

## MANAGEMENT AREA 1

### Wilderness

There are 10 wildernesses in this Management Area, each of which is handled separately in some portions of the management prescriptions.

#### Wet Beaver Wilderness

**Analysis Area: 35**

**Acres: 6,173**

Forty miles south of Flagstaff, the Wet Beaver Wilderness commences at its eastern border at the confluence of Brady and Jacks Canyons. Moving west, the boundary follows the canyon rim. In the lower reaches of the canyon, the boundary moves back slightly from the rim to include some of the adjacent plateau. The area ends where Wet Beaver Creek canyon opens towards the Verde Valley. Wet Beaver is a steep walled canyon cutting into the rim of the Colorado Plateau. Supai sandstone and shale form striking red cliffs along the lower canyon.

Wet Beaver Creek is a benchmark of pristine riparian habitats and excellent water quality. The Wilderness is an excellent example of one of Arizona's finest but most rare resources, a perennially flowing stream. It is also a place of solitude and primitive recreation for residents of nearby Flagstaff, Sedona, Cottonwood, Camp Verde, and more distant Phoenix. Opportunities for primitive recreation are further enhanced by the narrow twisting character of the canyon which offers seclusion, even with relatively high use. Portions of the canyon can only be traversed by swimming through deep pools. Two major trails, Apache Maid and Bell Trail, offer easy access to the rim country portions of this Wilderness.

Riparian areas are habitat for a diverse community of plant and animal life. The streambed cottonwoods, sycamore, and ash are unlikely neighbors to the nearby canotia. Maidenhair fern and prickly pear cling to the same canyon wall within a few feet of each other.

The black hawk, a State-listed species, nests here and the area is potential habitat for Arizona bugbane (*Cimicifuga arizonica*), a candidate species.

#### Fossil Springs Wilderness

**Analysis Area: 36**

**Acres: 10,436**

Sixty miles south of Flagstaff, the Fossil Springs Wilderness encompasses a steep, wide canyon approximately 1,600 feet down at the edge of the Colorado Plateau. The creek is situated in a region dominated by Quaternary basalt laid down over Supai formation. The springs are located on the southern side of the Wilderness, but are not within the Wilderness. See MA 17 for more discussion of the springs, a Botanical Area.

The area contains one of the most diverse riparian areas in the State. Over 30 species of trees and shrubs provide striking contrast to the surrounding Desert Scrub Zone. Trees include mesquite, catclaw acacia, canotia, cacti, ash, walnut, alder, cottonwood, willow, boxelder, with ponderosa pine dominating the higher plateaus. There also is a wide variety of nonwoody plant life. The vegetative diversity creates many wildlife niches for deer, javelina, and 100 species of birds.

Fossil Creek is an important isolated refuge for the Gila roundtailed chub (*Gila robusta grahami*). The black hawk, a Group II State listed species, is found in this area. The creek is the habitat of the narrow-headed garter snake, known in a small number of localities. Endemic snails have been discovered and as yet are unnamed.

The stream itself is of hydrologic and geologic interest. It will turn blue at times. Geologically there is good exposure above the springs of a scarp of the Colorado Plateau, eroded on Late Paleozoic sedimentary rocks and now buried under extensive Tertiary basalt lava flows.

The area has retained its integrity as an outstandingly clean, pristine site. It has primitive hiking trails and is a good place to find solitude. It is used by big and small game hunters, hikers, and backpackers.

## West Clear Creek Wilderness

**Analysis Area: 37**

**Acres: 15,502**

Located 10 miles east of Camp Verde, West Clear Creek is one of the most rugged, remote canyons in northern Arizona. The canyon forms where Willow Valley and Clover Creek join near two access trails; the Maxwell Trail and the Tramway Trail. The canyon continues westward for approximately 27 miles, measured along the creek, ending near Bull Pen Ranch. The creek continues westward to join the Verde River south of Camp Verde. The canyon is very narrow for most of its length, with many side canyons.

West Clear Creek Canyon is the longest of the canyons cutting through the Mogollon Rim, the edge of the Colorado Plateau. The formations visible in the canyon area are, from bottom to top, Late Paleozoic sedimentary rocks (Supai, Coconino, Kaibab), Tertiary sediments, and Tertiary basalt lava flows.

Vegetation in the canyon is typical of the Southwest: ponderosa pine at the higher altitudes to the east, replaced by juniper as one moves westward.

The canyon does contain some evidence of human use but the apparent naturalness of the area is unaffected. In spite of the short distance from the northern to the southern boundary, the area offers outstanding opportunities for solitude and primitive recreation by virtue of the very steep canyon walls. A trail starts at the west end of Bull Pen Ranch and follows the north side of the private land and then drops down to the creek eastward for a few miles to climb up the northern slope to the rim. This access is fairly easy, even for inexperienced hikers or for fishermen. There are short steep access trails

that are unmaintained from the rim to the canyon bottom. In the main, narrow part of the canyon, there are no trails. It is necessary to wade or swim in many places when hiking from one end of the canyon to the other so that even the most seasoned hiker will find lots of challenge. The canyon is wild and primitive. Users must plan trips carefully.

The proposed West Clear Creek Research Natural Area (RNA) lies in the western portion of the Wilderness approximately 2 miles above Bull Pen Ranch and covering 1,180 acres. See MA 17 for management Standards and Guidelines for RNA's. Primitive hiking and overnight camping are allowed, based on carrying capacity.

## **Strawberry Crater Wilderness**

**Analysis Area: 38**

**Acres: 10,404**

Located 30 minutes north and east of Flagstaff, the Wilderness is gently rolling pinyon-juniper, cinder terrain, about 5,500 to 6,000 feet elevation. The Wilderness contains two areas, separated by a primitive non-system road.

Strawberry Crater is part of the San Francisco Mountain volcanic field, which contains some 600 craters and cones. Strawberry Crater itself is about 50,000 to 100,000 years old. In appearance it is quite different from the younger, rounded cinder cone nearby. The Crater was formed by slow moving basaltic andesite. The ridges of the central Crater show the distinct layering that occurred during eruption. The ridges are broken at right angles to the ground and to one another. The jagged features and deep rust color of Strawberry Crater make it unique among local cinder cones.

The Strawberry Crater area offers the visitor an opportunity to experience the sense of time and endless horizon presented by pinyon-juniper zones. From the low cinder cones, there is a good view of the Painted Desert, the Hopi mesas, and the buttes of the Little Colorado River valley. The area offers opportunities for day hiking, backpacking, and camping. There are a few game animals and small mammals throughout. Opportunities for solitude and for exploring interesting geological and archaeological features exist.

Because of roads along the south and west boundaries and the gentle terrain, ORV tracks and trails are present throughout a major part of the south area. Illegal firewood cutting has also occurred throughout the south portion.

The area contains two sensitive plant species: Penstemon clutei and Phacelia welshii.

## Kachina Peaks Wilderness

**Analysis Area: 39**

**Acres: 18,705**

Located just north of Flagstaff, the Kachina Peaks Wilderness is part of a large, heavily vegetated composite volcano 7,400 to 12,633 feet high including Humphreys Peak, the highest point in Arizona. The San Francisco Mountains exhibit a rich diversity of past geologic events such as lava flows, volcanic eruptions, glaciation, and erosion. The Mountain is an outstanding example of past volcanic activity and preserve the best example of Ice Age glaciation in Arizona in lateral and medial moraines and former streambeds.

Pioneer ecologist C. Hart Merriam used the Mountain in developing his life zone concept. Of the life zones studied, five exist on the Mountain, Alpine Tundra, Timberline, Hudsonian (spruce-fir), Canadian (Douglas-fir), and Transition (ponderosa pine). The only Alpine tundra vegetation in the State is found on the Mountain in a fragile 2-square-mile zone and contains a threatened plant: *Senecio franciscanus*. The Mountain contains large tracts of virgin spruce-fir forests and have the only area of bristlecone pine in Arizona.

There is great diversity of resident wildlife species, including mule deer, elk, turkey, black bear, coyote, mountain lion, red squirrel, and Clark's nutcracker.

Several roads, jeep trails and hiking/equestrian trails provide access to, and within, this unit. Recreational opportunities include day hiking, backpacking, cross-country skiing, snowshoeing, winter camping, snow and ice climbing, small and big game hunting, bird watching, and leaf watching (fall). Hundreds of people hike to the top peaks each year to sample the outstanding views of the Painted Desert, the North Rim of Grand Canyon, and Sunset Crater.

The Mountain is sacred to several western Indian tribes including the Hopi and Navajo. A number of religious shrines have been documented. These shrines have historic and religious value and are currently used by the Hopi and Navajo.

The San Francisco Peaks RNA, a bristlecone pine/tundra/old-growth spruce-fir community, is in the Wilderness. The RNA was established in 1931 and contains 1010 acres. There is a proposed addition in a large stand of bristlecone pine of 282 acres. See MA 17 for management Standards and Guidelines for RNA's. Primitive hiking and camping are allowed based on determined carrying capacity.

The C. Hart Merriam Scenic Area of 275 acres was designated in 1966. Designation of the Kachina Peaks Wilderness superseded the need for this classification, as protection of the visual quality objectives and management for primitive recreation are provided by law.

## **Kendrick Mountain Wilderness**

**Analysis Area: 40**

**Acres: 2,450**

The Kaibab National Forest led the planning effort for the Kendrick Mountain Wilderness. Specific prescriptions for management are included within the Kaibab Forest Plan.

Located 19 miles northwest of Flagstaff, Kendrick Mountain is a heavily vegetated volcanic dome. Outstanding examples of volcanic structures are the largest volcanic dome in the San Francisco volcanic field and rock glaciers.

Kendrick contains a great diversity of ecosystems and their associated wildlife. The area is an important elk summer range, and is an important site for the study of Arizona ecosystems.

Kendrick's steep topography and dense vegetation offers outstanding opportunities for primitive and unconfined activities. These include hiking, backpacking, small and big game hunting, horseback riding, photography, and nature watching. Several hiking trails exist, including one that climbs to the summit. There are outstanding views of the San Francisco Mountain and the North Rim of Grand Canyon National Park.

## **Red Rock-Secret Mountain Wilderness**

**Analysis Area: 41**

**Acres: 47,581**

Located twenty miles south of Flagstaff, the Red Rock-Secret Mountain Wilderness includes spectacular red, tan, and buff cliffs that mark the edge of the Colorado Plateau. The country plunges as much as 2,500 feet into canyons that drain into Oak Creek and the Verde River. Secret Mountain and Wilson Mountain are high mesas jutting out into the lower country. Several lava flows cap the high rims of Tertiary, Triassic, Permian, Pennsylvanian, and Mississippian exposures. The area includes the dramatic backdrops and scenic cliffs that make Sedona a popular tourist spot.

This is an area of great climatic variation. The high rims are cool and moist most of the year, except for May and June. The south end of the wilderness, near Sedona, has a much warmer climate. Mid-winter temperatures average above freezing. Annual precipitation is above normal for the State. There are eight major plant communities: ponderosa pine; fir; chaparral; pinyon-juniper woodland; evergreen oak woodland; Arizona cypress woodland; upper and lower riparian; and desert grassland. The wide variety of vegetative types provide habitat for equally diverse wildlife populations. There are at least 250 species of vertebrates in the area including elk, mule, and white tail deer,

javelina, coyote, rabbit, mountain lion, and bear. Of these, 60 percent depend on the riparian habitat during at least part of their life cycles. Bugbane (*Cimicifuga arizonica*) occurs here and has been nominated for classification as a threatened species. The area has a very high rating as potential peregrine falcon habitat.

Aside from the few species that are officially recognized as being rare or threatened, the area is very interesting to biologists as it represents the northern and southern limits of many species. For example, some 32 species of ferns occur in the canyons and on the slopes. At least three species reach their northern limits here and at least three others reach their southern limits here. There are also a number of habitat types representing unique combinations of plants, animals, and environments.

There are archaeological sites scattered throughout. One or two are particularly striking. This area has been relatively little studied but is particularly interesting to archaeologists because the normally agricultural Sinagua apparently were forced to go to a hunting and gathering economy in the area because of a lack of agricultural land. The Wilderness offers outstanding solitude because of topography and vegetation. Opportunities for primitive recreation are many.

The West Fork of Oak Creek RNA, a willow/boxelder community is in the Wilderness and includes a riparian area and the adjacent canyon walls. The RNA was established in 1931 and includes **1,853** acres. See MA 17 for management Standards and Guidelines for RNA's. Primitive hiking is allowed, but overnight camping is prohibited.

## **Munds Mountain Wilderness**

**Analysis Area: 42**

**Acres: 18,100**

Elevations in the Wilderness range from 3,600 to 6,800 feet. Located east of Sedona, the area is characterized by the moderate to steep slopes of the Mogollon Rim. Rattlesnake, Woods, and Upper Jacks Canyon are the major drainages. Munds Mountain, Lee Mountain, and Horse Mesa are the areas of highest elevation.

Munds and Lee Mountains are unique geologic areas of the Mogollon Rim. There are extensive outcroppings of Coconino and Supai sandstone on the cliff faces of Munds and Lee Mountains, and ramp basalt flows.

A great diversity of vegetation and wildlife species and outstanding riparian habitat characterize the upper Woods Canyon. Depending upon slope and aspect, several vegetation communities are found, including desert sagebrush, desert grass and short grass plains, oak brush, chaparral, oak woodland, pinyon-juniper, and woodland types of the lower and upper Sonoran Zones. There is a small portion of ponderosa pine. Riparian vegetation is found in the major drainages.

The deep drainages and rugged nature of the terrain offer many opportunities for primitive and unconfined activities including hiking, backpacking, horseback riding, swimming, rock climbing, bird watching, and hunting. Due to the striking beauty of the red cliffs and riparian habitat, the Wilderness also offers outstanding opportunities for photography and painting.

This unit contains many prehistoric Indian sites.

## **Mazatzal Wilderness**

**Analysis Area: 43**

**Acres: 2,589 - Coconino National Forest**

The ponderosa pine vegetative type is the Forest's largest commercial timber zone. The ponderosa pine stand blanketing the Mogollon Rim is part of the largest contiguous ponderosa pine stand in the world. There are three major vegetation associations that occur in this Management Area:

Forming part of the northern boundary of the 251,900 acre Mazatzal Wilderness, the area provides unique contrasts between the streamside environments and surrounding high desert as well as desert grassland and chaparral vegetation. There are culturally significant archaeological sites. The area has carved out a deep rugged canyon with attendant riparian habitat and supporting a wealth of wildlife and vegetation. The Verde Wild and Scenic River bisects the bulk of the area and is extremely valuable as riparian habitat for a number of species.

The general remoteness and rugged terrain offer a wealth of opportunities for hiking, fishing, river running, archaeological site viewing, bird watching, and photography. The area presently receives very little visitation other than hunting and hiking. There are a number of continuing activities in the area including reintroducing of river otters, enhancing nesting eagle habitat, viewing prehistoric sites, and river running opportunities. The area abounds in wildlife, supporting southern bald eagles, golden eagles, river otters, beaver, javelina, deer, bear, waterfowl, kit fox, and many other native Sonoran species. The relatively proximity to the populous Phoenix metropolitan area ensures that the area will receive increased use.

Management prescriptions for the Mazatzal Wilderness are contained within the Tonto National Forest Plan.

## **Sycamore Canyon Wilderness**

**Analysis Areas: 44, 45, 46**

**Acres: 44 - 23,970 - Coconino 45, 46 - 28,884 – Prescott, Kaibab 52,854-Total**

The Coconino portion of this Wilderness covers the eastern side of Sycamore Creek up to the rim. The southern portion of the area is a series of broad mesas with gently sloping drainages tributary to the Verde River. Along the Verde there is extensive riparian habitat. The northern section is a series of foothills and canyons that rise to a 300-foot rim of rugged sandstone outcrops along Sycamore Canyon. Elevation ranges from 3,700 to 6,500 feet. These differences in elevation and aspect throughout the canyon result in a variety of contrasting ecological associations, set in spectacular "red rock" geologic formations. Vegetation in the canyon varies from mixed conifer and ponderosa pine in the upper reaches,

to chaparral and woodland in the lower portions. The stream course is a hardwood complex, riparian vegetative type.

Wildlife species include quail and javelina in the lower canyon and elk in the upper reaches.

### **Management Emphasis**

Emphasize wilderness recreation and watershed condition while maintaining wilderness resource values. In order to accomplish this, some additional trail and trailhead development will be done, particularly in the Kachina Peaks, Red Rock-Secret Mountain, West Clear Creek, and Munds Mountain Wildernesses.

Highlights include:

- ◆ Manage Visual Quality Objective (VQO) in wilderness as Preservation. No variation in this acreage is acceptable.
- ◆ Manage for a mix of Wilderness Opportunity Spectrum (WOS) classes with some areas, for example Fossil Springs and portions of Red Rock-Secret Mountain managed toward the primitive end of the WOS spectrum. Wildernesses are managed to maintain wilderness quality and to maintain use within capacity, with first priority for management efforts to the Kachina Peaks Wilderness. Where overuse problems are apparent or imminent, such as some WOS classes in Kachina Peaks, Red Rock/Secret Mountain, Wet Beaver, West Clear Creek, and Sycamore Canyon, use studies are undertaken and remedial action implemented to protect the resource. The study currently underway in the Kachina Peaks is continued and similar studies are undertaken in other areas. Possible corrective measures include the initiation of permit systems or seasonal closure of sensitive areas.
- ◆ Manage to provide a quality experience for people while protecting wilderness resources. It may be necessary to limit numbers of people and/or horses and packstock in some instances. The majority of use in all areas is day use.
- ◆ Manage grazing under Congressional guidelines for grazing in wilderness. Livestock grazing presently occurs in portions of all the wildernesses except Strawberry Crater.

**Recreation Planning and Inventory**

Recreation Prepare establishment reports for West Clear Creek Research Natural Area and expansion of San Francisco Peaks Research Natural Areas during the first half of the decade. See MA 17 for Standards and Guidelines for RNA's. Declassify the C. Hart Merriam Scenic Area within the Kachina Peaks Wilderness. Wilderness Management direction provides stronger protection for the scenic values than the original classification.

**Wilderness Planning and Inventory**

Wilderness Prepare and publish brochures for each wilderness in the first decade to be reviewed annually and updated as needed.

Prepare wilderness implementation schedules for each wilderness during the first decade.

Enforce provisions of 36 CFR, part 261 and Title 18 U.S.C. regarding prohibitions in wilderness.

Implement "NO TRACE" program, providing educational information to users.

Manage wildernesses so that the current net balance of WOS classes is changed no more than  $\pm 15$  percent in the first decade.

<b>WOS Class</b>	<b>Percent of Net Forest Acres</b>
<b>Pristine</b>	<b>17%</b>
<b>Primitive</b>	<b>49%</b>
<b>Semi-primitive</b>	<b>20%</b>
<b>Transition</b>	<b>14%</b>

Use the Limits of Acceptable Change (LAC) concept for establishing objectives, standards, and monitoring levels for wildernesses, as outlined in FSM 2320.

Locate the wilderness boundaries and post them as needed in the first decade to prevent unauthorized intrusions. Close existing roads in the first decade to prevent intrusions.

Develop Wilderness Information Specialist (WIS) program Forest-wide. The WIS volunteers meet the public at wilderness trailheads or in wildernesses to provide information about each area, and patrol each area to pick up garbage and to help visitors.

Determine outfitter-guide needs for each wilderness during the first decade. Coordinate with AGFD for those providing wildlife recreation opportunities.

**Program**

**Components Activities Standards and Guidelines**

Implement corrective measures such as a wilderness permit system if overuse causes unacceptable resource damage. Overuse is determined from:

- Limits of Acceptable Change (LAC) studies
- Range analyses
- Code-a-site inventories
- Professional judgment

The Kachina Peaks, Red Rock-Secret Mountain, Wet Beaver, West Clear Creek, and Sycamore Canyon Wildernesses are closely monitored to determine whether or not corrective measures are needed in the first two decades.

Wildernesses are open to horse use unless specifically restricted.

Bicycles are not allowed in wildernesses.

**Wilderness-specific Guidelines:**

Standards and Guidelines for the Kendrick and Mazatzal Wilderness are in the Kaibab and Tonto Forest Plans, respectively.

Provide regular Wilderness Ranger patrol in wildernesses to the degree necessary to meet the standards for each area. If funding is limited, use volunteers to accomplish as much of this work as possible via the WIS program. Standard level trail maintenance is defined in the implementation schedules for each wilderness.

**Wet Beaver**

- Maintain the current WOS classes.
- Acquire legal access for a trail through private land in the first decade.
- Improve trailhead at Beaver Creek Ranger Station.

**Fossil Springs**

- Maintain the current WOS classes.
- No new trail construction.

**West Clear Creek**

- Maintain the current WOS classes.
- Acquire legal access at Bull Pen Ranch or by-pass with a trail.
- Develop trailheads at Bull Pen Ranch, in the first decade, and Maxwell, Tramway, and Cedar Flat in the second decade.
- Prepare establishment report for West Clear Creek RNA in the first decade.

**Program**

**Components Activities Standards and Guidelines**

Strawberry Crater

- Maintain the current WOS classes, except for changes due to trail construction.
- Construct trail to northeast side of Strawberry Crater.
- Stop motorized vehicle intrusions and firewood cutting.
- Close road between north and south pieces of the Wilderness through physical and administrative closure by the end of FY 88.

Kachina Peaks

- Consult with Native Americans on projects.
- Change is allowed in WOS classes to accommodate trail development.
- Construct a trail around the Mountain that links existing and proposed trailheads in the first decade.
- Construct trailheads at Bismarck Lake, Snow Bowl, Abineau Canyon, Lockett Meadow, Schultz Pass, and Freidlein Prairie by the end of the second decade. Locate, plan, construct, and manage in a manner that protects other resource values.
- Foot traffic only on the Humphreys Peak Trail and from Humphreys Peak to Doyle Saddle along the ridge.
- No horse or packstock use above timberline.
- No overnight camping above timberline.
- Use in the City of Flagstaff watershed (draining into Inner Basin) is limited to day-use foot traffic. The area may be closed if unacceptable damage occurs as determined by a degradation of water quality.
- Protect *Senecio franciscanus* by an area closure.
- Prepare establishment report for San Francisco Peaks RNA addition in the first decade. In the interim, manage the area to preserve the suitability for designation.
- Declassify C. Hart Merriam Scenic Area in the first decade.

Red Rock/Secret Mountain

Munds Mountain

**New direction is contained on the following pages. Refer to pages 108-1 through 108-4.**

## **Wilderness (MA 1)**

This portion of MA 1 management direction includes information for Munds Mountain, Red Rock-Secret Mountain and a portion of the Sycamore Wilderness. This revised direction was the result of the analysis for the Sedona/Oak Creek Planning Area. The information in Amendment 12 supersedes any conflicting direction within the remainder of MA 1 for these Wildernesses.

### **Management Emphasis**

Ecosystem processes, such as fire, play a natural role.

People experience solitude, natural quiet, self discovery and self reliance.

### **PLANTS, WILDLIFE, SOIL, AIR AND WATER**

#### **Objectives**

1. Fire, under prescribed conditions, is allowed to play a natural role. Fire management strategies are prepared and implemented for all Wildernesses.
2. Native fish habitat exists and functions within the West Fork of Oak Creek. Angling opportunities are available.

### **SCENERY**

#### **Objectives**

1. Visitors see a landscape in which the visible effects of recent human activity are nonexistent or rare.

#### **Guidelines**

1. Limit signing in Wilderness to those that are essential for resource protection and user safety.
2. Facilities are rare and are constructed of rough-hewn native materials.

### **RECREATION**

#### **Goals**

1. Pristine and Primitive WOS/ROS settings predominate.
2. Feature opportunities for restorative experiences and benefits.
3. Uses adjacent to Wilderness do not compromise Wilderness values.

**Objectives**

1. Manage as prescribed by Congress for Primitive attributes. Several inconsistencies exist, such as at Bell Rock, West Fork, Boynton Canyon and some places near private land. Make every effort to limit the degradation of Wilderness values. Where needed, take management actions in these places beyond levels normally associated with Wilderness management in order to protect visitor experience and resources. Near Secret Mountain and adjacent canyons, Sycamore Basin, upper Woods Canyon and portions of Jack's Canyon and Horse Mesa, the objective is a Pristine WOS setting.
2. Use popular places such as Bell Rock, Boynton Canyon and West Fork as opportunities to inform visitors about Wilderness.
3. Limit camping and recreation fires at or near trailheads and private lands as needed to protect resources, resident security and sanitation.
4. Establish key Wilderness trailheads with sanitation, orientation and interpretation.
5. Expand opportunities for Wilderness day hiking by creating loop hikes. Explore the feasibility of constructing a trail connection from Slide Rock State Park to the Sterling Pass Trail.
6. Evaluate the need for additional limitations on visitor use at Boynton Canyon and the West Fork of Oak Creek.
7. Consolidate the numerous trails up West Fork to one primary trail located in a way that avoids impacts on sensitive species. Keep creek crossings to a minimum when designating the trail route.
8. Designate camp areas in West Fork consistent with protection of threatened, endangered and sensitive species.
9. Discourage bicycles in Wilderness through such methods as ranger patrols, placement of bike racks near Wilderness boundaries, "Wilderness ahead" signs located outside of the Wilderness, improved trail design and expanded trail opportunities outside of the Wilderness.
10. Implement a Wilderness permit system for Red Rock-Secret Mountain Wilderness that will permit both day and overnight use.
11. Narrow the trail width of old 4x4 roads at Dry Creek, Secret Canyon, Devils Bridge, Margs Draw, Long Canyon, Vultee Arch, Doggie and Mooney Trails in order to improve the Wilderness experience.

12. Obtain a permanent easement for the Margs Draw Trailhead Wilderness access.
13. Rehabilitate damaged Wilderness sites, including West Fork, Bell Rock, Sycamore Pass, Sedona's north and east urban interface, Margs Draw and Boynton Canyon.
14. Update Wilderness Implementation Schedules to reflect Forest Plan objectives. Use the Wilderness Opportunity Spectrum as a tool to describe recreation goals.

**Standards**

1. Camping and recreation fires are prohibited in Boynton Canyon.
2. Visitor travel in Boynton Canyon is allowed only on designated trails or by special use permit.
3. Camping is prohibited throughout the West Fork of Oak Creek, except in designated campsites. Recreation fires in the West Fork of Oak Creek are prohibited.
- 4. In wilderness group size limit is generally 12 or fewer persons.**

**Guidelines**

1. Allow wheelchairs suitable for outdoor use but do not make special accommodations for wheelchairs in Wilderness. Encourage alternate transportation methods, such as horseback riding, that are appropriate to the Wilderness setting.
2. For the West Fork of Oak Creek Canyon establish a reservation only permit system for overnight camping. This system should include the following: no camping within 2.5 miles of the confluence, no more than 5 camping areas, each camping area to accommodate 2-4 camping parties, camping party size to be generally 4 persons, camp areas to be located outside of spotted owl protected activity centers where possible, and total annual overnight use to be maintained at or less than 1997 use (approximately 1,300 persons).
3. Monitor human use in West Fork Canyon including length of stay, number of visitors, travel routes, time of visit, and party size.

## **COMMERCIAL USES**

### **Objectives**

1. Continue to support Wilderness-dependent recreation opportunities such as backpacking, horse packing and hunter guiding where these activities are consistent with resource and WOS/ROS objectives.

### **Guidelines**

1. Commercial tour activities should be limited to trails and campsites designated for such use.
2. Commercial tours will be limited to Wilderness-dependent opportunities that cannot occur outside of Wilderness. Generally maintain or reduce current levels of commercial touring in Wildernesses.

## **INTERPRETATION AND COMMUNICATION**

### **Objectives**

1. Encourage widespread understanding of the philosophy of Wilderness and support for its natural and social benefits. People should be prepared with appropriate equipment and information. Visitors should learn about sensitive ecological features, know their responsibility and act in a way that protects ecological systems.
2. Expand partnerships such as the resort Wilderness Ranger Program to increase awareness of Wilderness values and etiquette.
3. Increase residents' awareness of the Wilderness near them by providing them with information about Wilderness.
4. Provide education and information at all Wilderness trailhead access points. This should include information about the variety of trails and experiences available in the Munds Mountain, Red Rock-Secret Mountain, and Sycamore Canyon Wildernesses and information about personal safety leave-no-trace etiquette and pertinent regulations.
5. Place major emphasis on interpretation about Wilderness at popular access points, such as Boynton Canyon, Bell Rock, West Fork and Dry Creek Road.

**Program**

**Components Activities Standards and Guidelines**

Sycamore Canyon

- Maintain existing WOS classes, except for changes d to trail construction or reconstruction.
- Evaluate the need for a trail from the vicinity of White Horse Lake to and along the bottom of Sycamore Canyon as a part of the wilderness implementation schedule. If included, construct with volunteers during the first decade.
- Improve road access to trailheads.
- Protect/preserve Taylor Cabin by regular patrol.

**Wilderness--Standard Level Management (SLM)**

Standard level management meets Forest Plan objectives. The intensity of management varies according to the specific objectives and WOS class.

The following is a general description of SLM in the Kachina Peaks, south side of Red Rock-Secret Mountain, South end of Sycamore Canyon, west end of West Clear Creek, and the west end of Wet Beaver Wildernesses.

Develop and implement implementation schedules with annual updates. Develop a brochure for each wilderness, including a trail map. Administer a permit system, if one is implemented. Maintain all wilderness facilities to Condition Class I. Provide parking and toilet facilities at major trailheads. Install traffic counters at all trail heads. Implement WIS program. The goal is to protect wilderness values and provide a quality wilderness experience. Use volunteers as much as possible, particularly during peak season to patrol, pick up litter, break up fire rings, restore damaged sites, contact the public, and maintain trail condition logs.

The following is a general description of management in the Fossil Springs, Munds Mountain, Strawberry Crater, east end of West Clear Creek, east end of Wet Beaver, north portion of Sycamore Canyon, and the north side of Red Rock-Secret Mountain Wildernesses.

Use volunteers as much as possible, particularly during peak season to patrol, pick up litter, break up fire rings, restore damaged sites, contact the public, and maintain trail condition logs. Service trail heads as necessary. Public safety and resource protection are emphasized. When permanent damage to the resource is apparent or imminent, measures are taken to both limit and distribute visitor use in wilderness by permit system or other methods. Maintain facilities and signs to protect the investment only.

**Program**

**Components Activities Standards and Guidelines**

**Nonstructural Wildlife Habitat Improvements, T&E Species**

Wildlife Protect 325 acres of alpine areas on the San Francisco Mountains to improve habitat for *Senecio franciscanus* by closing the area during snow-free periods. Access is limited to designated trails.

**Range Resource Planning and Inventory**

Range Wildernesses are open to grazing. Strawberry Crater Wilderness has no grazing capacity assigned to it and is managed at Level A. The tundra and upper mixed conifer/spruce-fir slopes within the Kachina Peaks Wilderness are closed to grazing and are not part of any grazing allotment. Other wildernesses have a total of 77,426 acres of full capacity lands. Of the total acres, 2,710 acres are in less than satisfactory condition. Less than satisfactory range conditions are improved by completion of the development program contained in the AMP.

Grazing management in wilderness is in accordance with FSM 2300 and Conference Report S.2009 (H.R. No. 96-1126).

Grazing management is generally at Level C.

Permits for grazing in wildernesses are issued only in areas where grazing was established at the time of wilderness designation.

Any adjustments in the numbers of livestock permitted to graze in wildernesses will be made as a result of revisions in the normal grazing and land management planning and policy setting process, giving consideration to legal mandates, range condition, and protection of the range resource from deterioration. It is anticipated that the numbers of livestock permitted to graze in wilderness would remain at the approximate levels existing at the time an area enters the wilderness system. If studies reveal conclusively that increased livestock numbers or animal unit months (AUM's) could be made available with no adverse impact on wilderness values, such as plant communities, primitive recreation, and wildlife populations or habitat, some increase in AUM's may be permissible (Conference Report S.2009 (H.R. No. 96-1126)). By the same token, if it is discovered that present livestock numbers have an adverse impact on wilderness values, some decrease in AUM's may be necessary.

**Range Structural Improvements**

New structural improvements and maintenance and replacement of existing improvements are considered in the overall context of the purpose and direction of the Wilderness Act and evaluated through practical, reasonable, and uniform application of the "Grazing in National Forest Wilderness Areas" committee guidelines.

**Program**

**Components Activities Standards and Guidelines**

New structural range improvements deemed necessary for proper management and/or protection of the wilderness resource must be approved by the Forest Supervisor.

Motorized equipment to transport, install, or maintain range improvements, or for use in conducting the necessary management practices associated with the grazing operation must be approved by the Regional Forester.

**Integrated Stand Management**

Timber Consider wilderness acres in meeting some wildlife habitat objectives in 10K Blocks. See MA 3 Standards and Guidelines for applicable management direction.

**Air Quality**

Air Review Prevention of Significant Deterioration (PSD) permit applications to determine the potential effect increased emissions from major stationary sources will have on air quality related values (AQRV's) in National Forest Class I areas. Protect the current status of AQRV's in the Sycamore Canyon Wilderness Class I Airshed. Treat other wildernesses in the same manner as Class I Airsheds. Predict the impacts of air pollution generating activities with current and cost effective modeling techniques.

Monitor specific air pollutant and meteorological parameters necessary for determining air quality in Class I areas.

In the Class I Airsheds, maintain high quality visual conditions. The form, line, texture, and color of characteristic landscapes is clearly distinguishable when viewed as middleground. Cultural resources and ecosystems remain unmodified by air pollutants. Determine baseline information and the background condition of the above AQRV's, and specify limits of acceptable change that will affirmatively protect these values in Class I Airsheds.

**Water Rights**

Evaluate the need in the first decade to file for reserved water rights under the Wilderness Act.

**Fire Management Planning and Analysis**

Protection Fire under prescribed conditions is allowed to play a natural role in wilderness.

Implementation schedules are prepared and implemented for all wildernesses by December 1990.

Fires that are not a threat to areas outside the wilderness are allowed to run their natural course provided that the following prescribed conditions and situations are met:

- Fuel levels permit a sound natural fire program to be implemented.
- Fire forces are available in sufficient numbers to contain the fire(s) during the period between the afternoon fire weather forecast and 10 a.m. the next day.

**Program**  
**Components Activities Standards and Guidelines**

Fires that are not a threat to areas outside the wilderness are allowed to run their natural course provided that the following prescribed conditions and situations are met:

- Fuel levels permit a sound natural fire program to be implemented.
- Fire forces are available in sufficient numbers to contain the fire(s) during the period between the afternoon fire weather forecast and 10 a.m. the next day.
- Fire behavior, both existing and predicted is such that fire forces are expected to be able to stop the spread of the fire(s) in any direction.
- Fuels in the path of the fire(s) are of an amount, size, and arrangement that expected fire intensity will not cause unacceptable damage to the wilderness resource.
- The fire creates a mosaic vegetation pattern. Fires outside of these limits are unacceptable. The following ratio of burned to unburned acres are achieved:

<u>% Burned</u>	<u>% Unburned</u>
25 to 75	75 to 25

- Fires that do not meet prescribed conditions are declared wildfires and suppressed in accordance with the following general suppression objectives. More specific suppression objectives for portions of the wildernesses may be developed as a part of the implementation schedules.
- Kachina Peaks--10 acres; Kendrick Mountain--10 acres; Strawberry Crater--300 acres; Red Rock-Secret Mountain--300 acres; Munds Mountain--300 acres; West Clear Creek--300 acres; Wet Beaver Creek--300 acres; Fossil Springs--300 acres; Sycamore Canyon--1,000 acres;
- In areas where unnatural fuel buildups have occurred because of the suppression of natural fires, prescribed fire using planned ignitions is used to restore a natural fuel condition so that fire can be allowed to play a natural role.

Fires that exceed prescription are suppressed using tactics that minimize impact on wildernesses.

Fires or portions of fires that threaten to or do cross out of the wilderness are managed under fire management direction for the area outside the wilderness.

Fires in the RNA's are allowed to burn undisturbed unless they threaten the uniqueness of the area.

## Verde Wild and Scenic River - Management Area 2

Analysis Area: 34

Acres: **2,888**

The Verde Wild and Scenic River was designated by the Arizona Wilderness Act of 1984, Public Law 98-406, on August 28, 1984. Beginning at the most southern point of the Forest, the confluence of the Verde River and Fossil Creek, the Wild and Scenic River stretches northward approximately 22 miles to a parcel of private land south of Camp Verde. The Wild and Scenic River designation applies to both sides of the river and generally totals one-half mile wide, one quarter mile on each side of the river. The area overlaps with a portion of the Mazatzal Wilderness.

Increased use of the Verde Wild and Scenic River is expected to occur as it is the only such designated river in Arizona. The Arizona Wilderness Act, 1984, specified that the designation would not prevent water users receiving Central Arizona Project water allocations from diverting the water through an exchange agreement with downstream water users in accordance with Arizona water law. Streamflows could be reduced in the future.

A Comprehensive River Management Plan (CRMP) has been completed for the Verde Wild and Scenic River. The CRMP establishes a comprehensive approach to managing the free-flowing natural character of the river and its outstandingly remarkable values. The CRMP also provides detailed direction, management standards, implementation actions, and monitoring that will be applied to protect and enhance river values. The CRMP is the result of a coordinated effort of three National Forests, Tonto, Prescott, and Coconino, along with many other Federal, State, and local agencies, as well as concerned citizens, to identify a plan for protection and use of the river.

Each of the Forest Plans for the three National Forests has been amended to reflect the CRMP direction. Due to the low levels of development present along the Verde River at the time of its designation, the Arizona Wilderness Act (P.L. 98-406) divided the river into a Wild segment and a Scenic segment. There is no Recreational designation along the Verde River. The Scenic River Area begins near Beasley Flat, continues downstream about 18.8 miles to the boundary of the Mazatzal Wilderness. The Wild River Area lies within the Mazatzal Wilderness, beginning at the Wilderness boundary and continuing downstream about 22.2 miles to the confluence of Red Creek on the Tonto National Forest.

### Management Emphasis

Maintain the Wild & Scenic River outstandingly remarkable values (ORV's) for scenic, fish, wildlife, and historic and cultural values, while also protecting the river's free-flowing character. The CRMP describes in further detail the Wild and Scenic Rivers legislation and the details of the ORV's for this River. The Act also requires that the

Wild & Scenic River must first be administered in such a manner as to protect and enhance the river's values, and second to allow other uses that do not interfere with public use and enjoyment of those river values. Protection and enhancement of the specific outstandingly remarkable values and water quality within the VWSR provides the foundation upon which all management actions and authorizations of uses are based. The following is an excerpt from the CRMP summarizing those values.

- ◆ Scenery - The Verde River has outstandingly remarkable scenic values. The scenic qualities of landform, vegetation, and water within the Verde Wild and Scenic River are distinctive. Landform varies from steep, rocky canyons framing the river, to plateaus dropping to wide flood plains, with the river as a central feature. Vegetation varies according to terrain, from broad mesquite bosques and cottonwood gallery forests to narrow bands of riparian willows, in contrast to the surrounding dry grassland and desert vegetation. Scenic qualities of the perennial Verde River change dramatically with the seasons and with changes in river flow. Dramatic fall color contrasts with summer greenery. Water flow changes from shallow, still pools and slow water, to high flow, seasonal rapids, and waterfalls. Recreationists view the river corridor from the high edges of plateaus and canyons, from within the floodplain, from the riverbank, and from the surface of the river itself. The VWSR area is visually sensitive due to the combination of high viewer expectations, generally long duration of view, and high amount of detail visible by the viewer. The river corridor is characterized in many locations by open, expansive vistas viewed from numerous locations.
- ◆ Fish - Outstandingly remarkable fish values along the Verde Wild & Scenic River (VWSR) results from the high quality habitat that the river provides for native fish species, including several federally endangered and threatened listed species and their critical habitats. Periodic natural flooding, a diversity of aquatic habitats, and a native fish assemblage make the VWSR a unique and valuable resource in the Southwest. Historically, the native fish assemblage in the Verde River was comprised of razorback sucker, Colorado pikeminnow, spokedace, loach minnow, Sonora sucker, desert sucker, roundtail chub, speckled dace, and longfin dace. Three of these fish species, the razorback sucker, Colorado pikeminnow, and the loach minnow were extirpated from the Verde River basin. The current native fish assemblage found within the VWSR is comprised of the Sonora sucker, desert sucker, the reintroduced razorback sucker and Colorado pikeminnow, and the occasional roundtail chub. The longfin dace and speckled dace are common in tributaries to the VWSR, and only briefly occupy the mainstem after downstream displacement from the tributaries due to flooding. Generally, native species comprise less than twenty percent of the fish community in the VWSR reach of the Verde River. The only notable exception was in 1995 when high reproduction and recruitment of desert and Sonora suckers into the fish community was documented due to spring flooding providing suitable spawning conditions.

Currently, federally listed fish species in the VWSR include the razorback sucker (endangered), Colorado pikeminnow (experimental nonessential), and the roundtail chub (Forest Service sensitive). There is also designated critical habitat for the razorback sucker throughout the reach of the VWSR, and for the spokedace and loach minnow from Beasley Flat to the Fossil Creek confluence. The AGFD began reintroductions of razorback sucker and Colorado pikeminnow into the Verde River in 1981 and 1985, respectively. Since 1994, the VWSR has been the focal area of the recovery program in Arizona with annual goals to stock 2,000 large individuals of each species.

The introduced, nonnative fish assemblage found in the VWSR includes common carp, channel catfish, flathead catfish, smallmouth bass, largemouth bass, green sunfish, red shiner, and mosquitofish.

- ◆ Wildlife - Outstandingly remarkable wildlife values along the Verde Wild & Scenic River result from the high quality habitat that the river and its associated riparian areas provide. The VWSR provides habitat for a diverse array of wildlife species and contains some of the most important riparian and associated upland habitat found in Arizona and the Southwest. A number of factors combine to make this area extremely critical for riparian-dependent species, as well as terrestrial wildlife in general. The River's combination of location and orientation provides a ribbon of riparian habitat suitable for birds that seasonally migrate through or inhabit these life zones. It also provides wintering habitat for waterfowl and year-round riparian and associated upland habitat for resident species. Finally, it provides a source of water and aquatic habitat that supports a diverse array of species in an otherwise arid environment.
- ◆ Currently, there are 50 threatened, endangered, sensitive or special status wildlife species present or potentially present within the River corridor. The corridor contains important nesting habitat for the bald eagle and potential and suitable habitat for the southwestern willow flycatcher, western yellow-billed cuckoo, and Yuma clapper rail. It is home to a thriving population of river otters and beaver. It is a summer home to many riparian-dependent, neotropical migrant birds. In addition, the River and its riparian area provides habitat for over 60% of the vertebrate species that inhabit the Coconino, Prescott, and Tonto National Forests. The high variety of both resident and migratory wildlife species found in the River corridor illustrates the corridor's value for these species within Arizona and the Southwest. Riparian vegetation quality and quantity ultimately determines the number of wildlife species, the population of each species, and sustainability of these levels of the outstandingly remarkable wildlife resource of the VWSR. Willows are a principal vegetation component, but velvet ash, Arizona sycamore, and Fremont cottonwood are also important. Although the river and floodplain seem large, less than 30% of the valley bottom has wetter soils capable of supporting lush riparian vegetation communities. Because most of the wildlife found within the VWSR is dependent on riparian vegetation for their livelihood, the restricted distribution and limited acreages only increase the importance of this habitat to the wildlife.
- ◆ Historic and Cultural - The Verde Wild and Scenic River corridor is known to contain archaeological evidence of the occupation and agricultural use and modification of the Verde River floodplains, terraces, and hill slopes by people from prehistoric to modern times. There is evidence of the occupation of people related to the prehistoric Hohokam and Southern Sinagua cultural traditions over a period of at least 600 years and there may be sites from as long ago as 8,000 to 10,000 years. The River corridor is also expected to contain a number of pre-European contact and historic sites reflecting its use and occupation by Yavapai and Apache hunters, gatherers, and farmers. It is known to have sites representing the Anglo, Hispanic, and Basque stockmen who raised or drove cattle and sheep throughout the area. The earliest hydroelectric power plant in the State of Arizona is located in the VWSR corridor at the small settlement of Childs, still occupied and functional. The significance of the Childs power plant has already been recognized by its listing in the National Register of Historic Places. The VWSR corridor also contains the burned out remains of one of Arizona's first tourist developments, the Verde Hot Springs Resort across the river from Childs.

*Chapter 4 – Management Direction  
Verde Wild and Scenic River – Management Area 2*

- ◆ Manage for the following indicator species:
  - ◆ Macroinvertebrates
  - ◆ Yellow breasted chat

Highlights from the establishing legislation:

All management activities in and near the river corridor shall be administered in such a manner as to protect and/or enhance the identified outstandingly remarkable values for the Verde Wild & Scenic River (PL 90-542, Wild & Scenic Rivers Act, 1968, as amended, Section 10(a) and Section 12(a)).

The free-flowing characteristics of the river shall be protected (PL 90-542, Section 1(b)).

River characteristics necessary to support the existing classifications of Wild or Scenic shall be protected during all management activities (47 CFR 173, 9/82) (PL 90-542, Section 2(b)(1 and 2)).

Water resource development projects, either within the designated river corridor or adjacent to it, which would have a direct and adverse effect on the values of the Verde River, shall not be allowed (PL 90-542, Section 7(a)).

Any conflict between the provisions of the Wilderness Act and the Wild and Scenic Rivers Act shall be resolved in favor of the more restrictive provisions (PL 90-542, Section 10(b)).

This designation shall not prevent water users receiving Central Arizona Project water allocations from diverting that water through an exchange agreement with downstream water users in accordance with Arizona water law (P.L. 98-406, Arizona Wilderness Act, 1984).

The following Desired Conditions (Goals) apply to Coconino, Prescott, and Tonto National Forest lands within the Wild and Scenic River corridor for the Verde River. This management direction is located in the CRMP. For the Coconino National Forest summarized management direction for the VWSR is located in Management Area-2 (MA2), for the Prescott refer to the MA-9, and for the Tonto refer to MA-1C, MA-1D, and MA-4B.

### **Desired Conditions (Goals) for Wild and Scenic Sections**

#### **Scenery**

Within the VWSR corridor the public experiences a landscape that is dominated by a free-flowing river and is predominantly natural appearing. Deviations from the natural landscape are limited and may include valued cultural landscape features and essential and minimal management elements that blend with the natural landscape. The Childs area is considered a valued cultural feature and managed to retain its scenic integrity.

Scenic integrity is Very High throughout the VWSR corridor except at Beasley Flat and Childs, where the scenic integrity is High. Important and desired cultural features are identified and the public has an opportunity to view them.

### **Fish**

The VWSR contains high quality habitat for self-sustaining populations of razorback sucker, Colorado pikeminnow, roundtail chub, and other native fish species. The public is aware of the importance of native fish and releases listed species when caught. The public is aware of sport fishing resources and opportunities. Aquatic habitat is maintained in a condition with low substrate embeddedness, abundant aquatic food supply, and stable streambanks.

### **Wildlife**

Wildlife management within the VWSR focuses on a variety of riparian dependent species including migratory birds, management indicator species, game species, and threatened, endangered, and sensitive species such as southwest willow flycatcher, yellow-billed cuckoo, and bald eagle. Habitat condition for these species is at optimum levels as determined by vertical and horizontal cover, plant density, and species composition of naturally occurring riparian vegetation. Population trends are identified and adjustments made in permitted activities when needed to protect habitat. In the Wild Section, natural habitat processes occur, while habitat improvements are implemented as needed to meet wildlife habitat management objectives in the Scenic Section.

The river corridor provides important consumptive and non-consumptive wildlife use opportunities for visitors. The public is aware of these opportunities as well as species protection requirements.

### **Cultural/Historic**

Visitors to the VWSR corridor are aware of the cultural and historic values present, the role of human activity in shaping the landscape of the area, and the importance of protecting these resources. Cultural and historic sites are accessible for public visitation and interpretive facilities are available at primary river access points.

Historic and cultural properties are preserved in place wherever feasible. These sites are protected from vandalism, looting, pothunting, and other forms of unnatural deterioration by inspection and monitoring. Excessive forms of natural deterioration such as gully erosion and animal burrowing that threaten the integrity of features or cultural deposits are minimized. Adverse effects from management activities, visitor impacts, and damaging levels of natural deterioration are mitigated.

An inventory of historic and cultural sites, traditional tribal use areas, and places of traditional or religious significance provides data on all types of sites and cultural values present in the valley. The significance of the historic and cultural resources of the VWSR corridor is recognized in a nomination to the National Register of Historic Places.

### **Vegetation**

Plant communities within the River corridor are dominated by native species. Woody, herbaceous, and emergent native vegetation is present and consistent with its potential

species composition, density, and structural diversity. Native vegetation offers both bank protection and sediment trapping during floods. Gallery forests are a component of the floodplain surfaces. Trees, shrubs, and grasses cover upland areas adjacent to the River. Soil condition, grass density, and organic matter allow for infiltration of precipitation. Development of native plant communities is not impeded by invasive plant species

### **Recreation**

The VWSR offers exceptional river-related recreation opportunities that emphasize non-motorized recreation. Recreation activities occur at appropriate locations and intensities such that ORVs are protected and enhanced. Recreation opportunities and activities are primarily nature based and offer outstanding opportunities for experiencing scenic beauty, and the intrinsic cultural and natural resources associated with the river. The high demand for both camping and day use of the VWSR is balanced with the maintenance of outstanding opportunities for primitive recreation and solitude in the Verde Wild River.

Facilities and management emphasize recreation opportunities for individuals, families, and small groups. Both day use and camping recreation opportunities are offered, within a predominantly undeveloped river setting. Beasley Flat and Childs areas are managed for higher levels of visitation and to provide river access while meeting the demands of intensive day-use recreation activities in the river's floodplain. Recreation facility operation, maintenance, enforcement, and management presence are consistent with desired resource conditions for ORVs. Recreation user conflicts are minimal.

Except for the developed areas of Childs and Beasley Flat, the VWSR is managed for a predominantly uncrowded setting. The character of recreation settings is identified and managed through the Recreation Opportunity Spectrum (ROS). Recreation use activities and capacities are established for commercial and non-commercial uses consistent with outstandingly remarkable values and ROS/WOS (Wilderness Opportunity Spectrum) classifications.

Boating activities are allowed, consistent with protection and enhancement of the ORVs. Boating on the VWSR offers outstanding opportunities to experience whitewater rafting on a wild and free flowing river. There are undeveloped river camps available and opportunities for primitive recreation and solitude.

Opportunities for new commercial recreation uses are very limited. Protection of the natural resources, non-commercial recreation experience, and availability of recreation space for general public use are primary considerations in managing recreation special uses.

### **Access and Travel Management**

Roads and trails provide access within the VWSR consistent with protection and enhancement of scenic, cultural/historic, wildlife, and fish outstandingly remarkable values and protection of soil and water quality. The transportation system supports interpretation, recreation, and resource management activities.

### **Interpretation and Environmental Education**

The outstandingly remarkable values of the VWSR are interpreted to provide public appreciation and understanding, and increased resource stewardship. Interpretation and

education are integral to successful resource management of the corridor. Interpretive themes stress resource protection, stewardship, “Leave No Trace” and “Tread Lightly” ethics. Interpretation and education are the primary means of accomplishing management objectives that relate to user impacts and behavior.

**Wilderness**

Visitors have opportunities for primitive recreation, solitude, physical and mental challenge and inspiration consistent with preservation of the Wilderness resource. Natural processes operate freely.

**Management Direction for the Verde Wild and Scenic River**

The remainder of the management direction (standards) is in the Verde Wild and Scenic River Comprehensive River Management Plan (CRMP, 2004). Included in the CRMP is unique direction for the Verde Wild and Scenic River along with other management direction that is duplicated elsewhere in the Forest Plan but was highlighted for the CRMP as a matter of emphasis. In addition, the CRMP has some site-specific direction not suitable for the Forest Plan, such as trail and road obliteration.

*Chapter 4 – Management Direction – Standards/Guidelines  
Verde Wild and Scenic River – Management Area 2*

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## **Ponderosa Pine and Mixed Conifer, Less Than 40 Percent Slopes - Management Area 3**

**Analysis Areas: 1-9, 11, 12, 57, and 59**

**Acres: 511,015**

### Ponderosa Pine

The ponderosa pine vegetative type is the Forest's largest commercial timber zone. The ponderosa pine stand blanketing the Mogollon Rim is part of the largest contiguous ponderosa pine stand in the world. There are three major vegetation associations that occur in this Management Area:

- ◆ Ponderosa pine with a Gambel oak understory occurs on a wide variety of elevational and climatic ranges. It is most commonly found on warm dry slopes. The oak usually comes in after a site disturbance, such as fire or logging. New Mexican locust is often associated as another understory species.
- ◆ Ponderosa pine with intermingled groups of aspen is found mostly on the west and north sides of the San Francisco Peaks. These stands are an important tourist attraction and a source of preferred firewood.
- ◆ Ponderosa pine with a ponderosa pine understory is characterized by relatively pure stands of ponderosa pine regeneration with inclusions of Douglas-fir, white fir, and Gambel oak. The ponderosa pine regeneration is dominant and occupies more than 75 percent of the site.

Logging, grazing, firewood gathering, hunting, and recreation are historic uses. There are many roads. The area provides crucial and key habitat for many species of wildlife because of diversity of cover and food production. Deer, elk, turkey, and songbird nesting habitat are found in the area.

Ponderosa pine is often called a fire dependent species because fire is required for successful regeneration. The thick bark of the ponderosa pine provides more protection from fire than bark of some other species. Ponderosa pine productivity can be maintained through harvesting and use of fire. Intermediate harvesting improves the growth rates on the remaining trees by concentrating the site's growth potential onto fewer trees. Stocking level control early in the life of the stand, precommercial and commercial thinning, is important to the long-term stand growth rates.

Natural fuel accumulations are moderate, 15+ tons per acre, and fire occurrence is the highest in the nation (see EIS Chapter 3). Logging and precommercial thinning residues can add 10 to 30 tons per acre. These accumulations can produce sufficient heat (B.T.U.'s) and flame length to kill residual trees during wildfires. Dispersed recreation use is heavy and risk of person-caused fires is high.

The incidence of dwarf mistletoe is moderate Forest-wide. However, areas of heavy infestations are a continuing problem and significantly reduce growth.

#### Mixed Conifer

The woody vegetative composition of the mixed conifer is variable and consists of overstories and understories of ponderosa pine, Douglas-fir, white fir, and aspen in a wide variety of mixtures.

Recreation, timber harvest, and wildlife are the major uses of the mixed conifer. Dry and wet meadows are interspersed throughout the area and provide an important source of food for wildlife and domestic livestock. Douglas-fir mistletoe and spruce budworm are prevalent.

Wildfires have played an important role historically. Wildfire has been controlled for approximately 70 years and natural mortality has resulted in fuel loadings of 10 to 50 tons per acre. Logging and precommercial thinning have created concentrations of fuel that vary between 20 and 60 tons per acre. Lightning or person-caused fires in fuels of 20 or more tons per acre during periods of high fire danger usually result in a total kill of all vegetation. Grasses and forbs are quick to take over a burned area and vegetative succession begins again. The size and distribution of aspen patches provide a living map of fire history or insect outbreaks.

### **Management Emphasis**

Emphasize a combination of multiple-uses including a sustained-yield of timber and firewood production, wildlife habitat, livestock grazing, high quality water, and dispersed recreation.

Highlights include:

- ◆ Manage for timber production using Integrated Stand Management (ISM) to achieve diverse and healthy stands. Manage to reduce or eliminate dwarf mistletoe. Protect stands from unacceptable losses due to insects or diseases.
- ◆ Visual quality objectives are generally Modification and Partial Retention. Maximum Modification is allowed to manage insect or disease outbreaks or to harvest fire-killed timber. Acceptable variations in VQO classification acres are outlined in the Forest-wide Standards and Guidelines.
- ◆ Manage habitat for the following indicator species through ISM:
  - ◆ Turkey
  - ◆ Goshawk
  - ◆ Pygmy nuthatch
  - ◆ Elk
  - ◆ Abert squirrel
  - ◆ Red squirrel
  - ◆ Hairy woodpecker
  - ◆ Spotted owl

*Chapter 4 – Management Direction*  
*Ponderosa Pine and Mixed Conifer, Less Than 40 Percent Slope – Management Area 3*

- ◆ Manage to make firewood available from major species within this MA.
- ◆ Manage to make miscellaneous forest products available in a cost-effective manner, including Christmas trees, poles, posts, and wildings.
- ◆ Manage the approximately 12,100 acres identified as the pine-aspen capability area for aspen, on a regulated, sustained-yield basis to maintain aspen as a component of the Forest. Feature a rotation to enhance firewood production and wildlife habitat. Use firewood sales to achieve regeneration by sprouting.
- ◆ Manage livestock grazing generally at Level C and D. Closely coordinate range management with wildlife habitat management to achieve compliance with the State Comprehensive Plan. Coordinate with timber management to take advantage of transitional range created behind intermediate timber harvests.

## **Program**

### **Components Activities Standards and Guidelines**

#### **Recreation**

#### **Recreation Management**

Manage dispersed recreation at the Standard Service Level.

Prohibit camping between Lockett Meadow Trailhead and the Inner Basin. The access road is managed as a trail and closed to vehicles, except that the City of Flagstaff may periodically be authorized to use it for special vehicles such as drill rigs if determined appropriate through environmental analysis.

Manage the Mount Elden/Dry Lake Hills to maintain a semi-primitive nonmotorized ROS class. Build a trail system to make a loop trail from Buffalo Park over the Dry Lake Hills to the Mount Elden Trail, then through the Elden Environmental Study Area on the El Paso natural gas pipeline and back to Buffalo Park. The trails are for nonmotorized traffic only, except the Schultz Creek Trail which is open to motorized vehicles. The Mount Elden Lookout Trail and the portion of the Oldham trail between Buffalo Park and the El Paso natural gas pipeline are closed to horse and packstock. Trails in the system have standard level maintenance.

Schultz Tank and immediate vicinity will be day use only.

A primitive horse camp may be developed at either the Schultz Pass trailhead or the proposed Schultz Creek trailhead. Dispersed use will be monitored in these two locations to determine the most desirable site.

**Program**

**Components Activities Standards and Guidelines**

Schultz Creek trail will remain open to all types of use. Monitoring will be done to provide future information on development of any user conflicts. If conflicts develop, restrictions will be determined at that time.

Loading and unloading horses is not permitted at the Schultz Tank parking area.

Livestock and pets are not permitted to water or otherwise use Schultz Tank because it is part of the water supply for the Doney Park Community.

**Range Resource Planning and Inventory**

Range

Grazing allotments will generally be managed to Level C and D.

This MA is open to grazing. There are 623,222 acres of full capacity lands. Of these total acres, 46,740 acres are in less than satisfactory condition. Less than satisfactory range conditions are improved through completion of the development program contained in AMP's.

**Range Forage Improvement Maintenance**

Evaluate forage improvements and maintain forage improvement acres in satisfactory or better condition. Attain a balanced composition of cool and warm season forage species.

Broadcast seed immediately following natural or prescribed burns, with high production, shade tolerant, multi-growing season species unless the area is planned for timber regeneration.

Seed behind intermediate timber harvests with mixes tailored to fit the site where additional forage is needed. Emphasize high production, shade tolerant, multi-growing season species that will not inhibit tree regeneration. Do not seed after the last intermediate harvest if tree regeneration will be inhibited. Do not seed after seed cuts.

Where open meadows in the pine/mixed conifer type are to be maintained, eliminate invading overstory vegetation, stabilize gullies to raise the water table, scarify the soil, and seed with appropriate grass and forage species. Control livestock grazing through management and/or fencing to establish the revegetation.

Identify each terrestrial ecosystem and assess soil properties to determine:

- Soil limitations for soil scarification purposes.
- The method of soil scarification best suited for the soils of the project area.
- Soil potential for revegetation - Identify soils that are suitable or unsuitable for successful revegetation.

**Program**

**Components Activities Standards and Guidelines**

- Erosion hazard and on-site soil loss - Soils with a potential erosion hazard rating of severe will require specific resource management activities in order to avoid severe impairment of soil productivity.

**Reforestation**

Timber

Monitor reforestation sites for soil moisture and/or soil temperature to help determine moisture availability for seedling survival.

Inventory, diagnosis, prescription, and monitoring is done for reforestation projects.

Artificial regeneration is required on an estimated 20 percent of the suitable timber lands and on the remaining 80 percent regeneration is assumed to occur naturally following regeneration harvest. On naturally regenerated lands site preparation is required on an estimated 88 percent of the acres and 12 percent regenerates without site preparation.

Planting is used where needed to establish a new timber stand. The number of trees planted varies by site according to the number needed to regenerate the site. Average annual planting needs are estimated at 560 acres for the first decade.

Satisfactory stocking ranges from 120 to 325 trees per acre depending on site class and management objectives, within 5 years after final removal, FSM 2470.

Terrestrial ecosystems requiring reforestation are inspected to determine:

- Soil potential for reforestation - Identify soils that are suitable or unsuitable for successful reforestation. Adjust stocking levels and take other measures where successful reforestation is limited by environmental factors in the terrestrial ecosystem.
- Erosion hazard and on-site soil loss - Soils with a potential erosion hazard rating of severe will require specific resource management activities in order to avoid severe impairment of soil productivity.
- Soil potential for site preparation - Identify soils that present severe limitations for successful site preparation such as rocky and clayey soils. Require specific resource management activities where successful site preparation is limited by environmental factors in the terrestrial ecosystem.
- The method of site preparation best suited for the soils within the project area.

Site preparation is done where needed to establish a new timber stand. Mechanical and chemical methods and prescribed fire are used. Use pesticides only when they are legally available, economical, biologically sound, and environmentally acceptable.

Mechanical site preparation is not done on sensitive soils that have a high erosion hazard or where rocky soils are a limiting factor.

**Program**

**Components Activities Standards and Guidelines**

Reforested areas are protected from animal damage until the plantations are established with satisfactory stocking, usually 5 to 10 years, FSM 2470 and FSH 2409.26b. Where needed to prevent livestock damage and ensure satisfactory stocking, plantations are fenced and assigned no grazing capacity until seedlings are established.

Lands classified as suitable but currently unstocked or understocked that may not achieve minimum levels naturally are evaluated for reforestation potential and are regenerated if environmentally and economically feasible; otherwise, these lands become unsuitable for timber management.

Continue with current management on the Wild Bill Study Plots only as long as the incumbent permittee has the grazing permit; after the incumbent's use is ended, the Wild Bill study plots, formerly used for range forage research, will be reforested on a schedule to provide appropriate diversity within the 10K Block.

Slash disposal during the regeneration period is done as necessary to facilitate site preparation and meet protection standards.

No grass is seeded during the regeneration period unless it is necessary for erosion control.

**Nursery Management**

Each District with suitable timber lands will collect sufficient tree seed by species to maintain a 10-year supply.

**Genetic Forest Tree Improvement Program**

Select, certify, manage, and protect ponderosa pine superior trees for the Elden, Flagstaff, Long Valley, Mormon Lake, and Blue Ridge Ranger Districts. Establish a seed production area in each of the two major seed zones (130 and 140) in Decade 1.

**Timber Stand Improvement**

Overstocked stands are precommercially thinned to proper growing stock levels as needed, see FSM 2470

Plan fuel treatments on an area basis. Fuel treatments will be designed to meet objectives on the area as a whole, not on every acre. Plan fuel treatments that have the least impact on the site, meet resource management needs, are cost effective, and meet fuel treatment objectives.

**Program**

**Components Activities Standards and Guidelines**

**Silvicultural Examination and Prescription**

Silvicultural prescriptions emphasize treating dwarf mistletoe infections to bring them down to acceptable levels, **unless threatened, endangered, or sensitive species habitat requirements take precedence.**

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**Program**  
**Components Activities Standards and Guidelines**

**Integrated Stand Management (ISM)**

If there are reductions in the treatment of specific age classes, for example reduced pulpwood harvesting, increased time frames may be necessary to meet stand management objectives or stands will have smaller average diameter at rotation.

Establish and maintain stand diversity through ISM to provide suitable habitat for wildlife in lands suitable for timber production, while maintaining or enhancing timber resource production and timber age class distribution (regulation).

**10,000-Acre Blocks (10K Blocks)**

Within each 10K Block treated, uneven-aged management will be emphasized. Where even-aged management is used not less than 8 percent nor more than 40 percent of the suitable lands is scheduled for regeneration during any 20-year period, provided there are adequate stands available for regeneration. Stands can be regenerated if they have, generally, reached CMAI, have unacceptable dwarf mistletoe ratings, or have multiple-use objectives that require the stand to be regenerated before CMAI. Regenerated stands may be harvested at 95 percent of CMAI. Page 123

The following standards and guidelines will apply in areas where threatened, endangered, or sensitive habitat requirements do not conflict. Habitat requirements for threatened, endangered, or sensitive species take precedence over requirements for other species. The headings included are: Raptors, Wildlife Cover, Squirrel Habitat, Spotted Owl and Bear Habitat, Turkey Nesting and Roosting, and Snag Management.

**Raptors:**

Maintain a current inventory of nest locations. A nest group consists of nest tree and adjacent trees and is maintained at least as follows unless environmental analysis indicates either more or less is needed:

- Goshawk -- Please refer to the Standards and Guidelines in the Forest-wide management direction on page 65-7 through 65-11.
- Cooper's hawk -- 15 acres of uncut area around active nests.
- Sharp-shinned hawk -- 10 acres of uncut area around active nests.
- Other raptors -- An area extending to 50 feet from active nests is left uncut.
- Bald eagle winter roosts -- Protect with a 300-foot radius uncut zone around the roost. Road development should avoid the roost and uncut zone.

**Program**

**Components Activities Standards and Guidelines**

- Ospreys -- At the start of Forest Plan implementation, the only known osprey nesting area is at Lake Mary. The following Standards and Guidelines apply to this nesting area. As additional nesting territories are discovered, environmental analysis is done to determine if, and to what extent, these Standards and Guidelines apply:
  - Restrict all logging activities within one-fourth of a mile of active nests from March 1 through August 15.
  - Provide a 20-acre nest site of uncut area around each existing (occupied or unoccupied) nest.
  - Provide at least 3 potential nest sites in preferred nesting habitat within Designated Bald Eagle/Osprey Emphasis Area(s). This potential nest site should be at least 5 acres of mature and overmature trees with at least 2 snags per acre greater than or equal to 20 inches. Use of uneven-age stands is optimal.
  - Construct artificial nesting platforms as needed for habitat maintenance and improvement.
  - Forest-wide, during 10K Block planning, give high priority to managing for snags within potential osprey habitat. Snags and old-growth managed for osprey habitat contribute to the 10K Block requirements.
  - Manage for at least 2 snags per acre of 20" or greater. Snags should be the height of the canopy or taller, on at least percent of the acres along the shorelines. Where necessary to provide sufficient perches and nest sites, take actions to create snags.
  - Road construction or reconstruction should avoid osprey nest sites. New roads should not be constructed within 660 feet of nests.
  - Where human disturbance is causing reproductive failure, evaluate the need to close the area from March 1 to at least August 15.
  - In cooperation with the Arizona Game and Fish Department, develop an implement an osprey and wintering bald eagle public education program.

**Wildlife Cover:**

Manage for at least 30 percent cover in 10K Blocks. Of this total at least one third is in thermal cover, one third is in hiding cover, and the remaining one third is in either thermal or hiding cover. Thermal cover for elk is a stand of coniferous trees tall enough to allow animal movement and bedding with a high degree of crown closure. Hiding cover is vegetation capable of hiding 90 percent of a standing deer or elk from human view at a distance of 200 feet or less. Emphasize maintaining some thermal cover in known travelways and bedding areas. Emphasize maintaining some hiding cover adjacent to dependable water and key openings, along known travelways, and in pine stringers. Cover areas should be at least 200 feet wide; however, pine stringers less than this width may still be managed for hiding and thermal cover

**Program**

**Components Activities Standards and Guidelines**

Evaluate existing and potential cover on a stand by stand basis. Consider open road densities, topography, and non-commercial tree, shrub, and herbaceous species to determine effective cover. The presence of non-commercial species, such as Gambel oak, New Mexico locust, juniper, aspen, and bigtooth maple, or topographic features such as drainages or other terrain breaks, rock outcrops, or large surface boulders, will normally result in less BA/GSL of commercial species to meet cover requirements. The measure of effective cover is meeting the definition and objectives fro hiding cover or thermal cover.

Protect and manage to include hiding and thermal cover known fawning and calving areas and defer logging activities from May 15 to June 30 in these areas.

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**Program**  
**Components Activities Standards and Guidelines**

The following table lists basal area (BA) and growing stock level (GSL) which experience has shown will fully meet hiding and thermal cover requirements in even age ponderosa pine and mixed conifer when there are no cover effects from topographic features or other species. The presence of more than one size class may reduce the amount of BA/GSL required to provide effective cover. Before determining that cover must be obtained by managing stands in suitable lands for these BA/GSL's, conduct field examinations to evaluate cover distribution needs and to determine whether other factors contributing to effective cover are present.

<b>Species</b>	<b>Size Class</b>	<b>Acceptable Range</b>
Ponderosa Pine - Hiding Cover	1 – 5” dbh	150 – 170 GSL
	5 – 9” dbh	150 – 180 GSL
	9 – 12” dbh	160 – 200 BA
	Area Size	15 – 25 acres
Mixed Conifer - Hiding Cover	1 – 5” dbh	80 – 100 GSL
	5 – 9” dbh	100 – 120 GSL
	9 – 12” dbh	100 – 120 BA
	Area Size	15 – 25 acres
Ponderosa Pine - Thermal Cover	5 – 9” dbh	180 – 200 GSL
	9 – 12” dbh	180 – 210 BA
	12 – 15” dbh	200 – 240 BA
	Area Size	30 – 40 acres
Mixed Conifer - Thermal Cover	5 – 9” dbh	140 – 160 GSL
	9 – 12” dbh	140 – 160 BA
	12 – 15” dbh	160 – 180 BA
	Area Size	30 – 40 + acres

**Squirrel Habitat:**

Manage for at least 20 percent of potential habitat capability for red squirrels in 10K Blocks as determined by the Forest Habitat Capability Model. As needed to meet habitat capability, protect red squirrel primary caches at a density of one cache per 2 acres. Retain all trees within a 26-foot radius from the cache (1/20th acre) (mixed conifer only).

Manage for at least 20 percent of potential habitat capability for Abert squirrels in 10K Blocks as determined by the Forest Habitat Capability Model.

**Spotted Owl and Bear Habitat:**

Whenever possible, areas managed for old-growth, bear, and spotted owls are the same. Evaluate owl and bear habitat needs **as well as cover** during project planning.

**Program**  
**Components Activities Standards and Guidelines**

**MEXICAN SPOTTED OWL**

**Please refer to the standards and guidelines in the Forest-wide management direction on pages 65 through 65-6.**

In key mixed conifer bear habitat, manage for at least 30 percent of the mixed conifer to meet hiding cover needs. Give priority for cover management in drainage bottoms, heads of drainages, and isolated pockets of mixed conifer. Defer logging activities from April 15 to June 30 in known bear maternity areas.

**Turkey Nesting and Roosts:**

Defer timber harvesting and slash treatment activities in turkey nesting areas from April 15 through June 30.

Leave scattered patches of untreated slash within 1/2 mile of dependable water in actual or potential turkey nesting areas. Patches are at least 1/4 acre in size and cover at least 10 percent and not more than 20 percent of the harvested area. Slash is left untreated for at least 5 years, longer if it is determined that nesting is still occurring in the area. These guidelines will be evaluated and adjustments made, if necessary.

Retain and/or develop an average of at least two turkey roost tree groups per section, in actual or potential turkey habitats.

Retain and/or develop an average of at least four turkey roost tree groups per section in identified key turkey winter range.

**Snag Management:**

Snag Definition --

- A ponderosa pine/mixed conifer snag is defined as a tree greater than 12 inches d.b.h. and 15 feet tall.
- An aspen snag is defined as a tree greater than 12 inches d.b.h. and 15 feet tall.
- An oak snag is defined as a tree greater than 10 inches d.b.h. and 10 feet tall.

Within 10K Blocks at least 50 percent of the forested land meets the following criteria for snags:

- At a minimum, snags are maintained at an average of 200 snags per 100 acres.
- Snag species will represent the tree species composition of the stand.
- In high priority areas as determined by environmental analysis, including both edge habitats adjacent to meadows or water and interior stands, manage for an average of 280 snags per 100 acres.
- Snags are not available for firewood unless designated because of being surplus to wildlife needs, for example, after wildfires.

**Program**

**Components Activities Standards and Guidelines**

- Snag acres in old-growth can be used to count toward the snag requirement within a 10K Block.
- Snags and potential snags will be identified and tallied for each stand. Markers will paint mark each tree with a yellow "w".
- Leave potential snags where needed to meet snag requirements. The following are priorities for leaving trees for future snags:
  - obvious culls with conks and cavities present,
  - less than one-third merchantable tree including wolfy and crooked trees,
  - spiketops less than one-half merchantable,
  - any tree expected to die before expected harvest of the sale being marked, and
  - mistletoe and genetically poor trees will not be left unless they are planned to be killed.
- Carefully plan salvage sales to meet snag standards where snag numbers are less than desired levels. Delay salvage sales if numbers are too low to allow salvage.
- Nonharvest areas, such as wilderness or unsuitable timber lands, can be credited toward meeting management direction for snag management. Use of nonharvest areas from adjacent 10K Blocks does not exceed one-third of the 10K Block management objectives for snags.

In 10K Blocks seriously deficient in snags, environmental analysis will be done to evaluate the marking of merchantable green trees to meet snag numbers and ISM objectives.

In order to be considered a road hazard, a snag must lean toward the road and must be tall enough to reach the road if the snag fell. Any snag not meeting both requirements will not be marked for removal as a hazard snag.

Focus media attention on snag management at least twice annually, just before and at the height of firewood season.

**OLD-GROWTH:**

**Please refer to the standards and guidelines in the Forest-wide management direction on pages 70-1 through 70-2.**

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**Program**

**Components Activities Standards and Guidelines**

**Stand Size**

The following minimum factors are considered in obtaining stand diversity. The presence of one or more of these factors constitutes a difference between stands.

- Stand age -  $\pm 20$  years difference in measurable age.
- Density -  $\pm$  BA 30 ft.<sup>2</sup>
- Average Stand Diameter -  $\pm 4$  inches. If average stand diameter is larger than 16 inches, then this parameter will not be used.
- Species composition differences are determined by the ID Team, depending on the project or sale objectives. Overstory and/or understory species are evaluated.

Stands managed for old-growth are 100 to 300 acres in size.

**Program**  
**Components Activities Standards and Guidelines**

**Silvicultural Prescriptions**

Management will generally use uneven-aged systems. When stands are managed under even-aged systems, the shelterwood method is the preferred method in accordance with the following guidelines (FSM 2471, FSH 2409.26d, Regional Guide).

**Ponderosa Pine/Mixed Conifer Standard Silvicultural Prescription:**

**Shelterwood --**

- Prepare site during seed cut. Cut pine to approximately 30 GSL and mixed conifer to approximately 60 GSL.
- Remove overstory that does not blend in with 0-40 year age class.
- Precommercial thin as needed.
- Use one to four commercial (intermediate) cuts. Make a cut when the available average cut volume/acre is at least 160 cubic feet/acre for the sale area. GSL's will vary from 60 to 120 depending on site, species, stand conditions, and multiple-use management objectives.
- Make preparatory cuts, where needed, for windfirmness, crown development, and/or to enhance seed bed.

In accordance with 36 CFR 219.16(2)(iii), stands may be regenerated at 95 percent or more of CMAI as determined by individual stand examination or less than 95 percent if multiple-use objectives would be better obtained.

Harvest recent dead and poor risk trees in excess of planned snag densities. Snags without red needles are retained for wildlife purposes, except wildfire-killed trees.

**Aspen/Conifer Silvicultural Prescription:**

Aspen/conifer lands to be managed for aspen include all stands having a minimum of 25 percent of the total stems (greater than 5 inches d.b.h.) or 25 percent of the GSL in aspen, and which are suitable for aspen regeneration.

Stands having less than 25 percent of total stems (greater than 5 inches d.b.h.) and GSL in aspen will be evaluated through the environmental analysis process to determine management objectives and direction.

On aspen/conifer lands determined to be managed as ponderosa pine or mixed conifer through environmental analysis, existing aspen stems may be cut.

- Approximately 254 acres per decade are converted to aspen over seven decades.

**Program**

**Components Activities Standards and Guidelines**

- On aspen/conifer lands managed for aspen, the rotation length is a minimum of **90** years. Minimum stand diameter at regeneration is 11 inches d.b.h. Stands converted to aspen are managed by Standards and Guidelines for MA 5, Aspen.

**Gambel Oak Silvicultural Prescriptions:**

Manage oak to improve wildlife habitat and provide firewood. Silvicultural prescriptions provide a balance of age classes within a 10K Block and provide a sustained-yield of sprouts, mast, cavities, and foliage volume. Maintain oak components wherever they occur. Salvaging of dead, down oak is encouraged. Oak showing obvious wildlife use will be retained.

Administer green oak harvest with the same care that is used in the management of other timber sales, including tree marking. Either "cut" or "leave" trees may be designated.

Oak management is considered in all activities, including harvest of other species.

Gambel oak occurs on both suitable and unsuitable timber lands and is managed differently depending on suitability. There are two oak prescriptions, one for nonindustrial wood (Timber's Stand Data Base Component 265 = code 951) and one for oak in association with suitable ponderosa pine stands (Timber's Stand Data Base Component 265 = codes 500's or 600's). When oak comprises 50 percent or more of the stand's BA, the stand will be managed for oak (Timber's Stand Data Base Component 265 = code 951).

Gambel Oak Non-industrial Wood --

- Shelterwood--no site preparation during the seed cut.
- Leave sprouts for at least 3 years. After that, manage for one sprout per inch of diameter of the stump.
- When thinning thickets of trees less than 10 inches d.b.h., emphasis is on removing trees with less than 60 percent live crown. Retain at least 40 percent of the stems.
- Preparatory and/or seed cut are done to open the stand to allow sunlight on the ground to aid in regeneration. Retain at least 10 trees per acre greater than 12 inches d.b.h. with greater than 60 percent live canopy.
- Harvest excess overstory when regeneration is established and certified. At least 10 seed trees per acre are left standing to die of natural causes.
- Regeneration cuts can occur at anytime to meet stand objectives.
- Minimum stand size is 1 acre and maximum stand size, 10 acres.
- To maximize sprouting, cutting is done from July 15 through May 15.
- Standing dead trees greater than 10 inches d.b.h. and greater than 10 feet tall and live trees containing one or more cavities are retained regardless of vigor at a density of at least two cavity bearing trees per acre.

**Program**

**Components Activities Standards and Guidelines**

- In 10K Blocks where the snag density objectives are exceeded, areas containing excessive mortality may be harvested under the following criteria:
  - Retain at least two snags per acre greater than 15 inches d.b.h. without signs of wildlife use.
  - Retain trees showing obvious signs of wildlife use or rot.
  - Retain trees with some live crown and less than 75 percent trunk girdling unless removal is necessary to meet overall objectives.

**Gambel Oak on Tentatively Suitable Lands --**

- Oak component within a stand will not fall below 20 percent of the total stand basal area when average oak d.b.h.  $\geq 5$  inches.
- Rotation age for the oak component will be 240 to 360 years.
- Rotations for conifer and oak will be about 60 years out of phase to avoid competitive interaction during seedling establishment.
- Oak component will not fall below one sprout cluster per acre when average d.b.h.  $\leq 5$  inches.
- Use an irregular shelterwood system for the oak component. Seed trees are left standing to die from natural causes.

**Bigtooth Maple Silvicultural Prescription:**

Bigtooth maple areas are managed to maintain coniferous overstory that provides shading for existing and the regenerated maple areas and a BA of at least 120 in 10 to 16-inch overstory trees. Manage for 280 snags/100 acres greater than 12 inches d.b.h. and greater than 15 feet high. Snags are to be randomly dispersed. White fir over 20 inches d.b.h. is not cut, nor is any white fir showing signs of rot.

**Blue Spruce Silvicultural Prescription:**

Prescriptions will preserve existing stands. Known locations are West Fork of Oak Creek, Volunteer Canyon, and Hochderffer Hills.

**Alligator Juniper Silvicultural Prescription:**

The alligator juniper component of the ponderosa pine is managed primarily for maintaining and enhancing wildlife habitat by the following criteria:

- In areas where alligator juniper trees comprise less than 50 percent of the total basal area, retain live alligator juniper trees  $\geq 12$  inches d.b.h.
- In areas where alligator juniper trees comprise more than 50 percent of the total basal area, live trees  $\geq 12$  inches d.b.h. may be removed if  $< 25$  percent of the crown is living.
- In both of the above cases, some live trees  $\leq 12$  inches d.b.h. may be removed. Retain at least 40 percent of the trees.

**Program**  
**Components Activities Standards and Guidelines**

**Pine Stringers Silvicultural Prescriptions:**

Pine stringers are noncontiguous, narrow communities of predominantly ponderosa pine that extend into the pinyon-juniper woodland below the normal elevational distribution of ponderosa pine. Manage pine stringers to emphasize wildlife habitat needs by maintaining turkey roosts and big game cover except where environmental analysis indicates otherwise.

**Mixed Conifer Stringers in Ponderosa Pine Silvicultural Prescription:**

Mixed conifer stringers, primarily Douglas-fir, are noncontiguous, narrow communities that extend into the ponderosa pine. Manage the mixed conifer stringers to emphasize wildlife habitat needs by maintaining big game cover except where environmental analysis indicates otherwise.

**Visual Management**

Timber stands managed to meet visual management objective (VQO) of foreground retention are managed as follows:

- Maintain or create a mosaic of stands of various sizes and age classes throughout the rotation.
- Obtain a stand of ponderosa pine and/or mixed conifer at maturity of 30 to 45 trees per acre.
- The average diameter of mature trees is 20 inches or greater. The large trees are maintained as long as possible. Extended rotations may be necessary.
- Allow naturally regenerated trees to stay if the overall visual quality objective is met.
- Obtain diversity of landscape management features.
- Created slash is promptly treated.
- Mistletoe treatments are designed to meet as many of these Standards as possible.
- Precommercial thinning is done as needed to meet the visual quality objectives.

**Silvicultural Prescription in Foreground Retention Areas:**

*Uneven-Aged Management –*

- Uneven-aged stands have three or more distinct age classes present. The different aged trees are usually intermixed. Cutting methods are used that develop and maintain uneven-aged stands such as single-tree selection and group selection. Stands are entered on a 20-year cutting cycle and cut to a GSL of 100. Stand size is determined by the scale of the landscape, width of the road, and the speed of the viewer (e.g., I-17 vs. 89A). Stand size may be less than 10 acres.

**Program**  
**Components Activities Standards and Guidelines**

*Deferred Management*

- Deferred harvest management is used on stands that presently meet foreground Retention stand characteristics. These stands are managed by the uneven-aged management prescription when the stands no longer meet foreground Retention stand characteristics.

Roads to be managed for foreground Retention within this MA and in MA 4 (other areas of foreground retention on the timber type are found in MA's 13 and 19):

<b>Road</b>	<b>Miles</b>
I-17	21
I-40	8
U.S. 180	26
U.S. 89A South	23
U.S. 89A North	5
Arizona Hwy 87	29
FH 3	46
FH 9	8
418-419 (Hostetter)	13
420 (Schultz Pass)	10
522 (Snow Bowl)	6
151 (Hart Prairie)	6
557 (Mt. Elden)	2
90 (Mormon Lake)	8
240 (Pinewood - Mormon Lake)	10
231 (Woody Mnt)	14
538 & 538A (Turkey Butte)	6
213 (Stoneman Lake)	5

An average 300 feet on each side of the road will be managed as foreground Retention (nearly 20,000 acres) total from all MA's. Determine the exact width of the foreground Retention area after on-the-ground review.

**Foreground Partial Retention (VQO) Silvicultural Objectives are:**

- To maintain or create a mosaic of stands of various sizes and age classes throughout the rotation with a mature tree component ( $\pm 18$  inches d.b.h.) on at least 10 percent of the area.
- Created slash will be treated.

**Silvicultural Prescription in Partial Retention Areas:**

Except for the following GSL's, the standard silvicultural prescription for foreground Partial Retention areas is the same as the standard silvicultural prescriptions for Ponderosa Pine/Mixed Conifer (see page 130). Stand sizes may be less than 10 acres;

## **Program**

### **Components Activities Standards and Guidelines**

Growing stock levels (GSL) are maintained approximately as follows:

Ponderosa pine -	Site 75 - 90 GSL
	Site 56-74 - 80 GSL
	Sites less than 56 - 70 GSL
Mixed conifer -	Sites > 65 - 90 GSL
	Sites < 65 - 70 GSL.

### **Miscellaneous Forest Products**

Underneath transmission lines there may be a potential for Christmas tree production, firewood, wildings, pulpwood, and/or other miscellaneous forest products. The land is managed to attain products whenever possible. The choice of silvicultural objectives depends on the profile of the powerline and the multiple-use objectives.

### **Firewood**

Law enforcement emphasizes minimizing resource theft, damage, and user conflicts. Sign to inform and educate the public. Aggressively pursue violators.

Emphasize using slash for firewood. Unless there are documented resource or protection needs, leave slash for at least 2 years before disposal. Clearly identify free-use firewood areas to assist the public in removing wood residues and thereby reducing future slash disposal costs. Provide easy to follow maps and signing for designated firewood areas.

### **Timber Sale Preparation**

Complete sale planning, design, and layout. Appraise, advertise, open bids, and make sale awards on sales scheduled for the planning period.

Minimum cut volumes per acre are usually between 300 and 500 (average 400) board feet of sawtimber and/or 160 cubic feet (2 cords) per acre for pulpwood except on Colorado Plateau Pulpwood Sale (CPPS) where pulpwood must average 40 cords on 20 acres. CPPS terminates March 1989.

### **Utilization Standards:**

Sawtimber:	9+ inch d.b.h. to 6 inch d.i.b. top.
Pulpwood:	5+ inch d.b.h. to 4 inch d.i.b. top.
Firewood:	Sizes vary by objectives.

**Program**

**Components Activities Standards and Guidelines**

Evaluate K-V soil and water and wildlife resource improvement opportunities on sale areas. Plan projects to improve areas in unsatisfactory condition and to maintain those in satisfactory or better condition.

Priorities for use of K-V funds will be:

1. Regenerate stands.
2. Correct serious problems that have been identified such as erosion that needs to be stopped to preserve soils, needed T&E habitat improvement, and treatment of dwarf mistletoe infected stands.
3. TSI where needed to manage stocking levels and where the site justifies the costs.
4. Restoring riparian areas and closing roads by revegetation, channel restoration, blocking, providing drainage, obliteration, or combination of these types of activities.
5. Seeding to improve forage in areas where additional forage is needed.
6. All other work.

Exceptions below priority 2 may be made by the Forest Supervisor based on documented results of an environmental analysis.

Construct landings and decking areas outside of riparian areas.

Locate or relocate roads out of riparian areas, except at designated crossings. Obliterate unnecessary roads in riparian areas.

Avoid or designate stream course crossings for skid trails. Limit to the minimum needed. Choose crossings with stable conditions or stable bed and bank material such as cobble or rock.

Restrict skidding and hauling to soil moisture conditions that do not cause excessive soil compaction, displacement, or puddling. Restrict timber sale activities to slopes of 25 percent or less on cinder cones under conventional skidding.

For each timber sale area, identify each terrestrial ecosystem and assess soil properties to determine:

- Soils with severe potential for sheet and gully erosion, such as steep slopes, cinder cones, alluvial bottoms, and swales, that require specific resource management activities in order to avoid severe impairment of soil productivity.
- Soil limitations for site preparation - Identify soils that present severe limitations for successful site preparation such as soils with severe erosion hazard and shallow soils. Require specific resource management activities where successful site preparation is limited by environmental factors in the terrestrial ecosystem.

**Program**

**Components Activities Standards and Guidelines**

- Soil potential for reforestation - Identify soils that are suitable or unsuitable for successful reforestation. Adjust stocking levels and require specific resource management activities where successful reforestation is limited by environmental factors in the terrestrial ecosystem.
- Whether soils are suitable, unsuitable, or unproductive for timber management.
- Soil limitations for timber harvest activities.
- Soils with high potential to convert to another vegetative type such as oak, locust, or juniper as a result of timber management activities - Modify timber management activities in these terrestrial ecosystems to halt the type conversion by approved chemical or mechanical means or by prescribed fire.

**Timber Harvest Administration**

Timber

Administer timber sales, pulpwood sales, permits for forest products, firewood, and miscellaneous forest products sales. This activity includes the following: accountability, financial management, field inspections, and contract interpretation and enforcement. Aggressively protect non-designated trees, including firewood, through the enforcement of the timber sale contract.

Plan, prepare, administer, and sell or issue free-use permits for commercial and personal use, miscellaneous convertible and nonconvertible products (FSM 2462).

Generally, local roads are closed until the next entry by signing and physical obstruction such as gates or barriers. Temporary roads are obliterated and returned to production. If necessary to ensure protection, off-road driving restrictions are imposed until roads are fully revegetated.

**Fire Management Planning and Analysis**

Protection

Suppression objective is 100 acres or less.

Prescribed fire using planned and unplanned ignitions is used to meet resource objectives.

Unplanned ignitions are not used as a management tool in the urban interface.

Annual average wildfire acreage burned should not exceed 750 acres per year on the average over a 10-year period.

Emphasize using slash for firewood. Unless there are documented resource or protection needs, leave slash for at least 2 years before disposal. Clearly identify free-use firewood areas to assist the public in removing wood residues and thereby reducing future slash disposal costs. Provide easy to follow maps and signing for designated firewood areas.

## **Ponderosa Pine and Mixed Conifer, Greater Than 40 Percent Slopes Management Area 4**

**Analysis Areas: 10, 10a, 13, 13a**

**Acres: 46,382**

### Ponderosa Pine

A small part of this Management Area (MA) has been logged in the past, generally for short distances immediately above more gentle slopes. Steep canyons having no roads in them and a number of cinder cones have not been logged.

Many of the remaining overmature trees and large snags in the pine type are in this MA. The snags are important to snag dependent species of wildlife.

The area contributes very little to the range resource because of steepness. However, the south facing slopes do provide a significant amount of big game winter habitat.

Recreation use is concentrated on trails passing through the area because of the steepness and the amount of debris on the ground. In addition, some steep slopes are scenic backdrops for sensitive recreation viewpoints.

Refer to the description of MA 3 for a discussion of vegetation, fire, and fuels.

### Mixed Conifer

The vegetative composition, fire history, and natural fuels are similar to MA 3. Little to no logging activity and road building has taken place.

The area's value to wildlife is much greater than to domestic livestock because of the inaccessibility to most livestock.

Recreation use is largely limited to hiking and hunting.

### **Management Emphasis**

Emphasize wildlife habitat, watershed condition, and dispersed recreation. Management intensity is low.

Highlights include:

- ◆ Manage with emphasis on wildlife habitat and dispersed recreation. Total acres of any Recreation Opportunity Spectrum (ROS) class may change no more than +15 percent in Decade 1 due to road or trail building and other activities.
- ◆ VQO's in this area vary and are managed in accordance with the Forest-wide standards and guidelines.
- ◆ Manage for the following indicator species:
  - ◆ Turkey
  - ◆ Goshawk
  - ◆ Pygmy nuthatch
  - ◆ Elk
  - ◆ Abert squirrel
  - ◆ Red squirrel
  - ◆ Hairy woodpecker
  - ◆ Spotted owl
- ◆ Manage the Dry Lake Hills-Mount Elden area for dispersed recreation and wildlife habitat and a semi-primitive nonmotorized ROS class.

**Recreation Planning and Inventory**

Recreation Manage the Mount Elden/Dry Lake Hills to maintain a semi-primitive nonmotorized ROS class. Build a loop trail system tying into trailheads at Schultz Pass, Schultz Creek, Flagstaff-Elden Ranger Station, and Buffalo Park. Trails are for non-motorized use, except in Schultz Creek adjacent to Forest Road 420 up to Road 789. Horses and packstock are allowed except on the Mount Elden Lookout Trail and the portion of the Oldham Trail between Buffalo Park and the El Paso natural gas pipeline. The trail system is maintained at standard service level.

Manage Mount Elden/Dry Lake Hills for visual quality objective of Retention.

**Range Resource Planning and Inventory**

Range The area is generally classified as no capacity range and is usually not fenced, but occasional livestock use does occur. No capacity is assigned.

**Silvicultural Examination and Prescription**

Timber Conduct silvicultural examination and re-evaluate potential for suitability during first decade.

**Spotted Owl and Bear Habitat:**

Whenever possible, areas managed for old-growth, bear, and spotted owls are the same. Evaluate owl and bear habitat needs during project planning.

**MEXICAN SPOTTED OWL**

Please refer to the Mexican Spotted Owl Standards and guidelines in the Forest-wide direction on pages 65 through 65-6.

**NORTHERN GOSHAWK**

Please refer to the northern goshawk Standards and Guidelines in the Forest-wide direction on pages 65-7 through 65-11.

**Fire Management Planning and Analysis**

Protection Standards and Guidelines for fire management planning and analysis are the same as for MA 3.

## Aspen - Management Area 5

**Analysis Area: 14**

**Acres: 3,450**

Aspen is the dominant tree species, comprising 50 percent of more of stand stocking. Most of the aspen is on the west and north side of the San Francisco Peaks. Other stands of aspen are found on cool moist sites on the rest of the Forest.

There is an overstory of aspen with an understory ranging from forbs and grass to ponderosa pine and sparse conifer reproduction, usually white fir or spruce. Without silvicultural treatment, aspen stands with mixed conifer or ponderosa pine understories will convert to conifer type as the aspen overstories die. Aspen on the Forest is mostly seral.

The aspen type, especially those stands with forb-grass understories, is an important producer of forage for wildlife and livestock. Aspen sprouts are favored browse for elk, livestock, and deer.

Aspen stands are important aesthetically because of contrasting colors and changing leaves. Their leaves are a light green in summer and turn yellow in the fall. Their white trunks provide further accents.

Regionally, the commercial market for aspen wood products varies from firewood, excelsior, and pallet material to high grade paneling. Until recent demands for firewood, the demand had been relatively low compared to conifer species. The low demand resulted in little management. Aspen usually requires fire or harvesting, by clearcutting, for regeneration. Most of the existing aspen stands are a direct result of past wildfires. Successful fire control over many years has reduced the establishment of new stands and the total acreage of aspen dominated stands has decreased.

Aspen stands provide natural firebreaks that aid in stopping wildfires that originate in adjacent vegetative types.

### Management Emphasis

Emphasize a combination of wildlife habitat, visual quality, firewood production, watershed condition, and dispersed recreation with other resources and uses managed to be compatible.

Highlights include:

- ◆ Manage for the following indicator species:
  - ◆ Yellow bellied sapsucker
  - ◆ Mule deer
- ◆ Manage for VQO of Retention and Partial Retention in designated foreground areas, as specified in MA 3, and all VQO's in middleground and background.
- ◆ Manage firewood on a sustained-yield basis.

**Program**

**Components Activities Standards and Guidelines**

**Visual Quality**

Recreation

Review the VQO inventory as a part of project planning and make necessary refinements following the field checking.

Clearcutting to enhance or maintain aspen in Retention and Partial Retention areas is permissible with limitations on size and distribution of openings. Clearcuts should be distributed over larger areas rather than confined to small areas. In Retention areas, openings may be up to 2.5 acres in foreground areas, 5 acres in middleground areas, and 20 acres in background areas. In Partial Retention areas, openings may be up to 15 acres in foreground areas, and 40 acres in middleground and background areas.

**Structural Wildlife Habitat Improvements**

Wildlife

Fence to protect aspen regeneration from grazing or wildlife where necessary.

**Range Resource Planning and Inventory**

Range

Grazing allotments are generally managed at Level C or D. There are 3,864 acres of full capacity lands, all in satisfactory condition.

**Program**

**Components Activities Standards and Guidelines**

Manage aspen regeneration stands to limit aspen sprout consumption by grazing to 20 percent or less of current year's growth.

Where water facilities are provided inside aspen stands, pipe water to areas outside the stand to maintain distribution of livestock and wildlife. This is to be done during reconstruction of the structural facility where feasible.

**Reforestation**

Timber

Regeneration is planned to occur naturally by sprouting. Artificial regeneration may be needed when clonal root systems have died or have been destroyed.

Protect regenerated areas and assign no grazing capacity until seedlings are established. Protect areas or a group of areas by excluding grazing through fencing, or other means where appropriate. If funding is not available for needed protection, do not harvest the area(s).

**Integrated Stand Management (ISM)**

Establish and maintain stand diversity through ISM to provide suitable habitat for wildlife, while maintaining or enhancing firewood production, age class distribution, and sustained-yield of firewood.

**Silvicultural Prescription**

Stands are managed by either even-aged or uneven-aged systems depending on the objectives and existing condition of the stand. Rotation length is a minimum of **90 years**. Minimum average stand diameter at regeneration is **11 inches**. Minimum stand size for management is 5 acres except in foreground Retention (see A2 above). Combining adjacent stands to create a larger more manageable stand is acceptable.

Following firewood harvest treatments, other silvicultural treatments may be used to obtain natural regeneration including prescribed burning, girdling, disking, severing roots, and herbicide treatments when legally available, environmentally sound and most cost-efficient. Natural sexual reproduction also is possible, although not common.

Retain snags greater than 12 inches d.b.h. and nest trees. Follow snag Standards and Guidelines as shown in MA 3.

The timing of regeneration treatments varies depending on local site qualities, silvicultural objectives, and other resource objectives. Generally, harvest from August 15 to May 15 in order to maximize sprouting.

**Program**  
**Components Activities Standards and Guidelines**

Treatment areas are usually less than 40 acres in size with emphasis to cut a series of small areas (2.5 to 10 acres) rather than one large, continuous harvest area.

Harvest treatments are usually accomplished through personal-use firewood sales or commercial firewood sales. Commercial firewood sales may be planned in areas where general public access is not reasonable.

**Timber Sale Preparation and Administration**

Sale preparation and administration minimize the amount of roads, spur trails, and landings located within the harvest area. Project administration will also emphasize minimal damage to designated leave trees during treatment activities. Roads that are not planned to be kept open are closed following harvest.

Fuel treatments are implemented that favor aspen regeneration and have the least impact on the site, meet other multiple-use needs, and are cost effective. Slash is treated or not treated to meet timber objectives for regeneration.

**Fire Management Planning and Analysis**

Protection

Prescribed fire using planned and unplanned ignitions is used to meet resource objectives. Suppression objective is to hold fires to 100 acres or less.

Unplanned ignitions are not used as a management tool in the urban interface.

## Unproductive Timber Land - Management Area 6

**Analysis Areas: 15, 16**

**Acres: 67,146**

Unproductive timber lands are within the ponderosa pine vegetation types. They are unsuitable for timber harvest because they fall in at least one of the following two categories.

- ◆ They do not meet the minimum standards for productivity which is Site Index 40 and/or 20 cubic feet per acre per year.
- ◆ There is not reasonable assurance that such lands can be adequately restocked as required by section 219.27(c)(13) of the planning regulations.

### Management Emphasis

Emphasize a combination of wildlife habitat, watershed condition, and livestock grazing. Other resources are managed in harmony with the emphasized resources.

Highlights include:

- ◆ Manage for the following indicator species:
  - ◆ Elk
  - ◆ Abert Squirrel
  - ◆ Mule Deer
  - ◆ Hairy Woodpecker
- ◆ Use prescribed fire as a tool to help meet desired resource objectives.
- ◆ Visual Quality Objectives (VQO) are managed in accordance with the Forest-wide Standards and Guidelines

**Program**

**Components Activities Standards and Guidelines**

**Range Resource Planning and Inventory**

Range

Grazing allotments are generally managed at the C or D level. Full capacity lands are assigned a grazing capacity. There are 74,651 acres of full capacity lands. Of this total acreage, 4,628 acres are in less than satisfactory condition. Less than satisfactory range conditions are improved through completing the development program contained in the AMP.

**Range Forage Improvement**

Conduct an analysis immediately following natural and/or prescribed burns to determine the potential and need for broadcast seeding. Based on positive analysis results, increase forage production by attaining a balanced composition of cool and warm season forage species by broadcast seeding immediately following natural and/or prescribed burns.

Where an open meadow is maintained, as determined in an environmental analysis, eliminate invading overstory vegetation, stabilize gullies to raise the water table, and seed with appropriate grass and forage species. Control livestock grazing through management and/or fencing to allow for adequate revegetation.

Identify each terrestrial ecosystem and assess soil properties to determine:

- Soil limitations for soil scarification purposes.
- The method of soil scarification best suited for the soils of the project area.
- Soil potential for revegetation - Identify soils that are suitable or unsuitable for successful revegetation,
- Erosion hazard, and on-site soil loss - Soils with a potential erosion hazard rating of severe will require specific resource management activities in order to avoid severe impairment of soil productivity.

**Reforestation**

Timber

Reforestation is limited to administrative study areas for the purpose of finding successful methods and will be conducted according to an administrative study plan.

Lands not suited for timber production are examined at least every 10 years to determine if they have become suited.

During the first decade, identify each terrestrial ecosystem and assess soil properties to determine:

- Whether soils are suitable, unsuitable, or unproductive for timber management. Provide detailed soils input to administrative study plans for reforestation.

**Program**  
**Components Activities Standards and Guidelines**

**Silvicultural Examination and Prescription**

Implement Integrated Stand Management (ISM) to benefit other resources and to aid in Forest-wide monitoring.

Evaluate stand conditions, including insect and disease, and the health and vigor of stands.

Maintain diversity of tree species so that ponderosa pine, Gambel oak, and alligator juniper are maintained as a component of the vegetation where they are now present.

**Snag Management:**

Where necessary to meet multiple-use objectives, harvest recent dead and poor risk ponderosa pine in areas having excess snag densities and adequate recruitment for future snags. This may also be done where habitat evaluation indicates a surplus of snags and there is a determination that harvest will not cause future snag densities to fall below desired densities or cause other adverse effects on habitat.

**Alligator Juniper:**

Manage alligator juniper to maintain and enhance wildlife habitat by the following criteria:

- In areas where alligator juniper trees comprise less than 50 percent of the total basal area, retain live alligator juniper trees  $\geq$  12 inches d.b.h.
- In areas where alligator juniper trees comprise more than 50 percent of the total basal area, live trees  $\geq$  12 inches d.b.h. may be removed if  $<$  25 percent of the crown is living.

In both of the above cases, some live trees  $\leq$  12 inches d.b.h. may be removed. Retain at least 40 percent of the trees  $\leq$  12 inches.

**Turkey Habitat:**

Manage to retain and/or develop an average of at least four turkey roost tree groups per section in identified turkey winter range.

**Fire Management Planning and Analysis**

Protection

01 Suppression objective is to minimize cost and provide for personal safety.

Areas mapped as the urban interface have a suppression objective of 10 acres or less. In areas outside of the urban interface, the suppression objective is to hold fires to 100 acres or less. Prescribed fire using planned and unplanned ignitions is used to accomplish resource objectives except no provision for unplanned ignitions in areas included in urban interface.

## **Piñon-Juniper Woodland, Less Than 40 Percent Slopes - Management Area 7**

**Analysis Areas: 17, 18, 19**

**Acres: 273,815**

The pinyon-juniper woodland is comprised of an overstory of pinyon pine, Utah juniper, and one-seed juniper with a small portion of alligator juniper and Rocky Mountain juniper. There is a wide variety of grass, forbs, and shrubs in the understory.

Traditional uses have included hunting, firewood cutting, pinyon nut gathering, Christmas tree and juniper post cutting, big game winter range, and grazing. There are many two-track roads through the area.

Fire occurrence is low and potential for large fires is low. Ground fuels are less than 5 tons per acre except in stands that have been harvested for firewood.

The local public prefers juniper over pinyon for firewood.

The area contains a large number of archaeological sites.

### **Management Emphasis**

Emphasize firewood production, watershed condition, wildlife habitat, and livestock grazing. Other resources are managed in harmony with the emphasized resources.

Highlights include:

- ◆ Manage the pinyon-juniper on a sustained-yield basis for firewood and miscellaneous convertible products, on 0-15 percent slopes.
- ◆ Wildlife habitat management emphasizes forage production on 0 to 15 percent slopes, in conjunction with firewood harvest using Integrated Stand Management (ISM). Old-growth, cover, and snags are generally provided on slopes greater than 15 percent. However, exceptions will occur if dispersion requirements for habitat components are not met on these steep slopes. Where necessary to meet 10K Block requirements or specific habitat needs, one or more of these components can be obtained through management emphasis on the gentler slopes.
- ◆ Manage for the following indicator species:
  - ◆ Plain titmouse
  - ◆ Mule deer
  - ◆ Elk
- ◆ Use prescribed fire to help achieve resource objectives.

- ◆ Manage for the visual quality objectives outlined in the Forest Visual Resource Management inventory and in the Forest-wide Standards and Guidelines, including a configuration and design of opening which is consistent with the characteristic landscape.
- ◆ Palatable grass and forb species may be seeded.

**Program**

**Components Activities Standards and Guidelines**

	<b><u>Wildlife Structural Improvements</u></b>
Wildlife and Fish	Provide water where needed on key wildlife winter ranges. Use bubblers or other means to prevent freezing, where needed.
	<b><u>Wildlife Nonstructural Improvements</u></b>
	Areas needing additional forage for elk and mule deer are given first priority in scheduling firewood/wildlife habitat treatments. Treatments are usually done in areas remote from intensive development and high road densities.

**Program**

**Components Activities Standards and Guidelines**

**Range Resource Planning and Inventory**

Range

Grazing allotments will generally be managed at Level C or D. Full capacity lands are assigned a grazing capacity. There are 227,601 acres of full capacity lands, of which 29,702 acres are in less than satisfactory condition. Less than satisfactory range conditions will be improved through completion of the range development program outlined in the AMP.

**Range Forage Improvement Maintenance**

Conduct an analysis immediately following natural or prescribed burns to determine the potential and need for broadcast seeding. Based on a positive analysis, broadcast seed immediately following natural or prescribed burns with a warm and cool season seed mix to increase production for the site. This is done where necessary based upon the Burned Area Rehabilitation Handbook.

Evaluate and determine the need to maintain forage improvement acres in satisfactory or better condition.

Some acres have been mechanically treated by using heavy equipment to remove individual trees, or "pushing," "chaining," or "cabling" as the practice is called. A portion of these lands have very low potential for revegetation and are allowed to proceed towards climax stage. In some areas other low density canopy lands with a higher potential for revegetation are rotated into management as seral grasslands if an environmental analysis indicates.

Pinyon-juniper woodlands that have not been previously treated, but are in the 0-10 percent canopy cover class as a result of past fire and subsequent successional development, are evaluated through the environmental analysis process to determine if they are included among lands maintained as seral grasslands. The criteria used for physical/biological suitability are the rating of soil potential for revegetation and the erosion potential as outlined in the Terrestrial Ecosystems Survey Handbook (TESH, January 7, 1985).

Lands showing a low potential for revegetation are not retreated to maintain a seral state. Lands suitable for revegetation to grasslands and determined to be desirable through the environmental analysis are put on the 25-year average retreatment schedule.

Where seral grasslands are maintained in the pinyon-juniper woodland, eliminate invading vegetation through mechanical, chemical, or planned fire treatments on a maintenance schedule averaging once every 25 years. Consider firewood harvesting and Christmas tree harvesting as tree removal methods. Stabilize gullies, scarify the soil, and seed disturbed soils with a mix tailored for the site, emphasizing high production, shade

**Program**

**Components Activities Standards and Guidelines**

tolerant, and multi-growing season species. Seed suitable areas in all range condition classes if needed. Control livestock grazing through management and/or fencing to allow for adequate revegetation.

Terrestrial ecosystems are identified and soil properties are assessed to determine:

- Soil limitations for soil scarification purposes.
- The method of soil scarification best suited for the soils of the project area.
- Soil potential for revegetation - Identify soils that are suitable or unsuitable for successful revegetation.
- Erosion hazard and on-site soil loss - Soils with a potential erosion hazard rating of severe will require specific resource management activities in order to avoid severe impairment of soil productivity.

**Range Forage Improvement**

On pinyon-juniper lands managed for firewood production where firewood harvesting has taken place, **lopping and scattering of slash may be used** to create a more moist microclimate. Seed harvested areas with selected forage and browse species. Allow slash to become dry and brittle. Slash may be crushed where it adversely affects livestock and/or wildlife movement. Areas may be reseeded prior to crushing. This series of events takes place over a 1-2 year time span. Approximately 1,490 acres are cut for firewood per year. Grazing takes place following cutting to use the transitional range. A second entry to these sites is made approximately 15 years later to remove excess stocking of woodland regeneration and selected seed trees. No range nonstructural improvement practices will be implemented until the next firewood harvest.

**Integrated Stand Management (ISM)**

Timber

Establish and maintain stand diversity through ISM to provide suitable habitat for wildlife while maintaining or enhancing firewood production and age class distribution (regulation).

**Bear Habitat:**

Evaluate bear habitat needs during project planning in dense pinyon-juniper, areas adjacent to steep pinyon-juniper, or pinyon-juniper associated with chaparral species.

**Old-Growth:**

Stand size is between 100 and 300 acres and  $\geq 5$  chains wide, or closely grouped stands that provide contiguous habitat for interior-dwelling species.

**Program**  
**Components Activities Standards and Guidelines**

**Stand Size**

Same as ponderosa pine/mixed conifer criteria, see MA 3.

**Silvicultural Prescription**

Develop projects using the following criteria, that ensure perpetuation of the woodland vegetation type and to maintain wildlife habitat:

- Created openings in areas that have been identified as historic big game winter range are designed so that an animal will be no more than 10 chains (660 feet) from hiding cover at any location within the opening.
- Harvested areas are separated from adjacent areas by at least an 8 chain wide untreated strip.
- Cover corridors are laid out to connect treated areas or breaks in terrain to provide interconnecting cover corridors. Known or suspected routes of game travel are used to lay out cover corridors. Corridors are managed to create at least 60 percent crown cover, and are at least 8 chains wide.
- Use steep, rocky, or otherwise unmanaged areas useable by game to satisfy wildlife cover requirements to the extent possible (MA 8). Cover requirements are considered on a 10K Block basis.
- At least 20 percent of the area within a 20 chain zone adjacent to pine stringers is managed for dense mature or overmature stands of pinyon/juniper. Gambel oak in these zones is managed to increase mast production.
- If operable ground extends to the edge of a sharp break in terrain, such as a deep, steep canyon or bluff, leave an untreated strip along the break, a minimum of 3 to 8 chains wide on at least 20 percent of the break, varied to fit the country, character, and density of the stand. The same treatment is given to toes of slope breaks in terrain.
- Lay out projects to appear as natural configurations of the woodland.
- There are usually 30 years difference between regeneration of any two adjoining stands. Manage to achieve where possible not more than one-quarter of a stand's perimeter in common with an adjacent stand whose ages vary by less than 30 years.
- Harvesting firewood for sustained production is done only on sites meeting minimum regeneration criteria or as a method to prepare sites for subsequent regeneration.

**Program**

**Components Activities Standards and Guidelines**

- Unwanted, merchantable trees are disposed of through firewood sales on projects where tree removal is necessary. Large projects may need 3 years for disposal of trees by this method.
- Where slash suitable for firewood is piled for burning, there is at least 2 years free-use firewood salvage before burning piles.
- There is no firewood cutting in sensitive big game winter range from November 30 to April 15.
- Microenvironment of some sites may warrant lopping or scattering created slash to improve regeneration success and forage production.
- An average of three unburned piles per acre are left on areas with piled slash to provide cover for birds and small animals or leave lopped and scattered slash on 30 percent of treatment area.
- Manage for at least 30 percent cover.
- Emphasize cover management in travelways, bedding areas, reproductive areas, and adjacent to dependable waters and key openings.
- Cover is managed to provide at least 60 percent crown cover and at least 8 chains wide. Manage for hiding and thermal cover in known fawning and calving areas.
- Manage for small game and nongame by leaving an average of one slash pile per 3 acres in the woodland type and/or leave lopped and scattered slash on 30 percent of area harvested.
- Manage for at least an average of 1.0 snag per acre on 40 percent of the pinyon-juniper woodland acres in each 10K Block. Snags are at least 9-inch d.r.c. and at least 10 feet high.

Shelterwood --

- Natural regeneration is planned during the regeneration period. No planting is done. Site preparation in conjunction with good seed crops (3-7 years for pinyon) may be done.
- Intermediate cuts are designed to increase forage and wood fiber production.
- Preparatory cuts are done as needed to prepare the stand for regeneration.
- Seed cut is designed to leave a minimum of 20 to 50 trees/acre, depending on the amount of advanced regeneration present and the tree species mix desired. The number of residual trees is increased by 20 percent in areas to be managed for Christmas tree production.
- Final removal is done when seedlings are established and certified. Average rotation length is 180 years.
- Slash is lopped and scattered during regeneration.

Clear Cuts --

- Clearcuts may also be used, particularly when regeneration of alligator juniper is desired. Average rotation length is 180 years.
- Firewood harvests cut small patches of trees not to exceed 40 acres in size. The Regional Forester may approve cut areas greater than 40 acre.

Unevenage --

- Uneven-aged systems may also be used. Regeneration may be more certain with the single tree selection method.

**Program**

**Components Activities Standards and Guidelines**

**Alligator Juniper:**

Alligator juniper is managed primarily for maintaining and enhancing wildlife habitat by the following criteria:

- In areas where alligator juniper trees comprise less than 50 percent of the total basal area, retain live alligator juniper trees  $\geq$  12 inches d.b.h.
- In areas where alligator juniper trees comprise more than 50 percent of the total basal area, live trees  $\geq$  12 inches d.b.h. may be removed if  $<$  25 percent of the crown is living.
- In both of the above cases, some live trees  $\leq$  12 inches d.b.h. may be removed. Retain at least 40 percent of the trees.

**Pine Stringers:**

Pine stringers are noncontiguous, narrow communities of predominantly ponderosa pine that extend into the pinyon-juniper woodland below the normal elevational distribution of ponderosa pine. Manage pine stringers to emphasize wildlife habitat needs by maintaining turkey roosts and big game cover.

**Visual Management**

Foreground Retention and foreground Partial Retention treatment follow these Guidelines:

- Landform and soil help determine where an area may be cleared. Rocky ridges left and gentle drainages cleared, or rocky ridges and slopes may be cleared and rough drainages left alone.
- Roads, fences, or survey lines may be used as stand boundaries, where they help to create irregular shapes in character with the surrounding landscape. However, in most cases, fences and survey lines are in straight lines and are not irregular.
- Avoid treatment patterns that present a "farmed" or humanmade appearance.
- Retain the natural aspect of the original vegetative type. Practice "vegetative manipulation" rather than "type conversion."
- Feather edges of treatments.
- Leave islands or peninsulas in treated areas.

**Timber Sale Preparation**

Complete sale planning, sale design, sale area layout and designation, and sale package preparation. Appraise, advertise, open bid, and make sale awards on sales scheduled for the planning period. Give preference to personal-use over commercial firewood sales in areas where demand exceeds, or is expected to exceed, supply. Generally schedule commercial sales in areas remote from communities and major travel routes.

**Program**

**Components Activities Standards and Guidelines**

Restrict firewood harvest and hauling to soil moisture conditions that do not cause excessive soil compaction, displacement, or puddling.

For each project area, identify each terrestrial ecosystem and assess soil properties to determine:

- Soil potential for reforestation - Identify soils that are suitable or unsuitable for successful reforestation.
- Soils that contain undesirable soil properties that determine regeneration or revegetation in an area as being difficult.

**Timber Harvest Administration**

Administer contracts and permits for forest products, firewood, and miscellaneous forest products sales. This activity includes accountability, financial management, inspections, contract interpretation, and enforcement.

**Fire Management Planning and Analysis**

Protection

Suppression objective is to minimize cost and provide for personnel safety. Areas mapped as urban interface have a suppression objective of 10 acres or less. In areas outside the urban interface, the suppression objective is to hold fires to 1,000 acres or less.

Prescribed fire using planned and unplanned ignitions is used to accomplish resource objectives except no provision for unplanned ignitions in areas included in urban interface.

Emphasize using slash for firewood. Unless there are documented resource or protection needs, leave slash for at least 2 years before disposal. Clearly identify free-use firewood areas to assist the public in removing wood residues and thereby reducing future slash disposal costs. Provide easy to follow maps and signing for designated firewood areas.

## **Pinyon-Juniper Woodland, Greater Than 40 Percent Slopes - Management Area 8**

**Analysis Area: 20**

**Acres: 19,077**

This area includes the pinyon-juniper woodlands on slopes over 40 percent. The description is the same as MA 7. Steep canyons and volcanic slopes make the area unsuitable for many uses such as firewood cutting and some kinds of recreation.

Most of the area is old-growth because it has not been cut and fire has been excluded.

### **Management Emphasis**

Emphasize wildlife habitat, watershed condition, and dispersed recreation.

Management intensity is low.

Highlights include:

- ◆ Manage for the following indicator species:
  - ◆ Plain titmouse
  - ◆ Mule deer
  - ◆ Elk
- ◆ Manage Visual Quality Objectives (VQO) in accordance with the Forest-wide Standards and Guidelines. VQO's vary significantly in this MA

**Program**

**Components Activities Standards and Guidelines**

**Wildlife Structural Improvements**

Wildlife and Fish During winter months in key wildlife winter ranges provide water where needed using bubblers to prevent freezing.

**Range Planning and Inventory**

Range The area is classified as no capacity range. The area generally is not fenced, so occasional livestock use does occur.

**Integrated Stand Management**

Timber The area is not managed for forest products. Timber activities take place only where needed to achieve management of other resources.

**Bear Habitat:**

Evaluate bear habitat needs during project planning

**Fire Management Planning and Analysis**

Protection Suppression objective 250 acres or less except where included in urban interface.  
Prescribed fire using planned and unplanned ignitions is used to accomplish resource objectives except no provision for unplanned ignitions in areas included in urban interface.

**Program**

**Components Activities Standards and Guidelines**

## **Mountain Grassland - Management Area 9**

**Analysis Area: 25**

**Acres: 9,049**

Laying in a patchwork across the Colorado Plateau, the mountain grasslands are meadows varying in size from just a few acres to well over 1,000 acres. Natural meadows are located in frost pockets or have soil or moisture conditions not conducive to conifer growth. A wide variety of species of grasses and forbs characterize the vegetation which varies according to soil moisture and temperature. The grasslands contain some riparian areas too small to be mapped. Riparian areas are managed by the Standards and Guidelines for MA 12.

The area is important to elk, turkey, and small mammals. Meadows provide vegetation diversity needed by wildlife.

The meadows provide opportunities for breathtaking views and are themselves a highly attractive visual resource.

In some areas, the meadows are dwindling through channel erosion and subsequent dropping of the water table. This results in encroachment by conifers and other species. As the grasslands shrink, forage for wildlife and livestock is reduced and visual quality declines.

### **Management Emphasis**

Emphasize livestock grazing, visual quality, and wildlife habitat. Other resources are managed in harmony with emphasized resources. The smaller mountain meadows in remote areas are managed mostly for wildlife habitat, especially for elk summer range.

Highlights include:

- ◆ Manage for the following indicator species:
  - ◆ Antelope
  - ◆ Elk
- ◆ Manage Visual Quality Objectives (VQO) in accordance with the Forest-wide Standards and Guidelines. VQO's vary significantly in this MA.

## **Program**

### **Components Activities Standards and Guidelines**

#### **Recreation Planning and Inventory**

Recreation Manage for VQO's of Partial Retention and Modification, with portions adjacent to major travel routes managed as foreground Retention.

Closely monitor off-road driving. If damage is occurring or becomes imminent, apply and enforce appropriate restrictions, (see Forest-wide Standards and Guidelines - Recreation program component, for criteria).

Focus media attention on off-road driving damage in these sensitive areas at least annually.

#### **Nonstructural Wildlife Habitat Improvements**

Wildlife and Fish Evaluate in the first decade the need to maintain and improve meadows by eliminating competing conifers, stabilizing gullies to restore water tables, and reseeding with species desirable to wildlife.

#### **Structural Wildlife Habitat Improvements**

Evaluate need and, where necessary, construct fences to protect key meadows from grazing.

When springs are developed in meadow communities, riparian areas, or other sensitive areas, protect these areas by piping the water to water developments in adjacent, less sensitive areas.

**Program**

**Components Activities Standards and Guidelines**

**Range Resource Planning and Inventory**

Range

Grazing allotments are generally managed at the D level. Full capacity are lands assigned a grazing capacity. There are 8,824 acres of full capacity land; of this total, 947 acres are in less than satisfactory condition. Less than satisfactory range conditions will be improved through completion of the development program in the respective AMP's.

**Range Forage Improvement**

Maintain existing mountain meadows by removing invading overstory by cutting or other methods, gully stabilization to raise the water table, soil scarification, and seeding with appropriate grass and forage species.

Control livestock grazing by management and/or fencing to allow adequate regeneration of grasses and forbs.

Increase forage production by attaining a balanced composition of cool and warm season forage species.

**Water Resources Planning**

Watershed/Soils/air

Manage mountain grasslands to achieve 90 percent of potential ground cover to prevent accelerated surface erosion and gully formation. Areas that presently do not meet these standards are scarified and seeded to bring ground cover to the desired level by the second decade. Restricting livestock may be necessary until revegetation.

Identify each terrestrial ecosystem and assess soil properties to determine:

- Soil limitations for soil scarification purposes. The method of soil scarification best suited for the soils of the project area.
- Soil potential for revegetation - Identify soils that are suitable or unsuitable for successful revegetation, erosion hazard, and on-site soil loss. Soils with a potential erosion hazard rating of severe will require specific resource management activities in order to avoid severe impairment of soil productivity.

In areas capable of supporting woody riparian species, maintain and/or improve these species to standards in the Regional Guide, August 1983.

Plan and implement cost effective stream channel restoration projects to raise the water table in meadow areas where channel erosion has resulted in a lowering of the water table.

**Road Maintenance and Management**

Transportation

Generally, avoid construction of new roads. Relocate and reconstruct around this roads around this MA whenever possible.

**Program**

**Components Activities Standards and Guidelines**

**Fire Management Planning and Analysis**

Protection

Suppression objective is to minimize suppression costs and provide for personnel safety. Suppression objective of 10 acres or less in areas mapped as urban interface. In areas outside the urban interface the suppression objective is to hold fires to 100 acres or less. Suppression methods are chosen to minimize damage to the resource.

Prescribed fire using planned and unplanned ignitions is used to accomplish resource objectives except no provision for unplanned ignitions in areas included in urban interface.

## **Grassland and Sparse Piñon-Juniper Above the Rim - Management Area 10**

**Analysis Areas 26, 27**

**Acres: 160,494**

This area is made up of the grasslands and pinyon-juniper with less than 10 percent cover above the Mogollon Rim and a small portion of the transition zone (ecotone) between ponderosa pine and pinyon-juniper, primarily on Anderson Mesa. The area includes a few stringers of ponderosa pine and ecotones between grass and pinyon-juniper lands. The majority of the area is pinyon-juniper that has been treated and is in the seral grassland stage.

Fuel loading and fire danger are low. The area is important wildlife winter range, as well as year long antelope range, and is used primarily as grazing land for both livestock and wildlife.

### **Management Emphasis**

Emphasize range management, watershed condition, and wildlife habitat. Other resources are managed to improve outputs and quality. Emphasis is on prescribed burning to achieve management objectives. Walnut Canyon National Monument entrance road is within this MA. The management and use of the 1000 foot right-of-way along the entrance road is directed toward the protection and maintenance of the cultural and natural resources of the area.

Highlights include:

- ◆ Manage for the following indicator species:
  - ◆ Antelope
- ◆ Manage Visual Quality Objectives (VQO) in accordance with the Forest-wide Standards and Guidelines. VQO's vary significantly in this MA.
- ◆ Enforcement of the management restrictions and the day to day administration of the Monument entrance is the responsibility of the Park Service, as is the maintenance of the facilities. Major changes in the development, construction, or initiation of resource management projects are coordinated between the Park Service and the Forest.

**Program**

**Components Activities Standards and Guidelines**

**Program**

**Components Activities Standards and Guidelines**

**Recreation Planning and Inventory**

Recreation

Walnut Canyon National Monument Entrance Road - (displayed on the MA map as MA 10, although as seen from road more closely resembles characteristics of MA 7).

- The VQO is foreground Retention.
- Roadside signing is a part of the visitor experience, and is of high quality. Signing, interpretive, informative, or regulatory is done in a positive manner.
- Speed limits are posted and maintained by the Park Service.
- The fenced boundary is signed as "National Forest Land Administered by the Park Service."
- The primary purpose of the roadway is access to the National Monument. Secondary uses are for public access to and from Forest Road 303 and adjacent Forest Lands.
- Picnicking, walking, hiking, and similar non-impacting uses are encouraged.
- Permit the gathering and collecting of edible plants, nuts, and berries for personal consumption.
- Vehicle traffic permitted only on designated roadways, with the exception of access to fences (for repair), for maintenance of utilities, traversing the right-of-way, and for stock management by permittees of the National Forest.
- The Park Service has the option to allow controlled firewood harvest by members of the public who have obtained personal-use permits from the Forest.
- The Forest and the Park Service cooperate together in fire suppression activities. A joint agreement is annually prepared to describe in detail the nature of the cooperation.
- Prescribed burning to reduce hazardous fuels is approved jointly by the Forest and the Park Service. Activities may be proposed by either agency.

**Program**

**Components Activities Standards and Guidelines**

- The sliver of land on the north side of the Monument separated by the FR 303 is difficult for the Park Service to manage, and the triangle west of the entrance road and east of the Monument is difficult for the Forest to manage. These lands are designated for transfer between the agencies.

**Nonstructural Wildlife Habitat Improvement**

Wildlife and Fish

Control invasion of undesirable plant species when necessary to improve and protect wildlife habitat values. Prescribed burning will be one specific practice used, especially where needed to improve wildlife habitat.

**Structural Wildlife Habitat Improvements**

During winter months in key wildlife winter ranges, provide water where possible, using bubblers or other methods to prevent freezing where needed.

**Range Resource Planning and Inventory**

Range

Manage grazing allotments generally at Levels D and E. Full capacity lands are assigned a grazing capacity. There are 123,435 acres of full capacity land; of these, 24,278 acres are in unsatisfactory range condition. Unsatisfactory range conditions will be improved through completion of the range development program in AMP's.

**Range Forage Improvement Maintenance**

Maintain a seral grassland state on pinyon-juniper lands where type conversions have occurred in the past, with the exception that corridors of cover for wildlife habitat, determined through environmental analysis, may be allowed to develop through regrowth of pinyon-juniper. Initiate a retreatment schedule of approximately 25 years. Retreatments are accomplished through one or all of the following methods (see Table 12):

- Individual tree pushing or cutting;
- Prescribed burning;
- Chemical treatments.

Depending upon plant composition and diversity, seed treated sites with a mix tailored to the site, emphasizing high production, multi-growing season species to achieve a balance between warm and cool season plants. The goal of retreatment is to maintain the seral grasslands in a savannah-like state that emphasizes a diversity of habitats to enhance forage for livestock and wildlife.

**Program**

**Components Activities Standards and Guidelines**

Some acres have been mechanically treated by using heavy equipment to remove individual trees, or "pushing," "chaining," or "cabling" as the practice is called. A portion of these lands have very low potential for range revegetation and are allowed to proceed towards climax stage. Other low density canopy lands with a higher potential for revegetation are rotated into management as seral grasslands in some areas if an environmental analysis indicates.

Pinyon-juniper woodlands that have not been previously treated, but are in the 0 to 10 percent canopy cover class as a result of past fire and subsequent successional development, are evaluated through the environmental analysis process to determine if they are included among lands maintained as seral grasslands. The criteria used for physical/biological suitability are the rating of soil potential for revegetation and the erosion potential as outlined in the Terrestrial Ecosystems Survey Handbook (TESH, January 7, 1985).

Identify terrestrial ecosystems and assess soil properties to determine:

- Soil limitations for soil scarification purposes.
- The method of soil scarification best suited for the soils of the project area.
- Soil potential for revegetation - Identify soils that are suitable or unsuitable for successful revegetation.
- Erosion hazard and on-site soil loss - Soils with a potential erosion hazard rating of severe will require specific resource management activities in order to avoid severe impairment of soil productivity.

**Fire Management Planning and Analysis**

Protection

Suppression objective is to minimize cost and provide for personnel safety. Suppression objective is 10 acres or less in areas mapped as the urban interface. In areas outside urban interface, the suppression objective is to hold fire to 1,000 acres or less.

Prescribed fire using planned and unplanned ignitions is used to accomplish resource objectives except no provision for unplanned ignitions in areas included in urban interface.

## **Program**

### **Components Activities Standards and Guidelines**

## **Verde Valley - Management Area 11**

**Analysis Areas: 28, 29**

**Acres: 169,529**

The Verde River is an important feature of the Verde Valley and is covered by Standards and Guidelines in MA's 2 and 12. It is because of the Verde River that the Verde Valley is an unusual kind of ecosystem in Arizona. The Valley shares other characteristics with similar country at the same elevations and with a similar climate, but it has been the Verde River and the lower portion of Oak Creek, Beaver Creek, and West Clear Creek that have attracted people and wildlife to the Valley since prehistoric times. The prehistory of the area is one of the richest in the United States. That the Valley has been inhabited for centuries is clearly evidenced by the abundance of ruins of prehistoric dwellings. Good forage for wildlife also attracted people and their domestic livestock. The Valley was chosen as an early cavalry post because of the abundance of forage.

In more recent times, people have migrated to the area because of the mild climate with winter temperatures ranging from low teens to mid 50's and summertime temperatures from the low 50's to 110oF. Precipitation ranges between 12 to 16 inches per year. Vegetation includes pinyon-juniper woodland, Arizona Cypress groves, grass, and desert vegetation types including black grama-tobosa grasslands, creosotebush, and mesquite. There are chaparral species, seral grasslands, and Canotia.

### **Management Emphasis**

Emphasize watershed condition, range management, wildlife habitat for upland game birds, and dispersed recreation.

Highlights include:

- ◆ Manage for the following indicator species:
  - ◆ Antelope
- ◆ Manage visual Quality Objectives (VQO) in accordance with the Forest-wide Standards and Guidelines. VQO's vary significantly within this MA.

**Program**

**Components Activities Standards and Guidelines**

**Recreation Planning and Inventory**

Recreation

Verde Valley is managed for dispersed recreation along the upper Verde River outside the Wild and Scenic section and along lower Oak Creek. Coordinate management of areas adjacent to, and clearly visible from, the portion of the Verde River classified as Wild and Scenic with the Verde River Implementation Plan. Place special emphasis on maintaining ROS class compatible with management and use of the Wild and Scenic River.

Coordinate with Dead Horse State Park for connecting trails and access roads adjacent to the Park. These trails/roads are consistent with more complete service to the public and other resource management support.

Manage the segment of West Clear Creek downstream from the wilderness to Clear Creek Campground and the segment of Wet Beaver Creek downstream from the wilderness to the private land boundary at the section line between sections 22 and 23, T. 15N., R. 6E. to maintain their free flowing status and their scenic and recreational values. Manage to avoid impacts that would disqualify them from future study and possible designation as scenic, recreational, or other equivalent classification. Evaluate activities and proposed developments that are visible from or that could affect the physical character or ROS class through the environmental analysis process. Proposed developments evaluated in this manner include, but are not limited to, impoundments and new water diversions (unless directed otherwise by legislation), developed recreation sites, and road building. Manage livestock grazing and vehicular access to maintain ROS class and recreation/scenic values.

**Habitat Access Controlled by Closures**

Wildlife

Access likely to cause disturbance is prohibited in the vicinity of nesting bald eagles between December 1 and June 15 (Closure Order 16-52, October 23, 1984). If eagles occupy a nest territory earlier or later, the closure period may be lengthened or shortened.

**Program**

**Components Activities Standards and Guidelines**

**Nonstructural Wildlife Habitat Improvement**

Determine the need to control invasion of undesirable plant species in antelope range to improve and protect wildlife habitat values. Where necessary, implement the control measures, such as prescribed burning to improve antelope habitat. Range Resource Planning and Inventory

**Range Resource Planning and Inventory**

Range

Grazing allotments are generally managed at Levels C, D, and E. Full capacity lands are assigned a grazing capacity. There are 159,396 acres of full capacity range. Within the full capacity acreage, there are 41,602 acres of less than satisfactory lands. Less than satisfactory range conditions will be improved through range management or development program contained in the AMP's.

**Range Forage Improvement Maintenance**

Broadcast seed immediately following natural or planned burns when an adequate seed source is not available with a warm and cool season seed mix to increase production for the site. This is done where necessary based upon the Burned Area Emergency Rehabilitation Handbook, FSH 2509.13.

Evaluate and determine the need to maintain forage improvement acres in satisfactory or better condition.

Some acres have been mechanically treated by using heavy equipment to remove individual trees, or "pushing," "chaining," or "cabling" as the practice is called. A portion of these lands have very low potential for revegetation and are allowed to proceed towards climax stage. Other low density canopy lands with a higher potential for revegetation are rotated into management as seral grasslands in some areas if an environmental analysis indicates.

Where seral grasslands are maintained as pinyon-juniper woodland, eliminate invading vegetation through mechanical, chemical, and prescribed fire treatments on a maintenance schedule averaging once every 25 years.

Stabilize gullies, scarify the soil, and seed disturbed soils species mix tailored for the site, emphasizing high production, shade tolerant, and multi-growing season species. Control livestock grazing through management and/or fencing to allow for adequate revegetation.

**Range Forage Improvement**

On desert scrub lands with overstories of mesquite, catclaw, Canotia, manzanita, and turbinella oak, vegetative treatments may be planned to take place. Sites are reviewed for soil potential for revegetation and erosion potential as outlined in the Terrestrial Ecosystems Surveys Handbook (TESH January 7, 1985).

**Program**

**Components Activities Standards and Guidelines**

Identify terrestrial ecosystems and assess soil properties to determine:

- Soil limitations for soil scarification purposes.
- The method of soil scarification best suited for the soils of the project area.
- Soil potential for revegetation - Identify soils that are suitable or unsuitable for successful revegetation.
- Erosion hazard and on-site soil loss - Soils with a potential erosion hazard rating of severe will require specific resource management activities in order to avoid severe impairment of soil productivity.

Treatments suitable for each species are used to convert sites to a lower successional and more productive state. Seed treated sites emphasizing a balance between warm and cool season growers.

**Water Resources Planning**

Watershed/Soil/Air

Where watershed condition is unsatisfactory plan, design, and implement projects by the end of the second decade following watershed condition inventory and subsequent prioritization. Evaluate soils to determine suitable species that would provide maximum soil stabilizing benefits on each of the various soil parent materials. Establish a cost effective monitoring program to determine trends in watershed condition.

**Silvicultural Examination and Prescription**

Timber

Evaluate lands to identify those areas that may meet suitability standards for miscellaneous forest products by the end of the second decade. Complete a minimum of 30 percent of identification in Decade 1.

Plan, prepare, administer, and sell or issue permits for commercial and personal-use miscellaneous convertible and nonconvertible products as requested by other resources (FSM 2462).

**Land Exchange**

Special Uses/Lands

**Text was superceded by Amendment 12, see pages 206-20 and 206-21.**

**Program**

**Components Activities Standards and Guidelines**

**Fire Management Planning and Analysis**

Protection

Suppression objective is to minimize cost and provide for personnel safety except suppression objective is 10 acres or less in areas mapped as the urban interface. In areas outside the urban interface, the suppression objective is to hold fires to 1,000 acres or less.

Prescribed fire using planned and unplanned ignitions is used to accomplish resource objectives except no provision for unplanned ignitions in areas included in urban interface.

## Riparian and Open Water - Management Area 12

**Analysis Areas: 32, 33**

**Acres: 20,490**

Riparian areas are wetland ecosystems that have a high water table because they are close to surface or subsurface water. Riparian areas usually occur in the transition between aquatic and terrestrial ecosystems, but have distinct vegetation and soil characteristics.

There are eight types of riparian areas on the Forest:

- ◆ Intermittent streams
- ◆ Perennial streams
- ◆ Wet meadows
- ◆ Marshes
- ◆ Rivers
- ◆ Ponds
- ◆ Lakes
- ◆ Seeps and Springs

This management area includes both mapped riparian areas and riparian areas which were too small to be mapped as discrete units during the analysis process.

Riparian areas provide very important wildlife and fish habitat and recreation opportunity because of the water.

There are over sixty named lakes and wetlands in the area, including Mormon Lake and Stoneman Lake, the two largest natural lakes in Arizona.

Riparian areas are extremely variable due to different types of water bodies such as lakes, streams, and ponds. The characteristics of the area in which riparian areas occur such as gradient, topography, soil type, elevation, and plant communities also affect the area type. Each different type has associated vegetation that is characteristic.

Definition: Riparian ecosystems are distinguished by the presence of free water within the common rooting depth of native perennial plants during at least a portion of the growing season. Riparian ecosystems are normally associated with seeps, springs, streams, marshes, ponds, or lakes. The potential vegetation of these areas commonly includes a mixture of water (aquatic) and land (phreatic) ecosystems.

Riparian areas are critical for multiple-use management because:

- ◆ Riparian areas are generally more productive per acre of biomass (plants and animal) than other areas.
- ◆ They provide large amounts of edge between life zones which adds significantly to the diversity of an ecosystem.
- ◆ Different species and age classes provide vertical edge for wildlife species.

- ◆ The three basic requirements of wildlife habitat (food, cover, and water) are met.
- ◆ The fisheries resource is associated with this area.
- ◆ Topography, high productivity, easy availability, and the presence of water attract livestock and they tend to concentrate here. Riparian areas are highly sensitive to overgrazing.
- ◆ Scenic values are very high.
- ◆ Stream channels and associated riparian vegetation are fragile components of good watershed condition.
- ◆ Most of the developed campgrounds and picnic areas are in or directly adjacent to the riparian area. Dispersed recreationists concentrate in the area because of the water, visual quality, and shade trees.
- ◆ The topography generally provides for less expensive road construction and serves as convenient wildlife travel corridors. These uses are often in direct conflict.

### **Management Emphasis**

Emphasize wildlife habitat, visual quality, fish habitat, and watershed condition on the wetlands, riparian forest, and riparian scrub. Emphasize dispersed recreation, including wildlife and fish recreation, on the open water portion.

An interdisciplinary team approach will be used on management activities such as timber sales, allotment management plans, and other management activities to prescribe specific management practices to meet the goal of riparian area recovery by 2030. Manage riparian areas based on the potential to support riparian vegetation. Potential is determined through a consensus of an interdisciplinary review. In order to achieve certain aspects of recovery, such as establishing three age classes of woody riparian vegetation, implementing riparian Standards and Guidelines occurs in the first decade. Riparian areas provide a filter strip of vegetation, important for filtering sediments generated from upslope soil erosion. Eighty percent of the riparian recovery is expected by 2030. The remaining 20 percent will be significantly improved, but will not have all of the characteristics of a fully recovered riparian area. The goals and objectives for elk populations and for livestock grazing affect achievement of the full recovery.

Highlights include:

- ◆ Improve riparian areas through a combination of improvement projects and management activities.
- ◆ Manage for the following indicator species:
  - ◆ Cinnamon teal
  - ◆ Lincoln's sparrow
  - ◆ Yellow breasted chat
  - ◆ Lucy's Warbler
  - ◆ Macroinvertebrates
  - ◆ Manage for visual quality objectives of Retention, Partial Retention, and Modification.

**Program**

**Components Activities Standards and Guidelines**

**Recreation Planning and Inventory**

Recreation

In the first decade develop specific management direction for open water areas on lakes and reservoirs having significant amount of over water recreation use, e.g., sailboating, motorboating, canoeing, fishing, and windsurfing. Consider, as a minimum, ROS class demand and distribution, wildlife and fisheries habitat needs, user safety and enjoyment, and cost-effectiveness of management practices. Coordinate with Arizona Game and Fish Department (AGFD) in this analysis. Where determined through environmental analysis, identify and implement specific management practices such as wakeless zones, traffic circulation patterns, presence and/or size of gasoline motors, and regulations on use of jet skis. Coordinate with AGFD in implementation.

Do not issue outfitter/guide permits or permit use which causes significant change for the ROS social or managerial setting, e.g., airboats or seaplanes.

Manage Stoneman Lake basin for dispersed day-use. Overnight camping in the basin is prohibited.

**M11 Contains additional management direction for a portion of West Clear Creek and Wet Beaver Creek.**

**Wildlife Planning and Inventory**

Wildlife and Fish

Complete inventory, survey, and evaluate riparian areas by end of first decade.

Cooperate with AGFD to develop implementation schedules for Arizona Cold Water Fisheries Strategic Plan.

The following applies to riparian areas, whether they are large enough to be mapped out or not. Wetlands and open water containing emergent vegetation which provide nesting habitat are protected from disturbing uses that will harass nesting birds, such as activities that are noisy or would damage nests or nesting habitat from May 1 to July 15.

Meet the following Riparian Standards in the Regional Guide for 80 percent of riparian areas above the Rim and 90 percent below the Rim by the year 2030:

- Maintain at least 80 percent of the potential overstory crown coverage.
- Maintain at least three age classes of woody riparian species, with at least 10 percent of the woody plant cover in sprouts, seedlings, and saplings.
- Maintain at least 80 percent of the potential stream shading from June to September along perennial cold and cool water streams.
- Maintain at least 80 percent of the potential shrub cover in high elevation areas.
- Maintain at least 80 percent of the potential emergent vegetation cover from May 1 to July 15 in key wetlands.
- Maintain at least 80 percent of the spawning gravel surface free of inorganic sediment.
- Maintain at least 80 percent of streambank total linear distance in stable condition.
- Retain snags in riparian areas that are not a safety hazard.

Measures such as fencing to exclude livestock, vegetation projects, and special management prescriptions will be undertaken until the affected areas are brought into satisfactory riparian condition.

In addition, the remainder of the Forest's riparian areas will have some of these characteristics, but not all of them by 2030.

Coordinate with other resource functions to pursue instream flow rights to protect aquatic ecosystems, fish, and wildlife.

#### **Nonstructural Wildlife Habitat Improvements**

Determine the need to rehabilitate riparian areas through seeding and planting woody species in areas that are in unsatisfactory condition, including those areas not mapped as discrete riparian areas, and then proceed to rehabilitate areas as determined. Attempt using unpalatable species where necessary to avoid wildlife browsing.

Maintain or improve nesting cover and waterfowl forage on existing waterfowl islands and shorelines. In conjunction with construction of waterfowl islands seed herbaceous species unpalatable to large herbivores.

Cooperate with Arizona Game and Fish Department on fish population control of aquatic plants and fish stocking to meet State fisheries management goals.

**Program**  
**Components Activities Standards and Guidelines**

**Structural Wildlife Habitat Improvements**

Construct 10 miles of fences per decade for the first two decades where necessary to protect key wet meadows, wetlands, and riparian regeneration from grazing.

Construct 150 waterfowl islands per decade in Decades 2 and 3 and create potholes in wetland areas to provide nesting habitat.

Maintain riparian and meadow communities by providing waters for wildlife and livestock away from these sensitive areas.

Establish administrative exclosures the first decade to determine riparian vegetation potential on representative streams.

Modify watershed improvement structures where possible to provide water for wildlife.

Manage lakes and streams to improve fisheries habitat by constructing structures and barriers as appropriate based on environmental analysis and on professional judgment of the responsible official and resource specialist:

- Install 10 stream improvement projects on perennial streams in first decade; Improve fish habitat through placement of 200 cover structures on lake bottoms during the first decade; Create spawning habitat of 10 acres per year in lakes in the first decade.

**Range Resource Planning and Inventory**

Range

Grazing allotments are generally managed at Levels C and D. There are 3,159 acres of full grazing capacity lands, of this total 484 acres are in less than satisfactory range condition that will be improved through completion of the development programs contained in the AMP's. AMP's are reviewed and, if necessary, amended by 1992 to contribute towards the achievement of satisfactory riparian condition.

Salt is used to help achieve proper livestock grazing distribution. Permanent salt is not placed within 1/4 mile of the edge of any riparian area. Temporary salting may be approved if it will help to achieve a specific management objective for enhancement of riparian areas.

Proper allowable use within MA 12 is not to exceed 20 percent on the woody vegetation.

Stoneman Lake is fenced to exclude livestock grazing below the rim of the basin.

**Program**

**Components Activities Standards and Guidelines**

**Range Forage Improvement**

Favor the establishment of woody riparian vegetation, where potential natural vegetation has been determined through an interdisciplinary process to include woody riparian species. Control livestock grazing through management and/or fencing to allow for adequate establishment of vegetation and the elimination of overuse. Evaluate seeding projects for effects on concentrating livestock use in riparian and other sensitive areas.

**Timber Harvest and Administration**

Timber

Plan, prepare, administer, and sell or issue permits for commercial and personal use miscellaneous convertible and nonconvertible products such as firewood only as requested by other resources to achieve wildlife habitat, visual quality, public safety, or dispersed recreation objectives.

Evaluate bear habitat needs during project planning. Defer logging activities from April 15 to June 30 in known bear maternity areas.

No precommercial thinning or piling thinning slash in riparian areas or areas that have riparian characteristics.

**Water Resources Planning**

Watershed/Soil/Air

Plan for suitable filter strips between streamcourses and disturbed areas and/or road locations. See Filter Strip Table in Forest-wide Standards and Guidelines under Watershed/Soil/Air, F2. Plan for suitable filter strips between stream courses and ground disturbing activities including roads.

**Water Resource Monitoring**

Cooperate with USDI Geological Survey in maintaining stream gages.

**Soil Resource Planning**

Conduct an on-site soil investigation where needed to identify soil properties of riparian sites not delineated in the T.E.S. inventory due to mapping scale and inclusions such as soils with aquic subgroups, aquic soil moisture regimes, and poorly drained properties.

**Program**  
**Components Activities Standards and Guidelines**

**Water Resource Improvement**

Through coordination with other disciplines, maintain or improve, where necessary, riparian vegetation along streams for moderating water temperature and protecting bank stability. Accomplish promptly after the inventory phase is completed. Investigate and implement where necessary, cost effective structural measures to control channel erosion.

**Minerals**

Minerals Mineral material excavation with the riparian zone may be allowed after environmental analysis. Authorized mineral activities will maintain or improve riparian conditions.

**Special-Use Management**

Special Uses/Lands New special-uses are normally not allowed in riparian areas unless they benefit riparian management. Exceptions which cannot be avoided, such as utility lines or roads crossing stream courses, are designed to minimize the amount of riparian affected and the degree of effects.

**Land Exchange**

Acquiring riparian areas through land exchange has a high priority.

**Fire Management Planning and Analysis**

Protection Fight fire aggressively, if necessary, to prevent resource damage, using suppression methods that minimize long-term adverse impacts to riparian habitats.

## Cinder Hills Off-Highway Vehicle Area – MA 13

Acres: 13,711

The northern boundary is south of Sunset Crater Volcano National Monument (Monument) and south of Forest Road (FR) 545, the eastern boundary is the Doney MA, (east of Fernwood subdivision), the southern boundary is the Doney MA (underground pipeline) and the western boundary is the Craters MA (large KV electric line). This MA is a portion of the San Francisco volcanic field with a field of large cinder cones sparsely covered by ponderosa pine trees and shrubs and covered with a deep layer of loose cinders. The landscape of impressive cinder cones in this MA provides world class ATV, sandrail, and motorcycle riding, dispersed camping, and spectacular scenery. Unique among southwestern forests, the Cinder Hills are the result of massive, recent volcanic activity around the San Francisco Mountain. NASA used a part of the area to train astronauts in the 1960's because of its moon-like surface. The unique nature of the cinder soils, combined with hills, cool summer temperatures, and other features make the Cinder Hills OHV area an extremely popular destination of OHV enthusiasts. Individuals and large groups enjoy the area year-round, with heaviest use occurring on summer weekends. Because of the deep cinders, only 4 wheel drive, ATV's, or sandrails can travel on the cindery roads. Other roads are travelable only because they have had other surface material brought in. Current improvements include improved main roads, trails, loading ramps, and signs. There is no private land within the MA; the communities of Fernwood and Doney Park are adjacent to the nearby Doney MA.

Portions of the Cinder Hills OHV area are viewed from overlooks in the Monument and as one drives along FR 545. As visitors look from the Cinder Hills Overlook, OHV activity can be seen and heard, especially on very busy weekends. The hills provide a scenic backdrop as seen from Highway 89. New information has shown that portions of the OHV area erupted along with Sunset Crater. The geologic ties of Gyp Crater and the rest of the volcanic "vent" and the Kana-a Lava flow, has lead to greater emphasis on protection of these features. Some of the landforms in the Cinder Hills hold religious and cultural significance to American Indians. This MA supports plant and animal species adapted to cinder landscapes. Plants adapted to the cinder soils include *Penstemon clutei*, a Forest Service Region 3<sup>5</sup> sensitive plant.

### Management Emphasis

Emphasize OHV recreation opportunities and amenities. Monitor communities of plants such as *Penstemon cluteii* where and when they occur in the OHV area. Ensure continued existence of this endemic plant. Mitigate scenic integrity of areas seen from the Monument, Highway 89, and neighboring rural residential areas. Protect the Kana-a Lava flow and Gyp Crater geologic features associated with Sunset Crater.

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<sup>5</sup> Region 3 refers to the Southwest Region of the Forest Service including Arizona, New Mexico, and a portion of Oklahoma

Highlights include:

- ◆ Per the Objectives for Recreation Opportunity Spectrum map, this MA is mostly Semi-primitive Motorized with Roded Natural corridors along improved roads. On busy summer weekends there are more people than would usually be the case in a Semi-primitive setting, but other aspects of Semi-primitive settings occur and this is acceptable.
- ◆ Actively manage for OHV use by increasing facilities to match use, better signing and trail designation, more on-site presence, and road improvement. Coordinate administration/enforcement with the National Park Service.
- ◆ Management Indicator Species for this MA are mule deer, pygmy nuthatch, and hairy woodpecker.
- ◆ Manage for Visual Quality Objectives (VQO's) of Partial Retention, and Modification. The VQO's should be Partial Retention as seen from Doney Park, Highway 89, Sunset Crater Volcano National Monument vistas, and FR 545; and Modification from roads crossing the area.

***All of the following items are Guidelines***

**OHV Use**

This MA is designated for off-road driving and is managed for two and four wheeled vehicles.

Manage off-road driving to provide recreational opportunities and coordinate with needs of other recreation users and other resources.

Make slight adjustments to the boundary of the OHV area where needed to ease administration of the site. These changes will improve enforcement of the boundaries, help users identify the area, and in combination with other access management activities will lessen encroachment into the Monument. Consider fencing or other physical barriers a means of boundary identification.

The boundary has been slightly revised on the southwest corner of the area for administrative identification. There is no significant change in the size of the area, but it is adjusted to roads

or features that are identifiable on the ground. The map in Appendix M has been revised to reflect what is currently posted on the ground.

See the *Objectives for Recreation Opportunity Spectrum* map (Appendix M) and manage uses to meet these objectives. On busy summer weekends, the number of encounters with other recreationists will likely be outside parameters set for Semi-primitive settings and this is acceptable.

Reference the *Cinder Hills Off-Road Driving Area Report* (Peaks Ranger District). This report is a detailed desired condition that will be validated or changed via subsequent site-specific NEPA analysis. This report includes a map of the desired improved roads, camping areas, specific slope designations, rehabilitation needs, sanitation facilities, signing, boundary management, information, and interpretation actions. The report will be updated as needed with involvement from off-road vehicle users, Native American tribes, and others concerned with Cinder Hills use. Requiring a permit and/or charging a fee may be considered in the future. Operation of the area by a concessionaire may be considered.

Portions of this MA will be open to unrestricted cross-country travel, portions will have use restricted to designated routes, and portions will be closed (some slopes).

Reasons for closing areas may include:

- Protection of geologic features tied to Sunset Crater
- Scenic integrity of steep slopes facing the Sunset Crater Overlook, the Doney Park communities, and Highway 89
- Presence of archaeological sites that could be damaged (usually located under a cinder layer) or other places of traditional cultural importance
- Maintenance of ground vegetation necessary for ecosystem function
- Sensitive plant locations, such as *Penstemon cluteii*
- Needs of off-road users
- User safety
- Manageability
- Excessive erosion resulting in cinder removal down to mineral soil and subsequent erosion or resulting bare tree roots exposed at mineral soil

Reasons for keeping areas open may include:

- Low visibility from communities or from the Monument (interior of this MA)
- Quality of the ATV/sandrail experience
- To provide for a variety of OHV experiences
- Proximity to camping areas
- Low or absent vegetative cover

Organized off-road driving events are considered on a case-by-case basis through the environmental analysis process.

Glass containers may be prohibited if the containers create a health, safety, and/or litter problem.

Pursue on-site patrols and more full time stewardship.

Partner with OHV community to benefit from volunteer contributions.

Pursue State<sup>6</sup> grants and other funding opportunities for improvements, rehabilitation, interpretation, and on-site presence. Other funding may include Fee Demo.<sup>7</sup>

Vehicle sound emissions will be required to meet State standards, or in the absence of State standards, industry or other standards.

Vehicles will meet Forest Service Region 3 fire equipment standards.

### **Recreation Signing**

Improve and maintain boundary and interior signing. Cooperate with NPS to construct a physical barrier delineating the OHV area from the National Monument boundary if motorized incursions continue.

### **Camping and Roads**

Improve or re-locate improved roads and locate camping in order to disperse riders, provide additional areas for enjoyment, and lessen use in sensitive areas. This includes limiting through traffic to the Sunset Crater Volcano-Wupatki Scenic Loop Drive (FR545), and improvement of roads in the interior of the area. Criteria for access and camping design include: location of riding areas, presence of *Penstemon cluteii* habitat, dispersing riders, improving visual quality, and protection and rehabilitation needs of impaired vegetation and soils.

Provide different camping levels and experiences. Provide more developed camping hubs along improved roads. Design and develop transportation routes at camping hubs for pulling off the road. These hubs will include sanitation facilities. Provide quiet area camping sites. Quiet area restrictions are posted, and as funding becomes available, monitored by host and OHV users. Sanitation facilities are included at these sites as needed. All other areas of the OHV are open to primitive camping, unless specifically closed.

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<sup>6</sup> *Coordination with the State: We will continue to work with the State, to determine what grants are available and appropriate to apply for in relation to the proposed management, improvements, and rehabilitation needs of the area. In addition to exploring funding avenues, we will work with the State to determine other management partnerships that might be desirable to achieve the management objectives and enhance the OHV experience.*

<sup>7</sup> *Fee Demo: The District will be studying the concept of Fee Demo for the OHV Area. A District team will determine if fee demo is a desirable funding avenue, and if so, how a fee demo area would be implemented. We will visit other fee demo sites, talk to other managers, and work with the OHV community to determine if this is an appropriate and/or desirable action to take.*

## Scenery

In closed areas, attempt actions to remove tracks and re-create natural cinder landscapes. Research techniques that may help the situation, but without causing large areas of additional ground disturbance. Examples of actions may include raking, dragging cinders up slope, mimicking needlecast or seeding.

## Cultural/Historical

Provide signing informing the public about closure of astronaut training ground.

Close the astronaut training ground by adding a fence to exclude OHV's.

Continue active monitoring of cultural and historical sites to assess impacts from recreation. Changes in management can occur in response to demonstrated (through monitoring) negative impacts to archaeological resources. Cooperate with Park Service personnel to accomplish monitoring.

## Rare Plants

Continue to monitor *Penstemon cluteii*. There is an ongoing status report<sup>8</sup> being developed for this plant. As this information is attained we will make any necessary adjustments to ensure continued existence of this endemic plant.

## Forestry

Many acres within the Cinder Hills OHV area have low regeneration potential due to cinder soils and are currently classified as unsuitable for timber production.

Evaluate stand conditions, including insect and disease, and the health and vigor of stands. Where and when necessary to meet safety objectives, harvest recent dead and poor risk ponderosa pine.

## Livestock Grazing

This area is currently closed to livestock grazing.

## Prescribed Burning

Prescribed fire using planned and unplanned ignitions is used to accomplish resource objectives except there is no provision for unplanned ignitions in areas included in the urban interface.

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<sup>8</sup> *Penstemon cluteii* grows in cinder soils at various locations on the Peaks Ranger District. The status report covers the entire range for this plant, which includes the OHV area.

### **Coordination with National Park Service**

Protect areas that are directly tied to the Sunset Crater eruption for future research, and visitor interpretation of the geologic story. Coordinate with the NPS to inventory, map, and assess conditions of the geologic features.

For Gyp Crater: establish safety barriers, and/or warning signs around the exterior of the crater, establish and coordinate interpretive signing and programs with the National Park Service, close Gyp Crater to OHV access and camping, and rehabilitate tracks in Gyp Crater.

For the Kana-a lava flow, prevent off road vehicle use in the lava flow. Use proposed boundary adjustments in combination with access management. Roads leading north off of FR 244 should be closed and rehabilitated. These roads lead out of the OHV area and impact the Kana-a lava flow.

Work with and establish interpretive messages and programs with the National Park Service and volunteers from OHV users. Including improved signing, information kiosks, and interpretive message at the Cinder Hills Overlook. Provide signing and information aimed at the following objectives: to prevent lost riders, to show opportunities of where to ride, to clearly depict boundaries and eliminate encroachment into Sunset Crater Volcano National Monument, and to identify dangerous and/or closed areas.

Coordinate with Sunset Crater Volcano and Wupatki National Monuments in managing dispersed recreation use adjacent to the Monuments.

## Oak Creek Canyon (MA 14)

Acres: 5,388

This MA begins just north of Uptown Sedona and rises to Oak Creek Vista amid steep walls, a rich streamside environment and deep, clear pools. Oak Creek Canyon, which contains private lands interspersed with National Forest lands, is internationally known for its unique beauty and recreation opportunities. Nearly five million people pass through the Canyon annually. Residents and visitors alike are concerned about how to meet their recreation desires while protecting wildlife, water quality and the beauty they came to experience.

### MANAGEMENT EMPHASIS

Emphasize day-use activities that are pedestrian-oriented with access to Oak Creek and scenery. Provide a range of high-quality recreation benefits and interpretation.

Highway 89A offers an outstanding scenic driving experience.

Wildlife habitat, healthy stream conditions and clean air and water are protected.

Cultural history is interpreted.

Fire hazards and risk are carefully managed within this streamside corridor.

### PLANTS, WILDLIFE, SOIL, AIR AND WATER

#### Objectives

1. Consider recreation management methods that are consistent with wildlife habitat direction.
2. Complete the assessment of road densities, conditions and locations within the Oak Creek watershed in order to identify actions needed to reduce impacts on the floodplain, peak flows and sediment routing.
3. Participate with the Oak Creek Water Quality Task Force and assist with implementation of its recommendations. Collaborate with County and State governments to protect public health and safety by defining water quality monitoring and public health and safety risk management.
4. Explore the need for and feasibility of reducing campfire smoke in Oak Creek Canyon from April to November to improve habitat conditions for bats, birds and other wildlife species.
5. Use prescribed fire and mechanical methods to achieve fire management goals.
6. Ensure adequate instream flow to maintain aquatic communities and water sources for wildlife.

7. Initiate collaboration with the AG&FD and the USFWS to determine the feasibility of reintroducing Gila trout into Oak Creek.
8. Support research efforts that further define the habitat requirements of native fish and bat populations. Protect and/or restore habitat conditions that may be limiting these populations.
9. Ensure that there is an appropriate range of spawning, rearing and overwintering habitat to support the native fish community in Oak Creek.
10. Ensure that woody materials, such as logs, tree limbs and snags, are present in riparian communities for prey base habitat, aquatic nutrient cycling and soil retention consistent with public safety.
11. Acquire undeveloped private property needed to protect critical riparian habitats.

**Standards**

1. Water quality in Oak Creek must comply with Arizona State water quality standards and the State Unique Water status of Oak Creek.

**Guidelines**

1. Discourage facility investments within the Oak Creek 100-year floodplain.
2. Cooperate with the AG&FD to stock fish and provide fishing access to meet goals and objectives of the Arizona Cold Water Fisheries Strategic Plan.
3. Assess existing and proposed floodplain developments for their impacts on floodplain function and channel processes.

**SCENERY**

**Objectives**

1. State Highway 89A provides a high-quality scenic experience. Highway improvements should blend with existing natural-appearing features except when there are safety concerns that cannot be mitigated. Minimize the relative dominance (scale) of State Highway 89A to the extent possible/practical.
2. National Forest land within Oak Creek Canyon should retain their natural characteristics. Identify private parcels on which development does, or could, detract from scenic integrity. Pursue methods for protecting scenic integrity such as scenic easements or acquisition.

3. Infrastructure on National Forest lands associated with private land needs, such as utilities, waterlines, roads and bridges, meets scenic goals, particularly as viewed from the highway and recreation sites.

### **PREHISTORIC AND HISTORIC ARCHAEOLOGY**

#### **Objectives**

1. Cultural areas with distinctive historic features such as orchards are inventoried and evaluated for their landscape value and interpretive potential. Such areas include Pendley Homestead, Mayhew Lodge, Call of the Canyon, Manzanita, Banjo Bill, Cave Springs and Troutdale.

### **COMMUNITY**

#### **Objectives**

1. Fire management activities are intense and focus on protection of life and property. Identify locations of high fuel buildup and potential National Forest/urban interface wildfire problems.
2. Public/private land patterns and uses protect the riparian community and the surrounding scenic quality of Oak Creek Canyon. Identify private land important for acquisition.
3. Strengthen partnerships with ADOT, Coconino County and private landowners to protect scenic quality, water quality and riparian resources and to provide a safe recreational driving experience on the highway.

#### **Guidelines**

1. Slide Rock base-for-exchange land is intended for acquisition by Slide Rock State Park to better facilitate management of the creek and the park.

### **RECREATION**

#### **Objectives**

1. Oak Creek Canyon is an area of contrasting recreation settings, ranging from heavily used highway to highly developed recreation sites and resorts to primitive trails. Manage most of the Canyon for Rural or Roded Natural ROS settings. Management should be consistent with a Rural and Roded Natural ROS setting adjacent to the road. In areas more remote from the road influence, the setting should transition to a Semi-primitive ROS setting. Access to the West Fork of Oak Creek should have a Semi-primitive character.
2. The recreation experience should not be significantly affected by crowding at recreation sites or on State Highway 89A.

3. Increase day-use opportunities emphasizing nature-based activities such as hiking, picnicking, bird watching, photography, fishing and interpretation. Increase opportunities for people to access the water and enjoy the creek.
4. Litter control is a priority through enforcement, refuse and recycling facilities and litter patrols.
5. Collaborate with State Parks to better meet visitor needs and protect resources in the vicinity of Slide Rock. Evaluate Halfway Picnic Ground for future needs for parking, coordinating this effort with Slide Rock State Park.
6. Limit the amount of development and consolidate parking and facility development where possible to minimize resource impacts in the Canyon. Use such methods as alternative modes of transportation, roadside parking limits and parking fees. Develop a strategy to minimize private vehicle traffic and reduce parking impacts, thus improving scenic quality and safety. Encourage alternative modes of transportation that reduce automobile dependency and traffic congestion. Investigate the feasibility of shuttle services for Oak Creek Canyon. The level of private recreation traffic in the Canyon should be consistent with a high-quality recreation experience.
7. Provide scenic turnouts along State Highway 89A where appropriate. Locations for consideration are Banjo Bill, Bootlegger, Midgely Bridge and the Sedona City limits.
8. Develop a trails strategy for Oak Creek Canyon that:
  - ◆ allows for creek access while protecting the riparian community, wildlife habitat and sensitive plants;
  - ◆ improves trail access and orientation information;
  - ◆ provides loop trail opportunities with existing trails that lead to the rim of Oak Creek Canyon and other management areas;
  - ◆ expands opportunities for interpretive trails and pleasure walking at sites such as Cave Springs Campground, Call of the Canyon, the West Fork of Oak Creek and/ campgrounds and picnic areas;
  - ◆ maintains historical trails that access the rim of Oak Creek Canyon, such as the Telephone, Purtyman, Harding Springs, Cookstove, Thomas Point, Thompson Ladder and Casner trails;
  - ◆ supports transportation goals; and
  - ◆ considers a safe pedestrian route extending the length of Oak Creek Canyon from uptown Sedona to Oak Creek Vista.

9. Assess the need for upgrading campground facilities to meet demands for group use, showers and child-play areas.
10. Convert Banjo Bill and Bootlegger Campgrounds to day-use areas.
11. Develop a rock-climbing management strategy for the Oak Creek Vista area that addresses climbing needs, visitor safety and resource protection.
12. Redesign the Wilson Mountain Trailhead area to avoid the crowding and traffic problems that currently exist at Midgely Bridge and to improve the appearance and accessibility of view access trails at Midgely Bridge.
13. Evaluate the feasibility of picnic and interpretive trail development at Call of the Canyon.
14. Use a scenic corridor action plan to develop more specific direction for Oak Creek Canyon to guide scenic, transportation and recreation elements. Manage Oak Creek Vista primarily for short-duration visits emphasizing interpretation and orientation to Oak Creek Canyon and the redrock country.
15. Open Wilson Mountain trail to equestrian use. Provide horse trailer parking at the Jim Thompson Trailhead to access Wilson Mountain Trail.
16. Reduce heavy smoke build-up in Oak Creek Canyon through such methods as requiring campers to burn only dry wood, prohibiting wood gathering and prohibiting campfires at certain times.
17. Reduce impacts on water quality by such methods as:
  - ◆ placing toilets in strategic locations,
  - ◆ providing information about proper sanitation practices,
  - ◆ limiting equestrian use, and
  - ◆ installing shower and hand-washing facilities and more gray-water disposal sites.
18. Restore damaged sites along Oak Creek, including but not limited to the Ladders, the pools upstream from Slide Rock, Midgely pools, Pumphouse and Hawkeye.

**Standards**

1. Prohibit National Forest access to Slide Rock recreation area except through the State Park and prohibit parking along State Highway 89A in this vicinity.

2. Prohibit camping and recreation fires except in designated sites.

**Guidelines**

1. Accommodate research and educational activities consistent with resource protection and recreation experience goals.

**COMMERCIAL USES**

**Objectives**

1. Encourage alternative modes of transportation provided by commercial tours to help reduce the impacts of traffic and parking.

**Standards**

1. Withdraw Oak Creek Canyon MA from locatable and leasable mineral entry.
2. Minerals materials operations are discouraged, though some activities may be appropriate for ADOT and Forest Service administration needs if they are minor and consistent with MA objectives and goals.

**INTERPRETATION AND COMMUNICATION**

**Objectives**

1. Agencies communicate and work together with local organizations to achieve goals for the Canyon. There is ongoing communication among community organizations, interest groups and homeowner associations.
2. Regulations (e.g., parking rules and prohibitions against littering) are known and enforced. Visitors are properly informed about services, facilities, rules and environmental ethics.

3. Develop an interpretive trail outside of Wilderness at Call of the Canyon to reduce pressure on the Oak Creek RNA and to meet the demand for access and interpretation along Oak Creek.
4. Through a variety of interpretive efforts, people learn about geology, riparian communities and biodiversity and will be motivated to practice careful stewardship.
5. Provide an easily accessible directory to recreation opportunities and interpretive activities and a wide variety of publications and interactive materials at Oak Creek Vista.
6. Visitors should feel welcomed to Oak Creek Canyon and know where to go to enjoy the activities they seek. They should sense that they are entering a special location with unique and remarkable characteristics.

**Guidelines**

1. Interpretation should follow the themes established in the Sedona Ranger District Interpretive Strategy and more specific direction developed through further site-specific analysis and planning for Oak Creek Canyon.

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## Developed Recreation Sites - Management Area 15

Analysis Areas 22, 23, 24, 58

Acres: 874

Developed recreation sites not included in the Oak Creek or Mogollon Rim Management Areas are included in this Management Area. Developed recreation facilities under special-use authorization include the Snow Bowl ski area, summer home areas near Mormon Lake and in 44 Canyon, organization camps, and resorts.

People have been and will continue to be attracted to these areas because:

- ◆ There is a scarcity of water in the Southwest and people are attracted to water environments. Most of the developed sites are near water.
- ◆ The areas provide climatic relief and a high degree of scenic quality.
- ◆ Campgrounds attract people and roads provide access.

These areas are not conducive to either intensive timber or forage production. Vegetative types include the broadest cross section of Forest vegetation. Climate is highly variable.

### Management Emphasis

Emphasize developed recreation.

Highlights include:

- ◆ Manage for VQO's of Retention or Partial Retention with the exception of the Snow Bowl.
- ◆ Construct, reconstruct, or expand sites according to approved site plans and as funding permits.
- ◆ Facility development at the Snow Bowl ski area is guided by the Ski Area Master Development Plan based on approved NEPA analysis.

**Program**  
**Components Activities Standards and Guidelines**

**Recreation Planning and Inventory**

Recreation Evaluate all five summer home areas near Mormon Lake and the area at 44 Canyon in the first decade to determine future disposition. The evaluation will determine if there is a need to terminate, continue, relocate, or exchange the areas into private ownership. Do not issue new 20 year term permits or extend existing permits beyond 10 years until this evaluation is completed.

**Recreation or VIS Site Rehabilitation**

Conduct feasibility studies and develop project plans for site rehabilitation on a scheduled basis. Plans include upgrading of RIM Condition Classes 4-8 to Class 1. Site rehabilitation includes site grading, stream protection, vegetation establishment, and road improvement and realignment, where appropriate.

In designing new facilities and in evaluating developed sites that are amortized or in need of reconstruction, give special consideration to riparian habitat, especially riparian scrub, wetlands, and riparian forest. Utilize opportunities to relocate existing facilities out of these areas where it can be done cost-effectively and still provide adequate opportunities for National Forest recreation.

**Developed Recreation Sites--Standard Service Level Management**

Operate developed sites at a Standard Service level. Patrol areas regularly for such things as public safety, facility/resource protection, and fee compliance checks. Sites are operated during their heavy use season and to the standards outlined in Forest Service publication "Cleaning Recreation Sites (7/80)."

Maintain facilities at Condition Class Level I. Repair minor site damage within 1 year and major site damage within 2 years. Sites are closed to off-road driving, unless specific management needs are identified for such things as administration, construction, or maintenance. Sites are closed to vehicles and operators not licensed for highway use in the State of Arizona.

**Visual Management**

Manage the Snow Bowl special-use authorization area as Modification and Maximum Modification because of the improvements and cleared runs. However, minimize adverse visual impacts in all activities.

**Program**

**Components Activities Standards and Guidelines**

**Range Resource Planning and Inventory**

Range No grazing capacity has been assigned.

The Snow Bowl special-use authorization area will be fenced to physically exclude grazing.

**Timber Resource Management Planning and Inventory**

Timber Conduct inventory, plans, and examination as requested by other resources.

No timber activities are planned unless requested for user safety or development purposes, and insect and disease control.

Plan, prepare, administer, and sell or issue permits for commercial and personal-use, miscellaneous convertible and nonconvertible products as requested by other resources (FSM 2462).

**Bear Habitat:**

Evaluate bear habitat needs during project planning.

**Water Resources Monitoring**

Watershed/Soils/Air Monitor water quality and quantity in compliance with P.L. 92-500, Section 208.

Conduct water quality monitoring of primary contact recreation sites to standards of FSM 2540 and Arizona Water Quality Standards for full body contact waters (swimming and wading). Limit access to sites when standards are repeatedly exceeded. Notify the public when water quality has not met State and Federal Standards at designated swimming sites with signs where it is reasonable to expect reoccurrence.

**Fire Management Planning and Analysis**

Protection Suppression objective is to minimize damage to improvements and/or resources.

Prescribed fire using planned ignitions is used as a management tool where it is needed to accomplish resource objectives.

## **Inner Basin - Management Area 16**

**Analysis Area: 21**

**Acres: 972**

The Inner Basin is a collapsed caldera which was subsequently glaciated. Located on the eastern slopes of the San Francisco Peaks, it provides a variety of recreational, scenic, and water resources.

The Inner Basin contributes to the water supply for Flagstaff through an extensive water collection and distribution system. Originally developed by the railroad around the turn of the century, the water system includes spring developments, infiltration galleries, and wells, along with associated access roads and buried pipelines. It is the heart of the Flagstaff Municipal Watershed, an area designated by the Chief of the Forest Service.

The area is open to day-use foot traffic, but closed to domestic livestock and public travel by vehicle. Protecting water quality is the main thrust of management direction.

The Inner Basin is a popular dispersed recreation area. It is also highly visible from the Weatherford Trail in the Kachina Peaks Wilderness.

### **Management Emphasis**

Emphasize and protect watershed condition because of the area's importance for water collection for the City of Flagstaff and visual quality.

Highlights include:

- ◆ The existing roads may be used as a corridor for a buried powerline to provide electric power for the wells, in lieu of the current diesel operated pumps.
- ◆ The VQO is Partial Retention as viewed from the Kachina Peaks Wilderness.

**Program**

**Components Activities Standards and Guidelines**

**Recreation Planning and Inventory**

Recreation Dispersed use is limited to day use, foot or bicycle traffic only. Signing needed to control use is provided, installed, and maintained by the City of Flagstaff.

**Range Resource Planning and Inventory**

Range The area is closed to grazing and is not part of a grazing allotment. Unfenced areas are fenced as needed.

**Timber Resource Management Planning and Inventory**

Timber Conduct stand examination and evaluation as requested by other resources. No timber activities are planned, except as needed by other resources, or to control significant insect or disease outbreaks.

Plan, prepare, administer, and sell or issue permits for commercial and personal use, miscellaneous convertible and nonconvertible products as requested by other resources (FSM 2462).

**Special-Use Management**

Special Uses/Lands Continue to work with City of Flagstaff to minimize environmental impacts in the Inner Basin and to improve rehabilitation of areas disturbed through past development and maintenance such as Abineau Road. Encourage the City of Flagstaff to convert existing diesel pumps to electric pumps by establishing an underground electrical line into the Inner Basin using existing roads within the Basin. Evaluate the City of Flagstaff proposed water development projects using the NEPA process and monitor the projects. Identify rehabilitation needs caused by City activities and accomplish in conjunction with each project as needs occur.

**Transportation Management and Planning**

Transportation Limit vehicle access to City and Federal vehicles necessary to administer the area. The area is closed to livestock use and recreational livestock use such as horses, mules, or llamas. The area is closed to off-road driving use.

Existing roads are jointly reviewed by the City and the Forest in the first decade and those determined unnecessary to administer the area are obliterated. The Forest is responsible for obliterating roads it creates and no longer needs and the City is responsible for obliterating theirs.

**Fire Management Planning and Analysis**

Protection The suppression objective is to hold fires to 10 acres or less. Choose suppression tactics that minimize damage to the soil and water resources. Prescribed fire using planned ignitions is used to accomplish fuel treatment and other resource objectives.

## Special Areas - Management Area 17

**Analysis Areas: 48-51**

**Acres: 4,459**

The Special Areas include one geological area, four botanical areas, one research natural area (RNA), Casner Canyon, and one proposed RNA, Rocky Gulch. There are two other RNA's, the San Francisco Peaks and West Fork of Oak Creek, included in the wildernesses that surround them, and G. A. Pearson RNA is included in the Fort Valley Experimental Forest. The management direction for Oak Creek RNA has been expanded with Amendment 12 in addition to the following the management direction for the Special Areas originally identified in the Forest Plan. However, the acres for Oak Creek and San Francisco Peaks RNAs and the G.A. Pearson RNA are all accounted for in the other MAs that they have dual designations with, such as wilderness or experimental forest, so that the only source of change for acreage is Casner Canyon RNA. West Clear Creek proposed RNA is within the West Clear Creek Wilderness. By approval of this Forest Plan, the Red Mountain Geological Area, the Mogollon Rim Botanical Area, the Verde Valley Botanical Area, the Fern Mountain Botanical Area, and the Fossil Springs Botanical Area are officially designated (FSM 2372.2). The proposed Rocky Gulch and West Clear Creek RNA's require establishment reports and designation by the Chief.

- ◆ Casner Canyon RNA is located near Sedona and within Oak Creek Canyon. The area contains a pure stand of Arizona cypress along with some chaparral. This area was established in 1973 and contains 609 acres.
- ◆ The 1,201-acre Red Mountain Geological Area was first proposed in 1977 by the Forest but only had a withdrawal from mineral entry without formal designation. It contains a unique cinder cone within the San Francisco Peaks volcanic field.
- ◆ Mogollon Rim Botanical Area, a 339-acre white fir/bigtooth maple community, represents a unique vegetation type found in Arizona only at a few locations along the Mogollon Rim.
- ◆ Verde Valley Botanical Area, a 1,209-acre desert scrub community, represents a unique desert community which has been greatly reduced by human activities. *Cowania subintegra*, a T&E species, is located here.
- ◆ Fern Mountain Botanical Area, a 186-acre high elevation riparian scrub community dominated by Bebb's willow, represents a unique riparian community .
- ◆ Fossil Springs Botanical Area is a riparian deciduous forest associated with a large perennial spring and covers approximately 12 acres. It is immediately adjacent to the Fossil Springs Wilderness.
- ◆ Rocky Gulch proposed RNA is located in the Beaver Creek Watershed. The area contains 950 acres of old-growth ponderosa pine and was one of the control watersheds for research in the Beaver Creek Watershed (acres are in MA 3).

Special designations not in Forest Plan decision authority:

- ◆ The 150-acre G. A. Pearson RNA was established in 1950 and is located just north of Flagstaff in a portion of Rocky Mountain Research Station Experimental Forest. The area represents a pure stand of old-growth ponderosa pine. Management decisions for the experimental forests are not made in this Forest Plan.

## **Management Emphasis**

Emphasize and protect watershed condition and maintain natural ecological

conditions on the Research Natural Areas (RNA's) so that they are available for research and education that does not disturb the areas' natural condition. Use restrictions are imposed as necessary to keep areas in their natural or unmodified condition. There is no harvest of timber products, including firewood. RNA's are closed to off-road driving.

The botanical areas and the geological area are managed to maintain, as nearly as possible, existing conditions and natural processes for public enjoyment, demonstration, and study. Interpretative and educational demonstration opportunities are emphasized and enhanced through selective facility development. Natural events are not rehabilitated. Off-road driving is prohibited.

Highlights include:

- ◆ Prepare establishment reports for the Rocky Gulch and West Clear Creek proposed Research Natural Areas.
- ◆ Prepare implementation schedules for the botanical areas and the geological area.
- ◆ Include management that provides for later interpretation.
- ◆ Manage for VQO's of Preservation in the research natural areas and Retention or Partial Retention in the geological and botanical areas.

**Program**  
**Components Activities Standards and Guidelines**

**Recreation Planning and Inventory**

Recreation      Prepare an implementation schedule for the Red Mountain Geological Area and post the boundaries for it in the first decade.

Prepare implementation schedules and post boundaries for Mogollon Rim, Verde Valley, Fern Mountain, and Fossil Springs botanical areas during the first decade.

Eliminate mention of RNA's in news stories and general informational materials.

Prepare establishment reports for the Rocky Gulch and West Clear Creek proposed RNA's during the first decade. In the interim, manage them to preserve their suitability for designation.

As the Arizona Natural Areas Council recommends RNA's and botanical areas for inclusion in the State Natural Areas Program, the Forest will review the recommendations and may support the recommendations and develop VIS programs as needed.

**Dispersed Recreation--Standard Service Level**

As needed, assess carrying capacity in special areas and limit visitors to meet carrying capacity.

Prohibit off road-driving.

**Range Resources Planning and Inventory**

Range      RNA's are assigned no grazing capacity.

There are 93 acres in the Red Mountain Geological Area open to grazing that are managed at the C level.

RNA's and botanical areas are managed to protect and maintain their uniqueness and ecological condition.

AMP's will have provisions to protect the uniqueness and/or ecological condition of the special areas. Approved AMP's are revised and if necessary amended by 1992.

**Timber Resource Management Planning and Inventory**

Timber      Timber harvest and firewood cutting is prohibited.

**Program**  
**Components Activities Standards and Guidelines**

**Minerals**

Minerals                      Seek withdrawal of RNA's and the other special areas from locatable mineral entry in the first decade.

**Lands**

Special Uses/Lands        Do not allow special-use authorizations that would or could adversely affect or change the character of the areas.

**Road Maintenance and Management**

Transportation            Manage roads adjacent to botanical areas and the Red Mountain Geological Area to prevent vehicular intrusion. Block and obliterate existing roads entering the area in the first decade.

**Fire Management Planning and Inventory**

Protection                      Use prescribed fire with planned ignitions as a management tool provided its use is compatible with the management of the specific area.

Suppression tactics minimize damage to the the character of RNA's and all other special areas.

Manage each special area as the adjacent lands until implementation schedules are developed.

Implementation schedules will recognize each area's unique management objectives and the sensitivity of each area to different fire suppression techniques.

## Special Areas (MA 17)

The Sedona/Oak Creek Planning Area created more specific direction for two research natural areas: Oak Creek RNA in the West Fork of Oak Creek and Casner RNA to the north of Schnebly Hill Road. Both are superb representatives of the area's natural plant communities. Oak Creek RNA is an example of a biologically diverse creek-side area and is a paleo-botanical area containing plant species surviving from the last ice age. Casner is noted for the Arizona cypress, which remains in an almost pristine condition on the area's lower slopes.

### Management Emphasis

**Ecosystem processes such as fire and flood play a natural role.**

**Access and management are consistent with preservation for research values.**

#### Plants, Wildlife, Soil, Air and Water

##### Standards

1. Non-commercial group size should be limited to 25 persons or fewer in Casner RNA and to 12 persons or fewer without a permit in the West Fork of Oak Creek.
2. Prohibit livestock grazing.

#### Recreation

##### Objectives

1. Manage Casner RNA for a Semi-primitive Non-Motorized ROS setting. Manage Oak Creek RNA consistent with Wilderness-defined Primitive WOS setting criteria. Recognize the high level of hiking use in the lower part of West Fork through Oak Creek RNA as more consistent with Roaded Natural ROS setting criteria.
2. Limit visitor access and use to environmentally acceptable levels to maintain the research values of the RNA. Employ various methods such as using a permit system and providing alternative recreation opportunities and more intense management.

##### Standards

1. Prohibit overnight camping and recreation fires in Casner RNA.
2. Restrict camping and prohibit recreation fires in Oak Creek RNA.

**Guidelines**

1. Recreation use is not promoted and access is restricted as needed to keep these places in their natural, unmodified condition.

**Commercial Uses**

**Standards**

1. **Prohibit permitted commercial tours except in support of approved research.**
2. Withdraw Casner Canyon RNA from locatable and leasable mineral entry.

## **Environmental Study Areas – MA 18**

**Acres: 1,577**

Mt. Elden ESA - Located at the base of Mt. Elden adjacent to the subdivisions of Shadow Mountain, Paradise Hills, Skyline Estates, and Swiss Manor, and adjacent to Buffalo Park. Originally a bird sanctuary, the Elden Environmental Study Area (ESA) serves a unique purpose. Trails provide for popular hikes that are convenient and easy to use. The area is available for study and recreation and has become an integral part of the Flagstaff Public School curriculum. In addition, the Elden ESA is popular daytime destination for hiking, dog-walking, mountain-biking, and horse riding. There are many formal access points developed along the edge of subdivisions providing public access. There are many informal access points and social trails as well. This ESA strengthens the opportunities for partnerships between the school, the Forest Service, and Arizona Game and Fish Department. A wintering deer herd provides an opportunity for wildlife viewing and monitoring by the students. The El Paso natural gas pipeline crosses the area.

Old Caves Crater ESA - Old Caves Crater is located north of Silver Saddle Road, east of Highway 89, and adjacent to Doney Park communities. This large volcanic cinder cone has diverse vegetation, provides scenic backdrops to surrounding residents, and contains archaeological sites and cultural values. Teachers at Cromer School have developed a curriculum for the area and students walk from the school to the site. There are trails in the area and high levels of non-motorized daytime dispersed recreation use.

Griffith's Spring ESA - Griffith's Spring is located south of Flagstaff on Highway 89A, adjacent to the Forest Highlands community and just south of Pine Dell. Among a variety of uses, local teachers have used the spring and its stream channel as an outdoor classroom. Visitors traveling Highway 89A stop here for picnics and daytime walks. Nearby residents also enjoy the area. There is a stream channel with riparian vegetation and aquatic species. A nearby wet meadow adds additional diversity.

### **Management Emphasis**

Elden ESA now includes an area behind Christensen Elementary School. The area directly behind Christensen and the Peaks Ranger Station is adjacent to the current Elden ESA.

Emphasize environmental education opportunities for the Flagstaff Public Schools and the general public by maintaining the ecosystem and developing interpretive facilities. Since these areas fall within the Urban/Rural Influence Zone, emphasize fuels reduction and other techniques to reduce the risk of catastrophic wildfire. Non-motorized dispersed recreation is encouraged. Visual resource management and watershed condition are emphasized. Cultural resources are protected and where appropriate interpretation of cultural resources is provided. Low fire potential exists with fire's role re-established in the ecosystem. Meadows and drainages function properly and aquatic species are maintained.

Highlights include:

- ◆ In the Elden ESA implement tree thinning, prescribed fire or other activities that lessen risk of catastrophic wildfire and maintain shrubs, such as Arizona cliffrose, that provide winter food source for deer.
- ◆ Implement improvements in the Old Caves Crater that improve watershed health, protect fragile archaeological sites, restore vegetation to bare soil areas, close the area to motorized vehicles, and provide trails for non-motorized daytime recreation uses. Examples of improvements are; marking the boundary of the area with fenceline along private landlines, locate and adopt some trails and obliterate others, provide signing, change roads to trails or obliterate them, and locate a trail to the top of the Crater.
- ◆ Continue improvements to the Griffith’s Spring area to provide for recreation and outdoor education and protects stream banks, riparian vegetation, aquatic wildlife species, and scenery. Examples of improvements are: parking areas, pole fences, interpretive and environmental education information, directional signing, and a vault toilet. The relocation and construction of trail and the closure and rehabilitation of two-track road are needed to prevent loss of vegetation, erosion and damage to streambanks, soil compaction, and excessive water turbidity. The construction of aspen/willow fences around a small area is needed to prevent browsing damage by elk and deer.

***All of the following items are Guidelines.***

**Recreation**

Develop the Elden ESA in accordance with the concept plan map prepared by the Recreation Resource Center for Environmental Education and Flagstaff Public Schools.

Plan and support uses and trails in conjunction with the curriculum needs of the Flagstaff Public Schools. Develop environmental education programs cooperatively with public schools.

**Dispersed Recreation**

Maintain fencing as needed for management.

The Elden ESA is open to the public for foot traffic and day use only. Use the El Paso Natural gas line as a trail in conjunction with the Mt. Elden/Dry Lake Hills trail system. Horses are allowed on the pipeline trail.

Enforce off-road driving closures. Make a special effort through the schools and the media to focus public attention on the importance of complying with the closure for all areas.

**Special-Uses**

New special-use authorizations or amendments to existing special-use authorizations that would or could adversely affect or change the character of the ESA are not allowed.

**Forestry**

Manage vegetation to meet management direction for this MA.

**Livestock Grazing**

The areas are not currently open to livestock grazing.

**Prescribed Burning**

Prescribed fires from planned ignitions are used to accomplish fuel treatment and other resource management objectives.

## **Mogollon Rim - Management Area 19**

**Analysis Areas: 1-9, 11, 12, 13**

**Acres: 12,044**

The Mogollon Rim MA covers the area from the Rim north to the Rim road (Forest Road 300), the General Crook Trail, and the foreground VQO area adjacent to the boundary roads and trails. The MA extends from Arizona Highway 87 to the boundary with the Sitgreaves National Forest and includes Milk Ranch Point on the west and Knoll Lake on the east.

The Mogollon Rim forms the Forest's southern boundary. Dispersed recreation use is heavy and developed use is heavy at Knoll Lake and Kehl Springs Campgrounds.

Vegetation includes ponderosa pine, mixed conifer, and patches of aspen and bigtooth maple. There is a severe infestation of dwarf mistletoe in much of the ponderosa pine and mixed conifer.

While fire history has not been severe on the Coconino side, a number of large wildfires have started below the Mogollon Rim and made their way over the top and into the prime timber on the Sitgreaves National Forest to the east. For that reason, fire and fuels management are a constant concern.

The Mogollon Rim, both physically and historically, is the major division between the desert country in the south and the high timber of the Colorado Plateau. Its abrupt features make it an important scenic, historic, and recreational attraction.

### **Management Emphasis**

Emphasize dispersed and developed recreation, visual quality, and wildlife travel corridors across the Rim, generally the heads of major canyons running to the northeast. Dwarf mistletoe is aggressively treated through ISM.

Highlights include:

- ◆ Manage for VQO of Retention in the foreground viewing area from the proposed General George Crook Trail, the Rim Road (300), Roads 218, 218A, 295, 295E, and 673A.
- ◆ The Rim Road is upgraded to double lane, aggregate surface with minimal realignment. It is scheduled to be completed in the second decade. Management of the resource and public safety, not speed, governs road standards.

*Chapter 4 – Management Direction  
Mogollon Rim – Management Area 19*

- ◆ Develop hiking/horseback trails along the Rim road in coordination with the comprehensive plan for the proposed General George Crook National Historic Trail. Coordinate with the Apache-Sitgreaves National Forests.
- ◆ Restrict off-road driving use along and south of the Rim Road and the Crook Trail to enhance solitude and reduce distractions to other recreational users.
- ◆ Protect and maintain the General George Crook Trail. Reconstruction of the Rim road protects the major undisturbed portions of the trail.
- ◆ Natural and created fuels are treated to manage large fire potential and to protect visual resource and wildlife habitat.
- ◆ Wildlife corridors are provided for animals to move across the Rim.
- ◆ Develop informational trail guides jointly with the Tonto National Forest.
- ◆ Construct trails/trailheads for access from Crook Trail to Highline Trail on the Tonto.
- ◆ Construct a new developed campground.
- ◆ Expand existing developed campgrounds.
- ◆ Manage riparian inclusions according to MA 12 Standards and Guidelines.

**Recreation Planning and Inventory**

Recreation

Manage for VQO of foreground Retention on Roads 300, 218, 218A, 295E, and 673A.

Manage for VQO of Partial Retention on other roads within MA 19. Close MA 19 to off-road driving, except for vehicles traveling over-the-snow such as snowmobiles or in the vicinity of Knoll Lake, please refer to Off-road Driving Map.

Protect original mile posts, blazes, V monuments on trees and rocks, and other historical features on the General George Crook Trail.

Plan activities that cross the General George Crook Trail at approved locations only.

Develop Rim recreation trails to complement the potential General George Crook National Historical Trail. The trail is located generally south of the Road 300 along the Rim.

Plan and construct the Milk Ranch Point Loop Trail during the first decade.

Develop key trails and trailheads to accommodate hiking the Rim and the Highline Trail below the Rim. Coordinate with the Tonto National Forest.

Close trails that connect to the Highline Trail on the Tonto National Forest to motor vehicles.

Expand Knoll Lake Campground and construct Mogollon Rim Campground in the first decade. By the end of FY 1991 complete the environmental analysis and design narrative for the Mogollon Rim Campground.

Sites are closed to off-road driving, unless specific management needs are identified for such things as administration, construction, or maintenance. Sites are closed to vehicles and operators not licensed for highway use in the State of Arizona.

**Nonstructural Wildlife Habitat Improvement**

Wildlife and Fish

Improve forage conditions by seeding forage and browse species desirable to wildlife.

Use prescribed fire to improve wildlife forage.

**Nonstructural Fish Habitat Improvements**

See MA 12 for specific Standards and Guidelines.

**Program**

**Components Activities Standards and Guidelines**

**Habitat Access Controlled by Closures**

Manage local and temporary roads feeding to the Rim Road as needed to enhance wildlife habitat and dispersed recreation.

**Range Resource Planning and Inventory**

Range

Grazing allotments will generally be managed at C and D levels. There are 12,233 acres of full capacity lands; of the total, 758 acres are in less than satisfactory range condition. Less than satisfactory range condition will be improved through completions of the development program in AMP's.

**Range Forage Improvement Maintenance**

Evaluate forage improvements and maintain forage improvement acres in satisfactory or better condition. Except during the timber regeneration period, revegetate suitable sites. Forage emphasis is to attain a balanced composition of cool and warm season forage species.

Where additional forage is needed, seed behind intermediate timber harvests with mixes tailored to fit the site. Emphasize high production, shade tolerant, multi-growing season species that will not inhibit tree regeneration. Do not seed after the last intermediate harvest if tree regeneration will be inhibited. Do not seed after seed cuts.

Where open meadows in the pine/mixed conifer type are to be maintained, eliminate invading overstory vegetation, stabilize gullies to raise the water table, scarify the soil, and seed with appropriate grass and forage species. Control livestock grazing through management and/or fencing to establish the revegetation.

**Timber Planning and Inventory**

Timber

Evaluate timber lands adjacent to the Rim within the first decade to determine timber suitability.

Management for the ponderosa pine/mixed conifer stands and the big tooth maple stands is the same as MA 3, foreground Retention and for areas adjacent to foreground Retention lands. See MA 5 for direction for the aspen stands.

**Spotted Owl and Bear Habitat:**

Whenever possible, areas managed for old-growth, bear, and spotted owls are the same. Evaluate owl and bear habitat needs during project planning.

**MEXICAN SPOTTED OWL AND NORTHERN GOSHAWK**

**Please refer to the Standards and Guidelines in the Forest-wide management direction on pages 65 through 65-11.**

**Program**

**Components Activities Standards and Guidelines**

**Mixed Conifer Stringers in Ponderosa Pine Silvicultural Prescription:**

Mixed conifer stringers, primarily Douglas-fir, are noncontiguous, narrow communities that extend into the ponderosa pine. Manage the mixed conifer stringers to emphasize wildlife habitat needs by maintaining big game cover except where environmental analysis indicates otherwise.

In key bear habitat, manage for at least 30 percent of the mixed conifer to meet bear hiding cover needs. Give priority for cover management in drainage bottoms, heads of drainages, and isolated pockets of mixed conifer. Defer logging activities from April 15 to June 30 in known bear maternity areas.

**Old-Growth:**

See **pages 70-1 through 70-2** for Standards and Guidelines.

Transportation

Work with Coconino County and Arizona Department of Transportation to provide safe parking for snowplay, cross-country skiing, and over-the-snow vehicles, such as snowmobiles, along and near Highway 87.

Reconstruct the Rim road system consisting of portions of the 218, 218A, and 300 roads to a two-lane, aggregate surfaced road in the second decade. Use the existing corridor as closely as possible. Protect intact sections of the General George Crook Trail and provide a safe Rim road system for users.

**Fire Management Planning and Analysis**

Protection

Ponderosa Pine and Mixed Conifer - Suppression objective is 100 acres or less. Use prescribed fire with planned and unplanned ignitions is used to meet resource objectives.

In riparian areas fight fire aggressively, if necessary, to prevent resource damage, using suppression methods that minimize long-term adverse impacts to riparian habitats.

**Program**  
**Components Activities Standards and Guidelines**

In developed recreation sites the suppression objective is to minimize damage to improvements and/or resources.

Prescribed fire using planned ignitions is used as a management tool where such use is compatible with other resources.

Fuel treatment projects in natural fuels are aimed at creating and maintaining a natural fuel condition that is maintained through the periodic use of prescribed fire.

Emphasize using slash for firewood. Unless there are documented resource or protection needs, leave slash for at least 2 years before disposal. Clearly identify free-use firewood areas to assist the public in removing wood residues and thereby reducing future slash disposal costs. Provide easy to follow maps and signing for designated firewood areas.

## Highway 180 Travel Corridor Milepost 220-250

### Management Area 20

**Acres: 7,608**

The Highway 180 Travel Corridor goes from the northwest side of Flagstaff to the most northwestern corner of the Coconino National Forest. It is one of the three main routes leading to the Grand Canyon National Park. The entire existing road is two 12 foot travel lanes with 1 foot paved shoulders. Currently the trees are as close as 5 feet to the roadway. The current situation does not allow for a recovery area that is a traversable and unobstructed roadside area allowing drivers leaving the roadway out of control to regain control or come to a safe stop.

Vegetation includes ponderosa pine and patches of aspen, which then give way to pinyon/juniper as the elevation drops on the northern edge of the Forest.

Fire history has been sporadic, with a number of large wildfires adjacent to or crossing the Highway.

The diverse vegetation and spectacular views of the San Francisco Peaks make it an important scenic, historic, and recreational attraction.

Highway (Hwy) 180 began as a dirt road in 1943 and was completely paved by 1959. Early uses were local forest use and tourism. More recent use is 2,000 average number of vehicles over entire length of road and a predicted 2,800 average number by the year 2002.

Today, Hwy 180 is a destination in itself for local residents and tourists for scenic beauty and outdoor recreation. Hwy 180 is used as a tour bus, commerce route, local and tourist drive between National Forest land, Flagstaff and the Grand Canyon, with over half of the drivers from out of State.

There have been 10 fatal accidents with 13 people killed in the last 6 years (1987-1992). There have been 433 non-fatal accidents with 314 people injured. Drivers run off the pavement and hit something, usually a tree. Some people drive too fast, causing them to lose control. Vehicles hit animals. Intersections are not as safe as they could be. Plowed snow piles up on the highway, thaws and melts and runs across the highway then freezes again causing icy spots and damaging pavement. People park along the highway and on soft shoulders, affecting the flow of through traffic. Bicyclists use the highway with virtually no shoulder and cars must drive around them. Tourists are often not aware that highway 180 is a mountain road with curves, steep hills and few places to pass safely. Hwy 180 climbs approximately 1,000 feet in elevation and weather conditions are often more extreme than in Flagstaff. Tourists may misjudge the time it will take them to reach their destination or may be unaware of the potential hazards of inclement weather.

## **Management Emphasis**

Hwy 180 will be maintained and managed now and in the future as a two lane scenic highway. With strong value in its own right as a scenic attraction, the road provides important access to year round outdoor recreation and the South Rim of the Grand Canyon. Hwy 180 is one of three roads to the Grand Canyon and will be managed and emphasized as the scenic, slower route. Hwy 180 will offer a reasonably safe and scenic travel experience through a healthy, diverse forest.

The key factors necessary for reaching this vision are:

- ◆ A reasonably safe roadway and recovery area;
- ◆ Driver compliance with posted speed limits;
- ◆ Public understanding of road conditions;
- ◆ Forest Management.

Highlights include:

- ◆ Manage Hwy 180 and its foreground as a sustainable and resilient ecosystem with an emphasis on large trees and stand diversity. There will be sustainable, healthy communities of aspen, ponderosa pine and pinyon juniper with a large percentage of the corridor containing large old trees. Hwy 180 will have a retention visual quality objective.
- ◆ Introduce a level of visual diversity in the driving experience. Viewing the the forest is a sequential linear event.
- ◆ Improve the shoulders and recovery area so as to increase the percentage of errant vehicles that are able to recover safely. A recovery area is a traverseable, unobstructed roadside area that allows drivers leaving the roadway out of control to regain control or come to a stop.
- ◆ Provide opportunities for parking to rest, take pictures, and access forest roads and trails.
- ◆ Provide information and interpretive signs for improving driver awareness and safe driving as well as improve visitor experience through understanding of the environment, history, and cultures.
- ◆ Aggressively pursue partnerships with city organizations to inform the touring public about scenic road status, road conditions, and other route options.

**Standards and Guidelines**

**Right of Way Grants for Roads and Trails**

Lands

All ADOT projects for management of the two lane scenic highway will occur with Federal Highway Administration (FHWA) assuming the role of lead Federal agency. ADOT will follow FHWA NEPA guidelines with Forest Service providing input. Forest Service input on ADOT highway improvement projects will include stipulations derived from the Final Vision and Guiding Description Document and the Forest Plan.

On-the-ground implementation of all projects within the corridor should occur with an inter-agency interdisciplinary team approach. This team should work out site

## **Standards and Guidelines**

specific coordination for wildlife travel areas, seed mixes, and the blending of scenic quality, and safety.

ADOT and FS will work cooperatively to sign the highway with the objectives of informing and warning drivers where needed, providing interpretation of the adjacent forest lands and blending sign design and location with the scenic character of the highway.

### **Visitor Information Services-Standard Service Level Management**

Same as Forest-wide Standard and Guidelines. "Provide timely reprints of major brochures and guides. Write and develop new information as needed to increase public awareness of recreation opportunities and hazards. Review printed information annually to determine needed updates."

Provide the touring public with a greater understanding, appreciation and therefore enjoyment of the forest environment and history of the area.

Work cooperatively with local private, city, county and State organizations to share information between the Forest Service and these groups. Through these partnerships, inform the touring public of road conditions, speed limits, scenic and recreation opportunities and other routes available.

### **Visual Resource Planning and Inventory**

Same as Forest-wide Standard and Guidelines "prepare a viewshed corridor implementation schedule during the first decade for the interstate highways, US Highways 89, 89A and 180; ...". This plan amendment and implementation process by an interdisciplinary team will provide the viewshed corridor implementation schedule.

### **Recreation Planning and Inventory**

Manage for VQO of foreground Retention on Hwy 180.

Provide places where people can pull off the road, get out of their cars, read information signs, take pictures, rest, and access Forest roads and trails. Maintain Kendrick Park Picnic Area.

Construct two new parking sites for summer and winter use. Their locations will be approximately 1 mile east of Snow Bowl road intersection and somewhere in the vicinity of the Walker Lake curve. Evaluate the need for future parking areas.

### **Nonstructural Wildlife Habitat Improvement**

The objectives of seed mixtures to be used in disturbed areas are to hold disturbed soil in place, add color and texture to the scenery, be non-palatable to large grazing animals, and consist of native species to the extent possible. It is important to not attract large grazing animals to the side of the highway.

## **Standards and Guidelines**

### **Habitat Access Controlled by Closures**

Manage local and temporary roads intersecting with Hwy 180 as needed to enhance wildlife habitat, dispersed recreation and safety .

### **Range Resource Planning and Inventory**

The area within the right-of-way is not part of grazing allotments. The rest of the corridor makes up a small percentage of the adjacent allotments. Management of range lands within the rest of the corridor will be similar to Forest-wide and adjacent management area Standards and Guidelines for range resource planning and inventory.

The right-of-way fence will be maintained by ADOT.

### **Timber Planning and Inventory**

Management for the ponderosa pine/mixed conifer stands is the same as MA 3, foreground Retention and for areas adjacent to foreground Retention lands. See MA 5 and Amendment #7 for direction for the aspen stands.

Stands of trees adjacent to the recovery area are blended with the recovery area to meet visual quality objectives and management emphasis for this area.

Site specific tree removal adjacent to the recovery area will be established on the ground by a design team. The design team, consisting of Forest Service representatives, ADOT employees, and other interested agencies and citizens will design areas site specifically. Tree clearing will vary, taking advantage of natural openings, with emphasis on retention of older yellow bark ponderosa pines.

### **Old-Growth:**

The Hwy 180 corridor itself will not function as old-growth because it is a linear corridor. However, much of the corridor will have old-growth characteristics in keeping with visual quality guidelines described above.

### **Wildlife Cover**

On-the-ground design of the recovery area and adjacent stands will include maintenance of large animal movement to and from areas on either side of the highway. Factors such as density of trees, location of right-of-way fence and topography will be considered.

### **Snag Management**

See MA3 for snag management except within right-of-way where snags may pose safety hazard as determined by ADOT.

## **Standards and Guidelines**

### **Fire Prevention**

Forest-wide Standards and Guidelines.

### **Fire Suppression**

Forest-wide Standards

### **Fuel Treatment**

Slash work may include piling, lop and scatter, pile burning, broadcast burning, chipping and hauling.

Prescribed fire using planned ignitions is used as a management tool where such use is compatible with other resources.

Slash for fuelwood may be emphasized where practical depending on access from forest roads and whether or not there is a need to more quickly dispose of slash to meet visual quality or fire risk management needs.

*Chapter 4 – Management Direction  
Highway Corridor 180 – Management Area 20*

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