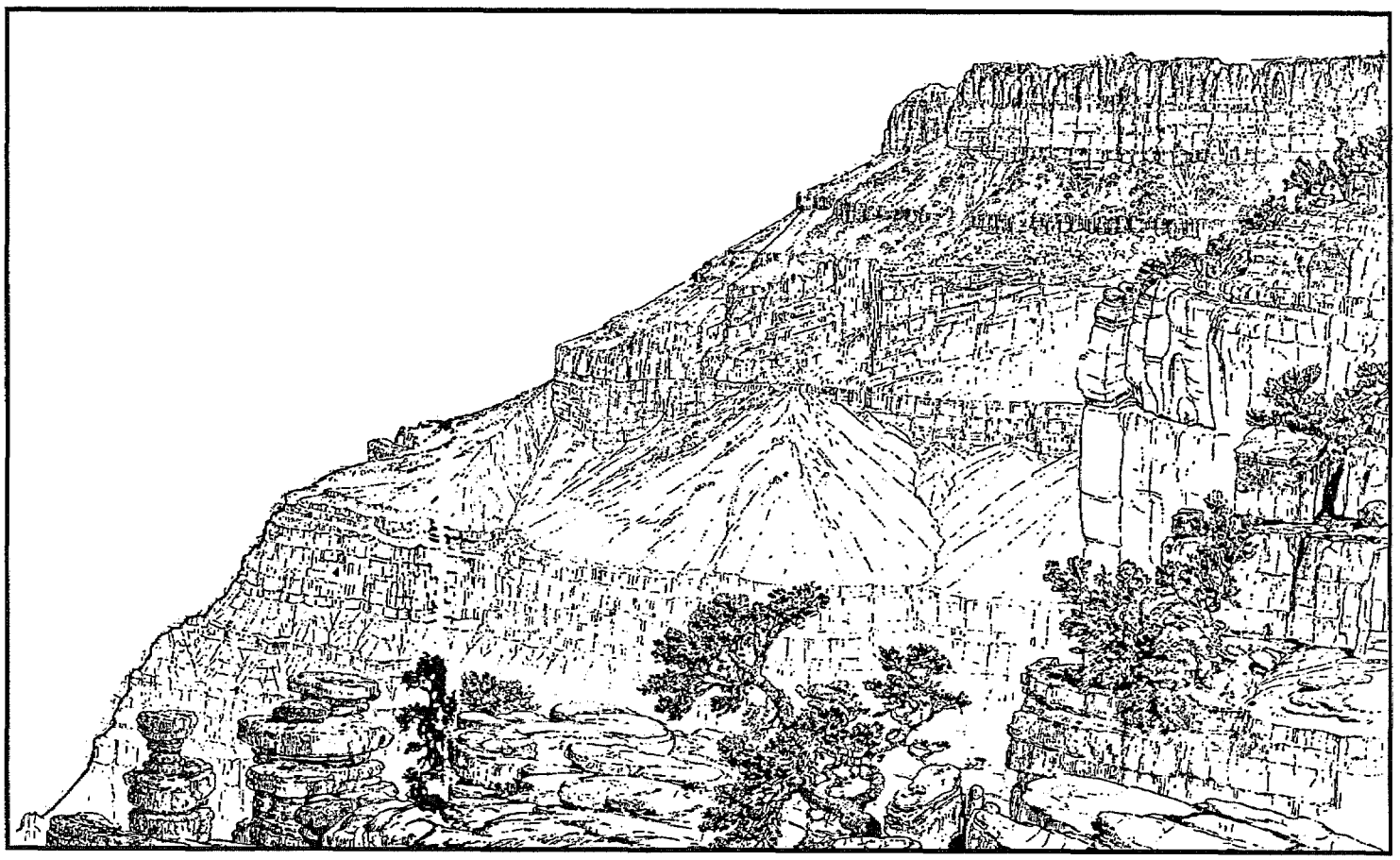
U.S. Department of the Interior
Bureau of Land Management

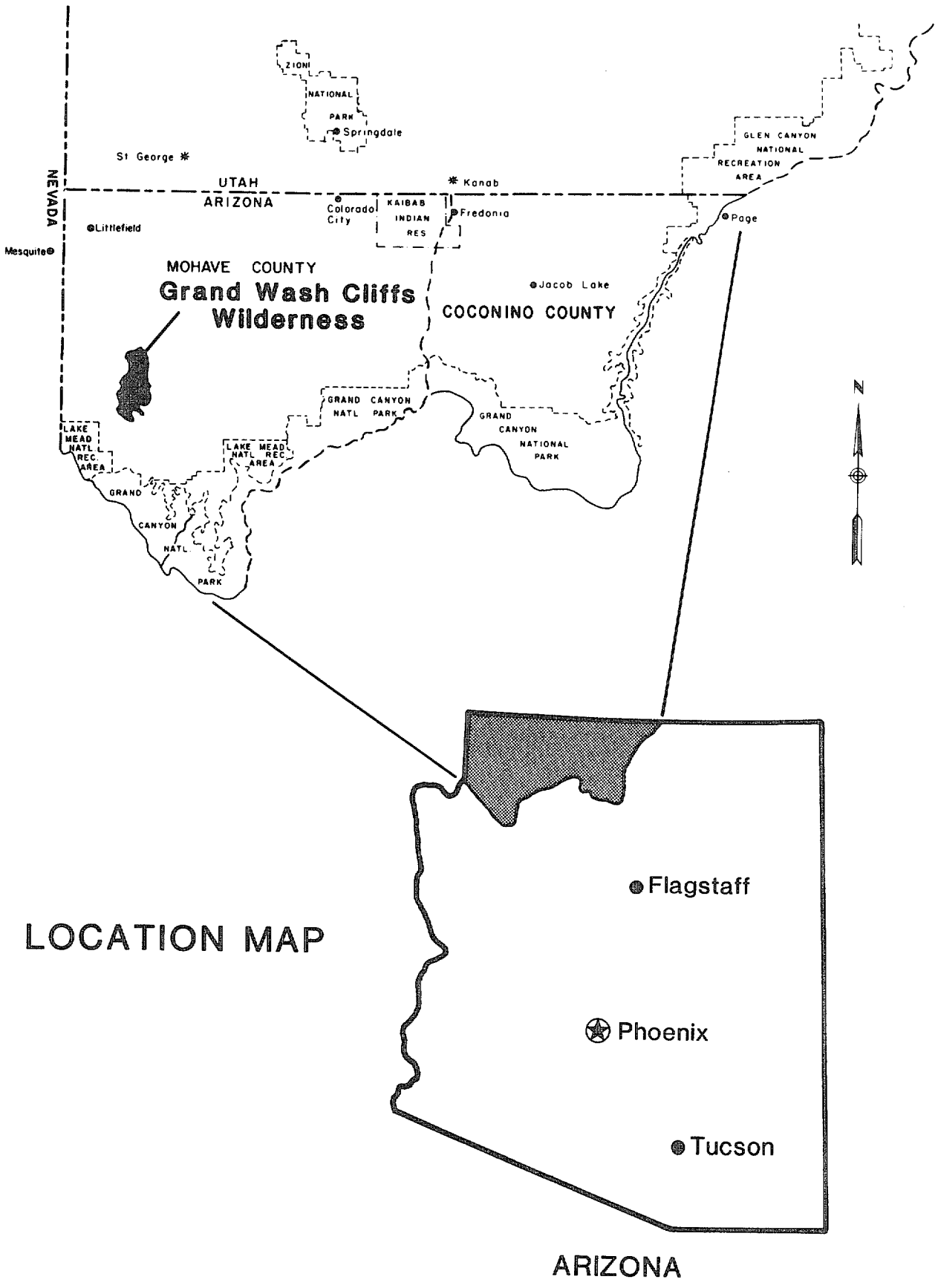
Arizona Strip District Office
390 North 3050 East
St. George, Utah 84770

FINAL

Grand Wash Cliffs Wilderness Management Plan

Arizona

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MOHAVE COUNTY
Grand Wash Cliffs Wilderness
Jacob Lake
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LAKE MEAD NATL REC AREA
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LOCATION MAP
ARIZONA

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
ARIZONA STATE OFFICE
3707 N. 7TH STREET
P.O. BOX 16563
PHOENIX, ARIZONA 85011

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:
8561 (931)

June 20, 1990

Dear Reader:

Designation of the Grand Wash Cliffs Wilderness in 1984 resulted in an opportunity to preserve an area with outstanding wilderness qualities. A wild and remote area seen by few people, this area retains the essence of what is truly wilderness. With an elevation difference of over 3500 feet, its rugged canyons and steep cliffs provide an area of solitude and surprising beauty. Predominantly desert in nature, this area will require significant management scrutiny because of its sensitive ecology.

This plan is designed to guide our efforts to protect and preserve this unique area for ourselves and our posterity. It provides a system for protecting and restoring resource and social conditions needed to comply with the Wilderness Act of 1964 and the Arizona Wilderness Act of 1984.

Our thanks to the many people who helped us prepare this plan by providing suggestions and insights to special management needs in the area. We hope you will continue to work with us as we put the plan into effect.

Sincerely

Lynn H. Engdahl
Acting State Director

FINAL

WILDERNESS MANAGEMENT PLAN

for the

GRAND WASH CLIFFS WILDERNESS

U.S. Department of Interior

Bureau of Land Management

Arizona Strip District - Arizona

August 1990

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INTRODUCTION

BACKGROUND

The Arizona Wilderness Act of 1984 designated the Grand Wash Cliffs Wilderness (GWCW) a component of the National Wilderness Preservation system on August 28, 1984. The Act designated forty areas throughout the state, nine of which are north of the Colorado River on the Arizona Strip. The BLM manages seven, the Forest Service one and the two agencies jointly manage one.

PLAN PURPOSE

This wilderness management plan serves three purposes. First, it presents management objectives, policies, and actions which will provide the resource protection and use opportunities intended by Congress. Second, it sets forth a sequence for implementing these actions. And third, it fulfills the bureau policy requirement that a management plan be prepared for a designated wilderness on public lands.

PLAN ORGANIZATION

Part I - an overview of the GWCW which includes a physical description, natural and human values important to the area and the general management situation

Part II - the four broad national goals for BLM wilderness management that give the agency a philosophy on which to base more specific objectives

Part III - the specific management objectives important to good management of the area

Part IV - a summary of objectives for each resource or "element"

Part V - the wilderness management program (the heart of the plan) with specific management objectives, current situation, assumptions, management policies and actions needed to manage each of the wilderness elements

Part VI - an implementation schedule with target dates for accomplishing the actions proposed in the management program

Part VII - the environmental assessment for the proposed action and alternatives

Part VIII - cost estimates for implementing the plan, showing workmonths and dollars

AREA OVERVIEW

Location

The 36,300 acre GWCW is on the southwestern edge of the Colorado Plateau Physiographic Province in the northwestern corner of Mohave County, Arizona (See Map 1). The wilderness boundaries lie within Townships 34, 35, and 36 North, Ranges 13, 14, and 15 West, Gila and Salt River Meridian. St. George, Utah, the largest city in the area (20,000 people), is 36 air miles north of the GWCW. The smaller communities of Mesquite, Nevada and Littlefield, Arizona are 24 and 25 air miles, respectively, northwest of the wilderness.

Access

From St. George, Utah the GWCW can be reached via I-15 and the Quail Hill, Hobble, St. George Canyon and Hidden Canyon roads. The area may also be reached from Mesquite, Nevada on the Lime Kiln, Cottonwood, Grand Wash and Grand Gulch roads. The Grand Canyon and Lake Mead prevent access from the south.

Two portals on the north and south sides of the wilderness provide non-motorized access to the Grand Wash Bench, between the upper and lower Grand Wash Cliffs. The north portal is one-half mile off the Hidden Canyon road while the south portal is reached by traveling seven miles north on the Grand Wash Bench road from its intersection with the Grand Gulch road. Both portals serve as the limit of public vehicle travel on the bench road and are marked by wilderness information signs and a cable across the road.

In creating the GWCW, Congress specified that the Grand Wash Bench road be gated and locked, with access only for administrative purposes by the BLM and livestock permitees, such as fire suppression, livestock management and maintenance of existing range improvements.

With the exception of I-15, all roads cited above are unsurfaced-- from improved dirt roads to jeep trails. Driving conditions vary widely depending on weather and amount of maintenance. Legally, access is unimpeded.

Size and Boundaries

The *Arizona Wilderness Act of 1984* designated as wilderness ". . . certain lands in the Arizona Strip District... which comprise approximately 36,300 acres . . . known as the Grand Wash Cliffs Wilderness." Section 303 of the act further requires a map and legal description for each wilderness be filed by the Secretary of the Interior, as soon as practicable after the passage of the Act, with the Committee on Energy and Natural Resources of the U.S. Senate and the Committee on Interior and Insular Affairs of the House of Representatives.

The boundary has been computer digitized and a narrative description written. An official boundary package with a map and description has been sent to the BLM Washington Office. The map package is forwarded to Congress when the final WMP is published.

The GWCW boundary is a combination of roads, canyon rims, cliff lines and legal section lines. The west boundary is a 30-foot offset from the Grand Wash road, the southern a 30-foot offset from the Grand Gulch road and the upper rim of Squaw Canyon. To the east, the boundary is marked by a combination of section lines and the rim of the upper Grand Wash Cliffs. Northerly, a 30-foot offset from the Hidden Canyon road serves as the boundary. All offsets are from the road centerline.

Ownership

The area within the GWCW exterior boundary is public domain under BLM jurisdiction. One section (640 acres) was reconveyed to federal administration by the State of Arizona on April 2, 1985.

Natural and Human Values

The wilderness straddles the boundary between the Colorado Plateau and Basin and Range physiographic provinces. The Grand Wash fault system, whose faultline trends north, is expressed by two large steps down from east to west—the Upper and Lower Grand Wash Cliffs.

Along the continuous wall of the upper cliffs, which form most of the eastern wilderness boundary, are rolling hills and ridges covered by a mostly uniform pinyon-juniper (P-J) woodland. Elevations here average around 6400 feet. The terrain drops precipitously for 2000 feet to the bench or step below, moving through the Kaibab and Toroweap limestone as well as the Coconino sandstone formations.

The bench area, unique because of its mixture of Mohave desert and P-J woodland vegetation from colder deserts is gently rolling country, dissected by numerous drainages running from east to west. The northern portion of the bench is marked by sandstone buttes and rimrocks that provide sharp relief in the otherwise gently rolling terrain.

Moving west, the bench drops off into sharply dissected, extremely rugged canyons, through the Callville and Pakoon limestone layers some 1600 feet to an alluvial fan or bajada covered by sparse Mohave desert shrubs and annual grasses. This area is known as the Pakoon Basin. Much of the native Mohave desert vegetation in these lower elevations has been destroyed by wildfires carried by stands of exotic (non-native or introduced) annual grasses and forbs that have invaded the area over the past 75-100 years.

The various vegetative communities provide habitats for a wide range of wildlife, including the desert tortoise in the lower desert area and the recently re-introduced desert bighorn sheep along the rugged lower cliffs. The clifflines also provide updrafts for soaring golden eagles, redtail hawks and the transient turkey vulture.

Besides the tortoise, the lower desert is habitat for the Gila monster, Mohave rattlesnake, other desert reptiles and many small mammals and birds, including Gambel's quail, cottontail rabbits and blacktail jackrabbits.

A closer look at the vegetation reveals a wide range of natural conditions that determine the various vegetative communities. Elevation, soil type, slope, aspect, precipitation, temperatures and latitude all influence the kind and amount of vegetation. Precipitation is the single most important factor in this arid region. On the upper cliffs, along the eastern boundary, a 17-inch average annual precipitation comes from winter snow and violent, drenching summer thunderstorms. Pinyon and juniper, cliffrose, turbinella and Gambel oaks, mutton grass, june grass, and other assorted annual grasses and forbs grow in limestone-based soils.

On the bench below, sandy soils and an average annual rainfall of 12 inches support pinyon, juniper, cliffrose,

black brush, sagebrush, joshua trees, banana yucca, prickly pear and cholla cactus, sideoats gramma and sand dropseed grasses, cheatgrass and other assorted annuals.

The rugged canyons in the lower cliffs and the alluvial fan below, with an 8 inch average annual rainfall, are characterized by large stands of cheatgrass, red brome, and other annual grasses and forbs in the burned areas. The unburned areas support the typical Mohave desert species—joshua trees and other yuccas, creosote bush, white bursage, range ratany, bush muhly, big galleta and three-awn grasses and annual grasses and forbs.

Current data show human use of the area dating back to the Archaic period—6-8 thousand years ago. There is also evidence of Anasazi presence much later in time, as well as more recent use by bands of Paiutes into the 20th century.

Early Historic information is sketchy. Copper was periodically mined in the nearby Grand Gulch and Savannic mines from around 1870 until 1958. The early settlers in southern Utah may have grazed cattle, but dates are difficult to document. Domestic sheep were also grazed in the area in the 1930's through the 1950's.

Human use of the area today is limited to cattle grazing at certain times of the year. A few improvements, such as fence lines and small stockponds, are the only human signs within the wilderness. Both prehistoric and historic evidence indicates that the GWCW is truly a place "...where man himself is a visitor and does not remain."

GENERAL MANAGEMENT SITUATION

Multiple use programs currently being administered by the BLM in the GWCW are limited to occasional wilderness visitors and livestock grazing and wildlife habitat management. The wilderness includes parts of five grazing allotments (see Table 3). Associated with these grazing allotments are ten range improvements—four small reservoirs (three fenced) and several fencelines totaling 6 linear miles (See Table 4).

A 750-acre wildfire burn on the bench was aerially seeded with sand dropseed (Sporobulus cryptandrus) and side-oats grama (Bouteloua curtipendula) in 1981 when the area was in Wilderness Study Area (WSA) status. Both species are native and results have been good.

The four-wheel drive road along the bench between the upper and lower cliffs was excluded by Congress and the wilderness boundary is specified as being thirty feet on either side of the centerline, in effect creating a sixty foot corridor through the wilderness.

However, based on recommendation from the Committee on Interior and Insular Affairs, this road is gated and locked at both ends where it enters the wilderness. Motorized vehicle use on this road is restricted to BLM for administrative purposes and to the grazing permittees for range improvement maintenance and livestock management.

Wildlife habitat management centers around the 1983 and 1986 desert bighorn sheep transplants which reintroduced the species into an area from which they had been eliminated. Currently two wildlife water catchments are on the lower cliffs with another proposed either in the north end of the wilderness or outside the boundary. No springs or other live water is known to exist in the GWCW.

The lower desert part on the west is desert tortoise habitat. Also inhabiting the area are mule deer, mountain lion, coyote, bobcat, small game species (e.g., rabbits and quail) and many non-game species, including birds, reptiles and small mammals. Wildlife management is guided by the Parashaunt and Virgin River-Pakoon Basin Habitat Management Plans (HMP).

Wildfire has become an important management factor due to the invasion of cheatgrass (Bromus tectorum), red brome (Bromus rubens), Mediterranean grass (Schismus barbatus), and filaree (Erodium cicutarium) following wildfires. These species provide a continuous flashy fuel source.

Approximately 17,000 acres of Mohave desert shrub and 800 acres of blackbrush/pinyon-juniper vegetation types have burned in the wilderness over the past ten years, converting much of the lower desert acreage to annual grasses and forbs that tend to perpetuate fire. This situation is now widespread throughout the Pakoon Basin, both inside and outside the wilderness.

Vegetation patterns in burns on the bench area have been somewhat less predictable, with some resulting primarily in cheatgrass and other annuals while others have produced re-growth of shrubs such as cliffrose and some perennial grasses.

Because of its remoteness and lack of permanent water, the GWCW has received very light recreation use and no visitor use data have been collected.

A slight recreation use increase may result in the near future, but activity is expected to remain very light and therefore will likely remain unregulated except for information signs at access points and off-site efforts to inform the public of wilderness ethics and no-trace camping techniques.

Available recreation opportunities include solitude, primitive and unconfined recreation, wildlife viewing, photography and nature study. Encounters with other visitors or resource users are rare. Two small caves, Grand Wash and Bobcat, provide spelunking (cave exploring) possibilities.

Opportunities to interact with the natural environment without regulation are very high. Management presence is rare and would generally be associated with wildlife, grazing and fire management activities. Recreationists would be essentially free from regulation.

No mining claims, mineral leases, state or private lands are within the wilderness.

The Shivwits Resource Area staff is responsible for day-to-day management of the GWCW.

WILDERNESS MANAGEMENT PHILOSOPHY AND GOALS

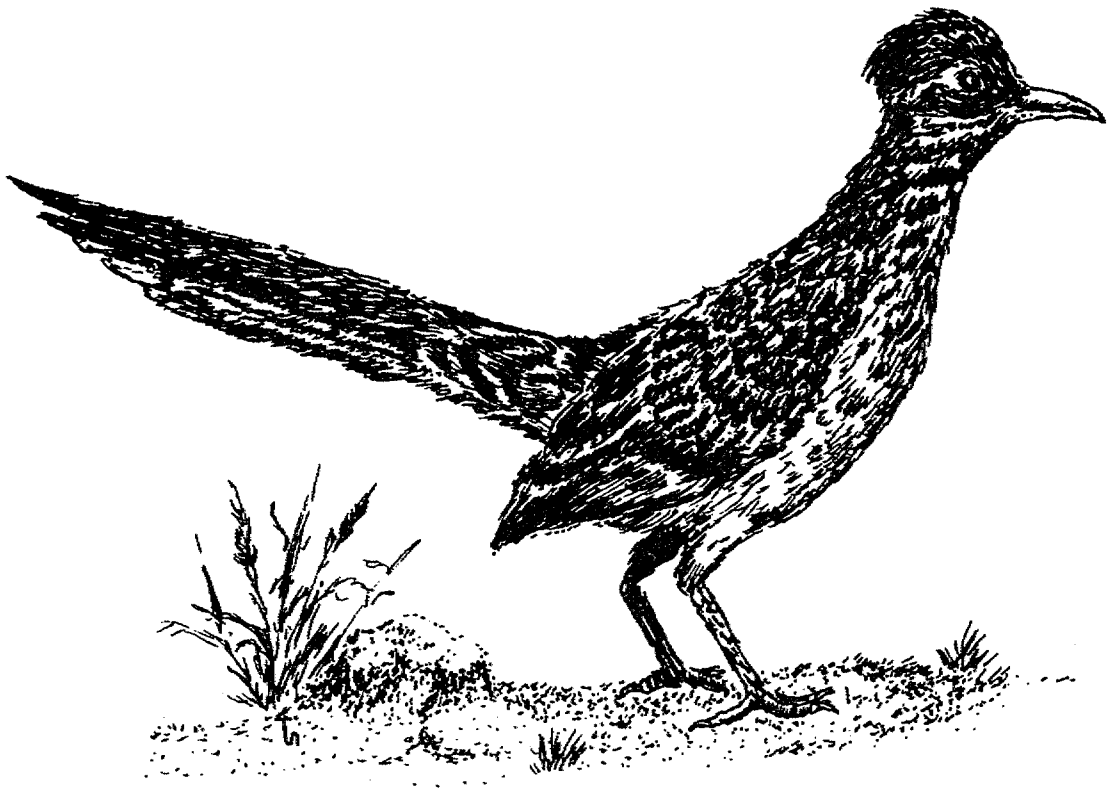
The following goal statements reflect wilderness management philosophy as outlined in the *Wilderness Act of 1964*, FLPMA, *The Arizona Wilderness Act of 1984* and BLM's *Wilderness Management Policy*.

-To provide for the long-term protection and preservation of the area's wilderness character under a principle of nondegradation. To manage in ways that will keep unimpaired 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.

-To manage the wilderness area 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 use 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 nonconforming 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. Nonconforming uses are the exception rather than the rule, therefore, emphasis is placed on maintaining wilderness character.



MANAGEMENT STRATEGY

The GWCW is an extremely remote area, where human intrusion is primarily limited to occasional visits from grazing permittees, Arizona Game & Fish and BLM personnel. Recreation use is very light, with most around the perimeter of the wilderness.

Proposed Management - The greatest change in the ecosystem within the GWCW has been the conversion of the native desert shrub vegetation to an annual grass and forb community by wildfire. Management's long—term objective will be to return the vegetation to its native state, to whatever degree possible. BLM understands that eradication of the invading annuals is not possible at the present time and natural plant succession is very slow.

GWCW management will concentrate on defining standards for the vegetative resource and appropriate indicators to measure progress toward maintaining or achieving these standards. Fire management will be an important factor in achieving desired vegetative conditions. A Fire Management Plan is included as Appendix A to this plan.

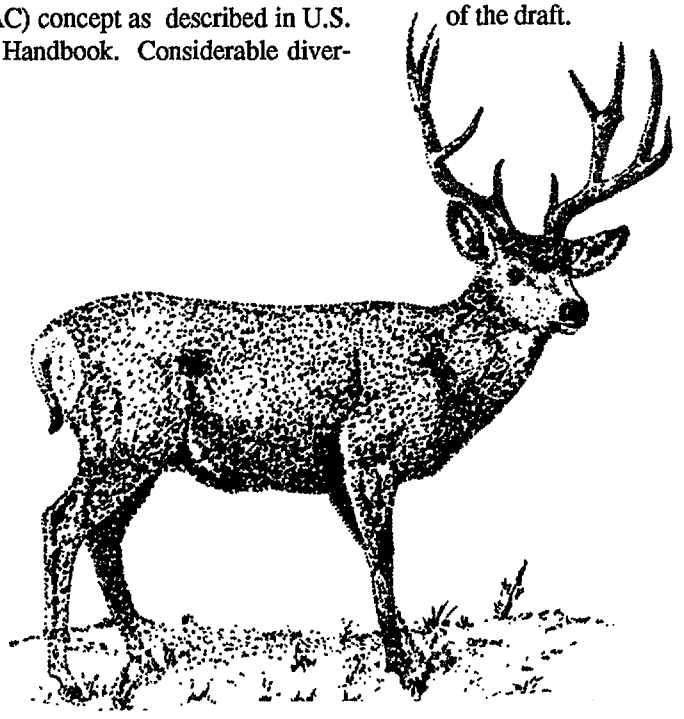
Parking and campsite areas will be inventoried and standards and indicators defined for monitoring impacts. Standards and indicators for other resources will also be developed where needed. Methods for achieving the desired conditions will be based on the Limits of Acceptable Change (LAC) concept as described in U.S. Forest Service LAC Handbook. Considerable divergence from the normal LAC process is likely due to its emphasis on recreational use and the fact that such use is extremely light in the GWCW.

Alternatives to this proposed strategy, which are more fully explained in the Environmental Assessment, include the following:

Alternative A - No Action - Under this alternative, the GWCW would be managed through guidance from BLM *Wilderness Management Policy*, and existing AMPs, HMPs and MFP decisions. The vegetation would be managed for conditions immediately prior to wilderness designation (8/28/84) - essentially an annual grass and forb range in the lower desert and the native pinyon-juniper- joshua tree and blackbrush communities on the bench.

Alternative B - Resource Protection - Under this alternative, the GWCW would be managed to protect the natural and cultural resources from human impact. No new range or wildlife improvements would be allowed. Recreation use would be restricted or excluded, if necessary, to reduce or prevent human impact. The vegetation resource would be managed the same as the proposed action.

The final plan may include parts of one or more alternatives, depending on comments received during review of the draft.



SUMMARY OF WILDERNESS MANAGEMENT OBJECTIVES

Following is a summary of the management objectives for the wilderness elements addressed in this plan. These objectives are repeated in the wilderness management program section.

PHYSICAL/BIOLOGICAL ELEMENTS

Vegetation

-To facilitate a return to the natural plant succession to whatever degree possible in the burned areas.

-To maintain indigenous plant species as they existed immediately prior to wilderness designation in the undisturbed (unburned) area.

-To allow dead and downed vegetation to be used for campfires in amounts that can be replaced annually through natural accumulation.

Wildlife

-To maintain and where possible enhance habitat for indigenous species, with emphasis on sensitive, threatened or endangered species.

-To limit habitat alteration from human activities and authorized uses to a level that will not have a detrimental effect on wildlife populations.

-To permit reestablishment of native species or establishment of a sensitive, threatened or endangered species when the action is for the purpose of correcting a condition resulting from human activities.

-To minimize competition and the possibility of disease transmission from exotic animals.

SOCIAL ELEMENTS

Recreation

-To provide a spectrum of opportunities for solitude, primitive and unconfined recreation, and other activities that are consistent with preservation of wilderness values.

MANAGERIAL ELEMENTS

Fire

-To maintain a natural fire regime in the areas dominated by native vegetation.

-To minimize acreage burned in areas dominated by annual grasses and forbs.

-To use fire suppression strategies that will ensure protection of wilderness resources, human safety and property while minimizing evidence of suppression.

Cultural Resources

-To inventory, evaluate, preserve and protect cultural resources in compliance with state and federal laws and BLM policy.

Grazing Management

-To allow livestock grazing to continue within the GWCW in accordance with BLM *Wilderness Management Policy.*

Emergency Services

-To provide emergency visitor assistance and initiate search and rescue operations whenever visitor safety or life-threatening situations occur.

Information and Education

-To make information about the wilderness available to the public on request but without advertising or promoting its use. This information promotes resource protection and identifies responsibilities and risks involved with wilderness recreation.

-To educate wilderness users on wilderness ethics and no-trace camping techniques.

-To encourage visitor compliance with wilderness use regulations through positively worded information about the wilderness and its opportunities.

Scientific study

-To encourage and permit scientific research that is dependent on a wilderness setting or on a resource or ecological situation unique to the GWCW.

WILDERNESS MANAGEMENT PROGRAM

PROGRAM DIRECTION BY ELEMENT

PHYSICAL/BIOLOGICAL ELEMENTS

Vegetation

Objectives

- To maintain indigenous plant species as they existed immediately prior to wilderness designation in the undisturbed (unburned) area.

- To facilitate a return to the natural plant succession to whatever degree possible in the disturbed (burned) areas.

- To allow dead and downed vegetation to be used for campfires in amounts that can be replaced annually through natural accumulation.

Current Management Situation

Most of the lower elevations of the GWCW have lost the native desert species due to the build-up of exotic annuals (cheatgrass, red brome, Mediterranean grass, filaree) and repeated fires. Cheatgrass was first reported in Utah in 1894 and red brome in 1935. An assumption is made here that these species invaded the Pakoon Basin during the past 100 years. These short-lived annuals become dry fuel and, ignited by lightning from summer thunderstorms, can carry fire over large areas in relatively short time. Prior to this vegetation change, it is believed that fire was rare and affected only small areas.

BLM does not know exactly what the vegetative community was like prior to the invasion of annuals or prior to domestic livestock use. Both cattle and sheep have used the area, although use is now only by cattle. It is known that the most noticeable plant, the Joshua tree, has inhabited the area for a long time. The pinyon-juniper-joshua tree community on the bench and the creosote-joshua tree community in the lower elevations are documented through pack rat midden studies. The studies show these plants have been in the Mohave and Sonoran deserts for 10 to 13 thousand years.

The variety of joshua found in the Mohave desert sprouts from rhizome-like underground stems and observations indicate that if a fire does not kill these stems, sprouting will occur. However, over large areas burned in the last 10-20 years, the fires have been hot enough to destroy these sprouting stems, especially where repeated fires have occurred. Loss of thousands of acres of joshua trees and their associated vegetation by fire, then, appears to be a recent phenomenon.

For the purposes of this plan, the vegetation objectives will be based on vegetation inventories done in 1978-79 before much of the area was burned.

The accumulation of dead and downed wood in the unburned portion of the bench is considered to be in a natural state due to the extremely low visitor use. Campfires are rare.

While no threatened or endangered species of plants are known to grow in the wilderness, data on this area are limited and it is possible that one or more of these plants may be in the GWCW (See Table 1).

Management Assumptions

- Eradication of the exotic annual grasses and forbs by artificial means is not feasible at this time.

- Controlling fire will increase natural succession toward a desert shrub community.

- Any return to the pre-fire plant community will take place very slowly over several decades, primarily through natural succession.

Management Policies

- Vegetation management in the GWCW will be directed toward maintaining or restoring the native plant composition as it was before the recent catastrophic fires (See Fire Management Plan, Appendix A).

- Restoration efforts will emphasize non-surface disturbing methods and will be restricted to seeding only those plants classified as native to the region.

TABLE 1
THREATENED, ENDANGERED, CANDIDATE AND STATE-LISTED SENSITIVE SPECIES

Species That Do or May Occur in the GWCW

FEDERALLY LISTED SPECIES			
COMMON NAME	SCIENTIFIC NAME	STATUS	
		FED	AZ
American Peregrine Falcon	Falco peregrinus anatum	E	C
Bald Eagle	Haliaeetus leucocephalus	E	E
Desert Tortoise	Xerobates agassizii	T	C
Spotted Bat	Euderma maculatum	2	C
Southwestern Willow Flycatcher	Empidonax trailii extimus	2	E
Western Snowy Plover	Charadrius alexandrius nivosus	2	C
Mountain Plover	Charadrius montanus	2	NL
Ferruginous Hawk	Buteo regalis	2	T
Merriams Kangaroo Rat	Dipodomys merriami frenatus	2	NL
Grand Canyon Cave Psuedoscorpion	Archeolarca cavicola	2	NL
Grand Wash Spring Snail	Pyrgulopsis bacchus	2	NL
Sharp-Shinned Hawk	Accipiter striatus	NL	C
Red Bat	Lasiurus borealis	NL	C

LEGEND

E	Endangered	2	Federal Candidate Category 2 (Insufficient Data to List)
T	Threatened		
C	Candidate	NL	Not Listed

SOURCES

1. Endangered and Threatened Wildlife and Plants. 50 CFR 17.1 and 17.12. April 15, 1990
2. Animal Notice of Review. Federal Register, Vol. 54, No. 4, January 6, 1989
3. Plant Notice of Review. Federal Register, Vol. 55, No. 35, February 21, 1990
4. Threatened Native Wildlife in Arizona. Arizona Game and Fish Department, Phoenix, Arizona, 16 pp.

- If technology develops to control the exotic plants, BLM will consider its use, subject to wilderness policy constraints.

- No cutting or removal of live vegetation will be allowed.

- Firewood cutting or gathering will be limited to hand cutting dead and downed material and must be used on-site.

Management Actions

- Monitor existing vegetation communities by utilizing existing range and wildlife studies and adding new studies when necessary.

- Write a vegetation management plan, specifying proposals for restoration and maintenance of the vegetative communities.

- For other actions related to vegetation management, see the Fire Management Plan, Appendix A.

Wildlife

Objectives

- To maintain and where possible enhance habitat for indigenous species, with emphasis on sensitive, threatened or endangered species.

- To limit habitat alteration from human activities and authorized uses to a level that will not have a detrimental effect on wildlife populations.

- To permit reestablishment of native species or establishment of sensitive, threatened or endangered species when the action is to correct a condition caused by human activities.

- To minimize competition and the possibility of disease transmission from exotic animals.

Current Management Situation

Wildlife management in the GWCW is guided by the Parashaunt and Virgin River-Pakoon Basin Habitat Management Plans (HMPs). In general, these plans seek to enhance the quality of habitat for all wildlife species, with special emphasis on threatened, endangered and sensitive species (See Table 1).

Wildlife habitat management centers around the recent transplants of desert bighorn sheep in the lower cliffs in an attempt to reestablish them in this portion of their historical range. A current statewide cooperative transplant program (between AGFD and BLM) is now trying to reestablish the species throughout its former range.

Exotic sheep and goats have been documented in the Pakoon Basin in recent years, although none have been reported in the GWCW. These animals compete with native species (i.e., bighorn sheep) for space, cover and food and may degrade the native vegetation. Exotics may also transmit disease to the native species.

Wild burros are known to inhabit nearby Pigeon and Snap Canyons, part of the Tasi-Gold Butte Burro Management Area. Based on the plan for that area, burro habitat does not include any portion of the GWCW, although burros may range into the area.

The lower portion of the wilderness is habitat for the threatened desert tortoise (*Gopherus (=Xerobates) agassizii*). Habitat quality for this species has been greatly reduced by the recent large fires which have eliminated much of the shrub cover.

Two water catchments are on the edge of the lower cliffs with another being proposed, possibly within the wilderness in the northern part of the lower cliffs. An eighteen-acre vegetation study enclosure in the lower desert portion covers a combination of burned and unburned vegetation (See Table 2).

The bench area between the upper and lower cliffs is mule deer winter range. The state game management unit in which the GWCW is located was closed to deer hunting for the '86 and '87 seasons due to a considerable drop in deer population since 1980.

The upper cliffs have been rated as suitable habitat for the Peregrine falcon. Little inventory currently exists for this species in the GWCW, but occurrence in the area is likely because known falcon habitat is in the Grand Canyon National Park to the south.

Consultation under Section 7 of the *Endangered Species Act* has been completed with the U.S. Fish and Wildlife Service for both the desert tortoise and the peregrine falcon.

TABLE 2
WILDLIFE IMPROVEMENTS IN THE GWCW
Bureau of Land Management, Arizona Strip District, Arizona

NAME AND TYPE OF IMPROVEMENT	PROJECT NUMBER	LOCATION	CONDITION
Squaw Canyon Catchment	4914	T35NR14W Sec 28	Fair
Olaf Catchment	4939	T35NR14W Sec 16	Good
Blackbrush Exclosure	4962	T36NR14W Sec 9	Good

SOURCE: District files

Management Assumptions

- Diversity and abundance of wildlife populations will depend primarily on natural processes; however, some human influence may be required to promote viable and stable populations of some species.

- Small game hunting will continue on a small scale within the wilderness. Big game hunting will increase if deer numbers recover and bighorn sheep populations grow to huntable numbers, although the number of hunters is expected to remain low.

- Wildlife management will occasionally require the use of motorized vehicles (including aircraft) and mechanized equipment for habitat improvements, maintenance and management activities.

- Large exotic animals could be removed using current technology.

Management Policies

- The Master Memo of Understanding (MOU) between the BLM and AGFD dated March 18, 1987 will serve as the basis for cooperative management activities. This MOU contains the policies and guidelines in W.O. Instruction Memo No. 86-665 "Policies and Guidelines for Fish and Wildlife Management in Wilderness Areas."

- Jurisdiction and responsibilities of the AGFD regarding management and protection of wildlife species are not changed by wilderness designation.

- In coordination with the AGFD, BLM will make habitat improvement recommendations based on need for wilderness resource protection.

- Hunting and trapping within the GWCW will be permitted, subject to BLM wilderness policies and applicable federal and State of Arizona laws and regulations.

- T&E species will have priority if conflicting management proposals arise. Consultation with the USFWS may be necessary under provisions of the *Endangered Species Act*.

- Exotic animal management and/or control will be conducted by the appropriate agency with close coordination between the agency and BLM to assure that control actions agree with wilderness management policy.

- Proposed wildlife improvements will be analyzed in a site-specific environmental analysis (EA).

- Bighorn sheep water improvement proposals, if approved, will emphasize the use of natural materials and be constructed so as to blend in with the surrounding landscape.

- Motorized vehicle or equipment use for project construction and maintenance will be analyzed through the EA process and will be approved only when it is determined to be the minimum tool and will not have a significant adverse effect on the natural environment. The procedure will be similar to the process described for range improvements in Appendix B. Specifics of motorized entries will be documented in wilderness records.

Management Actions

- Review and amend, if necessary for consistency with wilderness management policy, the Parashaunt and Virgin River-Pakoon Basin HMPs as they deal with objectives and proposed actions within the wilderness.

- Continue the program to reestablish and monitor the bighorn sheep within the wilderness, subject to wilderness policy constraints.

- Remove burros and exotic animals, as needed, to prevent habitat degradation and competition with native species and initiate actions to prevent the exotics' return.

- Conduct desert tortoise monitoring studies to assess habitat potential, population densities and trend.

- Continue coordination of wildlife management between BLM and AGFD as needed.

SOCIAL ELEMENTS

Recreation Use

Objectives

- To provide the entire spectrum of opportunities for solitude, primitive and unconfined recreation, and other activities consistent with preservation of wilderness values.

Current Management Situation

While no recreation use data are available for the GWCW, visitor use is known to be extremely light, with only an occasional hiker entering the wilderness. Other visitor use is limited to motorized vehicles along boundary roads. Prior to wilderness designation, a short access road and parking area were partially completed at the head of the canyon that contains Grand Wash and Bobcat caves.

Use on the bench road which leads to this access road is now restricted to necessary trips by the grazing permittee and by BLM personnel for administrative use. Both uses require prior approval by the authorized officer.

Management Assumptions

- Recreation use will continue to be very light for at least the next five years.

- The AGFD may issue bighorn sheep hunting permits during the life of this plan.

- Deer hunting will resume at low levels in the next ten years.

Management Policy

- On-site visitor regulation will be kept to a minimum in order to provide high-quality wilderness recreation opportunities. No trails or trailheads will be constructed unless necessary for resource protection.

- Signs will be used only where necessary for wilderness resource protection or visitor safety.

Management Actions

- A sign plan will be written to document existing sign locations, new sign proposals and a maintenance schedule.

- Establish and monitor selected key areas for camping impacts, including loss of vegetative cover, soil compactions and campfire rings.

- Reclaim parking area near Grand Wash and Bobcat caves. Downgrade cave access road to a foot trail. The rehabilitation plan and EA will be completed before any surface-disturbing activities begin.

MANAGERIAL ELEMENTS

Fire

Objectives

- To maintain a natural fire regime in the areas dominated by native vegetation.

- To minimize acreage burned in areas dominated by annual grasses and forbs.

- To use fire suppression strategies that will ensure protection of wilderness resources, human safety and property while minimizing all possible evidence of suppression.

Current Management Situation

Most of the lower elevations of the GWCW have lost the native desert species due to the build-up of exotic annuals (cheatgrass, red brome, Mediterranean grass, filaree) and repeated fires. Some wildfires have burned small portions of the bench on top of the lower cliffs but most of that area consists of natural vegetation—blackbrush, pinyon/juniper, joshua trees.

Management Assumptions

- Annual grasses and forbs will dominate the area from the base of the lower cliffs to the west boundary for the foreseeable future.

- Lightning-caused wildfires will continue in this area.

- Fire suppression will be necessary in the wilderness.

Management Policy

- Suppression will be limited to the minimum tools and equipment necessary to accomplish the task.

- A Wilderness Resource Advisor will be sent to any fire that has potential of escaping initial attack.

Cultural Resources

Objectives

- To inventory, evaluate, preserve and protect all cultural resources in compliance with state and federal laws and BLM policy.

Current Management Situation

No cultural resource inventory has been done in the wilderness although informal reports indicate that sites are present. A Class II inventory has been proposed for the Shivwits Resource Area and would include the GWCW.

Management Assumptions

- Cultural resources are present within the GWCW.

- Wilderness designation and blocking off the bench road provide an added measure of protection for cultural resources.

Management Policy

- All cultural resources within the GWCW will be protected under the provisions of the *Antiquities Act of 1906*, the *Historic Sites Act of 1935*, *Executive Order 11593*, the *National Historic Preservation Act of 1966*, as amended, and the *Archeological Resources Protection Act of 1979*.

- Cultural resource inventory will be permitted to record and evaluate cultural resources.

- Cultural resources which do not meet the criteria for inclusion in the *National Register of Historic Places* will be subject to the forces of nature in the same manner as other wilderness resources.

- Proposals for intensive site study and/or stabilization involving surface disturbance will be analyzed through a site-specific environmental assessment.

- Wilderness and cultural resource surveillance will be coordinated to increase monitoring efficiency.

Management Actions

- Conduct a Class II inventory to determine the extent of cultural resources in the GWCW.

- Protect cultural resources in the GWCW through a variety of methods, including non-disclosure of site locations, public education, aerial and ground surveillance and, if necessary, on-site protection.

- Include cultural resource protection information in the new GWCW map/brochure.

Grazing Management

Objectives

- To allow grazing to continue within the GWCW in accordance with BLM *Wilderness Management Policy*.

Current Management Situation

Five grazing allotments are partially within the GWCW. All of the grazable land has been allotted (about 2,294

AUMs of active preference within the wilderness boundary -- see Table 3 for allotment breakdown). Of the five allotments, three have allotment management plans (AMPs), one has an AMP under development and one is under maintenance management. All allotments are monitored for forage utilization, condition and trend. About six miles of fences in five separate segments, four small reservoirs and two range study plots are in the GWCW (See Table 4).

Grazing occurs throughout the wilderness area except where steep rocky areas prohibit livestock access.

In the area below the lower cliffs, grazing is limited to winter and spring use while grazing on the bench occurs at various times throughout the year, depending on forage conditions and/or grazing cycle specified in the AMP.

The bench road is used for motorized vehicle access to range improvements.

Management Assumptions

- Utilization levels and patterns of use will remain generally as they are now. Over the past eight years, utilization has been 50% or less of current year's growth.

- Grazing permittees will occasionally need motorized vehicles and mechanized equipment for range improvement maintenance and other grazing management needs.

Management Policy

- Grazing will continue in the GWCW as stated in Section 4(d)(4) of the *1964 Wilderness Act* and *House Report 96-1126* which provides additional grazing management direction.

- Adjustments in grazing use will be based on BLM range monitoring studies, allotment evaluations and consideration of impacts on wilderness resources.

TABLE 3
GRAZING ALLOTMENTS IN THE GWCW
Bureau of Land Management, Arizona Strip District, Arizona

ALLOTMENT	TOTAL ACTIVE PREFERENCE	ESTIMATED AUMs IN THE GWCW	ESTIMATED PERCENT OF AUMs IN WILDERNESS
Link Spring	1,779	836	47
Pakoon	1,845	775	42
Mud & Cane	5,178	207	4
Jump Canyon	2,286	69	3
Grassie	10,174	407	4
TOTALS	21,262	2,294	100

SOURCE: District Files

- Newly proposed range improvements or significant modifications to existing improvements will be evaluated before any work is accomplished in an environmental assessment (EA). New projects will be allowed only to improve management and protect wilderness values, rather than to accommodate increased number of livestock.

- Whenever possible, new range improvements will be located outside the wilderness.

- Range improvement maintenance plans are being developed. Interim schedules for motorized vehicle use have been developed in cooperation with the grazing permittees. These interim schedules will be reviewed and adjusted as needed annually until the EA(s) and maintenance plans are completed. See Appendix B for detailed information about this process.

- The bench road will be minimally maintained by BLM to allow access for range improvement maintenance and administrative purposes, including fire suppression activities.

Management Actions

- Continue monitoring studies, including utilization, trend, actual use, precipitation and livestock counts.

- Inventory all range improvements within the GWCW. Abandoned or unnecessary improvements may be considered for removal.

TABLE 4
RANGE IMPROVEMENTS IN THE GWCW
Bureau of Land Management, Arizona Strip District, Arizona

NAME AND TYPE OF IMPROVEMENT	PROJECT NUMBER	ALLOTMENT	LOCATION	CONDITION
Grand Wash Reservoir	4875	Mud & Cane	T36NR14W Sec 10	Good
Grand Wash Fence	4875	Mud & Cane	T36NR14W Sec 10	Good
Nutter Road Fence	4201	Mud & Cane Pakoon	T36NR14W Sec 8,9,16	Good
Nutter Twist Div. Fence	831	Mud & Cane Jump Canyon	T36NR14W Sec 3,10,11	Good
Link Spring Div. Fence	4584	Jump Canyon Link Spring	T36NR14W Sec 10-12	Good
Jack Reservoir	1579	Link Spring	T36NR14W Sec 13	Poor
Slick Rock Reservoir	1581	Link Spring	T36NR14W Sec 26	Fair
Divide Reservoir	1577	Link Spring	T36NR14W Sec 26	Fair
Esplin-Max Fence	4078	Link Spring Grassie	T35NR13&14W Sec 19,23,24	Good
Fire Rehab Seeding	4674	Link Spring	T35&36NR14W Sec 2,3,10,11,35	Good

SOURCE: District Files

- Develop maintenance plans for those improvements requiring motorized vehicle and/or mechanized equipment use, in coordination with the grazing permittees.

- Hold annual coordination meetings with the grazing permittees to review and update maintenance schedules.

- Incorporate maintenance plans into existing and new AMPs and into each grazing permit.

- Revise existing AMPs, if necessary, to reflect wilderness management policies. Incorporate these policies into new AMPs.

Emergency Services

Objectives

- To provide emergency visitor help and begin search and rescue operations whenever visitor safety or life-threatening situations require such action.

Current Management Situation

The primary responsibility for search and rescue within the GWCW rests with the Mohave County Sheriff, with BLM cooperating and actively supporting the operations. BLM will take initial action where immediate response is necessary to ensure visitor safety.

The existing District Search and Rescue Plan, which includes stipulations for wilderness operations, will guide all search and rescue activities in the GWCW.

To date, BLM knows of no operation of this nature having been needed or carried out in the GWCW.

Management Assumptions

- The Mohave County Sheriff will continue to have the lead responsibility for search and rescue operations within the GWCW.

- Visitor use will continue to be light, making emergency operations improbable although the potential will exist.

- The visitor assumes risks when entering wilderness that are part of the experience of being isolated from the modern world and its conveniences.

Management Policy

- BLM will support and coordinate with the Mohave County Sheriff on search and rescue operations. In cases where immediate action is essential, BLM will initiate search and rescue operations pending the Sheriff's Department involvement.

Management Actions

- Review and, if necessary, update the District Search and Rescue Plan to reflect wilderness management considerations.

- Maintain contact with the Mohave County Sheriff's Department to discuss problems and needs.

Information & Education

Objectives

- To make information about the wilderness available to the public on request but without advertising or promoting its use. This information will promote resource protection and identify responsibilities and risks involved with wilderness recreation.

- To educate wilderness users on wilderness ethics and "no-trace" camping techniques.

- To encourage visitor compliance with wilderness use regulations through positively worded information about the wilderness and its opportunities.

Current Management Situation

As of the writing of this plan, there have been no specific requests for information on the GWCW. Its remote location and lack of publicity have resulted in little use by recreationists.

Management Assumptions

Visitor use will increase only slightly during the next five years.

Management Policy

Develop a map/brochure with messages promoting voluntary compliance with wilderness rules and regulations as well as messages dealing with the "no-trace"

camping technique and the "pack-it-in", "pack-it-out" philosophy. Cultural, geological, and vegetation resource interpretation will also be included.

Provide information on request.

Management Actions

- Develop a map/brochure and include appropriate information as outlined in the policy statement above.

- Provide information on the GWCW on an "as requested" basis.

Scientific Study

Objectives

- To encourage and permit scientific research in the GWCW that is dependent upon a wilderness setting or on a resource or ecological situation unique to the GWCW.

Current Management Situation

The BLM conducts ongoing studies in the GWCW, e.g., range trend studies, livestock utilization studies, and big-horn sheep and tortoise population studies. Also, in association with a proposed district-wide cave resource inventory, Grand Wash and Bobcat caves have been explored and mapped. The AGFD conducts aerial surveys of bighorn sheep annually.

Management Assumptions

- Requests for conducting resource and/or resource use studies will occur on a limited basis.

Management Policy

- Research projects that further the management, scientific, educational, historical and conservation purposes of the GWCW while preserving wilderness values will be allowed.

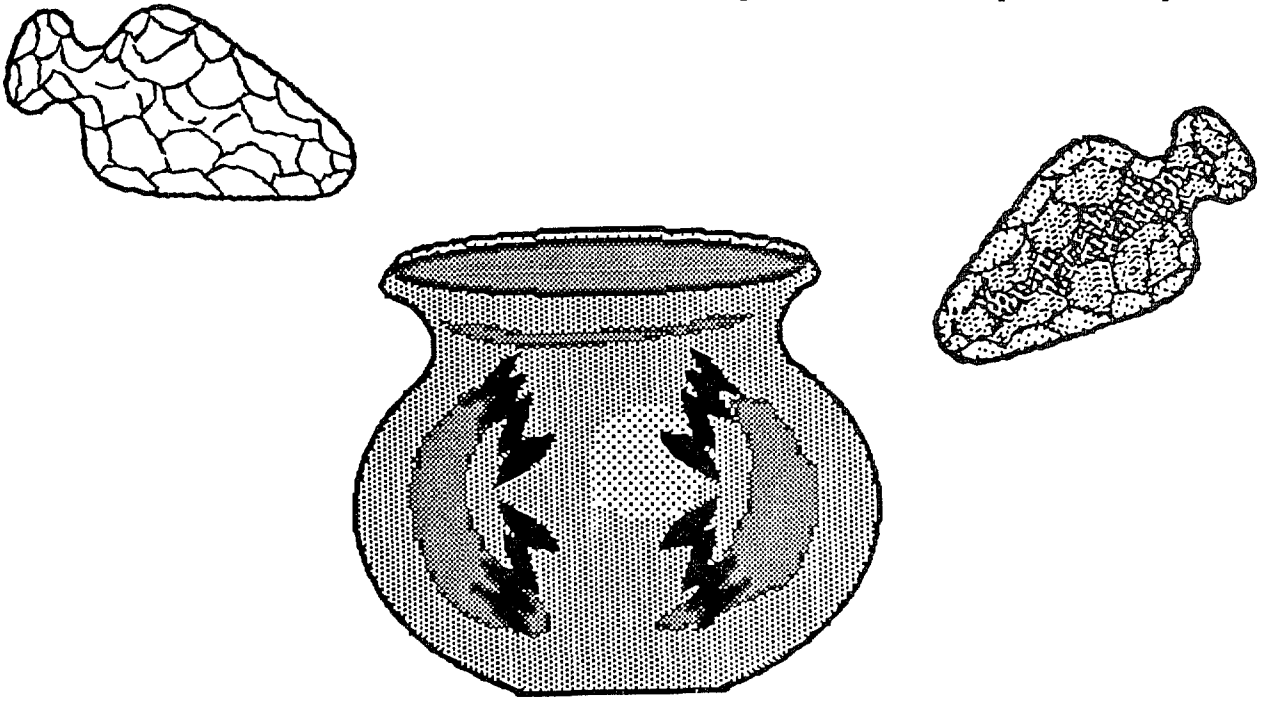
- Research projects will be conducted without use of motorized equipment or construction of temporary or permanent structures.

- Exceptions to the above policy may be approved by the authorized officer for studies that are essential to management of the wilderness when no feasible alternatives exist. Such use must be the minimum necessary and must not degrade the wilderness character.

- Project leader(s) will maintain close coordination with the authorized officer to assure compliance with the policies of this plan.

Management Actions

- Evaluate research proposals on a case-by-case basis, ensuring conformance with the policies of this plan.



IMPLEMENTATION SEQUENCE

Wilderness Element/ Management Action	Target Date	Responsibility
VEGETATION		
Monitor vegetative communities using existing range and wildlife studies—new studies only when necessary	Ongoing	Shivwits R.A.--Range Cons. Biologist, Wilderness Spec.
Write a vegetation management plan specifying proposals for restoration and maintenance of the various vegetative communities.	FY92	Shivwits R.A.--Wilderness Specialist
WILDLIFE		
Review and amend, if necessary, the objectives/ proposed actions parts of the Parashaunt and Virgin River-Pakoon Basin HMPs (within the GWCW) to comply with wilderness management policy	FY93	Shivwits R.A. Biologist
Continue the program to reestablish and monitor bighorn in GWCW, subject to wilderness policy constraints	Ongoing	Shivwits R.A. Biologist
Remove burros and exotic animals as needed to prevent habitat degradation and competition with native species and initiate actions to prevent recurrence	As needed	Shivwits R.A. Biologist and/or Wild Horse Burro Specialist
Conduct desert tortoise monitoring studies to assess habitat potential, population densities and trend	Ongoing	Shivwits R.A. Biologist
Continue coordination of wildlife management in the GWCW between BLM and AFGD, as needed	Ongoing	Shivwits R.A. Biologist
RECREATION		
Write a sign plan that shows existing sign locations new sign proposals, and maintenance schedule	FY92	Shivwit R.A. Wilderness Spec.
Establish and monitor selected key areas for camping impacts, including loss of vegetative cover, soil compaction and campfire rings	Begin FY91	Shivwits R.A. Wilderness Spec.
Reclaim parking area near Grand Wash and Bobcat caves. Downgrade cave access road to a foot trail	FY93	Shivwits R.A. Wilderness Spec.
CULTURAL RESOURCES		
Conduct Class II field inventory to determine the extent of cultural resources in the GWCW	FY94	Shivwits R.A. Archeologist
Protect cultural resources in the GWCW by non-disclosure of site locations, public education, aerial/ground surveillance, and, if necessary, on-site protection	Ongoing	Shivwits Area Manager

Wilderness Element/ Management Action	Target Date	Responsibility
GRAZING MANAGEMENT		
Continue monitoring studies, including utilization, trend, actual use, precipitation and livestock counts	Ongoing	Shivwits R.A. Supervisory Range Con.
Inventory all range improvements within the GWCW. Abandoned or unnecessary improvements may be considered for removal	FY 91	Shivwits R.A. Supervisory Range Con.
Develop maintenance plans, together with grazing permittees, for those improvements that require motorized vehicle and/or motorized equipment use	FY 91	Shivwits R.A. Supervisory Range Con.
Hold annual coordination meetings with the grazing permittees to review and update maintenance plans	Annually	Shivwits R.A. Supervisory Range Con.
Incorporate maintenance plans into existing and new AMPs and into each grazing permit	FY 91	Shivwits R.A. Supervisory Range Con.
Revise existing AMPs, if necessary, to reflect wilderness management policies. Incorporate these policies into new AMPs	FY 91 and as needed	Shivwits R.A. Supervisory Range Con.
EMERGENCY SERVICES		
Review and, if needed, revise the District Search and Rescue Plan to reflect wilderness management considerations	FY 91	Shivwits R.A. Wilderness Spec. & District Ranger
Maintain contact with the Mohave County Sheriff's Department to discuss problems and needs	As needed	Shivwits R.A. Wilderness Spec. & District Ranger
INFORMATION AND EDUCATION		
Develop a map/brochure to include appropriate information, as outlined in the wilderness, recreation and cultural objectives and policies of this plan	FY 92	Shivwits R.A. Wilderness Spec.
Provide information about the GWCW on an as-requested basis	As needed	Shivwits R.A. Wilderness Spec.
SCIENTIFIC STUDY		
Evaluate research proposals on the basis of conformance with the objectives and policies of this plan	As needed	Shivwits R.A. Area Manager

COST ESTIMATES

Estimated annual expenditures for management of the GWCW will total $29,500 with an additional nonrecurring cost of $7,150. Specific components anticipated for GWCW management are identified below.

EXPECTED ANNUAL EXPENDITURES FOR THE GWCW:

Workmonths	$23,000
Vehicles	2,200
Sign & Blockade Maintenance	1,500
Travel	1,500
Use Supervision and Monitoring	1,000
Vegetation Monitoring	300
TOTAL	$29,500

NONRECURRING EXPENDITURES RESULTING FROM MANAGEMENT ACTIONS:

Produce Official Boundary Maps & Descriptions	$3,000
Produce New Visitor Map/Brochure	3,500
Write Sign Plan	150
Write Vegetation Management Plan	500
TOTAL	$7,150

WILDERNESS MANAGEMENT ACTIONS FUNDED BY OTHER RESOURCE PROGRAMS

(no cost estimates made for these actions)

Annual Meeting with Livestock Operators
Allotment Management Plan Revisions
Habitat Management Plan Revisions

ENVIRONMENTAL ASSESSMENT

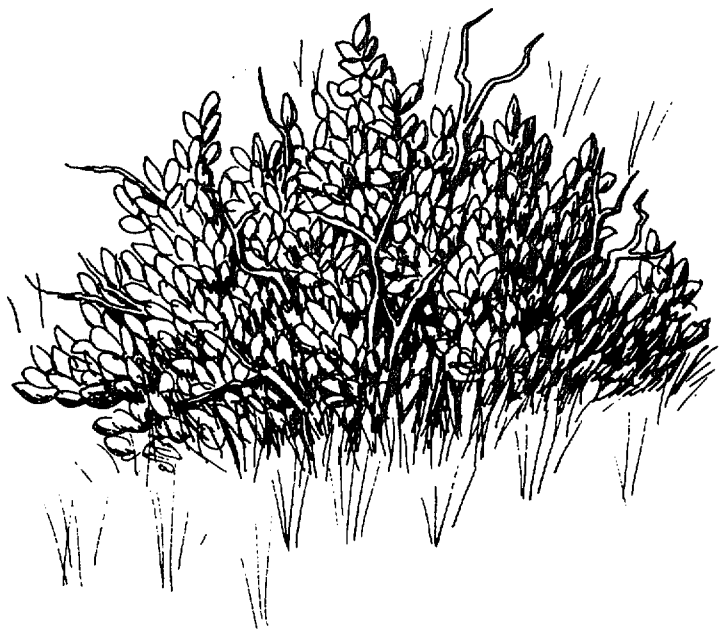
INTRODUCTION

Before wilderness designation, the Grand Wash Cliffs Wilderness was included in two Wilderness Study Areas that were analyzed in a draft environmental impact statement (EIS) of December 1982. Several other management plans and EAs have been written (on all or part of the GWCW) covering prewilderness management issues, such as livestock grazing and wildlife management. All of these documents are available at the Shivwits Resource Area or Arizona Strip District offices. This EA analyzes the effects of implementing the proposed action and two alternatives for managing the GWCW.

You will find background information, including purpose, organization, location, access, boundaries, natural and human values, and general management situation in the Introduction section (pp1-4).

PURPOSE AND NEED

BLM has developed the proposed action and alternatives in the EA to provide a range of practical management choices for carrying out Congressional intent--as specified in the *1964 Wilderness Act*, the *Arizona Wilderness Act of 1984* and subsequent regulations and policies. The EA identifies, documents and analyzes the impacts of the proposed management plan and two alternative management strategies.



DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

Three alternative management proposals are being considered for the GWCW. The final plan may select individual management prescriptions for more than one alternative or may include suggestions based on comments from the public or other government agencies. Under each alternative, site-specific EAs (subject to public review) would analyze proposals such as wildlife improvement projects or cultural property stabilization.

PROPOSED ACTION

The proposed action is based on a long-range goal of returning primarily the lower elevation portion of the GWCW to the vegetative condition that existed before the large fires of the past two decades and then maintaining that condition as nearly as possible. This alternative would enhance the naturalness and scenic quality of the area and would emphasize protection of opportunities for solitude and primitive and unconfined recreation, while providing for non-conforming but acceptable uses as required by legislation, regulation and policy.

ALTERNATIVE A - NO ACTION

Under this alternative, the GWCW would be managed through guidance from BLM *Wilderness Management Policy* and existing AMPs, HMPs and MFP decisions. The vegetation would be managed to match conditions immediately before wilderness designation (August 28, 1984) -- essentially annual grasses and forbs maintained by periodic wildfires in the desert area and the natural pinyon-juniper, joshua tree and blackbrush community on the bench. This alternative would result in maintaining current conditions in the GWCW.

ALTERNATIVE B - RESOURCE PROTECTION

Under this alternative, protection of the natural and cultural resources from all human impact would receive priority. No new range or wildlife improvements would

be allowed. Recreation use would be restricted or excluded, if necessary, to reduce or prevent human impact. The vegetation resource would be managed the same as under the proposed action. This alternative would result in enhancing the naturalness and scenic quality of the area, possible restrictions on primitive and unconfined recreation, and would eliminate any range and wildlife improvement construction.

AFFECTED ENVIRONMENT

You will find a description of the affected environment in the Introduction section (pp.1-4).

ANALYSIS OF THE PROPOSED ACTION AND ALTERNATIVES

Assumptions and Definitions

Impact analysis is based on the following assumptions and definitions:

- Each alternative is analyzed as if it were a fully funded action with all necessary personnel included.

- Plan implementation would begin in FY 1991.

- The short term is for five or fewer years, the long term for more than five years.

- The base against which the impacts of the proposed action and alternatives are judged is the condition existing at the time of designation, August 28, 1984.

ENVIRONMENTAL CONSEQUENCES

PROPOSED ACTION

Implementing the recreation management actions in this alternative would maintain or enhance the wilderness values in the GWCW without constraining wilderness recreation. Opportunities for solitude and primitive and unconfined recreation would be excellent due to low managerial presence, emphasis on off-site information and education dissemination and minimal signing.

The proposed recreation management actions of writing a sign plan and establishing key monitoring sites for recreation use would have negligible impacts. Long-term results of monitoring though, would be slightly beneficial by identifying potential problem areas before significant impacts occur.

If successful, vegetation and fire management proposals would have significant positive impacts over the long term, resulting in greater plant and wildlife species variety and a more natural-appearing landscape. Return of native Mohave desert vegetation would benefit desert tortoise and other non-game and small game habitat. Specific actions of writing a vegetation management plan and monitoring vegetation communities would have moderately positive effects by providing direction and guidance as well as information needed to reestablish native plant species.

Fire management operations would have varying degrees of temporary adverse impact, depending on the nature of actions taken. Use of slurry tankers, helicopters, engines and hand crews would disturb solitude and naturalness but long-term benefits would likely outweigh short-term disturbances by improving the native plant communities.

The proposed wildlife management action of continuing bighorn sheep reestablishment would enhance wilderness values by providing opportunities to observe or hunt bighorns in a wilderness setting. Bighorn sheep monitoring, which would include low-level helicopter flights by the AGFD, would have temporary adverse impacts to solitude and naturalness but would be limited to six to eight hours of flights once a year.

Burro and exotic animal control would cause some temporary low adverse impacts during the operations, but also long-term positive impacts by maintaining the native plant and animal species. Maintaining the existing wildlife water catchments and/or building another, if allowed, would have some adverse impacts on solitude and naturalness but would benefit many native animal species over the long term.

Reviewing and amending HMPs and coordinating with AGFD would ensure that wildlife management activities conform with wilderness policies, resulting in a slight positive impact to wilderness values. Desert tortoise monitoring studies would also have a positive effect by providing information needed to properly manage habitat for this species.

The grazing management actions of continuing monitoring studies, revising AMPs and developing motorized vehicle use plans would have a slight positive impact on wilderness values by ensuring that good grazing management practices continue and that vehicles are used only when necessary, thus reducing vehicle use from pre- wilderness levels.

Cultural resource management actions of conducting a Class II inventory and providing information on cultural resource protection would have a slight positive effect on this component of the wilderness resource.

Potential search and rescue operations involving the use of motorized vehicles would have short-term adverse impacts on solitude and naturalness.

ALTERNATIVE A - NO ACTION

With this alternative, management would be based on BLM *Wilderness Management Policy* and existing activity plans for the area. Most program administration would be the same as the proposed action except that the vegetation would be managed to maintain essentially the native plant community on the bench and annual grasses and forbs in the lower desert.

No cultural inventory would take place and no visitor brochure would be developed, and therefore no visitor education would be disseminated about no-impact camping techniques. The quality of the wilderness experience would be slightly lowered under this alternative.

ALTERNATIVE B - RESOURCE PROTECTION

Results of implementing this alternative would be similar to those of the proposed action. Possible restrictions on visitor use would have slightly positive impact on the natural resources but would limit opportunities for human enjoyment of the wilderness. Eliminating the possibility of further water development may limit the spread of the bighorn sheep in the northern portion of the GWCW.

With no new livestock improvements possible, livestock grazing would remain as it is now. Since no new improvements are being considered at this time and utilization, condition, and trend are generally good, impacts to either wilderness values or the grazing program would be minimal.

SUMMARY

Wilderness management under any one of these alternatives, combinations thereof, or any other feasible possibility would result in very little change in the physical, social or managerial settings as they are now. Some beneficial effects will occur through the reduction of motorized vehicle use along the bench road.

Recreation visitor use is extremely low and is expected to stay in a low range for the next five to ten years. This means possibly 100-200 visitors annually spending 2-3 days each in the area.

Vegetation management objectives of native plant reestablishment will occur slowly over a time span of decades even under ideal conditions, which include successful fire suppression in the annual grass areas as well as reintroduction of native perennial species.

Other elements, such as grazing management and cultural resources would be minimally impacted by any of the feasible management scenarios. Wildlife habitat, under those alternatives with vegetation improvement proposals would be positively impacted over the long term due to the increase in variety of habitats that would occur with a return to native vegetation in the lower desert area.

FINDING OF NO SIGNIFICANT IMPACT/DECISION RECORD
FINAL GRAND WASH CLIFFS WILDERNESS MANAGEMENT PLAN

Decision and Rationale: The selected alternative for this plan is the Proposed Action. This alternative was selected because it is consistent with the public comments received on the Draft Plan, legislative mandates, and Bureau policy.

Findings of No Significant Impact: Based on the analysis of potential environmental impacts contained in the environmental assessment, I have determined that impacts are not expected to be significant and an environmental impact statement is not required.

Prepared by _____ June 20, 1990
George W. Cropper, Area Manager — Date
Shivwits Resource Area

Recommended by _____ June 20, 1990
G. William Lamb, District Manager — Date
Arizona Strip District

Approved by _____ June 20, 1990
Lynn H. Engdahl, Acting State Director — Date
Arizona

APPENDIX A
FIRE MANAGEMENT PLAN

INTRODUCTION

The Grand Wash Cliffs Wilderness lies about 50 miles south of St. George, Utah in Mohave County Arizona. The 36,000 acres of wilderness are along the Grand Wash Cliffs—about half at the foot of the lower Grand Wash Cliffs and half on the Grand Wash Bench.

Vegetation in the wilderness ranges from the Mohave Desert vegetation type to the Pinyon-Juniper vegetation type. Plant species include creosote bush, baccharis, snake weed, Joshua trees, blackbrush, cliffrose, pinyon, juniper, sand dropseed, Indian ricegrass, black gramma, blue gramma, sideoats gramma and various cacti. Also found over much of the wilderness are two non-native species—cheatgrass and red brome.

This plan will guide fire management in the GWCW and will also be incorporated by reference into the Pakoon Basin Fire Management Plan which is to be completed later.

OBJECTIVES FOR FIRE MANAGEMENT IN WILDERNESS

The following objectives relating fire management to other resource programs, public safety, protection of property, and legislative/administrative policies will guide the fire management program in the Grand Wash Cliffs Wilderness Area.

- Maintain a natural fire regime in the areas dominated by native vegetation.

- Minimize acreage burned in areas dominated by annual grasses and forbs.

- Use fire suppression strategies that will ensure protection of wilderness resources, human safety, and property while minimizing evidence of suppression.

FIRE HISTORY

Two distinct periods of fire history are 1) before 1870 and 2) after 1870 when human influence began.

Fire occurrence was rare in GWCW before modern man came to the area. The Mohave Desert Type did not typically produce enough vegetation to keep a fire burning more than a few yards.

Around 1870 ranchers began to run livestock in the Pakoon Basin and in the area of the Grand Wash Cliffs. About 1900 two Mediterranean grasses were introduced into the United States—cheatgrass and red brome. These prolific annual grass species had, by the 1930's, entered the Pakoon Basin and Grand Wash cliffs area and established themselves in pockets. The grasses grew in the spring, cured and provided a flashy fuel source to carry fires. The size of the fires increased with the increase in fuel source.

These fires burned hot enough to kill some existing desert vegetation each time; therefore the annual grasses had less competition for water. The cycle of fires killed existing vegetation (removing competition) and the annual grasses then came back even more profuse—leading to more flashy fuel and thus more fires. The average fire size has increased as these annuals have proliferated. Recent fire records indicate burns average around 500 acres with the largest being 10,000 acres in 1980.

FIRE REGIME

A natural fire regime is the total pattern of fires in vegetation, over time, characteristic of a natural region or ecosystem, with all the variations in ignition, fire intensity and behavior, fire size, recurrence intervals and ecological effects.

The two different fire regimes within the wilderness are 0 and 2 on the Heinselman Continental Fire Regime scale. (Miron Heinselman-Professor, department of Ecology and Behavioral Biology - University of Minnesota).

0=No natural (or very little). -**the native Mohave Desert type**
1=Infrequent light surface fires(more than 25 yr return interval).
2=Frequent light surface fires (1 to 25 year return intervals). - **non-native annual grasses.**

3=Infrequent severe (often high intensity) surface fires (more than 25 year return interval).
4=Short return interval crown fires and severe surface fires in combination (25 to 100 year return intervals).
5=Long return interval crown fires and severe surface fires in combination (100 to 300 year return intervals).
6=Very long return interval crown fires and severe surface fires in combination (over 300 year return intervals).

NATURAL ROLE OF FIRE

The natural role of fire has not been a dominant factor in controlling the natural ecosystem in this area. The natural vegetation remaining in the area shows no evidence of fire activity. Joshua trees (a very long-lived species easily killed by fire) in the Pakoon Basin and along the Grand Wash Cliffs are evidence of a lack of large fires in the past.

The present ecosystem over much of the area in the wilderness is much different. Years of good spring precipitation and favorable temperatures produce a dense stand of annual grass that cures and provides a ready fuel source. This results in the frequent light surface fires on a 1- to 25-year return interval. The return interval in the GWCW seems to be 7 to 8 years. Fires as large as 20,00 acres in the Pakoon Basin and 10 to 15,000 acres in the wilderness are very real possibilities at the present time.

Each large fire in the wilderness area expands the area covered by annual grasses as more and more of the native vegetation is lost. This cycle could conceivably change the remaining unburned vegetation in the wilderness area to annual grassland leaving no native vegetation.

To date, on the bench, fire occurrence has been more and the fires smaller than those in the lower lands. Before wilderness designation, several fires had burned up the cliffs but consumed only relatively small areas before being suppressed or going out naturally.

PROPOSED DEGREE OF SUPPRESSION

Suppression tactics in the native vegetation zone will be based on allowing natural fire to play its role in the ecosystem; however these fires will be monitored. The fire management team may determine that suppression is necessary in cases of threat to human safety or to resources outside the wilderness.

In the annual vegetation zone, tactics will be based on quick suppression of the fire with minimum disturbance.

A wilderness resource advisor will be sent to any fire that has any potential of escaping initial attack. The resource advisor advises the incident commander about resource values with the potential of being impacted either by the fire or the suppression actions themselves.

In the event a fire escapes initial attack an escaped fire situation analysis will be completed to determine the management strategy for the fire. This analysis will be completed by the district fire management officer, the area manager and the incident commander. The analysis can be completed either in the field or in the office and should take no more than one hour to prepare. Management strategies include confinement, containment, or control of the fire.

Five years out of seven the low precipitation on the annual- grass-and-forb lands produce little annual vegetation and pose little fire threat. However, during those years that annual grasses are produced in sufficient quantities, aggressive initial attack of fire starts will be needed to meet the fire objectives outlined above.

The line between the two suppression zones will generally be along the top of the lower cliffs. However, this line may vary from year to year based on an assessment of fuel loading and potential fire danger.

Suppression tools and equipment will be limited to the minimum necessary to accomplish the task with the least impact to wilderness values. The primary method of initial attack will be with the use of aircraft—large air tankers, a single engine air tanker, or helitack. "Fugitive-type retardant" will be used in the wilderness. Primary support for aircraft will be hand crews.

Essential vehicles may be approved for all interior trails and roads, but off-road vehicle use within the GWCW boundaries requires district manager approval. If an urgent or emergency situation involving threat to life or property exists, the incident commander may approve the use of vehicles. Mechanized equipment for cutting firelines will not be allowed.

PRESCRIBED BURNING

Prescribed fires, ignited by BLM personnel, will be considered on a case-by-case basis only if it can be clearly shown that burning would correct an unnatural situation caused by past fire suppression or would serve

to reduce fire danger in the area dominated by annual vegetation. For prescribed fires in the wilderness a site-specific plan, approved by the state director, is required.

FIRE BEHAVIOR

Expected fire behavior in the annual vegetation will be high intensity, fast moving surface fires. Rates of spread will be extremely high due to the light flashy fuels and the high, erratic winds associated with the lightning-producing thunderstorms that ignite these fires.

Fire behavior in the native vegetation zone will not be as intense or fast-moving as in the annual vegetation zone. Spread potential in the pinyon-juniper is extremely low. Spread potential in the blackbrush and sagebrush is expected to be low to moderate. Overall, any moderate or large (more than 500 acres) fire would be very unlikely except under extreme burning conditions.

SMOKE MANAGEMENT

Even the most intense fires in the wilderness will not pose much of a smoke management problem. The fuels are light, less dense and tend to burn quickly resulting in less smoke. Transport winds during fire season are from the southwest and carry the smoke away from any smoke sensitive areas.

REHABILITATION

Rehabilitation measures may help reduce the risk of a large catastrophic fire in the future. Rehabilitation would be primarily the seeding of native perennial grasses and/or shrubs in natural-appearing patterns, strategically located to serve as fire breaks.

An EA is required for rehabilitation projects.

APPENDIX B - MOTORIZED/MECHANICAL EQUIPMENT USE FOR RANGE IMPROVEMENT

Congressional guidance in *House Report 96-1126* which accompanied the *Central Idaho Wilderness Act of 1980* provides overall direction for management of grazing, including criteria for the possible use of motorized vehicles in livestock management or maintenance of range improvements.

The language of the house report is very clear in its intent that livestock grazing (when established prior to wilderness designation) and necessary facilities to support a livestock grazing program will be permitted to continue. The house report further states that wilderness designation should not prevent the maintenance of existing fences or other livestock management improvements, nor the construction and maintenance of new fences or improvements which are consistent with allotment management plans and/or which are necessary for the protection of the range.

The house concluded that the general rule of thumb on grazing management in wilderness should be that activities or facilities established prior to the date of an area's designation as wilderness should be allowed to remain in place and may be replaced when necessary for the proper administration of the grazing program.

Interim range improvement maintenance schedules have been developed for the Grand Wash Cliffs Wilderness (GWCW) -- based on Congressional intent and the following criteria from BLM Manual 8560:

- Minimum threat to or loss of property

- Minimum use of motorized equipment within wilderness

- Development and management of rangeland resources in cost- effective manner

- The least amount of impact on wilderness values from non- conforming uses by 1) scheduling during periods of low use, 2) harmonizing improvements to surrounding landscape, 3) locating improvements to achieve maximum screening and 4) fully utilizing natural feature opportunities

- Type of practice or construction material

- Timeliness, including the frequency and the time of year

- Need to deal with emergency or urgent situations that develop through acts of nature, such as drought or heavy snow

- Location of nearest ranch facilities in relation to the project

- Availability of primitive transport, e.g., team and wagon, saddle and pack stock, etc.

- Length of time to complete a project by alternative methods

- Availability to temporary camp and feed sites

- Age and health factors of permittee

Final maintenance plans are under development. The process for these plans is described in this narrative.

A list of all range improvements known to be in the GWCW has been compiled and is summarized in Table 4.

Available data from such sources as project files, maintenance inspections, aerial photos, employee and permittee knowledge and field inventories (when necessary) will be compiled for each project.

Using this information and following the BLM *Wilderness Management Policy* criteria the authorized officer will, after consultation with the affected permittee, determine and document which projects are needed to continue the grazing management program and which are not.

Those not needed will no longer be maintained and the person responsible will be notified to discontinue maintenance. If removal is determined to be practical and motorized equipment needed and/or significant surface disturbance is possible, an Environmental Analysis (EA) and Decision Record (DR) will be prepared to analyze impacts, document the best removal method and identify any mitigating measures.

Needed developments will be further analyzed as to the need for and type of motorized equipment required for their maintenance, based on the information compiled from the above criteria. The developments will be grouped into three categories for analysis purposes based on need for and type of possible motorized vehicle and/or equipment use.

Any project may be independently evaluated through the remainder of the process at separate times for either routine maintenance or reconstruction where more equipment may be required. Project reconstruction will be evaluated in the same manner as maintenance needs.

The first category includes those projects where it is conclusively determined that neither motorized vehicles nor mechanized equipment will be required in maintenance. No further analysis will be made for these projects.

A list of these projects will be prepared, the grazing permittee notified and the list and maintenance decision made a condition of the AMP and grazing permit by reference. On this basis, the permittees will be authorized to proceed with non-motorized maintenance. Compliance with these non-motorized requirements will be a component of BLM's wilderness monitoring program.

A second category will include those projects where motorized vehicle use is deemed necessary to inspect or maintain the improvements. Normal vehicle use expected would be ATV's or trucks up to 2-1/2 tons to haul materials or livestock.

An environmental analysis (EA) will be prepared to analyze environmental impacts—the type, frequency of and access routes for motorized vehicles on each project or group of projects where the proposed vehicle uses and the potential environmental impacts are similar.

It will also consider other factors such as minimum tools or possible project relocation outside of the wilderness. These EAs and subsequent DRs will be prepared in priority order as rapidly as possible following issuance of the final Wilderness Management Plan and will be available for public review upon request.

A maintenance plan will then be prepared in consultation with the permittee and will be based on mitigating measures developed in the EA. It will detail timing, vehicle type, number of trips, authorized person(s) and record-keeping requirements. This plan will be incorporated into the grazing permit and AMP by reference and will, upon approval, authorize the permittee to make motorized uses as specified during the normal grazing period for the allotment.

In making uses authorized in the maintenance plan, each permittee will be required to keep accurate records of date, time, type of vehicle, access used, purpose and duration of any motorized entry. This log will be submitted to the BLM at the end of the grazing period.

Any use of motorized vehicles not covered in the plan will normally require advance authorized officer approval. Since the wilderness is remote from communication facilities, the maintenance plan will provide for correcting *emergency* situations while on the scene and notifying the authorized officer as soon as possible afterward.

Field compliance on these motorized vehicle entries will be made and documented. Findings can then be compared to the records submitted by the permittees to detect and correct discrepancies or violations.

Vehicle entry deemed necessary specifically for livestock management purposes other than project maintenance, such as hauling livestock or large quantities of salt block, will be processed in the manner described above with the same constraints, reporting requirements and monitoring procedures.

The third category includes those developments where heavy earth-moving equipment is proposed. These proposals will require a minimum 60-day notice from the permittee that this type of equipment is needed. The project is examined in the field and a site-specific EA is prepared that examines the need for maintenance and alternatives of access, equipment, tools, timing and possible relocation as well as recommending mitigating measures and reclamation requirements. A DR is then prepared that selects an alternative with mitigating measures or a no action alternative.

If the decision permits the action to proceed, the permittee is notified of the terms and timing approved. It is standard procedure to have a BLM wilderness or surface protection specialist on site during any earth-moving operations to assure compliance with terms and to supervise reclamation.

During these processes reconsideration of original criteria may change perceptions of what is needed to accomplish the desired result. A different procedure would then be followed. At any point in this process, the authorized officer will consider all information available

at that point to approve or deny proposals for emergency motorized use to protect livestock or property. Considerations will include validity of the emergency and potential impacts to wilderness values.
A summary of the range improvements known to exist in the Grand Wash Cliffs Wilderness and to be analyzed under these procedures include:

Miles of livestock fence	6.5
Number of reservoirs	4
Number of corrals or water lots	3
Miles of livestock or truck trail	2
Acres of land treatment (seeding)	750

APPENDIX C

PLAN AND ENVIRONMENTAL ASSESSMENT PARTICIPANTS

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USDI – Bureau of Land Management
Arizona Strip District

Grand Wash Cliffs Wilderness
(36,300 Acres)

LEGEND

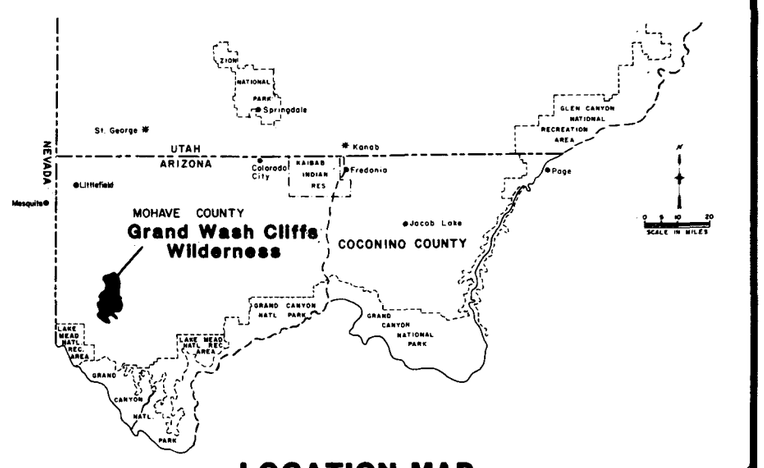
- Wilderness Boundary (Approximate)
- Improved Road
- 4 Wheel Drive Road
- Wildlife Water Catchment
- Livestock Water Reservoir

North

0 1/2 1 2

Scale in Miles

December 1984



LOCATION MAP