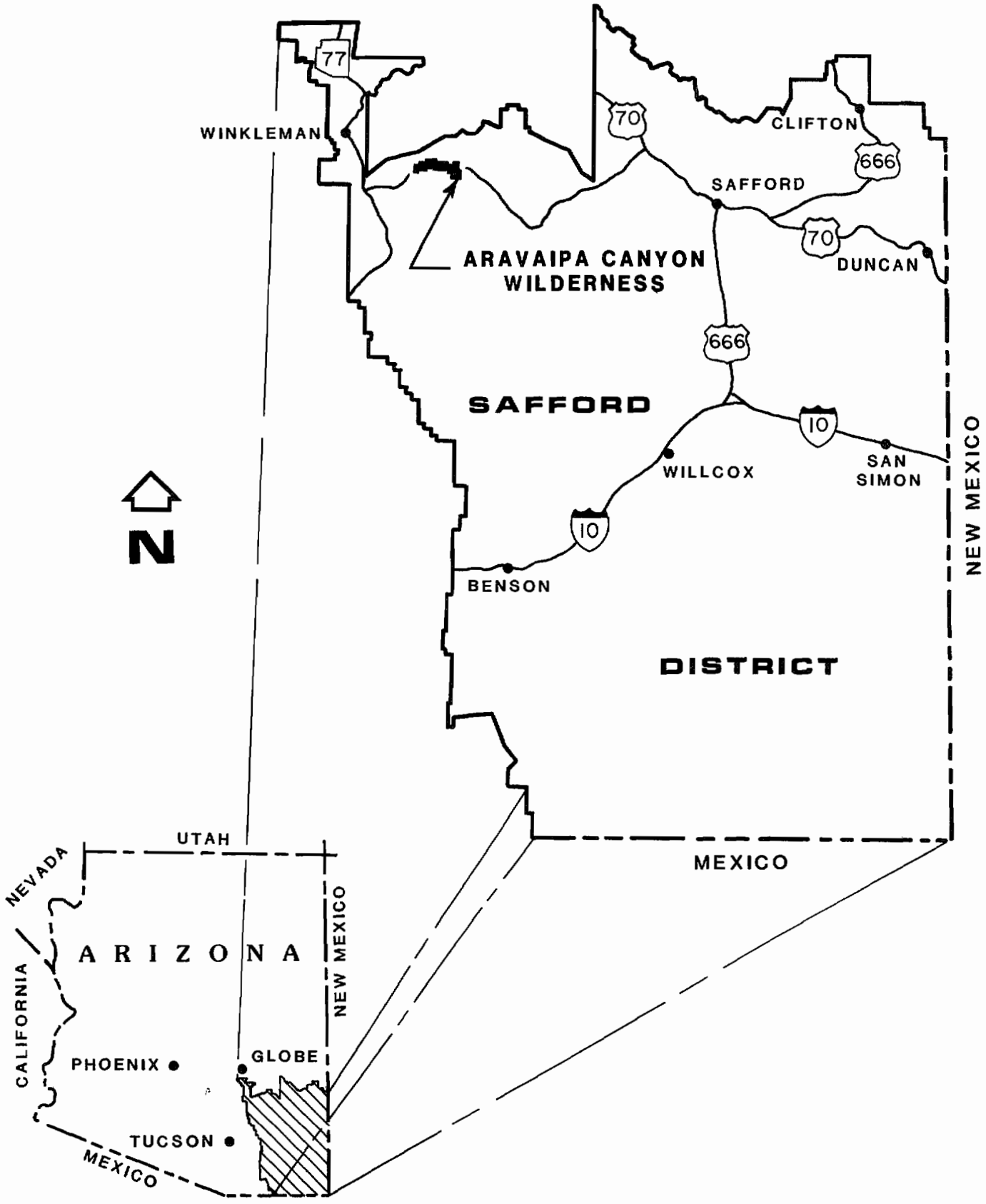
WILDERNESS
MANAGEMENT PLAN

ARAVAIPA CANYON WILDERNESS

ARIZONA

DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

ARAVAIPA CANYON WILDERNESS LOCATION MAP



WILDERNESS MANAGEMENT PLAN

for the

ARAVAIPA CANYON WILDERNESS

ARIZONA

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

Safford District
Graham and Pinal Counties, Arizona

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INTRODUCTION

Plan Purpose

This wilderness management plan establishes the objectives, policies and actions by which Aravaipa Canyon Wilderness (ACW) will be managed for the 10-year period through 1997. Those resources or elements that are important aspects of ACW and its use are identified. The plan outlines a sequence for implementing management actions and provides for monitoring the accomplishment of wilderness management objectives. Through these steps, ACW will be managed according to the intent of the establishing legislation.

Plan Organization

The plan presents information from the general concepts of wilderness management to the specific actions involving ACW management. After a brief description of the area's location, attributes, history and general management situation, the four wilderness management goals that currently guide BLM's wilderness management program are listed. A section on wilderness management strategy addresses the use of limits of acceptable change and carrying capacity as methods of assessing changing conditions and recognizing situations needing correction.

The substance of the plan is in the *Wilderness Management Program* section. This part outlines the elements or components critical to managing ACW, the management objectives relating to each of these elements and a description of the current situation and management assumptions for each element. Management direction, by element, follows with management policies and actions that will guide ACW management.

Next is a timetable for implementing the management actions from the program section, an environmental assessment (EA) of the management alternatives developed during the planning process follows and the final section of the plan shows cost estimates for implementing the wilderness management program for the 10-year period ending with fiscal year (FY) 1997.

Area Overview

LOCATION

ACW is north of the Galiuro Mountains in eastern Pinal County and western Graham County, Arizona. The canyon lies 90 miles southeast of Phoenix and 55 miles northeast of Tucson (the two largest metropolitan areas in Arizona) and 40 miles west of Safford, Arizona. The designated area is within Township 6 South, Ranges 17, 18 and 19 East, Gila and Salt River Meridian.

Access to the wilderness is available primarily by two county-maintained roads, the Aravaipa Road from the west and the Klondyke Road from the east. The Aravaipa Road is reached by traveling State Highway 77, 11 miles south of Winkelman, Arizona. The west trailhead is 12 miles up the Aravaipa Road.

The Klondyke Road branches off U.S. Highway 70, 15 miles northwest of Safford. The east trailhead is reached by traveling another 45 miles. The map inside the front cover shows ACW's location and the routes for approaching the trailheads.

DESCRIPTION

ACW totals 6,699 acres administered by BLM. The acreage discrepancy from the approximately 6,670 acres referred to in the Arizona Wilderness Act (Appendix 1) results from more accurate computations made during preparation of the boundary description. No state or private inholdings are within the wilderness boundaries although two private parcels are surrounded on three sides by the wilderness.

The majority of the ACW boundary follows legal subdivision lines. Exceptions are along the southeast boundary and a small portion on the north side. The southeast boundary is defined as the west rim of Turkey Creek Canyon. A one-half mile section of unimproved road forms a portion of the north side boundary. Both of these boundary sections are described by a metes and bounds survey. The complete boundary description is in Appendix 2. The official boundary map, as submitted to the Committee on Energy and Natural Resources, United States Senate, and the Committee on Interior and Insular Affairs, House of Representatives, is included in the pocket on the inside of the back cover.

Aravaipa Canyon has long been recognized for its natural qualities and significant ecological attributes. Beneath scenic towering cliffs, Aravaipa Creek flows perennially supporting lush riparian vegetation in stark contrast to the cactus and shrubs of the Sonoran Desert on the canyon slopes. ACW is home for a variety of wildlife, including 46 mammal, 46 reptile, 7 native fish and 8 amphibian species. In addition, more than 200 bird species ranging from permanent residents to rare or migrant species may be found in ACW (BLM 1983).

Nine major side canyons enter the 11-mile long stretch of Aravaipa Canyon within the wilderness. Most have water flowing during portions of the year, providing pools and small waterfalls as attractions for recreation and scenic enjoyment and important habitat for wildlife.

Turkey Creek flows from another major side canyon just outside of the wilderness to the east. The lower portion of the canyon is in public ownership and contains one of the best developed riparian vegetation communities in the Southwest. The hiking and camping in Turkey Creek are

often in conjunction with a visit to ACW. A low maintenance dirt road goes up the canyon for about three miles.

Above the canyon rims on both the north and south lie the tablelands, an area of hills and flats covered with desert shrub and grassland vegetation. The tablelands within ACW are deceivingly rugged as many of the flats are large bedrock areas crisscrossed with fissures and fractures of various depths and widths. Small drainages are lined with vertical walls and other erosional features are found throughout the area. Steep slopes prevail on the hills and ridges in the eastern portion of ACW.

Aravaipa Canyon's geology is largely of volcanic origin. In the central and western portions of the canyon, Tertiary Galiuro Volcanics consisting of lava flows and ash-flow tuffs are exposed. On the east end of the canyon, the Hell Hole Conglomerate overlies the Galiuro Volcanics, while in the extreme western end of the canyon Precambrian bedrock underlies the volcanics and is exposed on the canyon floor. The canyon was formed as the stream's downcutting was able to keep pace with the uplift of the Galiuro Mountains fault block (Krieger 1979, Simons 1964).

A well-established herd of desert bighorn sheep populate the wilderness north of Aravaipa Creek. Black hawks are an uncommon species whose range extends southward into Mexico. They nest during the spring and summer in the tall cottonwoods and sycamores along the stream to take advantage of frogs and fish for food. Seven species of native fish, including the federally-listed threatened spikedace and loach minnow, are found in Aravaipa Creek. No other Arizona stream is known to support so large a number of native fishes in the absence of substantial numbers of introduced species.

GENERAL MANAGEMENT SITUATION AND HISTORY

Interest in protecting Aravaipa Canyon as a wilderness preserve and scientific study area was expressed by several organizations and individuals in the early 1950s. In August 1968 the canyon was proposed for retention in public ownership and for primitive area status. Following a public hearing that showed strong local, state and national support, Aravaipa Canyon Primitive Area was established by order of the Secretary of the Interior on January 10, 1969.

The primitive area originally contained 3,957 acres. Through adjustments that added land on the north and south rims and excluded land in Turkey Creek, the primitive area was expanded to 4,044 acres in April 1971. An additional 1,480 acres of state land adjacent to the primitive area were acquired in December 1978 to improve management and protection of Aravaipa Canyon.

BLM initiated work on a management plan for the area in October 1969 and finalized management plan decisions in 1970 with considerable public participation. The most recent revision of the plan was completed in 1979.

With the passage of the *Federal Land Policy and Management Act* (FLPMA) in 1976, Aravaipa Canyon Primitive Area came under the mandate to be studied for inclusion in the *National Wilderness Preservation System*. The review was initiated in 1978 and wilderness designation of the primitive area and contiguous public lands was recommended in the Wilderness Suitability Report in October 1979. The President concurred, sent it to Congress on September 13, 1982 and the Aravaipa Canyon Wilderness bill was incorporated in the *Arizona Wilderness Act*, passed by Congress on August 28, 1984.

Recreation, wildlife habitat, watershed and livestock grazing are the most active resource uses of the public lands in ACW. No mining claims or mineral leases exist inside the wilderness. Over the years, several scientific studies and research projects have focused on the resource elements of ACW.

Recreation visitors to Aravaipa Canyon enjoy outstanding opportunities to experience solitude, primitive types of recreation, the scenery and perennial water of Aravaipa Creek, especially in contrast to the surrounding desert. Many come to view bighorn sheep or catch a glimpse of a black hawk or for the renowned birdwatching opportunities.

Visitor use of the main canyon and side canyons is controlled by a permit system limited to 50 people per day. A permit is not required for visitor use of the tablelands. Two rangers, one stationed near each end of the canyon, monitor visitor use, provide information and assist in emergency situations. Visitor use occurs year-round but peaks during the spring and fall months.

The significant wildlife habitat in ACW is also an important management consideration. Wildlife in ACW, including rare and threatened species, may be affected by visitor use to varying degrees depending on such factors as visitor numbers, visitor awareness and behavior, time of year and climatic conditions. Aravaipa Creek is currently under consideration by U.S. Fish and Wildlife Service for identification as critical habitat for spikedace and loach minnow, two species of native fish inhabiting the creek.

The water resources of ACW are particularly crucial to the future well-being of the Aravaipa Canyon ecosystem. Most of the water flowing through the main canyon and side canyons originates on state, private, national forest and public lands outside of the wilderness. Irrigated crop and pasture lands in the Aravaipa Valley upstream from ACW use groundwater from the Aravaipa watershed.

Continuous streamflow monitoring is done with streamgages at either end of ACW. The streamgages measure changes in streamflow and record data to provide information on minimum flow levels necessary to maintain the riparian ecosystem. BLM has filed application with the Arizona Department of Water Resources for minimum instream flow water rights on Aravaipa Creek. Periodically, storms falling throughout Aravaipa Creek's 541 square mile drainage area result in flash floods that are funneled through Aravaipa Canyon. Flooding has long been a part of natural processes in Aravaipa Canyon, at times rejuvenating the riparian ecosystem while at other times having devastating effects.

Livestock grazing is permitted within ACW on the tablelands above the canyon. Grazing has been excluded from the canyon bottom since 1974 to protect riparian vegetation and eliminate conflicts with visitor use. The rancher is

allowed to herd cattle by horseback through the canyon between the east trailhead and trails downstream from Hell Hole Canyon to the tablelands. This practice has been established through the years and is allowed due to the rugged terrain between Turkey Creek and Parsons Canyon and in the Hell Hole area, and the difficulty in moving livestock by any other route or method to shipping points outside the east end of Aravaipa Canyon. This use occurs infrequently and is completed in a matter of two to four hours.

Access on the county roads to the east and west ends of Aravaipa Canyon is mostly through private lands. The George Whittell Wildlife Preserve at Aravaipa Canyon is adjacent to the wilderness on the east and west. The preserve is administered in trust by the Defenders of Wildlife.

In an exchange completed with the State of Arizona in April 1986, BLM acquired 51,023 acres to the north and south of ACW. Management of these lands will not be addressed in this wilderness management plan as these lands are in the Winkelman Planning Unit, and the Winkelman Management Framework Plan addresses the multiple resource uses and management decisions for lands in the planning unit (BLM 1981). Further multiple resource planning will begin in the near future to determine how the acquired lands will be managed. Management objectives and actions for Turkey Creek will also be identified in that effort.

WILDERNESS MANAGEMENT GOALS

The management objectives and management actions presented in the *Wilderness Management Program* section of this plan have been developed to attain the following four goals that guide the management of BLM-administered wilderness.

To provide for the long-term protection and preservation of the area's wilderness character under a principle of non-degradation. The area's natural condition, opportunities for solitude, opportunities for primitive and unconfined types of recreation and any ecological, geological or other features of scientific, educational, scenic or historical value present will be managed so that they will remain unimpaired.

To manage the wilderness for the use and enjoyment of visitors in a manner that will leave the area unimpaired for future use and enjoyment as wilderness. The wilderness resource will be dominant in all management decisions where a choice must be made between preservation of wilderness character and visitor use.

To manage the area using the minimum tool, equipment or structure necessary to successfully, safely and economically accomplish the objective. The chosen tool, equipment or structure should be the one that least degrades wilderness values temporarily or permanently. Management will seek to preserve spontaneity of use and as much freedom from regulation as possible.

To manage non-conforming but accepted uses permitted by the *Wilderness Act* and subsequent laws in a manner that will prevent unnecessary or undue degradation of the area's wilderness character. Non-conforming uses are the exception rather than the rule; therefore, emphasis is placed on maintaining wilderness character.

WILDERNESS MANAGEMENT STRATEGY

In managing ACW, the limits of acceptable change (LAC) system will be employed to assure that desired wilderness conditions are maintained. The LAC approach to wilderness management consists of nine interrelated steps. Summarized, the LAC process requires acceptable and achievable resource and social conditions with measurable characteristics to be identified. The relationship between existing conditions and those judged acceptable is analyzed and management actions necessary to achieve the desired conditions are formulated. Management actions are then monitored for effectiveness. Once established, LAC indicators signal unwanted changes in the environment or visitors' perceptions of the wilderness. LAC planning for ACW will begin in 1987.

A social carrying capacity study of ACW was initiated in 1985 by the University of Arizona, School of Renewable Natural Resources. The study is the outgrowth of several factors (including continued demand for recreation use of the wilderness): (1) to determine if readjusting use limits, rules or management practices is needed, and (2) to achieve the *Wilderness Act* mandate of preserving an enduring resource of wilderness composed of natural conditions and outstanding opportunities for solitude. Limits and other rules now governing recreation use of ACW were established in the mid-1970s in response to growing use of the primitive area and to protect resources. Over the years, the use levels have appeared to be appropriate for resource protection and visitor satisfaction though at times certain areas within the canyon may experience overuse.

The objective of recreational carrying capacity is to prevent unacceptable biological, physical and social impacts by controlling the amount, type, timing and location of recreation use.

The goals and objectives of the ACW carrying capacity study are to develop a research design that will provide information to establish carrying capacity guidelines and to determine strategies and a management framework implementing those guidelines. The information obtained from the study will establish a database containing a description of the sociological characteristics of ACW visitors, their perceptions of the wilderness and their attitudes toward resource conditions and current management practices. Database analysis will lead to development of management strategies and standards for maintaining or improving the quality of wilderness recreation experiences. The recommendations of the study, to be completed in 1988, will be considered in LAC planning.

The terrain has much to do with dictating the patterns of use in ACW. Four distinct topographic areas within the wilderness influence the type and amount of use.

The canyon corridor essentially includes the bottom of Aravaipa Canyon from one end of the wilderness to the other. In addition to being the main travel zone, the canyon corridor is the site of camping and many other recreational activities. The side canyons comprise a second area that also attracts a significant amount of use though of a different nature than the canyon corridor. Side canyons are most frequently day-use destinations for hiking, climbing and swimming when water is present.

Use of the tablelands, the area above the canyon rims, is primarily during hunting season, with very little use from spring through early fall. Few trails or routes connect the tablelands within ACW to the canyon corridor and are mostly in the eastern portion of the wilderness. The canyon slopes receive little recreation use but form a backdrop to activities in the canyon corridor and are important habitat for bighorn sheep and other wildlife in the wilderness.

The different topographic characteristics of these areas within ACW will be considered in the LAC planning process. Standards that apply to one area may not apply to another. The LAC system will be implemented in ACW as the management tool to attain the objectives and goals of this plan and to monitor the resource and social conditions in the wilderness.

WILDERNESS MANAGEMENT PROGRAM

Specific objectives and management direction for the wilderness elements of ACW are detailed in this section. These elements have been identified as the significant factors that comprise and affect the wilderness values of ACW. A description of the current situation and management assumptions for each element lays the groundwork for establishing management policies and actions that will work to achieve the objectives. The elements have been categorized as being environmental, social or managerial components of the wilderness.

While objectives and management direction in this section are intended to establish a comprehensive management program for ACW, unforeseen situations that may arise in the future will be governed by *BLM Manual 8560, Management of Designated Wilderness Areas*, and by plan revisions.

Environmental Elements

SOIL

Management Objective

To limit soil degradation and erosion resulting from visitor use.

Current Situation

The soils of ACW fall into two major groups, shallow soils of the uplands and deep alluvial soils of the canyon bottom.

The shallow soils of the uplands are formed primarily of volcanic parent material and show a dark gravelly clay loam or gravelly loam surface over a gravelly clay subsurface horizon. The 20 inches or less of gravelly clay subsurface overlies weathered bedrock.

The alluvial soils in the canyon bottom generally exceed 60 inches in depth and have a gravelly fine sandy loam surface and gravelly sandy loam, loamy sand, or gravelly sand subsurface. These soils are highly susceptible to water erosion and have a rapid permeability. Human waste disposal in these soils near Aravaipa Creek has the potential to contaminate stream waters (BLM 1978).

Management Assumptions

The alluvial soils of the canyon bottom will continue to be affected by the majority of visitor use occurring in ACW. Visitor use in the canyon corridor has the potential to degrade soils and increase erosion, although soil compaction is generally not a problem in the gravelly sandy loam. Periodic flooding will remain the most significant factor affecting soils in Aravaipa Canyon.

Management Direction

Management Policy

Visitor use adversely affecting soils in ACW, particularly in the canyon corridor will be identified and managed to maintain the overall natural condition of the wilderness.

Management Action

Establish LAC standards for erosion and soil contamination resulting from visitor use and human waste in and near campsites and along trails.

WATER

Management Objectives

To maintain or enhance the water quality of Aravaipa Creek and its tributaries in ACW to allow continued safe recreation use and protect aquatic, wildlife and riparian resources.

To prevent human-caused contamination of water in the wilderness.

To assert and legally protect the necessary water rights required to perpetuate the riparian ecosystem, aquatic life, wildlife and recreation in ACW.

Current Situation

The Aravaipa Creek watershed begins at a low divide in the northwest end of the Sulphur Springs Valley. The direction of flow is northwest through the Aravaipa Valley between the Galiuro Mountains and the Pinaleno and Santa Teresa ranges. The channel then turns west through Aravaipa Canyon, deeply dissecting the foothills of the Galiuros and entering the San Pedro River south of Dudleyville.

The watershed covers about 541 square miles and nearly 69% of the watershed is upstream from the eastern boundary of ACW. The creek is intermittent from its beginning through Aravaipa Valley but rises as a perennial stream about four miles northwest of Klondyke. From that point, the creek flows year-around the remaining six miles to the wilderness boundary and is perennial through ACW.

Aravaipa Creek is also fed by springs in the canyon bottom and steep side canyons. Records indicate at least ten springs and numerous seeps contribute to the creek's flow. Average stream flows range from about 18 cubic feet per second (cfs) at the east end of the canyon to about 25 cfs at the west end. BLM established permanent streamgaging stations on each end of the wilderness in 1980 for the purpose of determining minimum flow requirements for the riparian vegetation and native aquatic life in the creek.

Based upon the flow data obtained from these stations and the quantified uses of the stream, BLM has requested instream flow rights of 15 cubic feet per second with the State of Arizona (USFWS, 1983). Approval of the application is currently pending with the state. If granted, the instream flow right would have a priority that precedes the date of establishment of ACW.

Historic climatic records indicate an annual rainfall average of 15 inches for the general area. However, official weather service stations in Winkelman and Klondyke are no longer in operation. BLM has established and maintained two weather stations in the area for eight years. From 1978 through 1985 the average annual precipitation was 19.45 inches at Klondyke and 19.95 inches at the West Aravaipa administrative site, with about 33 percent of the rainfall during the summer rain period.

Flash flooding due to often intense storms is a natural occurrence in Aravaipa Canyon. A large flood in October 1983 swept away vegetation and many trees in the canyon and caused substantial private property damage outside ACW. The peak discharge of that flood has been estimated at 23,000 cubic feet per second. Radiocarbon dating of charcoal taken from previous flood deposits indicates that the 1983 flood was the largest in the past 1,100 years. However, Aravaipa Creek's flood history is not unusual in magnitude nor frequency when compared to that of similar watersheds in the Southwest. (Fuller 1986).

Several additional factors potentially affect the quality and quantity of water flowing through ACW. Agricultural interests in Aravaipa Valley have developed water using both wells and diversion dams with up to six such diversions between Klondyke and the wilderness at times. Fertilizer and pesticide use on crops and extensive livestock grazing upstream from ACW may have a potential detrimental effect on water quality.

In addition, numerous mineral deposits dot the Klondyke area. Mining activity in the mountains surrounding the area existed sporadically from the late 1870s to 1957. Since that time activity has been limited to exploration and sporadic prospecting. Legal descriptions of known mines in the area have been detailed (Minckley 1981). The potential for the presence of heavy metals in the water carried down by runoff from mined areas is a concern. The impacts of these activities on the quality of water in ACW are not presently known.

Research conducted by Arizona State University and the University of Arizona has provided extensive background information on the chemical properties of Aravaipa Creek (Minckley 1972 and 1981, Sommerfeld 1977, Ellingson 1980). Early studies showed mercury to exceed the recommended water quality standards in Aravaipa Creek (Minckley 1972). Recent analysis found all element concentrations except iron to be within these standards (BLM 1987). Some testing of bacteriological conditions has been done in the studies to date. BLM is implementing a recently written water quality monitoring plan to establish procedures to measure the physical, chemical and biological parameters of flowing water in ACW (BLM 1986).

Management Assumptions

Water in Aravaipa Creek is of suitable quality according to state surface water standards.

The water rights for instream flow will be granted for 15 cfs. This amount is satisfactory to sustain the riparian ecosystem, aquatic and wildlife populations and recreation needs, including aesthetic values.

Flooding is a natural event in ACW. Control of soil and riparian vegetation loss from flooding in ACW is practicably unfeasible.

Existing land uses and practices and factors controlling the timing and amount of water yield in the watershed above ACW will not change.

An implied federal reserve water right was created when ACW was designated. Established water rights existing under state law prior to creation of the wilderness area would not be affected by a federal reserve water right claim. If unappropriated water is available, the amount of water claimed by BLM would be limited to the amount required to satisfy wilderness purposes.

Management Direction

Management Policy

Wilderness management activities will include measures for protecting watershed condition and maintaining or enhancing the existing natural water quality of Aravaipa Creek and its tributaries in ACW.

BLM will protect Aravaipa Creek from degradation. The State of Arizona's Unique Waters Protection Program provides a means for increased protection of naturally pristine surface waters. Water quality data needed to supplement previous studies will be collected according to the water quality monitoring plan to determine if Aravaipa Creek can be protected under these regulations.

Suspected sources which degrade water quality in excess of established standards will be investigated and measures will be initiated to control pollution. Relevant legislation will be enforced and actions will be coordinated with other government agencies in monitoring and restraining damaging activities.

Water quality measurements of physical, chemical and biological parameters will be made by portable or nonpermanent equipment. Transportation of this equipment will be by non-motorized means.

BLM will continue to comply with state requirements regarding water use to protect its instream flow water rights (beneficial use requirements).

Water rights and waters currently used for domestic and stock watering purposes will be maintained. Additional development needs for water will be considered on a case-by-case basis according to wilderness management guidelines and policies of this plan.

Requests or approval for private control of water sources within the wilderness will be opposed by BLM.

BLM may, where state law permits, file for water rights on additional selected water sources in order to protect wilderness resources, threatened and endangered species habitat and recreational uses.

BLM will educate wilderness visitors to use proper and safe methods of human waste and detergent disposal and correct methods of fire ash and garbage management.

Watershed restoration may take place in ACW if deteriorated soil and vegetative conditions caused by human influences create a serious threat or loss of wilderness values or present a definite hazard to life or property. Where such dangers are not imminent or where natural vegetation may be expected to return in a reasonable time, restoration work will not be done. All restoration work will utilize native species and non-motorized equipment when feasible. Approval by the Director is required for all watershed restoration proposals.

New activities with the potential to adversely affect the Aravaipa Creek watershed will be evaluated as soon as possible. If needed to protect the watershed, activities will be modified on BLM lands and modifications of activities and practices will be strongly urged on other lands.

Management Actions

Implement the water quality monitoring plan in 1987. Previous research will be studied. Springs, mines and other potential influences on the quality of Aravaipa Creek will be assessed to provide a comprehensive picture of watershed issues.

Continue monitoring Aravaipa Creek streamflow.

Establish LAC indicators for quality and quantity of flowing water in ACW.

Maintain the quality of Aravaipa Creek according to state water quality standards.

Apply for Unique Waters Designation, if it is determined that surface water within ACW is suitable for such protection.

Make water filings where unappropriated water exists and state law permits for recreation, wildlife, stock water and wilderness resources.

Retain a current knowledge of management practices and proposed activities in the Aravaipa watershed and monitor those practices and activities with the potential to adversely affect water quality and quantity in Aravaipa Creek. Enforce applicable laws and regulations to protect water quality and quantity.

Include information with all ACW visitor use permits about disposing of waste (human, detergent, fire residue, etc.) to minimize water pollution.

VEGETATION

Management Objectives

To manage the canyon corridor and side canyons so that natural ecological processes continue to repair poor vegetation conditions caused prior to wilderness designation.

To increase fine fuels on the tablelands to the point that natural fires can return vegetation to grassland conditions.

To limit the interruption of natural plant succession and the adverse effects on vegetation caused by visitor use along trails and at campsites.

To prevent invasion of exotic plants that would substantially alter wilderness character.

Current Situation

Vegetation within much of ACW has been greatly modified by human actions prior to wilderness designation. A written account by one of the first American explorers to the area indicates that the canyon's riparian area was densely wooded (Bell 1867). Today this area has only scattered trees with small groves in some protected locations. The description of vegetation on the tablelands implies it was a grassland (Bell 1867) and relict areas still are desert grasslands. However, most of the tablelands are now dominated by native shrubs. The steep canyon slopes appear to be unmodified and still support healthy closed chaparral, jojoba-mixed shrub and Sonoran desert vegetation communities.

Visitor impacts are concentrated in riparian vegetation of the canyon corridor and side canyons. Trails develop in the canyon bottom along easily traveled routes between stream crossings. Some trails persist from year to year while others change location as vegetation in the riparian areas grows up and another route becomes more easily traveled. In both cases young plants are trampled and vegetation growth is hindered. Popular camping areas are trampled clear of vegetation and soil chemistry is modified by ashes from campfires. Firewood is being depleted around these same areas. Some of these effects are lasting while others are transitory and unnoticeable following a growing season or flooding.

Livestock grazing has had a major impact on vegetation in the canyon bottom and on the tablelands above. Although livestock have been excluded from the riparian area since 1974, there are the lingering effects of lost years of tree regeneration. Young trees are now becoming established, middle-aged trees are non-existent and the last pregrazing trees are dying of old age or being toppled by floods.

Livestock grazing on the tablelands reduced grass cover and decreased fire frequency. Fire is a natural process that maintains the grassland community. Brush has been encroaching into the grassland, changing the plant community and the wildlife populations that depend upon it.

Human activities upstream from the wilderness can have an impact on vegetation within the wilderness. Mining,

livestock grazing, agriculture and stream channelization can alter water flow patterns and water chemistry within Aravaipa Canyon and can cause changes in aquatic and riparian vegetation.

Flooding can also have profound effect on the canyon's riparian vegetation. However, experience since the 1983 flood is showing that natural vegetation can reestablish along Aravaipa Creek in a reasonable time.

Few perennial exotic plant species have become established in Aravaipa Canyon. Bermuda grass, salt cedar and watercress were not native to the canyon but have become established in the riparian and aquatic zones. Bermuda grass has become naturalized and appears to cause little problem. Watercress increases during stable flow periods until it impedes flow along the creek. Most of it is removed during floods. Salt cedar has the potential to compete with native trees. To date, periodic flooding and control by pulling up young plants has prevented this species from becoming dominant in the canyon.

Management Assumptions

Visitor activity will remain concentrated in the riparian areas of the canyon corridor and side canyons. Visitor use of trails and campsites will result in adverse effects to vegetation in those places.

Livestock grazing non-use will continue in the canyon.

Flooding will remain at the same intensity and frequency or increase due to human activities upstream out of the the wilderness. Flooding will continue to affect establishment of riparian vegetation, but overall the riparian zone should continue to develop naturally.

Wildfire on the tablelands will increase in frequency and intensity as fine fuels are increased through improved livestock management.

Management Direction

Management Policy

Management of vegetation in ACW will be directed toward allowing natural ecological processes to operate freely and to return (unless prevented by flooding) plant communities to conditions similar to those described in the 1860s.

Natural revegetation and the natural processes of ecological succession are the preferred methods of ecosystem restoration in ACW. Reseeding or replanting in rare cases may be authorized by the Director when there is no reasonable expectation of natural revegetation. Only native species and primitive methods would be allowed.

Exotic plant control will focus on those species, particularly salt cedar, that would jeopardize the continued existence of native plants in ACW. Control by hand methods is preferred.

Visitor use will be managed to limit damage to vegetation in ACW (see ADMINISTRATION).

Management Actions

Establish LAC standards for vegetation affected by visitor use at campsites and along trails.

Manage visitor use in the riparian area to prevent permanent damage to vegetation (see ADMINISTRATION).

Increase grass cover on the tablelands through natural revegetation and ecological succession. Continue grazing non-use in the canyon.

Control, by hand methods, salt cedar and other exotic perennial plants that jeopardize wilderness characteristics. Monitor the canyon bottom periodically to locate exotics brought in by floods or pack and saddle stock.

INSECTS, DISEASE AND NOXIOUS PLANTS

Management Objective

To allow insects, disease and noxious plants to play a natural role in the ACW ecosystem.

Current Situation

Insects and other arthropods are natural components of the ecosystem. While most are totally benign, a few such as mosquitoes, horseflies, bees, wasps, ants, centipedes, wood ticks, scorpions, conenose kissing bugs, blister beetles and some spiders can affect humans. At times, some become so numerous as to make being in ACW unpleasant. Other insects, including grasshoppers and tent caterpillars, occasionally become so numerous they defoliate trees, shrubs and other vegetation. Insect populations are cyclic and weather, natural predators, disease or food limitations eventually restore a balance.

Diseases known to exist in ACW include rabies, blue tongue, EHD (epizootic hemorrhagic disease) and soremouth. Skunks believed rabid have bitten visitors in recent years and apparently rabid gray foxes have been observed. Rabies outbreaks usually appear when wildlife populations are high and end when the diseases kill off the carrier population. Control is economically and administratively unfeasible and visitor education and warnings should prevent most incidents.

Blue tongue, EHD and soremouth are viral diseases known to exist in the bighorn sheep population (Dodd 1980). These diseases will cause no problems as long as range conditions are satisfactory, but a sheep die-off is to be expected during any prolonged drought or other stress period.

Malaria was present in the Aravaipa area in the late 1800s. The disease caused the original Fort Grant to be moved from the junction of Aravaipa Creek and the San Pedro River (War Department 1870). Running water is poor habitat for the mosquito vector and the absence of the disease in the human population makes its return unlikely.

Noxious plants include poison ivy, desert cotton (*Gossypium thurberi*) and salt cedar (see VEGETATION). Poison ivy, a native vine that causes dermatitis in susceptible

individuals, grows in riparian areas. Desert cotton was controlled during the 1930s as it was believed to be a reservoir for diseases of domestic cotton (Kearny 1951). Both species are uncommon native plants and control is not warranted.

Mistletoe and dodder are common parasitic plants in ACW. They do kill individual trees and shrubs but pose no threat to the health of the community. As natural components of the ecosystem, they provide food and cover for wildlife and speed the nutrient flow. Control is not desirable in ACW.

Management Assumptions

Various insects, disease and noxious plants are a natural component of the ACW ecosystem.

The use of chemicals and other artificial methods to control outbreaks of insects, disease and noxious plants can adversely affect the total biological community.

Public awareness that insects, disease and noxious plants are a natural part of the wilderness ecosystem will encourage precautions that will minimize risk and discomfort that could be encountered in visiting ACW.

Management Direction

Management Policy

Insects, disease outbreaks and noxious plants will not be artificially controlled in ACW except in special instances when loss to a resource is undesirable or threat to human health or safety is imminent within or outside the wilderness. In the event of such emergency situations the BLM Director could approve suppression projects.

Management Actions

Inform visitors of the potential hazard of rabid animals, particularly skunks, and other harmful insects and plants in ACW and advise visitors of practices that could minimize encounters or discomfort.

Monitor conditions, if infestations occur, to determine effects on resources and visitor health and safety.

FISH AND WILDLIFE

Management Objectives

To maintain fish and wildlife species indigenous to ACW.

To allow natural processes to occur so that fish and wildlife species may arrive at a balance with their natural habitat and each other.

To limit habitat alteration and adverse effects on fish and wildlife species resulting from visitor use and authorized human activity.

To protect sensitive, rare, threatened and endangered species and the habitat conditions they depend upon in ACW.

To permit hunting, subject to applicable state and federal laws and regulations.

Current Situation

The Aravaipa Canyon Wilderness provides high quality habitat for a variety of fish and wildlife species. The perennial water of Aravaipa Creek, besides furnishing habitat, allows for the growth of the canyon's riparian vegetation. The high cliffs and dissected uplands provide habitat for additional wildlife.

The riparian community in the canyon bottom has been excluded from livestock grazing since 1974 and has seen significant regeneration in spite of a catastrophic flood in 1983. Livestock grazing had curtailed the natural development of the riparian zone from the early 1900s until exclusion. Riparian habitat extends up many of the side canyons and is in good condition where natural barriers have kept cattle out. In the main canyon riparian vegetation is in fair to poor condition. Though young trees are establishing after exclusion of cattle from the canyon bottom and following large floods, old trees are scarce and middle-aged trees are non-existent.

The uplands provide wildlife habitat of varying quality. Many isolated benches, hillsides and canyons have excellent wildlife habitat. Other areas have been heavily grazed for many years and are in poor condition.

ACW is in the planning area covered by the Mescal-Dripping Springs Habitat Management Plan (HMP). The plan calls for: (1) improving the habitat of sensitive wildlife and plant species, and (2) reducing the influence of limiting factors, such as the availability of water and forage, on big game wildlife through habitat manipulation (BLM 1982). The HMP identifies Aravaipa Canyon as a particularly important area with respect to desert bighorn sheep, native fish, riparian and aquatic habitats and black hawks.

Desert bighorn sheep, wiped out in the 1930s and reintroduced in the late 1950s and 1973, have increased dramatically and are expanding their range. The number of bighorn sheep in the Aravaipa area is estimated at 160. Arizona Game and Fish Department (AGFD) monitors the herd with annual aerial and ground surveys. An intensive on-the-ground study indicated that the sheep were coexisting with livestock without problem, each using different parts of the habitat (Dodd 1980). A small group of bighorn is commonly seen along the north side of the canyon by visitors in the canyon bottom and appears to be tolerant of people hiking or backpacking. The remainder of the sheep use the canyon slopes, side canyons and tablelands north of Aravaipa Creek and have traditionally used the old release exclosure outside of ACW for lambing. The sheep may be establishing new lambing areas as they expand. A small masonry dam was built near Painted Cave Canyon prior to wilderness designation to provide water for sheep.

Federally listed and candidate threatened and endangered species are found within the wilderness boundaries. Peregrine falcons nest near or in ACW and forage within the

wilderness. The desert tortoise lives in the western part of the wilderness in Sonoran desert habitat. No information is available on population numbers of either species. The black hawk, though having no federal status, is listed as a State of Arizona threatened species. This raptor is uncommon in Arizona and the continuation of the species could be in jeopardy in the future. Nesting black hawks are sensitive to disturbance from visitor use.

Aravaipa Creek contains seven native fish including the loach minnow (*Tiaroga cobitis*) and the spikedace (*Meda fulgida*). Those two species have been listed as threatened under the *Endangered Species Act*. The other native fish found in Aravaipa Creek are roundtail chub, longfin dace, speckled dace, Sonoran sucker and desert mountain sucker. The variety of aquatic habitats — shallow riffles, deep pools, sandy bottoms and gravel bottoms — allows for the variety of fish species. Frequent and often heavy flooding maintains the native assemblage of fish. Exotic species tend to be flushed out of the system by flooding, but some (like the green sunfish) persist in pools in the side drainages.

Runoff from mined areas in the Aravaipa Creek watershed may contain traces of heavy metals such as mercury or cadmium. Heavy metals have been shown to concentrate in living tissues and become toxic at increasing levels. If picked up by the aquatic life, heavy metals enter the food chain and can have an adverse effect on wildlife.

Hunting, fishing and trapping are activities generally allowed in wilderness, subject to state and federal laws and regulations. It is prohibited to take in any manner a threatened or endangered species. None of the fish species found in Aravaipa Creek are considered to be game species. Commercial trapping, defined as trapping when it is the trapper's sole source of livelihood, is not permitted in wilderness. Big game animals, including mule deer, white-tailed deer, javelina, mountain lion and bighorn sheep, attract many hunters to the area, primarily on the tablelands north of the canyon. Big game populations are stable despite pressure from recreation and grazing.

The canyon area is rich in nongame species, particularly riparian bird species, but also mammals, amphibians and reptiles. Yellow-billed cuckoos, buff-collared nightjars, beardless flycatchers, black hawks and zone-tailed hawks are some of the uncommon species doing well in ACW. Ringtail cats, coatis, bobcats, gray foxes and raccoons are among the 46 mammals known living in the canyon.

The steep, rocky canyons, perennial water flow, riparian vegetation, abrupt elevation changes and numerous microhabitats have produced a large assemblage of reptiles and amphibians. The canyon is the eastern edge of the range of the desert tortoise and tiger rattlesnake. In all, 23 species of snakes, 20 lizards and 8 amphibians are known to inhabit the area (Johnson 1980).

Management Assumptions

Through improved management of watershed and maintained instream flows, sufficient water will be present in Aravaipa Canyon for fish and riparian vegetation. Additionally, grazing will not be allowed in the riparian zone of ACW in the future. Much of the upland habitat near the wilderness is now under management by BLM and Defenders of Wildlife. Watershed values should improve.

The revised and updated HMP will continue to recognize the importance of habitat in the Aravaipa area.

Arizona Game and Fish Department will continue annual aerial monitoring of the bighorn sheep population. The current trend in the population is expansion in all directions. AGFD may gather bighorn sheep from the Aravaipa herd for transplant to other areas in the future.

Listed and candidate threatened and endangered species will be monitored and will receive special consideration. Additional information should be obtained concerning visitor use effects on black hawks and other wildlife. The U.S. Fish and Wildlife Service will designate Aravaipa Creek as critical habitat for spikedace and loach minnow.

The fish, reptile, amphibian, bird and small mammal populations are expected to remain stable in the long term. Big game numbers will fluctuate with weather conditions and other environmental factors. Arizona Game and Fish Department will monitor those populations.

Management Direction

Management Policy

The major emphasis of wildlife management in ACW will be on allowing natural processes to control the evolution of the riparian habitat. Natural revegetation will eventually result in a well-developed riparian zone, facilitating the permanent establishment of native species populations. Management on the tablelands will also be geared to the free operation of natural processes.

Arizona Game and Fish Department (AGFD) will continue to monitor the desert bighorn sheep as part of their wildlife management responsibilities. BLM will be notified in advance of helicopter use to ensure wilderness resource values are maintained. Continued radiocollaring of sheep and monitoring of collared animals will be coordinated with BLM. BLM will be notified in advance of the retrieval of a collar sending a mortality signal.

Non-motorized methods will be used to retrieve collars and dead sheep in the wilderness unless, in an emergency, retrieval will only be feasible and timely by motorized methods. The District Manager is authorized to permit emergency motorized vehicle and equipment use in ACW.

HMP objectives stress proper management of the bighorn sheep habitat. The canyon slopes and tablelands are important habitat areas. Gathering or release operations for the purpose of transplanting bighorn sheep will be coordinated with BLM. To the extent possible, facilities and motorized operations for gathering or release will occur outside ACW or be of a temporary nature. Recreation activities will be limited or controlled in areas crucial to bighorn sheep if conflicts arise. Visitor use management will recognize the importance of maintaining spatial segregation between visitors and bighorn sheep.

Aerial surveys of deer and javelina have been conducted by AGFD in the Aravaipa area in the past and are allowed to continue over ACW as a management practice. BLM will be notified in advance of all wildlife aerial surveys over ACW.

Habitat manipulation and installation of permanent facilities will not be allowed unless necessary to protect threatened and endangered species, correct unnatural conditions resulting from human influence or enhance wilderness values. The potential to obtain the desired situation by conducting such activities outside the wilderness will be evaluated as an alternative to habitat manipulation and facility installation in ACW. The masonry dam near Painted Cave Canyon will be maintained as needed, using non-motorized and non-mechanized methods compatible with maintaining wilderness character.

Visitor use will be discouraged in the vicinity of peregrine falcon and black hawk nest sites during critical nesting periods.

Exotic fish in the side canyons will be eliminated in a manner compatible with the wilderness resource. Chemical or mechanical means may be approved for use on a project-by-project basis. Reintroduction of native fish into these areas will follow eradication of exotic species.

Under unusual conditions, such as very severe drought or following severe floods, closing the canyon to visitor use may be considered for the benefit of wildlife.

Management of game animals in ACW will consider visitor safety and wilderness values. An area open to hunting with bow and arrow only (no discharge of firearms) has been established (see RECREATION). Nongame animals will be managed by maintaining their natural habitat.

Trapping must comply with AGFD regulations and BLM visitor use rules, including obtaining a permit to enter Aravaipa Canyon and the side canyons. Anyone trapping in the concentrated use areas of the canyon bottom and side canyons will be cautioned to be aware of visitor safety. Commercial trapping, or the trapper's sole source of livelihood, is not allowed. Predator control in ACW will be allowed when directed at individual animals causing the problem, if the removal will not diminish wilderness values of the area.

Management Actions

Establish LAC standards for fish and wildlife habitat.

Review and amend the Mescal-Dripping Springs HMP where necessary to be consistent with this plan.

Continue livestock grazing non-use in the canyon to maintain the riparian habitat.

Schedule annual AGFD helicopter use to monitor bighorn sheep and aerial surveys of deer and javelina in ACW on weekdays and times of low visitor use.

Protect high use bighorn nursery band areas in Aravaipa Canyon on the north side of Aravaipa Creek from Painted Cave Canyon to Booger Canyon. Coordinate with biologists to ensure that visitor use and trails avoid these areas.

Plan with AGFD and the U.S. Fish and Wildlife Service to eliminate exotic fish in the side canyons and reintroduce native fish in a manner consistent with wilderness values and visitor use.

Continue current hunting restrictions in the canyon bottom. Advise visitors of hunting seasons. Predator control in ACW will only be direced at offending animals.

Discourage visitors from destroying nongame species habitat, such as flood debris piles critical to some reptiles, amphibians and small mammals (see ADMINISTRATION).

Encourage visitors to avoid camping and concentrated activities near raptor nest sites from March to June. Should black hawk numbers drop significantly, campsites near nests or the entire canyon may be closed during the critical nesting cycle.

CULTURAL RESOURCES

Management Objectives

To recognize cultural resources as a fragile, nonrenewable and significant supplemental value to ACW.

To manage cultural resources by using inventory, evaluation, physical and administrative protective measures, data preservation, enhancement and public use in compliance with federal and state laws and BLM policy.

Current Situation

The University of Arizona has conducted a cultural resource survey of about 5.5% of the wilderness (Gillman 1975). Incidental inventories by BLM personnel have identified a total of 22 sites in ACW. No more than 10% of the area has been inventoried.

Aravaipa Canyon was inhabited as long as 10,000 years ago. The Cochise culture (10,000-2,000 years before present) probably used the canyon for hunting, fishing, gathering wild edible plants, as shelter and as a corridor from the Aravaipa Valley on the east to the San Pedro River Valley on the west. While sites specifically attributable to the Cochise are not known within the wilderness itself, it is likely that this reflects a data gap.

Cochise sites are known along the San Pedro River less than ten miles west of the wilderness boundary. The San Pedro has been intensively inventoried over the years and it is expected that if the area between the river channel and Aravaipa Canyon, as well as the canyon itself, were similarly inventoried, Cochise sites would be located. One known and extremely significant *National Register* quality rock art site of suspected Cochise origin is less than one-half mile from the wilderness boundary.

Most of the 22 known sites within the wilderness boundary are from later prehistoric cultures, the agricultural Hohokam, Mogollon and Salado people (about 1 AD — 1450 AD).

Cultural remains from these people are found in overhangs in the canyon walls and in the rim country above the canyon. A few surface artifact scatters are also known. Most of the overhangs were probably occupied on a seasonal basis and several contain rock art.

A small cliff dwelling is in Turkey Creek Canyon just outside the wilderness boundary. This single room structure has a uniquely constructed pitched roof and was probably occupied by Salado people (about 1350 AD — 1450 AD). It is well known and frequently visited by people using the wilderness.

Some of these rock shelters and others known to the public also contain evidence of Apache use (about 1500 AD — 1871 AD). Apache baskets and bows and arrows, for instance, were reported by vandals to have come from rock shelters in the canyon. Historically, the Aravaipa Apache homeland centered around the canyon and it was part of a raiding route into Sonora, Mexico.

During historic times, Aravaipa Canyon was not only inhabited by Apache but also provided a pass through the mountains for Hispanics and AngloAmericans. In 1789, Spanish troops left Tucson to scout northeast. While traveling through the area, Aravaipa Apaches were spotted fleeing into the Santa Teresa Mountains. In 1863, American troops attacked a rancheria in Aravaipa Canyon and killed more than 50 Apaches in an effort to stop Apache raids on Anglo settlers. The wilderness is ten miles northeast of the infamous Camp Grant massacre site where more than 100 unarmed Apache were slaughtered by a vigilante force from the Tucson area bent on revenge for Apache raids on settlements in 1871.

Two historic sites are known in the wilderness, including the site of the original Salazar ranch house. Abandoned just prior to WWII, this site is of no great antiquity, but the Salazars figure prominently in the recent history of the canyon and still own property near ACW. The other site is in Aravaipa Canyon near the mouth of Horse Camp Canyon. Construction of a rock building began about 1924-25 but was not completed.

Most of the known cultural sites have been heavily impacted by casual collectors and professional pot hunters. There are no known cases of intentional vandalism to rock art sites and deterioration of this cultural resource appears to be from environmental causes.

Interpretation of the cultural history for the visitor is limited to a brief overview in the visitor brochure. Both historic home sites are listed in the "points of interest" section without further explanation. Standard cautionary antiquities signs are at the Salazar home site and the small cliff dwelling site in Turkey Creek Canyon. All three sites are visible or are easily accessible and are therefore especially vulnerable to degradation from visitor use.

Management Assumptions

Aravaipa has long been a focus of human activity and only a portion of the cultural resource base is known by BLM. Information on significant sites known to people outside BLM should be sought by BLM personnel.

Proper management including protection, enhancement or wise use is difficult without a current assessment of the known cultural resources and without an inventory in areas where potential for site presence is high.

Wilderness visitors will cause negative impacts to some cultural resources within and adjacent to the wilderness through inadvertent effects of visitation and some vandalism. Protection of other sites will be enhanced since vandals will find it harder to dig in a relatively high profile area.

Some human-caused degradation to sites is casual, unintentional or based on ignorance of the value of cultural resources.

Management Direction

Management Policy

Cultural resources are subject to the forces of nature in the same manner as other wilderness resources. Excavation, stabilization or restoration of cultural sites may only be permitted where it will not degrade the wilderness character of the area and following State Director approval.

Specific cultural sites will not be identified for the public in ACW.

Eligible sites will be recommended for nomination to the *National Register of Historic Places*.

All sites will be evaluated according to the Cultural Resource Use Evaluation System and allocated to appropriate uses through Cultural Resource Management Plans.

Prehistoric and historic sites will be protected from vandalism and inadvertent destruction. ACW rangers will be trained in site protection and monitoring.

Efforts to expand the data base of known cultural resources will include field inventories and interviews with people knowledgeable about site locations or about original locations of artifacts allegedly removed from sites in ACW.

Wilderness brochure revisions will take a positive, informational approach in discussing cultural resources to foster respect for the resource and to enhance other protection measures.

Management Actions

Establish LAC standards for cultural resources.

Include a more detailed cultural history of ACW in wilderness brochure revisions without referring to specific site locations. Include a cautionary statement about disturbing, damaging or collecting cultural material. Interpret the Salazar historic homesite, the Horse Camp historic site and the Turkey Creek cliff dwelling in a manner consistent with wilderness management policy. These sites are visible, easily accessible and known to the general public.

Train ACW rangers to identify and locate sites during the course of other duties and to assist in future inventories. Train them in site protection, including patrolling and vandalism reporting.

Develop a site patrol plan to monitor site condition and visitor impact and to be implemented by the ACW rangers.

Assess known sites for condition and significance and nominate eligible sites to the *National Register of Historic Places*.

Inventory areas in ACW as site potential is identified.

Evaluate all sites according to the Cultural Resource Use Evaluation System.

Identify: (1) residents near the wilderness for an oral history project, and (2) other people knowledgeable of the area's cultural sites. The emphasis will be on data collection rather than vandal investigation.

Begin oral history interviews.

Contract an ethnographic and historic study on the Western Apache to acquire data on specific site locations used by the Apache in Aravaipa Canyon. This study and follow-up field inventories will identify sites for evaluation and protection and also provide educational material for the public at large.

Social Element

RECREATION

Management Objectives

To allow recreation activities that are dependent on and consistent with a wilderness setting characterized by natural conditions and outstanding opportunities for solitude.

To permit commercial recreation use that will meet public needs while maintaining wilderness resources.

To manage the use of pack and saddle livestock to limit resource damage such use may cause within the wilderness.

Current Situation

ACW is a popular destination for day hiking, backpacking, birdwatching, photography, wildlife observation and sightseeing. Hunting occurs in portions of the wilderness during the fall and winter. Horseback riding in ACW also takes place but less frequently. Most visits happen during the spring and fall when temperatures are moderate and storms are uncommon. However, the climate allows year-round use.

The majority of visitors to ACW come from Tucson and Phoenix, although people from throughout the United States and the world do visit Aravaipa Canyon. The scenery, the desert stream and its tributaries and the opportunities for birding and observing bighorn sheep are the most famed attractions of ACW.

Visitor use statistics for Aravaipa Canyon have been kept since the mid1970s. Over that period, visitor use has remained rather stable with the exception of the years 1980-82 when use increased dramatically. The increase was probably because of publicity about the pending wilderness designation. After the flood of October 1983, visitor use lessened for a year but has since returned to that of the 1970s. Visitor use statistics are shown in Table 1.

Table 1

Aravaipa Canyon Visitor Use

Year	Visitor Days	Visitors
1974	6,232	3,116
1975	5,240	2,620
1976	7,456	3,737
1977	9,620	4,061
1978	8,053	3,238
1979	7,861	3,301
1980	10,089	3,597
1981	12,189	4,215
1982	14,072	4,940
1983	8,300	2,890
1984	5,865	2,091
1985	7,980	2,854
1986	8,430	3,048

Source: BLM, Safford District files, Arizona

Most recreation use within ACW is in the canyon corridor and to a lesser degree in the side canyons. Hunting is the most common recreation activity on the tablelands. To protect visitors, the confines of Aravaipa Canyon and its side canyons were closed to the discharge of firearms in 1973. To allow for hunting of bighorn sheep, that order was modified in 1981 under a joint agreement between BLM and Arizona Game and Fish Department to read "The floodplain of Aravaipa Creek and the first 50 vertical feet above the streambed are open to hunting with bow and arrow only." Discharge of firearms in that area is prohibited for public safety purposes.

Several other rules have been implemented to govern visitor use in Aravaipa Canyon since the development of the first primitive area management plan in 1970: limit of 50 visitors per day, up to 20 people at the east entrance and up to 30 at the west; maximum length of stay three days and two nights; no pets allowed. A complete list of visitor use rules is in Appendix 3.

A reservation and permit system was initiated in 1973 to allow visitors to plan their trips to Aravaipa Canyon and to

help in monitoring use. A permit is required for use of Aravaipa Canyon and the side canyons within the wilderness below the rims of the canyons. A permit is not required for use of the tablelands only. Currently, reservations may be made at the Safford District Office up to six months in advance of the desired entry date. To receive a permit, reservations made over one month in advance must be confirmed within the month prior to the reserved date. Reservations not confirmed up to two weeks prior to the entry date are made available for others on a first-come, first-served basis. Though the number of no-shows has been reduced since implementing this policy, some confirmed reservations still go unused. Reservations for hiking and backpacking are limited to 10 people per permit.

Two rangers work in ACW providing visitor assistance and use supervision. They are stationed near the two ends of the wilderness. The east end ranger lives in Klondyke and the west end ranger lives near the Wood Ranch, at the west end trailhead about one mile downstream from the wilderness boundary. Depending on the season and the intensity of use, two or three days a week are spent by the rangers on patrol duties in ACW. During other times they are working on public lands outside the wilderness.

A use fee was instituted in April 1984 for ACW as a result of the President's initiative that the recreating public share a larger portion of the cost of providing recreation opportunities. Fees of $1.50 per person per day are paid by the visitor at a self-service station at each trailhead. This system was chosen as being most effective in keeping down administrative costs. Visitor compliance with fee requirements is generally good. Paying fees does not negate requirements for obtaining a permit to enter ACW.

The University of Arizona is doing a study of social carrying capacity in ACW. Information from the study will improve BLM's understanding of visitors' perceptions regarding wilderness character, use and management of ACW. This information will help BLM attain the goal of preserving the wilderness resource while allowing for the use and enjoyment of Aravaipa Canyon as wilderness. Data gathering will take place during 1987 and 1988 and final recommendations will be made in 1988. Recommendations from the study will be considered in the limits of acceptable change (LAC) planning process.

One special recreation permit for commercial use of ACW is in effect at the present. Commercial use is recreational use of the public lands, such as outfitting or guiding, for business or financial gain. The permittee generally conducts overnight backpacking trips into the wilderness. Former commercial use permittees have taken in groups for day hiking, photography and nature study. In the past, commercial use has not made up a significant amount of visitor use in the canyon. During 1985, only about 1% of the visitor days in ACW were contributed by commercial use.

Another 1% of the visitors to ACW prefer to use pack and saddle livestock in connection with their visit. Horses have been used almost exclusively, though llamas were used once to pack in visitors' equipment and supplies. Overnight use of pack and saddle livestock in the canyon is not allowed due to the environmental effects of trampling on the alluvial soils and vegetation of the canyon bottom. Pack and saddle stock groups are limited to a maximum of five animals.

Management Assumptions

Public demand to visit ACW will continue to rise steadily at a moderate rate over the ten-year planning period. Actual visitor use is expected to increase slightly.

Patterns of ACW visitor use will not change substantially. Peak use periods will remain during the spring and fall and on weekends. Most use will continue to be within the canyon corridor.

Increased use of the wilderness can cause resource deterioration and diminish opportunities for solitude.

The demand for commercial use permits and the use of pack and saddle stock to visit ACW will remain stable.

Management Direction

Management Policy

ACW will be managed to provide for visitor use and enjoyment that is consistent with the preservation of wilderness character and that will leave the wilderness unimpaired for future use and enjoyment.

Resource conditions and unique values within ACW may require that recreation and visitor use activities be restricted at times or in certain locations to preserve an enduring resource of wilderness.

The social carrying capacity of ACW and indicators of limits of acceptable change (LAC) will be determined so as to anticipate and avert degradation of wilderness character and to mitigate impacts caused by various uses.

Direct and indirect methods of visitor management will be used when necessary to preserve the wilderness resource and the visitor's wilderness experience and opportunities.

Commercial use of ACW will be allowed so long as it is planned and administered to meet public needs while maintaining the wilderness resource. Commercial use permittees are subject to the regulations in 43 CFR 8372 as well as the reservation and permit system and other rules pertaining to use of ACW. Commercial use levels will not be allocated among total visitor use.

The use of saddle and pack stock will be allowed in ACW, subject to rules that prevent unacceptable impacts to wilderness resources.

Management Actions

Establish LAC standards for the social effects of recreation use in ACW.

Retain the reservation and permit system and existing rules governing visitor use in ACW (Appendix 3). The LAC planning process and carrying capacity study recommendations will determine the need for modifying visitor use levels and rules.

Monitor commercial use to determine compliance with regulations.

Study the effects of pack and saddle stock use on the ACW environment and establish LAC standards.

Managerial Elements

ADMINISTRATION

Management Objective

To conduct necessary administrative activities in a manner consistent with preserving wilderness values and according to wilderness management objectives, policy, regulations and law.

Current Situation

Aravaipa Canyon Wilderness is managed by the staff of the Gila Resource Area through the authority of the Area Manager. The resource area's Outdoor Recreation Planner is responsible to the Area Manager for providing direction on wilderness management and coordinating day-to-day management activities in ACW.

Two full-time rangers are stationed near ACW to carry out on-the-ground wilderness administrative activities — one is one mile west of ACW at the West Aravaipa Administrative Site, the other at the Klondyke Administrative Site, about ten miles southeast of ACW. The administrative sites consist of an office and residence building (double-wide mobile home), storage sheds and fences or corrals.

The two rangers regularly patrol the wilderness to monitor resource conditions and supervise visitor use, provide visitors with information, monitor the permit and fee systems, encourage compliance with management rules, investigate unauthorized use and render assistance when needed. They also maintain administrative facilities associated with the wilderness and other public lands in the area.

Both administrative sites are on land leased from private owners. The West Aravaipa Administrative Site residence building is also leased, while the residence at Klondyke is owned by BLM.

Parking and trailhead facilities for the west entrance to ACW are near the West Aravaipa residence on leased land. On the east, the parking area and trailhead are adjacent to the wilderness on private land, almost ten miles from the Klondyke Administrative Site. The east parking area, trailhead and about 1/4 mile of road from the end of the county road are covered by a perpetual exclusive easement granted to the U.S. Government. Trailhead facilities at both entrances include signs giving information and rules, a registration box, a self-service fee payment station and toilet and trash facilities.

County roads provide access from highways to both parking areas. Access to the north and south sides of ACW on the tablelands is restricted to unmaintained, four-wheel drive roads, some crossing private lands with locked gates. Some of these vehicle trails go out to the canyon rim. Two of the tablelands roads cross short stretches of the wilderness. At times motorized vehicles have driven into areas on the tablelands now included in ACW.

Access to ACW from the west parking area crosses one mile of private land. Authorization for this use is also covered in the previously mentioned lease agreement. Visitors are asked to remain along Aravaipa Creek in traveling to ACW from the west trailhead to confine their use while crossing private land.

Few administrative facilities are in ACW. A fence (water gap) crossing Aravaipa Creek is near the west ACW boundary. It was installed to prevent livestock from moving upstream from private land into the wilderness. A similar fence crosses the creek just outside the wilderness on the east end. A small wood rail fence was constructed around the Salazar Homestead Site near Hell Hole Canyon in the late 1970s to provide some protection and recognition of the area.

No toilets are in the wilderness. Water quality monitoring, as discussed in the WATER section, and the LAC process will be used to determine the need for future management actions regarding human waste in ACW.

Signs are limited mainly to the trailhead and boundary areas of the wilderness and along access routes. Signs have been posted at most vehicular access points along the boundaries and at places demonstrating the need for directional signs.

Little exists in the way of maintained or established trails in ACW. The narrow character of the canyon corridor confines travel along the creek or across benches with frequent stream crossings. Routes along the canyon bottom come into use during peak visitation periods and then often become overgrown with vegetation during growing seasons or obliterated by flooding at other times. A few trails that have been established over the years by livestock operations lead out of the canyon .

Campsites in ACW are found primarily in the canyon corridor near the mouths of side canyons. Some campsites are also used in the larger side canyons, such as Virgus Canyon. The most heavily used camp areas are on the bench between Virgus and Horse Camp Canyons and at the mouth of Hell Hole Canyon.

Campsites are not designated. Campsite selection appears to be affected by the proximity of attractions such as opportunities for swimming or exploring side canyons. The narrow and confining nature of Aravaipa Canyon also determines the location of suitable campsites.

The sandy soils of the canyon bottom are not particularly susceptible to compaction or hardening. Continued campsite use of an area does lead to trampling and elimination of vegetation, however. Campfires are allowed but use of cook stoves is encouraged. A number of fire rings will often be built over time in an area. These are broken apart and scattered periodically to discourage overuse and improve aesthetics of an area.

Management Assumptions

Increased attention to ACW administration will be needed as visitor demand rises and wilderness resources are regarded more highly.

The continued presence of rangers stationed at ACW will be required to administer the permit system, monitor resource conditions and encourage compliance with rules.

An administrative site and residence near the wilderness for both the west and east entrance points is essential to proper administration of ACW.

The county roads and the lease agreement and easement provide adequate and legal access to ACW through the west and east trailheads.

Management attention to trailheads, facilities, signs, trails and campsites is important to the health and safety of visitors and the public's appreciation and care for wilderness resources.

The West Aravaipa residence will need replacing during the period of this plan because of its age and condition.

Management Direction

Management Policy

Personnel needed to assure achievement of wilderness management objectives will be assigned to ACW.

Administrative sites will be located near ACW to provide efficient wilderness resource management and visitor use supervision. Alternative sites that would provide better visitor services, improve administrative and residential situations and could be acquired for public ownership will be investigated (see LANDS MANAGEMENT). Administrative sites will not be located in ACW.

Residents near ACW will be informed of and consulted about any proposed changes in policy or management that could affect traffic to the wilderness trailheads.

Trailheads will have sufficient parking and facilities for ACW visitors and will be regularly maintained. Trailhead signs will give necessary information about visiting the wilderness.

Visitors having an Aravaipa Canyon permit may camp at the trailheads the night before and after the period of the permit. Others will be discouraged from camping at the trailheads or along the county roads. Developed camping or picnic sites will not be established along the roads to the trailheads.

Facilities or improvements such as signs, designated campsites and toilets will be provided in ACW only where necessary to protect the wilderness resource and visitor health and safety. Visitor education will be employed to minimize the need for facilities or improvements. Trails will not be improved in the canyon corridor and side canyons unless construction of small segments or maintenance of existing routes would reduce visitor impact on vegetation and soils or eliminate multiple trails. Existing trails and routes to the tablelands will be evaluated for visitor use.

Campsites will be closed when visitor use impacts on vegetation, soils, water or wildlife are unacceptable. Visitor group size will be limited to minimize the area affected at campsites. Fire rings will be broken up three times a year (March, June, and December) to discourage the long-term establishment of campsites in one place.

Campfires using only dead and down wood will be allowed. Visitors will be encouraged to use cooking stoves to minimize the depletion of organic material. Campfires will be prohibited at times of high fire danger or when wildlife habitat would be adversely affected by further depletion of driftwood piles. LAC standards will be established to monitor and limit the adverse effects of campfires. Visitor education will address minimizing the effects of campfires.

The LAC process will be used to determine the need for facilities or improvements, campsite closures and campfire prohibition. LAC will be the method for monitoring wilderness conditions.

ACW boundaries must be signed at possible motorized vehicle access points. Vehicle trails inside ACW leading to the canyon rim will be closed.

Environmental assessments will be prepared for proposed actions not considered in this wilderness management plan.

BLM administrative use of aircraft and motorized vehicles or equipment in ACW for non-emergency purposes must be approved by the State Director. Emergency use of aircraft and motorized vehicles or equipment in ACW may be authorized by the District Manager. Use of motorized vehicles or equipment by other agencies, groups, or individuals not addressed elsewhere in this plan (see FISH AND WILDLIFE, RANGE MANAGEMENT) is prohibited.

Law enforcement assistance in matters involving ACW will be obtained from BLM special agents, the district law enforcement ranger or requested of the Pinal or Graham County Sheriff, the Department of Public Safety or the Arizona Game and Fish Department.

Management Actions

Station full-time rangers at ACW west and east entrances to supervise use, monitor wilderness resource conditions and conduct assigned duties in ACW and on other public lands in the area.

Maintain present administrative sites and residences. Continue and periodically review lease agreements. Monitor the condition of the West Aravaipa residence and plan for its replacement when needed.

Investigate alternative locations for administrative sites that would provide more efficient wilderness resource management and visitor use supervision.

Prepare a maintenance plan for the west and east trailhead and parking areas.

Prepare an ACW sign plan that includes information to be conveyed, sign locations and inspection and maintenance schedules.

Identify and map existing trails and routes in ACW. Evaluate visitor use of trails outside the canyon corridor considering maintenance requirements, effects on wildlife and other wilderness resources and livestock use by the allotment operator. Prepare a trail maintenance plan.

Monitor condition of campsites and surrounding areas using LAC indicators. Periodically rehabilitate or close sites as needed.

Post 'Closed to motorized vehicle use' signs at the wilderness boundary on vehicle trails leading to the canyon rim. Evaluate the need for constructing physical barriers to motorized travel in ACW on these trails.

Coordinate law enforcement and emergency activities with federal, county and state authorities.

INFORMATION AND EDUCATION

Management Objectives

To make available information that educates the public about ACW management, interprets ACW resources, promotes resource protection and identifies responsibilities and risks involved in visiting the wilderness.

To allow environmental education use within the limits of established ACW visitor management rules.

Current Situation

Aravaipa Canyon's resources and unique qualities have long brought recognition to the area. Over the years, information concerning ACW has been presented in several ways — printed materials developed by BLM or others, such as hiking guides or articles, verbal information from ACW rangers or district office personnel, signs and information at wilderness trailheads and special programs, including slide shows or video tapes presented by BLM employees or over the broadcast media.

An ACW brochure, map and list of rules and general information are currently sent from the district office when a permit is obtained or when information is requested. Other printed materials include correspondence to explain and administer the reservation and permit system.

The rangers stationed at West Aravaipa and Klondyke play an important role in informing visitors of ACW rules and encouraging practices that protect wilderness resources. They maintain a current knowledge of weather forecasts to apprise visitors of potential flash flooding or other weather hazards. Their familiarity with the area and its natural history greatly contributes to visitor appreciation and enjoyment of ACW.

Elementary and high school groups periodically visit ACW for nature study and educational purposes. These groups are subject to the reservation and permit system and established visitor management rules. Use fees are waived upon documentation of educational use as defined in 43 CFR 8372.

Management Assumptions

Interest in visiting ACW will increase in years to come.

People wishing to visit ACW require information that helps them plan their visit, enhances their appreciation of the area and assists BLM in effectively managing the wilderness.

Information and education can be used to direct visitor behavior, minimize adverse effects on resources and encourage compliance with management rules.

ACW has a value as an outdoor classroom to awaken and stimulate life-long appreciation and care for the natural world.

Management Direction

Management Policy

Information and education will be used when feasible before relying on regulations or facilities and improvements to achieve management objectives.

Information on wilderness management and ACW will be made available without promoting or advertising the area.

Printed information will be concise, easily understood and kept up to date.

Details included in information from various sources will be reviewed and coordinated to insure consistency.

Environmental education and nature study are appropriate activities in ACW when conducted in a manner that preserves wilderness character.

Management Actions

Prepare an ACW Information and Education Plan that will comprehensively address how to present ACW and its management to the public. Topics to be discussed include: information subjects and presentation methods, information sources, consistency and accuracy, interpretation and education opportunities and methods, presentation of management rules and regulations, revision procedures and personnel training.

Prepare a new brochure.

Permit environmental education use that meets visitor management rules.

SCIENTIFIC STUDY

Management Objective

To permit and encourage research and study within ACW for scientific and educational purposes in a manner that preserves the wilderness character.

Current Situation

The biological and physical resources of Aravaipa Canyon have been an important focus of scientific research and study. Projects have included a comprehensive ecological study of Aravaipa Creek, a report on the hydrology of the Aravaipa watershed, studies and on-going observations of native fishes, bighorn sheep and black hawks, a study of the cultural resources of Aravaipa Canyon and, more recently, research concerning flood hydrology. The ecological study included investigations of the physical, chemical and biological elements of the creek as well as the streamside vascular plants.

A social carrying capacity study of ACW is in progress and is also discussed in the *Wilderness Management Strategy* and RECREATION sections of this plan. The study will provide recommendations to improve ACW visitor management. An equally important objective of the study is to develop methods that can be applied to assess social carrying capacity and better understand visitor perceptions in other canyon areas or confined corridor situations.

In the early 1970s, Aravaipa Canyon was included in a statewide natural areas study to identify areas deserving of special management and recognition. The State Natural Areas Advisory Council determined that Aravaipa Canyon met all the necessary qualifications to be included in the State's Natural Areas Program and approached the Bureau of Land Management to place Aravaipa Canyon on Arizona's Natural Area Register. It was agreed that registration should wait until the status of wilderness designation was determined. Now is an ideal time to consider registration of this scientific natural area. Aravaipa Canyon already possesses a long history of ecological and social research, and designation of the area as a state scientific natural area would serve to continue that use.

Management Assumptions

The value of ACW as a setting for scientific study and environmental research will be increasingly recognized. Proposals to conduct research and studies within the wilderness will continue to be submitted to BLM.

Sound wilderness management decisions require social and natural resource information that can be acquired through scientific study and research.

Management Direction

Management Policy

Research projects will be permitted and encouraged if they further the managerial, scientific, educational, historical and conservation purposes of ACW while preserving wilderness character .

Motorized equipment or construction of temporary or permanent structures will not be allowed in conducting research or other studies in ACW.

Management Actions

Evaluate proposals submitted to conduct scientific study in ACW and permit those that meet management policy by improving wilderness management and furthering resource knowledge.

Maintain contact with the project leader through study completion to coordinate use of ACW and to obtain research information.

Pursue placing Aravaipa Canyon on Arizona's Natural Area Register.

SEARCH AND RESCUE

Management Objective

To provide emergency assistance to visitors and initiate search and rescue operations when needed to enhance public safety.

Current Situation

As in other areas within the Safford District, each local county sheriff has primary responsibility for search and rescue operations. In Aravaipa Canyon Wilderness the responsibility for search and rescue falls on the Pinal and Graham County Sheriffs' offices. Cooperation and support is provided by BLM.

BLM also recognizes an obligation to the public and acts accordingly in cases where immediate action is necessary for visitors who are lost, seriously ill or injured. Flash flooding situations have been a problem in the past and continue to present a concern for visitor safety. A Safford District Search and Rescue Plan has been prepared containing a section addressing actions to take for events in ACW.

Management Assumptions

Both the Pinal and Graham County Sheriffs' offices will continue to have lead responsibility for search and rescue operations within ACW.

As visitation increases, so will the need for search and rescue preparedness, capability and coordination between the involved sheriff's office and the BLM.

Monitoring of weather conditions for flash flooding or other severe weather will help avert some emergency situations.

Above all, the visitor assumes the risks of entering wilderness as a consequence of isolation from conveniences of the modern world.

Management Direction

Management Policy

BLM will coordinate with the Pinal and Graham County Sheriffs' offices on search and rescue matters.

The rangers assigned to ACW will be first-aid qualified.

The ACW section of the Safford District Search and Rescue Plan will continue to be reviewed regularly and revised as needed.

The rangers will be familiar with search and rescue procedures in the Safford District Search and Rescue Plan and will be prepared to initiate or assist in search and rescue operations.

The rangers will maintain current weather forecast information. They will contact the National Weather Service when specific information on possible flash flooding and severe weather is needed and will attempt to keep visitors informed.

Management Actions

Meet with the Pinal and Graham County Sheriffs' offices annually to discuss problems and update search and rescue plans.

Update and make needed revisions to the search and rescue plan annually.

Provide first aid and CPR training to the rangers assigned to work within ACW. They will be familiar with current search and rescue procedures.

Initiate immediate search and rescue operations when action is essential to save lives or expedite rescue. Helicopter and vehicular use will be allowed under emergency conditions within ACW when visitor health and safety are determined to be in jeopardy.

Maintain current weather information for ACW visitors.

RANGE MANAGEMENT

Management Objectives

To manage the range and grazing allotments in ACW to maintain or improve existing range conditions.

To provide for necessary maintenance of existing range improvements without compromising wilderness values.

Current Situation

Four grazing allotments are partially within the boundaries of Aravaipa Canyon Wilderness. The 588 Animal Unit Months (AUMs) of active use in ACW are distributed as follows:

408 AUMs in South Rim Allotment in southern ACW

36 AUMs in Hell Hole Allotment in northeastern ACW

36 AUMs in Dry Camp Allotment in north central ACW

108 AUMs in Painted Cave Allotment in northwestern ACW.

The Hell Hole and Painted Cave Allotments are operating under allotment management plans (AMP). The South Rim and Dry Camp Allotments are in the AMP development process. Range improvements within the wilderness include a few segments of fence, two short stretches of fourwheel drive road, livestock trails and all or part of three dirt reservoirs. There are presently three range study plots within the wilderness.

The vegetation is primarily of mountain shrub and desert scrub communities dissected by extensive riparian drainages. The Aravaipa Canyon bottom has been excluded from livestock grazing since 1974 and portions of the tablelands have been rested for up to three years through non-use of the grazing permit. Grazing non-use has substantially helped improve the vegetative conditions in these areas. The southeastern portion of the wilderness has been heavily grazed at times but recently has undergone a change in management that will provide rest for this portion as well.

BLM has three established range monitoring study sites in ACW, in:

T. 6 S., R. 18 E., Sec. 8, NE¼SW¼
T. 6 S., R. 18 E., Sec. 14, SE¼NE¼
T. 6 S., R. 19 E., Sec. 30, lot 4.

Customarily they have been reached on foot or horseback across land now within the wilderness boundaries.

The operators of the South Rim and Hell Hole Allotments may use a portion of Aravaipa Canyon between the east entrance and trails to the tablelands just downstream from Hell Hole Canyon as a travel lane for livestock operations. This practice has been established through the years and is allowed due to the rugged terrain in the Parsons Canyon and Hell Hole areas and the difficulty in moving livestock by any other route or method to shipping points outside the east end of Aravaipa Canyon. The canyon may not be used as a holding pasture. Use of the canyon for moving cattle is infrequent and of short duration, usually lasting two to four hours.

Management Assumptions

Range condition will remain static or continue to improve under current and proposed grazing systems in Aravaipa Canyon Wilderness.

Utilization levels will remain about the same on three allotments in ACW and substantially decrease on the other.

Range trend will generally improve under existing and proposed management practices.

Existing range improvements in ACW will need to be maintained periodically. When needed, the existing dirt reservoirs will be cleaned out by mechanized equipment.

Management Direction

Management Policy

Existing livestock grazing can continue at levels established at the time of wilderness designation pursuant to Section 4(d)(4) of the *Wilderness Act* and *House Reports 96-1126 and 98-643*.

Grazing non-use will continue on the canyon portion of the wilderness.

Any changes in grazing preference will be based on standard BLM range monitoring studies, allotment evaluations and the effect on resources, resource values or uses and wilderness characteristics.

Studies conducted at the three BLM range monitoring study sites within the wilderness will continue to be reached on foot or horseback rather than by motorized vehicle.

New range improvements will be located outside the wilderness area whenever possible.

Proposed new range improvements and modifications to existing improvements will be evaluated in the allotment management plan and an environmental assessment. The construction of new improvements must prove to be for the protection and effective management of rangeland and wilderness resources, rather than solely to accommodate increased numbers of livestock.

Motorized vehicle or equipment use by the allotment operator will be authorized when it is determined that it is the only practical alternative and such use conforms with criteria in *BLM Manual 8560.37A.3.d*. The two short stretches of road will be closed and rerouted as necessary to avoid crossing the wilderness.

Management Actions

Conduct monitoring studies, including utilization, trend, actual use and climate data gathering as projected and necessary. Additional monitoring studies will be established as existing studies indicate the need.

Revise AMPs to incorporate a range improvement inspection and maintenance schedule for improvements in ACW and to be consistent with the management objectives and policy of this plan.

Coordinate use of the canyon for moving livestock with the allotment operator to reduce visitor conflicts and problems.

Continue grazing non-use of the canyon portion of ACW.

LANDS MANAGEMENT

Management Objective

To permit only those lands and realty authorizations that will not diminish the wilderness character of ACW.

To acquire ownership of land for administrative sites.

Current Situation

No private or state inholdings and no rights-of-way or other realty authorizations are within ACW. Two private land parcels, one in the north (T.6 S., R.18 E., Sec. 14, N½NE¼) and the other on the south side (T.6 S., R.18 E., Sec. 17, SW¼SE¼, SE¼SW¼) of ACW, are surrounded on three sides by the wilderness. Each parcel is about 80 acres in size. Paisano Canyon, an Aravaipa Creek tributary, passes through the north parcel.

The wilderness administrative sites at West Aravaipa and Klondyke are presently on privately owned land (see ADMINISTRATION). Public ownership is desirable at these or other sites which would improve wilderness management and increase the effectiveness of visitor use administration. Location of the administrative sites on publicly owned land would allow for the construction of more permanent quarters and office facilities than now exist.

Management Assumptions

Requests for rights-of-way or other realty actions within ACW are not anticipated.

Development of the private land parcels (described above) in a manner incompatible with wilderness resources and management is not expected due to remote locations and poor access.

Administrative sites on publicly owned land will provide more effective long-term management and administration of ACW.

Management Direction

Management Policy

Lands and realty authorizations in ACW will only be issued on applications determined to be compatible with ACW management plan goals and objectives.

Public ownership of administrative sites will be investigated as opportunities arise. Administrative sites will be established in locations near ACW that provide the most effective wilderness management and visitor use administration.

Acquisition of land by exchange is preferred.

Management Action

Acquire ownership of land for ACW administrative sites.

MINERALS MANAGEMENT

Management Objective

To prohibit mining activity or mineral leasing within ACW.

Current Situation

As of the date of designation of the wilderness, August 28, 1984, no mining claims or mineral leases were in existence within ACW. Therefore, no valid existing mineral rights are held in the wilderness.

A mineral survey of the Aravaipa Canyon study area was made in 1978 by the U.S. Geological Survey and the U.S. Bureau of Mines. The report concluded that no minable ore deposits are known in the Aravaipa Canyon study area. The study area was essentially identical to the wilderness as designated by Congress.

The only historical mining activity to take place in Aravaipa Canyon resulted in two adits being driven between Horse Camp and Booger Canyons to remove potassium nitrate. A federal sodium prospecting permit was issued in 1927 for the activity. Work was abandoned when it was determined that the potassium nitrate was only contained in a coating of bat guano on the surface of the rock. The sodium permit was terminated in 1929.

Exploratory drilling was conducted by Bear Creek Mining Company in 1970 and 1971 west of Turkey Creek. Most of the activity took place outside of the mineral study area. The mining claims were subsequently relinquished and the exploration abandoned.

A deposit of a zeolite mineral appears to exist in the extreme western portion of ACW. However, this deposit does not appear to constitute a significant resource due to prohibitive mining costs.

Management Assumption

Interest in mineral resources in and surrounding ACW will remain low.

Management Direction

Management Policy

Prospecting and exploration work under the mining laws will not be allowed in ACW. Also, no leasing under the mineral leasing laws will be allowed. In the absence of valid existing rights, the right to continue those kinds of operations terminated on the date of wilderness designation (*Wilderness Act of 1964*).

Management Action

Ensure that no mining activity or mineral leasing takes place in ACW.

AIRCRAFT OVERFLIGHTS

Management Objective

To minimize the intrusion of noise and technology (from aircraft passing over ACW) on the wilderness and the visitor's experience.

Current Situation

In today's world, people often seek wilderness to escape, for a time, technological intrusions such as aircraft noise. Though BLM has no administrative control of airspace, actions can be taken to reduce the impacts of aircraft overflights.

The BLM and Federal Aviation Administration (FAA) have entered into a cooperative agreement that has resulted in an air advisory to pilots to maintain a minimum altitude of 2,000 feet above BLM wilderness. This air advisory and the boundaries of ACW are being identified on FAA sectional charts.

Air Force training flights are in the vicinity and a designated military aircraft training route is about two miles north of the wilderness. Other operations areas are some distance to the southeast and west of ACW. Occasionally, visitors and BLM personnel report low-flying military aircraft directly over Aravaipa Canyon. The Air Force has expressed concern over the effect designated wilderness will have on the continued use of training routes.

In the past, BLM and other government agencies have used aircraft over and around Aravaipa Canyon for administrative purposes. In the course of monthly flights to monitor activities in wilderness study areas, BLM Safford District personnel have checked the tablelands in ACW for unauthorized activities. Arizona Game and Fish Department has conducted surveys of big game, including bighorn sheep, in and around ACW using aircraft. Other agencies have used aircraft for search and rescue operations in Aravaipa Canyon.

Management Assumptions

While often of short duration, the presence of aircraft and the accompanying noise is annoying to wilderness visitors.

BLM does not control airspace but can take actions that will minimize the number and impact of aircraft overflights.

Management Direction

Management Policy

Low flight over wilderness will be discouraged except in emergencies or investigations of unauthorized activities.

Reported incidents of low overflights by unscheduled or unknown aircraft will be investigated. When necessary, contact with proper military authorities, other government agencies, private organizations, the FAA and pilots involved will be made to reduce low wilderness overflights and to improve cooperation.

BLM administrative use of aircraft in wilderness for nonemergency situations is not allowed unless approved by the State Director.

Management Actions

Maintain the BLM and FAA cooperative agreement providing for the air advisory of 2,000 feet minimum altitude above wilderness.

Request the Air Force to periodically advise pilots to remain within established training routes in the vicinity of ACW.

Establish schedules and notification procedures with Arizona Game and Fish Department and other organizations requiring non-emergency use of aircraft over ACW to have the least effect on the visitor's wilderness experience.

Notify visitors when non-emergency aircraft use over ACW is scheduled.

Follow up on reported incidents of low wilderness overflights.

Avoid overflight of ACW or maintain the minimum 2,000 feet above ground level over the wilderness during BLM administrative flights.

FIRE MANAGEMENT

Management Objectives

To control fire when the loss of human life or property within the wilderness is threatened or when the spread of fire to areas outside of the wilderness threatens life, property or resources.

To allow fire to play its natural role when the fire conforms with an approved fire management plan and any overriding fire guidance.

Current Situation

Aravaipa Canyon and its tributaries are narrow and steep. Surrounding terrain is rolling tableland dissected by canyons leading into the main canyon area. Vegetation varies from dense stands or pockets of riparian vegetation growth in the canyon bottom to annual and perennial grasses and stands of oak chaparral in the hills and tablelands.

The fire history of the wilderness shows few fires, the majority on the grassy tablelands above the canyon walls. Riparian vegetation within the confines of the canyon is generally found in separated pockets. The potential for large fires within the canyon is low; however, depending on location of a fire, resource damage to wildlife habitat may be significant.

The wilderness lies within an area that has previously been designated for limited suppression.

Management Assumptions

Fire occurrence will be infrequent and the number of acres burned will generally be small due to the numerous canyons, gullies and gorges that dissect the area.

Fire is a natural part of the ecosystem.

Increased human use of the wilderness will not significantly affect fire occurrence within the wilderness because of the isolated pockets of fuels.

Management Direction

Management Policy

Wildfires in ACW, regardless of ignition source (natural versus human-caused), will be treated under limited suppression guidelines unless life, property or resources are threatened.

When suppression is needed, techniques will be used that result in the least possible impact to the wilderness resource. All surface disturbances caused by suppression actions will be rehabilitated to as natural a state as possible.

All fire suppression decisions will be made on a case-by-case basis by a team consisting of the District Fire Management Officer, the Area Manager and a resource advisor. The District Manager may also be involved in the decision process.

A wilderness resource advisor will be assigned to all fires when suppression action has been determined necessary.

Management Action

Write a fire management plan for Aravaipa Canyon Wilderness. This plan will address all aspects of fire management, as well as required conditions for any prescribed burning.

IMPLEMENTATION SEQUENCE

This section outlines the management actions that will be implemented to achieve the objectives of the plan. Timeframes and responsibilities are established for each action subject to personnel and funding availability. Implementation dates reflect priorities in managing ACW to preserve wilderness character and resources. In some cases those dates indicate the beginning of actions that are continuing processes to be worked on over a period of time. Interrelated actions are cross-referenced to other wilderness elements in parentheses.

WILDERNESS ELEMENT/ MANAGEMENT ACTION	RESPONSIBILITY	IMPLEMENTATION DATE
Soil		
Establish limits of acceptable change (LAC) standards for erosion and soil contamination resulting from visitor use and human waste in and near campsites and along trails.	Area Staff	09/30/88 and continuing
Water		
Implement the water quality monitoring plan. Previous research will be studied. Springs, mines and other potential influences on the quality of Aravaipa Creek will be assessed to provide a comprehensive picture of watershed issues.	Area Staff	12/31/87
Continue monitoring Aravaipa Creek streamflow.	Area Staff	On-going
Establish LAC indicators for quality and quantity of flowing water in ACW.	Area Staff	09/30/88 and continuing
Maintain the quality of Aravaipa Creek according to state water quality standards.	Area Staff	On-going
Apply for Unique Waters Designation, if it is determined that surface water within ACW is suitable for such protection.	District Hydrologist	09/30/88
Make water filings where unappropriated water exists and state law permits for recreation, wildlife, stock water and wilderness resources.	District Hydrologist	On-going
Retain a current knowledge of management practices and proposed activities in the Aravaipa watershed and monitor those practices and activities with the potential to adversely affect water quality and quantity in Aravaipa Creek. Enforce applicable laws and regulations to protect water quality and quantity.	Area Manager and Staff	On-going
Include information with all ACW visitor use permits about disposing of waste (human, detergent, fire residue, etc.) to minimize water pollution. (Re: Information and Education)	Area Recreation Planner	09/30/88
Vegetation		
Establish LAC standards for vegetation affected by visitor use at campsites and along trails.	Area Staff	09/30/88 and continuing
Manage visitor use in the riparian area to prevent permanent damage to vegetation. (Re: Administration, Information and Education)	Area Recreation Planner	On-going

Increase grass cover on the tablelands through natural revegetation and ecological succession. Continue grazing non-use in the canyon. (Re: Fish and Wildlife, Recreation, Range)	Area Range Conservationist	On-going
Control, by hand methods, salt cedar and other exotic perennial plants that jeopardize wilderness characteristics. Monitor the canyon bottom periodically to locate exotics brought in by floods or pack and saddle stock.	Area Recreation Planner, Wildlife Biologist and ACW Rangers	On-going
Insects, Disease and Noxious Plants		
Inform visitors of the potential hazard of rabid animals, particularly skunks, and other harmful insects and plants in ACW and advise visitors of practices that could minimize encounters or discomfort. (Re: Information and Education)	Area Recreation Planner	On-going
Monitor conditions, if infestations occur, to determine effects on resources and visitor health and safety.	ACW Rangers	Continuously
Fish and Wildlife		
Establish LAC standards for fish and wildlife habitat.	Area Staff	09/30/88 and continuing
Review and amend the Mescal-Dripping Springs HMP where necessary to be consistent with this plan.	Area Wildlife Biologist	09/30/88
Continue livestock grazing non-use in the canyon to maintain the riparian habitat. (Re: Vegetation, Range)	Area Range Conservationist	On-going
Schedule annual AGFD helicopter use to monitor bighorn sheep and aerial surveys of deer and javelina in ACW on weekdays and times of low visitor use. (Re: Aircraft Overflights)	Area Manager	Annually
Protect high use bighorn nursery band areas in Aravaipa Canyon on the north side of Aravaipa Creek from Painted Cave Canyon to Booger Canyon. Coordinate with biologists to ensure that visitor use and trails avoid these areas. (Re: Administration, Range)	Area Recreation Planner	On-going
Plan with AGFD and the U.S. Fish and Wildlife Service to eliminate exotic fish in the side canyons and reintroduce native fish in a manner consistent with wilderness values and visitor use. (Re: Water)	Area Wildlife Biologist	09/30/88
Continue current hunting restrictions in the canyon bottom. Advise visitors of hunting seasons. Predator control in ACW will only be directed at offending animals. (Re: Recreation, Information and Education)	Area Recreation Planner	On-going
Discourage visitors from destroying nongame species habitat, such as flood debris piles critical to some reptiles, amphibians and small mammals. (Re: Vegetation, Administration, Information and Education)	Area Recreation Planner	On-going
Encourage visitors to avoid camping and concentrated activities near raptor nest sites from March to June. Should black hawk numbers drop significantly, campsites near nests or the entire canyon may be closed during the critical nesting cycle. (Re: Administration, Information and Education)	Area Recreation Planner	On-going

Cultural Resources

Establish LAC standards for cultural resources.	Area Staff	09/30/88 and continuing
Include a more detailed cultural history of ACW in wilderness brochure revisions without referring to specific site locations. Include a cautionary statement about disturbing, damaging or collecting cultural material. Interpret the Salazar historic homesite, the Horse Camp historic site and the Turkey Creek cliff dwelling in a manner consistent with wilderness management policy. These sites are visible, easily accessible and known to the general public. (Re: Administration, Information and Education)	Area Recreation Planner and Archaeologist	09/30/89
Train ACW rangers to identify and locate sites during the course of other duties and to assist in future inventories. Train them in site protection, including patrolling and vandalism reporting.	Area Archaeologist	10/30/88
Develop a site patrol plan to monitor site condition and visitor impact and to be implemented by ACW rangers.	Area Archaeologist	10/30/88
Assess known sites for condition and significance and nominate eligible sites to the *National Register of Historic Places.*	Area Archaeologist	On-going
Inventory areas in ACW as site potential is identified.	Area Archaeologist	06/30/89 and on-going
Evaluate all sites according to the Cultural Resource Use Evaluation System.	Area Archaeologist	On-going
Identify: (1) residents near the wilderness for an oral history project, and (2) other people knowledgeable of the area's cultural sites. The emphasis will be on data collection rather than vandal investigation.	Area Archaeologist and ACW Rangers	09/30/88
Begin oral history interviews.	Area Archaeology Temporaries	11/30/88 and continuing
Contract an ethnographic and historic study on the Western Apache to acquire data on specific site locations used by the Apache in Aravaipa Canyon. This study and follow-up field inventories will identify sites for evaluation and protection and also provide educational material for the public at large.	Area Archaeologist	09/30/90

Recreation

Establish LAC standards for the social effects of recreation use in ACW.	Area Staff	12/31/88 and continuing
Retain the reservation and permit system and existing rules governing visitor use in ACW (Appendix 3). The LAC planning process and carrying capacity study recommendations will determine the need for modifying visitor use levels and rules.	Area Recreation Planner	On-going
Monitor commercial use to determine compliance with regulations.	Area Recreation Planner	On-going
Study the effects of pack and saddle stock use on the ACW environment and establish LAC standards.	Area Staff	09/30/88 and continuing

Administration		
Station full-time rangers at ACW west and east entrances to supervise use, monitor wilderness resource conditions and conduct assigned duties in ACW and on other public lands in the area.	Area Manager	On-going
Maintain present administrative sites and residences. Continue and periodically review lease agreements. Monitor the condition of the West Aravaipa residence and plan for its replacement when needed.	Area Recreation Planner and ACW Rangers	On-going
Investigate alternative locations for administrative sites that would provide more efficient wilderness resource management and visitor use supervision.	Area Manager	09/30/88 and continuing
Prepare a maintenance plan for the west and east trailhead and parking areas.	Area Recreation Planner and ACW Rangers	09/30/88
Prepare an ACW sign plan that includes information to be conveyed, sign locations and inspection and maintenance schedules. (Re: Information and Education)	Area Recreation Planner	09/30/88
Identify and map existing trails and routes in ACW. Evaluate visitor use of trails outside the canyon corridor, considering maintenance requirements, effects on wildlife and other wilderness resources and livestock use by the allotment operator. Prepare a trail maintenance plan. (Re: Vegetation, Fish and Wildlife, Range)	Area Recreation Planner and ACW Rangers	09/30/88
Monitor condition of campsites and surrounding areas using LAC indicators. Periodically rehabilitate or close sites as needed. (Re: Vegetation)	Area Recreation Planner and ACW Rangers	09/30/88 and continuing
Post 'Closed to motorized vehicle use' signs at the wilderness boundary on vehicle trails leading to the canyon rim. Evaluate the need for constructing physical barriers to motorized travel in ACW on these trails.	Area Recreation Planner and ACW Rangers	09/30/88
Coordinate law enforcement and emergency activities with federal, county and state authorities. (Re: Search and Rescue)	Fire/Aviation Management Officer	As needed
Information and Education		
Prepare an ACW Information and Education Plan that will comprehensively address how to present ACW and its management to the public. Topics to be discussed include: information subjects and presentation methods, information sources, consistency and accuracy, interpretation and education opportunities and methods, presentation of management rules and regulations, revision procedures and personnel training.	Area Recreation Planner	09/30/88
Prepare a new brochure.	Area Recreation Planner	09/30/89
Permit environmental education use that complies with visitor management rules.	Area Recreation Planner	On-going
Scientific Study		
Evaluate proposals submitted to conduct scientific study in ACW and permit those that meet management policy by im-	Area Recreation Planner and Area Staff	As received

proving wilderness management and furthering resource knowledge.		
Maintain contact with the project leader through study completion to coordinate use of ACW and to obtain research information.	Area Recreation Planner	As needed
Pursue placing Aravaipa Canyon on Arizona's Natural Area Register.	Area Recreation Planner	09/30/88
Search and Rescue		
Meet with the Pinal and Graham County Sheriffs' offices to discuss problems and update search and rescue plans. (Re: Administration)	Fire/Aviation Management Officer	Annually
Update and make needed revisions to the search and rescue plan.	Fire/Aviation Management Officer	09/30/88 and annually
Provide first aid and CPR training to the rangers assigned to work within ACW. They will be familiar with current search and rescue procedures.	Area Recreation Planner	Biannually
Initiate immediate search and rescue operations when action is essential to save lives or expedite rescue. Helicopter and vehicular use will be allowed under emergency conditions within ACW when visitor health and safety are determined to be in jeopardy.	ACW Rangers	As needed
Maintain current weather information for ACW visitors.	ACW Rangers	Daily
Range Management		
Conduct monitoring studies, including utilization, trend, actual use and climate data gathering as projected and necessary. Additional monitoring studies will be established as existing studies indicate the need.	Area Range Conservationist	On-going
Revise AMPs to incorporate a range improvement inspection and maintenance schedule for improvements in ACW and to be consistent with the management objectives and policy of this plan.	Area Range Conservationist	09/30/88
Coordinate use of the canyon for moving livestock with the allotment operator to reduce visitor conflicts and problems.	Area Range Conservationist	On-going
Continue grazing non-use of the canyon portion of ACW. (Re: Vegetation, Fish and Wildlife)	Area Range Conservationist	On-going
Lands Management		
Acquire ownership of land for ACW administrative sites. (Re: Administration)	Area Manager	09/30/89
Minerals Management		
Ensure that no mining activity or mineral leasing takes place in ACW.	Area Recreation Planner	On-going
Aircraft Overflights		
Maintain the BLM and FAA cooperative agreement providing for the air advisory of 2,000 feet minimum altitude above wilderness.	Fire/Aviation Management Officer	On-going

Request the Air Force to periodically advise pilots to remain within established training routes in the vicinity of ACW.	Area Manager	Annually or as needed
Establish schedules and notification procedures with Arizona Game and Fish Department and other organizations requiring non-emergency use of aircraft over ACW to have the least effect on the visitor's wilderness experience. (Re: Fish and Wildlife)	Area Manager	Twice a year
Notify visitors when non-emergency aircraft use over ACW is scheduled.	Area Recreation Planner	Two weeks prior to date of use
Follow up on reported incidents of low wilderness overflights.	Area Recreation Planner	When reported
Avoid overflight of ACW or maintain the minimum 2,000 feet above ground level over the wilderness during BLM administrative flights.	All District personnel	When occurring
Fire Management		
Write a fire management plan for Aravaipa Canyon Wilderness. This plan will address all aspects of fire management, as well as required conditions for any prescribed burning.	Fire/Aviation Management Officer	09/30/88

ENVIRONMENTAL ASSESSMENT (AZ-040-6-38) for the Implementation of the Aravaipa Canyon Wilderness Management Plan

Purpose and Need

In compliance with the National Environmental Policy Act of 1969 and BLM Manual 8561, Wilderness Management Plans, this environmental assessment documents the evaluation of the environmental consequences of implementing the Aravaipa Canyon Wilderness Management Plan. The assessment analyzes the effects of the proposed action and three alternatives for managing Aravaipa Canyon Wilderness (ACW) on the wilderness resource and human environment.

This action complies with BLM policy and manual requirements to prepare a wilderness management plan for BLM-administered wilderness. The wilderness management plan will insure the proper management of ACW as intended by Congress and BLM policy.

BACKGROUND

The 1979 Aravaipa Canyon Wilderness Environmental Statement evaluated the environmental consequences of designating the proposed Aravaipa Canyon Wilderness. It concluded that no significant impact upon the environment would occur should the area be designated wilderness. Congress passed the Arizona Wilderness Act on August 28, 1984, incorporating Aravaipa Canyon in the National Wilderness Preservation System.

Description of the Proposed Action and Alternatives

In addition to the proposed action, the following three alternatives are considered in directing the management of ACW: No Action, Resource Protection and Recreation Enhancement. The proposed action and alternatives are the result of issues and concerns expressed by BLM staff, government agencies, organized groups, local interests and the public during the planning process for ACW.

PROPOSED ACTION

The proposed action emphasizes preserving the wilderness character and resources of ACW while managing recreation and other use in a manner that will leave ACW unimpaired for future use and enjoyment as wilderness. It consists of the management actions described in the *Wilderness Management Program* section of the wilderness management plan. These management actions would be implemented as outlined in the *Implementation Sequence* section of the plan. Under the proposed action, the resources and recreation use of ACW would be subject to limits of acceptable change (LAC). Standards and indicators will be established for all critical resource elements of the wilderness. LAC standards would be set to assure that recreation and other uses would not degrade the many resource values that make up ACW. Other management actions of the plan would also maintain or enhance the resources and wilderness character of ACW while allowing continued use. The proposed action includes mitigation and enhancement measures to assure that the wilderness character of ACW is maintained or improved.

NO ACTION ALTERNATIVE

No change from the present level or methods of management would occur under this alternative. ACW management would continue to be guided by the Winkelman Management Framework Plan (1981), the Aravaipa Canyon Management Plan (1979) and BLM wilderness management policy. The Aravaipa Canyon Wilderness Management Plan and management actions important to maintaining and enhancing wilderness resources would not be implemented under this alternative. LAC standards would not be established for monitoring the physical, biological and social components of the wilderness.

RESOURCE PROTECTION ALTERNATIVE

An emphasis on protecting the resources within ACW from the effects of human use would be the overriding goal of this alternative. Visitor use would be restricted or excluded to allow natural processes to operate with minimal or no human influence. Management actions under this alternative would favor the environmental elements of the wilderness in cases where human use would have an impact or may cause conflict.

RECREATION ENHANCEMENT ALTERNATIVE

This alternative would emphasize the recreation use of ACW. The wilderness area would be managed according to BLM wilderness policy with management actions favoring few visitor use rules or restrictions in order to enhance recreation opportunities. New trails could be constructed and use would be encouraged throughout all areas of the wilderness even though conflicts with other resources may occur. Visitor use rules would be modified to allow for longer visits and overnight use of pack and saddle stock in the canyon bottom. Other changes in visitor use rules

would be considered, including increasing the number of people allowed to enter ACW or eliminating the permit system.

Affected Environment

A description of the affected environment is found on page 1 of the wilderness management plan in the Area Overview. Further description of the affected environmental, social and managerial elements of the wilderness is found under the Current Situation heading for each element in the *Wilderness Management Program* section of the plan. The 1979 Aravaipa Canyon Wilderness Environmental Statement also contains a detailed description of the Aravaipa Canyon study area environment.

Environmental Consequences

Implementation of the wilderness management plan will begin in 1987. For purposes of assessment, it is assumed that each alternative would be fully funded and staffed. The anticipated impacts of managing Aravaipa Canyon Wilderness are described by alternative.

PROPOSED ACTION

Implementation of the management actions in the proposed action alternative would maintain and enhance the wilderness resources while allowing for recreation use to continue. Wilderness-dependent recreation experiences would also be positively affected as the plan is implemented. Administration of ACW would follow the management policies of the plan as well as BLM wilderness policy, regulations and law. However, the effect of implementing the plan on current administrative practices would not be significant.

The primary management action under the proposed action would be the establishment of limits of acceptable change (LAC) standards for the wilderness. In the long term this action would result in stabilizing soils and reducing vegetation damage along trails, in campsites and at other visitor use areas. The implementation of water quality monitoring would provide data to signal any changes that would require public notification and corrective action. Water quality would not be adversely impacted but would be maintained to support fish and wildlife resources.

Several actions would coordinate management of the various uses and resources of the wilderness. A comprehensive information and education plan would be written to identify ways of providing visitors with information to minimize impacts of visitor use on soil, vegetation, water and wildlife. Additional attention to cultural resource site patrols, existing trails and campsite condition would have a positive impact on the wilderness by protecting and preserving resources.

Administration would also be directed toward establishing management that benefits the wilderness resource while minimizing the impacts of recreation and other uses. Some of the actions that would positively impact the wilderness environment include: (1) controlling exotic plants, (2) increasing grass cover and riparian habitat through livestock management, (3) eliminating exotic fish, (4) discouraging predator control, (5) deterring destruction of nongame habitat and (6) retaining current visitor use rules.

HMP and AMP revision to comply with wilderness policy and to establish improvement inspection and maintenance schedules and procedures would ensure that wilderness values are not compromised. Accepted uses, such as grazing, would be allowed to continue with a minimum of impact on the wilderness. Given the nature of the improvements and projected practices, range and wildlife management operations would have little or no effect on the wilderness and the individuals or agencies involved.

The fire and search and rescue plans would guide emergency actions in ACW. The use of motorized vehicles and equipment in emergency situations to carry out resource and life-saving operations would have a varying degree of adverse, though temporary, impact on the environment, depending on the situation. Scheduling necessary nonemergency aircraft use and notifying visitors to eliminate conflicts would reduce adverse impacts.

A resource-specific analysis of the implementation of the proposed action supports the conclusion that there would be no significant adverse consequences from implementing the proposed action.

NO ACTION ALTERNATIVE

Continuing current management practices would not resolve some management conflicts or problems that have the potential to adversely affect the environment. LAC standards would not be developed for desired resource conditions. This alternative does not provide management prescriptions that would prevent resource damage from visitor use, therefore the quality of the wilderness recreation experience would also be diminished. Additional cultural resource sites in the wilderness would not be identified and their significance would remain unknown. Other actions connected with the current management of Aravaipa Canyon would not adversely impact the environment.

WILDERNESS PROTECTION ALTERNATIVE

Most of the management actions that comprise the proposed action would be implemented under this alternative. Anticipated impacts would be similar to those described in the proposed action, largely benefitting the wilderness resource. Placing greater emphasis on protecting and enhancing the operation of natural processes in the wilderness would positively affect the environment. More restrictions on visitor use, such as designating campsites, eliminating overnight use or allowing no visitor use over certain periods of time, would have a beneficial impact on wilderness resources.

Management actions dealing with eliminating exotic fish or necessary use of non-emergency aircraft would be conducted with less attention to disturbing visitors to insure that the action is done under optimal conditions for wilderness protection. In general, wilderness recreation opportunities in ACW would become more limited under this management approach. The resources that comprise the environmental elements of the wilderness would be able to reach a more natural balance with less human influence.

RECREATION ENHANCEMENT ALTERNATIVE

The resulting impacts are similar to the proposed action as some of the management actions would be implemented under this alternative. LAC standards would be established to limit adverse impacts to wilderness resources. With increased emphasis on allowing recreation use to occur more freely, the environmental elements and natural processes of the wilderness would be at greater risk to deteriorate or be adversely affected.

Relationship of Long-Term Productivity to Short-Term Use

The long-term productivity of the wilderness would not be adversely affected by any short-term uses resulting from the proposed action. The environmental consequences of the proposed action would have a net beneficial impact on ACW resources and the recreation visitor.

Irreversible or Irretrievable Commitment of Resources

Implementation of the proposed action would make no irreversible or irretrievable commitment of resources.

Consultation and Coordination

The following agencies, organizations and individuals have been sent a copy of this document for comment. In addition, many other individuals who have expressed an interest in Aravaipa Canyon and wilderness have received a copy of the plan.

U.S. Congress

Senator Dennis DeConcini
Senator John McCain
Representative John J. Rhodes
Representative Jon Kyl
Representative Jim Kolbe
Representative Bob Stump
Representative Morris Udall

State Representatives

Senator Carol MacDonald
Senator Peter Rios
Representative Gus Arzberger
Representative Roy Hudson
Representative Joe Lane
Representative Richard "Dick" Pacheco

Federal Agencies

National Park Service
Safford District Advisory Council
Safford District Grazing Board
Soil Conservation Service
U.S. Air Force
U.S. Bureau of Mines
U.S. Fish and Wildlife Service
U.S. Forest Service
U.S. General Accounting Office
U.S. Geological Survey

State of Arizona

Arizona Agriculture and Horticulture Commission
Arizona Bureau of Geology and Mineral Technology
Arizona Department of Public Safety
Arizona Game and Fish Commission
Arizona Game and Fish Department
Arizona Mineral Resources Department
Arizona Office of Tourism
Arizona Outdoor Recreation Coordinating Committee
Arizona State Historic Preservation Officer
Arizona State Land Department
Arizona State Parks
Arizona State Senate Library
Cooperative Extension Service
Governor's Commission on Arizona Environment
Governor of Arizona
Indian Affairs Commission
Office of Economic Planning and Development

Local Government

City of Safford
City of Willcox
Graham County Supervisors
Pinal County Supervisors
San Carlos Apache Tribe
Town of Winkelman

Organizations

American Wilderness Alliance
Arizona Cattlegrowers Association
Arizona Desert Bighorn Sheep Society
Arizona Farm Bureau
Arizona Veterans Fish and Game Club
Arizona Wildlife Federation
Boy Scouts of America
Cochise-Graham Cattlegrowers Association
Defenders of Wildlife
Desert Fishes Council
George Whittell Trust
Gila County Citizens for Conservation
Great Outdoors
Huachuca Audubon Society
Izaak Walton League
League of Women Voters

Maricopa Audubon Society
Mineralogical Society of Arizona
National Audubon Society
National Campers and Hikers
National Parks and Conservation Association
National Public Lands Task Force
Natural Resource Defense Council
The Nature Conservancy
Phoenix 4-Wheelers
Prescott Audubon Society
Public Lands Council
Safford Chamber of Commerce
Sierra Club
Southern Arizona Environmental Council
Southern Arizona Hiking Club
Southern Arizona Sportsman and Gunowners Association
Southwest Llama Association
Tucson Audubon Society
Tucson 4-Wheelers
Tucson Rod and Gun Club
The Wilderness Society
The Wildlife Society
Yuma Audubon Society

Business

Aravaipa Outfitters
ASARCO Inc.
Clayton Construction Company
E. Grover Heinrichs and Associates
National Outdoor Leadership School
Page Land and Cattle Company
Phelps Dodge Corporation
Resource Network Internationale
Southwest Environmental Services
SWCA Inc.

Educational Institutions

University of Arizona
Arizona State University
The Amerind Foundation
Brigham Young University
Central Arizona College
Clemson University
Eastern Arizona College
Fort Lewis College
Glendale Community College
Graham County Library
Greenlee County Library
Museum of Northern Arizona
Northern Arizona University
Northwestern University
Reevis Mountain School of Self Reliance
University of Tennessee

COST ESTIMATES

The estimated cost to implement the management actions of this plan are listed below. Annual expenditures are shown separately from development costs and non-recurring expenditures. A number of the management actions identified in the plan can be implemented in the course of regular work schedules, resulting in little or no cost over the current annual expenditures in wilderness and other resource management programs.

Current Annual Expenditures	
Workmonths (18)	$45,000
Vehicles	6,000
Travel and Training	2,000
Administrative Site Leases	3,000
Utilities and Phones	2,000
Printing — Brochures, Permits and Fee Envelopes	1,000
Signs, Fence and Trailhead Maintenance	1,000
Misc. Supplies and Materials	1,500
SUBTOTAL	$61,500
Annual Expenditure Resulting from Planned Management Actions	
Water Quality Analysis	$ 5,000
TOTAL ANNUAL OPERATING COST	$66,500

Non-Recurring Expenditures	
Carrying Capacity Study	$15,000
Limits of Acceptable Change Plan	7,500
Exotic Fish Elimination	10,000
Alternative Administrative Sites Investigation	10,000
Replace West Aravaipa Residence	25,000
Cultural Resource Site Assessment and Investigation	18,000
Oral History Project	18,000
Ethnographic and Historical Research Contract	12,000
TOTAL NON-RECURRING EXPENDITURES	$115,500

APPENDIX 1

PUBLIC LAW 98-406 August 28, 1984

Public Law 98-406
96th Congress

An Act

To designate certain national forest lands in the State of Arizona as wilderness, and for other purposes.

Aug. 28, 1984
[H.R. 4707]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Arizona Wilderness Act of 1984".

Arizona Wilderness Act of 1984.

TITLE I

National Wilderness Preservation System.
National Forest System.

SEC. 101. (a) In furtherance of the purposes of the Wilderness Act (16 U.S.C. 1131-1136), the following lands in the State of Arizona are hereby designated as wilderness and therefore as components of the National Wilderness Preservation System:

(1) certain lands in the Prescott National Forest, which comprise approximately five thousand four hundred and twenty acres, as generally depicted on a map entitled "Apache Creek Wilderness—Proposed", dated February 1984, and which shall be known as the Apache Creek Wilderness; 16 USC 1132 note.

(2) certain lands in the Prescott National Forest, which comprise approximately fourteen thousand nine hundred and fifty acres, as generally depicted on a map entitled "Cedar Bench Wilderness—Proposed", dated August 1984, and which shall be known as the Cedar Bench Wilderness; 16 USC 1132 note.

(3) certain lands in the Apache-Sitgreaves National Forest, which comprise approximately eleven thousand and eighty acres, as generally depicted on a map entitled "Bear Wallow Wilderness—Proposed", dated March 1984, and which shall be known as the Bear Wallow Wilderness; 16 USC 1132 note.

(4) certain lands in the Prescott National Forest, which comprise approximately twenty-six thousand and thirty acres, as generally depicted on a map entitled "Castle Creek Wilderness—Proposed", dated August 1984, and which shall be known as the Castle Creek Wilderness; 16 USC 1132 note.

(5) certain lands in the Coronado National Forest, which comprise approximately sixty-nine thousand seven hundred acres, as generally depicted on a map entitled "Chiricahua Wilderness—Proposed", dated March 1984, and which are hereby incorporated in and shall be deemed part of the Chiricahua Wilderness, as designated by Public Law 88-577; 16 USC 1131 note.

(6) certain lands in the Coconino National Forest, which comprise approximately eleven thousand five hundred and fifty acres, as generally depicted on a map entitled "Fossil Springs Wilderness—Proposed", dated April 1984, and which shall be known as the Fossil Springs Wilderness; 16 USC 1132 note.

(7) certain lands in the Tonto National Forest, which comprise approximately fifty-three thousand five hundred acres, as generally depicted on a map entitled "Four Peaks Wilderness—Proposed", dated April 1984, and which shall be known as the Four Peaks Wilderness; 16 USC 1132 note.

(8) certain lands in the Coronado National Forest, which comprise approximately twenty-three thousand six hundred acres, as generally depicted on a map entitled "Galiuro Wilderness Additions—Proposed", dated April 1984, and which are hereby incorporated in and shall be deemed a part of the Galiuro Wilderness as designated by Public Law 88-577;

16 USC 1131 note.

(9) certain lands in the Prescott National Forest, which comprise approximately nine thousand eight hundred acres, as generally depicted on a map entitled "Granite Mountain Wilderness—Proposed", dated April 1984, and which shall be known as Granite Mountain Wilderness;

16 USC 1132 note.

(10) certain lands in the Tonto National Forest, which comprise approximately thirty-six thousand seven hundred and eighty acres, as generally depicted on a map entitled "Hellsgate Wilderness—Proposed", dated August 1984, and which shall be known as the Hellsgate Wilderness;

16 USC 1132 note.

(11) certain lands in the Prescott National Forest which comprise approximately seven thousand six hundred acres, as generally depicted on a map entitled "Juniper Mesa Wilderness—Proposed", dated February 1984, and which shall be known as the Juniper Mesa Wilderness;

16 USC 1132 note.

(12) certain lands in the Kaibab and Coconino National Forests, which comprise approximately six thousand five hundred and ten acres, as generally depicted on a map entitled "Kendrick Mountain Wilderness—Proposed", dated February 1984, and which shall be known as Kendrick Mountain Wilderness;

(13) certain lands in the Tonto National Forest, which comprise approximately forty-six thousand six hundred and seventy acres, as generally depicted on a map entitled "Mazatzal Wilderness Additions—Proposed", dated August 1984, and which are hereby incorporated and shall be deemed a part of the Mazatzal Wilderness as designated by Public Law 88-577: *Provided*, That within the lands added to the Mazatzal Wilderness by this Act, the provisions of the Wilderness Act shall not be construed to prevent the installation and maintenance of hydrologic, meteorologic, or telecommunications facilities, or any combination of the foregoing, or limited motorized access to such facilities when nonmotorized access means are not reasonably available or when time is of the essence, subject to such conditions as the Secretary deems desirable, where such facilities or access are essential to flood warning, flood control, and water reservoir operation purposes;

16 USC 1131 note.

16 USC 1131 note.

(14) certain lands in the Coronado National Forest, which comprise approximately twenty thousand one hundred and ninety acres, as generally depicted on a map entitled "Miller Peak Wilderness—Proposed", dated February 1984, and which shall be known as the Miller Peak Wilderness;

16 USC 1132 note.

(15) certain lands in the Coronado National Forest, which comprise approximately twenty-five thousand two hundred and sixty acres, as generally depicted on a map entitled "Mt. Wrightson Wilderness—Proposed", dated February 1984, and which shall be known as the Mt. Wrightson Wilderness;

16 USC 1132 note.

(16) certain lands in the Coconino National Forest, which comprise approximately eighteen thousand one hundred and fifty acres, as generally depicted on a map entitled "Munds Mountain Wilderness—Proposed", dated August 1984, and which shall be known as the Munds Mountain Wilderness;

16 USC 1132 note.

(17) certain lands in the Coronado National Forest, which comprise approximately seven thousand four hundred and twenty acres, as generally depicted on a map entitled "Pajarita Wilderness—Proposed", dated March 1984, and which shall be known as the Pajarita Wilderness; 16 USC 1132 note.

(18) certain lands in the Coconino National Forest, which comprise approximately forty-three thousand nine hundred and fifty acres, as generally depicted on a map entitled "Red Rock-Secret Mountain Wilderness—Proposed", dated April 1984, and which shall be known as the Red Rock-Secret Mountain Wilderness; 16 USC 1132 note.

(19) certain lands in the Coronado National Forest, which comprise approximately thirty-eight thousand five hundred and ninety acres, as generally depicted on a map entitled "Rincon Mountain Wilderness—Proposed", dated February 1984, and which shall be known as the Rincon Mountain Wilderness; 16 USC 1132 note.

(20) certain lands in the Tonto National Forest, which comprise approximately eighteen thousand nine hundred and fifty acres, as generally depicted on a map entitled "Salome Wilderness—Proposed", dated August 1984, and which shall be known as the Salome Wilderness; 16 USC 1132 note.

(21) certain lands in the Tonto National Forest, which comprise approximately thirty-two thousand eight hundred acres, as generally depicted on a map entitled "Salt River Canyon Wilderness—Proposed", dated April 1984, and which shall be known as the Salt River Canyon Wilderness; 16 USC 1132 note.

(22) certain lands in the Coconino National Forest, which comprise approximately eighteen thousand two hundred acres, as generally depicted on a map entitled "Kachina Peaks Wilderness—Proposed", dated August 1984, and which shall be known as the Kachina Peaks Wilderness; 16 USC 1132 note.

(23) certain lands in the Coronado National Forest, which comprise approximately twenty-six thousand seven hundred and eighty acres, as generally depicted on a map entitled "Santa Teresa Wilderness—Proposed", dated February 1984, and which shall be known as the Santa Teresa Wilderness; the governmental agency having jurisdictional authority may authorize limited access to the area, for private and administrative purposes, from U.S. Route 70 along Black Rock Wash to the vicinity of Black Rock; 16 USC 1132 note.

(24) certain lands in the Tonto National Forest, which comprise approximately thirty-five thousand six hundred and forty acres, as generally depicted on a map entitled "Superstition Wilderness Additions—Proposed", dated August 1984, and which are hereby incorporated in and shall be deemed to be a part of the Superstition Wilderness as designated by Public Law 88-577; 16 USC 1131 note.

(25) certain lands in the Coconino National Forest and Prescott National Forest, which comprise approximately eight thousand one hundred and eighty acres, as generally depicted on a map entitled "Sycamore Canyon Wilderness Additions—Proposed", dated April 1984, and which are hereby incorporated in and shall be deemed a part of the Sycamore Canyon Wilderness as designated by Public Law 92-241; 16 USC 1132 note.

(26) certain lands in the Coconino National Forest, which comprise approximately thirteen thousand six hundred acres, as generally depicted on a map entitled "West Clear Creek Wilder- 16 USC 1132 note.

ness—Proposed", dated April 1984, and which shall be known as the West Clear Creek Wilderness;

16 USC 1132 note.

(27) certain lands in the Coconino National Forest, which comprise approximately six thousand seven hundred acres, as generally depicted on a map entitled "Wet Beaver Wilderness—Proposed", dated February 1984, and which shall be known as the Wet Beaver Wilderness;

16 USC 1132 note.

(28) certain lands in the Prescott National Forest, which comprise approximately five thousand six hundred acres, as generally depicted on a map entitled "Woodchute Wilderness—Proposed", dated August 1984, and which shall be known as the Woodchute Wilderness;

16 USC 1132 note.

(29) certain lands in the Coconino National Forest, which compromise approximately ten thousand one hundred and forty acres, as generally depicted on a map entitled "Strawberry Crater Wilderness—Proposed", dated April 1984, and which shall be known as Strawberry Crater Wilderness;

16 USC 1132 note.

(30) certain lands in the Apache-Sitgreaves National Forest, which comprise approximately five thousand two hundred acres, as generally depicted on a map entitled "Escudilla—Proposed Wilderness", dated April 1984, and which shall be known as Escudilla Wilderness.

(b) Subject to valid existing rights, the wilderness areas designated under this section shall be administered by the Secretary of Agriculture (hereinafter in this title referred to as the "Secretary") in accordance with the provisions of the Wilderness Act governing areas designated by that Act as wilderness, except that any reference in such provisions to the effective date of the Wilderness Act (or any similar reference) shall be deemed to be a reference to the date of enactment of this Act.

16 USC 1131 note.

(c) As soon as practicable after enactment of this Act, the Secretary shall file a map and a legal description of each wilderness area designated under this section with the Committee on Interior and Insular Affairs of the United States House of Representatives and with the Committee on Energy and Natural Resources of the United States Senate. Such map and description shall have the same force and effect as if included in this Act, except that correction of clerical and typographical errors in such legal description and map may be made. Such map and legal description shall be on file and available for public inspection in the Office of the Chief of the Forest Service, United States Department of Agriculture.

Public availability.

(d) The Congress does not intend that designation of wilderness areas in the State of Arizona lead to the creation of protective perimeters or buffer zones around each wilderness area. The fact that nonwilderness activities or uses can be seen or heard from areas within a wilderness shall not, of itself, preclude such activities or uses up to the boundary of the wilderness area.

Water.
16 USC 1133.
16 USC 1131 note.

(e)(1) As provided in paragraph (6) of section 4(d) of the Wilderness Act, nothing in this Act or in the Wilderness Act shall constitute an express or implied claim or denial on the part of the Federal Government as to exemption from Arizona State water laws.

Fish and fishing.
Wildlife.

(2) As provided in paragraph (7) of section 4(d) of the Wilderness Act, nothing in this Act or in the Wilderness Act shall be construed as affecting the jurisdiction or responsibilities of the State of Arizona with respect to wildlife and fish in the national forests located in that State.

(f)(1) Grazing of livestock in wilderness areas established by this title, where established prior to the date of the enactment of this Act, shall be administered in accordance with section 4(d)(4) of the Wilderness Act and section 108 of Public Law 96-560. Livestock. 16 USC 1133.

(2) The Secretary is directed to review all policies, practices, and regulations of the Department of Agriculture regarding livestock grazing in national forest wilderness areas in Arizona in order to insure that such policies, practices, and regulations fully conform with and implement the intent of Congress regarding grazing in such areas, as such intent is expressed in this Act. 16 USC 1133 note.

(3) Not later than one year after the date of the enactment of this Act, and at least every five years thereafter, the Secretary of Agriculture shall submit to the Committee on Interior and Insular Affairs of the United States House of Representatives and to the Committee on Energy and Natural Resources of the United States Senate a report detailing the progress made by the Forest Service in carrying out the provisions of paragraphs (1) and (2) of this section. Report.

SEC. 102. (a) In furtherance of the purposes of the Wilderness Act, the Secretary of Agriculture shall review the following as to their suitability or nonsuitability for preservation as wilderness and shall submit his recommendations to the President:

(1) certain lands in the Coronado National Forest, which comprise approximately eight hundred fifty acres, as generally depicted on a map entitled "Bunk Robinson Wilderness Study Area Additions—Proposed", dated February 1984, and which are hereby incorporated in the Bunk Robinson Wilderness Study Area as designated by Public Law 96-550; 94 Stat. 3223.

(2) certain lands in the Coronado National Forest, which comprise approximately five thousand and eighty acres, as generally depicted on a map entitled "Whitmire Canyon Study Area Additions—Proposed", dated February 1984, and which are hereby incorporated in the Whitmire Canyon Wilderness Study Area as designated by Public Law 96-550; and

(3) certain lands in the Coronado National Forest, which comprise approximately sixty-two thousand acres, as generally depicted on a map entitled "Mount Graham Wilderness Study Area", dated August 1984, and which shall be known as the Mount Graham Wilderness Study Area.

With respect to the areas named in paragraphs (1) and (2), the President shall submit his recommendations to the United States House of Representatives and the United States Senate no later than January 1, 1986. President of U.S.

(b) Subject to valid existing rights, the wilderness study areas designated by this section shall, until Congress determines otherwise, be administered by the Secretary so as to maintain their presently existing wilderness character and potential for inclusion in the National Wilderness Preservation System.

SEC. 103. (a) The Congress finds that— Conservation.

(1) the Department of Agriculture has completed the second roadless area review and evaluation program (RARE II);

(2) the Congress has made its own review and examination of national forest system roadless areas in Arizona and of the environmental impacts associated with alternative allocations of such areas.

(b) On the basis of such review, the Congress hereby determines and directs that— Congress.

(1) without passing on the question of the legal and factual sufficiency of the RARE II final environmental statement (dated January 1979) with respect to national forest system lands in States other than Arizona, such statement shall not be subject to judicial review with respect to national forest system lands in the State of Arizona;

(2) with respect to the national forest system lands in the State of Arizona which were reviewed by the Department of Agriculture in the second roadless area review and evaluation (RARE II) and those lands referred to in subsection (d), except those lands designated for wilderness study upon enactment of this Act, that review and evaluation or reference shall be deemed for the purposes of the initial land management plans required for such lands by the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended by the National Forest Management Act of 1976, to be an adequate consideration of the suitability of such lands for inclusion in the National Wilderness Preservation System and the Department of Agriculture shall not be required to review the wilderness option prior to the revisions of the plans, but shall review the wilderness option when the plans are revised, which revisions will ordinarily occur on a ten-year cycle, or at least every fifteen years, unless, prior to such time the Secretary of Agriculture finds that conditions in a unit have significantly changed;

16 USC 1600 note.

16 USC 1600 note.

(3) areas in the State of Arizona reviewed in such final environmental statement or referred to in subsection (d) and not designated wilderness or wilderness study upon enactment of this Act shall be managed for multiple use in accordance with land management plans pursuant to section 6 of the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended by the National Forest Management Act of 1976: *Provided*, That such areas need not be managed for the purpose of protecting their suitability for wilderness designation prior to or during revision of the initial land management plans;

16 USC 1604.

(4) in the event that revised land management plans in the State of Arizona are implemented pursuant to section 6 of the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended by the National Forest Management Act of 1976, and other applicable law, areas not recommended for wilderness designation need not be managed for the purpose of protecting their suitability for wilderness designation prior to or during revision of such plans, and areas recommended for wilderness designation shall be managed for the purpose of protecting their suitability for wilderness designation as may be required by the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended by the National Forest Management Act of 1976, and other applicable law; and

16 USC 1600 note.

(5) unless expressly authorized by Congress, the Department of Agriculture shall not conduct any further statewide roadless area review and evaluation of national forest system lands in the State of Arizona for the purpose of determining their suitability for inclusion in the National Wilderness Preservation System.

(c) As used in this section, and as provided in section 6 of the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended by the National Forest Management Act of 1976, the term "revision" shall not include an "amendment" to a plan.

16 USC 1604.

(d) The provisions of this section shall also apply to national forest system roadless lands in the State of Arizona which are less than five thousand acres in size.

SEC. 104. Section 3(a) of the Wild and Scenic Rivers Act (16 U.S.C. 1274) is amended by inserting the following after paragraph (50):

"(51) VERDE, ARIZONA.—The segment from the boundary between national forest and private land in sections 26 and 27, township 13 north, range 5 east, Gila Salt River meridian, downstream to the confluence with Red Creek, as generally depicted on a map entitled 'Verde River—Wild and Scenic River', dated March 1984, which is on file and available for public inspection in the Office of the Chief, Forest Service, United States Department of Agriculture; to be administered by the Secretary of Agriculture. 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. After consultation with State and local governments and the interested public and within two years after the date of enactment of this paragraph, the Secretary shall take such action as is required under subsection (b) of this section.". Water.

SEC. 105. There are added to the Chiricahua National Monument, in the State of Arizona, established by Proclamation Numbered 1692 of April 18, 1924 (43 Stat. 1946) certain lands in the Coronado National Forest which comprise approximately eight hundred and fifty acres as generally depicted on the map entitled "Bonita Creek Watershed", dated May 1984, retained by the United States Park Service, Washington, D.C. The area added by this paragraph shall be administered by the National Park Service as wilderness.

TITLE II

Aravaipa Canyon Wilderness.

SEC. 201. The Congress finds that—

(1) the Aravaipa Canyon, situated in the Galiuro Mountains in the Sonoran desert region of southern Arizona, is a primitive place of great natural beauty that, due to the rare presence of a perennial stream, supports an extraordinary abundance and diversity of native plant, fish, and wildlife, making it a resource of national significance; and

(2) the Aravaipa Canyon should, together with certain adjoining public lands, be incorporated within the National Wilderness Preservation System in order to provide for the preservation and protection of this relatively undisturbed but fragile complex of desert, riparian and aquatic ecosystems, and the native plant, fish, and wildlife communities dependent on it, as well as to protect and preserve the area's great scenic, geologic, and historical values, to a greater degree than would be possible in the absence of wilderness designation.

SEC. 202. In furtherance of the purposes of the Wilderness Act of 1964 (78 Stat. 890, 16 U.S.C. 1131 et seq.) and consistent with the policies and provisions of the Federal Land Policy and Management Act of 1976 (90 Stat. 2743; 43 U.S.C. 1701 et seq.), certain public lands in Graham and Pinal Counties, Arizona, which comprise approximately six thousand six hundred and seventy acres, as generally depicted on a map entitled "Aravaipa Canyon Wilderness—Proposed" and dated May 1980, are hereby designated as the Aravaipa Canyon Wilderness and, therefore, as a component of the National Wilderness Preservation System. 16 USC 1132 note.

16 USC 1131 note.

SEC. 203. Subject to valid existing rights, the Aravaipa Canyon Wilderness shall be administered by the Secretary of the Interior in accordance with the provisions of the Wilderness Act governing areas designated by that Act as wilderness. For purposes of this title, any references in such provisions to the effective date of the Wilderness Act shall be deemed to be a reference to the effective date of this Act and any reference to the Secretary of Agriculture with regard to administration of such areas shall be deemed to be a reference to the Secretary of the Interior, and any reference to wilderness areas designated by the Wilderness Act or designated national forest wilderness areas shall be deemed to be a reference to the Aravaipa Canyon Wilderness. For purposes of this title, the reference to national forest rules and regulations in the second sentence of section 4(d)(3) of the Wilderness Act shall be deemed to be a reference to rules and regulations applicable to public lands, as defined in section 103(e) of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701, 1702).

16 USC 1133.

SEC. 204. As soon as practicable after this Act takes effect, the Secretary of the Interior shall file a map and a legal description of the Aravaipa Canyon Wilderness with the Committee on Energy and Natural Resources of the United States Senate and with the Committee on Interior and Insular Affairs of the United States House of Representatives, and such map and description shall have the same force and effect as if included in this Act: *Provided*, That correction of clerical and typographical errors in the legal description and map may be made. The map and legal description shall be on file and available for public inspection in the offices of the Bureau of Land Management, Department of the Interior.

Public availability.

SEC. 205. Except as further provided in this section, the Aravaipa Primitive Area designations of January 16, 1969, and April 28, 1971, are hereby revoked.

TITLE III

16 USC 1131 note.

SEC. 301. (a) In furtherance of the purposes of the Wilderness Act, the following lands are hereby designated as wilderness and therefore, as components of the National Wilderness Preservation System—

16 USC 1132 note.

(1) certain lands in the Arizona Strip District of the Bureau of Land Management, Arizona, which comprise approximately six thousand five hundred acres, as generally depicted on a map entitled "Cottonwood Point Wilderness—Proposed", dated May 1983, and which shall be known as the Cottonwood Point Wilderness;

16 USC 1132 note.

(2) certain lands in the Arizona Strip District of the Bureau of Land Management, Arizona, which comprise approximately thirty-six thousand three hundred acres, as generally depicted on a map entitled "Grand Wash Cliffs Wilderness—Proposed", dated May 1983, and which shall be known as the Grand Wash Cliffs Wilderness;

16 USC 1132 note.

(3) certain lands in the Kaibab National Forest and in the Arizona Strip District of the Bureau of Land Management, Arizona, which comprise approximately seventy-seven thousand one hundred acres, as generally depicted on a map entitled "Kanab Creek Wilderness—Proposed", dated May 1983, and which shall be known as the Kanab Creek Wilderness;

(4) certain lands in the Arizona Strip District of the Bureau of Land Management, Arizona, which comprise approximately fourteen thousand six hundred acres, as generally depicted on a map entitled "Mt. Logan Wilderness—Proposed", dated May 1983, and which shall be known as the Mount Logan Wilderness; 16 USC 1132 note.

(5) certain lands in the Arizona Strip District of the Bureau of Land Management, Arizona, which comprise approximately seven thousand nine hundred acres, as generally depicted on a map entitled "Mt. Trumbull Wilderness—Proposed", dated May 1983, and which shall be known as the Mount Trumbull Wilderness; 16 USC 1132 note.

(6) certain lands in the Arizona Strip District of the Bureau of Land Management, Arizona, which comprise approximately eighty-four thousand seven hundred acres, as generally depicted on a map entitled "Paiute Wilderness—Proposed", dated May 1983, and which shall be known as the Paiute Wilderness; 16 USC 1132 note.

(7) certain lands in the Arizona Strip District, Arizona, and in the Cedar City District, Utah, of the Bureau of Land Management, which comprise approximately one hundred and ten thousand acres, as generally depicted on a map entitled "Paria Canyon-Vermilion Cliffs Wilderness—Proposed", dated May 1983, and which shall be known as the Paria Canyon-Vermilion Cliffs Wilderness; 16 USC 1132 note.

(8) certain lands in the Kaibab National Forest, Arizona, which comprise approximately forty thousand six hundred acres, as generally depicted on a map entitled "Saddle Mountain Wilderness—Proposed", dated May 1983, and which shall be known as the Saddle Mountain Wilderness; and 16 USC 1132 note.

(9) certain lands in the Arizona Strip District, Arizona, and in the Cedar City District, Utah, of the Bureau of Land Management which comprise approximately nineteen thousand six hundred acres, as generally depicted on a map entitled "Beaver Dam Mountains Wilderness—Proposed", dated May 1983, and which shall be known as the Beaver Dam Mountains Wilderness. 16 USC 1132 note.

(b) The previous classifications of the Paiute Primitive Area and the Paria Canyon Primitive Area are hereby abolished.

SEC. 302. (a) Subject to valid existing rights, each wilderness area designated by this title shall be administered by the appropriate Secretary in accordance with the provisions of the Wilderness Act: *Provided*, That any reference in such provisions to the effective date of the Wilderness Act shall be deemed to be a reference to the effective date of this Act, and any reference to the Secretary of Agriculture shall be deemed to be a reference to the Secretary who has administrative jurisdiction over the area. 16 USC 1131 note.

(b) Within the wilderness areas designated by this title, the grazing of livestock, where established prior to the date of enactment of this Act, shall be permitted to continue subject to such reasonable regulations, policies, and practices as the Secretary concerned deems necessary, as long as such regulations, policies, and practices fully conform with and implement the intent of Congress regarding grazing in such areas as such intent is expressed in the Wilderness Act. Livestock.

SEC. 303. As soon as practicable after enactment of this Act, a map and a legal description on each wilderness area designated by this title shall be filed by the Secretary concerned with the Committee

on Energy and Natural Resources of the United States Senate and the Committee on Interior and Insular Affairs of the House of Representatives, and each such map and description shall have the same force and effect as if included in this Act: *Provided*, That correction of clerical and typographical errors in each such legal description and map may be made by the Secretary concerned subsequent to such filings. Each such map and legal description shall be on file and available for public inspection in the Office of the Chief of the Forest Service, Department of Agriculture or in the Office of the Director of the Bureau of Land Management, Department of the Interior, as is appropriate.

Public availability.

SEC. 304. The Congress hereby finds and directs that lands in the Arizona Strip District of the Bureau of Land Management, Arizona, and those portions of the Starvation Point Wilderness Study Area (UT-040-057) and Paria Canyon Instant Study Area and contiguous Utah units in the Cedar City District of the Bureau of Land Management, Utah, not designated as wilderness by this Act have been adequately studied for wilderness designation pursuant to section 603 of the Federal Land Policy and Management Act (Public Law 94-579), and are no longer subject to the requirement of section 603(c) of the Federal Land Policy and Management Act pertaining to the management of wilderness study areas in a manner that does not impair the suitability of such areas for preservation as wilderness.

43 USC 1782.

TITLE IV

SEC. 401. If any provision of this Act or the application thereof is held invalid, the remainder of the Act and the application thereof shall not be affected thereby.

Approved August 28, 1984.

LEGISLATIVE HISTORY—H.R. 4707 (S. 2242):

HOUSE REPORT No. 98-643 Part I (Comm. on Interior and Insular Affairs).
SENATE REPORT No. 98-463 accompanying S. 2242 (Comm. on Energy and Natural Resources).
CONGRESSIONAL RECORD, Vol. 130 (1984):
Apr. 2, 3, considered and passed House.
Aug. 9, considered and passed Senate, amended, in lieu of S. 2242.
Aug. 10, House concurred in certain Senate amendment.

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APPENDIX 2
BOUNDARY DESCRIPTION
ARAVAIPA CANYON WILDERNESS

The Aravaipa Canyon Wilderness is located within the Safford District of the Bureau of Land Management in Pinal and Graham Counties, Arizona, Township 6 South, Ranges 17, 18 and 19 East, Gila and Salt River Meridian.

Commencing at the section corner common to Secs. 25 and 36 of T. 6 S.,R. 18 E., and Secs. 30 and 31 of T. 6 S., R. 19 E., Gila and Salt River Meridian;

S 89°51′ E, 1316.04 feet along the section line to the quarter corner common to Secs. 30 and 31;

S 89°51′ E, 1986.74 feet along the section line between Secs. 30 and 31 to a point on the west rim of Turkey Creek Canyon;

thence from point to point along the following consecutive courses, approximating the west rim of Turkey Creek Canyon:

N 20°28′ E, 619.00 feet, to a monument with an aluminum cap;

N 20°33′ E, 486.23 feet, to a monument with an aluminum cap;

N 34°58′ W, 944.21 feet, to a monument with an aluminum cap;

N 19°41′ E, 586.93 feet, to a monument with an aluminum cap;

N 2°47′ W, 1446.90 feet, to a monument with an aluminum cap;

N 43°03′ W, 646.00 feet, to a monument with an aluminum cap;

N 15°52′ W, 599.07 feet, to a monument with an aluminum cap;

N 7°14′ W, 898.88 feet, to a monument with an aluminum cap;

N 20°18′ W, 341.67 feet, to a monument with an aluminum cap;

N 0°23′ W, 439.33 feet, to a monument with an aluminum cap;

N 53°12′ W, 1128.39 feet, to a monument with an aluminum cap;

N 20°10′ W, 508.55 feet, to the center quarter corner of Sec. 19;

thence N 0°03′ E, 2637.36 feet, along the north and south center line of Sec. 19, to the quarter corner common to Secs. 18 and 19;

N.89°56′ W, 1298.88 feet along the section line to the closing corner common to Secs. 18 and 19, T. 6 S., R. 19 E., Gila and Salt River Meridian;

North, 232.98 feet along the township line to the section corner common to Secs. 13 and 24, T. 6 S., R. 18 E., Gila and Salt River Meridian;

North, 5280.00 feet along the township line to the corner common to Secs. 12 and 13;

S 89°57′ W, 5272.08 feet along the section line to the corner common to Secs. 11, 12, 13 and 14;

S 0°01′ E, 1320.00 feet along the section line to the north 1/16 section corner of Secs. 13 and 14;

N 89°59′ W, 2638.85 feet along the east and west center line of the northeast quarter to the center north 1/16 section corner of Sec. 14;

N 0°01′ E, 1320.00 feet along the north and south center line to the quarter corner common to Secs. 11 and 14;

N 89°59′ W, 2638.02 feet along the section line to the corner common to Secs. 10, 11, 14 and 15;

S 89°47′ W, 5274.72 feet along the section line to the corner common to Secs. 9, 10, 15 and 16;

S 89°54′ W, 2646.60 feet along the section line to the true point for the quarter corner common to Secs. 9 and 16;

N 0°02′ W, 2633.84 feet along the north and south center line to the center quarter corner of Sec. 9;

N 89°58′ W, 2646.93 feet along the east and west center line to the true point for the quarter corner common to Secs. 8 and 9;

S 89°54′ W, 848.77 feet along the east and west center line of Sec. 8 to a point.

thence from point to point along the following consecutive courses approximating a line offset 30 ft. southerly from the south edge of a jeep road:

S 23°52′ W, 52.90 feet, to a monument with an aluminum cap;

S 47°21′ W, 133.34 feet, to a monument with an aluminum cap;

S 66°22′ W, 76.90 feet, to a monument with an aluminum cap;

N 80°24′ W, 811.43 feet, to a monument with an aluminum cap;

N 77°07′ W, 144.30 feet to a point on the east and west center line;

S 44°59′ W, 98.17 feet, to a monument with an aluminum cap;

S 83°30′ W, 135.79 feet, to a monument with an aluminum cap;

S 6°04′ W, 141.20 feet, to a monument with an aluminum cap;

S 21°46′ W, 75.10 feet, to a monument with an aluminum cap;

S 39°02′ W, 74.34 feet, to a monument with an aluminum cap;

S 53°21′ W, 159.25 feet, to a monument with an aluminum cap;

S 66°56′ W, 75.62 feet, to a monument with an aluminum cap;

S 80°19′ W, 119.85 feet, to a monument with an aluminum cap;

N 71°13′ W, 105.75 feet, to a monument with an aluminum cap;

N 88°55′ W, 85.71 feet, to a monument with an aluminum cap;

N 47°00′ W, 296.06 feet, to a monument with an aluminum cap;

N 70°47′ W, 98.24 feet, to a monument with an aluminum cap;

N 50°12′ W, 209.24 feet, to a monument with an aluminum cap;

N 27°33′ W, 103.08 feet, to a point on the east and west center line of Sec. 8;

thence S 89°54′ W, 1989.70 feet along the east and west center line to the quarter corner common to Secs. 7 and 8;

N 89°50′ W, 2644.62 feet along the east and west center line to the center quarter corner of Sec. 7;

S 0°03′ W, 2640.00 feet along the north and south center line to the quarter corner common to Secs. 7 and 18;

N 89°50′ W, 3020.82 feet along the section line to the corner common to Secs. 7 and 18, T. 6 S., R. 18 E., Gila and Salt River Meridian;

South, 355.08 feet along the township line to the closing corner common to Secs. 12 and 13, T. 6 S., R. 17 E., Gila and Salt River Meridian;

S 89°57′ W, 2657.16 feet along the section line to the quarter corner common to Secs. 12 and 13;

South, 5254.18 feet along the north and south center line of Sec. 13 to the quarter corner common to Secs. 13 and 24;

N 89°50′ E, 2652.54 feet along the section line to the closing corner common to Secs. 13 and 24, T. 6 S., R. 17 E., Gila and Salt River Meridian;

North, 313.50 feet along the township line to the corner common to Secs. 18 and 19, T. 6 S., R. 18 E., Gila and Salt River Meridian;

S 89°50′ E, 5678.64 feet along the section line to the corner common to Secs. 17, 18, 19 and 20;

N 89°52′ E, 1321.65 feet along the section line to the west 1/16 section corner of Secs. 17 and 20;

N 0°04′ W, 1319.62 feet along the north and south center line of the southwest quarter to the southwest 1/16 section corner of Sec. 17;

N 89°53′ E, 1321.44 feet along the east and west center line of the southwest quarter to the center south 1/16 section corner of Sec. 17;

N 89°51′ E, 1320.88 feet along the east and west center line of the southeast quarter to the southeast 1/16 section corner of Sec. 17;

S 0°06′ E, 1319.61 feet along the north and south center line of the southeast quarter to the east 1/16 section corner of Secs. 17 and 20;

N 89°52′ E, 1321.65 feet along the section line to the corner common to Secs. 16, 17, 20 and 21;

N 89°58′ E, 5286.60 feet along the section line to the corner common to Secs. 15, 16, 21 and 22;

N 89°47′ E, 5283.96 feet along the section line to the corner common to Secs. 14, 15, 22 and 23;

S 89°58′ E, 1317.36 feet along the section line to the west 1/16 section corner of Secs. 14 and 23;

S 0°01′ E, 1320.00 feet along the north and south center line of the northwest quarter to the northwest 1/16 section corner of Sec. 23;

S 89°58′ E, 2634.01 feet along the east and west center line of the north half of the section through the center north 1/16 section corner to the northeast 1/16 section corner of Sec. 23;

South, 1320.00 feet along the north and south center line of the northeast quarter to the center east 1/16 section corner of Sec. 23;

S 89°58′ E, 1317.03 feet along the east and west center line to the quarter corner common to Secs. 23 and 24;

S 0°01′ E, 2640.00 feet along the section line to the corner common to Secs. 23, 24, 25 and 26;

S 0°01′ E, 5280.00 feet along the section line to the corner common to Secs. 25, 26, 35 and 36;

S 89°48′ E, 5286.60 feet along the section line to the corner common to Secs. 25 and 36, Township 6 South, Range 18 East, and Secs. 30 and 31, Township 6 South, Range 19 East, Gila and Salt River Meridian, this being the point of beginning.

The lands bounded by this description contain 6,699 acres, more or less.

APPENDIX 3
VISITOR USE RULES

1. A permit is required to enter Aravaipa Canyon and the side canyons within the wilderness below the canyon rims. A permit is not required for use of the tablelands only. Permits are obtained from the Safford District Office.
2. Reservations are not accepted more than six months in advance of entry date. The intent to use the reservation must be confirmed between 30 days and 15 days prior to entry date. Permits are issued when reservations are confirmed or when entry date is less than 30 days in advance. Reservations not confirmed by 15 days prior to entry date become available on a first-come, first-served basis.
3. The number of people allowed to be in ACW is limited to 50 at any one time. Up to 20 persons are allowed to enter from the east trailhead and up to 30 persons are allowed to enter from the west trailhead per day.
4. The maximum length of stay is three days and two nights. No overnight tethering of pack and saddle stock (horses, llamas, etc.) in the main canyon or side canyons is allowed.
5. Group size is limited to 10 people. Pack and saddle stock groups are limited to five animals.
6. No pets are allowed in Aravaipa Canyon Wilderness.
7. A fee of $1.50 per person per day is payable for use of Aravaipa Canyon Wilderness at the wilderness trailhead self-service fee stations. Fee payment does not replace permit requirements.
8. The flood plain of Aravaipa Creek and the first 50 vertical feet above the streambed are open to hunting, in season, with bow and arrow only (closed to discharge of firearms).
9. The use of motorized and mechanized vehicles or equipment in the wilderness is prohibited.
10. Commercial use of the wilderness is subject to fees (other than those in Rule 7) and additional permit requirements outlined in 43 CFR 8372 as well as the above rules.

APPENDIX 4
PLAN PARTICIPANTS

Al Alvarez	Fire/Aviation Management Officer
Cindy Alvarez	Hydrologic Technician
Albert Bammann	Wildlife Biologist
Leroy Cook	Gila Area Manager
Olga Diaz	Editorial Clerk/Word Processor
Ken Mahoney	Outdoor Recreation Planner
Robert Parker	Natural Resource Specialist
Penny Rucks	Archaeologist
George Schuh	Engineering Technician
Paul Tankersley	Range Conservationist

APPENDIX 5
PUBLIC PARTICIPATION AND COMMENT SUMMARY

At the beginning of the Aravaipa Canyon Wilderness management planning process, meetings were held with the Safford District Advisory Council in Safford and with the public in four locations throughout the district to identify management concerns and issues that should be addressed in the plan. Many of the topics raised in those meetings have been considered in this plan.

A 45-day public comment period followed preparation of the draft Aravaipa Canyon Wilderness Management Plan. During that time, a total of 27 letters were received from 12 individuals, eight organizations and seven government agencies. Most letters made more than one comment on various topics. Many of the commenters were supportive of the plan in general or specific policies in the plan. Other comments have been summarized and a response follows for each comment below.

Comment 1: Three commenters said that campfires should be prohibited in ACW. Reasons given are to eliminate the proliferation of fire rings; to stop the gathering of firewood which contributes organic matter to the ecosystem and provides habitat for wildlife, insects and other organisms; and to prevent accidental fires. Another commenter felt that the public should be educated to the use of small rockless fire circles or to consider building no fire at all. One additional comment stated flood deposits should not be cleaned up as a reminder of flood potential and to provide habitat.

Response: Having a campfire is recognized as part of the camping experience when practiced in a responsible and acceptable manner. As long as campfires are not causing environmental and ecological damage, their use will be at the discretion of the visitor rather than placing further restrictions on use of the wilderness.

The limits of acceptable change (LAC) system will be used to monitor the impact of allowing campfires on the amount of dead and down wood, on soils and water and on the aesthetics of an area. If monitoring shows standards being exceeded and unacceptable impacts occurring, campfires will not be permitted either at specific sites or throughout a general area in the wilderness. This information would accompany the permit when issued as well as being posted at the trailheads.

Campfires will be prohibited in times of high fire danger. However, accidental fires have not been a problem in the past.

Information on visitor perceptions toward campfires will be obtained from the carrying capacity study now in progress. That information, along with the LAC system, will be used to set campfire policy. In the meantime, campfires will continue to be allowed subject to the above-mentioned conditions. Use of camp stoves will continue to be encouraged. Through methods developed in the ACW Information and Education Plan, information will be given to visitors encouraging minimizing the impacts of campfires such as building fires in a safe manner without the use of fire rings, keeping fires small and alerting visitors to the potential effects of disturbing habitat.

Other than allowing use of dead and down wood for campfires, flood deposits will not be cleaned up.

Comment 2: Rules governing visitor use limits and the permit and fee systems were addressed by ten commenters. Five comments strongly supported continuing limiting the number of visitors to the wilderness to protect natural values and to preserve the opportunity to experience solitude. One of those comments also supported the ongoing research to determine the need for potential changes to visitor use rules. Another commenter stated that school groups should be subject to group size limits as well as the reservation and permit system.

One commenter felt that the wilderness management plan reflected too much desire to control the canyon through too many rules and regulations. The comment pointed out that nature, through floods and regrowth, is the overriding force in the canyon and that a permanent and stabilized canyon floor is an illusion.

One commenter was adamantly opposed to charging the $1.50 per person per day recreation use fee and stated that the fee is absurd when compared to BLM's grazing fee of $1.35 per animal unit month (AUM). Another commenter suggested that, to reduce the number of no-shows, the fees be collected at the district office before a permit is issued, rather than at the trailhead self-service stations.

One other commenter wanted permit requirements to be clarified and felt that permits should not be required of people on the tablelands and upper tributary canyons of the wilderness. The commenter recommended that the permit rule be modified to state that properly licensed hunters, hunting outside of and not camping in the canyon bottom, do not require a permit.

Response: Public demand to visit Aravaipa Canyon, particularly during the spring and fall months and on weekends, continues to be high. Limiting the number of people allowed to enter the canyon will remain a primary management tool to maintain the natural character and opportunities for solitude in ACW. Without retaining some form of management control over the area, it is all too likely that the wilderness environment and experience would be degraded in light of the increasing ease of access to remote areas and the ability to change the landscape by mechanized means. However, it is recognized that nature is the overriding force in ACW.

School groups are required to comply with visitor management rules as previously outlined under the Management Actions in the INFORMATION AND EDUCATION section of the plan.

Recreation use fees and their implementation are set by policy at BLM's headquarters in Washington, D.C. Grazing fees are established through different methods and criteria not comparable to recreation fees. Collecting fees prior to issuing permits is likely to be effective in reducing the number of no-shows. Though that practice is not being implemented at this time to minimize changes or variable situations during the carrying capacity study, it will be evaluated for use as a fee collection method when the study is completed.

Permit requirements are clarified in the RECREATION section and APPENDIX 3. The permit system is being modified to reflect that visitor use on the tablelands portion of the wilderness does not need to be controlled at this time. A permit is required for all visitor use of Aravaipa Canyon and the side canyons to the rim of the canyons, regardless of the nature of the visit. A permit is not required for use of the tablelands, that area above the canyon rims, within the wilderness. Visitors to the tablelands who go below the rim of Aravaipa Canyon or the rims of any of the nine major side canyons (Parsons, Hell Hole, Paisano, Booger, Horse Camp, Virgus, Javelina, Hell's Half Acre and Painted Cave) must have a permit. The reservation and fee systems remain unchanged.

The objective of the permit system, since its beginning, is to provide a method for limiting the number of people visiting Aravaipa Canyon to preserve the natural values of the area. Visitor use is concentrated in the main canyon and side canyons and has the greatest potential to adversely affect natural and social conditions in those areas. Visitor use on the tablelands, is infrequent and does not appear to be adversely affecting the environment or the opportunity for solitude. The effects of visitor use on the tablelands will be monitored through the limits of acceptable change (LAC) process to determine whether regulation will be required in the future. Due to poor access and the remoteness of the tablelands, little increase in the number of visitors to the tablelands is expected by this modification to the permit system.

Comment 3: Five commenters stressed the importance of monitoring conditions in the wilderness and making rapid response to prevent resource conflicts and ecosystem damage.

Response: The LAC process will establish specific standards and schedules for monitoring the environmental and social conditions important to maintaining the wilderness resource. Rangers will continue wilderness patrols as an integral part of resource monitoring.

Comment 4: Six commenters addressed the subject of livestock grazing in the wilderness. Three of those supported policies outlined in the plan to continue grazing non-use in the canyon, manage the tablelands to improve range conditions and to only allow range and watershed improvements that are necessary for the protection of the soil, vegetation and wilderness resources. One comment urged that checking for the presence of livestock in the canyon and promptly removing them remain a high priority in managing the wilderness. Two commenters felt that livestock grazing should be eliminated from the entire wilderness.

Response: *The Wilderness Act* provides that livestock grazing, where established prior to wilderness designation, shall be permitted to continue subject to reasonable regulation. Congressional intent and BLM policy are very clear in regard to the standing of livestock grazing in wilderness. *House Report 96-1126* reaffirmed the language of the *Wilderness Act* and included as a guideline that:

> There shall be no curtailments of grazing in wilderness areas simply because an area is, or has been designated as wilderness, nor should wilderness designations be used as an excuse by administrators to slowly "phase out" grazing. Any adjustments in the numbers of livestock permitted to graze in wilderness areas should 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 the protection of the range resource from deterioration.

The wilderness management objective for ACW is to maintain or improve range condition on the grazing allotments in the wilderness. The *Congressional Grazing Guidelines* (*House Report 96-1126*), BLM policy and policy contained in this plan will provide direction for managing livestock grazing in ACW.

Comment 5: Topics dealing with administrative activities and the administrative sites were addressed by four commenters. One commenter agreed that relocation and improvement of BLM administrative sites at both ends of the canyon should be pursued to facilitate more effective management. Another felt that the administrative site for the west entrance should be near the end of the blacktopped portion of the county road to control visitor use and reduce traffic and dust along the remainder of the road.

One commenter stated that the long-term problem of access hasn't been adequately addressed and that leasing parking and access facilities from a private land owner is a major problem that must be resolved before any kind of real management plans can be formed. One other commenter wanted a policy developed that picnic or camping areas will not be developed at the administrative sites or along the Aravaipa Road. It was also requested that a policy be included to notify residents near the Aravaipa Canyon area of policy or management changes that would affect traffic into the canyon.

Response: BLM is working toward the eventual establishment of administrative sites that are in public ownership and that are located near ACW to provide efficient wilderness resource management and visitor use supervision. Until that is accomplished, management of the wilderness must continue. Though not a long-term solution, leasing provides a workable situation and an agreement that allows parking, an administrative site and residence and access across private land from the county road.

Access to the parking area is by county road. BLM controls the number of people allowed to enter Aravaipa Canyon but does not have the responsibility or authority to control traffic on the county road. Data accumulated from traffic counters along the West Aravaipa Road over the last six years indicate about 18 to 22 percent of traffic on the road is attributable to people driving to the trailhead, depending on the time of year. There are admittedly potential problems associated with dust and traffic on a winding and somewhat narrow dirt road. BLM has committed to the Aravaipa Property Owners Association to work with the

county to minimize hazards and to urge permit holders to exercise caution when driving the road to the trailhead parking.

The primary purpose of the administrative site is to provide service to wilderness visitors and to manage the wilderness resources. This can be accomplished best with a site near the wilderness rather than at the end of the paved road about 9 miles away.

BLM is not proposing any developed camping or picnic areas along the Aravaipa Road. Occasionally, people having permits to visit Aravaipa Canyon will ask about camping at the trailhead parking area the night prior to or immediately after visiting Aravaipa Canyon. BLM has allowed this limited camping use as it is directly connected to the use of the Aravaipa Canyon permit. Camping or picnicking along the road or at the administrative sites is discouraged under any other circumstances. This policy is clarified in the ADMINISTRATION section.

Residents near ACW will be informed and consulted in advance of any proposed changes in policy or management that could affect traffic to the wilderness trailheads. That policy has also been included in the plan.

Comment 6: The subject of aircraft flying over the wilderness was addressed by two commenters. Both referred to a crash of an Air Force training plane just south of the wilderness in the fall of 1986 as a reason to strictly control aircraft activity in the area. It was pointed out that aircraft fuel from a crash could devastate the native fishery of Aravaipa Creek, and that the visitor's wilderness experience is diminished by aircraft flying over the canyon even if the 2,000 foot above ground level air advisory is maintained. Closing the air space above Aravaipa Canyon should be pursued.

Response: BLM will continue to work with the Air Force to urge that aircraft remain along the established training routes two miles north of the wilderness when flying in the vicinity. Reported incidents of any aircraft flying low over the wilderness will be investigated and owners contacted when the aircraft can be identified by tail number and description. Air space closures are granted only by law or under very limited and specific conditions which generally do not apply to ACW.

Comment 7: Hunting, trapping and related issues were the focus of comments made by two commenters. One commenter supported a ban on hunting and trapping and felt that bow and arrow hunting should be prohibited in the canyon bottom. The other commenter stated that the discussion on trapping is confusing and recommended expanding on the subject with language from the International Association of Fish and Wildlife Agencies (IAFWA) guidelines for Fish and Wildlife Conservation in Wilderness. The commenter also suggested a stronger section on firearms use limitations and recreation. A map showing the no-discharge-of-firearms area captioned with the Arizona Game and Fish Commission Order No. 1 is recommended to be made available to the public and ACW permit holders.

Response: Hunting and trapping are allowable activities throughout the wilderness subject to applicable state and federal laws and regulations. Specific regulations applying to hunting or trapping in ACW are (1) a visitor use permit obtainable from the Safford District Office is required of all visitors to Aravaipa Canyon and the side canyons within the wilderness below the canyon rims (see Comment 2 and Response) and (2) the floodplain of Aravaipa Creek and the first 50 vertical feet above the streambed are open to hunting, in season, with bow and arrow only (Arizona Game and Fish Commission Order No. 1). The Commission Order is for public safety purposes. Otherwise, hunting and trapping are generally regulated by the Arizona Game and Fish Department based on their wildlife population surveys and other factors.

The IAFWA guidelines relating to trapping state only that "... Angling, hunting and trapping are legitimate wilderness activities subject to applicable State and Federal laws and regulations." That has been previously recognized in the plan. The discussion of trapping has been clarified to define commercial trapping as the trapper's sole source of livelihood and to recognize public safety concerns regarding trapping.

A sentence has been added in the RECREATION section to reinforce that the area described in the Commission Order is closed to the discharge of firearms. A general information sheet of ACW rules currently contains the Commission Order and is mailed out to all who obtain reservations, permits or request information. It is not felt that publishing a map of the nodischarge-of-firearms area would be particularly helpful due to map scale requirements and the fact that the area essentially parallels the canyon bottom.

Comment 8: Seven commenters covered a variety of topics on the subject of wildlife and its management in ACW. Desert bighorn sheep management was the focus of many of those comments. Four commenters were generally supportive of management actions regarding bighorn sheep and suggested additional actions: (1) resolving conflicts between recreation activities and bighorn sheep in favor of bighorn sheep, (2) maintaining spatial segregation between visitors and bighorn, (3) protecting high use bighorn nursery band areas and (4) recognizing the canyon slopes and tablelands as zones for desert bighorn sheep habitat.

It was urged that the desert bighorn's status as a Group 3 state-listed species ("continued presence in Arizona could be in jeopardy in the foreseeable future") be considered as qualifying, similarly to threatened and endangered species, for habitat manipulation and installation of permanent facilities for its protection and perpetuation. One comment stated that waterholes developed for desert bighorn should not be considered permanent facilities and such construction should be allowed if the need is identified.

A portion of the management policy on bighorn sheep in the WILDLIFE section discussing artificial encouragement of population increases was questioned and clarification was requested. Potential conflicts with transplants, if needed in the future, were foreseen with the policy as written. Two comments stated that the policy should allow motorized equipment for retrieval of collars, dead sheep and other biologically important information when nonmotorized means are inadequate, inappropriate, unfeasible or will not allow for a timely retrieval.

One commenter observed that the bighorn sheep were eating all of the large barrel cactus and asked if BLM had given that any consideration.

Two commenters support the policy regarding the annual aerial survey of sheep and recommend that the policy be expanded to include survey of deer and javelina.

One person commenting has noted a substantial increase of non-native fishes trapped in the fields after irrigation about five miles down Aravaipa Creek from the west wilderness boundary. The commenter identified two of the fish as yellow-bellied bullhead catfish and Gila robusta or Verde trout. It was also requested that the exotic fish referred to as present in the side canyons of ACW be identified.

One other commenter inquired about management of exotic fish in the side canyons. It was asked that if exotics become established in the main canyon, would their elimination be allowed and what techniques would be permitted.

One comment pointed out that in attempting to discourage visitor use in the vicinity of peregrine falcon nests, BLM may be better off not drawing any possible attention to nest sites in ACW as special management may actually increase conflicts.

Response: As reflected by the number of comments, bighorn sheep continue to be a significant management concern in ACW. Management policies and actions in the WILDLIFE section have been expanded as suggested to strengthen protection of the sheep and their habitat. Management policy as previously established provides for limiting or controlling recreation activity when conflicts arise.

BLM recognizes the desert bighorn sheep as a Group 3 state-listed species. That status confers important management attention though not the same considerations as are given to threatened and endangered species. Habitat manipulation and facility development, including waterholes, for bighorn sheep do not appear to be necessary in ACW at this time. Water does not seem to be a limiting factor, management policy provides for discontinuing visitor use under unusual conditions to benefit wildlife and provides for controlling or limiting activities in areas crucial to bighorn sheep if conflicts arise. The Aravaipa sheep herd is generally healthy, expanding its range and increasing its numbers. Monitoring of herd and habitat condition will indicate whether changes to ACW management policy are necessary in the future.

The sentence concerning artificially encouraged population increase of bighorn sheep has been deleted from the management policy. Should it be necessary to release additional sheep in the Aravaipa area in the future, transplant operations in ACW may be authorized using temporary enclosures or facilities. Non-motorized retrieval of dead sheep or collars in ACW remains the first choice though the District Manager may authorize motorized methods in emergencies. The management policy has been modified accordingly.

BLM will consider, when monitoring vegetation and wildlife habitat in ACW, the general condition of the barrel cactus population and the effect of bighorn sheep use.

Aerial surveys of deer and javelina have been conducted by AGFD in the Aravaipa area in the past and are allowed to continue over ACW. BLM will be notified in advance of these aerial surveys as with surveys of bighorn sheep. This policy has been added in the WILDLIFE section.

Aravaipa Creek was surveyed for fish near the west wilderness boundary in the spring of 1987, and no non-native fish were found (Marsh 1987). A survey in October 1985 indicated three non-native fish species in Aravaipa Creek and the lower pools of Virgus Canyon. Fathead minnow and mosquitofish were found in the main creek and green sunfish were in Virgus Canyon (Minckley and Karp 1986). Other observers have reported bullhead in some stock tanks on the tablelands and an unidentified catfish species in Aravaipa Creek. Gila robusta is also known as roundtail chub and is a native fish of Aravaipa Creek. The green sunfish is the exotic fish referred as present in the side canyons, mainly Virgus Canyon.

Elimination of exotic fish in the main canyon is a much more difficult action than in the side canyons. Elimination of exotics could be allowed there depending on techniques proposed and protection of threatened species. It hasn't yet been addressed much as exotics have not generally been present in the main canyon .

Management policy regarding peregrine falcon and black hawk nest sites will be to discourage use in their vicinity without calling attention to the nests. As suggested in the comment, there may be times and places when no action is appropriate so that attention is not drawn to nest sites.

Comment 9: Water-related issues were addressed by eight commenters. Four supported plan policies and actions to maintain water quality through monitoring, pursue a Unique Waters designation and to protect instream flow water rights. Two commenters recommended that the plan more strongly establish management actions for activities within the Aravaipa watershed but outside the wilderness, recognizing the potential effects activities upstream could have on the quality and quantity of water flowing in Aravaipa Creek through the wilderness. One additional commenter also felt that more detail and specific actions such as watershed surveillance, exercise of existing legislation and cooperation with relevant government agencies for monitoring and restraining damaging actions, are needed to assure water quality and quantity.

One commenter reported that the Department of Water Resources *Hydrographic Survey Report* identifies the maximum flow for October 1, 1983, at 70,800 cubic feet per second.

Two additional comments regarding water quantity and quality were made by one person and are printed verbatim.

> 1. on pg. 11 you speak of water resources — one of the problems I have w/this is that as you say, 69% of the ACW watershed is upstream of the E. boundary. Yet you talk about pollution controls and min. stream flows. You need 15 CFS to maintain the "wilderness". Do your 10 identified springs and seeps provide 10 CFS? If not you had better not plan on much unless you can go upstream & purchase water rights. I would hate to see the "wilderness" used to usurp someones predated water rights. You also mention pollution from "mines" & "agriculture" — has this been documented or are you just pointing fingers?
>
> 2. page 18 again do you have water quality analyses that actually show elevated levels of Hg/Cd ?? or are you again assuming that these heavy metals have been absorbed & accumulated by plants in the ACW?

Generally most plants cannot tolerate elevated levels of heavy metals — only certain species actually accumulate metals.

Response: Water management policies and actions for ACW have been further defined in the areas of water rights, maintaining water quality and watershed protection. It is felt that watershed issues can be addressed in the WATER section and so a separate watershed section has not been established. The management actions that have been identified will enable BLM to obtain the management objectives for water in ACW. Policy provides the direction for additional actions that may be needed as situations arise.

BLM has chosen to use the 23,000 cubic feet per second (cfs) figure established by Fuller and Roberts using paleohydrological techniques as the peak discharge estimate for the October 1983 flood on Aravaipa Creek near the west boundary of ACW. BLM's streamgage at the western boundary was lost in the flood. The U.S. Geological Survey streamgage is about six miles downstream from the wilderness. At that point, Aravaipa Creek is subject to large channel changes during flooding. Slope-area calculations at four cross-sections near the gage site were used to estimate a 70,800 cfs peak discharge. The USGS regards the estimate as "poor". The difference in discharge estimates is not seen to be due to the difference in drainage area between the two study sites.

BLM's request for instream flow rights is based on the requirements of native fishes of Aravaipa Creek (two species listed as threatened) and to maintain riparian vegetation and habitat rather than to maintain the wilderness as implied in the comment. The amount of water coming from the identified springs and seeps has not been quantified but the average flows at the west end streamgage are about seven cfs higher than average flows at the east end streamgage. BLM does not intend to usurp someone's predated water rights. While the State of Arizona goes through adjudication procedures, BLM stands in line with all others who have filed. It is not in BLM's interest nor is it a policy to usurp or capture valid existing water rights. BLM recognizes them.

No assumptions are made that heavy metals have been absorbed and accumulated by plants in ACW. If heavy metals were present, more concern would be directed toward their potential concentration in aquatic or other animal life. Water quality analysis conducted by Minckley in 1972 showed elevated levels of mercury. BLM testing about two years ago showed cadmium levels slightly higher than standards. Recent testing has shown neither of these metals. Additional testing outlined in the *Aravaipa Creek Water Quality Monitoring Plan* is needed to work up a comprehensive picture of Aravaipa Creek water quality.

Comment 10: Fire management was the topic of two comments, one strongly supporting the fire management policies in the plan, the other also supporting the return of the area to "natural fire frequency" but adding that aboriginal burning probably played a large role in prehistoric fire frequency. The commenter suggested a prescribed burn plan or policy be instituted.

Response: Prescribed burning will be addressed in the fire management plan as previously provided in the actions for the FIRE MANAGEMENT section.

Comment 11: Motorized equipment and access were subjects of four comments. One asked for clarification of the policy in the SCIENTIFIC STUDY section prohibiting motorized equipment in conducting research or studies and asked if aerial photography and reconnaissance or backpack fish shockers were prohibited. Also expressed was that, since wildlife enhances wilderness while livestock grazing detracts from wilderness attributes, motorized access should be allowed for wildlife improvements and developments as well as for range improvements. One group requested consideration as legitimate users of motorized vehicles and equipment in the wilderness during the performance of officially sanctioned BLM activities for the purpose of desert bighorn sheep conservation.

The subject of closing the vehicle trails leading to the canyon rims in the wilderness was addressed by two commenters. One strongly supported restricting vehicle use to canyon rims for bighorn sheep protection. The other needed clarification, apparently believing recreational vehicle trails leading to the edge of ACW are being closed.

Response: Wilderness management emphasizes management of the area as wilderness as opposed to the management of a particular resource. All management activities within wilderness should be done without motor vehicles, motorized equipment or mechanical transport unless truly necessary to administer the area or specifically permitted by other provision in the Wilderness Act.

Research is permitted and encouraged in wilderness as long as projects are conducted in an unobtrusive manner to preserve the area's wilderness character. Methods that temporarily infringe on the wilderness environment may be approved if alternative methods or other locations are not available. Such exceptions may be approved by the State Director in projects that are essential to managing the specific wilderness when no other feasible alternatives exist.

Aerial surveys of wildlife by Arizona Game and Fish Department are permitted under the conditions described in the plan. AGFD has the responsibility of being the primary wildlife manager in the state. Permission for aerial photography or reconnaissance in situations other than necessary BLM or AGFD management activities will be rare and only under the above described provisions. Ground survey, though less convenient, is an alternative as is seining in conducting fish surveys rather than using a motorized fish shocker.

Motorized access for any development or activity, regardless whether for wildlife or range, will be evaluated on a case-by-case basis. No blanket authorizations for use of motorized vehicles or equipment in the wilderness will be given.

Language regarding the posting of motor vehicle closure signs at the wilderness boundary has been clarified. Vehicle trails leading to the ACW boundary are not being closed. These trails, however, continue beyond the boundary to the canyon rim, one half mile or more inside the

wilderness. Motor vehicles are not allowed inside the wilderness and signs are posted at the ACW boundary on those trails to notify the public.

Comment 12: One commenter requested a more specific definition of commercial use and a limit to the level of commercial use, saying that 43 CFR 8372 is too broad and open to future interpretation that could increase commercial use to unacceptable limits.

Response: Commercial use is recreational use of the public lands for business or financial gain. Commercial use is defined quite specifically in the Code of Federal Regulations at 43 CFR 8372. To visit ACW, a commercial use permittee must obtain reservations and permits for him or herself and all other members of the group following the rules of the reservation and permit system. All other rules pertaining to visitor use of ACW, including the limit of 50 people per day allowed in ACW and limits on group size and length of stay, also apply to commercial use. Although the amount of commercial use could increase, the total number of people allowed to enter ACW would not increase. Commercial use is not expected to increase significantly, but if it does, allocation of commercial vs. private use may need to be addressed.

Comment 13: Two commenters expressed concerns over the impacts of visitors on the ACW environment. One felt that there is no plan for dealing with "sewage" from visitors to ACW and sees that as a more serious problem than the alleged mining and farming "pollution". The other commenter suggested designating semipermanent campsites and installing temporary latrines to minimize impacts.

A third commenter suggested developing horseback camping areas on the tablelands and improving existing trails to the tablelands and paralleling the canyon above the rim for horseback use.

Response: The limits of acceptable change (LAC) process is the method or plan by which BLM will monitor and deal with impacts of visitor use on the ACW environment. Additionally, the *Aravaipa Creek Water Quality Monitoring Plan* provides for bacteriological testing of water in the wilderness. Results to date have shown total coliform in Aravaipa Creek to be over potable standards. Fecal coliform concentrations are well under full body contact standards. The fecal coliform to fecal streptococcus ratio of samples to date indicate that bacteria present are largely of animal rather than human origin.

If future water quality monitoring indicates a change or worsening in those conditions, that information along with other information gained through LAC monitoring of soils and visual determinations will be used to outline a course of action to improve conditions. Perhaps requiring people to pack out their waste would be a more administratively feasible action than installing, maintaining and relocating temporary latrines.

Allowing visitors to choose their campsites does not appear to be causing environmental damage at this time. Policies and actions are already in place in the plan for campsite closures if conflicts occurr with black hawk nesting or other wildlife. LAC monitoring of soils and vegetation will determine whether campsites need to be closed.

At the present, horseback groups are free to camp anywhere on the tablelands. The need for developing horseback camps is not apparent. Some trails may be improved following management policy and actions in the ADMINISTRATION section.

Comment 14: The trial record following the 1871 Camp Grant massacre recorded that the raiding party was composed of 92 Papagoes, 48 Mexicans and 6 Anglos.

Response: The sentence in the CULTURAL RESOURCE section has been changed to omit reference to the ethnic make-up of the vigilante force.

APPENDIX 6
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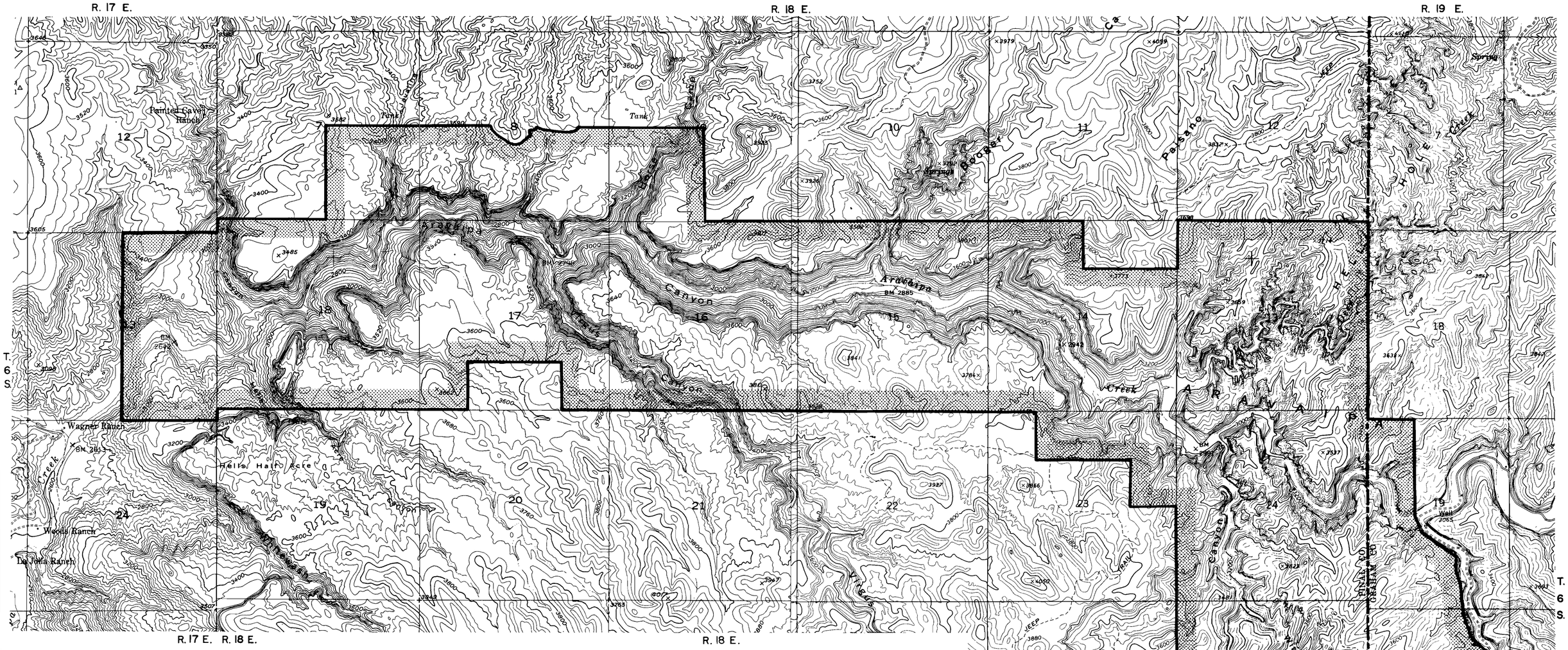

Scale in Miles

Scale in Feet

Aravaipa Canyon Wilderness

SAFFORD DISTRICT
BUREAU OF LAND MANAGEMENT
ARIZONA
1987

The Exterior Boundary of Aravaipa Canyon Wilderness, Safford District, Arizona, August 5, 1985, as included in the National Wilderness Preservation System by P.L. 98-406 dated August 28, 1984.

LEGEND

Wilderness Boundary

County Line

N

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