

**COMPREHENSIVE MANAGEMENT PLAN  
HURRICANE CREEK WILD AND SCENIC RIVER**

**OZARK-ST.FRANCIS NATIONAL FOREST  
U.S. FOREST SERVICE, SOUTHERN REGION  
U.S. DEPARTMENT OF AGRICULTURE**

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**HURRICANE CREEK WILD AND SCENIC RIVER  
COMPREHENSIVE MANAGEMENT PLAN**

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# COMPREHENSIVE MANAGEMENT PLAN FOR HURRICANE CREEK

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## ***PURPOSE OF THE PLAN***

### **INTRODUCTION**

The Comprehensive Management Plan for Hurricane Wild and Scenic River provides direction for managing lands within the boundaries of the designated corridor. The purpose of this comprehensive management plan is to protect the Outstandingly remarkable values of the river, its free flowing condition, and water quality. This plan was prepared by the Forest Service, for the portion of the Hurricane Creek (15.5 miles) from the headwaters to the confluence with Big Piney.

The Hurricane Wild and Scenic River flows through the Hurricane Creek Wilderness. In general, the Wild and Scenic Rivers Act is more restrictive than the Wilderness Act, and in cases where the two laws overlap the more restrictive provisions prevail.

This plan is intended to fulfill the requirements of the Wild and Scenic River Act which requires that comprehensive management plans be developed for designated streams (see Appendix A, Legislative History). The Ozark-St. Francis National Forests' Land and Resources Management Plan (FLRMP) will be amended to implement this plan.

The Wild and Scenic Rivers have been under special consideration since the development of the Forest Land and Resources Management Plan was signed in 1986. Actions within the existing corridors and throughout the watersheds, where the Forest Service has jurisdiction, are regulated to protect water resources, flood plains, riparian values, etc. These management plans focus on the national forest lands within the corridors, and those actions which may be taken to provide additional enhancement of the river values. The protections offered to the watershed areas outside the corridors are not being eliminated, reduced, or altered.

### **PLAN FORMAT**

The River management plan is broken into two parts, private lands and National Forest lands. The National Forest lands portion is further divided into six sections (see table of contents). The five sections following the purpose of the plan section are broken down by the Forest Service Directive System. This numerical format is used simply for ease of locating various sections of the plan. By taking one resource designation, one can follow the same designation in other sections by following the number.

### **PRIVATE LANDS**

Private land ownership is legitimate within Wild and Scenic River corridor boundaries. Within the corridor boundaries, ranching, farming and forest management uses which were in existence when the river was designated within "Scenic" and "Recreational" classifications are consistent with river goals. Land uses on private lands adjacent to, but not included in the river corridor are not affected by the river designation.

The U.S. Forest Service does not manage private land within the Wild and Scenic River corridors, and has no authority to zone private lands. The Act does, however, include provisions to encourage the protection of river values on private lands through cooperation with State, local governments, and

landowners. The Forest Service's authority to affect private lands is dependent upon exercising acquisition authorities, or through willing-seller, willing buyer transactions. Except for these authorities, for which just compensation is required, the agency cannot regulate the use of private property under this Act. We do however encourage landowners within the corridor or adjacent to the high water mark to manage their lands to protect and enhance river values.

The Act directs the Forest Service to protect and enhance the values for which the river was designated, its free flowing nature, and water quality, consistent with the public use and enjoyment of these values. This is limited on private lands to serving in an advisory role, providing technical assistance and cooperating with States or their political subdivisions, landowners, other Federal agencies or individuals to plan, protect and manage river resources. The Forest Service has responsibility to evaluate project proposals that affect the River's free-flowing characteristics in which a federal agency is the proponent or provides assistance through loan, grant, license, or permit.

The Wild and Scenic River corridor includes private land in two situations:

- 1) Private lands under floatable stream beds - Included here are privately owned stream beds under the floatable portions of hurricane creek. For river segments generally termed as floatable, the extent of public use of the bed and banks below the ordinary high water mark is defined by State law.
- 2) All other private lands - Included here are: A) Private lands that are above the mean highwater line, whose owners requested to be included in the corridor and B) Non-floatable privately owned stream beds under hurricane creek. In both cases landowners control public access to their property. Streams and stream beds generally considered non-floatable remain private waters with public access subject to operation of state trespass and posting law. The designation of a river as a part of the National System has no bearing upon the determination of which portions may be considered floatable.

Neither this plan nor the Act affects the ability of a landowner to control public access on their lands, and this remains true within the corridor boundaries, irrespective of whether such private lands are located under or adjoining the stream beds (floatable or not). This plan does not imply any right of public use on or access to private lands within the corridor beyond that which is now established through the operation of State law. Nothing in the Wild and Scenic Rivers Act or this Plan shall affect state and local jurisdiction to carry out State Game and Fish laws.

This plan is intended to protect and enhance identified river values through partnership with other Federal, State, and local agencies, private landowners and other public interests. This plans goals are to: 1) Make efforts to inform the public of the location of private lands and that such lands are not open to public use without permission of the landowner; and, 2) encourage the public to respect private landowner rights.

## **NATIONAL FOREST LANDS**

### **MANAGEMENT GOAL**

The overall goal of Wild and Scenic River management is to provide recreation opportunities within the capability of the resources, the protection of the free-flowing condition of the river and the preservation and enhancement of values for which the river was designated.



## HURRICANE CREEK - MANAGEMENT OBJECTIVES

- 1.) Protect and/or enhance the Outstandingly Remarkable Values, free-flowing characteristics, and water quality.
- 2.) Continue to provide a broad range of recreation experiences ranging from primitive wilderness settings to more managed outdoor recreation use. These experiences will provide outstanding opportunities to meet visitor needs for solitude as well as experiencing a diverse riverine system.
- 3.) Establish measurable indicators and standards for biophysical and social conditions, effectively monitor the condition of those indicators, and prevent degradation of riparian resources and visitor experiences.
- 4.) Provide for a healthy functional ecosystem which maintains the diverse plant and animal communities characteristic of this portion of the Big Piney/Arkansas watersheds.
- 5.) Be responsive to the needs of the public in consonance with the Outstandingly remarkable values identified. Provide for interpretation which encourages protection of river values, the re-establishment of the streamside forest, and respect for private property rights.
- 6.) Monitor unique botanical communities within the wilderness, maintain and/or enhance population viability where feasible outside the wilderness portions of the corridor.

This plan will be a guide for the management of Hurricane Wild and Scenic River, as designated by Section 3 (a) as amended by the One Hundred Second congress on April 22, 1992.

## OUTSTANDINGLY REMARKABLE VALUES

Three Outstandingly remarkable values were identified for Hurricane Creek [Wild and Scenic River Study Report and Final Environmental Impact Statement on Thirteen Rivers in the Ozark National Forest]. Those values are Botanical, Wilderness, and Scenic.

**Botanical.** Bristle-Fern, which is listed as threatened by the Arkansas Natural Heritage Commission, is located within the river corridor inside Hurricane Creek Wilderness.

**Wilderness.** Hurricane Creek Wilderness was designated by Congress in 1984. Since wilderness designation affects broad reaches of land (in this case 15,177 acres) and protects the broader watershed of which the river is a part, it has important complementary benefits. The area contains the Hurricane Natural Bridge and portions of the Ozark Highlands Trail.

**Scenic.** Topography within 1/4 mile on either side of Hurricane Creek and its side drainages is quite rugged and scenic. The stream is clear and exhibits interesting ripple-pool patterns meandering through richly diverse vegetation with dominant overstory of beech in some reaches.

## ***EXISTING CONDITIONS***

### **LOCATION AND ACCESS**

Hurricane Creek is located in northwestern Arkansas, Newton and Johnson Counties, on the Buffalo Ranger District, Ozark National Forest. Nearby unincorporated communities are Deer, Cowell, and Pelsor. It is approximately three miles west of Pelsor and 40 miles north of Russellville. A legal description of the Hurricane Creek is on file at the Ozark National Forest Supervisor's office in Russellville, Arkansas.

Primary access is forest development road (FDR) 1208 west of Scenic Byway 7, just north of Sand Gap/Pelsor. Another access is FDR 1202/1209 from the community of Deer east and south of Highway 16. This goes to the old community of Chancel where Buck Branch enters Hurricane. FDR 1209 is no longer accessible from Highway 123. However, the creek is accessible from FDR 1002 which tracks north from the Fort Douglas bridge to the confluence of Hurricane and Big Piney.

### **CORRIDOR BOUNDARIES AND CLASSIFICATION**

The river corridor was established using a metes and bounds system of survey across National Forest Land tying to known monumented corners. There is approximately 144 acres of private land (the private land acreage is an estimate of the land between the high water marks). The Forest Service has no jurisdiction over this private land. Access is by owner permission only. The corridor on Forest Service/public land allows for a corridor of about a quarter mile on each side of the river. This corridor includes areas seen from the river by varying corridor width on Federal Lands and keeps within the 320 ac/mile limit. [Ozark-St. Francis Forest Land and Resource Management Plan, Amendment #7].

The Arkansas Wild and Scenic Rivers Act of 1992 states in SEC. 2. WILD, SCENIC, AND RECREATIONAL DESIGNATIONS:

**HURRICANE CREEK, ARKANSAS.**--The 15.5-mile segment from its origin in section 1, township 13 north, range 21 west, to its confluence with Big Piney Creek, will be administered by the Secretary of Agriculture in the following classes:

- (A) The 11.8-mile segment from its origin in section 1, township 13 north, range 21 west, to the western boundary of the private land bordering Hurricane Creek Wilderness, as a scenic river.
- (B) The 2.4-mile segment from the western boundary of the private land bordering Hurricane Creek Wilderness to the Hurricane Creek Wilderness boundary, as a wild river.
- (C) The 1.3-mile segment from the Hurricane Creek Wilderness boundary to its confluence with Big Piney Creek, as a scenic river.

### **SOCIAL AND ECONOMIC CONDITIONS OF THE AREA**

The Ozark and Ouachita Highlands comprise a wealth of public land providing wilderness and backcountry recreational opportunities. The Ozark, Ouachita and Mark Twain National Forests contain 19 designated wilderness areas totaling 194,917 acres. An additional 9,874 acres of wilderness are designated in two national wildlife Refuges (Mingo in MO and Big Lake in AR) within the region. Long distance hiking opportunities are provided by the Ozark Highlands Trail which crosses the Ozark National Forest and extends to the Buffalo National River.

Nine streams on the Ozark, Ouachita, and Mark Twain National Forests are in the National Wild & Scenic Rivers System. U.S. Army Corps of Engineer reservoirs provide ample boating, fishing, and camping opportunities, within a two hour drive of Hurricane Creek. For example Lake Dardenelle and Lake Ludwig are area lakes utilized for recreational fishing, camping, etc.

Several urban centers are within a three hour drive of Hurricane Creek: Fort Smith, AR; Russellville, AR; Tulsa OK; Fayetteville-Springdale AR; Memphis TN; and Little Rock AR. The area within a 250 mile radius of the river has a population of approximately seven million people.

## **PROGRAM AREAS**

### **1600 INFORMATION SERVICES**

There are no Wild and Scenic River signs, showing the WSR logo, posted anywhere along the river corridor. There is a backcountry portal with bulletin board just east and south of the Hurricane ford upstream from the confluence with the Big Piney. Also, there is a registration portal on the Ozark Highlands Trail on the Chancel spur. The Hurricane Creek Wilderness map covers most of the area. There are several interpretive guide books which discuss traversing the Ozark Highlands Trail through the Wilderness.

### **2100 ENVIRONMENTAL MANAGEMENT**

Environmental management includes solid waste, pesticide, and hazardous materials management. There are no known existing problems.

Pesticide use was allowed in the corridor in the past, but not in recent years. Application of pesticides would follow the guidelines established in the Forest land and Resources Management Plan, Amendments 4 and 5. There are standards regarding the type, frequency, methods of application, monitoring, and safety. 10% of project areas on the Forest are monitored for off-site movement of herbicides to assure water quality protection. Procedures for monitoring and reporting results are in the "Herbicide Monitoring Plan for Water Quality, 1993. Ozark-St. Francis National Forests."

### **2230 RANGE MANAGEMENT**

Grazing is permitted in one woodland range allotment that includes portions of the river corridor. Currently, there are 18 head of cattle under one Forest Service permit with a total of 90 AUM's (Animal Unit Month of forage = The amount of forage that a 1,000 pound cow will eat in a month) consumed in one five month grazing season. This woodland allotment is approximately 8500 acres in size. There is little or no use within the corridor from cattle under permit in this allotment although the allotment is not fenced to prevent cattle from entering the river or the corridor.

### **2300 RECREATION MANAGEMENT**

#### **RECREATION OPPORTUNITY SPECTRUM (ROS) & LIMITS OF ACCEPTABLE CHANGE (LAC)**

Two well accepted concepts of recreation management were incorporated into the planning process. The Recreation Opportunity Spectrum (ROS) provides a means for classifying areas in relation to the

types of recreation opportunity experiences that are or can be provided and the settings in which they occur.

The Limits of Acceptable Change (LAC) concept was used to develop strategies for managing use to maintain the desired ROS. The LAC concept does not focus attention on limiting use to an estimated capacity, but it can provide an estimate of the desired level of use. River managers may have several possible solutions to overuse problems if they can encourage users to adjust habits.

Allocating or limiting use may be necessary, if conditions deteriorate to such a degree. The planning process was designed to be flexible and respond to changes in river conditions without the need for major revisions. The process emphasizes objectives and establishes a monitoring system that will trigger implementation of management options on the Hurricane Wild and Scenic River to protect its unique qualities.

**CURRENT RECREATION USE**

Current uses in the area include hiking, camping, backpacking, hunting, fishing and research related activities. Past uses have also included off-road vehicle use and gathering of plant materials (e.g., ginseng, goldenseal, mayapples). No ginseng permits are issued for this area. There is still evidence of off-road vehicle use in the area .

Hurricane Creek provides opportunities for fishing for smallmouth bass and sunfish within the Wilderness. The current use level is moderate and the water quality is rated as excellent. Before the area became Wilderness, the fishing use was fairly heavy. Fishing is light in the pond which was stocked by the Forest Service in previous years.

The area provides abundant food and cover and supports healthy populations of black bear, deer, turkey and small game. For this reason, it is quite popular with hunters. Current deer hunting is rated as moderate to heavy with the major portion of use concentrated into the gun season each year. Turkey and small game such as squirrel and raccoon experience moderate hunting pressure. Since the county road has reopened to the Sexton Cemetery traffic has increased.

Horse use in the area has increased. This is probably due to the proposed Deer Tower Trail and in general an increase in horseback riders in the immediate area, the state, and even from Missouri. There are numerous old roads which area riders use. There are no designated horse trails within the river corridor, nor in the Hurricane Creek Wilderness. The Ozark Highland Trail excludes horses as a general policy for protecting the foot trail. However, the OHT picks up on the old road leading into the Natural Bridge area. This has potential user conflicts.

**Wilderness Visitor Use Data [from registration cards)**

HURRICANE CREEK	1992	1993	1994
Average Overall Experience [1-10 With 10 As Best]	8.3	9.2	8.7
Total # Of Visitors	688	550	897
Average Group Size	2.7	3	3.1
Average # Of Groups Encountered	.8	2.8	2.8

Based on 1990 study done on Caney Creek Wilderness roughly 45% of our backcountry visitors do not register. \* *1995 data has not been analyzed.*

In 1992 the District inventoried campsites associated with Hurricane Creek Wilderness. A total of 51 campsites were mapped, 34 of which were obliterated, and 17 were formally inventoried. Average class condition was 3.9.

### **CAMPSITE CONDITION DEFINITIONS**

1. Campsite barely distinguishable; slight loss of vegetation cover and/or minimal disturbance of organic litter.
2. Campsite obvious; vegetation cover lost and/or organic litter pulverized in primary use areas.
3. Vegetation cover lost and/or organic litter pulverized on much of the site, some bare soil exposed in primary use areas.
4. Nearly complete or total loss of vegetation cover and organic litter, bare soil widespread. Soil erosion may be obvious, as indicated by exposed tree roots and rocks and/or gullyng.

### **OFF HIGHWAY VEHICLES**

Off Highway Vehicles (OHVs), ATVs and four wheelers, are permitted to use open Forest Service roads within the river corridor. These vehicles are prohibited from riding on closed Forest Service roads (e.g., within the wilderness boundaries). The Forest Land Management Plan (page 4-14) states "Exclude vehicles from streams except at designated crossings". This policy would include passenger cars, four wheel drive trucks, motorcycles, as well as OHVs. State law excludes ATVs from county roads and State Highways.

### **TRAILS**

There is one maintained trail within the area, the Ozark Highland Trail. The major portion of the use of the Hurricane Creek Wilderness comes from hikers on this trail.

### **2360 HERITAGE RESOURCES**

The river corridor is considered a high probability area for both historic and prehistoric sites. There are several fields associated with recorded sites, eight sites have been recorded, one of which is not officially documented by the State Historic Preservation Officer (SHPO). Also there are three other sites recorded in Hurricane Creek Valley but they're on private property. Most of the sites are either prehistoric shelter bluffs or remnants of old houseplaces (e.g., rock walls, linear rock piles, chimney falls, etc.).

### **2380 SCENERY MANAGEMENT**

The Act requires that the corridor sufficiently protect the Outstandingly Remarkable Values which caused the stream to be included in the Wild and Scenic River System. Scenic values of the Hurricane are considered to be Outstandingly Remarkable. A clean, rocky, mountainous stream best describes Hurricane Creek. The most striking characteristics of the creek are the rocky substrate, steep gradient,

and blue-green water. Other characteristics of note are the large number of riffles, low percentage of instream cover and low to moderate amount of stream canopy during the low-flow period.

## **2400 VEGETATION MANAGEMENT**

Vegetation within the corridor is composed largely of upland hardwood species with a few stands of mixed hardwoods and shortleaf pine or predominant shortleaf pine, mainly in historic old fields that have succeeded to pine or been planted in the last 30-40 years. Typical hardwood species include red and white oaks, shagbark, mockernut and bitternut hickories, and black gum. Within riparian areas better site conditions allow for the growth of other species such as beech, basswood, sweetgum, river birch, sycamore and hophornbeam. Such areas may exhibit lush understory characteristics with species such as witch hazel, spice bush, black cohosh and paw paw present. It may also include herbaceous species such as columbine, jacob's ladder, larkspur, alumroot, and goldenseal.

Along bluff lines and where soils are thin, species composition is more limited. Red and white oaks mixed with hickory species and black gum are primary. Typically the understory will be comprised of such species as dogwood and red maple and herbaceous species such as huckleberry, greenbriar, Virginia creeper and scattered native grasses and sedges such as poverty grass, little and big bluestem and panicums. Most of the corridor shows evidence of historic logging activity.

## **2500 WATERSHED AND SOILS MANAGEMENT**

Fifty one square miles of National Forest land drain into Hurricane Creek which is part of the Big Piney watershed. The 15,177 acre Hurricane Creek Wilderness is located in the Boston Mountain Plateau of the Ozark Highlands. Hurricane Creek begins in the southcentral part of Newton County and flows in a south and southeast direction. It receives drainage from the south and east as it turns to a northeast corner of Johnson County. Piney Creek enters Dardanelle Reservoir on the Arkansas River approximately 40 miles downstream.

Steep upland portions of the basin are covered with hardwood forest comprised of red and black oaks, red cedar and shortleaf pine. Streamside riparian zones are rich in tree variety. Data collected by the Natural Resource Conservation Service [formerly SCS], states that 95% of the land is in forests and 5% is in pastureland. The majority of the watershed is in the Ozark National Forest. The steep, mountainous terrain in the Boston Mountains Region is largely undeveloped, and the area around Hurricane Creek is only slightly disturbed. Hurricane is considered a good least-disturbed stream.

Geology - Cane Hill and Boyd Shale formations of Pennsylvanian Age underlie most of the watershed.

Topography - The Hurricane Creek basin can generally be described as very mountainous with sheer bluffs and narrow valleys along the major tributaries. The topography is very steep to gently sloping terrain with moderately sloping stream valleys. The Boston Mountains Region has the most relief of any area in the state and the least amount of level land, which results in streams in the region having very high gradients. Elevation varies from near 750 feet to over 2000 feet above sea level.

Soil type - Two major groups of soils make up the Hurricane Creek basin. The Nella-Enders-Mountainburg association is located in the upland portions of the basin. These soils are well-drained, gently sloping to very steep, deep and shallow, and loamy and stoney. The pH ranges from strongly acid to moderately acid (pH 5.5 to 6.0). Potential for erosion is moderate to severe.

The Pickwick-Spadra association is found in the stream valley. It is well-drained, nearly level to gently sloping, deep loamy soils on stream terraces. The pH ranges from moderately acid to slightly acid (pH 5.6 to 6.5). The pH in the stream seems to correlate to the soil pH.

Stream pH ranged from 6.5 to 6.2 in three samples collected during the fall of 1983 and the spring of 1984. [PHYSICAL, CHEMICAL AND BIOLOGICAL CHARACTERISTICS OF LEAST-DISTURBED REFERENCE STREAMS IN ARKANSAS' ECOREGIONS, V.I-Data Compilation, Arkansas Department of Pollution Control and Ecology, June 1987]

**2600 WILDLIFE, FISHERIES, AND RIPARIAN RESOURCES**

The Forest Service, with the cooperation of the Arkansas Game and Fish Commission, manages fish and wildlife habitat on National Forest System lands within the river corridor. Populations of fish and wildlife species in the corridors are at a sustaining level.

A variety of animal life is found within the corridor. Mammalian species such as eastern pipistrelle bats, gray squirrels, raccoons, white-tailed deer, wood rats and black bear occur. Neotropical migrant birds such as the ovenbird, wood thrush and red eyed vireo are well represented along with species like the Louisiana waterthrush and parula warblers which favor riparian habitat.

**2670 THREATENED, ENDANGERED, AND SENSITIVE SPECIES**

The following sensitive species (species being monitored by the State and the Ozark National Forest) are likely to occur within the river corridor or within the Hurricane Creek Wilderness.

COMMON NAME	SCIENTIFIC NAME	STATUS
Ozark Chinquapin	<u>Castanea pumila var. ozarkensis</u>	Sensitive
Golden Seal	<u>Hydrastis canadensis</u>	Conservation
Bristle Fern	<u>Trichomanes Boschianum</u>	State threatened
Bald Eagle	<u>Haliaeetus leucocephalus alascanus</u>	Threatened

One species, the mountain lion (Felis concolor), is listed as federally endangered; however, the U.S. Fish and Wildlife Service considers the species to be extirpated within the state.

**2700 SPECIAL USES**

**OUTFITTERS/CONCESSIONAIRES**

There are no permitted outfitters nor concessionaires.

**UTILITY CORRIDORS**

There are two non-active utility poles within the Wilderness near Chancel. As per Wilderness management area direction these need to be removed when any other Carroll Electric work in the area permits. There are two pending special use permits request for utility rights-of way on FDR 1209 just south of Chancel. Utility corridors in the upper reaches have not been identified pending infrastructure inventory for the district's G.I.S. (Geographic Information System) data layer for this theme.

## **2800 MINERALS**

### **2810 - Mining Claims (Public Domain)**

There are no known mining claims staked within the designated river corridor. There are 1879 acres of PD land within the corridor.

### **2820 - Leasable Minerals**

There are no active oil or gas leases within the corridor.

### **2830 - Outstanding & Reserved Mineral Rights**

Outstanding rights are mineral rights owned by private parties where the interests and rights were reserved and excepted in a deed prior to the acquisition of the surface by the United States. There are 171 acres of outstanding and reserved mineral rights on the Hurricane.

While the owner of the mineral rights (outstanding) has unquestioned right to enter upon the surface property for the purpose of access and extracting his minerals, he must exercise such rights with recognition of surface rights and take appropriate action to prevent unnecessary disturbance to the surface. Reserved rights are subject to the Secretary of Agriculture's rules and regulations.

### **2850 - Minerals Materials**

Mineral materials permits for removal of surface stone are common on Forest lands. Current policy prohibits gathering of stone in any stream channel on National Forest lands. There have been no rock permits issued within the river corridor boundary.

## **5100 FIRE MANAGEMENT**

### **WILDFIRE**

Wildfires within the corridor are treated the same as those that occur within the general forest area except for the "wild" segment. The Wilderness areas have a separate fire management plan which contains a decision-tree process to determine needs to contain, confine, or control for resource values and private land protection.

There have been no wildfires within the river corridor within the last five years.

### **PRESCRIBED BURNING**

Currently, prescribed burning could be used only where it appropriately maintains or improves scenic or recreational values. Within Wilderness, the existing Forest Land Management Plan stipulates no use of prescribed burning. No prescribed burning has been done recently within the final river corridor.

## **5300 LAW ENFORCEMENT**

### **JURISDICTION**

The Forest Service law enforcement officers have jurisdiction to enforce Federal laws, regulations and Forest Supervisor's Orders on National Forest lands. County Sheriffs and the Arkansas State Police enforce state laws and also have jurisdiction within the National Forest boundary. The Arkansas Game and Fish Commission enforces State fisheries and wildlife laws on both public and private lands.



Typically, Forest Service law enforcement officers enforce regulations along National Forest roads within the corridor, within developed recreation sites, and along the river when it passes through National Forest land. The County Sheriff's Office is the lead agency to enforce State laws within the corridor on private land.

## **COOPERATIVE AGREEMENTS**

The Ozark National Forest has a cooperative agreement with the Newton County Sheriff to patrol National Forest recreation areas under certain conditions. Informal mutual assistance continues between the Sheriff's office, State Police, Arkansas Game and Fish Commission, the Forest Service, and the National Park Service where officers reciprocate for back-up and assistance.

## **FOREST SUPERVISOR'S ORDERS**

The following applies only to Upper Buffalo, Hurricane Creek, Richland Creek, East Fork, Leatherwood Wilderness areas. Order no. 00-04-61 prohibits possessing or using a wagon, cart, or other mechanized vehicle [CFR 261.57 (h). Pursuant to 36 CFR, Section 261.50 (e), the following persons are exempt from this order: (1) Wheelchair users when used as a necessary medical appliance.

## **5400 LAND OWNERSHIP PATTERNS**

Only one tract of private land lies within the corridor. It is a portion of one of the two inholdings within the Wilderness. Landowner permission to be included in the corridor for this tract was obtained.

### **5460 Right-Of-Way**

Existing rights-of-way will be identified using the district's geographic information system [G.I.S.] when available.

## **6700 HEALTH & SAFETY**

In the fall of 1995, the Forest developed a Search and Rescue Plan to facilitate rescues in remote areas. [see Appendix H]

## **7700 TRANSPORTATION**

**Wild segment:** The wild portion of the corridor falls within the Hurricane Creek Wilderness which is restricted to non-motorized, non-mechanical access with the exception of wheelchairs.

**Scenic segment:** The scenic segment of Hurricane Creek is traversed by a number and variety of roads. There are numerous fords on Hurricane and one immediately above the confluence of Buck Branch where it crosses 1209A [Sexton Cemetery Road]. The fords on Hurricane are located on 1209, NE61, and FDR 1003, and 92175A. The Sexton Cemetery Road/1209A weaves in and out of the creek. Newton County usually provides annual maintenance for cemetery access. This same road provides access to two private inholdings. The inholders are responsible for maintenance beyond the second gate(Sexton cemetery road veers up the hill). Most of this portion of the road is in Johnson County. From the eastern wilderness boundary to the west, this segment of the Scenic corridor falls within the Wilderness. This area has not been inventoried for old roadbeds. Based on historical data, there are another 20% not mapped or in inventory systems.

## ***DESIRED FUTURE CONDITIONS***

### **INTRODUCTION**

The Desired Future Condition statement provides general long-term management goals and describes a vision of the future river corridor. For ease of review, this section is divided into resource categories. However, the future condition of each of these resources or uses is closely integrated with the others.

### **PROGRAM AREAS**

#### **1600 INFORMATION SERVICES**

Signs are restricted to those which are necessary for safety, effective law enforcement, direction, and interpretation. These signs are located outside the Wilderness where possible. Information regarding the course of the river (a river map), safety, backcountry use ethics, and National Forest regulations are available from sources like the Ozark Interpretive Association and other area outlets. Emphasis is placed on providing information to visitors before they enter the area.

#### **2100 ENVIRONMENTAL MANAGEMENT**

Environmental waste and hazardous materials do not enter the Buffalo. Problems are corrected as soon as possible contacting appropriate agencies and/or personnel. [Each district has a hazardous waste coordinator.]

#### **2200 RANGE MANAGEMENT**

Within the corridor no grazing of domestic livestock takes place. Woodland allotments are phased out or require permittees to keep stock out of the corridor.

#### **2300 RECREATION MANAGEMENT**

The Wild Segment of the River corridor is managed for experiential qualities such as physical challenge, and spiritual values like opportunities for solitude. Most recreational users access the area by foot. Use remains relatively concentrated in the vicinity of the Ozark Highlands trail.

The Scenic Segment within the Wilderness provides opportunities for picnicking, hunting, hiking, and horse back riding.

The Scenic segment located downstream from the Wilderness is managed for a variety of recreational activities, including hunting, hiking, birding, church and family outings, biking and riding. The parking area remains undeveloped.

#### **2360 HERITAGE RESOURCES**

The area has been surveyed for heritage resources, which have been evaluated and, if determined to be significant, are preserved. Opportunities are provided to visitors to learn more about these past uses of the area. Prehistoric and historic features like old rock walls and rock chimney-falls are still present showing evidence of past living patterns. Information is disseminated off-site to visitors emphasizing the importance of preserving these artifacts and features for future generations.

Plants, animals, and culturally important areas are located within the river corridor, providing an element of cultural continuity and cultural importance to local communities, contributing to their sense of pride and ownership of the river.

### **2380 SCENERY MANAGEMENT**

In general, naturally eroded areas are left untreated, allowing visitors to experience the dynamics of free-flowing rivers. Eroded areas may need to be stabilized especially if accelerated by disturbances upstream or downstream. Area materials are utilized so as to camouflage these efforts.

Year-round the beech trees are dominant in the landscape due to large diameters and smooth bark. Also during the winter months especially since the leaves hang on until the following spring.

### **2400 VEGETATION MANAGEMENT**

Vegetation character and structure continue to provide a diverse component of the ecosystem. Species composition provides diversity reflective of the different community types within the corridor. For example, riparian vegetation, for the most part, reflects a multi-layered canopy with a mature overstory and multi-species understory. Historic old fields may be maintained with consideration of Wild & Scenic values.

The desired condition of the forested land within the corridor is late seral hardwood (beech/maple) and late seral hardwood/shortleaf pine. The desired condition of the pasture lands within the corridor is a combination of native warm season grasses, forbs, and shrubs. The riparian areas adjacent to open land are managed similar to what is described in Forest Publication NA-PR-07-91 "Riparian Forest Buffers".

### **2500 WATERSHED AND SOILS MANAGEMENT**

Excellent water quality in Hurricane Creek is an important component of this healthy aquatic ecosystem. Aquatic habitat is provided by preserving cover in the form of overhanging banks and large woody debris in the river channel. In general, the water quality parameters remain within baseline levels present in 1992 and continue to exceed the standards set by the Arkansas Department of Pollution Control and Ecology.

Natural erosional and depositional processes are in a state of dynamic equilibrium within the river. Natural changes in the stream channel may occur, resulting in eroding streambanks which creates habitat for those species dependent on such disturbances.

Within the Scenic corridor, human-caused erosion is rehabilitated using natural appearing methods. Bank stabilization and other watershed improvements are undertaken to protect roads or bridges or where private property is threatened. All erosion protection structures are designed to provide long-term stability and blend in with natural surroundings.

### **2600 WILDLIFE, FISHERIES AND RIPARIAN RESOURCES**

Wildlife communities dependent on mature forest landscapes remain abundant. Ecotone-dependent species sustain numbers relative to habitat availability. Populations of game and non-game species are at healthy levels, balancing ecological and recreational needs.

The Hurricane Creek corridor provides a linkage between core areas including the Big Piney Wild and Scenic River and the Hurricane Creek Wilderness. This linkage allows the diversity of animal species present to better maintain population viability across geographic distances by allowing mobility and genetic exchange.

Fish communities continue to support a diversity of aquatic life. Canopy cover has a stabilizing effect on water temperatures.

## **2670 THREATENED, ENDANGERED AND SENSITIVE SPECIES**

Threatened, Endangered, and Sensitive species, and unique communities are managed to maintain and enhance viability. Non-Wilderness segments are prioritized for efforts to provide quality habitat.

## **2700 SPECIAL USES**

### **WILD SEGMENT:**

All outfitters and guides that use public lands on the National Forest operate under special use permit. New permit applications are evaluated to ensure river values are protected.

### **SCENIC SEGMENT:**

Special use permits for recreation events are issued provided the event does not degrade the Outstandingly remarkable values.

Other temporary and long term permits (utilities and road rights-of-way) are evaluated on a case-by-case basis. Special use permits to access private lands are allowed if no other reasonable, non-Forest Service route is available. Also, the proposed route is located to protect the outstandingly remarkable values identified for this river.

## **2800 - MINERALS**

**WILD SEGMENT:** There is no mineral entry.

**SCENIC SEGMENT:** Surface occupancy outside the corridor protects water quality and river values.

### **2820 - Leasable Minerals**

All new oil and gas leases are issued with a no surface occupancy stipulation for lands within the designated river corridor. A controlled use stipulation applies to all other leased lands visible from the designated river corridor.

Applications for prospecting permits for hardrock minerals within the designated river corridor are denied.

### **2830 Outstanding & Reserved Rights**

The Forest Service recognizes the private mineral owners' rights and encourages a spirit of cooperation and understanding by both parties.

## **5100 FIRE MANAGEMENT**

Wildfires are suppressed to protect life, property, private lands, air, water, soil productivity and other resource values.

Prescribed burning is a tool used prudently for Forest Health, subordinate to Wilderness and Scenic values.

## **5400 LAND OWNERSHIP**

Partnerships exist between the private land owners, the Forest Service, and State of Arkansas to protect the river attributes while respecting each partner's rights and responsibilities. Where conflicts occur, the ownership boundaries are delineated to minimize conflict.

## **6700 HEALTH AND SAFETY**

The Forest Service works with interested publics and landowners to maintain a safe and healthy environment on the river. There is coordination with search and rescue teams and the County Sheriff's offices to respond to crisis on the river and within the corridor. The Forest Service continues to comply with regulations regarding safety in developed and dispersed recreation sites.

## **7710 TRANSPORTATION**

The forest road system is maintained to facilitate year round access. Selected roads are maintained for high clearance vehicles only. Road maintenance and construction improve access for multiple uses while protecting the river's values. The Wild portion of the corridor falls within the Wilderness which is restricted to non-mechanical and non-motorized access. Portions of the Scenic corridor also fall within Wilderness where construction is prohibited. The minimum tool rule is documented when maintenance or restoration is planned.

## ***STANDARDS [S] AND GUIDELINES [G]***

### **INTRODUCTION**

The Standards [S] and Guidelines [G] state the bounds or constraints within which all practices will be carried out in achieving the planned goals and objectives for Wild and Scenic Rivers. Note: Where river segments are within Special Interest Areas or Wilderness, the more restrictive Management Area (MA) standards and guidelines are to be followed.

Unless otherwise noted in the following Standards and Guidelines, refer to the Forestwide standards and guidelines (Management Area Direction) outlined in the Forest Plan. Not all aspects of the Wild and Scenic Rivers Act are reflected in these Standards and Guidelines. The Act should be used in conjunction with this management direction.

### **PROGRAM AREAS**

#### **2200 RANGE MANAGEMENT**

##### **Wild Segment**

Same as Management Area 1- Wilderness.

##### **Scenic Segments**

[S] - Issue no new grazing permits.

[G] - Phase out woodland allotments that no longer meet NFMA and Forest Plan guidelines.

[G] - Maintain existing open fields, haylands, and improved pastures that are compatible with river values.

[G] - Any field may have a riparian buffer, where needed, that is not mowed or grazed.

#### **2300 RECREATION MANAGEMENT**

##### **Wild Segments**

Same as Management Area 1 - Wilderness, in addition;

[S] - Apply LAC standards based on indicators selected for river segment classification.

##### **Scenic Segments**

[S] - Developed recreation areas will be managed in accordance with forestwide "Developed Recreation Areas" standards.

[S] - Facility development reflects ROS classification.

[S] - Extend LAC standards for scenic segments adjoining Wilderness.

## **2350 TRAILS**

### **Wild Segment**

[S] - Trails allowed in the corridor for resource protection.

### **Scenic Segment**

[S] - New motorized trails will be prohibited within the corridor.

[G] - New non-motorized trails are permitted if they meet objectives for the Wild and Scenic River and the specified outstandingly remarkable values.

## **2380 SCENERY MANAGEMENT**

### **Wild Segment**

Same as Management Area 1 - Wilderness.

### **Scenic Segments**

[S] - The Visual Quality Objective is Retention.

## **2400 VEGETATION MANAGEMENT**

### **Wild Segment**

Same as Management Area 1 - Wilderness

### **Scenic Segments**

[S] - Lands within the corridor will not be managed for timber production.

[G] - Vegetation management activities may be used to enhance the outstandingly remarkable values with an emphasis on aesthetic, scenic, historic, archeological, and scientific features.

[G] - Comply with the intent given in the management objectives specific for each river.

[G] - Correct impact or salvage material resulting from a catastrophic natural or human-caused disaster if necessary to maintain the outstandingly remarkable values.

[G] - Remove invasive, non-indigenous vegetation when appropriate for protecting river values.

[G] - Remove hazards for visitor safety using ROS guidelines (from "paved to primitive" settings).

[G] - Incidental or downed fuelwood may be removed for campfires.

## **2500 WATERSHED AND SOILS MANAGEMENT**

### **Wild Segment**

Same as Management Area 1 - Wilderness, in addition;

[S] - Prohibit all new water supply dams, flood control dams, hydroelectric power facilities, levees or other major diversions in the channel or river corridor.

[S] - Use LAC standards to monitor water quality.

### **Scenic Segments**

[S] - Prohibit all new water supply dams, flood control dams, hydroelectric power facilities, levees or other major diversion in the channel or river corridor.

[S] - Prohibit removal of mineral materials as per state regulations for extraordinary resource waters.

[G] - Limit stream channel and bank improvements to protection of life, property, and outstandingly remarkable values. Use materials for rehabilitation work that meet the ROS classification.

[S] - Use LAC standards to monitor water quality on streams with "Wild" segments.

## **2600 WILDLIFE, FISHERIES AND RIPARIAN RESOURCES**

### **Wild Segment**

Same as Management Area 1 - Wilderness.

### **Scenic Segments**

[S] - Ensure new wildlife or fish habitat improvements contribute to maintaining or improving the outstandingly remarkable values.

[G] - Maintain existing wildlife and fish habitat improvements that do not conflict with the objectives for that river segment.

## **2700 SPECIAL USES**

### **Wild Segment**

Same as Management Area 1 - Wilderness, in addition;

[S] - Prohibit new transmission lines, gas lines, water lines, rights-of-way.

### **Scenic Segments**

[S] - Prohibit motorized events within the corridor.

[S] - Permits shall not be issued for activities on National Forest Lands that are inconsistent with the management goals for the river corridor.

[G] - New transmission lines, gas lines, and water lines should be placed within already existing rights-of-way. Where a reasonable alternative exists, the proposed route is to be located to best protect the Outstandingly Remarkable Values.

## **2800 MINERALS**

### **Wild Segment**

Same as Management Area 1 - Wilderness.

## **Scenic Segments**

- [S] - Prohibit common variety minerals and mining claim operations within the designated river corridor.
- [S] - Prohibit surface occupancy for new oil and gas leases.
- [G] - Allow existing mineral operations to continue subject to Secretary of Agriculture regulations prescribed to protect rivers in the National Wild and Scenic River System.

## **5100 FIRE MANAGEMENT**

### **Wild Segment**

Same as Management Area 1 - Wilderness.

### **Scenic Segments**

- [G] - Prescribed burns may be used to achieve a desired future condition if this enhances the outstandingly remarkable values while protecting water quality.
- [G] - Limit hot burns in riparian areas.

## **5400 LAND OWNERSHIP**

### **Wild and Scenic Segments**

- [G] - Provide assistance to private landowners to encourage practices that enhance Wild and Scenic River goals and objectives.

### **Land Acquisition:**

- [S] - Acquire desirable tracts within the corridor only from willing sellers, when the opportunity exists.

## **7700 TRANSPORTATION**

### **Wild Segment**

Same as Management Area 1 - Wilderness.

### **Scenic I Segments**

- [S] - Use minimal tool rule when doing maintenance on roads within Scenic segments that are within the Wilderness. Apply only the minimum tools, equipment, device, force, regulation, or practice that will bring the desired result.
- [S] - Motorized vehicles may only cross at designated crossings. They may not travel up and down the river channel.
- [G] - Maintain or reconstruct existing roads serving private land and those authorized for National Forest Management. Manage existing National Forest roads and proposed new construction to protect and enhance the river corridor.

## ***OPERATIONS , DEVELOPMENT AND MONITORING***

### **INTRODUCTION**

After approval of the comprehensive river management plan, the Forest Supervisor shall ensure that all permits, contracts, and cooperative agreements are consistent with the Forest Plan. All later administrative activities including budget proposals will be based on the comprehensive river management plan. The Forest Supervisor can change proposed implementation schedules without an EIS when funding does not match proposed annual budgets, provided long term goods and service levels are not jeopardized.

Monitoring and evaluation objectives determine how well plan objectives have been met and how closely management requirements have been applied. Based upon the evaluation, the inter-disciplinary team may recommend to the Forest Supervisor necessary management direction changes, revisions, or amendments to the comprehensive river management plan.

The Wild & Scenic River Plans which also contain Wilderness acres, use the concepts outlined in LIMITS OF ACCEPTABLE CHANGE (LAC) System for Wilderness Planning, by Stankey et. al. (1985). LAC is a planning process consisting of a series of interrelated steps leading to the development of measurable objectives, defining desired backcountry and wilderness conditions. It also suggests management actions necessary to maintain or achieve desired conditions. Emphasis is placed on defining and achieving the resource and social conditions desired for the area rather than determining how many users an area can absorb. This process has been determined to be more effective than attempting to establish carrying capacity. Carrying capacity was first designed for range management.

The LAC process requires managers to define desired backcountry and wilderness conditions and to undertake actions to maintain or achieve these conditions. The process consists of nine major steps:

Step 1 identifies area concerns and issues.

Step 2 defines and describes opportunity classes (management zones).

Step 3 is the process of selecting resource and social indicators which represent backcountry conditions.

Step 4 is an inventory to determine the condition of the indicators selected.

Step 6 identifies alternative opportunity allocations.

Step 7 identifies management actions required to implement each alternative.

Step 8 is the evaluation and selection of an alternative.

Step 9 is the implementation of the preferred alternative and the establishment of a program to monitor indicators.

Goals, by definition, are broad statements of intent, direction and purpose. Management objectives are statements that describe the specific conditions sought, serve as criteria in determining what management actions are needed, and are used as the basis for evaluating the effectiveness of management actions.

All areas within the river corridors and the Wilderness are designated in one of four Opportunity Classes. Each Opportunity Class is described in terms of the desired resource, social, and managerial conditions for that area. These descriptions provide guidance for management decisions related to backcountry resources and use.

Opportunity Classes are designated based upon the following criteria:

1. Type and amount of use
2. Accessibility and challenge
3. Opportunity for solitude
4. Current resource conditions
5. Management uses

**\*\*\*LIMITS OF ACCEPTABLE CHANGE (LAC)\*\*\***

**OPPORTUNITY CLASS DESCRIPTION**

Class 1: Natural environment with little evidence of recent impact by humans. Outstanding opportunities for solitude exist and the sense of challenge is high. No trails are maintained and no signs are provided for visitor assistance.

Class 2: Natural environment with some evidence of human impact in the form of trails and campsites. Opportunities exist for solitude and sense of challenge is still high. New trails will be built only for resource protection.

Class 3: Natural environment with evidence of land use and/or recreational activities. Opportunities for solitude often exist but may be rare in peak recreational seasons. Trails and signs may be provided for natural resource and visitor protection. Existing trails will be maintained (for light use) at primitive trail standards. Scenic values are primary emphasis.

Class 4: Natural environment with obvious evidence of land-use and/or recreational activities and impacts. Opportunities for solitude may exist. Trails and/or signs may be provided for natural resource and visitor protection, and for educational purposes. Modest facilities may be provided for recreational activities.

**Segment Classifications**

<b>Segment</b>	<b>Classification</b>	<b>Length</b>	<b>Class</b>
Headwaters	Scenic	11.8	3 & 4
Hurricane Wilderness	Wild	2.4	3 & 4
West to Big Piney	Scenic	1.3	3 & 4

The delineation of Opportunity classes was based on river use patterns, access, management concerns, and resource considerations.

**Indicators and Standards**

Indicators and standards are used to help determine when corrective management actions should be implemented. Indicators are relevant, measurable factors which signify the condition of the backcountry setting. Standards are threshold levels established for each indicator. Standards are set at the upper level of what is considered acceptable, not necessarily what is desirable. Monitoring of indicators will enable management to know whether backcountry conditions are getting better or worse. Management still has the latitude to correct unanticipated problems not addressed by standards. The indicators and standards for each opportunity class are displayed in the following table.

A policy of nondegradation will be employed. The nondegradation policy seeks to prevent further degradation of current resource and social conditions in areas which are still well within standards and restore substandard settings to minimum levels.

***LAC INDICATORS & STANDARDS***

<b>Indicators</b>	<b>Class 1</b>	<b>Class 2</b>	<b>Class 3</b>	<b>Class 4</b>	<b>Comments</b>
Total campsite area (sq.ft.)	Less than 500sq.ft.	750-800 sq.ft.	800-1000sq.ft.	90% of sites are less than 2,000 sq.ft. with none greater than 3,500 sq.ft.	Evident by vegetation impacts
Number of fire rings	zero	zero	No more than 1	No more than 1	In order to maintain a standard of "0" in Class 1 and 2, there may need to be a "stoves only" restriction
Campsite condition (1=Best, 4=Worst) [Maximum number per square mile]	None rated more than "2"	No sites rated "4"	No sites rated above "4"	No more than 4 campsites within 1/4 sq.mile; condition "4" sites should be evaluated for restoration or closure	See campsite condition descriptions
Overall satisfaction (rate experience 1-10 with 10=Best)	Overall rating 8 or above	Average overall experience rating from registration cards for 1992-94 was 8.6			
Contact with other groups (Average # of groups encountered per outing)	No more than 1	No more than 2	No more than 5	No more than 5	Not to be exceeded more than 4 days/yr (weekends / holidays)

Preferred group size	6	6-8	No more than 10 (90% of the time)	No more than 10 (90% of the time)	More than 75 requires a special use group permit) <i>[10/96 LAC]</i>
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## OPPORTUNITY CLASS DESCRIPTIONS

**Class 1:** Natural environment with little evidence of recent impact by humans. Outstanding opportunities for solitude exist and the sense of challenge is high. No trails are maintained and no signs are provided for visitor assistance.

**Class 2:** Natural environment with some evidence of human impact in the form of trails and campsites. Opportunities exist for solitude and a sense of challenge is still high. New trails will be built only for resource protection.

**Class 3:** Natural environment with evidence of land use and/or recreational activities. Opportunities for solitude often exist but may be rare in peak recreational seasons. Trails and signs may be provided for natural resource and visitor protection. Existing trails will be maintained (for light use) at primitive trail standards. Scenic values are primary emphasis.

**Class 4:** Natural environment with obvious evidence of land-use and/or recreational activities and impacts. Opportunities for solitude may exist. Trails and/or signs may be provided for natural resource and visitor protection, and for educational purposes. Modest facilities may be provided for recreational activities.

## CAMPSITE CONDITION DEFINITIONS

1. Campsite barely distinguishable; slight loss of vegetation cover and/or minimal disturbance of organic litter.
2. Campsite obvious; vegetation cover lost and/or organic litter pulverized in primary use areas.
3. Vegetation cover lost and/or organic litter pulverized on much of the site, some bare soil exposed in primary use areas.
4. Nearly complete or total loss of vegetation cover and organic litter, bare soil widespread. Soil erosion may be obvious, as indicated by exposed tree roots and rocks and/or gullying.

## HURRICANE CREEK WILDERNESS WILDERNESS/WILD & SCENIC RIVERS LAC INDICATORS

Limits Of Acceptable Change	Indicators	LAC Standard
<p style="text-align: center;">Water Quality</p> <p>*Nondegradation based on arithmetic mean (baseline data collected quarterly in 1990-95)</p>	<p>Fecal Coliform</p> <p>Turbidity</p>	<p>Lower site = 18 col/100ml</p> <p><u>Upper site = 32 col/100ml</u></p> <p>Lower site = 11 FTU</p> <p><u>Upper site = 10 FTU</u></p> <p>***Exceeding standard would trigger management action to determine cause</p> <p style="text-align: right;">[10/96 ml &amp; cn]</p>

## ***Monitoring for LAC indicators***

All indicators listed require a monitoring program to determine whether they are within the standards set for each of the Opportunity Classes.

**Campsite Condition**: Monitoring procedures are detailed in the Buffalo Ranger District Backcountry Campsite Inventory and Monitoring Procedures (1992). All sites will be monitored at least once every five years on a rotating basis. Sites which failed to meet standards will be monitored the following year to determine whether corrective actions have been successful. A data management program has been developed to store and analyze all campsite monitoring data.

**Social Indicators**: Group size, contact with other groups, and overall satisfaction will be monitored yearly using data collected from wilderness registration cards (both those collected at portals and those mailed in to the district office at Jasper). For example, if there's a swing downward in overall satisfaction, this will trigger on-site-discovery as to cause at that location. For example, it could be tied to increased encounters with other groups or perhaps more encounters increases overall experience.

**Water Quality**: Monitoring of water quality indicators will be accomplished through the existing monitoring program. Site specific investigations will be carried out in additional areas if evidence of water quality degradation is found.

### ***POTENTIAL MANAGEMENT ACTIONS*** *Improving Unacceptable Site Conditions (In order of Preference)*

#### ***Opportunity Class 1 & 2:***

- \* Offsite Leave No Trace Education
- \* Contact Repeat Users
- \* Campsite Restoration
- \* Designated Campsites
- \* Limit Size of Groups Camping
- \* Prohibit Open Fires
- \* Seasonal Campsite Closures
- \* Individual Campsite Closures
- \* Area Camping Closure
- \* Camping Permit

#### ***Opportunity Class 3 & 4***

- \* Information and Education
- \* Increase Forest Service contacts
- \* Contact Repeat Users
- \* Campsite Restoration
- \* Limit size of groups camping
- \* Designate Campsites
- \* Campsite Closures
- \* Prohibit Stock
- \* Install Toilets
- \* Require Camping Permits

### ***Directed at Social Indicators (In order of Preference)***

#### ***Opportunity Class 1 & 2:***

- \* Encourage Use in Other Areas
- \* Modify or Remove Existing Facilities
- \* Limit Size of group
- \* Camping Permits

#### ***Opportunity Class 3 & 4***

- \*Encourage Use at Other times or places
- \*Improve or Modify Existing Facilities
- \*Limit Size of Groups Camping
- \*Camping Permits

## **PROGRAM AREAS**

### **1600 INFORMATION SERVICES**

Information services will address three needs: informational, regulatory, and interpretive/educational. They will inform river users about the general character of the river, the laws and regulations and opportunities that pertain to recreation activities in the corridor, and about specific natural or cultural values or features. Information will be provided through a variety of means, including signs, brochures, and personal contact.

Wilderness backcountry ethics and information are provided "in-town" rather than on-site.

### **SIGNS**

Minimize "sign pollution" by keeping the number of signs to the minimum necessary for safety, effective law enforcement, direction and interpretation. Forest Development Road signs are subject to the Highway Safety Act standards.

### **INFORMATIONAL**

The bulletin board near the confluence of Hurricane and Big Piney will display important information to visitors. All visitor information will be placed on one sign board.

Types of information to include on the sign board are:

- \* Visitor use guidelines, **Leave No Trace** outdoor ethics.
- \* Safety precautions and emergency contact numbers.

Informational signing within the river corridor will be minimal. There will be **no signing within the wilderness** portions of the corridor. No reflective surfaces, tape, lettering or symbols should be used on informational signs unless critical for visibility from moving vehicles.

### **REGULATORY**

Regulatory signing will be kept to a minimum. In general, regulatory information will be posted on informational sign board.

Existing roads, not open to public motor vehicle traffic, shall be signed for non-motorized travel. Signs identifying the designated river corridor boundary shall be posted only where the corridor coincides with or crosses a primary road.

Warning signs are usually made with reflective material.

Construction may require signs for safety and directions.

### **BROCHURES**

A brochure may be developed for the designated portion of the river corridor. The brochure would include the following information:

- \* Classification of rapids and inherent dangers associated with Wilderness and backcountry recreation.
- \* A map that identifies public & private lands, recreation facilities and access sites, landmarks and primary roads and trails
- \* Recreation opportunities available in the river corridor
- \* Brief description of the values for which the river was designated a National Wild and Scenic River, reasons for protection, and how users can help protect these values

- \* Inform visitors about regulations
- \* Interpretation of outdoor ethics, respecting private property rights and LEAVE NO TRACE practices.

## **PERSONAL CONTACT**

**WILD:** Opportunities for solitude prevail.

**SCENIC:** Contacts between Forest Service representatives (Forest Service personnel or volunteers) and visitors in the river corridor will be mostly on the OHT, near the Natural Bridge, near Chancel OHT spur, and early summer to check road conditions for cemetery access. Decoration Day varies depending on road conditions and water levels. Hiking and hunting seasons should be targeted for contact times.

The District Ranger and District representatives shall develop and maintain working relationships with area landowners, local and state agencies, and user groups to assure support and participation in successful river management.

## **2100 ENVIRONMENTAL MANAGEMENT**

**Operations.** Septic systems on National Forest lands will comply and meet all Arkansas Department of Health regulations. Education and information programs and materials will discuss solutions to disposal of human waste. "Leave No Trace" (LNT) programs can be used by the river manager to encourage responsible human waste disposal.

Support "pack-it-in and pack-it-out" and LNT concepts for kayakers, hunters, hikers and other recreationists. Discourage bringing glass containers into the river.

Pesticides may be used within the corridor on public lands if restrictions regarding the type, frequency, methods of application, monitoring, and safety are strictly followed. Actual application of pesticides may be to maintain or enhance the Outstandingly Remarkable Values or may be used if there is no adverse effect on those values.

### **Monitoring and Evaluation.**

Meet or exceed State of Arkansas standards at all waste disposal and treatment facilities. Soil, Water, and Air section of the Forest Plan addresses evaluation and monitoring of pesticides. Perceptual monitoring will occur at dispersed recreation sites to assess the need to add or improve toilet facilities.

## **2120 Air Quality Management**

**WILD & SCENIC = CLASS II AIRSHED STANDARDS (same as general forest)**

Allow for the use of prescribed fire for purposes of ecosystem management. Assure that prescribed burning programs comply with the provisions of the Clean Air Act as well as all other applicable State & Federal Laws.

## **2200 RANGE MANAGEMENT**

### **WILD & SCENIC**

Issue no new grazing permits that include the area within the corridor. Phase out existing woodland range allotments according to direction in the current Forest Land and Resource Management Plan.

#### **Monitoring & Evaluation Plan.**

Track NEPA process for range allotment analysis when pertinent to river corridor values.

## **2300 RECREATION MANAGEMENT**

### **ROS EXPERIENCE CHARACTERIZATION**

#### ***WILD SEGMENT - PRIMITIVE RIVER***

NATURALNESS - Unmodified natural environment. No evidence of human development. No impoundments, diversions, or channel modifications.

ACCESS - No developed access sites along the river. Traditional water craft consistent - motorized use prohibited.

REMOTENESS - Highest expectations of experiencing isolation from the sights and sounds of humans. Strong sense of remoteness.

SOCIAL ENCOUNTERS - No expected contact with other individuals. None to little evidence of other individuals. Very small party size (6-12) and few boats per group.

VISITOR MANAGEMENT - Self-reliance through application of outdoor skills in an environment that offers a high degree of challenge and risk. No on-site visitor management controls or regulations apparent. On outfitter trips, visitors participate in orientation of the river and perceive a high degree of challenge and risk.

FACILITIES - No facility development for user comfort. Regulations for human waste disposal. Low impact camping practices required.

#### ***SCENIC SEGMENT - SEMI-PRIMITIVE MOTORIZED RIVER***

NATURALNESS - Largely undisturbed natural environment. Little evidence of human development.

ACCESS - Very few access sites developed along the river. Primitive roads to designated access points along the river. Road parallels the river for at least six or seven miles [scenic segment within the wilderness, and scenic segment near confluence with Big Piney].

REMOTENESS - Moderate expectation of solitude and some expectation of experiencing isolation from the sights and sounds of others. Sense of remoteness.

SOCIAL ENCOUNTERS - Few contacts with other users. Little but some evidence of other users. Small party size (8-20).

VISITOR MANAGEMENT - Self-reliance through application of outdoor skills in an environment that offers a moderate degree of challenge and risk. Only a few, subtle on-site visitor management controls or regulations are apparent. Visitors experience a high to moderate degree of challenge and risk.

FACILITIES - Minimal facility development primarily for resource protection. See ROS Primer and Field Guide. Regulations for human waste disposal and camping practices required.

### **Recreation Opportunities**

- 1.) A semi-primitive, motorized recreation setting shall be maintained on National Forest system lands within the Scenic River corridor; a primitive, non-mechanical/non-motorized recreation setting shall be maintained for the Wild River corridor.
- 2.) Motorized recreation travel shall be restricted to "open" roads on public lands. ATV use is governed by current Forest policy.
- 3.) Dispersed camping shall be discouraged within 200 feet [**70 adult steps**] of creek unless on hardened surface (rock slab or gravel bar).
- 4.) Conduct a survey of recreation use in the corridor within the first ten years of plan implementation. The study should focus on OHT hikers and hunters during fall, winter, and/or spring seasons. Design shall be to collect, at a minimum, the following information:
  - \*use patterns (activity participation, timing and frequency, location)
  - \*visitor characteristics (origin, group type and size, first-time visitor)
  - \*visitor perceptions (desired experience, preference for management actions, conflicts or problems, expectations for visiting Hurricane Creek)
- 5.) Dispersed recreation in the corridor shall be monitored to evaluate potential social, biological and physical impacts, and appropriate corrective actions taken if unacceptable impacts are identified. Use LAC indicators and standards selected for that segment.

### **Recreation Development**

The Forest Service will maintain recreation facilities appropriate for the Recreation Opportunity setting. No new recreation developments or facilities are proposed within the river corridor.

**Facilities must meet river management objectives and satisfy the protection requirement of W&SR law.**

### **2350 TRAILS**

Maintain OHT at primitive standards; see standards & guidelines for Wild & Scenic in Wilderness.

Currently, there are no trails proposed for development. Development of new trails that enter or fall within the corridor (excluding Wilderness) should only be constructed where anticipated visitor needs indicate that a trail is necessary to provide access consistent with the outstandingly remarkable values and unavailable outside the corridor, to provide for important interpretation of resources found within

the corridor, or to prevent degradation of resources within the corridor. Any planned trail should meet Forest Service standards for the intended trail use and be consistent with Forest Land and Resource Management Plan guidance for overall trail system development. Design and layout should be an interdisciplinary process.

User-developed trails which cause unacceptable resource or social impacts shall either be closed and fully rehabilitated, relocated to a less sensitive location, or hardened. Evaluation of the best corrective measures should consider the traditional uses of the trails, the relative importance of the trail as an access route to unique attractions in the corridor, potential impacts to area landowners, and significance of the resource impacts. In general, user-developed trails determined to be causing unacceptable impacts should be closed and rehabilitated. Those user-developed trails that provide important access to the river or recreation attractions may be reconstructed to meet Forest Service standards if compatible with long-term management goals for the river corridor.

## **2360 HERITAGE RESOURCES**

The goal of managing heritage resources is to protect and preserve cultural resource properties and values within the Hurricane corridor.

### **WILD SEGMENT**

- Remove old fences from the trees and posts where feasible.
- Do not do any brushing in the old road system but let nature re-claim.
- Sites or structures that do not qualify for the National Register of Historic Places are allowed to deteriorate naturally unless they are deemed necessary for the purposes of wilderness, or serve administrative purposes.

### **SCENIC SEGMENT**

#### **Historic and Prehistoric Resources**

- Conduct site specific surveys for all proposed ground-disturbing projects.
- Complete Determinations of Effect and National Register evaluations and/or nominations for all cultural resource sites identified and recorded within proposed project areas.
- Sponsor a Partners-in-Time partnership to do a complete inventory of the river corridor.

#### **Cultural Values**

- Preserve elements of the river corridor contributing to local social and cultural values. Reassess social and cultural values of the river corridor once every ten years.
- Maintain relationship with the Newton County Historic Society and the Arkansas Archeological Society to ensure recognition of culturally significant features.

#### **Interpretation**

- Provide off-site interpretation of cultural resources. (refer to brochure discussed in 1600 Information Services).
- No specific location information will be included in any developed interpretive material without full SHPO and Advisory Council for Historic Preservation concurrence.



## **2380 SCENERY MANAGEMENT**

### **Operations:**

**WILD** = Preserve scenic and historic character of area.

**SCENIC** = Management actions on National Forest system lands, such as vegetation management, development of recreation facilities, or construction of erosion control structures, must meet the Visual Quality Objective of Retention and be appropriate for the Recreational Opportunity Setting.

### **Monitoring and Evaluation.**

Ask the question: Does this protect and/or enhance the Outstandingly Remarkable Value of Scenery? Does it meet the intent implied by the overall objectives for this Wild & Scenic River?

## **2400 VEGETATIVE MANAGEMENT**

### **WILD SEGMENT**

Vegetative cover should be managed to retain the primeval character of the environment and to allow ecological processes to operate freely.

### **SCENIC SEGMENT (outside Wilderness boundary only)**

Vegetation management can enhance and promote the appearance and structure of a biologically diverse ecosystem within the river corridor such as to favor sensitive species habitat. Let future inventories determine needs for restoration.

#### **Vegetation may be managed to:**

- Enhance the quality of wildlife habitat for indigenous species within the corridor with emphasis on enhancement of present ecotypes to support native populations.
- Correct impact or to salvage material resulting from a catastrophic natural or human-caused disaster. Concern should be on the EFFECT of disasters, not on what may have caused it.
- Control erosion and screen structures and developments visible from the river.
- Sustain the integrity of vegetative communities in the corridor by removal of encroaching vegetation (like mimosa or multiflora rose).
- Removal of hazards where visitor safety is a concern.

### **Fuelwood**

- Cutting or collecting firewood is not permitted in the corridor for commercial or private home use unless this takes you towards a desired future condition.
- Incidental collection of downed woody material for use at campsites is permitted [use of camp stoves is preferred].

Riparian zone management adjacent to open land should be managed to provide for a healthy buffer. This buffer may vary from 30-100 feet and should be allowed to expand naturally. The purpose of this zone is to create a stable ecosystem along the waters edge, provide a zone to cycle nutrients, provide

shade to moderate and stabilize water temperature, and to provide large woody debris for the water ecosystem. The dominant vegetation should consist of native trees and shrubs, and be managed for a late seral stage. Management of this zone should be limited to bank stabilization, and tree removal for safety reasons. Prescribed burning in this zone should be used sparingly and done under cool burn techniques.

**Monitoring and Evaluation.** Continued monitoring of the vegetative component will be necessary to determine the progress in reaching a late seral stage. This will be used to determine what strategies to take to achieve this community. The establishment of the riparian zone adjacent to open land will need monitoring to determine health.

## **2500 WATERSHED AND SOILS MANAGEMENT**

The Forest will continue to coordinate with the Arkansas Department of Pollution Control and Ecology, and the National Park Service to assess and prevent future impacts to the water quality of Hurricane Creek. Follow current Forest Service direction and Regulation No. 2, as Amended for Regulation Establishing Water Quality Standards for Surface Waters of the State of Arkansas [see sec. 6. specific standards].

Achieve the goals in the Federal Water Pollution Control Act, as amended. Water quality protection and improvement needed to meet the requirements of the Act will be attained through implementation of Best Management Practices (BMPs) as identified in "Water Quality Management for National Forest System Lands", April, 1979. The FLRMP provides direction to protect water quality in the entire watershed outside the corridor.

### **WILD SEGMENT - Water Quality**

Continue water quality monitoring program established in 1990 for the Hurricane Creek Wilderness (TREND ANALYSIS). Current sampling regime is quarterly (suspended in FY96 due funding shortages and need to compile water data collected for five year period).

### **SCENIC SEGMENT - Watershed Management**

**Operations.** Water quality protection and improvement needed to meet the requirements of the Act will be attained through implementation of Best Management Practices (BMPs). Identification of the appropriate BMP and implementation will be accomplished through individual projects. Participate in all studies and evaluations of projects affecting the Wild and Scenic River.

The Forest will continue to coordinate with the Arkansas Department of Pollution and Ecology, Arkansas Game and Fish Commission, Arkansas Forestry Commission, Arkansas Department of Health, and Arkansas Natural and Scenic Rivers Commission, to assess and prevent future impacts to the water quality of Hurricane Creek. Emphasize coordination with the Buffalo National River, National Park Service.

Where watershed improvement projects are undertaken, use materials that will blend in with the area naturally. Improvement actions should occur on erosion sites/banks that are threatening other forest investments such as roads, or private land. Emphasis will be placed on minimizing visual and/or water quality impacts of erosion control activities.

## **Streambank stabilization**

Evaluation of sites proposed for erosion control along the banks of Hurricane Creek on National Forest lands should consider the natural dynamics and lateral movement of the river channel.

Consideration shall be given to the habitat needs of other riparian dependent species such as wood turtles and bank swallows. Certain eroding streambanks (clay banks, some sandy banks with southerly exposures) which provide good nesting habitat will be left untreated or treated less intensively.

1. Streamside forests should be used in conjunction with sound land management systems that include nutrient management and sediment and erosion control.
2. Sediment removal - The streamside forest must be wide enough to filter sediment from surface runoff. Maximal effectiveness depends on uniform shallow overland flow. Percent removal of Total Suspended Solids is a good indicator of effectiveness.
3. Nutrient removal - Periodic flooding and the presence of forest litter contribute to conversion of nitrate to gaseous nitrogen by denitrification. Plant uptake also accounts for significant removal of nitrogen.
4. Periodic minor ground shaping may be necessary to encourage dispersed flow and prevent concentrated flow.
5. A portion of the riparian forest immediately adjacent to the stream should be managed to maintain a stable streamside ecosystem and to provide detritus and large stable debris to the stream.
6. Crown cover should be managed to minimize fluctuations in stream temperature and to maintain stream temperatures within the range necessary for instream aquatic habitat.
7. Instream slash and debris removal practices should be revised to conserve existing large stable debris by retaining useful stable portions of jams whenever possible. Unstable tops and smaller debris with potential to form problem jams should be removed a sufficient distance to prevent re-entry during storm events.

### **Monitoring and Evaluation Plan.**

Effectiveness of methods for preventing further erosion will be regularly monitored.

## **SCENIC SEGMENT - Soils**

### **Operations.**

-Sedimentation into Hurricane Creek or tributaries, or impacts to soils from existing human uses, shall be reduced either through information and education methods, structural or vegetative stabilization, or enforced closures. Where possible, the least restrictive methods should be implemented first and monitored for effectiveness. Further restrictions or stabilization methods may be phased in if necessary.

-Any Forest Roads or segments of roads identified as causing unacceptable resource impacts will be evaluated for reconstruction or closure. Projects (including road reconstruction or other significant changes in vegetative cover or soil movement) within the designated Scenic corridor shall have a site-specific reconnaissance performed and specific mitigating measures will be developed if necessary.

- monitor maintenance work on 1209A (Sexton Cemetery road)
- provide technical assistance when needed to ensure river values are protected during annual maintenance work by County or in-holders.
- maintain traffic counter for usage records

- monitor road parallel to creek on road leading into Natural Bridge area [sec. 17]
- Continue to coordinate with County Judge and soil conservation agencies to eliminate erosion and other resource impacts from county road crossings/roads in the corridor.

**Monitoring and Evaluation Plan**. See "Soil, Water and Air" section of the Forest Plan.

## **2600 WILDLIFE, FISHERIES AND RIPARIAN RESOURCES**

The Arkansas Game and Fish Commission (AG&FC), has the primary responsibility for the management of fish and wildlife populations, while the Forest Service has the primary responsibility for management of habitat on National Forest system lands. All riparian and aquatic habitat management activities will be coordinated with the Arkansas G&FC.

**[see Policies and Guidelines for Fish and Wildlife Management in National Forests and BLM Wilderness areas; Chapter 20, Sec., 23 in FSH 2309.19]**

**WILD SEGMENT** - Wilderness Management Objectives for Wildlife:

- 1.) To seek natural distribution, numbers, population composition, and interaction of indigenous species of wildlife.
- 2.) To allow natural processes, as far as possible, to control wilderness ecosystems and their wildlife.
- 3.) To keep wildlife wild, with its behavior altered as little as possible by human influence.
- 4.) To permit viewing, hunting, and fishing where such activities are: biologically sound, legal, and carried out in the spirit of a wilderness experience.
- 5.) To favor the protection and restoration of threatened and endangered species dependent on wilderness conditions whenever appropriate.
- 6.) To seek the least possible degradation of the qualities that make for wilderness - naturalness, solitude, and absence of permanent visible evidence of human activity - within the constraints of all overriding legislation applicable to wildlife in a particular wilderness.

### **GUIDELINES**

- 1.) Respect overriding legislation.
- 2.) Allow natural processes to shape wilderness habitat.
- 3.) Use minimum impact tools where natural processes must be supplemented or simulated.
- 4.) Favor wilderness-dependent endangered species.
- 5.) Manage for wild indigenous species.
- 6.) Encourage angling styles that are part of and compatible with wilderness experience.
- 7.) Favor hunting and trapping methods and conventions that foster wilderness-dependent experiences.
- 8.) Promote wilderness wildlife research using appropriate methods.

**SCENIC SEGMENT** - Wildlife Habitat Management

1. Management activities will contribute to the support of viable populations of native wildlife species found in the planning area.
2. Protect and enhance special habitat components within the corridor such as bark and cavity nesting habitat, wetlands and seeps, raptor nests, large woody debris, and exposed banks.

3. Provide information on the wildlife habitat and values associated with the corridor for visitors.
4. Prescribed burning may be considered to enhance wildlife habitat and ecosystem functions as long as scenic values are not measurably impaired. [see 2120 Air Quality].

### **Fisheries Habitat Management**

Riparian vegetation shall be managed for late seral stage to provide for the long-term input of woody material (large woody debris) to adjacent aquatic ecosystems.

Instream woody debris shall be left undisturbed. Navigational hazards are not to be considered (Wilderness and backcountry paddling have inherent risks which require more technical knowledge and scouting needs).

Monitoring and Evaluation Plan. Refer to Regional Forester's letter of 6/29/95, 2610/2320; copy also in Chapter 20, Sec., 23 in FSH 2309.19.

## **2670 THREATENED, ENDANGERED AND SENSITIVE SPECIES**

The goal of endangered, threatened and sensitive species management is to identify, monitor, protect, and enhance these species and associated ecosystem components within the corridor. These activities are required by the Endangered Species Act of 1973 (ESA), the Forest Service Manual (2670), and the Forest Plan.

**WILD SEGMENT:** Actions necessary to save endangered species should include only what is necessary and should follow the minimum tool rule.

### **SCENIC SEGMENT**

Implement current conservation strategies for species identified.

Emphasize information, education, and enforcement of regulations designed to protect endangered, threatened or sensitive species. Coordinate with visitors, landowners, partners, and other resource agencies.

Prevent the introduction of non-native plant and animal species that may have adverse affects on river values.

**Operations.** The Forestwide standards for threatened, endangered and sensitive species will apply in this management area.

**Monitoring and Evaluation Plan.** Monitoring and evaluation in this resource area is dealt with in the "Wildlife and Fish" section of the Forest Plan. See the Forest Plan for additional details on evaluation of monitoring results.

## **2700 SPECIAL USES**

### **WILD SEGMENT**

Prohibit special uses which do not protect and enhance river values.  
Favor wilderness-dependent activities.

## SCENIC SEGMENT

All outfitter and guides that use public lands on the National Forest operate under special use permit. New permit applications are evaluated to ensure river values are protected.

Special use permits for recreation events will be issued provided the event does not affect the outstandingly remarkable values.

Rights-of-way for public roads, major utility lines, and gas pipelines are permitted within the following parameters:

-New transmission lines, gas lines, water lines will be discouraged. Where no reasonable alternative exists, restrict additional or new facilities to existing right-of ways. Where new rights-of-way are needed, evaluate the proposal against the effect or impacts to the outstandingly remarkable values as well as any additional scenic, recreational, fish and wildlife values in the corridor.

**Monitoring and Evaluation Plan**. Special use permit applications are analyzed as specified in the Code of Federal Regulations. Permits which already exist, are evaluated during the monitoring process for unacceptable conditions. Unacceptable conditions must be corrected or the permit is terminated. See the Forest Plan for additional details on evaluation of monitoring results.

## 2800 MINERALS

### WILD SEGMENT

There are no existing rights prior to 1/1/84. Grant no new mining claims or mineral leases as per the Wilderness Act of 1964.

Federal lands within the boundaries of the river areas (generally one-quarter mile from the ordinary high water mark on each side of the river), designated and classified as WILD, are withdrawn from appropriation under the mining and mineral leasing laws by Section 9 of the Wild and Scenic Rivers Act.

### SCENIC SEGMENT

**Operations**. Manage for mineral prospecting and develop to minimize adverse environmental effects on other resource uses and values.

Federal lands within the boundaries of river areas, designated and classified as SCENIC are not withdrawn under the Act from the mining and mineral leasing laws.

Existing valid claims or leases within the river boundary remain in effect and activities may be allowed subject to regulations in a manner that minimizes surface disturbance, water sedimentation, pollution and visual impairment. Reasonable access to mining claims and mineral leases will be permitted. Mining claims, subject to valid existing rights, can be patented only as to the mineral estate and not the surface estate, subject to proof of discovery prior to the effective date of designation.

For rivers designated as SCENIC, filing of new mining claims or mineral leases is allowed but is subject to reasonable access and regulations in a manner that minimizes surface disturbance, water sedimentation, pollution and visual impairment.

All authorized surface use of a mining claim will be included in the plan of operations.

**Monitoring and Evaluation Plan**. See "minerals and geology" section of the Forest Plan. See also Section 9 of the Wild & Scenic Rivers Act.

## **5100 FIRE MANAGEMENT**

### **WILD SEGMENT**

Follow the fire policy established for Hurricane Creek Wilderness.

Use light-on-the-land techniques based on contain, confine, and control decision tree for Wilderness fire plan.

Abide by the minimum tool rule.

### **SCENIC SEGMENT**

Wildfire Suppression in the river corridor will follow the guidelines stated in the FLRMP, except additional efforts should be made for prompt rehabilitation of all control activity generated disturbances. The Incident Commander and Line Officer shall review the need for a Burned Area Rehabilitation Plan, regardless of fire size.

Depending on severity of potential fire conditions, there should be an increase in patrols during fire seasons, as well as an effort made to increase public awareness of fire risk.

### **Prescribed Burns**

Prescribed burning may be used as a tool to achieve vegetation, visual or recreation management objectives. Burn within parameters for air quality of Class II airshed and riparian zones which need cool, not hot, burns.

[see 2120 Air Quality]

**Monitoring and Evaluation Plan**. Monitoring and evaluation in this resource area is found in the "Protection" section of the Forest Plan. For example, each prescribed burn and wildfire will be reviewed by resource staff areas to assess the effectiveness of Forest Service actions and to assess the effectiveness of the prescribed burn or the damage caused by the wild fire.

## **5300 LAW ENFORCEMENT**

**Operations**. Enforcement of laws and regulations is critical for effective river plan implementation. Adequate enforcement has been a primary concern for area landowners, conservation groups, traditional user groups, and Forest Service administrators.

1. Maintain appropriate agency law enforcement presence for primitive and semi-primitive recreational setting in the river corridor.
2. The Forest Service shall maintain cooperative agreements with the Newton County Sheriff's Department to provide:
  - a.) Search and Rescue [SAR] operations for visitor protection and assistance. [see Appendix E, Search and Rescue Plan for Wilderness Areas]. River rescue efforts will require technical expertise in order to provide that rescuers are not put at risk. Newton County Sheriff's office can dispatch SAR unit - need to emphasize backcountry rescue needs.
  - b.) Assistance and support for Forest Service personnel in the enforcement of Federal and state regulations. This shall include violations such as the illegal harvesting of ginseng, etc.
3. The Forest Service shall maintain cooperative agreement with the Arkansas Game & Fish Commission in the enforcement of state regulations.

### **SUPERVISOR'S ORDERS:**

#### Order no. 00-08-108

-prohibits operating any motorized vehicle on a Forest Development Road or any portion thereof that is posted as closed or closed by an earthen mound, gate or other object which a reasonable and prudent person would consider closed. 36 CFR 261.54(e)

-prohibits operating any motorized vehicle on a closed and/or rehabilitated temporary travelway or operating a motorized vehicle in an area posted as closed or closed by an earthen mound, gate or other object which a reasonable and prudent person would consider closed to motorized traffic. 36 CFR 261.56

-prohibits possessing or using a wagon, cart, or other mechanized vehicle in Wilderness areas on the Ozark National Forest. 36 CFR 261.57 (h). Wheelchair use is exempt from this order.

Pursue obtaining Supervisor's Orders to:

Prohibiting driving ATVs up and down the stream bed.

**Monitoring and Evaluation Plan**. Law enforcement is seen as supporting other resource areas, such as vehicle restrictions, public safety, ginseng harvesting restrictions. The effectiveness of this function area will be measured by perceptions of the officers and use of the Law Enforcement Monitoring and Assessment System. Variability that would initiate further action would be non-compliance of Forest Supervisor's Orders, Federal Laws and Regulations, as well as state and local laws.

### **5400 LAND OWNERSHIP**

#### **Operations.**

National Forest system lands within the river corridor should generally not be exchanged. Exceptions may be considered on an individual basis upon completion of an environmental analysis.

The Forest Service should continue to coordinate with the Arkansas Department of Pollution Control and Ecology and other conservation organizations to help provide information and technical advice for landowners on how to minimize impacts to National Wild and Scenic Rivers Act objectives.

Lands in the river corridor, particularly those with frontage on the river or with important habitat for threatened or endangered species, should be acquired as the opportunities occur.

The Forest Service should work cooperatively with other land owners in the river corridor to meet the objectives of the National Wild and Scenic Rivers Act as well as objectives of the landowners. This could include assistance in getting technical and/or financial support from sister agencies like the Natural Resource Conservation Service, Arkansas Department of Pollution Control and Ecology, and the U.S. Corps of Engineers.

### **Monitoring and Evaluation Plan.**

Monitoring and evaluation in this resource area is dealt with in the "Lands" section of the Forest Plan. Monitoring will be for compliance with the Wild and Scenic Rivers Act. See the Forest Plan for additional details on evaluation of monitoring results.

### **Land Acquisition**

Lands in the river corridor, particularly those with frontage on the river or with important habitat for threatened or endangered species, shall be acquired on a willing-buyer, willing-seller basis as the opportunities occur.

### **Land Exchange**

National Forest System lands within the river corridor shall generally not be exchanged. Exceptions may be considered on an individual basis upon completion of an environmental analysis.

**Monitoring and Evaluation Plan.** Monitoring will be for compliance with the Wild and Scenic Rivers Act.

## **6700 HEALTH AND SAFETY**

**Operations.** Health and safety planning will address the following risks:

Target backcountry hikers about need to filter or boil drinking water.

**Do not direct access for paddlers onto private land. Specifically do not suggest the ford near the old Pelham place on 1209. This ford is immediately upstream from private land which may have fencing across the creek.**

Scout for unknown hazards first! Whitewater canoeing is inherently dangerous. All brochures and bulletin boards will address this risk. Public information will discuss actions which can be taken to lower the risk of personal injury, such as, having equipment in good condition, not boating when the river is in flood stage, using U.S. Coast Guard approved personal floatation devices, using safety equipment appropriate for the watercraft being used, not consuming alcohol or drugs while boating,

know your abilities and skill levels, portage around difficult areas, provide key people with your trip plan.

There are no developed recreation sites on these segments. Suggested wording for bulletin boards would be:

**"WARNING!**  
This recreation area has not been inspected for safety.  
Hazardous conditions, including falling trees and limbs, may exist  
in this area. Those choosing to use the area do so at their own risk."

In-channel dangers are inherent in whitewater streams. Dangers cannot, nor should not be eliminated within a Wilderness setting. In-channel blockages such as limbs and down trees should be portaged. The area where most paddlers launch is outside the Wilderness. Generally, a four foot wide section will be considered wide enough for passage of boats.

Vehicle traffic will be controlled by speed limits, State vehicle laws, and National Forest regulations. The Forest Service will coordinate vehicle traffic control measures with the appropriate State and local agencies.

Search and Rescue is coordinated with local SAR units including the Buffalo National River. See appendix for further information and key contacts. Note: Key contacts need to be updated every five years (annually would be better, but may not be practical).

**Monitoring and evaluation** is dealt with in several sections of the Forest Plan and through the Health and Safety Code Handbook (Forest Service Handbook 6709.11). Monitoring of accidents, incidents, and fatalities will be documented in Law Enforcement Incident Reports and from personal observations.

## **7700 TRANSPORTATION/ACCESS**

**Operations.** River use may increase slightly or not at all as a result of designation. Provide maps and signs to direct use to publicly owned access sites. No use of private lands is allowed unless special arrangements are made with the landowner. Private landowners are still entitled to post their property with "No Trespassing" signs or require users to obtain landowner permission. In the state of Arkansas, purple (lavender) paint is used to mark private land.

No easements for public access have been identified as being needed. However, a trail or road easement for public use must be specifically purchased from the landowner. Other types of easements such as for protection of visual resource qualities would probably not involve provisions for public use.

**Monitoring and Evaluation Plan.** District Ranger needs to stay in contact with private landowners to insure that public access problems are not impacting them.

## **FOREST SERVICE ROADS**

**Operations.** No new roads shall be developed in the river corridor without appropriate environmental analysis.

Layout and design of permanent system roads should consider protection of scenic, recreational and other river values. Comply with Best Management Practices.

Layout and design of temporary roads should consider protection of scenic, recreational and other river values, and prevention of future illegal vehicle use. Temporary roads should be rehabilitated as soon as feasible upon termination of administrative need. Close and restore roadbeds if needed to protect and/or enhance riparian values. Temporary forest roads constructed for short-term use are not intended to be part of the Forest's transportation system.

## **ROADS UNDER OTHER JURISDICTIONS**

**Operations.** The Forest Service shall coordinate with the counties, state and owners of private access roads to eliminate resource or social impacts to assure long-term protection and enhancement of river values.

## **BRIDGES**

**Operations.** Bridge installation would be permitted only if an environmental analysis and Section 7 analysis (under direction of the Wild and Scenic River Act, 1968) determine a net benefit to the values and objectives of the National Wild and Scenic Corridor.

**Monitoring and Evaluation Plan.** See "Facilities" section of the Forest Plan. Transportation records will be kept on the Transportation Inventory System. Roads or trails found to be in non-compliance of the service level standards or which are causing an adverse effect to the river will be closed, rehabilitated, and/or repaired.

## *APPENDIX A*

### LEGISLATIVE HISTORY

The Wild & Scenic River Study Report and Legislative Environmental Impact Statement on Thirteen Rivers in the Ozark National Forest, completed in September 1991, recommended the designation of six rivers to the Wild and Scenic Rivers System. The rivers received official designation in April 1992 with the passage of the Arkansas Wild and Scenic Rivers Act by Congress. The law required that the Ozark-St. Francis National Forests establish river management corridors and management plans to protect the free flowing nature of the rivers. The Forest Land Management Plan was amended on December 28, 1993, creating Management Area #9 for these boundary corridors. Creation of the management plans began shortly after that with draft plans completed in June 1996.

River management planning direction is contained in the Wild and Scenic Rivers Act (P.L. 90-542), and the Final Revised Guidelines for Eligibility, Classification and Management of River Areas, published by the U.S. Departments of Agriculture and Interior, - 47 Fed. Reg. 39454 (September 7, 1982). Section 3 (b) of the Wild and Scenic Rivers Act requires that three activities be accomplished:

- 1.) Establish detailed boundaries to include an average of not more than 320 acres per mile on both sides of the river [Amendment 7].
- 2.) Determine the classifications applicable to each segment of the river [Public law S.1743, "Arkansas Wild and Scenic Rivers Act of 1992"].
- 3.) A management plan is to be prepared for the actions needed to administer the river area.

Section 3(b) also states that publication in the Federal Register is required for boundaries and classifications... "shall not become effective until 90 days after they have been forwarded to the President of the Senate and the Speaker of the House of Representatives." Notice of completion and availability of management plans shall be published in the federal register. Section 10(a) of the Wild and Scenic Rivers Act provides for administration of system rivers and stresses that primary emphasis be placed on protecting and enhancing the scenic, historic, archaeological and scientific features of the rivers. Other uses are allowed "which do not substantially interfere with public use and enjoyment of these values." Authorization is given for development of individual river management plans which establish varying degrees of intensity for protection and development based on special features of the area. The 1982 guidelines list general management principles that must be addressed when federal agencies are preparing and implementing river management plans.

Amendment 7 to the Forest Land Management Plan established Management Area 9 (Wild and Scenic River Corridors) and requirements for continued protection and management (Table 4-18 in FLMP Wild and Scenic River Management Requirements).

The Hurricane Wild and Scenic River Management Plan will be the basis for amending the Ozark-St. Francis National Forest Land and Resources Management Plan. This plan will be a guide for the management of Hurricane Wild and Scenic River, as designated by Section 3 (a) of the Wild and Scenic River Act C16 U.S.C. 1274 (a) as amended by the One Hundred Second Congress on April 3, 1992 (P.L. 90-542) and is the "Management Plan" referred to in the Wild and Scenic River Study Report and



***APPENDIX B***  
**VICINITY MAP**

*APPENDIX C*

**RIVER SEGMENTS BY WILD AND SCENIC CLASSIFICATIONS  
AND OPPORTUNITY CLASSES**

## *APPENDIX D*

### **SUMMARY OF PUBLIC CONCERNS**

#### **Comments Prior to July 25, 1996**

This summary of public concerns was drawn from telephone calls, letters, personal conversations, public meetings and an Open House held at the district office in Jasper on 10/17/92. These public meetings were focused on the Limits of Acceptable Change (LAC) planning process for the three Wild & Scenic Rivers with "Wild" segments. These "Wild" segments all flow through Wilderness (Upper Buffalo, Richland Creek, and Hurricane Creek Wilderness areas).

12/5/92 - Deer cafeteria (32 present plus Forest Service personnel)  
1/30/93 - Deer Community Building (27 present plus FS personnel)  
2/27/93 - Deer Community Building (17 present plus FS personnel)  
4/24/93 - Deer Community Building (13 present plus FS personnel)  
6/12/93 - Boxley Church (12 present plus FS personnel)

Late in the year of 1993 LAC TASK FORCE members provided input on the Opportunity Class allocations for the Wilderness and the Wild and Scenic River.

Public comments have also been solicited at several points throughout this Wild and Scenic River determination process. The first request for comments occurred when 13 rivers were selected for study to be included in the Wild and Scenic Rivers System. Additional comments were received when the Forest Land and Resources Management Plan was amended to protect the study rivers (Amendment #2), when the corridor locations were evaluated for the six congressionally designated rivers, when the Forest Land and Resources Management Plan was amended (Amendment #7) to establish corridors, and finally, when drafting this comprehensive management plan process.

Landowners in Northern Arkansas are very concerned about land condemnation and the possibility of condemnation of scenic easements. They have farmed, raised families and lived on the land along the streams for many years; some since pioneer days in the early 1800's. They want no interference from the Forest Service or any other agency and strongly oppose inclusion of their land in the corridor. Their opposition is based on the belief that this another move by the Federal Government to acquire additional land as was done along the Buffalo National River in the 1970's. They are convinced there is no need for additional protection for the creek since it has fared well under their stewardship in the past.

Concerns about condemnation and encroachment of the Federal government into private landowner rights stimulated formation of the Arkansas Scenic River Landowners Association. These concerns arose over the past history of condemnation used by the National Park Service in establishing the Buffalo National River corridor in Arkansas and used by the Forest Service on the Eleven Point Wild and Scenic River in Missouri. Current Federal implementation of the Threatened and Endangered Species Act and wetland protection issues have reinforced landowner concerns. This group strongly supported scenic river management alternatives which minimized inclusion of private lands within a river corridor.

## **1600 INFORMATION SERVICES**

Public concern: In general commentors felt that additional signage would not be necessary or appropriate. During the planning process with the LAC TASK FORCE, it was suggested that we direct paddlers to public land for alternate access for a put-in near Chancel. Current access to Hurricane is limited by private landowner rights and not being able to ford Buck Branch.

## **2300 RECREATION**

Public Concern: Area horseback riders and hikers each want provisions made for their user group, and not to lose any existing opportunities.

Public concern: Will people with disabilities who need to use ATVs be allowed to recreate in these areas.

Public Concern: There continues to be ATV use within Hurricane Creek Wilderness on the old road into the Natural Bridge. They want the Forest Service do something about this.

## **2230 RANGE**

Public Concern: There is a general concern that continued woodland grazing threatens water quality. Trespass cows have also been reported numerous times.

## **2360 HERITAGE RESOURCES**

Public concern: The Davis corn crib is deteriorating. Is there some way to preserve the community culture of this area by maintaining access?

## **2400 VEGETATION MANAGEMENT**

Public concern: Many area residents feel that these wilderness areas should allow timber harvesting rather than wasting this economic resource.

## **2500 WATERSHED AND SOILS**

Public Concern: The overall concern centers around the annual maintenance and traffic on Sexton Cemetery Road [FDR 1209A]. This portion of the road parallels the creek in numerous places and has some eight creek crossings of which two or three washout annually. Another commentor wanted to know why the Forest Service couldn't do something about the first ford after crossing Buck Branch. This ford has gotten deeper and this year stayed deep well into the summer.

## **2600 WILDLIFE, FISHERIES AND RIPARIAN RESOURCES**

Public concern: The Forest Service used to stock the pond but doesn't anymore.

Public concern: Why did the Forest Service advertise these Wild & Scenic River streams in a flyer insert for Bass Pro?

## **2670 THREATENED, ENDANGERED AND SENSITIVE SPECIES**

Public concern: There needs to be more protection provisions for PETS (Proposed Endangered, Threatened and Sensitive species) including restrictions on commercial collection of goldenseal, ginseng and other herbs). Specifically listed were: Delphinium Newtonianum, Trichomanes boschianum, Rana sylvatica, Cambarus causeyi, Felis concolor coryi.

## **5400 LAND OWNERSHIP PATTERNS**

### **TRESPASS ON PRIVATE LAND**

Public concern: Landowners are concerned that this designation will bring more recreators who don't respect, much less realize, they're on private land.

## **5300 LAW ENFORCEMENT**

Public concern: Will the Forest Service be able to enforce regulations for these areas (for illegal ATV use, user conflicts, responsiveness to private landowners problems).

## **7700 TRANSPORTATION**

Public concern: Would public land access points be better identified to avoid landowner conflicts. In general, the sentiment was not to upgrade road levels in these areas. The existing transportation has both hurt and helped the area.

## **COMMENTS OUTSIDE THE SCOPE OF THIS DOCUMENT**

Public concern: Recently, area landowners expressed great concern that these Wild & Scenic Rivers were some part of an overall, United Nations conspiracy to make this area a Biosphere Reserve.

## **SUMMARY OF PUBLIC CONCERNS AFTER JULY 25, 1996**

### **INTRODUCTION**

The Wild and Scenic River Study Report and Legislative Environmental Impact Statement on Thirteen Rivers in the Ozark National Forest, completed in September 1991, recommended the designation of six rivers to the Wild and Scenic Rivers system. The rivers received official designation in April 1992 with the passage of the Arkansas Wild and Scenic Rivers Act by Congress. The law required that the Ozark-St. Francis National Forests establish river management corridors and management plans to protect the free-flowing nature of the rivers. The Forest Land Management Plan was amended on December 28, 1993, creating a Management Area for these boundary corridors. Creation of the management plans began shortly after that with draft plans completed in June, 1996.

Proposed Comprehensive River Management Plans were sent to 2,055 individuals who expressed an interest in this project on July 25, 1996, for their review and comment. Individuals were able to request and based on this request, were sent any or all of the six draft river plans. In addition, 1000 copies of the proposed amendment to the Forest Land Management Plan were also sent to individuals interested in both river management and forest planning for their review and comment. August 25, 1996, was

identified as the deadline to receive comments. (NOTE: A few comments were received wanting to extend the review period. They felt that 30 days was not enough to adequately review all six plans or that the plans did not adequately address issues such as private lands or watershed and should be modified and reissued for public review.)

Of the 3,000 information packets sent, 257 responses were received. These responses can be grouped into four categories: 182 form letters, 46 original letters, 26 phone calls, and 3 office visits. The responses came from a wide spectrum of individuals representing four main special interest groups: environmentally based organizations; landowner rights group; recreation user groups; or other natural resource agencies. Most of the form letters are from individuals who were not on the original mailing list and will be added. Sixty three of the respondents are out-of-state residents.

Forty three of the 182 form letters were generated from a news article that appeared in the Northwest Arkansas Times on August 14, 1996. The individual simply clipped the letter from the newspaper and signed their name. The remaining 136 form letters (51 from out-of-state residents) were comment cards issued by an unknown group that allowed individuals to check one of seven topics that they'd like to see addressed in the revised plans. This card also included a box to check if the individual wanted a moratorium issued on all soil disturbing activities in the affected watersheds. The issues and comments identified in the form letters are included in this summary.

## **METHOD**

Content analysis is one of several methods of analyzing public response. As an analytic system, content analysis is a means of separating portions of responses into various categories so that the message may be more thoroughly examined and reviewed, interpreted and evaluated. To state it more simply, in the analysis process the information in each letter is broken down into pieces, then grouped back together to tell the story of the public's opinions on the topic at hand. The primary intent of this method of analysis is to capture comments in the public's own language. It accurately captures and displays public concerns and reasoning about particular issues or actions presented for comment. The writer's reasoning is included regardless of the reviewer's opinion about its logic or worth. Content analysis is meant to reproduce ideas, not evaluate them. The result is an organized summary of what the publics are saying that a decision maker can review.

A coding system is used to keep the analysis process systematic, visible and trackable. The coding system was designed specially for this project capturing the topic description, as well as any editorial comments and information requests. The coding system used for this phase of the project is located in Appendix 2 of this report.

Members of the analysis team read each letter completely highlighting all comments, opinions and supporting statements with a transparent marker. The appropriate topic code was then placed next to the highlighted comment. Each letter and subsequent coded comments were entered into a database where they were sorted by topic code. Reviewers studied each topic query eliminating duplicate comments to create a comprehensive summary of what the public said. These summaries are included in the "Results" section of this report.

## **RESULTS**

Of the 257 responses received, only a few communicated strong support "for" or "against" the proposed management plans and Forest Plan amendment. A majority of the responses discussed concerns about

specific topics included in both documents. The respondents who indicated support for the river plans felt they were comprehensive and focused on resource objectives. Most of these respondents felt the proposed standards and management area 9 direction was good. Some said staff should be commended and appreciated the thoroughness. A few agreed with the direction for activities on Federal land within the corridor, but felt that private land was not adequately covered.

A great number of respondents felt that the proposed plans did not adequately protect the rivers and that the Forest Service needed to expand the plans to include entire watersheds -- land outside of the existing corridor. A majority of these comments were received through a form letter and strongly stated that the Forest Service should issue a moratorium on all soil disturbing activities in the watersheds of each river until management of roads, vegetation, herbicides\pesticides, wildlife corridors, grazing, mineral activity and ATV use is analyzed.

The following is a summary of public comment by topic:

**Outstanding Values:** Some indicated concern that the list of outstanding values for each river was non-inclusive. Values such as camping, equestrian use and canoe/kayaking were omitted and they felt that a full range of values should be considered in each plan.

**Monitoring:** Monitoring standards recommended in the plans, said some respondents, were not adequate and would not protect river values. They pointed out a need for a flora and fauna inventory, a system to monitor recreation use, and standards that protect stated goals and objectives. Two comments were received wanting provisions for adding new rivers to the scenic river system.

**Private Lands:** A strong contingency of respondents voiced concern about Federal control of private lands pointing out that management of the Federal lands in the corridor would impact private lands. Several of these respondents were concerned about restrictions that would interfere with livestock watering or irrigation from the rivers that flow through or adjacent to private lands, as well as mineral extraction, timber management and utility access to private lands. Some were concerned about the potential increase of trespassing and littering on private lands by recreationists. A few were adamant that the Forest Service has no right to control or effect private lands.

**1600 Information Services:** Very few comments were received on information services. They wanted explanations of recreation fee process discussed in the plans, and an expansion of the education program to include other resources users not just recreationists.

**2100 Environmental Management:** Almost half of the comments indicated a need for guidelines for the application of herbicides and pesticides in the entire watersheds. A majority of these comments were from the form letters.

**2200 Range:** Several comments were received concerning grazing in the river corridors. Of those, a majority were forms letters recommending all grazing be eliminated in the watersheds. A few wanted clarification of the 100 ft. riparian buffers and the conversion to native warm season grasses discussed in the Piney plan. Some were adamant that livestock have a right to water out of the river on private lands and were concerned about possible restrictions.

**2300 Recreation:** Numerous comments recommended that the plans consider recreation in the entire watersheds, not just within the rivers corridors. A few were insistent that the plans recognize equestrian activities as a continuing use in the corridors. Some were also strongly opposed to

continuing use of OHV/ATV's in the corridor. A few were concerned that hunting was not emphasized as an important recreation use.

**2360 Heritage Resources:** One person responded to this resource area. The respondent felt that the plans indicated that historic sites, such as rock fences, were only being protected for their scenic value. This person felt that the plans should focus on their historic value.

**2380 Scenery Management:** Respondents concerned about this resource area felt that visual diversity would be lost if the Forest Service initiated plans to purchase bottomland pastures that commonly occur within the river corridor then convert these lands to forest. One respondent was concerned that restrictions would be placed on private land in order to regulate the scenery for recreationists. This same respondent did not feel that the plans adequately addressed maintenance of the "natural beauty" of the river. Finally, there was the suggestion that current vegetative communities could be enhanced to improve habitat diversity.

**2400 Vegetation Management:** This resource section includes discussions on vegetation management, riparian areas, and vegetative resources. Most of the respondents said that the plans needed guidelines for vegetation management within the entire watersheds, not just standards for National Forest land within the corridors.

Another block of respondents was critical of National Forest timber management practices. Comments included statements such as: "stop cutting trees", "why should taxpayers subsidize the timber industry", "manage ONF sustainably, not as a tree farm." A small number stated that the plans did not analyze the effects of timber harvesting in the watersheds and asked for a moratorium of this activity.

Some respondents addressed the use of salvage logging. Of those who responded, most want to be assured that there would be an evaluation of the effects from salvage logging and that there would be an opportunity for full public review of salvage proposals. A fewer number stated that any salvage logging in the corridors would encourage disaster.

One respondent stated that the plans were not specific on the types of logging methods which would be allowed and suggested that only the single tree selection method be allowed. Several respondents supported either the proposed standards or encouraged vegetation management of timber. The comments included: "logging should be allowed outside the 1/4 mile corridor", "continue to manage forest under current logging rules and regulations", and "include vegetation manipulation as a tool to use in meeting river management objectives."

There seemed to be confusion about "riparian areas". One commentor said that a 100-foot riparian zone was not enough, one asked to see our riparian documentation, and one does not want us to use the term "riparian" and argued whether or not riparian areas exist on any of the rivers. One commentor expressed an opinion that the management plans should include private land within the riparian areas. One commentor suggested that large stable in-stream debris should be conserved and that unstable small debris should be removed. (Also see 2500 for further riparian issues).

A few commentors mentioned Special Interest Areas. One suggested that SIA's be protected for biodiversity, and another said that the SIA's recognized in Amendment 5 (FLRMP) should be considered in each watershed. There was also a suggestion that the old growth inventories should be

completed. One respondent felt that protection and propagation of strictly native plants should be encouraged.

The final issue under the Vegetation Management (2400) section deals with private land. A small number of comments were concerned about the effect of the plans on private land. Their concerns included: "people have right to water livestock out of the creek and to irrigate crops", "how will these plans affect existing riparian rights ?", and "landowner timber rights must be protected".

**2500 Watershed and Soils:** Many respondents asked for watershed analysis of National Forest management practices which could affect the Wild and Scenic Rivers. A few other respondents stated "concerned that sound watershed management practices be used" and the Buffalo plan ignores "sediment run-off from watershed roading activities". (Also see Vegetation Management discussion).

One respondent wanted very clear standards for unacceptable resource impacts concerning soil. Another suggested a restriction of human use where any human induced erosion occurs. One respondent thought the Standards should address erosion at heavily used recreation areas. A small number of respondents said that the plans failed to protect water quality and species dependent upon water quality. There is a concern that water quality measurements are lacking. Another commentor suggested that a time frame be established (if not already done) for bio-assays of significant environment or water quality indicators be used to establish baseline conditions.

Two final comments include: "riparian ecology is not adequately addressed and nothing mentions ground water within the watershed or the effects of forest management in the watershed on riparian habitats", and "without clean water, our plants can't grow and if our plants don't grow, we will not have clean oxygen or clean water".

**2600 Wildlife and Fisheries:** Numerous comments recommended that the plans provide guidelines for connecting wildlife corridors with watersheds. (A majority of these comments were provided from the form letters) A few were insistent that the plans specifically clarify that hunting refers to public lands only. Some wanted the plans to make provisions to continue with wildlife habitat improvements projects and maintain what we have.

**2670 Threatened, Endangered and Sensitive Species :** The few comments received for this area suggested that the plans include habitat plans for listed sensitive species and reduce ginseng permits to a minimum level.

**2700 Special Uses :** The only comments received concerning special uses dealt with access. They indicated that the Forest Service should not deny utility access to private landowners that may cross Federal land near or in the corridor. It was also suggested that the Forest Service is considering the impacts to the river to be more important than providing access.

**2800 Minerals and Geology :** Several comments were received, via form letter, recommending the withdrawal of all mining and drilling permits from the watersheds. A few insisted that the plan clearly state that mineral activity will continue on private lands. Some were concerned that leasing restrictions on Federal land would affect the available mineral pool under private lands. Some also wanted to continue to extract gravel from private lands for personal use or for county roads.

**5100 Fire Management :** Most of the comments made about fire management activities suggested the plans be more active in the use of prescribed fire, feeling it is an important part of the ecosystem. There was only one comment suggesting that fire management be restricted in the corridors.

**5300 Law Enforcement:** One respondent felt landowners should continue to control trespassing on private lands, including the streambeds. Some of the other comments included that there should be no prohibitions of watercraft on private stream sections, and there was a need for a greater law enforcement presence during high use periods.

**5400 Land Ownership :** The comments received concerning lands management ranged from the Forest Service becoming active in the affairs of private lands, to making sure private lands are not affected by any Forest Service restrictions or activities. Other comments included making sure no land would be exchanged or disposed of, a clarification of landowner rights, such as water from the river, and that land ownership included the streambed.

**6700 Health and Safety :** The few comments made about health and safety included a need for speed limit signs, and that navigational hazards only be removed on Federal lands. Navigational hazards on private land should only be removed by the landowner. There were two specific comments regarding Barkshed Recreation Area on the Sylamore and whether it should be classified the same as Gunner Pool and that it needed improvement for public health and visitor safety.

**7700 Transportation:** Most of the letters received addressed this management area. Most of those who addressed transportation issues expressed their opinion through a form letter stating "the plans need guidelines for the management of watershed road systems and the cessation of ATV use in the corridors". There were a few respondents who asked for a ban on ATV use and a few others who wanted guidelines for road systems but did not advocate closure of the corridors to ATVs.

Another large group of respondents said "plans did not include analysis of the harm that logging and road building activities are causing in the watershed". Specific suggestions were also received, they include: "all temporary roads should be permanently closed after...use", "low water slabs be checked and evaluated to determine if structures have negative impact on fish", and "...some uses such as mining and road building are preclusionary to other uses".

Sylamore: "there is a high use of ORVs and extensive abuse by ORVs"

Buffalo/Richland/Hurricane: "sediment run-off from watershed roading activities are ignored in the plans. ...plans continue to allow ATV use in most of the corridors. This, in effect, sanctions ATV crossings of tributary streams..."

Buffalo: "Road 1463A should be upgraded to allow vehicles with horse trailers to pass more safely".

Piney: "does not want any new roads to be built that will cross Piney".

Hurricane: "do not approve any further access roads or utility rights-of-way through river corridor" and "concerned about continued maintenance of road and creek crossing going into Sexton Cemetery".

There were only a couple of commentors that asked that all roads remain open and maintained ("better").

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## *APPENDIX E*

### **WATER MONITORING PROGRAM**

In January of 1990 the district initiated a water monitoring program on all three wilderness streams [Buffalo, Hurricane, Richland]. This has included quarterly grab samples on six sites, an upstream and a downstream site for each stream.

On the Hurricane, there are two sample sites. One is located just inside the eastern wilderness boundary below the confluence of Buck Branch (upper site). And the other site is just outside the western boundary of the wilderness upstream from the confluence with Big Piney (lower site).

Parameters monitored include suspended sediment, turbidity, phosphorus, nitrogen, sulfate, alkalinity, pH, and benthic macroinvertebrates. From 1/90 - 9/92 grab samples were analyzed by S.E. Experimental Forest Station at Berea Lab, KY. From 10/92-9/93 grab samples were analyzed by U.S.G.S Lab, FL. From 10/93 - 9/95 grab samples were analyzed by Arkansas DPC&E Lab in Little Rock. Benthic identification has been done by contract with Arkansas State University.

#### LAC INDICATORS

The five year (arithmetic) average for fecal coliform count at the upper sample site near Chancel was 32col/100mL and 18col/100mL for the lower site near Ft. Douglas. The geometric mean for the three year period of 1/90 to 12/93 on the upper site was 5col/100mL and 7col/100mL for the lower site.

The State standard for fecal coliform is 200 cal/100 mL for drinking water and 400 col/mL for body contact waters. Fecal coliform is merely an indicator for other pathogens which may be disease carriers.

Turbidity values taken over the five year period were not in comparable units. Beginning in 1993, through 1995, turbidity was measured in FTUs. This field data collected in 1993 - 1995 shows average turbidity values for the upper site are 10 FTUs and 11 FTUs for the lower site. The FTU unit of measure will be employed to monitor LAC standards.

*APPENDIX F*

**WILDERNESS**  
MINIMUM TOOL DECISION QUESTIONNAIRE

If this action is covered in an approved planning document, do not complete this form.

PROPOSED ACTION \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**[When considering Wilderness values/resources, address: natural and cultural resources, solitude, primitive character, visitor experience, research effects, and recreation resources.]**

1. What are the alternatives to the proposed action?
  
  
  
  
  
  
  
  
  
  
2. What long and short term impacts to Wilderness values are associated with each alternative?
  
  
  
  
  
  
  
  
  
  
3. What mitigating measures can be taken in association with each alternative?
  
  
  
  
  
  
  
  
  
  
4. How will the proposed action (if non-emergency) contribute to the management of Wilderness resources?

Comments:

Action Approved: \_\_\_\_\_

Action Denied: \_\_\_\_\_

\_\_\_\_\_  
DISTRICT RANGER or  
DEPUTY DISTRICT RANGER

\_\_\_\_\_  
(Date)

## ***APPENDIX G***

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## *APPENDIX H*

### **STANDARD OPERATING PROCEDURES FOR SEARCH AND RESCUE INCIDENTS ON THE OZARK NATIONAL FOREST**

**PURPOSE:** To provide standard procedures and guides for U. S. Forest Service personnel in responding to a search and/or rescue.

**RESPONSIBILITY:** It is the responsibility for all OZARK NATIONAL FOREST Employees to become familiar with contents of this operating plan and be able to implement this plan should the need arise. Insure all Forest Service personnel involved in wilderness SAR operations are trained in Forest Service and external agency SAR protocols, wilderness management policy, and delegations of authority.

**AREAS OF RESPONSIBILITY:** The appropriate county sheriff's department has overall responsibility for conducting search and rescues in the state of ARKANSAS. The U. S. Forest Service will act as advisors and provide technical assistance for search and rescues within the boundaries of the Forest. Requests for additional resources may be provided with the approval of the District Ranger.

**REQUEST FOR SEARCH AND/OR RESCUE:** Timely response to requests for search and/or rescue is vital. It is of equal importance to obtain the necessary information that would be critical for responding resources (e.g., information that will enable them to organize and effect a timely and professional search and/or rescue.)

**Note: Most First Responders are not trained for backcountry rescue. It is imperative that we not put rescuers at risk. Often times we get in the 911 mentality and think it's best to do SOMETHING quickly. It may be more prudent to wait and get the RIGHT people first (e.g., a SAR unit trained in backcountry rescue).**

#### **A. Background**

The following is a philosophical background paper that may be used to help explain and/or support decisions concerning search and rescue operations in Wilderness.

The Wilderness Act of 1964, amended in 1978 (16 U.S.C. 1131-1136), specifies congressional policy to secure for the American people an enduring resource of wilderness for the enjoyment of present and future generations. Wilderness "in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain." This definition is important as it establishes the basis for all USDA Forest Service management actions in classified Wildernesses. With certain exceptions, the Act prohibits motorized equipment, roads, and mechanical transport. Parts 293, 261, 219 and 228 in Title 36 of the Code of Federal Regulations apply to wilderness management.

At all times, Wilderness is to be managed to prevent degradation. The nondegradation principle seeks to maintain each Wilderness in at least as wild a condition as it was at the time of classification. The nondegradation policy assures appropriate diversity and Wilderness character are maintained.

Wilderness is managed to protect the values associated with it, specifically, the user's experience, natural ecological process, spiritual meaningfulness, and scientific research. Frequently, this means we must

manage the people, including users and other agencies that traverse, study, and use the wilderness resource. Ninety nine (99) percent of the problems associated with impacts on the wilderness resource can be tied to inappropriate use. For this reason, the Forest Service has standards and guidelines that are used to manage wilderness. Unless changed by the Forest's Plan, these standards are in place, and are listed by wilderness resource spectrum ranging from transition to pristine classifications (Forest Service Manual 2320).

Forest Service policy is to encourage and support strong local and State leadership in Search and Rescue operations. Field personnel must continue to be responsive to the public needs, particularly as they relate to the protection of life and property.

As stated in FSM 2326.1, the Forest Supervisor may approve the use of motorized equipment or mechanical transport in Wilderness for emergencies "where the situation involves an inescapable urgency and temporary need for speed beyond that available by primitive means." Normally, **the District Ranger and/or a representative approved by the Forest Supervisor has the authority to authorize motorized equipment or mechanical transport in Wilderness where a "life-threatening" emergency or a death exists.**

These guidelines will help the local manager make the appropriate decision. However, the local manager rarely has all the facts at hand when the decision must be made, and it is better to err on the side of safety than to risk further injury or a life. Also, life-threatening criteria can be applied to rescuers themselves as in the case where the use of a helicopter is the only "safe" way to carry out the rescue. There may also be embarrassing public relations problems associated with a bureaucratic approach to securing approvals in emergencies. **The most important factor is communication; the Forest Service needs to communicate internally and externally what Wilderness is and how it should be utilized and all parties need to communicate early and often during a search and/or rescue operation.**

Technically, the Sheriff's Department is in charge of all Search and Rescue; however, the Forest Service's job is to make sure the search and rescue organization is familiar with the terrain and its land allocations in which the Search and Rescue is occurring. When the local Forest officer makes a decision to use motorized equipment in the Wilderness for an emergency Search and Rescue situation, a brief narrative should be prepared documenting the situation in which they granted approval. This should be sent to the Forest Supervisor as soon as possible.

We do not want to cause undue stress to family members of an individual that is facing life-threatening conditions, or who is deceased. While death diminishes the urgency, in some ways it increases the urgency so the family may finally come to grips with the outcome and deal with it accordingly.

## **B. Approval Guidelines for Use of Motorized and Mechanical Equipment for Search and Rescue Within Wilderness**

### **RESCUE**

Always Approve

1. Removal of deceased persons.

2. Removal of people with obvious life-threatening injuries; e.g., heart attack, stroke, serious bleeding, fractured skull.
3. Whenever there is real doubt as to whether or not the injury is life-threatening.

#### Usually Approve

1. Injury is not life-threatening, but delay in rescue or rescue transportation by hand litter or stock may result in additional injury or serious complications resulting from initial injury; e.g., broken leg where the pain resulting from the primitive transportation would put the person into shock, serious cut from a source with high potential for infection to a person that is several days travel from a trail head.
2. Injury is not life-threatening but it is serious and the present and/or predicted weather would likely cause delays in travel that would make the injury life-threatening.
3. Where the topography or footing is so hazardous that it will expose the injured person or the rescue team to a very high probability of additional or new serious injury (approval here might depend on the skill or experience of the rescue team). Normally refers to use of aircraft.

#### Never Approve

1. When the injury is not life-threatening and the person can transport him or herself or be transported by non-motorized or non-mechanical means to the nearest logical point of rescue; e.g., simple fracture of arm, sprained ankle.

### **SEARCH**

This pertains only to those items requiring Forest Service approval; i.e., air drops, landing of aircraft in wilderness or the use of motorized or mechanical equipment in the wilderness. (Overflights are not an approved item, but we should advise potential violators of the FAA 2,000 feet advisory that overflight criteria should be essentially the same as landing criteria.)

#### Always Approve

1. There is good reason to believe that the person being searched for has a life-threatening injury; e.g., age, health condition, mental condition.
2. There is good reason to believe the lost person will be placed in a life-threatening situation such as a result of a predicted adverse change in the weather; e.g., person was lightly-dressed and snow storm is predicted.
3. The only potential rescuers are not physically capable of accomplishing the search without motorized or mechanical equipment.
4. When there is an external situation requiring immediate location of a person within the wilderness; e.g., immediate relative is in critical medical situation.
5. When there is serious doubt concerning whether or not the situation is life-threatening.

## Usually Approve

A close relative has died and the family has requested the person be located so they can perform a necessary function within uncontrollable time constraints.

## Never Approve

1. There does not appear to be any real indications that the person is in a life-threatening situation; e.g., person in good health, dressed for the situation is slightly overdue.
2. Outside request is made to locate a person for noncritical external reasons; e.g., attend funeral of a friend, to make financial decisions, to see if person is okay.
3. The specific requested method will result in physical impact to the wilderness and there are alternate methods that accomplish the objectives of the search without the impacts.

## **C. SEARCH AND RESCUE GUIDELINES OVERVIEW**

Group Size: Where possible, **maximum party size** should be six people in pristine wilderness resource settings. Primitive, SEMI-PRIMITIVE, and transition settings can accommodate up to 6 or 12 people. Livestock limits should be based on NEED...MINIMUM TOOL CONCEPT APPLIES TO MINIMUM NUMBER OF PEOPLE AND HORSES TOO.

(Note: Realize that it takes approximately six persons per mile to carry out an injured person, **the party should be limited to only what is necessary.**)

**Equipment:** As a rule, no mechanized or motorized equipment is allowed in wilderness. Exceptions are made for life-threatening injuries or death. These are determined on a case-by-case basis by the Forest Supervisor or the District Ranger responsible for the area. Where motorized equipment must be used, attention must be paid to access points, timing of landings or of use of noisy equipment or both, interactions with other users, impacts to vegetation and wildlife, and determine how they fit into the desired managed wilderness experience.

**Dogs:** Assess this need early on as tracking is based on human scent. It may only add to the chaos if used as a last resort. Ask if this is the minimum tool needed.

**Method of Travel:** In all cases, the preferred mode of travel is by foot or by horseback.

**Managerial Standards - Evidences of Search and Rescue Operations:** In all cases, the search and rescue operation should be as unobtrusive as possible in how the wilderness resource and visitor's experience might be affected. All efforts should be made to minimize any potential degradation of the resource or of the visitor's experience or both. In some cases, it may be useful for the District Ranger to place a Forest Service person on-the-ground, in the field of operation, to inform the general public as to the situation and why non-Wilderness methods are being used.

**D. REQUEST FOR SEARCH AND/OR RESCUE:** Timely response to requests for search and/or rescue is vital. It is of equal importance to obtain the necessary information that would be critical for responding resources. Information that will enable them to organize and effect a timely and professional search and/or rescue.



**OBTAIN THE FOLLOWING INFORMATION:**

1. Name, alias or nickname of person.
2. Address
3. Race Sex Age Height Weight Color Hair Color Eyes Build  
(other descriptive information (scars, beard, limp, glasses, etc.)

Description(include color, type material, etc.)

4. Shirt/Blouse
5. Pants/Dress/Skirt
6. Coat/Suit
7. Tie and/or Hat
8. Socks/Hose
9. Shoes/Boots-Sole Pattern
10. Point Last Seen-Time: AM/PM
11. Direction of Travel-Method of Travel
12. Knowledge of Area
13. Backcountry Experience
14. If Land Search-Carrying a Pack, Description and Contents
15. Name of Person Reporting
16. Relation to Missing Person
17. Present Location and Telephone No.
18. Other Locations and Telephone Nos.
19. Other witnesses.

**E. NOTIFICATION:** (During Normal Duty Hours)

1. Notify the District Ranger or lead Forest Service Officer.
2. Determine the county jurisdiction and notify the appropriate county sheriff's office. The following is a list of county sheriff's and rescue agencies:

**SPECIFY THAT THIS WILL BE A BACKCOUNTRY RESCUE [i.e., not volunteer fire department or First Responders/SAR UNIT IS NEEDED]**

**BAXTER COUNTY**

Sheriff's Office - (501) 425-2400

**CONWAY COUNTY**

Sheriff's Office - (501) 354-2411

**JOHNSON COUNTY**

Sheriff's Department - (501) 754-2200

Johnson County Search and Rescue Team: 1-800-538-7243, after tone dial 6227, enter your return telephone number after the second tone.

Contact: Kevin Caldwell, Team leader (501)754-6304

Office of Emergency Services - (501) 754-6383

**MADISON COUNTY**

Sheriff's Office (501) 738-2320

Madison County SAR\*

Contact: Mike Bowles (501) 677-2765

**\*several team members are certified on the national level in cave rescue and whitewater rescue.**

**MARION COUNTY**

Sheriff's Office (501) 449-4236

Buffalo Point Ranger Station, NPS, Buffalo National River (501) 449-4311

**NEWTON COUNTY**

Sheriff's Office (501) 446-5124 **Emergency-446-2002**

Office of Emergency Services (501) 294-5227

Contacts: Skip Krumwiede

Buffalo National River SAR - **Searcy County Dispatch\*(501-448-2340)**

\*they have radio contact with BNR

Contacts: Carl Hinrichs, Chief Ranger(501)741-5443#111

PRUITT RANGER STATION 446-5373

UPPER DISTRICT RANGER 446-5477 (home) Gary Kiramidjian

**POPE COUNTY**

Sheriff's Department- (501) 968-2558

Office of Emergency Services - (501) 890-6914

Northern Pope County for Search and Rescue - (501) 284-2291 contact Jerry Brock

## **SEARCY COUNTY**

Sheriff's Department-Phone **(501)448-2340 \*BNR contact for SAR unit**

EMS or Fire (501)448-2525

Witt Springs EMS (501)496-2495 [Gerald "Skip" Warner] note: these are First Responders, not a SAR unit.

## **VAN BUREN COUNTY**

Sheriff's Office - (501) 745-2112

Van Buren County Rescue, Leslie AR. (501) 745-2495, contact Steve Myers

## **OTHER CONTACTS**

Susan Peters (Search and Rescue Dogs) Ozone, AR (501) 292-3292

Explorer Search and Rescue Post 393 (501) 982-4256, 24hr Pager 660-7337 contact Allen Lawrence

Carrol Stuchell (Search and Rescue Dogs) (501) 988-5141

## *APPENDIX I*

### **Glossary of Acronyms and Terms**

**Best Management Practices** - A practice or combination of practices that is determined by a State (or designated area-wide planning agency) after problem assessment, examination of alternative practices, and appropriate public participation, to be the most effective, practicable (including technological, economic, and institutional considerations) means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals (Federal Register, Volume 40, No. 230 dated 11/28/75).

**Biodiversity** - A relative abundance and variety of species, both plant and animal, in a given area.

**Biological Evaluation** - A specific process required as a part of an environmental assessment that evaluates the potential effects of a proposed project on Proposed, Endangered, Threatened, and Sensitive species and their habitats.

**Cultural Resource** - The remains of sites, structures, or objects used by humans in the past-historic or prehistoric.

**Cumulative effects or Impacts** - Cumulative effect or impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or nonfederal or person) undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40CFR 1508.7 - these regulations use effects and impacts synonymously.)

**Decision notice** - The written record of the decision made after a federal agency completes an environmental assessment. The deciding officer chooses one of the alternatives, or a blend of the alternatives, and the decision may be appealed by the public. The Forest Service combines the decision notice with the FONSI (Finding of No Significant Impact) required by NEPA.

**Designated corridor** - Those areas found within the corridors as it was described in the Federal Register.

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

**Dispersed recreation** - A general term referring to recreation use outside developed recreation sites; this includes activities such as scenic driving, hiking, backpacking, hunting, fishing, horseback riding, and recreation in primitive environments.

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

**Easements** - An interest in real property that conveys use, but not ownership, of a portion of an owner's property.

**Habitat** - The area where a plant or animal lives and grows under natural conditions. Habitat consists of living and non-living attributes, and provides all requirements for food and shelter.

**Interdisciplinary Team (ID Team)** - A group of individuals with different training assembled to solve a problem or perform a task. The team is assembled out of recognition that no one scientific discipline is sufficiently broad to adequately solve the problem.

**Limits of Acceptable Change (LAC) System** - A framework for establishing acceptable and appropriate resource and social conditions in recreation settings. A system of management planning. Refer to USDA Forest Service General Technical Report INT-176, January 1985, Intermountain Forest and Range Experiment Station, Ogden Utah.

**Management plan** - A plan guiding overall management of an area administered by a federal or state agency; plan usually includes objectives, goals, standards and guidelines, management actions, and monitoring plans.

**Minimum tool rule** - Apply only the minimum impact policy, device, force, regulation, instrument or practice to bring about a desired result. Achieve results using the most "light-handed" approach.

**Mitigation** - Mitigation includes: (a) avoiding the impact altogether by not taking a certain action or parts of an action; (b) minimizing impacts by limiting the degree or magnitude of the action and its implementation; (c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment; (d) reducing or elimination of the impact over time by preservation and maintenance operations during the life of the action; and (e) compensating for the impact by replacing or providing substitute resources or environments. (40CFR Part 1508.20).

**National Forest Management Act (NFMA)** - A law passed in 1976 as an amendment to the Forest and Rangeland Renewable Resources Planning Act, requiring the preparation of Regional Guides and Forest Plans and the preparation of regulations to guide that development.

**Nondegradation** - A concept that calls for the maintenance of existing environmental conditions if they equal or exceed minimum standards, and for the restoration of conditions below minimum levels.

**Outstandingly Remarkable Values** - Term used in the National Wild and Scenic Rivers Act of 1968; to qualify as outstandingly remarkable, a resource value must be a unique, rare, or exemplary feature that is significant at a regional or national level.

**Public involvement** - A Forest Service process designed to broaden the information base upon which agency decisions are made by (1) informing the public about Forest Service activities, plan, and decisions, and (2) encouraging public understanding about and participation in the planning processes which lead to final decision making.

**Recreation Opportunity Spectrum (ROS)** - A framework for stratifying and defining classes of outdoor recreation environments, activities, and experience opportunities. The settings, activities, and opportunities for obtaining experiences have been arranged along a continuum of spectrum divided into

seven classes: Primitive, SEMI-PRIMITIVE Non-motorized, SEMI-PRIMITIVE Motorized, Roaded Modified, Roaded Natural, Rural and Urban.

1. Primitive - Area is characterized by an 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.
2. Semi-Primitive Non-motorized - Area is characterized by a predominately natural or natural appearing environment of moderate to large size. Interaction between users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present, but would be subtle. Motorized recreation use is not permitted, but local roads used for other resource management activities may be present on a limited basis. Rustic and rudimentary facilities primarily for site protection. No evidence of synthetic materials; use native materials.
3. Semi-Primitive Motorized - Area is characterized by a predominately natural or naturally appearing environment of moderate to large size. Concentration of users is low but there is often evidence of other users. The area is managed in such a way with minimum on-site controls and restrictions. Use of local primitive or collector roads with predominately natural surfaces and trails suitable for motorized vehicles like ATV's or OHV's. Rustic and rudimentary facilities primarily for site protection. No evidence of synthetic materials. Use native materials.
4. Roaded Natural - Area is characterized by predominately natural-appearing environments with moderate evidence of the sights and sounds of people. Such evidence usually harmonizes with the natural environment. Interaction between users may be moderate to high, with evidence of other users prevalent. Resource modification and utilization practices are evident, but harmonize with the natural environment. Conventional motorized use is allowed and incorporated into construction standards and design of facilities. Rustic facilities providing some comfort for the user as well as site protection. Use native materials but with more refinement in design. Synthetic materials should not be evident.
5. Rural - An area where the opportunity to observe and affiliate with other users is important as is convenience of facilities. Self-reliance on outdoor skills of little importance. Natural environment is culturally modified yet attractive (i.e. pastoral farmlands). Interactions between users may be high as is evidence of other users. Some facilities designed primarily for user comfort and convenience. Some synthetic but harmonious materials may be incorporated.
6. Urban - An area where the opportunity to observe and affiliate with other users is very important as is convenience of facilities and recreation opportunities. Urbanized environment with dominant structures, traffic lights and paved streets (like city parks or large resorts). Interaction between large numbers of users is high. Facilities mostly designed for user comfort and convenience. Synthetic materials are commonly used.

**Riparian** - Pertaining to areas of land directly influence by water or influencing water. Riparian areas usually have visible vegetative or physical characteristics reflecting this water influence. Stream sides, lake borders, or marshes are typical riparian areas.

**Riparian Forested Buffer** - An area of trees and other vegetation located in areas adjoining and upgradient from surface water bodies and designed to intercept surface runoff, wastewater, subsurface

flow and deeper groundwater flows from upland sources for the purpose of removing or buffering the effects of associated nutrients, sediment, organic matter, pesticides or other pollutants prior to entry into surface waters and ground water recharge areas.

**River** - A flowing body of water or estuary or a section, portion, or tributary thereof, including rivers, streams, creeks, runs, kills, rills, and small lakes. (Section 16(a) of the Wild and Scenic Rivers Act).

**River Area** - For study rivers, that portion of a river (segment or corridor) and its immediate environment comprising a minimum area extending at least 1/4 mile (1/2 mile to 2 miles in Alaska) from the ordinary high water mark. For designated rivers, the river and adjacent land within the authorized boundaries.

**River Corridor** - Land adjacent to the Wild and Scenic River, managed along with the river to maintain and/or enhance the outstandingly remarkable values of the river. Corridor boundaries may not encompass more 320 acres per river mile.

**Sensitivity level** - A measure of people's concern for the scenic quality of the National Forests. Three sensitivity levels are employed, each identifying a different level of user concern for the visual environment.

Level 1 - Highest Sensitivity

Level 2 - Average sensitivity

Level 3 - Lowest sensitivity

**Standards and guidelines** - Bounds or constraints within which all practices in a given area will be carried out, in achieving the goals and objectives for that area. Standards and guidelines provide environmental safeguards and also state constraints prescribed by law.

**Visual Quality Objective (VQO)**- Categories of acceptable landscape alteration measured in degrees of deviation from the natural-appearing landscape.

Preservation - Ecological changes only.

Retention - Management activities should not be evident to the casual Forest visitor.

Partial Retention - Management activities remain visually subordinate to the characteristic landscape.

Modification - Management activities may dominate the characteristic landscape but must, at the same time, follow naturally established form, line, color, and texture. It should appear as a natural occurrence when viewed in foreground or middleground.

Maximum Modification - Human activity may dominate the characteristic landscape, but should appear as a natural occurrence when viewed as background.

**Watershed** - The entire land area that contributes water to a drainage system or stream.

*WILD & SCENIC RIVERS ACT*