



U.S. Department of the Interior
Bureau of Land Management
Arizona State Office

Phoenix Resource Area

April 1995



Hell's Canyon

Wilderness Management Plan, Environmental Assessment, and Decision Record



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Hell's Canyon Wilderness Management Plan, Environmental Assessment, and Decision Record

U. S. Department of the Interior

Bureau of Land Management

Phoenix District

Phoenix Resource Area

Yavapai and Maricopa Counties
Arizona

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Plan Summary

Background

- The Arizona Desert Wilderness Act of 1990 designated the 9,311-acre Hell's Canyon Wilderness, 35 miles north of downtown Phoenix.
- Bureau of Land Management (BLM) policy requires the development of a management plan that will:
 - protect wilderness values,
 - allow for visitor use and enjoyment,
 - allow for the minimum tool to be used to accomplish resource objectives inside the wilderness and
 - allow legislatively accepted uses such as livestock grazing and mining.
- Protection of current wilderness conditions is the priority, considering expected large visitor increases due to development of nearby Lake Pleasant Regional Park.
- Public meetings and mailings assisted the BLM in developing Hell's Canyon's wilderness issues.
- The Public Work Group assisted in plan development.

Main Features of the Proposed Plan

- At the end of the plan's five-year life, the BLM will reevaluate management of the Hell's Canyon Wilderness.
- Objectives are established to preserve naturalness and provide for primitive recreation opportunities. Seventeen specific actions stem from the objectives.
- Wildfire will be suppressed using aircraft and "fugitive" fire retardant whenever possible. The BLM authorized officer may approve the use of motorized and mechanized equipment under special conditions.
- No vegetation gathering permits (i.e., wood, jojoba) will be issued.
- No new range or wildlife developments are proposed.
- Vegetation conditions will be monitored to ensure that naturalness values are maintained or improved.
- Existing livestock operations are allowed to continue.

- Range developments and the U.S. West telephone line may be maintained according to schedule.
- Approximately 10 miles of trails have been identified. Trail registers will be installed at the access points for four trails.
- Visitor use will be monitored to ensure that trail use and camping activities are low to maintain opportunities for solitude and primitive recreation.
- A total of 640 acres of private surface is identified for acquisition.
- Motorized use within the wilderness is limited to:
 - periodic maintenance of range developments,
 - response to life- and property-threatening emergencies,
 - pursuit of felons, suspected felons or game law violators,
 - aerial wildlife and wild burro inventories and
 - burro capture and removal, if necessary.

Part I - Introduction

Purpose And Background

The purpose of this plan is to guide management of the Hell's Canyon Wilderness for the next five years. Authority for establishment of the area is the Wilderness Act of 1964 (Public Law 88-577) and the Arizona Desert Wilderness Act of 1990 (Public Law 101-628) enacted November 28, 1990.

This interdisciplinary implementation plan amends all previous planning direction for this planning area. Specifically, the plan amends the Black Canyon Habitat Management Plan (1993) and the Phoenix Final Resource Management Plan Environmental Impact Statement (1988b). In addition, the plan supersedes the Burro Inventory Environmental Assessment (1991a), the Wildlife Inventory Environmental Assessment (1991b) and the Draft Range Improvement Maintenance Plan (n.d.).

The wilderness characteristics that motivated Congress to designate Hell's Canyon Wilderness will be preserved by implementing the Hell's Canyon Wilderness Management Plan. The BLM will manage the Hell's Canyon Wilderness for its scenic, resource and recreational values and opportunities for solitude. Naturalness and recreation objectives have been established for the wilderness. The management actions for achieving each objective are detailed in this plan.

The BLM will reassess the effectiveness of this plan in 1999. Use of the Hell's Canyon Wilderness may increase dramatically in the final three years of the plan's life due to the expansion of Lake Pleasant and the Regional Park to the east. Park visitation is projected to exceed one million persons per year when the facilities are fully operational. More intensive management may be required to protect the natural values and primitive recreation opportunities in the wilderness.

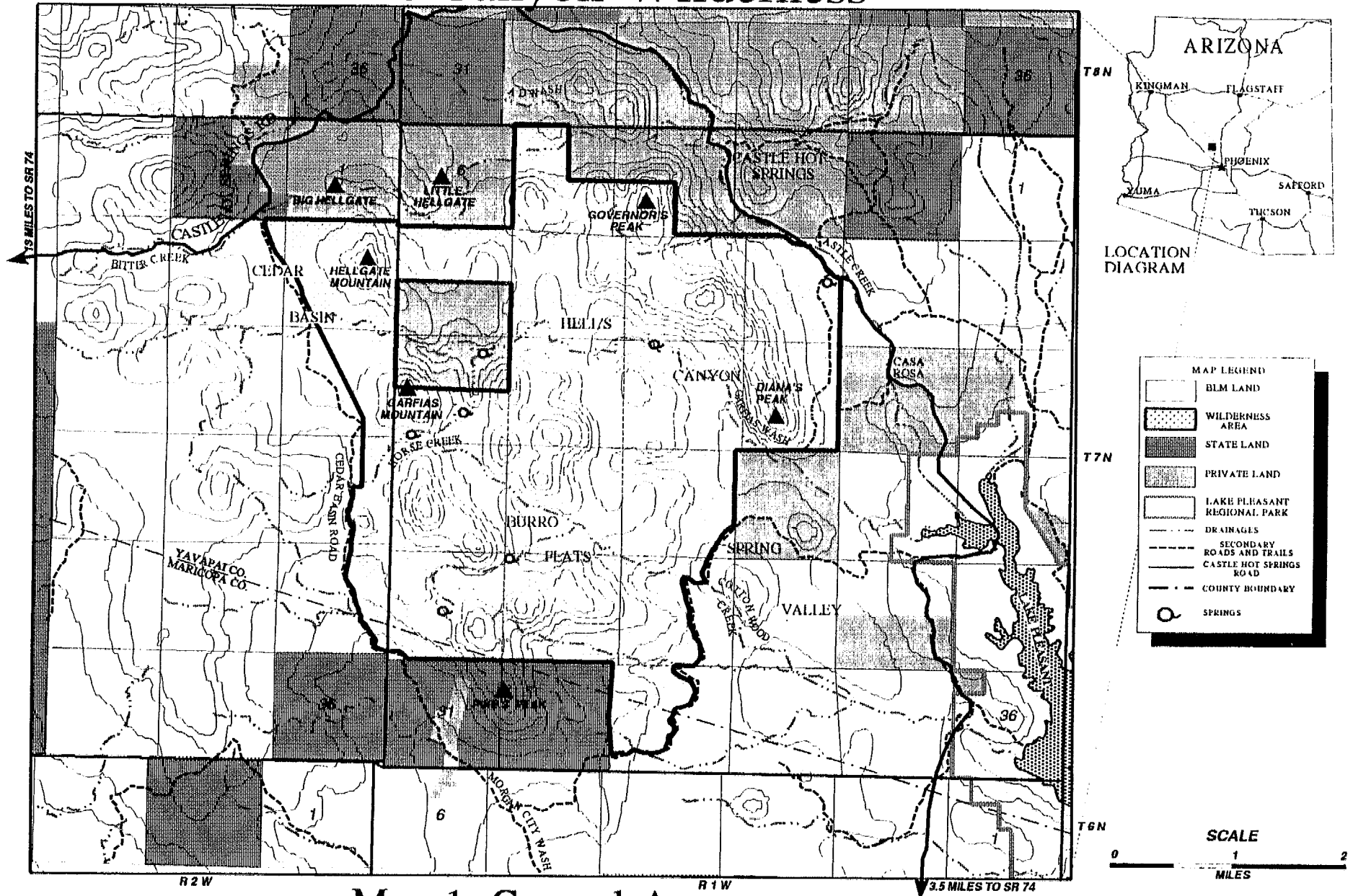
Wilderness Overview

Location and Access

The 9,311-acre Hell's Canyon Wilderness is 35 miles northwest of downtown Phoenix and one mile northwest of Lake Pleasant in Yavapai and Maricopa counties (see Map 1). The acreage does not include a 640-acre private inholding.

Portions of the east side of the wilderness are bounded by Castle Hot Springs Road and Castle Creek. One route providing legal access to the Hell's Canyon Wilderness is Castle Hot Springs Road, a major access road from State Route 74, maintained by Yavapai County. The road is accessible by two-wheel-drive vehicles during much of the year; however, high-clearance and four-wheel-drive vehicles are recommended during wet weather. The southeast and southern edges of the wilderness are bounded by Spring Valley Road, which is accessed from Morgan City Wash. Cedar Basin Road, the access and the boundary on the western edge of

Hell's Canyon Wilderness



Map 1: General Area

the wilderness, is periodically maintained by the BLM.

The Hell's Canyon Wilderness is in all or portions of secs. 4, 5, 7 through 10, 15 through 21, 28 through 30 and 33, T. 7 N., R. 1 W. and secs. 11 through 13, 24 and 25, T. 7 N., R. 2 W., Gila and Salt River Base and Meridian.

Wilderness Values and Unique Attributes

The Hell's Canyon Wilderness contains outstanding values of naturalness and opportunities for solitude. The wilderness is in the Hieroglyphic Mountain range and consists of rugged, highly dissected mountains with numerous small, twisting canyons. Several peaks encircle Burro Flats and other interior basins, effectively isolating them from the surrounding countryside. Predominant peaks include Garfias Mountain (3,381 feet or 1,031 meters) and Hellgate Mountain (3,339 feet or 1,018 meters), both featuring steep slopes and cliff-face peaks. The most distinctive feature of the wilderness is its namesake, Hell's Canyon, a deep, narrow gorge.

Vegetation consists primarily of Sonoran desertscrub, dominated by a paloverde/saguaro plant community. A unique feature of the wilderness is Cedar Basin, which includes a small enclave of juniper woodland adjacent to the Sonoran environment.

The most prominent landforms within the wilderness are the result of Mid-Tertiary volcanic processes. The mountains are rugged and highly dissected. Minor occurrences of silver, gold and copper mineralization exist in hydrother-

mal zones in the volcanic rocks in the west-central portion of the wilderness. Few exposures of the older underlying schist and granite can be observed.

General Management Situation

Wildlife

The Hell's Canyon Wilderness is in Arizona Game and Fish Department Unit 20B, administered by Region VI. Mule deer, javelina and mountain lion are the three big game species in the area. Small game animals include desert cottontail rabbits, mourning dove, white-winged dove and Gambel's quail. Hunting occurs mainly in the rolling hills of the southern part of the wilderness. The Arizona Game and Fish Department currently inventories big game populations once a year by helicopter. Inventory activities were authorized in 1991 (U.S. Department of Interior, 1991b).

Two special status wildlife species (the Arizona toad and the desert tortoise) are known to occur in the area and one additional species (the lowland leopard frog) may be present (see Table 1). The Black Canyon Habitat Management Plan (1993) outlines the wildlife management strategy for an area which includes the Hell's Canyon Wilderness. No projects are proposed within the wilderness under this plan.

Livestock Grazing

The wilderness incorporates portions of the Eleven L, Castle Hot Springs, Two Shoe and Cottonwood Creek grazing allotments (see Table 2). Map 2 shows their boundaries in relation to the wilderness boundary and indicates locations of range developments. All are perennial/

Common Name	Scientific Name	Status	Occurrence
Lowland leopard frog	Rana yavapaiensis	C2, C	P
Arizona toad	Bufo microscaphus microscaphus	C2, C	X
Desert tortoise	Gopherus agassizii	C2, C	X
Hohokam agave	Agave murpheyi	C2	P

C2 = Federal candidate Category 2
 C = Arizona threatened native wildlife candidate
 X = Known to occur
 P = Undocumented but potentially occurs

ephemeral allotments supporting yearlong cow/calf operations. No allotment management plans exist for these allotments. No new range developments are proposed during the life of the plan. Any proposals will be considered on a case-by-case basis.

Wild Burro Management

The Wild Horse and Burro Act (1971 Public Law 92-195) requires the BLM to manage wild burros on public lands. The Phoenix Resource Area is responsible for maintaining a healthy, viable population of wild burros in the 81,000-acre Lake Pleasant Herd Management Area. The wilderness comprises about 12 percent of the burro herd management area, providing habitat for a portion of the estimated 225 burros in the herd management area. Forage use by burros in the wilderness is light to moderate, with most use during the cooler months, October through April.

Currently, population surveys and vegetation monitoring data do not exist to warrant removal of any burros from the wilderness or herd management area.

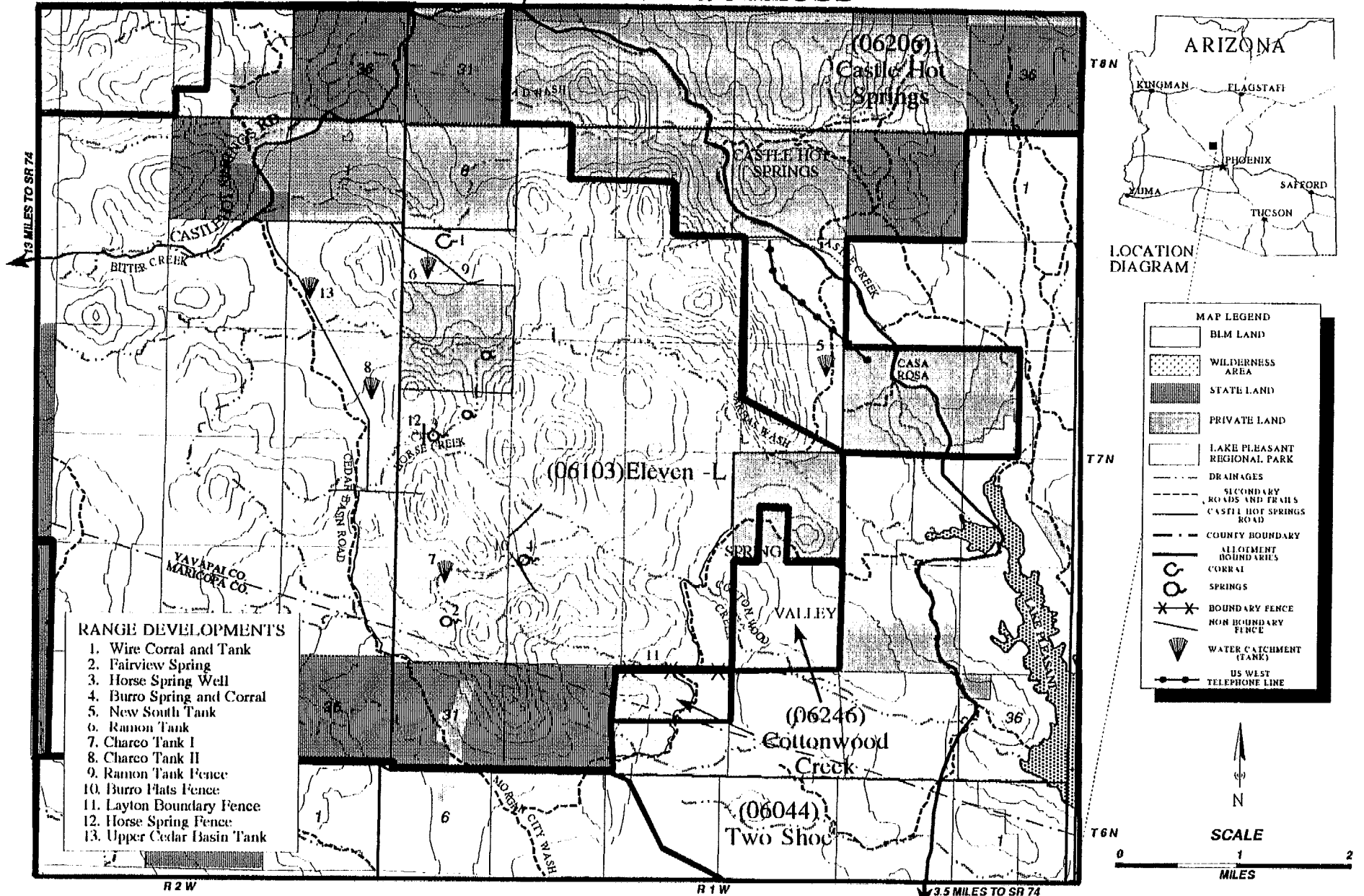
The BLM conducts a low-level aerial inventory of the entire herd every two to three years. Inventory activities were authorized in 1991 (U.S. Department of Interior, 1991a).

Vegetation

The vegetation of the Hell's Canyon Wilderness is predominantly the Arizona Upland subdivision of the Sonoran Desert with foothill paloverde (*Cercidium microphyllum*), saguaro (*Cereus giganteus*), triangleleaf bursage (*Ambrosia deltoidea*) and creosotebush (*Larrea tridentata*). Cedar Basin, in the northwestern corner of the wilderness, is a relict stand of low-elevation juniper woodland.

Allotment Name/Number	Total Animal Unit Months	Percentage of Wilderness Acres in Allotment	Percentage of Allotment Acres in Wilderness	Comments
Eleven L (06103)	1,962	87	42	Stocked at less than full preference in recent years
Castle Hot Springs (06206)	60	10	93	Full preference in recent years
Two Shoe (06044)	18	1	<1	Full preference in recent years
Cottonwood Creek (06246)	96	2	20	Full preference

Hell's Canyon Wilderness



Map 2: Range Developments and US West Telephone Line

Sonoran Desert vegetation grows on the surrounding hillsides. The basin is considered unusual due to the presence of juniper and saguaro almost side-by-side. It contains redberry juniper (*Juniperus erythrocarpa*), scrub live oak (*Quercus turbinella*), wait-a-minute bush (*Mimosa biuncifera*), red barberry (*Berberis haematocarpa*) and turpentine bush (*Haplopappus linearifolius* and *H. laricifolius*). Various chaparral species may also occur on north-facing slopes within the wilderness. No federally listed threatened or endangered plants have been found in the wilderness. Hohokam agave (*Agave murpheyi*), a candidate Category 2 plant species, may occur in the wilderness (see Table 1).

Ecological condition is the vegetative state of an ecological site in relation to the natural potential plant community. Ninety percent of the wilderness is currently considered to be in fair to good ecological condition while the remaining 10 percent is considered poor. At present, the trend overall is static. Ecological changes occur very slowly in the area and very little change is expected during the next five years.

Soils

The majority of the soils are characterized as very shallow to shallow, derived from colluvium and alluvium of basalt, andesite, granite and/or schists. Soils are well drained with textures ranging from very fine sandy loams to clay loams, also gravelly, cobbly and/or stony throughout (U.S. Department of Agriculture 1976, 1986).

Minerals

The Governor's Peak area is a "window" exposing Precambrian granites and

schists. There are no mining claims in the Hell's Canyon Wilderness.

Water

The Hell's Canyon Wilderness is in the Agua Fria River watershed, a subbasin within the ongoing Gila River System and Source General Water Rights Stream Adjudication. There are no perennial streams in this wilderness. Garfias Wash, an ephemeral stream draining the area, flows east-southeast out of the wilderness into Castle Creek, which flows into Lake Pleasant.

Congress reserved a quantity of water for each wilderness sufficient to fulfill the purposes of the Arizona Desert Wilderness Act. The priority date established for this reservation was November 28, 1990, the actual date of the Act. The BLM must inventory and quantify these rights and submit notification to the Arizona Department of Water Resources. All existing senior rights are protected. The BLM has filed water rights claims on springs, wells and stockponds for livestock, wildlife, wild burros and recreation purposes in the wilderness in the Agua Fria River Adjudication. In addition, private individuals (i.e., grazing permittees) have filed claims for water in the wilderness. Other water sources need further evaluation.

Known water sources include five springs, two wells and six stockponds. Water quality and quantity data for these sources are not complete. Water in the wilderness cannot be guaranteed safe for human consumption without prior treatment.

Air Quality

The Hell's Canyon Wilderness is designated as a Class II air quality zone

unless it is reclassified by the state of Arizona (BLM Manual 8560.36) as a result of the procedures prescribed in the Clean Air Act (42 U.S.C. 7401 as amended, 1977).

Cultural Resources

Four prehistoric sites have been recorded in this wilderness. However, little survey has been conducted to identify cultural resources. The varied topography of canyons, ridges and flowing springs is likely to contain significant prehistoric cultural sites. Prehistorically, the area was utilized by the Hohokam and possibly the Prescott branch of the Patayan Culture. During the late prehistoric period and continuing through the mid-1800s, the area was likely utilized by the Yavapai, a upland Yuman group. No traditional cultural properties have been identified.

One historic cultural site has been identified. Ranching and mining have been economic mainstays since the 1860s and remains of these activities may be found in the future.

Cultural resources in the Hell's Canyon Wilderness have been allocated to scientific use category in accordance with Cultural Properties in the Phoenix Resource Area Cultural Resource Management Plan (U.S. Department of Interior, 1991c).

Recreation

Outstanding opportunities for solitude and primitive recreation exist throughout much of the wilderness because of topographic and vegetative features. Numerous washes, canyons and peaks provide visitors with opportunities for seclusion. The predominantly mountainous terrain offers opportunities for rockclimbing, hiking and

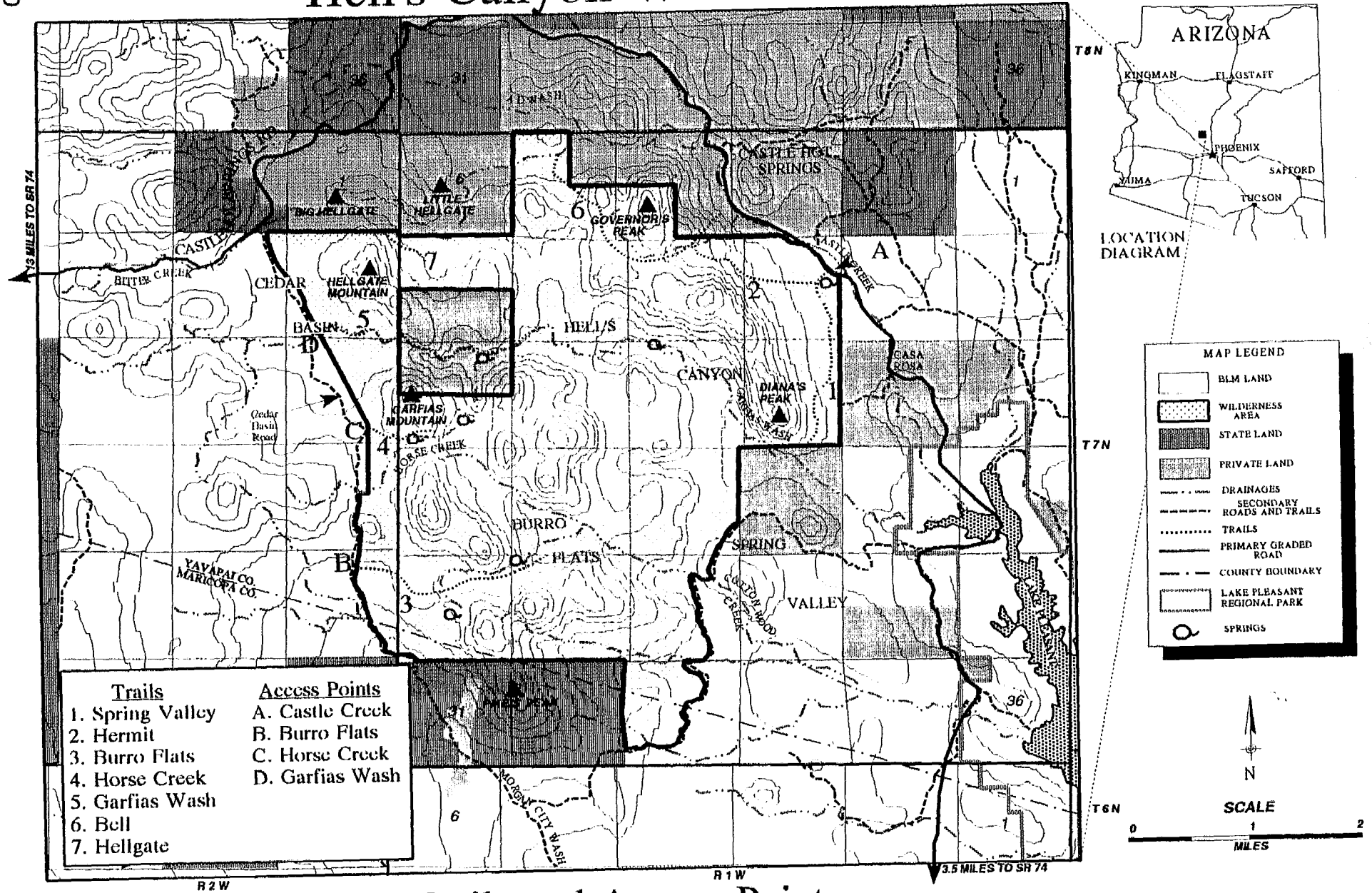
sightseeing. Known trails total more than 10 miles and traverse mountain, canyon and bajada environments (see Map 3). The Sonoran Desert landscape, geological features, wildlife and the Lake Pleasant burro herd (some individuals roam the wilderness) provide quality photographic opportunities.

A major threat to solitude is the development of Lake Pleasant and the Regional Park. The surface area of Lake Pleasant has tripled since completion of the New Waddell Dam and the park is being developed to accommodate an estimated one million visitors per year. Recreation use is expected to be light through 1995. However, with the advent of increased park visitation, use of the Hell's Canyon Wilderness is likely to increase greatly over the following three years.

Systematic visitor use studies have not been conducted in the Hell's Canyon Wilderness. The wilderness environmental impact statement (U.S. Department of Interior, 1987) for the study area estimated use levels to be low, most of which appears to be hiking or equestrian day use. At present, only limited recreation use data are available for this wilderness. Preliminary wilderness inventories of existing trails and visitor use show little evidence of regular use. The main season of use is September 1 through April 30.

The trail system provides the visitor with spectacular, pristine views of Sonoran Desert canyons and cliffs. Lake Pleasant is visible from trail vistas in the eastern portions of the wilderness. Trails follow former vehicle routes or canyon corridors. Currently there are no formal portals such as designated parking areas or visitor registers for any of the trails.

Hell's Canyon Wilderness



Trails	Access Points
1. Spring Valley	A. Castle Creek
2. Hermit	B. Burro Flats
3. Burro Flats	C. Horse Creek
4. Horse Creek	D. Garfias Wash
5. Garfias Wash	
6. Bell	
7. Hellgate	

Map 3: Trails and Access Points

No permit system exists for individual activities in the wilderness. No commercial permits have been issued to date; however, several outfitters have expressed interest in pursuing commercial trail rides within the Hell's Canyon Wilderness.

The historic Castle Hot Springs Resort, currently vacant, sponsored rides in the area for years prior to wilderness designation.

Law Enforcement/Search and Rescue

Law enforcement activities are conducted by BLM rangers, Arizona Game and Fish Department, and County Sheriff's Deputies. BLM officers are responsible for investigating resource protection violations. The Arizona Game and Fish Department enforces hunting and fishing laws. The County Sheriff's offices have jurisdiction regarding crimes against persons and property. Due to the remoteness of certain areas, response time to an incident can be approximately two hours. The Sheriff's offices of Maricopa and Yavapai counties are the lead agencies on any search-and-rescue incidents in the wilderness. Unauthorized vehicle intrusions occur occasionally in the areas of Garfias Wash and Spring Valley.

Fire

Historically, fires in this wilderness are rare. Hell's Canyon consists primarily of desert shrub fuels. Annual fuel accumulation is generated by winter season precipitation. During years of high precipitation, the annual fuels can be abundant and

significantly increase the fuel loading and fire potential. Fires are best characterized as fast-moving fires of medium intensity. Since 1980, two fires have been known to occur in the wilderness (see Table 3).

Existing Developments

Evidence of modern development occurs in the form of seven trails totalling at least 10 miles. Included in these 10 miles are former vehicle routes comprising 4.2 miles leading to springs and wells. Range developments include three developed springs, two wells, four fencelines and six earthen reservoirs (see Map 2).

An unauthorized U.S. West-owned telephone line was installed in the 1920s along Castle Creek, according to U.S. West sources (see Map 2). Wilderness inventories of the 1970s and early 1980s do not report the existence of the line. Congress was ostensibly unaware of this encroachment when Hell's Canyon was designated as wilderness in 1990. The telephone line serves Casa Rosa, one-half mile east of the wilderness, along Castle Creek.

The trails, range developments and utility line are relatively unnoticeable and only slightly impair the area's natural character.

Inholdings

The Hell's Canyon Wilderness, entirely BLM-administered, surrounds a 640-acre private parcel in the northwest quadrant (see Map 1) for which the subsurface mineral rights are federally held. The

Table 3. Fire History in the Hell's Canyon Wilderness

<i>Date</i>	<i>Fire Number</i>	<i>Acres</i>	<i>Class (Size)</i>	<i>Cause</i>
June 10, 1984	4268	140	D (100 to 299 acres)	Human
July 10, 1990	0437	0.1	A (0 to 0.25 acres)	Human

parcel has significant wilderness values. Five major peaks of the Hieroglyphic Mountains are within the parcel, contributing greatly to scenic values, vistas and plant and wildlife diversity. Recreational pursuits include climbing, backpacking and day hiking opportunities. Wildlife habitat includes that of Category 2 desert tortoise. Garfias Wash, including Hell's Canyon, contains a spring-fed verdant segment.

Overflights

Threatening the wilderness solitude values are military jets performing almost daily maneuvers overhead, flying as low as 200 feet above ground level. The Arizona Desert Wilderness Act of 1990 provides for continuing military overflights, specifically exempted from the provisions of wilderness management.

A nearby facility offers glider flights, some of which violate wilderness air space. Low-level ultralight flights have also been reported.

Motorized/Mechanized Use

Under certain circumstances, motorized/mechanized uses are allowed with prior approval of the Area Manager. These include low-level aerial flights for wildlife inventory and wild burro inventory or removal, maintenance of livestock developments, maintenance of the U.S. West telephone line, fire suppression, search-and-rescue or law enforcement. Motorized access for Native American traditional and religious purposes and access to private inholdings may also be allowed if no other means are available.

Part II - National Wilderness Management Goals

The National Wilderness Management Goals, Wilderness Act of 1964 (Public Law 88-577) provide the basic guidance upon which all wilderness actions are based. The BLM's goals in the Hell's Canyon Wilderness are as follows.

1. To provide for the long-term protection and preservation of the area's wilderness character under a principle of nondegradation. The area's natural condition, opportunities for solitude, opportunities for primitive and unconfined types of recreation and any ecological, geological or other types of scientific, educational, scenic or historical value present will be managed so that they will remain unimpaired.
2. 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.
3. 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.
4. 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.

Part III - Issues

Planning issues were identified in a series of internal and public meetings. BLM resource specialists met on August 6, 1992 to discuss potential management issues for this plan. The BLM met with interested members of the public on August 27 and September 9, 1992 and received comments about issues for this plan. As the plan was being developed in January and February 1993, additional issues were received and considered.

Wilderness issues are divided into two categories: 1) Issues addressed in the plan and 2) Issues solved through policy or administrative actions.

The National Wilderness Goals stated in Part II provide a foundation for the BLM's management in the Hell's Canyon Wilderness. The BLM determined that selected issues needed to be addressed by establishing certain resource objectives to be achieved over the five-year life of this plan. Specific management actions, to be implemented for achieving the objectives by 1999, are discussed in Part V.

Most issues will be addressed by administrative actions that constitute the normal course of BLM business. Actions will be guided by law, regulation and national and Phoenix District policy. Wilderness management is generally guided by BLM Manual 8560 and H-8560-1. These are actions that would be implemented (some already have) whether or not the BLM develops a management plan for the Hell's Canyon Wilderness. Therefore, no further mention of these issues will be made after this section of

this part of the wilderness management plan.

Activity Plan Issues

Naturalness

BLM actions will be dedicated to preserving natural conditions in compliance with National Goals 1, 3 and 4. Vegetative condition is a prime indicator of naturalness. Management Objective 1 (see Part V) will address:

- ecological condition of the plant community with livestock and burro utilization.
- wildfire,
- private inholding acquisition/access,
- vehicle route obliteration,
- range development maintenance and
- the U.S. West telephone line.

Recreation

The majority of issues identified were concerned with recreational opportunities. The BLM must manage its recreation program in the Hell's Canyon Wilderness to preserve natural features and characteristics as stated in National Goal 2. Management Objective 2 (see Part V) will address:

- visitor use levels.
- visitor experience,
- level of development, i.e., trails, portals,
- visitor information/education and
- permit system.

Issues Solved Through Policy Or Administrative Actions

Authority for administrative actions, where applicable, is given in each response to the issue identified.

Miscellaneous Administration

- Water rights
- Refuse removal
- Scientific research projects
- Vegetation gathering activities

The BLM will inventory all water sources and developments and submit notification of federal reserved rights for the wilderness to the Arizona Department of Water Resources by 1995 (Public Law 101-628, Arizona Desert Wilderness Act of 1990; Public Law 100-4, Water Quality Act of 1987).

There are no known areas of refuse. If any are found, removal will be dealt with on a case-by-case basis. A site-specific environmental assessment will be developed to deal with any removal action.

Scientific research proposals will be dealt with on a case-by-case basis. Any authorized project will be conducted using the minimum tool so as to not degrade wilderness values.

Vegetation gathering activities (i.e., wood, jojoba) will not be permitted so that vegetation communities will remain relatively unaltered.

Boundary Identification

- Wilderness signage
- Wilderness fencing

Nearly 10 miles of wilderness boundary have been signed as of August 1994. Boundary signing is an ongoing process. Informational signage does not currently exist, but is discussed in Part V, Objective 2.

There are no plans to fence the wilderness during the life of this plan.

Motorized/Mechanized Prohibitions

The use of motorized and mechanized equipment including, but not limited to, vehicles, tools, aircraft under the 2,000-foot threshold, bicycles or gliders is prohibited. Exceptions under certain (mostly emergency) circumstances are specified under the headings Law Enforcement/Search and Rescue and Fire Suppression Procedures. The use of wheelchairs is allowed.

Wildlife

- Predator control and inventory
- Wildlife catchments
- Protection of desert tortoise and habitat
- Reintroduction of desert bighorn sheep
- Control of domesticated animals

Government-sponsored animal damage control activities, using nonmotorized/nonmechanized methods, will be considered on a case-by-case basis by the BLM Area Manager. The proposed control activity will be reviewed and may be approved if one of several conditions is met and if removal of the target animal/animals will not affect wilderness values. The conditions are: protecting federally listed threatened or endangered species, preventing the spread of disease affecting

other wildlife and/or humans, preventing serious loss of domestic livestock or controlling non-indigenous species which are in direct conflict with indigenous species.

No wildlife developments exist in the wilderness, nor are any new developments proposed during the life of the plan. Any proposals will be considered on a case-by-case basis.

The BLM will manage desert tortoise habitat as Category II habitat according to Desert Tortoise Habitat Management on the Public Lands: A Rangeland Plan (U.S. Department of Interior, 1988a) and the Strategy for Desert Tortoise Habitat Management on Public Lands in Arizona (1990c). The habitat will be managed for no net loss in quantity or quality.

The Arizona Game and Fish Department will determine the feasibility of reintroducing desert bighorn sheep into the wilderness. If determined feasible, the BLM will cooperatively evaluate the proposal based on this plan and other applicable guidelines. The wilderness is only a small portion of the historic range for the species in this geographic area. If bighorn sheep reintroductions are determined to be feasible, the Phoenix Final Resource Management Plan/Environmental Impact Statement (1988b) will require amendment prior to authorization. All potential impacts to wilderness and other resources would be thoroughly evaluated prior to initiating this type of action.

All dogs will be kept on their leashes to prevent harassment of wildlife.

Law Enforcement/Search and Rescue

- Search-and-rescue emergencies
- Enforcement of wilderness laws and other resource violations

Coordination of search-and-rescue efforts in the wilderness will be ensured by managers through regular meetings of the agencies involved. The Sheriff's offices of Maricopa and Yavapai counties are the lead agencies on any search-and-rescue incidents in the wilderness.

The wilderness will be patrolled periodically from vehicles on the boundaries and by aerial surveillance, as conditions demand. Foot patrols inside the wilderness will be conducted as conditions warrant. Aerial patrols will be performed in fixed wing aircraft, observing the 2,000-foot altitude threshold over wilderness.

Law enforcement personnel will educate the public on wilderness regulations and behavior as a normal part of their encounters in and around the wilderness.

Law enforcement incidents in the wilderness, including, but not limited to, the pursuit of felons and game law violators, will be carried out using necessary equipment. The BLM will continue to work cooperatively with Yavapai and Maricopa county law enforcement agencies and the Arizona Game and Fish Department. Motorized equipment, including low-flying aircraft (under the 2,000-foot threshold) will be withdrawn when the emergency no longer exists. Justification of motorized equipment use will be submitted in writing to the Area Manager within 48 hours of conclusion of the incident.

Cultural Resources

- Management of historical buildings and other cultural resources
- Native American groups' concerns for cultural resource sites

There are no known historical buildings in the Hell's Canyon Wilderness.

Significant historic and prehistoric resources will be protected by appropriate means, including surveillance and stabilization. Stabilization plans will be dealt with on a case-by-case basis, ensuring protection of wilderness values, utilizing the minimum tool.

Cultural resources are managed as a scientific value. The resource is available to individuals and institutions with legitimate research interests. Research plans will specify utilization of the minimum tool to protect wilderness values.

Cultural resources are valued by Native Americans whose ancestors may

have occupied the area and by the general public (sociocultural value). Access to traditional cultural properties for groups with legitimate interests will be allowed in accordance with existing regulations for travel in wilderness.

Minerals

- Casual use (of mining claims) and "recreational mining"
- Use of motorized vehicles in conducting validity examinations
- Use of valid claims

Recreational or hobby collecting (rockhounding) of minerals is allowed in the wilderness. Collection is limited to hand methods.

No valid mining claims remain in the Hell's Canyon Wilderness. There will be no need for validity examination of any claims.

Part IV - Management Strategy

This plan has been designed to serve as the management guidance for the Hell's Canyon Wilderness for a five-year period. Implementation will commence following public review and final approval.

An interdisciplinary team developed two general management objectives for meeting the National Wilderness Management Goals (see Part II). The objectives and associated management actions were designed to help meet the goals of preserving the wilderness characteristics of the area while providing for primitive recreational opportunities, solitude and the continuation of nonconforming but accepted uses permitted by the Wilderness Act.

The two objectives address naturalness and recreation opportunities. The planned actions and monitoring of their effectiveness are designed to ensure that the characteristics that define the wilderness remain stable or actually improve.

Future issues, actions or opportunities will be considered on a case-by-case basis to determine if they are consistent and compatible with the goals and objectives of this plan. If, through evaluation, actions are determined to be consistent and compatible with the goals and objectives, they will be incorporated into the plan without amendment of the plan. Inconsistent or incompatible actions will be further evaluated and be subject to public review and comment.

Part V - Wilderness Management

Introduction

Planned management actions in the wilderness were designed to meet the objectives of preserving the naturalness of the area and providing opportunities for primitive recreation. This part of the plan presents the management objectives and planned actions with rationale statements. Monitoring tasks are outlined to evaluate the effectiveness of the management actions.

Management Objective 1 — Naturalness

Maintain or improve naturalness in the Hell's Canyon Wilderness over the life of the plan by:

- maintaining the vegetation in its current fair to good ecological condition in 90 percent of the wilderness while improving the remaining 10 percent currently considered to be in poor condition to fair condition,
- minimizing wildlife habitat loss due to wildfire,
- minimizing permanent human impacts on wilderness characteristics from 640 acres of private lands within the wilderness boundary,
- minimizing recreational firewood collection impacts to trees surrounding camping areas,

- allowing natural revegetation of 4.2 miles (57 acres) of routes formerly used by vehicles,
- minimizing the use of mechanical equipment for maintenance of range developments and the U.S. West telephone line,
- maintaining a healthy, viable wild burro population in a thriving ecological balance and
- allowing for effective management of wildlife populations.

Rationale: This objective addresses the first, third and fourth National Wilderness Management Goals (see Part II).

The first goal, preservation of wilderness character, or naturalness, was interpreted for this plan to include maintenance of vegetation condition and prevention of unnecessary damage to trees from recreational firewood gathering and wild burro and livestock use. Ecological condition in 90 percent of the wilderness is classified as fair to good (U.S. Department of Interior, 1985: 74-75) and should remain stable as a result of management actions, thus meeting the naturalness goals and objectives for wilderness management. The third goal addresses using the minimum tool to accomplish resource objectives, thus reducing human imprints, and the fourth goal addresses the management of accepted uses.

Management Actions:

1. Allow no more than 50 percent utilization of key forage species.
2. Establish key forage species and pace frequency transects.

Rationale: Utilization of less than 50 percent forage has been determined as adequate to ensure that plant communities are maintained in a healthy condition. Fifty percent forage will be maintained in its current fair-to-good condition while poor forage will improve to fair over the long term beyond the life of the plan.

3. Fully suppress all fires.

Rationale: The vegetation in the wilderness has evolved with infrequent wildfires. Many desirable plants, especially saguaro, are adversely affected by fire. In addition, native vegetation may be replaced by introduced annuals after a fire. Prevention of fire is important to meet the vegetation component of naturalness. See Appendix A for fire suppression procedures.

4. Acquire the S1/2, sec. 7 and N1/2, sec. 18, T. 7 N., R. 1 W. or provide legal access to owners.

Rationale: Acquisition of the two half sections will prevent uses incompatible with wilderness management. Potential means of acquisition include exchange, purchase or donation. If the BLM is unsuccessful in efforts to acquire the private inholding, legal access must be made available to the owner (Public Law 88-577, Section 5a). Any permit for access will be in such a manner as to cause the least lasting impact on wilderness

while allowing reasonable use of the nonfederal inholding.

5. Restrict firewood use to dead-and-down wood for campfires.

Rationale: The cutting of live trees and gathering branches from standing trees for firewood can lead to serious degradation of the Sonoran habitat and seriously affect primitive recreation experiences; therefore, it is necessary to enforce the dead-and-down wood restriction.

6. Allow natural revegetation of eight acres along Horse Spring Trail, 24 acres along Burro Flat Trail and 25 acres along Garfias Wash Trail.

Rationale: As motorized vehicles are incompatible with the goals of wilderness management, former vehicles routes have been closed and allowed to revegetate naturally. The routes, used to access range developments, were infrequently used even before wilderness designation. Natural revegetation has already begun to reclaim most of these routes, now identified as trails.

7. The approved maintenance procedures and schedule for 13 range developments described in this plan will be made a condition of the grazing lease (see Table 4). Any developments not utilized during the life of the plan will be removed from the schedule and rehabilitated.

Rationale: Use of the minimum tool allows for maintenance of range developments while protecting the wilderness characteristics (i.e., naturalness).

Table 4. Range Development Maintenance Schedule					
Development	Location	Action	Access	Frequency	Condition
Fences					
Layton Boundary (4080)	T. 7 N., R. 1 W., sec. 33	Routine inspection/maintenance	On foot or horseback	As needed	Good
Burro Flats (4583)	T. 7 N., R. 1 W., sec. 20, S½, sec. 29, N½	Routine inspection/maintenance	On foot, horseback or motorized vehicle on Trail 3	As needed	Good
Horse Spring (4123)	T. 7 N., R. 1 W., secs. 18 and 19	Routine inspection/maintenance	On foot, horseback or motorized vehicle on Trail 4	As needed	Good
Ramon Tank (4261)	T. 7 N., R. 1 W., sec. 7	Routine inspection/maintenance	On foot, horseback or motorized vehicle on Trail 7	As needed	Good
Water Facilities					
Ramon Tank (4261)	T. 7 N., R. 2 W., sec. 7, SW¼NW¼	Clean reservoir sediment; disturbance confined to previously disturbed area; 3 days work	Bulldozer "walked in" along Trail 7	Every 5 years during low use season on weekday	Fair
Charco Tank I (4262)	T. 7 N., R. 1 W., sec. 30, NE¼NW¼	Clean reservoir sediment; disturbance confined to previously disturbed area; 3 days work	Bulldozer "walked in" along Trail 3	Every 5 years during low use season on weekday	Good
Charco Tank II (4262)	T. 7 N., R. 2 W., sec. 13, NW¼SE¼	Clean reservoir sediment, repair breach; disturbance confined to previously disturbed area; 3 days work	Bulldozer "walked in" along existing track	Every 5 years during low use season on weekday	Poor
Wire Tank and Corral (4261)	T. 7 N., R. 1 W., sec. 7, NE¼NW¼	Tank: Clean reservoir sediment; disturbance confined to previously disturbed area; 3 days work. Corral: Routine inspection and maintenance	Tank: Bulldozer "walked in" from boundary Corral: Foot or horseback (routine); truck to haul equipment and supplies (major) from boundary	Tank: Every 5 years during low use season on weekday. Corral: Major reconstruction every 5 years; minor maintenance as needed	Poor
Fairview Spring Horizontal Well (4472) {includes trough and under-ground cistern}	T. 7 N., R. 1 W., sec. 30, NE¼SW¼	1) Routine inspection and maintenance 2) Equipment replacement	1) On foot or horseback 2) Truck along Trail 3	As needed	Good
Upper Cedar Basin Tank (5339)	T. 7 N., R. 2 W., sec. 12, NW¼SW¼	Clean reservoir sediment; repair dam; disturbance confined to previously disturbed area; 3 days work	Bulldozer "walked in" from boundary	Every 5 years during low use season on weekday	Poor
Horse Spring Horizontal Well (4123)	T. 7 N., R. 1 W., sec. 18, SE¼SW¼	1) Routine inspection and maintenance 2) Equipment replacement	1) On foot or horseback 2) Truck along Trail 4	As needed	Fair
Burro Spring and Corral (4124)	T. 7 N., R. 1 W., sec. 29, NW¼NW¼	1) Routine inspection and maintenance 2) Cattle hauled	1) On foot or horseback 2) By truck along Trail 3	1) As needed 2) No more than once a year	1) Poor 2) N/A
New South Tank (2189)	T. 7 N., R. 1 W., sec. 15, NE¼NE¼	Clean reservoir sediment; disturbance confined to previously disturbed area; 3 days work	Bulldozer "walked in" along Trail 1	Every 5 years	Fair

* All non-emergency maintenance will be conducted between May 1 and August 31 during the low period of use.

Periodically, major repairs to range developments will be necessary. A pickup truck may be required to carry materials and tools. The use of a bulldozer to clean out reservoir sediment may also be necessary. Any motorized vehicle use will be along existing trails. Before initiating such repairs, the permittee is required to notify the Area Manager at least two weeks in advance.

Emergency situations threatening human life, property (including livestock) or public land resources may also occur. The use of motor vehicles or other mechanized equipment in emergency situations is permissible. The operator of the equipment is required to notify the BLM Area Manager when the emergency situation has been detected and before entering the wilderness with the equipment. If the Area Manager cannot be notified prior to entry, contact must be made within 48 hours following the emergency entry.

8. Issue a wilderness access permit to allow approved maintenance activities for 1.4 miles of telephone line within the wilderness (see Table 5) and check for compliance.

Rationale: It will be necessary to periodically perform maintenance on the telephone line that traverses sec. 10, T. 7 N., R. 1 W., Gila and Salt River Base and Meridian (see Map 2). Two categories of actions are authorized. No reconstruction or replacement of the line is planned (see Table 5).

9. Inventory the Lake Pleasant wild burro herd every two to three years.

Rationale: Wild burros are managed under the Wild Horse and Burro Act

(Public Law 92-195) and are not considered "wildlife" in terms of game management (see Table 6 for burro herd inventory information).

10. Allow for wildlife population inventories by the Arizona Game and Fish Department using low-level aerial flights.

Rationale: The Arizona Game and Fish Department manages the wildlife populations in the Hell's Canyon Wilderness and will continue conducting aerial flights to determine populations of mule deer, white-tailed deer and javelina annually (see Table 7).

11. Conduct monitoring of vegetative condition.

Rationale: Vegetation monitoring is the observation and systematic collection of resource data to determine the success of management actions toward achieving the Naturalness Objective. It provides quantifiable data needed to periodically review and evaluate vegetation condition and the impact livestock and burros have on vegetation.

Monitoring:

1. One pace frequency transect in two representative natural plant communities will be established and read twice over the life of the plan. The Pace Frequency Method will be used to evaluate condition and trend. Two individual plots will be established and observed along four parallel straight line pace transects with 50 plots systematically placed at one or more pace intervals along each transect. The

Table 5. U.S. West Maintenance Schedule		
	<i>Normal</i>	<i>Emergency</i>
Description	Replacing a pole, rehangng cable and other minor line repairs can be scheduled during low visitation seasons	Pole replacement, cable rehangng and other minor repairs cannot be anticipated and include natural (i.e., wind, lightning) damages or human-induced (i.e., aviation accidents, vandalism) causes. To maintain service to Casa Rosa, U.S. West is authorized to use equipment specified earlier.
Time	Monday through Friday (daylight hours) only from May 1 through August 31	Anytime when emergencies prompt U.S. West to expedite repair
Tasks	Pole replacement: Equipment may include one boom truck and one backhoe with trailer; truck will haul the pole to the installation site along telephone line; other motorized/mechanized equipment -- a separate truck to pull the backhoe and trailer, and an aerial lift truck; equipment will not be driven outside a 10-foot linear path on either side of the utility line. Alternative equipment may include a helicopter to carry the pole to the installation site. Cable rehangng: Equipment may include one truck and/or one aerial truck; however, access in most cases will be on foot or horseback.	Same as normal maintenance tasks
Access	Road from Casa Rosa joining Spring Valley Trail in secs. 14 and 15, T. 7 N., R. 1 W.	Road from Casa Rosa joining Spring Valley Trail in secs. 14 and 15, T. 7 N., R. 1 W.
Notification	In writing to Area Manager at least 72 hours in advance of work	Area Manager immediately unless occurrence is on weekend or holiday; then notification on next business day

Table 6. Wild Burro Inventory			
<i>Method</i>	<i>Analysis method</i>	<i>Frequency</i>	<i>Result</i>
Low-level helicopter flights 30 to 100 feet above ground level along ½-mile-wide grids; burros marked with oil-based paint loaded in plastic pellets fired from airgun	Lincoln-Peterson Index (statistical ratio method)	Every 2 to 3 years from May 1 to August 31; Phase 1 -- 2 flights of approximately 4 hours each (on each of 2 days); Phase 2 -- 1 flight 3 to 5 days after Phase 1; additional flights at Area Manager's discretion	Information is used to estimate population

Table 7. Wildlife Inventory	
<i>Method</i>	<i>Frequency</i>
For mule deer, white-tailed deer and javelina -- low-flying aircraft (helicopters or fixed-wing) overflights	Annually between December 15 and February 15; surveys not to exceed 4 hours per year; Area Manager will be notified in advance of all planned surveys; AGFD will request written permission from Area Manager for additional flights, if necessary
For mountain lion -- on foot or horseback	Infrequently and informally

indicators of success will be an evaluation of no change in plant frequency by species with a 90 percent fair to good condition by 1999. An evaluation of groundcover — including live vegetation (basal), litter, rock and bare ground — is recorded.

2. Trend photo plots and key forage utilization transects will be established in key vegetative communities and read annually.
3. Documentation of recreational use-damaged vegetation around camping areas will be done annually.
4. Range developments and U.S. West telephone line maintenance will be field-checked annually for compliance (see tables 4 and 5).

Monitoring standards have been established to measure the effectiveness of the management actions (see Table 8).

Additional actions, if required:

1. Should damage from wild burro use occur, animals will be relocated. Removal of burros may be necessary if:
 - monitoring data reveal that habitat conditions are deteriorating and burros should be removed and/or
 - wilderness user complaints of harassment or danger (on the part of the animal) are substantiated.
2. Should damage from excessive livestock use occur, management practices will be adjusted. Corrective actions include, but are not

Methods of capture include use of a helicopter to herd burros into a wing trap, herd them to a roping area and/or net them to be sling-loaded from the area.

If traps are set up in the wilderness, trails or wash bottoms will be used. A truck will haul the equipment into the wilderness, making no more than two round trips. Following the capture activities, all traps will be removed and the areas left clean.

Dates, locations and methods of capture will be approved by the Area Manager, avoiding areas containing special status species. All captures will be conducted during cooler months — October 1 through March 31, excluding weekends and holidays — to reduce heat stress to captured animals.

Table 8. Naturalness Monitoring Standards		
<i>Factor</i>	<i>Indicator</i>	<i>Standard</i>
Key forage species plant trend (based on Pace Frequency Method)	Species (to be determined)	No decrease in plant frequency
Key browse species utilization	Species (to be determined)	No more than 50 percent utilization through 1999
Recreation use vegetative damage	Amount of tree limb damage	No observable tree damage within 100 feet of camping areas
Maintenance of range developments and U.S. West telephone line	Adherence to maintenance schedule and permit stipulations	No transgressions from schedule or stipulations

limited to, reduction in allowed livestock numbers.

3. If range developments are no longer utilized, they will be removed from the schedule and rehabilitated to enhance the naturalness of the area.
4. Should damage from recreational firewood collection exceed standards, campfires will be prohibited (see Objective 2 for additional recreation use monitoring).

Management Objective 2 — Recreation Opportunities

Provide for primitive recreation opportunities while ensuring preservation of wilderness characteristics by:

- maintaining the existing trail system,
- preventing the establishment of new trails,
- preventing the establishment of new campsites and obliterating existing sites,
- minimizing encounters by wilderness users, and
- establishing an education/visitor use program.

Rationale: To meet the second National Wilderness Goal, the BLM must ensure that visitor use does not cause deterioration of wilderness characteristics.

Preventing the establishment of new trails and campsites will help to protect the

wilderness values and provide for a primitive recreation experience.

Minimizing encounters by wilderness users through education and permit stipulations will assist in providing opportunities for solitude.

Management Actions:

1. Complete trail inventory for type and condition. New trails located during inventory will be added to the system or obliterated.
2. Maintain the existing trail system at its current level to protect wilderness character by preventing erosion and new trail routes through:
 - establishing periodic maintenance of the trail system,
 - utilizing native materials and hand tools for erosion control,
 - permitting minor trimming of vegetation for user safety,
 - permitting minor reroutes of existing trails if required to protect resource values and if the old segments are rehabilitated, and
 - placing no markers or signs in the wilderness.
3. Complete a campsite inventory for location, level of use, impacts to resources, disturbed vegetation, human waste and trash.

Rationale: Maintaining the existing trail system at current levels and eliminating all new trails and any campsites will protect wilderness values and naturalness characteristics while providing for primitive recreation opportunities.

4. Establish the following **commercial recreation** policy (including non-profit groups that require a Special Recreation Permit) with the following standard stipulations for permits. Schedule parties to avoid encounters.

Overnight

- No base camps within the wilderness
- Spike camps limited to 10 people, one night, 10 packstock
- Feed (no hay) provided for animals
- Each permit holder limited to a maximum of two nights per 14-day period

Day use

- Limited to 20 people, 10 stock
 - Each permit holder limited to a maximum of four groups per 14-day period
5. Establish a non-commercial recreation policy that states:
 - no group size limits will be imposed unless under a Special Recreation Permit, but group size will be monitored through 1999, and

- large group sizes will be discouraged through education and a visitor information program.

Rationale: The policy for commercial and non-commercial recreation use is consistent with the national goals and the plan objective. Commercial permit stipulations will also enhance the opportunity for solitude through limiting the number of users at one time.

6. Initiate a visitor information/education program.

- a. Install trail registers and regulatory information at four access points —Garfias Wash, Burro Flats, Horse Creek and Castle Creek (see Map 3).
- b. Implement a visitor response system through cards or logs at the trail registers that ask for date of entry, size of party, duration of visit, primitive experience level and suggestions for wilderness management.
- c. Develop a brochure emphasizing preservation of wilderness characteristics, the "Leave No Trace" ethic, small group size, commercial permit requirements, etc.
- d. Establish ranger and recreation staff contacts, presenting the same message as the brochure.

Rationale: A visitor information/education program will enable the BLM to inform the public on proper wilderness

ethics, regulations and requirements. The visitor response log will provide feedback for more effective management, visitor use and season of use.

Monitoring:

1. The trail system will be monitored annually for condition and existence of new trails.
2. The wilderness will be monitored annually for evidence of camping impacts.
3. Visitor use and permit stipulations will be monitored by ranger and recreation staff visitations.
4. Primitive recreation experiences, encounters and solitude opportunities will be measured through the visitor response system at the trail registers, through staff encounters and through the number of vehicles at access points.

Additional actions, if required:

1. Any new trails will be obliterated:
 - immediately for minor trails, or
 - within two months of discovery for more established trails.
2. Any observable campfire rings, trash or human waste will be removed or buried upon discovery.
3. If camping locations become overutilized and vegetation in the area becomes depleted or damaged, campfires will be prohibited.
4. If visitor encounters regularly exceed standards, a permit system for non-commercial and individual use will be established.
5. If vehicle density at access points regularly exceeds standards, parking areas will be established.

Monitoring standards have been established to measure the effectiveness of the management actions (see Table 9).

Table 9. Recreation Monitoring Standards		
<i>Factor</i>	<i>Indicator</i>	<i>Standard</i>
Trail condition	Erosion, parallel trails, trail widening	None observable
Evidence of camping impact	Fire rings, disturbed vegetation, human waste/trash	None observable; no camping impacts observable beyond a 50-foot radius
Availability of firewood	Amount of observable dead-and-down wood in vicinity	Dead-and-down wood generally available within 100 feet
Human encounters	Number of encounters	No more than five contacts per day during main season of use
Vehicle density at access points	Number of vehicles on regular basis	No more than five vehicles and/or three horse trailers per day during main season of use
Primitive recreation experience/solitude	Number of complaints per year	No more than 10 complaints

Part VII — Implementation Schedule And Cost Estimate

PLAN IMPLEMENTATION SCHEDULE FOR ONGOING ACTIVITIES IN THE HELL'S CANYON WILDERNESS			
<i>Planned action</i>	<i>Responsible parties</i>	<i>BLM workmonths</i>	<i>Non-labor costs</i>
Key forage monitoring; trend photo plots	Range and/or Recreation Staff	0.25/year	\$0
Monitor trail conditions and camping impacts	Recreation Staff	0.25/year	\$100/year
Monitor primitive recreation, encounters and solitude	Recreation Staff	0.25/year	\$100/year
Monitor vegetation damage and maintenance activity impacts	Range and Recreation Staff	0.25/year	\$0
Wilderness patrols	Law Enforcement and Recreation Staff	0.5/year	\$100
Conduct burro inventory	Wild Horse and Burro Specialist	*	*
Conduct wildlife inventory	Arizona Game and Fish Department	0	\$0

* Part of overall inventory of Lake Pleasant Herd Management Area

PLAN IMPLEMENTATION SCHEDULE FOR SPECIAL PROJECTS IN THE HELL'S CANYON WILDERNESS			
<i>Planned action</i>	<i>Responsible parties</i>	<i>BLM workmonths</i>	<i>Non-labor costs</i>
Install trail registers and response log/cards	Recreation Staff	1.0	\$1,000
Inventory trail and campsite condition	Recreation Staff	0.5/year	\$100/year
Land acquisition or provide legal access	Realty Staff	2.0	\$0
Wilderness access permit to U.S. West	Realty Staff	0.5	\$0
Produce wilderness brochure	Recreation Staff	1.0	\$500
Inventory water sources	Water Rights Specialist	1.5/year	\$520/year
Determine feasibility of bighorn sheep introduction	Wildlife Biologist and Arizona Game and Fish Department	1.0	\$0

Part VIII - Public Involvement

The BLM held two public scoping meetings during the summer of 1992 (see Part III) to determine planning issues for this effort. During that period, the BLM received written responses to a public mailing that solicited comment.

The BLM letter of August 17, 1992 requested that interested publics volunteer to serve on a work group to assist the BLM in plan development. An eight-member group first met on January 7, 1993 in Phoenix. Three agencies and three ranching operations were represented.

The following groups have been consulted or have provided comment to the BLM during plan development.

Hell's Canyon Public Work Group:

Scott and Lynn Layton
Tom Lazzelle, Arizona Department of
Environmental Quality
Eric Dodd
Barbara Heslin, Arizona Game and
Fish Department
James Wegge, Arizona Game and Fish
Department
Gabe Zinsli, Glendale Hiking Club
Howard Hensley
Larry Bartee
Kurt Flynn, Bureau of Reclamation
Arizona Game and Fish Department
U.S Bureau of Reclamation
Yavapai County Sheriff
Maricopa County Sheriff
Lake Pleasant Regional Task Force
Glendale Hiking Club

During preparation of the range development maintenance schedule, BLM range conservationists met with the interested livestock permittees. The range development locations and anticipated maintenance needs were discussed and verified. During these meetings, BLM policies and congressional guidelines relating to the maintenance of range developments in the wilderness were discussed.

Operators

C.K. Earle Trust, Two Shoe Allotment
Joseph Wright, Cottonwood Creek
Allotment
Scott and Lynn Layton, Eleven L
Allotment
Mae Sue Talley, Castle Hot Springs
Allotment

The Draft Hell's Canyon Wilderness Management Plan and Environmental Assessment was mailed to over 125 interested individuals, groups and governmental organizations. The document was mailed on September 28, 1994 and a 45 day comment period ensued, ending on November 12, 1994. An Open House was held at Phoenix District Office of BLM on October 20, 1994 to answer questions and seek public comments on the Draft Plan. Four individuals attended and all expressed support of the proposed action.

The BLM received five written comments, four of which expressed support for the Plan. Letters were received from two individuals, one State agency, a Tribal government, and a recreational interest

group. Four of the respondents expressed support for the plan. One person asked for further information.

Comments

Four comments dealt with recreational use. First, the concern for overuse as a result of Lake Pleasant Regional Park expansion was expressed. The plan on pages 28 and 29 outlines the BLM's plan for measuring visitor use and corrective actions in the event of overuse. Second, one more Wilderness access point was suggested: Cottonwood Wash (from Castle Hot Springs Road). This option will be evaluated as a possible future developed access. Third, a question was raised about BLM's proposed group use limits. It is desirable to set group limits in order to retain the pristine nature of Hell's Canyon and be able to document any degradations due to heavy use. Fourth, Garfias Wash on the east side was identified as an area of potential illegal entry. Hell's Canyon receives regular boundary patrol and the Garfias Wash area is and will be patrolled on the ground and from the air.

One comment addressed Yavapai-Prescott Tribal concerns. It was recommended that an intensive survey of the Wilderness be implemented to determine the nature and extent of cultural resources. Wilderness designation provides a degree of protection to cultural resources through restrictions on access, use, and ground-disturbing activities. BLM does not plan to conduct an intensive survey of Hell's Canyon Wilderness. However, if there are proposed developments or activities in a particular areas, BLM will perform site specific cultural inventory and clearance. Wilderness regulations (see page 18 of the plan) allow for access to traditional cultural properties.

One comment suggested that a table be added to the Plan depicting the status of water rights claims that have been filed. The Arizona Department of Water Resources maintains records of all filings, including filer name and subject water filed on. BLM is inventorying all water sources and will submit reserved rights notification. BLM's federal reserved right (priority date of November 28, 1990) is junior to all other rights preceding the enactment of the Arizona Desert Wilderness Act (same date).

BLM received a recommendation to plant cottonwoods in Garfias Wash. On pages 24-26 a program for vegetation monitoring is outlined. If studies show degradation to natural values, certain corrective actions will be implemented (see "additional action", no. 2).

One comment requested that BLM determine range carrying capacity. Phoenix Resource Area is in the process of developing additional vegetation monitoring studies in Hell's Canyon Wilderness. These studies will consider the combined grazing use of cattle, burros, and wildlife. If the studies indicate vegetation overuse, cattle and burro numbers will be adjusted.

A comment was received in opposition of using trucks to haul burro traps in the Wilderness. The likelihood of a capture operation is very low, because Hell's Canyon Wilderness represents only 12% of the total Herd Management Area. No known captures have ever been performed within the Wilderness. However, if the need arises, BLM is prepared to accomplish the task through our inclusion of a capture provision in the Plan.

Fire suppression was the subject of one

comment. It was suggested that fire planning be coordinated with adjacent land managers. One comment further stated that the person is opposed to the use of heavy mechanical equipment in suppression activities. Through the fire Incident Command System, a multiagency organization, fire suppression is coordinated among BLM, federal, tribal, state and local agencies. Use of mechanized equipment is done as a "final recourse". Fire prevention efforts will be discussed in upcoming Hell's Canyon Wilderness brochure.

Another comment dealt with management relationships of adjacent land management agencies: State Lands and Maricopa County Parks (Lake Pleasant Regional Park). BLM, Arizona State Land Department, and Maricopa County Parks and Recreation are all participants of the Lake Pleasant Regional Task Force which meets regularly to discuss common issues.

Arizona Game and Fish suggested minor changes in text which were incorporated. The agency also requested changes to the yearly inventory flights conducted between December 15 and February 15. First, Game and Fish requested more flexibility in the number of hours per year that it would be allowed low level wilderness flights. BLM increased the allowed hours from 2 to 4, still an insignificant amount of time over a two month period.

Secondly, BLM was asked to allow additional low level flight time without prior notification. BLM considers the notification requirement to be a reasonable one and has been agreed to by Arizona Game and Fish Department in the past. Therefore, it remains.

A comment was received that opposed (re)introduction of bighorn sheep. As stated on page 17, Arizona Game and Fish Department will determine the feasibility at a future (unspecified) date.

One comment addressed the possible removal of the U.S. West Telephone line that traverses a portion of the Wilderness. U.S. West does not anticipate abandoning the telephone line in the foreseeable future. Although not authorized, it pre-dates Wilderness designation by at least 60 years. When it is time to modernize this portion of U.S. West's customer network, it is likely that the old segment will be abandoned.

Finally, as a clarification to the Wilderness Maps: Cedar Basin Road does exist between Horse Creek and Morgan City Wash.

The Phoenix Resource Area Wilderness Management Plan Interdisciplinary Team:

Part IX — List of Preparers

Kathryn Pedrick	Supervisor Recreation and Archaeology Staff
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Jim Andersen	Realty Specialist
Ron Smith	Geologist
Pat Jessup	Archaeologist
Roy Lewis	Wild Horse and Burro Specialist
Gretchen Ward	Outdoor Recreation Planner
Glenn Joki	Fire Management Officer
Lin Fehlmann	Water Rights Specialist
Steve Markman	Hydrologist
Russell Krapf	Soil Scientist
Bob Ruiz	Ranger
Chris Horyza	IRM Branch Chief
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Wilderness plan maps were prepared using Geographic Information Systems by:

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Appendix A

Fire Suppression Procedures for the Hell's Canyon Wilderness

Introduction

The fire management procedures provide for:

- fire suppression strategy which ensures protection of wilderness resources, human safety and structures with suppression techniques resulting in the least possible evidence of human activity and
- ensuring a common understanding by Phoenix District personnel of the constraints, considerations and procedures involved with fire suppression operations in the wilderness.

All wildfires within or threatening to enter the wilderness will be extinguished with appropriate suppression response. The fact that a wildfire occurs in the wilderness is not in itself an emergency. An emergency exists when:

- a wildfire burning within the wilderness threatens human life or property or
- there is definite potential for a wildfire to exceed suppression efforts, burn beyond the wilderness boundary and endanger human life, property, managed resources or the public welfare.

Appropriate and approved suppression actions are those which:

- ensure protection of wilderness resources,
- provide for protection of human safety and structures,
- result in the least possible evidence of human activity,
- minimize surface disturbance and alterations of the natural landscape,
- are consistent with management objectives and constraints,
- allow for the least possible acreage burned,
- are reasonable and prudent for the time of year, current and predicted fire weather and fire behavior and availability of fire resources and
- minimize fire suppression cost.

Surface disturbance from suppression actions in the wilderness must be rehabilitated to as natural a state as possible.

An escaped fire situation analysis will be prepared to govern all wildfires escaping initial attack.

Suppression facilities, support vehicles and improvements, i.e., temporary fire camps, helispots, staging areas and other sites used for fire suppression activities, must be outside the wilderness, except those which are the minimum necessary to protect life, property, public welfare and wilderness objectives.

Due to the surface disturbance involved and adverse impacts on wilderness values and esthetics, fireline constructed with motorized equipment will be used as a final recourse.

Within the constraints defined by this guidance, initial attack suppression actions will be determined by the Initial Attack Incident Commander and Resource Advisor, if available.

The Area Manager will be informed immediately of all wildfires that occur in or threaten the wilderness.

Operating Procedures

Detection

Fire detection methods will have the least permanent impact on wilderness values, such as aircraft overflights. Aerial detection flights should attempt to maintain the FAA airspace advisory of 2,000 feet above ground level over the wilderness.

Initial Attack

Establish ground or aerial reconnaissance and determine:

- fire location, size, rate-of-spread and behavior,

- current and probable fuels, weather and topography, including any natural barriers and
- any threats to life, property or sensitive wilderness resources.

Send the Initial Attack Incident Commander to the fire.

Inform the District Manager and Area Manager of the fire.

Send the Resource Advisor to the fire.

Determine/respond with appropriate initial attack force.

Take actions to control the fire during initial attack.

Complete an escaped fire situation analysis if the fire escapes initial attack.

Escaped Fire Situation Analysis

An escaped fire situation analysis will be prepared immediately for any fire that escapes initial attack. Any fire with flame lengths greater than six feet or a perimeter increasing faster than 18 chains (1,200 feet) per hour will be considered to have escaped initial attack. The escaped fire situation analysis, used to determine the management strategy for the fire, will be completed by the District Fire Management Officer, Area Manager, Incident Commander and Resource Advisor.

Motorized And Mechanized Equipment

- perimeter growth exceeds 12 chains (800 feet) per hour in grass fuels or one chain (66 feet) per hour in brush/shrub fuels.

Approval Matrix

The following is the minimum level of authority for approving the use of motorized and mechanized equipment in wilderness.

The use of these tools will be immediately reported by the Incident Commander to the Area Manager through the District Fire Management Officer.

EQUIPMENT	APPROVAL LEVEL
Portable radio repeaters	Area Manager
Temporary weather stations	Area Manager
Chainsaws	Area Manager
Portable pumps	Area Manager
Initial attack aircraft and smokejumpers	Area Manager or Incident Commander
Retardant airtankers	Area Manager or Incident Commander
Helicopters	Area Manager or Incident Commander
Aerial ignition systems	Area Manager
Construction of new helispots	Area Manager
Spike camps	Area Manager
Fire engines	Area Manager
Support vehicles	Area Manager
Motorized earthmoving equipment	Area Manager

Exceptions

In special or emergency cases involving the health and safety of wilderness visitors or the protection of wilderness values, aircraft and motorized vehicles and mechanized equipment may be used. In these situations, the Incident Commander should order the resources needed and notify the appropriate line manager immediately.

The use of power tools (e.g., chainsaws, pumps) and aircraft used in building and holding fireline (e.g., retardant tankers, helicopters with buckets) is pre-approved to facilitate effective initial attack efforts and to minimize the need to locate line managers on short notice if:

- flame lengths exceed four feet or

Tactical Considerations

Planning

Emphasize the BLM minimum tool policy.

Evaluate suppression tactics during each planning and strategy session to ensure that they meet the objectives for the wilderness.

Include the BLM Wilderness Resource Advisor and other affected agency representatives in all planning and strategy sessions.

Emphasize the need to protect habitat for sensitive species, including federally listed threatened and endangered species.

Allow logs and snags to burn rather than be sawed or felled.

Assess and request early in the incident the need for an archaeologist or additional wilderness advisors.

Line Construction and Holding

Whenever possible, avoid the use of scratch lines. Use natural barriers as much as possible in fireline construction. Locate firelines to take advantage of natural barriers, rock outcroppings, trails, streams, etc.

Firelines will be no wider than absolutely necessary to stop the spread of the fire.

Place the fireline as close to the fire as possible.

Limbing of trees along the fireline will be done only as necessary for suppression efforts or for firefighter safety.

If unburned material is left within the fireline, all such material will be felt/tested with bare hands to assure that no sparks or glowing embers remain.

Burning snags or trees will only be felled when they may fall across the fireline or endanger firefighters. If possible, they will be allowed to burn naturally.

Spot fires will be flagged and/or signed from a main fire.

A flagged line from the fire to the nearest road or trail will be left for checking purposes. This line will be removed by whomever checks the fire.

Single engine airtankers with the capacities of 350 to 400 gallons of water, foam or fugitive fire retardant have been very effective in light to moderate fuel types. The use of this fire suppression resource in both initial attack and mop up will be considered.

Trees are minimal in number and provide sensitive wildlife habitat in the wilderness. Only those absolutely necessary for line construction will be cut.

Logistics

Use the long line or remote hook in lieu of constructing new helispots to deliver and retrieve gear. Emphasize the use of natural openings.

Emphasize the use of mule pack strings to resupply fire crews.

Emphasize the use of "no trace" camps.

Consider the use of rappelling operations.

Crews will stay on existing trails, whenever possible.

Base camps are prohibited in the Hell's Canyon Wilderness.

Spike camps in the wilderness are discouraged; if possible, place them outside the wilderness. Evaluate the location of and need for spike camps daily.

If spike camps are approved for use in the wilderness:

- use low impact "no trace" camping techniques, site selection and site use,

- use existing campsites, if available,
- if existing campsites are not available, select campsites unlikely to be observed by visitors,
- select impact-resistant sites such as rocky or sandy soils, avoiding sites along streams,
- change camp location if the ground vegetation in or around the camp shows signs of excessive use,
- do minimal disturbance to the land in preparing sleeping and cooking areas,
- campfires are not allowed,
- do not clear vegetation or dig trenches for sleeping areas,
- toilet sites should be located a minimum of 200 feet from any water source; holes must be dug six to eight inches deep,
- select alternate travel routes between camp and the fire if trail wear becomes excessive and
- restore the campsite area to as natural a condition as possible.
- the fire name, fire number and date of the fire,
- the resource area and wilderness involved,
- the names of the Incident Commander, Wilderness Resource Advisor and Area Manager,
- rationale for actions which may have long-term impacts on wilderness values,
- a description of any motorized vehicle use, date used, specific reason for use and nature of the emergency,
- a description of fire suppression actions taken in the wilderness,
- the specific location and description of the work done,
- rehabilitation action planned and completed to restore the work area to as natural an appearance as possible,
- the date a request was made for use of a motorized vehicle and approved by the Area Manager,
- the date the State Director was informed of the fire and mechanized use and
- any other significant information.

Documentation

A memorandum documenting fire support actions shall be completed immediately after the fire by the Area Manager and signed by the District Manager. Copies will be filed in the Hell's Canyon Wilderness file.

As a minimum, the memorandum shall contain:

Rehabilitation

Emphasize to all fire personnel the need to remove all signs of human activity.

Pack out all garbage.

Fill in deep, wide firelines and trenches.

Waterbar as necessary to prevent erosion.

Ensure that stumps from trees and large brush are cut flush with the ground.

Any trees or large brush cut during fireline construction should be scattered to appear natural.

Restore helicopter landing sites.

Cover or fill in latrine sites.

Appendix B

Bibliography

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- 1988b *Phoenix Final Resource Management Plan/Environmental Impact Statement.* BLM Phoenix District.
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BLM Manual 8560 and H-8560-1

Environmental Assessment

Introduction

Purpose and Need

The Federal Land Policy and Management Act (Public Law 94-579) of 1976 directed the BLM per Section 603 to identify "roadless" areas to be evaluated for suitability for wilderness designation. The Hell's Canyon Wilderness was so designated by Congress on November 28, 1990 in passing the Arizona Desert Wilderness Act (Public Law 101-628). The Wilderness Act (Public Law 88-577) of 1964 provides the framework of wilderness management. Designated areas will be managed for the preservation of wilderness character, visitor use, accepted (non-conforming) uses, utilizing the minimum tool. BLM Manual 8560 and 8561 provide for the development of individual wilderness management plans.

Conformance to Land Use Plans

The proposed action and alternatives conform to the Phoenix Final Resource Management Plan/Environmental Impact Statement (1988b), page 15. The record of decision was signed in 1989.

Relationship to Statutes, Regulations and Other Plans

The Phoenix Final Wilderness Environmental Impact Statement (1987) presented a study on the feasibility of placing the Hell's Canyon Wilderness Study Area into the National Wilderness Preservation System. Although Hell's Canyon was

recommended as unsuitable, Congress designated it as wilderness. The Hell's Canyon Wilderness Management Plan focuses on the BLM's management of wilderness values, visitor use, use of minimum tool and allowed usage, fulfilling BLM Manual requirement 8560.04D to issue wilderness management plans.

Description Of The Proposed Action And Alternatives

Two management plan alternatives have been proposed for consideration in the Hell's Canyon Wilderness Management Plan. Alternative A was developed by the resource area's interdisciplinary team with assistance from the Hell's Canyon Public Work Group. Alternative B is the no action alternative.

Alternative A — Proposed Action

The proposed action is the Hell's Canyon Draft Wilderness Management Plan described in Part V. This alternative is designed to perpetuate the excellent qualities of naturalness and primitive recreation opportunities that Hell's Canyon offers the visitor. Planned actions include restrictions on group usage and identification and protection of critical resource values.

Alternative B — No Action

Alternative B provides only for administrative actions. Vegetative utilization

would not be studied or necessary protective measures implemented. No proactive management designed to study or provide for visitor use will be implemented. The actions are more reactive in nature and adhere to law and BLM policy.

Affected Environment

See Part I, General Management Situation.

The Hell's Canyon Wilderness, in the Hieroglyphic Mountain range, consists of rugged, highly dissected mountains with numerous small, twisting canyons. Vegetation is primarily Sonoran desertscrub, dominated by paloverde/saguaro community and a small stand of relict juniper in Cedar Basin.

Two special status wildlife species and a possible endangered plant species are known to inhabit the area. Big game species include mule deer, javelina and mountain lion. Hunters generally use the southern portion of the Wilderness.

Portions of four grazing allotments are within the wilderness boundaries. No allotment management plans exist for these ranches. The wilderness comprises approximately 12 percent of the Lake Pleasant Burro Herd Management Area. Forage use by the burros is moderate, mostly in the fall and winter. Wildlife and burro inventories are conducted by low-level flights pursuant to previous agreements.

Outstanding opportunities exist for solitude and primitive recreation throughout much of the wilderness due to rugged topography. Trails provide visitors with spectacular, pristine views of Sonoran

Desert canyons, cliffs and the enlarged Lake Pleasant. Expansion of nearby Lake Pleasant Regional Park poses a potential threat to the solitude and natural qualities of the Hell's Canyon Wilderness.

This wilderness surrounds a 640-acre private parcel, which also possesses significant wilderness values. Also, a half-century-old telephone line traverses the northeast corner of the wilderness.

Environmental Impacts

The resources considered and found to be unaffected by the proposed action and alternatives are:

- prime and unique farmlands,
- floodplains,
- riparian habitat,
- Native American religious issues and traditional uses,
- hazardous waste,
- cultural resources,
- air quality,
- wild and scenic rivers,
- threatened and endangered species,
- areas of critical environmental concern and
- mining.

Alternative A — Proposed Action

Impacts to Wildlife

Potential damage to habitat due to livestock, burro and recreational use will be monitored and corrective actions pursued as necessary. Good ecological condition will be maintained or improved.

Impacts to Soil and Water

Recreational activities would have a slight negative impact to certain use areas,

which would receive a focus of activities. Areas along trails, especially camping spots, would receive some trampling and vegetation loss. Since these activities would be almost totally confined to the trails, the remainder of the wilderness should remain pristine.

Water sources will receive slight negative impact to quality due to human visitation.

Impacts to Vegetation

Vegetation communities will benefit as forage and browse utilization limits allow for maintenance of a healthy ecosystem. Full suppression of wildfire, if detected and extinguished promptly, will discourage degradation of the Sonoran desertscrub. Live mesquite, ironwood and paloverde trees will be protected as wilderness users confine firewood usage to dead-and-down fuels.

Adverse residual effects of private inholding development will be avoided upon its successful acquisition. Motorized access would not be necessary through sensitive desert vegetation. Desert vegetation in that parcel as well as those bounding parcels would not be affected by development.

Since recreational impacts will be monitored closely, negative human impacts from camping and hiking will be detected. High use areas exhibiting decline in condition can be repaired if attended to promptly.

Impacts to Range Management

Results of vegetation monitoring could lead to the reduction of cattle animal use months, or at least prevent the increase of present numbers. Implementing a maintenance schedule for range developments will allow continued routine maintenance,

Comparison of Alternatives in the Hell's Canyon Wilderness		
	Alternative A	Alternative B
OBJECTIVE 1: Naturalness		
1. Forage utilization	Utilization not to exceed 50 percent	No monitoring of utilization
2. Fire suppression	Full suppression of fire; no prescribed fire	Same as under Alternative A
3. Land acquisition and/or legal access	Protects wilderness values from development of private land	Inholding remains private: the BLM would have to allow access, if requested
4. Firewood use	Dead-and-down use only	Same as under Alternative A
5. Revegetation	Allow revegetation of routes formerly used by vehicles	Same as under Alternative A
6/7. Facility maintenance	Allows for maintenance of range developments and telephone line, using minimum tool	Same as under Alternative A
8. Monitoring	Evaluates vegetative condition and permit compliance	No vegetation condition and permit compliance evaluation
OBJECTIVE 2: Recreation Opportunities		
1. Trail inventory	Inventory existing trails; document condition	No trail data compiled
2. Maintain existing trails	Allows for periodic minor maintenance	No trail maintenance
3. Campsite inventory	Inventory existing campsite condition	No campsite data compiled
4. Commercial permits	Camping limitation	No camping limitation
5. Non-commercial recreation	Regulate large groups	Large groups unregulated
6. Public education	The BLM will produce a wilderness brochure available at public request; install trail registers; implement visitor response system	No brochure produced; no trail registers installed

which in turn will support efficient live-stock management.

Impacts to Wild Burros

Monitoring of habitat will allow the BLM to keep herd numbers within a thriving ecological balance, thus preserving habitat integrity.

Impacts to Recreation

More efficient management would be both the immediate and long-term effects of the action proposed under Alternative A. The inventory of existing trails, public education efforts and providing a brochure to wilderness visitors will help to maintain or enhance the wilderness values.

Impacts to Wilderness Values

The procedures proposed for special recreation permits and group size limits would help maintain the levels of solitude by regulating the effects of commercial services and large group sizes on opportunities for solitude. Monitoring would allow timely responses to circumstances that are incompatible with the desired social setting.

Acquisition of a 640-acre private inholding will preserve the wilderness values as a contiguous unit, assuring that this parcel will not be developed.

Aerial burro and wildlife inventories will have a negative but very brief impact on solitude. Low-level flights are of short duration and conducted during low use times.

Implementation of the range development maintenance schedule and wilderness access permit will have negative, albeit temporary, impacts to the wilderness experience. The sight of a bulldozer

removing silt from the reservoirs will impact qualities of solitude and naturalness. The impact will only last a maximum of three days and will be at a time when visitation would probably be minimal. Naturalness would be negatively affected by the lasting evidence that the bulldozer had traversed the wilderness route, plus the actual presence of the reservoir. Maintenance to the telephone line will allow for temporary vehicular and even occasional aircraft access. These impacts will be temporary and mostly during low use times.

Solitude would be temporarily interrupted if and when burro captures become necessary. However, naturalness and primitive recreation opportunities will be preserved with the removal of problem burros.

Cumulative Impacts

Long-term impacts of plan implementation should be positive for wilderness values of solitude and naturalness. The area will continue to provide an oasis of beauty and pristine vistas as the BLM closely monitors visitation and vegetative impacts of that visitation in addition to the allowed resource uses. Areas of degradation should heal. Areas of continued use will be closed if necessary to allow the healing process to evolve.

Economic impacts of this wilderness plan to the local community are expected to be minimal. There will be opportunity for outfitters to profit from wilderness guiding. The major economic impact will be provided by the adjacent park development.

Social impacts to the community will be significant. Adjacent road use will

continue to increase, affecting the residents along the wilderness border. Most of this impact is residual from Lake Pleasant visitors. It is not known how much increased visitor use will be related to the wilderness itself.

Mitigation Measures

The following measures will be implemented to lessen impacts of certain allowed, but incompatible, uses within the wilderness.

1. Authorized aerial inventories (wildlife, burro) will be performed during low use times, i.e., during the week, rather than on weekends. Burro inventory flights will be conducted between May 1 and August 31, considered to be a low use period.
2. Authorized maintenance to range developments and non-emergency maintenance to the telephone line will be conducted during low use times, i.e., during the week, rather than on weekends. Normal telephone line maintenance will be performed between May 1 and August 31, considered to be a low use period.
3. Removal of livestock and/or burros if it is determined that forage and browse overuse is a direct result of these animals.
4. Obliteration of new trails and campfire rings and removal of trash.
5. Campfire restrictions will be implemented if vegetation overutilization becomes a problem.

6. A permit system will be implemented if visitor use exceeds established standards.
7. Portals will be established if vehicle density exceeds established standards.

Residual Impacts

There will be infrequent times that aircraft and ground vehicles will be within the wilderness performing authorized work. This will disrupt solitude of the wilderness visitor.

Alternative B — No Action

Impacts to Wildlife

Potential habitat degradation may go undetected and unresolved, resulting in negative impacts.

Impacts to Soil and Water

There will be no vegetative or recreational monitoring programs to indicate the condition of the soil in potential heavy use areas. Negative impacts could begin and progress unimpeded. Water quality could degrade if no action is taken in response to downtrend in the annual studies.

Impacts to Vegetation

Vegetation communities would not be monitored with the frequency and detail needed to determine if healthy ecological conditions are being maintained. Potential overuse may lead to deterioration of vegetation communities. Full suppression of wildfire will discourage degradation of the Sonoran desertscrub if detected and extinguished promptly. Recreational use of live mesquite, ironwood or paloverde would destroy portions of the habitat.

Adverse residual effects of private inholding development will have a direct negative effect on surrounding wilderness lands. Wilderness values could be compromised if vegetation communities suffer from overuse and degradation caused by increased population on the adjacent parcel. Authorized motorized access would be necessary through sensitive desert vegetation.

Any negative human impacts from camping and hiking would be undetected by BLM personnel unless reported by the public. High use areas exhibiting decline in condition would deteriorate from increased unregulated visitor use.

Impacts to Range Management

The Eleven L and Castle Hot Springs allotments would be hindered by not permitting the use of motorized or mechanized equipment within the wilderness. All of the earthen reservoirs will eventually become completely filled with silt and lose the ability to hold water. This would result in changes to livestock distribution and overuse of some areas.

Impacts to Wild Burros

Same as under the proposed action.

Impacts to Recreation

The unmonitored and uncontrolled use of the area would detract from wilderness recreation opportunities. Trails would not be mapped, camping areas would neither be inventoried nor maintained and accurate information about the area would not be made available to the public.

Impacts to Wilderness Values

Wilderness values would likely deteriorate over time under Alternative B. Unauthorized uses of the wilderness would

not be well controlled and would eventually detract from the values of solitude and wilderness character.

Failure to acquire the 640-acre private inholding will allow the potential for development. Such development would severely mar the surrounding scenic wilderness values, adversely affecting solitude in the northwest quadrant of the wilderness. The BLM may be required to provide legal access to the private inholding which could result in a degradation of wilderness characteristics.

Aerial burro and wildlife inventories will have a negative but very brief impact on solitude. Low-level flights are of short duration and conducted during low use times.

Conducting maintenance and inspection of range developments on foot or horseback would not result in significant adverse impacts to wilderness values of solitude and naturalness.

Cumulative Impacts

Wilderness values of naturalness and solitude would probably deteriorate, especially given the long-term expectation of increased visitor use. The BLM would not be monitoring such use or controlling points of entry.

Unregulated usage of the wilderness in the face of large visitor numbers will degrade vegetation and soils in the more popular areas.

The primary livestock operators in the Hell's Canyon Wilderness would suffer economically due to inefficiencies created by limited means of access to vital range developments. Potential economic ben-

efits to outfitters would not be realized as no commercial permits would be issued for the wilderness.

Social impacts to the community will be significant. Adjacent road use will continue to increase, affecting the residents along the wilderness border. Most of this impact is residual from Lake Pleasant visitors. It is not known how much increased visitor use is related to the wilderness itself.

Mitigation Measures

The following measures will be implemented to lessen impacts of certain allowed, but incompatible, uses within the wilderness.

1. Authorized aerial inventories (wildlife, burro) will be performed during low use times, i.e., during the week, rather than on weekends. Burro inventory flights will be conducted between May 1 and August 31, considered to be a low use period.

2. Authorized maintenance to range developments and non-emergency maintenance to the telephone line will be conducted during low use times, i.e., during the week, rather than on weekends. Normal telephone line maintenance will be performed between May 1 and August 31, considered to be a low use period.

Residual Impacts

There will be infrequent times that aircraft and ground vehicles will be within the wilderness performing authorized work. This will disrupt solitude of the wilderness visitor.

Consultation And Coordination

See Part VIII of the Wilderness Management Plan.

Finding of No Significant Impact

Hell's Canyon Wilderness Management Plan

Environmental Assessment No. AZ-024-94-019

Case File AZA 25480

Decision: It is my decision to approve the Hell's Canyon Wilderness Management Plan. The plan establishes management direction for the Hell's Canyon Wilderness for a five-year period.

Finding of No Significant Impact: Based on the analysis of potential environmental impacts contained in the attached Environmental Assessment, I have determined that impacts are not expected to be significant. An Environmental Impact Statement is not required.

Rationale for Decision: The plan provides for the continued maintenance of wilderness values and closely monitors recreational use of Hell's Canyon Wilderness. Routine monitoring and yearly evaluations provide for modifications to the plan should a change in conditions occur.

Other Alternatives Considered: The proposed action and the no action alternative were considered.

Mitigation/Stipulations: Mitigative measures are incorporated in the proposed action.

Recommended by: Gail Chapman April 18, 1995
Area Manager, Phoenix Resource Area Date

Recommended by: L.S. Chinn April 18, 1995
District Manager, Phoenix District Date

Approved by: Lester K. Rendon April 20, 1995
State Director, Arizona Date