Rx #110 should be the only Rx used in primary and secondary Indiana Bat Zones regardless of site index values.**

***Silviculture Rx #115 should be used under Forest-wide Standard FW14 guidance and only on a limited basis.**

Table F-2. Silviculture Prescription Descriptions

Rx#	Accomplishes MA Emphasis	Type of System	TSI Treatment	Thinning Residual BA	Harvest Rotations	Regen. Residual BA/TPA
100	*	Even-Aged	@ 20 yrs to 300 TPA	70 BA	@ 90-110 yrs	20 BA
101	*	Uneven-Aged	n/a	n/a	harvest 1/6 of stand every 20 yrs	n/a
102	3.F	Even-Aged	@ 20 yrs to 300 TPA	70 BA	@ 130-200 yrs	20 BA
103	3.B	Even-Aged	@ 10 yrs to 300 TPA	20 BA	@ 180-200 yrs	20 BA
104	3.B	Even-Aged	@ 10 yrs to 300 TPA	40 BA	@ 140-160 yrs	20 BA
105	*	Uneven-Aged	n/a	n/a	harvest every 10 yrs to 60 BA	n/a
106	3.I	Two-Aged	@ 10 yrs to 300 TPA	60-80 BA	@ 120-140 yrs	20 BA
107	3.C	Even-Aged	@ 20 yrs to 300 TPA	70 BA	@ 80-110 yrs	12 TPA
108	3.D	Even-Aged	@ 20 yrs to 300 TPA	70-80 BA	@ 90-110 yrs	20 BA
109	3.E	Even-Aged	@ 15 yrs to 300 TPA	80 BA	@ 90-110 yrs	20 BA
110	*	Even-Aged	@ 10 yrs to 300 TPA	Follow FW Standards	@ 140-160 yrs	Follow FW Standards
111	3.G	Even-Aged	@ 20 yrs to 300 TPA	70 BA	@ 80-120 yrs	20 BA
112	3.H	Even-Aged	@ 20 yrs to 300 TPA	70 BA	@ 80-120 yrs	20 BA
113	3.C	Even-Aged	@ 20 yrs to 300 TPA	60 BA	@ 90-110 yrs	20 BA
114	3.A	Even-Aged	@ 20 yrs to 300 TPA	50 BA	@ 120-150 yrs	20 BA
115	*	Even-Aged	@ 10 yrs to 300 TPA	70 BA	@ 70-90 yrs	0 BA

***These prescriptions meet multiple management areas' goals and objectives.**

Silviculture Prescription Descriptions

The following prescriptions reflect the silvicultural harvests and follow-up treatments that best met the intent of the management areas desired future conditions. In most cases, the names used are not the names of recognized SAF silvicultural systems but reflect a series of activities used to produce desired conditions.

100 - Shelterwood - The purpose of this prescription is to maintain and regenerate pine or hardwood forest types by the shelterwood silvicultural system. Typically, these stands will be commercially thinned to maintain 70 sq ft of basal area and be regenerated at 90 to 110 years of age. In the first phase of the shelterwood, remove 70 percent of the overstory. Site preparation can include manual, chemical, fire and planting to establish the new stand. Chemical or manual release will often be necessary. In the second phase of the shelterwood, remove the remaining overstory. Execute prescribed burning every 3 to 5 yrs. throughout the rotation. Between the first and second stage of the shelterwood, adequate regeneration should be present to re-stock the stand with 300+ trees/acre. If natural regeneration is not adequate, planting may be necessary. Delay burning in the regenerated stand for 10 years to give regeneration time to become established. TSI the regenerated stand at 10 yrs. Harvest to 300 trees per acre (TPA) and commercial thin at regular intervals to maintain forest health and promote free to grow conditions.

101 - Group Selection - The purpose of this prescription is to create an uneven-aged stand by creating openings throughout the canopy. This is to be done by creating block patches on 1/6th of the stand every 20 years. Opening sizes will vary between three to five acres, scattered across the landscape. Thin between the groups to 60 sq ft of basal area to encourage oak reproduction. Openings are likely to need herbicide site preparation and planting of 80 to 100 oak seedlings per acre. A follow-up release treatment of herbicide will be necessary 1 to 3 years following harvest.

102 - Old Growth - The purpose of this prescription is to create old growth conditions. Thin existing stands to maintain approximately 70 sq ft of basal area per acre. Favor long lived trees such as white oak and shortleaf pine. The final harvest of shelterwood will occur between 130 and 200 years of age. In the first phase of the shelterwood, remove 70 percent of the overstory. In the second phase, 10 years later, remove the remaining overstory. Execute prescribed burning every three to five years throughout the life of the stand to control understory vegetation and maintain an herbaceous component. A pool of advanced oak regeneration should be in place by the time the overstory is removed. Delay burning in the regenerated stand for 10 years to give the oaks time to become established and then begin a fire regime with a 3- to 5-year return interval.

103 - Oak Savanna – The purpose of this prescription is to create an oak savanna condition on low sites with a crown closure of 20 to 39 percent. The target basal area per acre to be maintained is 20 sq ft throughout the rotation of the stand. This prescription uses pre-commercial thins, commercial thins, non-commercial thins, fire, or herbicide to achieve its desired condition. The final harvest of shelterwood will occur between 180 to 200 years of age. In the first phase of the shelterwood, remove 70 percent of the overstory. In the second phase, 10 years later, remove the remaining overstory. Execute prescribed burning every three to five years throughout the life of the stand to control understory vegetation and maintain an herbaceous component. A pool of advanced oak regeneration should be in place by the time the overstory is removed. Delay burning in the regenerated stand for 10 years to give the oaks time to become established and then begin a fire regime with a 3- to

5-year return interval. TSI the regenerated stand at 10 years to 300 trees per acre and maintain 20 sq ft of BA when the stand reaches 40 years of age. Harvest the regenerated stand at 180 to 200 years.

104 - Oak Woodland – The oak woodland condition as defined by this plan consists of a hardwood forest with 40 to 60 percent crown closure in trees 40 years and older. The target basal area to be maintained throughout the rotation is 40 sq ft. This prescription uses pre-commercial thins, commercial thins, non-commercial thins, fire, or herbicide to achieve its goal. The final harvest of shelterwood will occur between 140 and 160 years of age. In the first phase of the shelterwood, remove 90 percent of the overstory. In the second phase, 10 years later, remove the remaining overstory. Execute prescribed burning every three to five years throughout the life of the stand to control understory vegetation and maintain an herbaceous component. A pool of advanced oak regeneration should be in place by the time the overstory is removed. Delay burning in the regenerated stand for 10 years to give the oaks time to become established and then begin a fire regime with a 3- to 5-year return interval. TSI the regenerated stand at 10 years to 300 trees per acre and maintain a basal area per acre of 40 sq ft when the stand reaches 40 years of age. Harvest the regenerated stand at 140 to 160 years.

105 - Single Tree Selection – The purpose of this prescription is to create an uneven-aged age class distribution by establishing three or more distinct age classes, each age class being separated by 20 years or more through a series of thinnings spaced 10 years apart. The goal of the prescription is to create an uneven-aged condition following an inverse "j" shaped curve (distribution of number of trees over dbh [diameter at breast height]). Thins occur every 10 years to 50 sq feet of BA. Regeneration is established in skid trails and disturbed areas and initial burns create favorable seedling establishment. However, repeat burns are not done due to damage to new seedlings. Planting and/or natural regeneration are viable options for regenerating the stand. Single tree selection requires herbicide use to be effective both during the site-prep phase and again to release new seedlings. Typically, single tree selection is only viable in shortleaf pine.

106 - Shelterwood with Reserves - The purpose of this prescription is to regenerate pine or hardwood by the shelterwood silvicultural system. However, this system differs from the typical shelterwood systems in that the overstory is not removed until the first commercial thin or is left in place indefinitely. This prescription is to be used in visually sensitive areas and along riparian corridors. Typically these stands will be commercially thinned 2 or more times and regenerated at 120 to 140 years of age. A series of commercial thins to 60 to 80 sq ft will be carried out throughout the rotation. In the first phase of the shelterwood, remove 70 percent of the overstory. Site preparation can include manual, chemical, fire, and planting to establish the new stand. Chemical or manual release will often be necessary. Execute prescribed burning every three to five years throughout the rotation. Between the first and second stages of the shelterwood, adequate regeneration should be present to re-stock the stand with 300+ trees/acre, planting may be necessary. Delay burning in the regenerated stand for 10 years to give regeneration time to become established. TSI the

regenerated stand at 10 years and commercial thin at regular intervals to maintain forest health and promote free to grow conditions.

107 Seed Tree - The purpose of this prescription is to regenerate pine by the seed tree silvicultural system. Regular thinnings designed to maintain 70 sq ft of basal area should be done throughout the rotation. Regenerate the stand at 80 to 110 years. In the first phase of the seed tree, remove 90 percent of the overstory. Site preparation can include manual, chemical, fire, and planting to establish the new stand. Chemical or manual release will often be necessary. In the second phase of the shelterwood, remove the remaining overstory. Execute prescribed burning every three to five years throughout the rotation. Between the first and second stages of the shelterwood, adequate regeneration should be present to re-stock the stand with 300+ trees/acre, planting may be necessary. Delay burning in the regenerated stand for 10 years to give regeneration time to become established. TSI the regenerated stand at 10 years and commercial thin at regular intervals to maintain forest health and promote free to grow conditions.

108 Oak Decline – The purpose of this prescription is to restore stands impacted by the red oak borer epidemic of 1999–2001 to their original stand composition of red oak/white oak/hickory. Many of the stands heavily impacted by the red oak borer have little overstory left and little, if any, advanced oak regeneration. This prescriptions' goal is to reduce stand density to shelterwood levels promoting long lived species such as white oak and leaving healthy red oak for acorn production. Site preparation techniques will encompass burning, chemical and manual felling of competing vegetation along with the planting of large red and white oak seedlings. In some areas, pine may also be planted. Once regeneration becomes established, discontinue burning for 10 years to encourage oak reproduction. TSI the regenerated stand at 10 years and thin the regenerated stands at regular intervals to maintain 70 to 80 sq ft of basal area per acre. Harvest the regenerated stand through a shelterwood cut at 90 to 110 years.

109 High Quality Forest – The purpose of this prescription is to maintain a higher basal area per acre forcing trees to self prune. This self pruning will result in higher quality logs yet still maintain a healthy forest**.** Maintain a basal area of 80 sq ft throughout the rotation. Harvest with a 2-stage shelterwood between 90 and 110 years In the first phase of the shelterwood, remove 70 percent of the overstory. In the second phase, remove the remaining overstory. Intensive silvicultural techniques such as chemical site preparation, mechanical site preparation, and planting of oak or pine seedlings may be necessary where there is no advanced regeneration in place. Chemical release may be necessary. Commercial thin the regenerated stand and maintain 80 sq ft of basal area.

110 Indiana Bat – The purpose of this prescription is to maintain or enhance the habitat for the Indiana Bats. Commercial thin on a regular basis to 30 sq ft of BA per acre and harvest at 140 to 160 yrs. with a 2-step shelterwood. In the first phase of the shelterwood, remove 70 percent of the overstory. In the second phase, remove the remaining overstory. Follow guidelines set forth in the FW standards for Indiana Bat management. Begin prescribed burning in these areas and repeat on a 3- to 5-year schedule. Following the shelterwood

harvest, adequate oak regeneration should be present to re-stock the stand with 300+ trees/acre. Delay burning in the regenerated stand for 10 years to give the oaks time to become established. Upon regeneration establishment, resume burning and commercial thinning.

111 Crowley's Ridge – The purpose of this prescription is to regenerate upland hardwood stands growing on Crowley's Ridge of the St Francis NF to oak and discourage the yellow poplar. Maintain a basal area of 70 sq feet through regular commercial thinnings discriminating against yellow poplar where feasible. Integrate with a fire regime that returns every 7 to 10 years. Harvest the stands at 80 to 120 years of age with a 2-stage shelterwood. In the first phase of the shelterwood, remove 70 percent of the overstory. In the second phase, remove the remaining overstory. Once regeneration becomes established, discontinue burning for 10 years to encourage oak reproduction. After 10 years, begin prescribed burning in these areas and repeat on a 7- to 10- year schedule. Intensive silvicultural techniques such as herbicide use and planting of oak seedlings may be necessary to establish the stands where there is no advanced regeneration in place. Chemical release may be necessary.

112 Bottomland Hardwoods – The purpose of this prescription is to maintain and regenerate bottomland stands of oak, hickory, pecan, sycamore, willow oak, bald cypress, and other associated species. These areas need to be carefully thinned to avoid raising the water table and thus inundating new seedlings and perhaps killing the overstory trees. Commercial thins should be designed to maintain 70 sq feet or higher basal area. Final regeneration will occur with a 2-stage shelterwood between yrs. 80 and 120 years. In the first phase of the shelterwood, remove 70 percent of the overstory. In the second phase, remove the remaining overstory. Fire is not a silvicultural technique in these areas. Intensive silvicultural techniques such as herbicide use and planting of oak seedlings may be necessary where there is no advanced regeneration in place. Chemical release may be necessary.

113 Mixed Forest –The purpose of this prescription is to provide for a stand condition that is a transition between woodland and high quality and best meets Management Area 3.C. desired future conditions Typically, these stands will be commercially thinned 2 or more times and regenerated at 90 to 110 years of age. Regular thinnings designed to maintain 70 sq ft of basal area should be done. In the first phase of the shelterwood, remove 70 percent of the overstory. Site preparation can include manual, chemical, fire, and planting to establish the new stand. Chemical or manual release will often be necessary. In the second phase of the shelterwood, remove the remaining overstory. Execute prescribed burning every 3-5 years throughout the rotation. Between the first and second stage of the shelterwood, adequate regeneration should be present to re-stock the stand with 300+ trees/acre, planting may be necessary. Delay burning in the regenerated stand for 10 years to give regeneration time to become established. TSI the regenerated stand at 10 years and commercial thin at regular intervals to maintain forest health and promote free to grow conditions.

114 Pine Bluestem – The purpose of this prescription is to create a woodland condition in shortleaf pine. Maintain 50 sq feet of basal area in pine throughout the rotation through a series of commercial thinnings. Execute prescribed burn every three to five years to control the understory vegetation and create an herbaceous component. Harvest the stands with a 2-stage shelterwood between 120 and 150 years. In the first stage of the shelterwood, harvest 70 percent of the basal area. Once natural regeneration is established, remove the overstory. Delay burning for 10 years following regeneration establishment. TSI the regenerated stand at 10 years to 300 trees per acre and then maintain stocking at 50 sq ft of basal area through regular commercial thins.

115 Clearcut - Maintain a minimal basal area of approximately 70 sq ft per acre throughout the rotation through regular commercial thinnings. Harvest when stands are between 70 and 90 years of age. Conduct site preparation with chemical, fire, or mechanical means. Plant or obtain natural regeneration. Timber Stand Improvement (TSI) the regenerated stand at age 10 to 300 TPA and then begin commercial thinning, when practical, to maintain an average of 70 sq ft of BA. The introduction of fire should begin at age 10 with a return interval of three to five years. This prescription should be used under FW standard FW74 guidance and only on a limited basis.

APPENDIX G-RECREATION OPPORTUNITY SPECTRUM (ROS) AND SCENIC INTEGRITY OBJECTIVES

Table G-1: Management Areas with Recreation Opportunity Spectrum (ROS) Classifications.

Management Area	ROS Class
1.A - Wilderness	P
1.B - Recommended Wilderness Additions	P
1.C - Designated Wild and Scenic Rivers	
Recreational Sections	RN
Scenic Sections	SPM-RN
Wild Sections	P
1.D. - Recommended Wild and Scenic Rivers	SPM
1.E. - Experimental Forests	SPM-RN
1.F. - Research Natural Areas	SPM
1.G. - Special Interest Areas	SPM-RN
1.H. - Scenic Byway Corridors	RN
2.A. - Ozark Highlands Trail	SPNM
2.B - State Parks	RN
2.C. - Developed Recreation Areas	RN
2.D. - Upper Buffalo Dispersed Recreation Area	SPM-SPNM
2.E. - Wedington Unit Urban Recreational Area	U-RN
2.F. - Indian Creek Dispersed Recreation Area	SPM-SPNM
3.A. - Pine Woodland	RN
3.B. - Oak Woodland	RN
3.C. - Mixed Forest	RN
3.D. - Oak Decline Restoration Areas	RN
3.E. - High Quality Forest Products	RN
3.E. - Proposed Special Interest Areas	SPM-RN
3.F. - Old Growth Area	SPM
3.G. - Crowley's Ridge - Upland Hardwoods	RN
3.H. – Mississippi River Bottomland Hardwood	RN
3.I - Riparian Corridors	RN
3.J. - Pastures and Large Wildlife Openings	RN
3.K. - Wildlife Emphasis Area	SPM-RN

ROS Classifications are described in the following paragraphs.

Primitive (**P**) is the most remote, undeveloped recreation setting on the forest. These settings are generally located at least three miles from any open road and are 5,000 acres in size or larger. Primitive ROS generally does not exist because no single area is large enough to meet all criteria. The wildernesses on the OSFNFs were classified as semi-primitive non-motorized in the 1986 LRMP since major roads surrounded most of them.

Semi-primitive non-motorized (**SPNM**) is characterized by an environment where the natural landscape has been subtly modified and where alterations, though noticeable, would not draw the attention of most users. Specific activities are oriented toward both consumptive and non-consumptive use of the land and water resources of the area, including hunting, fishing, hiking, camping, and nature study. Basically, these settings accommodate dispersed, non-motorized recreation.

Semi-Primitive Motorized (**SPM**) settings are characterized by naturally appearing environment. Concentration of users is low. Motorized use is permitted.

Roaded Natural (**RN**) settings are located within a half mile of a road and usually provide higher levels of development such as campgrounds, picnic areas, and river access points.

Rural (**R**) management emphasis is for rural and roaded-natural recreation opportunities. These settings represent the most developed sites and modified natural settings on the forest. Examples of this classification are motorized and non-motorized recreation, such as driving for pleasure, viewing scenery, picnicking, and fishing are

Urban (**U**) represents a landscape character that has resulted from extensive human activities, no longer appearing natural, such as conversion of natural landscapes into an extensively altered landscape, such as a town, city or metropolitan area. The 1986 did not use this class.

Table G-2 describes the scenic integrity objectives of the management areas on the Ozark-St. Francis National Forests.

Table G-2: Scenic Integrity Objectives by Management Area.

Management Areas	Inventoried Scenic Class					
	1	2	3	4	5	6
	Scenic Integrity Objectives					
1.A Wilderness	VH	VH	VH	VH	VH	VH
1.B Recommended Wilderness Additions	VH	VH	VH	VH	VH	VH
1.C Designated Wild and Scenic Rivers	H	H	H	H	H	H
1.D Recommended Wild and Scenic Rivers	H	H	H	H	H	H
1.E Experimental Forests	H	M	L	L	L	L
1.F Research Natural Areas	H	H	H	H	H	H
1.G Special Interest Areas	H	H	H	L	L	L
1.H Scenic Byway Corridors	H	H	H	H	H	H
2.A Ozark Highlands Trail	H	H	H	H	H	H
2.B State Parks	H	H	M	M	M	M
2.C Developed Recreation Areas	H	H	M	M	M	M
2.D Upper Buffalo Dispersed Recreation Area	H	H	M	M	M	L
2.E Wedington Unit Urban Recreational Area	H	H	M	M	M	L
2.F Indian Creek Dispersed Recreation Area	H	H	M	M	M	L
3.A Pine Woodland	H	M	L	L	L	L
3.B Oak Woodland	H	M	L	L	L	L
3.C Mixed Forest	H	H	M	L	L	L
3.D Oak Decline Restoration Areas	H	M	L	L	L	L
3.E High Quality Forest Products	H	M	L	L	L	L
3.F Old Growth Area	H	H	M	M	L	L
3.G Crowley's Ridge - Upland Hardwoods	H	H	M	L	L	L
3.H Mississippi River Bottomland Hardwood	H	H	M	L	L	L
3.I Riparian Corridors	H	H	M	L	L	L
3.J Pastures and Large Wildlife Openings	H	H	M	M	M	M
3.K Wildlife Emphasis Area	H	M	M	M	L	L

Note: Explanation of table immediately follows.

Definitions of Scenic Classes and Scenic Integrity Objectives used in Table G-2 are found in Table G-3 and the following paragraphs.

Table G-3: Visual Quality Objective and Scenic Integrity Objective Crosswalk.

Visual Quality Objective (VQO) (Used in the Current Plan)	Scenic Integrity Objective (SIO) (Used in Revised Plan)
Preservation (P)	Very High (VH) Unaltered
Retention (R)	High (H) Appears Unaltered
Partial Retention (PR)	Moderate (M) Slightly Altered
Modification (M)	Low (L) Moderately Altered
Maximum Modification (MM)	Very Low (VL) Heavily Altered*

***The Revised Plan has no very low SIO.**

Definitions of Scenic Integrity Objectives:

Very High (Unaltered-Preservation) Scenic integrity refers to landscapes where the valued landscape character "is" intact with only minute if any deviations. The existing landscape character and sense of place is expressed at the highest possible level.

High (Appears Unaltered-Retention) Scenic integrity refers to landscapes where the valued landscape character "appears" intact. Deviations may be present but must repeat the form, line, color, texture, and pattern common to the landscape character so completely and at such scale that they are not evident.

Moderate (Slightly Altered-Partial Retention) Scenic integrity refers to landscapes where the valued landscape character "appears slightly altered." Noticeable deviations must remain visually subordinate to the landscape character being viewed.

Low (Moderately Altered-Modification) Scenic integrity refers to landscapes where the valued landscape character "appears moderately altered." Deviations begin to dominate the valued landscape character being viewed but they borrow valued attributes such as size, shape, edge effect and pattern of natural openings, vegetative type changes, or architectural styles outside the landscape being viewed. They should not only appear as valued character outside the landscape being viewed, but also compatible or complimentary to the character within.

Definitions of Scenic Classes:

Scenic Class 1: Scenery has extremely high public value
Scenic Class 2: Scenery has very high public value
Scenic Class 3: Scenery has high public value
Scenic Class 4: Scenery has moderately high public value
Scenic Class 5: Scenery has moderate public value
Scenic Class 6: Scenery has moderate/low public value, usually in unseen areas

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APPENDIX H-MINERALS

POTENTIAL ON THE OZARK-ST. FRANCIS NATIONAL FORESTS

The minerals potential for hard rock minerals, gas, and coal on the Ozark-St. Francis National Forests are displayed in the Table H-1. Geologic formations by percent occurrence on each ranger district are included as well. The areas of known mineral potential are based on current information and may change due to further exploration, technological advances, and geologic evaluations. The USDI Bureau of Land Management (BLM) in cooperation with the Forest Service developed the *Reasonable Foreseeable Development (RFD) Scenario* for oil and gas on the Ozark-St. Francis National Forests from which the potential for gas is based. Hardrock minerals potential is based on minerals and geology reports primarily from the State of Arkansas Geological Commission, USDI Bureau of Mines, USDI Geological Survey, and USDA Forest Service.

Table H-1: Oil & Gas and Hardrock Minerals Potential on the OSFNFs.

Ranger District (RD)	RD Geologic Formations	Oil and Gas Exploration Potential	Gas Production Current and Past	Hardrock Potential
Bayou	Pbh 60%, Pa 40%	High	No	Low
Boston Mtn	Pa 90%, Pbh 8%, Phc 2%	High	Yes (Franklin, Crawford, Washington, & Madison Counties)	Low
Boston Mtn – Wedington Unit	Mbn 90%, Mfb 5%, MDc 5%	Moderate to High	No	Low
Buffalo	Pbh 60%, Pa 25%, Mpfb 8%, Phc 5%, Mb 2%	High	No	Low
Buffalo – Henry Keon Experimental Forest, Jasper area	Mb 80%, Ose 10%, Mpfb 5%, Phc/Pbh 5%	Moderate	No	Low
Magazine	Pa 40%, Phs 30%, Pm 25%, Ps 5%	High	Yes (Logan County)	Low
Pleasant Hill	Pa 90%, Pbh 8%, Phc 2%	High	Yes (Johnson & Franklin Counties)	Low
Sylamore	Mb 40%, Ose 40%, Mpfp 5%, Mr 5%, Op 5%, Ocj 5%	Moderate	No	Low
St. Francis	/Ql 90%, Qcm 5%, Qso/Qt/Qsg 10%	Low	No	Low

WITHDRAWAL REVIEW

Existing withdrawals and potential future withdrawals were reviewed by the Forest as required under Section 204 of the Federal Land Policy and Management Act of 1976, through the analysis phase of the Forest planning process. The Forest Service makes recommendations on withdrawal status of National Forest lands to the USDI Bureau of Land Management. The decision to recommend maintaining or revoking an existing mineral withdrawal, or initiate action to approve a new mineral withdrawal is based primarily on the need to protect the resource or administrative values of the lands in question. When it is determined that full protection from the provisions of the 1872 mining law is necessary, and that existing regulatory controls applied to a mining related activity are not sufficient to secure this protection, it is appropriate to recommend removing the lands from mineral entry or retain an existing withdrawal. When it is determined that existing regulatory controls applied to mining related activities would be sufficient to allow other resource and administrative functions to occur, it is not necessary to recommend a new withdrawal, and/or it is appropriate to recommend lifting an existing withdrawal.

Table H-2: Review of Lands Withdrawn from Mineral Entry.

Ranger District	Township/ Range	Section	Acres	Name	Authority	Retain
Sylamore	T15N R11W T16N R11W	5 fr. NW, W2SW 6 fr. E2, fr.NW, fr.NESW 32 SESW	778	Half Mile Cave Unique National Area	PLO 3337 2/24/1964	Yes
Sylamore	T16N R11W	8, 17, 18, & partials 5, 7, 19, & 20	2,849	Sylamore Experimental Forest	PLO 1055 1/18/1955	Yes
Sylamore	T15N R11W T16N R11W	4 W2SW, NWNW 5 SWNE, SESE 32 S2SE	293	Blanchard Springs Recreation Area	PLO 1131 4/15/1955	Yes
Sylamore	T16N R12W	15 SENW, E2SW	120	Barkshed Recreational Area	PLO 1131 4/15/1955	Yes
Sylamore	T16N R12W	13 E2NE, SENW	120	Green Tower Dispatcher Station	PLO 1131 4/15/1955	Yes
Sylamore	T17N R11W	29 NENE	40	Sugar Loaf Lookout	PLO 1131 4/15/1955	Yes
Sylamore	T17N R13W	28 E2SW	80	Push Mtn. Fire Tower	PLO 1131 4/15/1955	Yes
Boston Mountain	T11N R28W	10 W2W2, NENE & 2 W2SW	280	Shores Lake Recreation Area	PLO 1131 4/15/1955	Yes
Boston Mountain	T12N R27W	24 NENW	40	Cass Ranger Station	PLO 1131 4/15/1955	Yes
Boston Mountain	T12N R27W	32 partial NW	40	Grays Camp Recreation Area	PLO 1131 4/15/1955	Yes

Table H-2: Review of Lands Withdrawn from Mineral Entry. (Continued)

Ranger District	Township/ Range	Section	Acres	Name	Authority	Retain
Boston Mountain	T12N R28W	24 N2SE	80	Potato Knob Guard Station	PLO 1131 4/15/1955	Yes
Boston Mountain	T12N R28W	22	640	White Rock Recreation Area	PLO 1131 4/15/1955	Yes
Boston Mtn & Pleasant Hill	T13N R2W	36 SWSE	40	Cherry Bend Recreation Area	PLO 1131 4/15/1955	Yes
Bayou	T10N R18W	7 partial SESW 18 NENW	59	Bayou Bluff Recreation Area	PLO 1131 4/15/1955	Yes
Bayou	T11N R21W	20 SESW	40	Pilot Knob Guard Station	PLO 1131 4/15/1955	No
Bayou	T12N R18W	24 SENW	40	Walker Mtn. Lookout Station	PLO 1131 4/15/1955	Yes
Bayou	T12N R20W	25 SENW, 26 NENE	80	Turnpike Dispatch Station	PLO 1131 4/15/1955	No
Bayou	T10N R20W	6 NWSE, SWNE	80	Long Pool Recreation Area	PLO 1131 4/15/1955	Yes
Bayou	T12N R21W	20 SENW	25	Haw Creek Recreation Area	PLO 156343 11/11/1908	Yes
Buffalo	T12N R23W	2 S2NE	80	Devils Knob Dispatch Station	PLO 1131 4/15/1955	Yes
Buffalo	T14N R18W	19 SWSE, 30 NENW	80	Round Hill Lookout Station	PLO 1131 4/15/1955	No
Buffalo	T13N R18W	6 S2SWSE, S2N2SWSE	30	Richland Recreation Area	PLO 1003 9/3/1954	Yes

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APPENDIX I MONITORING

Monitoring Summary Table

The monitoring summary table lists the major items to be monitored. The focal point for each monitoring item is the monitoring need. Each monitoring item comes from one or more monitoring needs (legal requirements, desired conditions, or objectives. Not all monitoring is needed each year. Annually needs that best answer the monitoring question for each resource area will be identified through the annual monitoring schedule process.

Table I-1: Monitoring Matrix, Contents, and Definitions

Content	Definition
Resource Area	A quantitative or qualitative parameter that can be assessed.
Monitoring Needs	Monitoring Needs identify the reason why particular items are monitored. Following is a list of monitoring needs: (1) Legal and regulatory requirements and Forest Service Manual direction; (2) Forest Plan desired conditions, priorities, objectives and performance indicators, and design criteria (standards); (3) Validation of assumptions and predictions; and (4) Court rulings. Legal and regulatory drivers are described whereas desired conditions, priorities, objectives, and standards are referenced. Refer to Chapters 2 and 3 for full description of these needs.
Measurement Frequency	Describes how often monitoring information is collected.
Evaluation and Reporting Frequency	Describes how often monitoring information is evaluated and reported.
Precision and Reliability	Precision is the exactness or accuracy of the measuring technique with which data are collected. Reliability is the expected probability that information acquired through sampling reflects actual conditions of the Forests' situation. Both precision and reliability are qualitatively rated as high, moderate, or low. Standards for precision and reliability accuracy levels are: High (H) - Within 10% Moderate (M) - Within 30% Low (L) - Within 50% N/A - Not determinable

The following sets of tables summarize monitoring needs for mandatory monitoring elements.

Table I-2: Monitoring Summary Table Mandatory Items

Resource Area	Monitoring Need	Measurement Frequency	Reporting Frequency	Precision & Reliability
All	NFMA. A quantitative estimate of performance comparing outputs and services with those projected by the Forest Plan.	Annual	Annual	H
All	NFMA. Documentation of costs associated with carrying out the planned management prescriptions as compared with costs estimated in the Forest Plan.	Annual	Annual	H
Soils	NFMA. Documentation of the measured prescriptions and effects, including significant changes in productivity of the land.	1-5 years	1-5 years	M
Timber	NFMA. Lands are adequately restocked as specified in the Forest Plan.	Annual	Annual	H
Timber	NFMA. Lands identified as not suited for timber production are examined at least every 10 years to determine if they have become suited; and that, if determined suited, such lands are returned to timber production.	10 years	10 years	H
Timber	NFMA. Maximum size limits for harvest areas are evaluated to determine whether such size limits should be continued. Priority-vegetation management. Manage forest ecosystems to maintain or restore composition (mix of species), structure (age class distribution), and function (resulting in benefits to the ecosystem and humans) within desired ranges of variability	10 years	10 years	M

Table I-2: Monitoring Summary Table Mandatory Items. (Continued)

Resource Area	Monitoring Need	Measurement Frequency	Reporting Frequency	Precision & Reliability
Insects & Disease	NFMA. Destructive insects and disease organisms do not increase to potentially damaging levels following management activities.	Annual	Annual	M
Wildlife	Priority-wildlife management Provide diverse habitats that will support viable populations of all native and desirable introduced wildlife. Maintain and, where appropriate, improve habitat to provide adequate populations of game species for hunting	Annual	1-5 years	M

The following sets of tables summarize monitoring needs for desired conditions of major forest communities and various resource programs on the Ozark-St. Francis National Forests Chapter 1.

Table I-3: Summary Table Desired Conditions Chapter 1

Resource Area	Monitoring Needs		
Major Forest Communities	**Monitoring Elements**		
For major forest communities in general, monitor and evaluate trends in:	▶ Abundance of mature forest across all forest types ▶ Abundance of old growth forest across all forest types ▶ Abundance of regenerating forest across all forest types ▶ Abundance of regenerating and young forest across all forest types		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	1-5 years	M

Table I-3: Summary Table Desired Conditions Chapter 1. (Continued)

Resource Area	Monitoring Needs		
Major Forest Communities	**Monitoring Elements**		
Dry Oak Forest and Woodland	▶ Total abundance of the community ▶ Abundance of mature forest and woodland ▶ Abundance of old growth ▶ Abundance of regenerating forest ▶ Abundance of regenerating and young forest ▶ Abundance of woodland ▶ Proportion of the community burned at desired intervals and seasons ▶ Abundance of mature and mid-aged forest that is in an open canopy condition		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	1-5 years	M
Major Forest Communities	**Monitoring Elements**		
Shortleaf Pine-Oak Forest and Woodland	▶ Total abundance of the community ▶ Abundance of mature forest and woodland ▶ Abundance of old growth ▶ Abundance of regenerating forest ▶ Abundance of regenerating and young forest ▶ Abundance of woodland ▶ Proportion of the community burned at desired intervals and seasons ▶ Abundance of mature and mid-aged forest that is in an open canopy condition		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	1-5 years	M
Major Forest Communities	**Monitoring Elements**		
Dry-Mesic Oak Forest	▶ Total abundance of the community ▶ Abundance of mature forest and woodland ▶ Abundance of old growth ▶ Abundance of regenerating forest ▶ Abundance of regenerating and young forest together ▶ Proportion of the community burned at desired intervals and seasons ▶ Abundance of mature and mid-aged forest that is in an open canopy condition		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	1-5 years	M

Table I-3: Summary Table Desired Conditions Chapter 1. (Continued)

Resource Area	Monitoring Needs		
Major Forest Communities	**Monitoring Elements**		
Mesic Hardwood Forest	▶ Monitor and evaluate trends in total abundance of the community		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	1-5 years	M
Major Forest Communities	**Monitoring Elements**		
Riparian Forest	▶ Monitor and evaluate trends in total abundance of the community		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	1-5 years	M
Major Forest Communities	**Monitoring Elements**		
Loblolly Pine Forest	▶ Monitor and evaluate trends in total abundance of the community on both forests		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	1-5 years	M
Major Forest Communities	**Monitoring Elements**		
Loess Slope Forest, St. Francis NF	▶ Total abundance of the community ▶ Abundance of mature forest ▶ Abundance of old growth ▶ Abundance of regenerating forest ▶ Abundance of regenerating and young forest together ▶ Proportion of the community burned at desired intervals and seasons ▶ Abundance of mature and mid-aged forest that is in an open canopy condition		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	1-5 years	M

Table I-3: Summary Table Desired Conditions Chapter 1. (Continued)

Resource Area	Monitoring Needs		
Major Forest Communities	**Monitoring Elements**		
Bottomland and Floodplain Forest, St. Francis NF	▶ Total abundance of the community ▶ Abundance of mature forest ▶ Abundance of old growth ▶ Abundance of regenerating forest ▶ Abundance of regenerating and young forest together		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	1-5 years	M
Major Forest Communities	**Monitoring Elements**		
Rare Communities, Both Forests	▶ Number of occurrences and acreage of each rare community type ▶ Percent of occurrences or acreage at desired conditions		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	3 years	3 years	M
Resource Program	**Monitoring Elements**		
Fish and Wildlife	▶ Abundance and distribution of selected non-native invasive species ▶ Abundance of remote habitat ▶ Habitat and status of federally-listed threatened and endangered species, and of selected sensitive and locally rare species ▶ Habitat and population trends for management indicator species ▶ Composition of stream fish communities ▶ Relative abundance of all species in stream communities focusing on feeding and breeding groups as part of an index to biotic integrity (IBI).		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	5 years	5 years	H/M

Table I-3: Summary Table Desired Conditions Chapter 1. (Continued)

Resource Area	Monitoring Needs		
Resource Program	**Monitoring Elements**		
Watershed	▶ Annually report the level of BMP compliance as a percent of the number of projects investigated ▶ Annually track the acres of watershed restoration/improvement and soil/water conservation projects ▶ Conduct stream condition surveys during watershed analysis and report combined results every five years ▶ Conduct five year trend analysis based on the above monitoring		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	1-5 years	H/M
Resource Program	**Monitoring Elements**		
Lands	▶ Annually report acres of land adjustment (purchase, easements, etc) and the reasons for that adjustment. ▶ Report annually miles surveyed to establish clear boundaries and the number of occupancy trespasses resolved. ▶ Every fifth year, an evaluate land ownership complexity and determine progress in reducing the amount of interface with private lands and the number of occupancy trespasses.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	5 years	H
Resource Program	**Monitoring Elements**		
Special Uses	▶ Every fifth year evaluate to determine if resource values in permitted areas are being sustained and being used efficiently (minimizing acres encumbered) in harmony with other uses and resources.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	5 years	5 years	M
Resource Program	**Monitoring Elements**		
Recreation	▶ Annually report the number of recreation sites maintained to standard and occupancy/use rates ▶ Maintain a facility condition and maintenance backlog index ▶ Every fifth year, evaluate trends in annual indicators and visitor satisfaction surveys to determine if the Forest has provided quality recreational experiences that result in increased visitor satisfaction (currently through NVUM process)		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	5 years	H

Table I-3: Summary Table Desired Conditions Chapter 1 (Continued).

Resource Area	Monitoring Needs		
Resource Program	**Monitoring Elements**		
Recreation - Conservation Education	▶ Each year document the number of certificates for appreciative behavior; number of non-government organizations, groups, and volunteers involved in activities ▶ Each year document the number and type of educational programs developed and the number of students reached ▶ Every fifth year, evaluate the interdisciplinary conservation education program and its effectiveness		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	5 years	M
Resource Program	**Monitoring Elements**		
Recreation - Scenery	▶ Report whether a landscape architect was consulted where project implementation was likely to affect scenic integrity, and if applicable, to what degree SIOs were maintained/achieved ▶ Report annually the number and type of management projects conducted in areas having a high SIO ▶ During implementation monitoring reviews, determine if the project under review adequately considered SIOs		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	5 years	M
Resource Program	**Monitoring Elements**		
Recreation - Heritage	▶ Annually report sites managed to standard (sites inventoried, evaluated, protected, promoted, preserved, restored, rehabilitated, monitored, or enhanced) ▶ Every fifth year, evaluate progress in increasing the number of heritage resources protected and managed to standard ▶ Every decade update the Heritage Resource Overview		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	1-5-10 years	H

Table I-3: Summary Table Desired Conditions Chapter 1 (Continued).

Resource Area	Monitoring Needs		
Resource Program	**Monitoring Elements**		
Tribal and Native American Interests	▶ Annually report the number and acres of resources protected, conserved or restored; agreements and protocols executed; and number of consultations ▶ Every fifth year, evaluate Native American feedback and satisfaction as an indicator of progress toward the desired condition ▶ Annually participate in the leadership of the To Bridge a Gap Conference		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	5 years	H
Resource Program	**Monitoring Elements**		
Law Enforcement	▶ Annually report on the number of accidents, citations, acres, and type of impact of each illegal activity ▶ Every fifth year evaluate trends in unlawful or criminal behaviors including cumulative impacts to natural resources		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	1-5 years	H
Resource Program	**Monitoring Elements**		
Facilities	▶ Annually report numbers of facilities maintained to standard ▶ Maintain a facility condition and maintenance backlog index ▶ Every fifth year, evaluate trends in the facility condition index and maintenance backlog to determine progress toward the desired condition		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	1-5 years	M
Resource Program	**Monitoring Elements**		
Transportation and Public Access	▶ Annually report the number of miles of road and trails maintained and operated to meet the objective maintenance level and class ▶ Annually report the number of miles of unclassified roads removed or classified into the system ▶ Every fifth year, evaluate trends in miles of road and trail facilities and trends in number of accidents per year		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	1-5 years	M

Table I-3: Summary Table Desired Conditions Chapter 1 (Continued).

Resource Area	Monitoring Needs		
Resource Program	**Monitoring Elements**		
Transportation and Public Access - Off Highway Vehicles	▶ Report annually the total miles of roads and trails available for use by off-highway vehicles ▶ Every fifth year, evaluate visitor satisfaction surveys, including the number of conflicts identified by field staff or reported by the public and the resolution of the complaints to determine if progress is being made toward the desired condition ▶ Annually review off-road vehicle management plans and temporary designations implemented since the last annual review. OHV plan revisions will be subject to public participation as stated in 36 CFR Section 295.3 ▶ Review every three to five years the OHV use strategy and designations to determine whether the open or closed OHV use designations, location of the trails, vehicle types, and seasons of use are still valid		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	1-5 years	M
Resource Program	**Monitoring Elements**		
Minerals	▶ Annually report the number of operating plans managed to standard including the number and type of mitigation standards implemented ▶ Every fifth year, evaluate the percentage of mineral developments that reduce the surface disturbance footprint and reduce siltation or other sources of environmental degradation		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	1-5 years	M
Resource Program	**Monitoring Elements**		
Range	▶ Each year document the number of acres in allotments managed to standard ▶ Every fifth year, evaluate rangeland condition and trends to determine progress toward the desired condition		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	1-5 years	M

Table I-3: Summary Table Desired Conditions Chapter 1 (Continued).

Resource Area	Monitoring Needs		
Resource Program	**Monitoring Elements**		
Fire Management	▶ Annually report the number of acres of hazardous fuel reduction in WUI including those implemented through cooperative agreements ▶ Document the number of communities or facilities protected by treatments ▶ Every fifth year, evaluate progress toward the desired condition through an analysis of the status of high hazard and high-risk areas		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	1-5 years	H

The following sets of tables summarize monitoring of performance indicators found in Chapter 2 for objectives for various resource programs on the Ozark-St. Francis National Forests.

Table I-4: Summary Table Program Objectives and Performance Indicators (Chapter 2).

Resource Area	Monitoring Needs		
Resource Program	**Monitoring Elements**		
Land Management Planning Forest Plan Monitoring and Evaluation	**OBJ01.** Complete an Environmental Management System (EMS) within the 1st five years of the planning cycle. **Performance Indicator**: Completed EMS		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	5 years	5 years	H
Resource Program	**Monitoring Elements**		
Vegetation and Forest Health - Major Communities	**OBJ02.** Follow silviculture allocation direction for management areas outlined in Appendix F of this LRMP. **Performance Indicator:** Through FACTS, report annually, acres allocated by management area and silviculture prescription. **OBJ03.** Across all community types, maintain more than 50% of the total forest and woodland acreage in a mature condition. Over time, develop old growth conditions on approximately 20% of forested acres. **Performance Indicator**: Percent of mature forest and old growth forest. **OBJ04.** Restore and maintain at least 22,000 acres of oak woodland over the 1st decade, with a long-term objective of 110,000 acres of oak woodland. **Performance Indicator**: Acres of oak woodland restored annually. **OBJ05.** Restore at least 20,000 acres of pine woodland over the 1st decade, with a long-term objective of 100,000 acres of pine woodland. **Performance Indicator**: Acres of pine woodland restored annually. **OBJ06.** Across all community types, maintain a range of 3.8 – 6.8% of the total forest and woodland acreage in regenerating forest conditions (0-10 years old). **Performance Indicator**: Percentage of forest in regenerating conditions. **OBJ07.** Across all community types, burn under prescribed conditions 120,000 acres annually on average. Burn approximately one third of this acreage within the growing season (April 1 through October 15). **Performance Indicator**: Acres burned under prescription per year, and acres burned within the growing season.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	5 years	5 years	H

Table I-4: Summary Table Program Objectives and Performance Indicators (Chapter 2). (Continued)

Resource Area	Monitoring Needs		
Resource Program	**Monitoring Elements**		
Vegetation and Forest Health-Insect and Disease Management	**OBJ08.** Reduce the risk of oak and pine mortality events by thinning and regenerating at least 150,000 acres within the first decade. **Performance Indicator**: Acres thinned and regenerated annually.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	5 years	5 years	H
Resource Program	**Monitoring Elements**		
Vegetation and Forest Health-Non-Native Invasive Species	**OBJ09.** Treat at least 200 acres per year for reduction or elimination of non-native, invasive species. **Performance Indicator:** Acres treated.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	5 years	5 years	H
Resource Program	**Monitoring Elements**		
Fish and Wildlife – Demand Species	**OBJ10.** Improve and then maintain bobwhite quail habitat on 5000 acres per year for the 1st decade. **Performance Indicator**: Acres improved through oak or pine woodland restoration, or acres in early seral stages **OBJ11.** Improve and then maintain habitat for whitetail deer on 10,000 acres per year for the 1st decade. **Performance Indicator**: Acres improved annually. **OBJ12.** Improve and then maintain habitat for eastern wild turkey on 10,000 acres per year for the 1st decade. **Performance Indicator**: Acres improved annually. **OBJ13.** Improve and then maintain habitat for black bear on 8,000 acres per year for the 1st decade. **Performance Indicator**: Acres improved annually. **OBJ14.** Improve winter forage grounds and maintain high grass and forb plant communities for elk on 480 acres over the 1st decade. **Performance Indicator**: Acres improved. **OBJ15.** Maintain habitat at 2004 levels for largemouth and smallmouth bass during the next 3-5 years. **Performance Indicator**: Acres maintained. **OBJ16.** Increase the amount of fish structures in large lakes by 100 acres over the 1st decade. **Performance Indicator**: Acres of structural improvement annually.		

Table I-4: Summary Table Program Objectives and Performance Indicators (Chapter 2). (Continued)

Resource Area	Monitoring Needs		
Fish and Wildlife – Demand Species (Continued)	**Measurement Frequency**	**Reporting Frequency**	**Precision & Reliability**
	3-10 years	3 10 years	H
Resource Program	**Monitoring Elements**		
Fish and Wildlife - Threatened, Endangered, and Sensitive Species	**OBJ17.** Improve roosting and foraging conditions in secondary buffers around Indiana Bat hibernacula on 750 acres per year for the 1st decade. **Performance Indicator**: Acres improved annually		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	10 years	10 years	H
Resource Program	**Monitoring Elements**		
Soil and Water and Air	**OBJ18.** Protect and improve the Air Quality Related Values of the Class I Area. **Performance Indicator:** Number of AQRV monitoring sites, number of PSD permits reviewed and number of regional air quality planning committees participated in. **OBJ19.** Conduct watershed improvements on 20 acres per year. **Performance Indicator:** Acres treated. **OBJ20.** Fence out livestock from SMZs and riparian areas as identified. **Performance Indicator:** Miles of SMZ fenced. **OBJ21.** Maintain or restore between 30–70% of the total perennial stream/river surface area of the NHD (National Hydrography Dataset) reaches as pool habitat in the 1st decade. **Performance Indicator**: Percentage of NHD streams pool habitat **OBJ22.** Maintain or restore LWD (Large Woody Debris) levels in perennial streams/rivers at 75–200 pieces/mile for all LWD larger than 3.3 feet long and 3.9 inches in diameter in the 1st decade. **Performance Indicator**: LWD composition in perennial streams after 10 years. **OBJ23.** Maintain or restore LWD levels in perennial streams/rivers at 8-20 pieces/mile for all LWD larger than 16.4 feet long and 19.7 inches in diameter in the 1st decade. **Performance Indicator**: LWD composition in perennial streams after 10 years.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	10 years	10 years	M

Table I-4: Summary Table Program Objectives and Performance Indicators (Chapter 2).

Resource Area	Monitoring Needs		
Resource Program	**Monitoring Elements**		
Lands and Special Uses – Boundaries and Corner Lines	**OBJ24.** Maintain existing known corner monuments. **Performance Indicator:** Number of corners maintained. **OBJ25.** Survey and monument lost/obliterated or found corners on a township basis (the basic PLSS unit which is also the most cost effective). **Performance Indicator:** Number monuments restored. **OBJ26.** Establish new (heretofore not marked to FS standard) on-the-ground boundary line to the extent funding is available. **Performance Indicator:** New boundary lines established. **OBJ27.** Maintain existing (heretofore marked to FS standard) on-the-ground boundary line to the extent funding is available. **Performance Indicator:** Miles of line maintained.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	10 years	10 years	M
Resource Program	**Monitoring Elements**		
Recreation - Trails	**OBJ28.** In conjunction with designating low maintenance standard roads develop a system of motorized trails that address the needs of OHV enthusiasts. **Performance Indicator**: Miles of new motorized trails. **OBJ29.** Within the first five years of the planning period, provide maps that show OHV route systems and using designated roads. **Performance Indicator**: Maps completed. **OBJ30.** Conduct maintenance on at least 100 miles of trails (non-motorized use) per year. **Performance Indicator:** Miles of trail maintained to standard annually		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	1-5 years	H
Resource Program	**Monitoring Elements**		
Recreation – Conservation Education	**OBJ31.** Increase partnerships by approximately 20% during the planning cycle. **Performance Indicator:** Percent increase in partnerships.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	10 years	10 years	M

Table I-4: Summary Table Program Objectives and Performance Indicators (Chapter 2).

Resource Area	Monitoring Needs		
Resource Program	**Monitoring Elements**		
Recreation – Scenery Management	**OBJ32.** Within 3 years, the Forests will map the existing scenic integrity levels to compare with the proposed scenic integrity objectives for each management area. **Performance Indicator:** Inventory of existing scenic integrity level. **OBJ33.** Within one year, update the scenery treatment guide for both forests. **Performance Indicator:** Updated guide. **OBJ34.** Improve or maintain all designated scenic overlooks at least once per decade. **Performance Indicator:** Number improved or maintained per year; percent maintained or improved per decade.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-10 years	1-5 years	H
Resource Program	**Monitoring Elements**		
Recreation – Heritage Resources	**OBJ35.** Evaluate historic sites for appropriate management. Develop site management plans for noteworthy heritage resources wherever they occur. **Performance Indicator**: Number of management plans. **OBJ36.** Provide public involvement programs with opportunities for people to partner in the stewardship of heritage resource sites. **Performance Indicator:** Number of programs (PIT, AAS digs, etc.) **OBJ37.** Develop public involvement programs to foster partnership in heritage resource stewardship to aid in identifying and evaluating heritage sites. **Performance Indicator**: Number of partnerships. **OBJ38.** Increase the heritage resource database by surveying non-project acreage. **Performance Indicator**: Acres of non-project surveys.		
Resource Program	**Monitoring Elements**		
Tribal Native American Relationships	**OBJ39.** Within this planning cycle, develop government-to-government programmatic agreements which define protocols with all local recognized tribes and organized groups of interested Native Americans. **Performance Indicator: .**Programmatic agreements developed. **OBJ40.** During the next 3-5 years, expand the Native American Wildland Firefighting Training program. **Performance Indicator:** Native American fire fighters trained annually.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	1-5 years	H

Table I-4: Summary Table Program Objectives and Performance Indicators (Chapter 2).

Resource Area	Monitoring Needs		
Resource Program	**Monitoring Elements**		
Facilities	**OBJ41.** Identify and evaluate applicable property or buildings of potential historic value in support of the facility master plan. Remove the facilities that have been abandoned or no longer needed, and restore the sites to natural conditions. **Performance Indicator**: Number of facilities removed. **OBJ42.** Construct new facilities to accommodate supplementary fire employees and equipment. **Performance Indicator**: Number of facilities constructed. **OBJ43.** Eliminate two leased facilities by 2015. **Performance Indicator**: Leases eliminated by 2015. **OBJ44.** Eliminate 10% of other non-essential administrative facilities by 2015. **Performance Indicator**: Non-essential facilities remaining as a percentage of the FY 2005 baseline (to be determined). **OBJ45.** Upgrade all identified publicly accessible facilities to Architectural Barriers Act standards as appropriate. **Performance Indicator**: Percentage of publicly accessible facilities upgraded. **OBJ46.** Complete energy efficiency upgrades on all administrative buildings and complete identified work on 10% of administrative buildings needing upgrades by 2015. **Performance Indicator**: Percentage of administrative buildings needing work with energy efficiency upgrades completed by 2015. **OBJ47.** Inspect all buildings compliance with health and safety standards and address all identified health and safety issues. **Performance Indicator**: Percentage of inspected buildings that met health and safety standards.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	1-5 years	M

Table I-4: Summary Table Program Objectives and Performance Indicators Chapter 2 (Continued)

Resource Area	Monitoring Needs		
Resource Program	**Monitoring Elements**		
Transportation and Public Access – Transportation System	**OBJ48.** Add unclassified roads to the Forest Service Road System when site-specific road analysis determines there is a need for the road. **Performance Indicator**: Number of roads added. **OBJ49.** Decommission roads and trails unnecessary for conversion to either the road or trail systems through the roads analysis process. **Performance Indicator**: Number of roads decommissioned. **OBJ50.** Reduce the number of unnecessary or redundant unclassified roads. **Performance Indicator**: Number of roads removed from the Forest Service Road System. **OBJ51.** Identify by the 1st decade all system roads that should be obliterated **Performance Indicator**: Miles of system roads decommissioned. **OBJ52.** Obliterate 15 percent of roads identified under the previous objective by the 2nd decade. **Performance Indicator**: Miles of road obliterated. **OBJ53.** Reduce miles of road under Forest Service maintenance. **Performance Indicator**: Miles of system roads eliminated from road maintenance inventory per year. **OBJ54.** Improve aquatic organism passage on an average of no less than six stream crossings per year (where there are road-related barriers to passage). **Performance Indicator**: Number of stream crossings where aquatic organism passage is improved.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	1-5 years	H
Resource Program	**Monitoring Elements**		
Fire Management – Community Protection	**OBJ55.** Improve condition class in all WUI areas within five years. **Performance Indicator**: Acres of improved condition class per year and cumulative percent of all WUI acres with improved condition class. **OBJ56.** Within 15 years, restore 15 to 20% of all ecological communities into Fire Regime CC 1. **Performance Indicator**: Acres restored into FRCC Class 1 annually. **OBJ57.** Annually complete 50,000 to 100,000 acres of hazardous fuel reduction. **Performance Indicator**: Acres burned, mechanically or chemically treated for fuels reduction per year.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	1-5 years	H

Table I-4: Summary Table Program Objectives and Performance Indicators Chapter 2 (Continued)

Resource Area	Monitoring Needs		
Resource Program	**Monitoring Elements**		
Fire Management – Prescribed Burning	**OBJ58.** Priority 1-Treat approximately 3,500 acres of Federal lands adjacent (within 1/2 mile) of Communities at Risk over the next 5 years. Emphasize mechanical treatments designed specifically to lower condition class and associated wildfire risk. In concert with the Arkansas Forestry Commission, over the next 5 years, treat approximately 55,000 acres of private and Federal lands in the wildland urban interface/intermix (WUI) areas as identified in http://silvis.forest.wisc.edu/projects/WUI_Main.asp. **Performance Indicator**: Acres treated within ½ mile of communities at risk. **OBJ59.** Priority 2–Expand treatments applied Priority 1 to improve condition class ratings in WUI areas that are within 1.5 miles of private ownerships with structures. Treat approximately 100,000 to 150,000 acres over the next 5-10 years. Identify and treat areas where snag hazards pose safety problems to firefighters and/or the public (particularly in oak mortality areas). **Performance Indicator**: Acres treated within 1.5 miles of Communities at Risk. **OBJ60.** Priority 3 - Over the next 5-10years, treat approximately 100,000 to 150,000 acres with resource objectives combining hazardous fuel reduction with the restoration of fire-adapted ecosystems. Focus on restoration of habitat for threatened, endangered, or sensitive species where periodic fire and reference conditions are expected to promote species viability. Prioritize work to take full advantage of partnerships with non-government organizations (NGOs) and other state and Federal agencies. **Performance Indicator**: Acres burned annually. **OBJ61.** Across all community types, burn under prescribed conditions 120,000 acres annually on average. **Performance Indicator**: Acres burned under prescription per year.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	1-5 years	H

Table I-4: Summary Table Program Objectives and Performance Indicators Chapter 2 (Continued

Resource Area	Monitoring Needs		
Resource Program	**Monitoring Elements**		
Commodities - Timber	**OBJ62.** Provide 731 MMBF (146 MMCF) per decade of sawtimber and pulpwood. **Performance Indicator**: Volume of timber sold per year and a running annual average. **OBJ63.** In Management Area 3.E and appropriate portions of other MAs, apply appropriate silviculture prescriptions to provide the following forest products: 18" to 20" sawtimber with grade 1 or 2 butt logs and/or Yellow Pine 18" sawtimber. **Performance Indicator:** During inventory, determine average diameter. **OBJ64.** In MA 3.C and appropriate portions of other MAs, apply appropriate silviculture prescriptions to provide the following forest products: 14" to 16" sawtimber with grade 2 butt logs and/or yellow pine 18" sawtimber. **Performance Indicator:** During inventory, determine average diameter.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	1-5 years	H
Resource Program	**Monitoring Elements**		
Commodities - Minerals	**OBJ65.** Process all applications for federal mineral leases, licenses, and permits within 120 days. **Performance Indicator:** Number and percent of applications processed in 120 days. **OBJ66.** Process all operations proposed under outstanding and reserved mineral rights within 60 days and 90 days. **Performance Indicator**: Number and percent of operations proposed within 60-90 days.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	1-5 years	M

The following sets of tables summarize monitoring needs for performance indicators and specific monitoring elements for management areas. Not all management areas have objectives or monitoring elements. Some of these may be included in forestwide monitoring, in Chapter 2.

Table I-5: Summary Tables for Management Area Monitoring Chapter 2.

Resource Area	Monitoring Needs		
Management Area	**Objectives and Monitoring Elements**		
1.A and 1.B Designated and Recommended Wilderness	**MAOBJ.1** Conduct inventories to determine the presence and extent of non-native invasive species in wildernesses by 2010. Based on results of these inventories, develop and implement appropriate monitoring and treatment programs. **Performance Indicators:** Inventories completed; monitoring plans completed; acres treated for invasive species control. Within the wilderness management area, monitor and evaluate trends in: ▶ Visitor use and resource damage using the Limits of Acceptable Change (LAC) process. ▶ Old roads and trails reverting back to a natural appearance.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	1-10 years	H
Management Area	**Objectives and Monitoring Elements**		
1.C and 1.D Designated and Recommended Wild and Scenic Rivers	**MAOBJ.2** Review and revise wild and scenic river plans 1st decade. **Performance Indicator:** Plans revised. Within the Wild and Scenic River Management Area, monitor and evaluate trends in: ▶ Visitor use in wild sections. ▶ Visitor satisfaction. ▶ Changes in outstandingly remarkable values for both scenic and recreational sections.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	1-5 years	M
Management Area	**Objectives and Monitoring Elements**		
1.F Research Natural Areas	Within the RNA Management Area, monitor and evaluate trends in: ▶ Ecological communities conditions to be used as a baseline to compare against other forest ecosystems.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	5-10 years	M

Table I-5: Summary Tables for Management Area Monitoring Chapter 2. (Continued)

Resource Area	Monitoring Needs		
Management Area	**Objectives and Monitoring Elements**		
1.G Special Interest Areas	Within the SIA Management Area, monitor and evaluate trends in: ▶ Public interpretation of unique SIA values. ▶ Management plans completed.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	1-5 years	H
Management Area	**Objectives and Monitoring Elements**		
1.H Scenic Byway Corridors	**MAOBJ.3** Improve or maintain all designated scenic overlooks at least once per decade. **Performance Indicators:** Number improved or maintained per year; percent maintained or improved per decade. **MAOBJ.4** Complete one scenic byway management plan each year: **Performance indicator**: Management plans completed annually. Within the Scenic Byway Management Area, monitor and evaluate trends in: ▶ Meeting scenic integrity objectives.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	1-5 years	H
Management Area	**Objectives and Monitoring Elements**		
2.A Ozark Highlands Trail	Within the OHT Management Area, monitor and evaluate trends in: ▶ Trail maintenance completed.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	1-5 years	H
Management Area	**Objectives and Monitoring Elements**		
2.B State Parks	Monitor and evaluate trends in: ▶ Visitor satisfaction related to the partnership. ▶ Public health and safety through the permit.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	1-5 years	M

Table I-5: Summary Tables for Management Area Monitoring Chapter 2. (Continued)

Resource Area	Monitoring Needs		
Management Area	**Objectives and Monitoring Elements**		
2.C Developed Recreation Areas	**MAOBJ.5** Reduce the recreation facilities maintenance backlog by approximately 10% within 3-5 years. **Performance Indicator**: Backlog sites maintained. **MAOBJ.6** Improve accessibility within at least one recreation site per year. **Performance Indicator**: Sites improved for accessibility annually. **MAOBJ.7** Maintain all recreation facilities to standard. **Performance Indicator:** Facilities maintained to standard annually. Monitor and evaluate trends in: ▶ Visitor satisfaction. ▶ Public health and safety.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	5 years	H
Management Area	**Objectives and Monitoring Elements**		
2.D. Upper Buffalo Dispersed Recreation Area	Monitor and evaluate trends in: ▶ Visitor satisfaction.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	5 years	5 years	M
Management Area	**Objectives and Monitoring Elements**		
2.E. Wedington Unit Urban Recreation Area	Monitor and evaluate trends in: ▶ Visitor satisfaction.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	5 years	5 years	M

Table I-5: Summary Tables for Management Area Monitoring Chapter 2. (Continued)

Resource Area	Monitoring Needs		
Management Area	**Objectives and Monitoring Elements**		
2.F Indian Creek Dispersed Recreation Area	**MAOBJ.8** Closure or obliteration of roads which do not meet the above criteria will be a priority in this MA. **Performance Indicator:** Miles of road closed not meeting criteria. **MAOBJ.9** Inventory current and potential dispersed recreation activities and develop a motorized access plan to support them. **Performance Indicator:** Inventory and access plan completed. Monitor and evaluate trends in: ▶ Visitor satisfaction.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	5 years	M
Management Area	**Objectives and Monitoring Elements**		
3.A Pine Woodland	Within the Pine Woodland MA, monitor and evaluate trends in: ▶ Abundance of pine woodland. ▶ Proportion of the Shortleaf Pine-Oak Forest and Woodland community burned at desired intervals and seasons.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	5 years	5-10 years	H
Management Area	**Objectives and Monitoring Elements**		
3.B Oak Woodland	Within the Oak Woodland MA, monitor and evaluate trends in: ▶ Abundance of oak woodland. ▶ Proportion of the Dry Oak Forest and Woodland community burned at desired intervals and seasons.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	5 years	5-10 years	H

Table I-5: Summary Tables for Management Area Monitoring Chapter 2. (Continued)

Resource Area	Monitoring Needs		
Management Area	**Objectives and Monitoring Elements**		
3.C Mixed Forest	**MAOBJ.10** Apply appropriate silviculture prescriptions to provide the following forest products on medium to high sites; 14" to 16" sawtimber with grade 2 butt logs and/or Yellow Pine 18" sawtimber. **Performance Indicator:** During inventories, determine average diameter. Within the Mixed Forest Area, monitor and evaluate trends in: ▶ Number of acres harvested		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	5 years	5-10 years	H
Management Area	**Objectives and Monitoring Elements**		
	Within the Oak Decline Restoration Areas MA, monitor and evaluate trends in: ▶ Number of acres restored to a red oak/white oak/hickory forest type.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	5 years	**5-10 years**	**H**
Management Area	**Objectives and Monitoring Elements**		
3.E High Quality Forest Products	**MAOBJ.11** Apply appropriate silviculture prescriptions to provide the following forest products on medium to high sites: 18" to 20" sawtimber with grade 1 or 2 butt logs and/or Yellow Pine 18" sawtimber. **Performance Indicator:** During inventories, determine average diameter. Within the High Quality Forest Products MA, monitor and evaluate: ▶ Number of acres harvested.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	5 years	5-10 years	H

Table I-5: Summary Tables for Management Area Monitoring Chapter 2. (Continued)

Resource Area	Monitoring Needs		
Management Area	**Objectives and Monitoring Elements**		
3.I Riparian Corridors	**MAOBJ.12** Map acres of other land meeting riparian definitions to incorporate in MA 3.I. **Performance Indicator:** acres mapped annually. **MAOBJ.13** Treat up to 300 acres per decade to meet riparian area species groups habitat needs. **Performance Indicator:** acres treated per decade. Within the Riparian Corridors MA, monitor and evaluate: ▶ Number of acres harvested.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	1-5 years	5-10 years	H
Management Area	**Objectives and Monitoring Elements**		
3.K Wildlife Emphasis Area	Within the Wildlife Emphasis Area MA, ▶ Work with Arkansas Game and Fish Commission (AGFC) and other partners to provide elk habitat.		
	Measurement Frequency	**Reporting Frequency**	**Precision & Reliability**
	5 years	5 years	M

APPENDIX J STREAM DEFINITIONS

Stream definitions and SMZ widths are applied based on two categories (perennial and defined channels) and guidelines for their application are found in the forest-wide standards. The use of SMZ protection areas and guidelines supersedes the management prescription for any mapped allocations.

Perennial streams - These features support water flow, and/or water pools through the greater part of the year, or otherwise provide year-round aquatic organism habitat. These features have well defined stream channels and banks. If riparian ecosystems are found adjacent to the perennial streams, management activities will be consistent with Management Area 3.I standards.

Perennial streams are best identified in the field through stream survey techniques, landscape modeling, and aquatic habitat surveys. In the absence of one of these identification methods, streams and rivers should receive the perennial stream designation for project planning purposes.

Defined channels - This category provides direction for some intermittent and all ephemeral streams. A defined channel is a feature that clearly exhibits most of the following characteristics:

- Displays signs of water flow velocity sufficient to move soil material, litter, and fine debris.
- Shows a defined bank and streambed.
- Shows accumulated deposits of sands and gravels.
- Is continuously connected with other hydrologic features.

This includes channels that may only support water flow immediately following a precipitation event; bed forms that can include large, stable rocks; and areas that possibly support riparian-dependent plants and animals. Furthermore, defined channels will not support year-round aquatic organism habitat.

By using only two categories for categorizing surface water, the traditional intermittent stream classification was abandoned. These streams are incorporated into the two categories based on the presence or absence of year-round aquatic habitat. This is identified as the location of the first pool encountered from an upstream point during July to October as determined in the field. All portions of the stream downstream from such point would be identified as perennial. This means that from year to year the perennial/defined channel division may migrate.

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APPENDIX K INDEX

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