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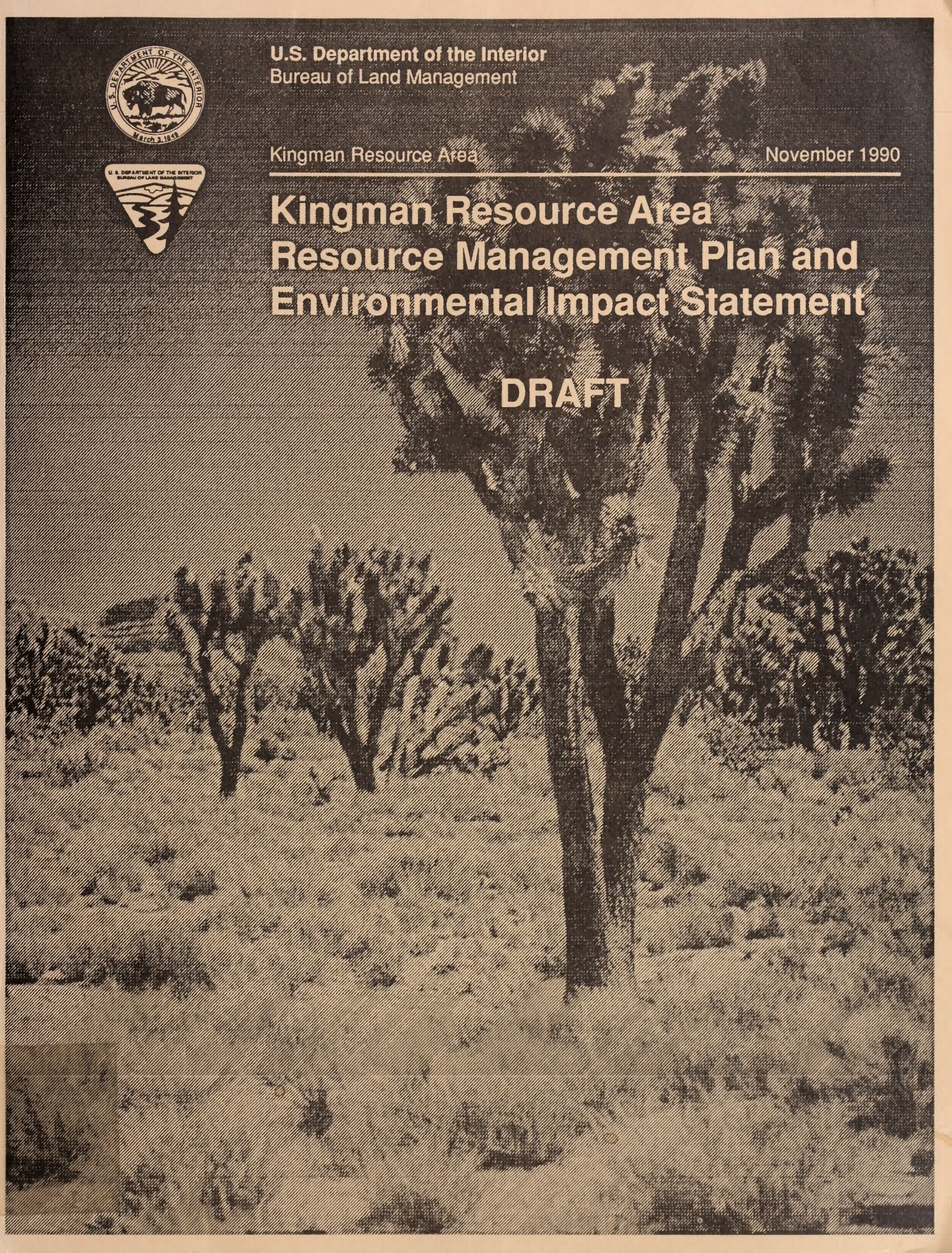
Kingman Resource Area

November 1990



# Kingman Resource Area Resource Management Plan and Environmental Impact Statement

**DRAFT**



As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. administration.

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# KINGMAN RESOURCE AREA

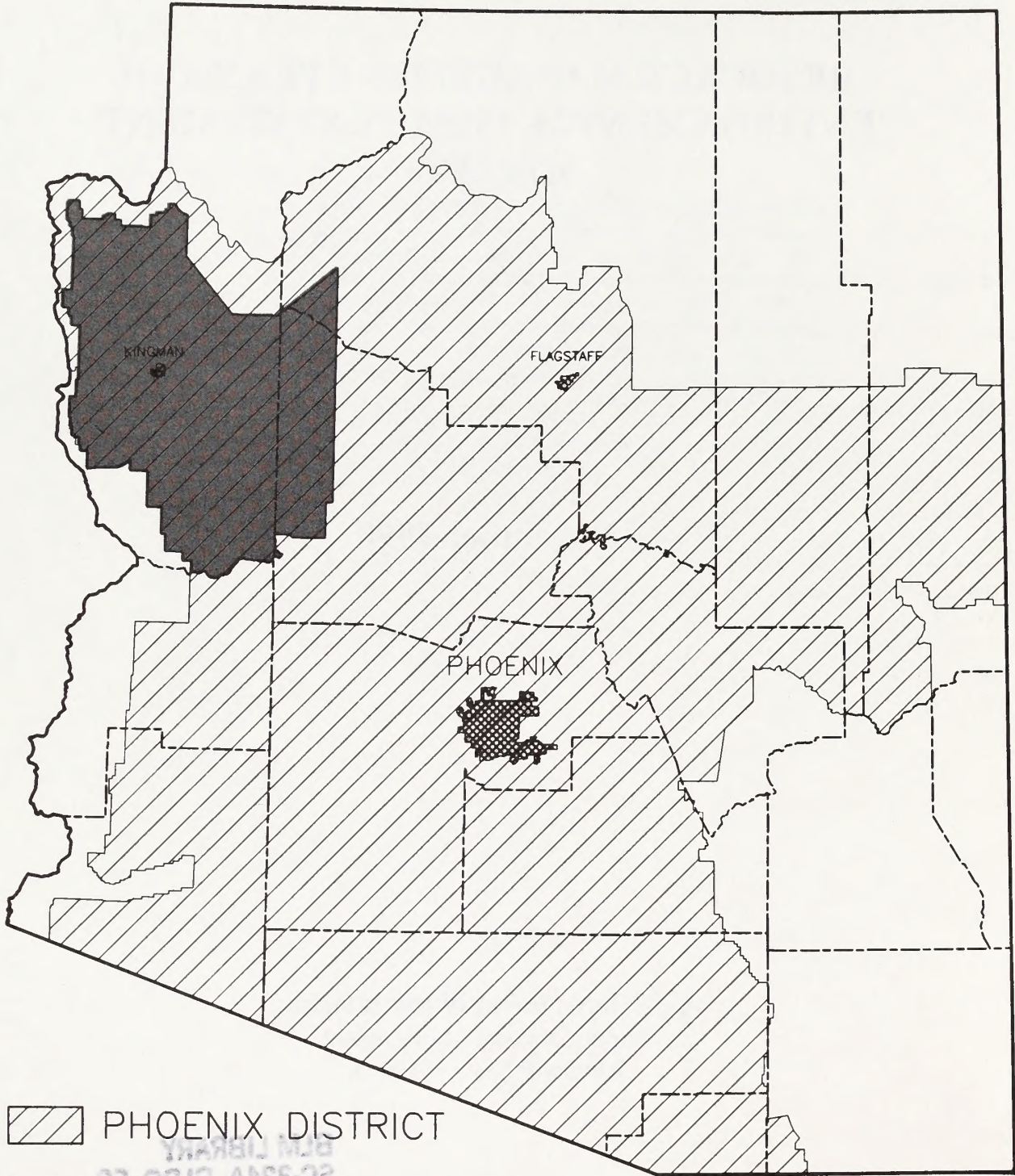
## RESOURCE MANAGEMENT PLAN AND ENVIRONMENTAL IMPACT STATEMENT •DRAFT•




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# PLANNING AREA LOCATION



-  PHOENIX DISTRICT
-  KINGMAN PLANNING AREA
-  COUNTY BOUNDARIES

# KINGMAN RESOURCE AREA

## RESOURCE MANAGEMENT PLAN AND ENVIRONMENTAL IMPACT STATEMENT

Draft (X)      Final ( )

The United States Department of the Interior, Bureau of Land Management

1. Type of Action: Administrative (X)      Legislative ( )
2. Abstract: This draft Resource Management Plan and Environmental Impact Statement describes and analyzes alternatives, including a No Action Alternative, for managing the public land and resources in the Kingman Resource Area, Arizona.
3. Comments have been requested from the individuals, groups and agencies listed in Chapter V.
4. For further information contact:  
  
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    Kingman Resource Area  
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    Kingman, Arizona 86401  
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5. Draft filed with the Environmental Protection Agency:      **NOV 27 1990**
6. Comments on this draft RMP/EIS must be postmarked no later than:      **MAR 08 1991**





# United States Department of the Interior

BUREAU OF LAND MANAGEMENT  
KINGMAN RESOURCE AREA  
2475 BEVERLY AVENUE  
KINGMAN, ARIZONA 86401



IN REPLY REFER TO:  
1792(026)  
November 1990

Dear Reviewer:

This draft Resource Management Plan/Environmental Impact Statement (RMP/EIS) for Kingman Resource Area is presented for your review and comment. This document analyzes alternatives for managing public lands in the resource area. These alternatives are designed to guide future management and resolve land management issues that were identified during the early stages of the planning process.

We welcome your comments on the content of this document. Those comments addressing the adequacy of the draft RMP/EIS will be responded to in the final. Specific comments will be most useful. We encourage you to submit your comments in writing. In order to be considered in the final RMP/EIS, comments must be received within 90 days of the Federal Register notice of availability.

Please keep this copy of the draft RMP/EIS, as an abbreviated final RMP/EIS may be issued in accordance with Council on Environmental Quality regulations. Copies of the final RMP/EIS will be sent to all those who provide comments on the draft or request-a copy.

All comments should be sent to:

Bill Carter  
Bureau of Land Management  
Kingman Resource Area Office  
2475 Beverly Avenue  
Kingman, Arizona 86401





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## SUMMARY

### INTRODUCTION

This draft resource management plan and environmental impact statement (RMP/EIS) identifies and analyzes alternatives for managing public lands and resources administered by the Bureau of Land Management (BLM) in the Kingman Resource Area (KRA). The RMP will guide the management of public lands, associated resources and diverse multiple uses on KRA over the next 20 years.

BLM's land use planning is accomplished under the authority of and in accordance with the Federal Land Management and Policy Act of 1976 (FLMPA). This draft was prepared by an interdisciplinary team and the resource area staff. The plan is the result of a concentrated step-by-step planning effort over the past 2 years and substantial public involvement and consultation. The BLM Phoenix District Office and the Arizona State Office provided technical assistance and review.

### THE PLANNING AREA

KRA encompasses 2.5 million acres of public land surface and 2.2 million acres of federal minerals in northwestern Arizona south of Lake Mead and the Hualapai Indian Reservation. KRA is characterized by large areas of checkerboard lands. (See Maps in the packet in back of document.)

KRA is a vast and interesting area rich in natural and cultural resources. Important forage, wildlife, mineral, archaeological, scenic, recreation, watershed, woodland, and other values are present in these public lands.

A wide variety of multiple uses occur on the planning area and public use has increased steadily in recent years, due to the increased population in and around Kingman and Bullhead City. The resources available and associated uses are important to the public as well as local communities.

### THE PLANNING PROCESS

This RMP/EIS was prepared in accordance with BLM planning regulations. Decisions made for implementing the RMP will update or, in some cases, replace land use planning decisions in the Cerbat Mountains (1974), Black Mountains (1975), and Hualapai-Aquarius (1980) management framework plans (MFP). These MFPs have guided KRA's public land management since their completion. Substantial changes have occurred in the planning area since completion of the MFP. These changes necessitate updating the land use planning for the area.

The planning criteria established the legal parameters and management goals that directed the development of the RMP. The basic criteria used came from FLPMA and Supplemental Program Guidance.

Objectives are an integral part of the planning process. They guide proposed management in development and evaluation of the alternatives. The planning area-wide objectives are found in Chapter II of this document.

### MANAGEMENT GUIDELINES

Recognizing that some public lands are more sensitive to multiple uses than others because of special qualities, concerns, or conflicts, two areas have been identified to guide management. They are referred to as General Management Areas and Areas Requiring Special Management.

### GENERAL MANAGEMENT AREAS

Most of KRA consists of lands containing a wide variety of resources and values that require continued multiple use management. These lands generally do not contain unusual characteristics and are not subject to unusual demands requiring special management attention.

Management guidelines for these areas would remain similar to current management practices which are considered adequate. Existing laws, regulations, policies and procedures would be followed. The following management guidelines would apply:

- designate off-highway vehicle (OHV) use as open or limited to existing roads, trails, and washes.
- issue sale and free-use permits as appropriate for vegetative products and mineral materials.
- provide for primitive motorized and primitive non-motorized recreation.
- lands determined to be necessary for community expansion could be transferred out of federal ownership, however, the preferred method will be through exchange.

### AREAS REQUIRING SPECIAL MANAGEMENT

The remaining lands have characteristics that include important scenic values and exceptional natural features that offer quality recreational opportunities in remote backcountry settings. With few exceptions, these lands are generally not developed. They have been identified by the public and BLM as having unique resource values, such as threatened and endangered species and would require special management.

Management guidelines for these public lands would be focused on the enhancement of various resource values, while allowing for multiple use. BLM would manage authorized uses and prepare management prescriptions to protect unique resource values. The following management guidelines would apply:

- close and rehabilitate roads where no public or administrative need exists
- designate OHV use as limited or closed
- implement special resource coordinated management plans to protect the fragile character and unique resource values of specific areas

- land will not be transferred out of federal ownership unless specifically required by law
- provide for primitive motorized and primitive non-motorized recreation.

## PLANNING ISSUES

The RMP/EIS is issue driven. The planning effort focuses on resolving major issues associated with management of public lands in the planning area.

There is high public interest and concern about how public lands and associated resources are and will be managed in the future. Scoping meetings held to obtain public input and followup staff work by the planning team identified six major planning issues for resolution in this RMP/EIS. These issues are the focus of this planning effort and they are addressed and tracked throughout this document. The six issues are listed below and explained in more detail in the "Planning Issues" section of Chapter 1.

- Issue 1: (a) Recreation Planning  
(b) Off-Highway Vehicles
- Issue 2: Special Area Designations
- Issue 3: Wildlife Habitat/Threatened and Endangered Species
- Issue 4: Riparian Area Management
- Issue 5: Land Tenure
- Issue 6: Saleable, Locatable, and Leasable Minerals

## MANAGEMENT COMMON TO ALL ALTERNATIVES

Management decisions and guidance common to all alternatives are also provided in the RMP/EIS. They are from existing MFPs, activity plans and the laws, regulations, and policies by which BLM is directed. Common management direction involves facets of the following resource programs: lands, minerals, rangeland/vegetation, wild horses and burros, special status species, wildlife habitat, riparian habitat, cultural resources, soil, water, and air, fire management, hazardous materials, recreation, transportation/access maintenance, woodland, law enforcement, and environmental management.

## ALTERNATIVES CONSIDERED

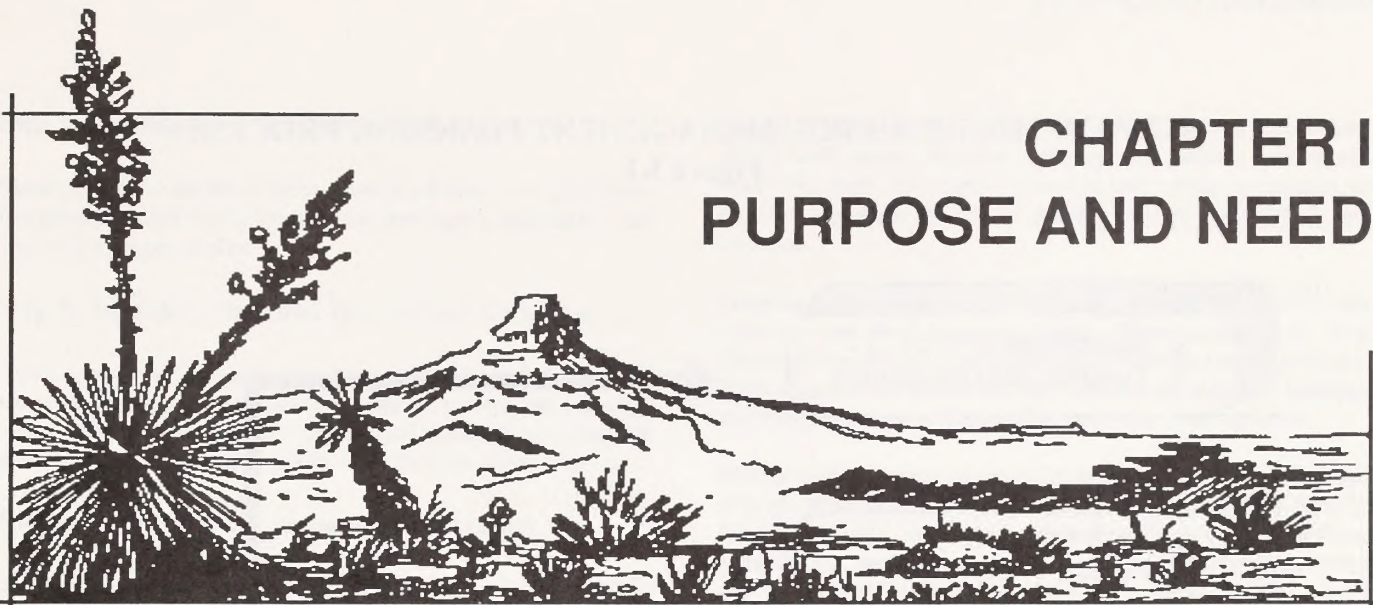
*Alternative 1 (Current Management)* represents the continuation of present management as prescribed in existing management framework plans (MFP) and as summarized in the management situation analysis (MSA). *Alternative 1* is the *No Action Alternative* for the RMP/EIS. *Alternative 2* contains decisions that the interdisciplinary team believes represent the best combination of actions allowing resource uses and still protecting the environment. *Alternative 3* places smaller areas under special management, adds two disposal areas, increases recreation facilities, closes areas to livestock grazing to protect unique resources, and reduces wild horse numbers.

## ENVIRONMENTAL CONSEQUENCES

The environmental impacts of the three alternatives have been analyzed and are described in Chapter IV and summarized at the end of Chapter II, see Table II-14. The impacts depict the projected changes that would occur to the environment if the alternative being analyzed was implemented.

The cumulative impact section addresses the degree and extent of the cumulative impacts on the environment. Cumulative impacts include the impact on the environment which results from the incremental changes from various actions when added to other past, present and reasonably foreseeable changes. Cumulative impacts can also result from individually minor, but collectively significant actions taking place over a period of time.

# CHAPTER I PURPOSE AND NEED



## INTRODUCTION

The Kingman Resource Management Plan/Environmental Impact Statement (RMP/EIS) will guide the Kingman Resource Area (KRA) in managing 2,506,000 acres of public land surface and 2,188,000 acres of federal minerals for the next 20 years. This RMP/EIS was prepared under the authority of Section 201 and 202 of the Federal Land Policy and Management Act (FLPMA) of 1976, as amended, which requires the Secretary of the Interior to develop land use plans for all public lands. The RMP/EIS conforms to the Bureau planning regulations (43 CFR 1600).

The National Environmental Policy Act (NEPA) requires all federal agencies to prepare an EIS on any major federal action. The EIS analyzes the environmental impacts of implementing the preferred RMP and alternatives and was prepared under the Council on Environmental Quality (CEQ) regulations for implementing NEPA. This draft EIS is not a decisionmaking document. Decisions are made in the Record of Decision.

## PURPOSE AND NEED

This RMP/EIS focuses on resolving planning issues associated with the future management of public lands in KRA. KRA public lands are rich in wildlife, archaeological, scenic, recreational, mineral and forage values. KRA's overall goal is to provide quality multiple use and sustained yield management of the public lands.

The planning issues were identified by the resource area's specialists, the management team, and the public during the scoping process. The scoping process is designed to determine the issues to be resolved by the RMP. This process began with the publishing of the Notice of Intent (NOI) to prepare the RMP/EIS in the *Federal Register* on September 27, 1988. Following the publishing of the NOI, the Bureau of Land Management (BLM) sent letters to the KRA's mailing list stating where and when the public scoping meetings would be held and the preliminary issues to be discussed at the meetings. See Chapter 5 "Consultation and Coordination" for a description of the scoping process.

The RMP/EIS does not address two issues identified during the scoping process: wilderness and livestock grazing. These two issues were discussed and analyzed in separate EISs. The decisions made

on the Cerbat/Black Mountain (BLM 1978) and Hualapai-Aquarius (BLM 1981) Grazing EISs, and the recommendations in the Upper Sonoran (BLM 1987), Phoenix (BLM 1987) and Arizona Mohave (BLM 1989) Wilderness EISs will be adopted as the management direction for the two programs in the RMP/EIS. All of these documents may be reviewed at the KRA office. A very limited scope of livestock grazing is addressed only as it relates to other issues, to ephemeral grazing management, and to allocation of forage on acquired lands.

This RMP will replace land use decisions in the three existing management framework plans (MFP), Cerbat Mountains, Black Mountains, and Hualapai-Aquarius, which have guided BLM's management of public land in KRA for the past 8 to 14 years. MFP decisions that are still valid are being carried forward and incorporated in this RMP. Decisions not mentioned in the RMP will no longer be valid.

## Description of the Planning Area

In northwest Arizona, south of the Lake Mead National Recreation Area, KRA contains 2,506,000 acres of public land surface and 2,188,000 acres of federal minerals. These lands are in Mohave, Yavapai, and Coconino Counties, Arizona. See planning area maps in Volume 2. The public lands in Mohave and Yavapai Counties for the most part are well blocked, with several large checkerboard areas. The 7,687 acres in Coconino County are isolated and scattered.

## Planning Process

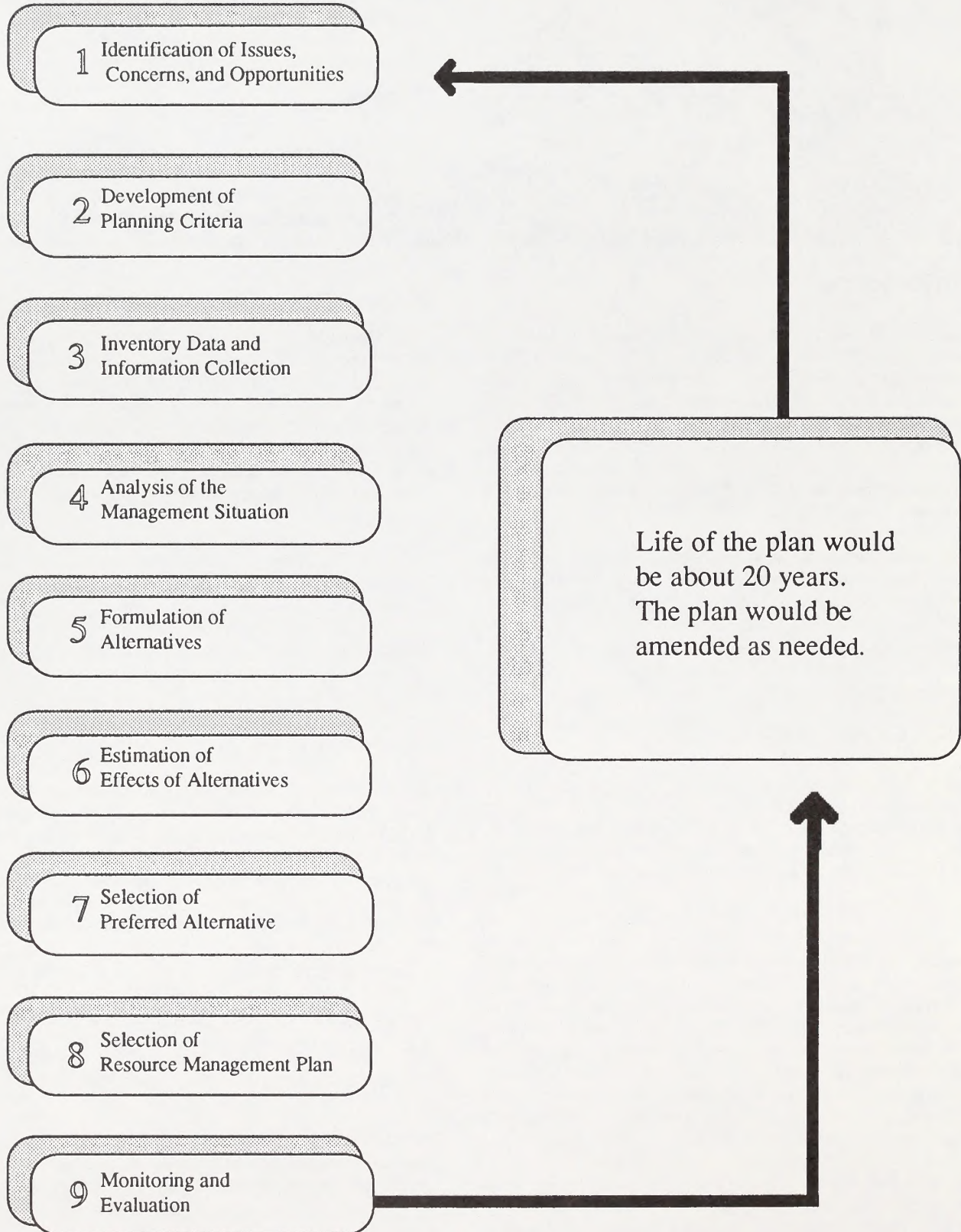
The BLM resource management planning process consists of nine steps, described below and shown in Figure I-1.

### Step 1: Identification of Issues

Step 1 identifies major problems, concerns, and opportunities associated with the management of public land in the RMP area. Issues are identified by the public, BLM, and other governmental entities. The planning process focuses on resolving the identified planning issues.

STEPS IN THE RESOURCE MANAGEMENT PLANNING PROCESS

Figure I-1



### Step 2: Development of Planning Criteria

Planning criteria are the policies, laws, regulations, and guidelines that should be used for resolving issues, developing alternatives, and choosing a proposed plan.

### Step 3: Inventory Data and Information Collection

This step involves the collection and assembly of biological, physical, social or economic information needed to resolve the planning issues. The inventory information is used in determining how the public land resources will respond to each of the alternatives.

### Step 4: Analysis of the Management Situation

The management situation analysis (MSA) describes the ways BLM currently manages the planning area's public land and discusses opportunities to better manage this public land.

### Step 5: Formulation of Alternatives

At this point, BLM formulates a range of alternatives for managing the resources in the RMP area. The range of alternatives is developed to resolve the planning issues and to address management concerns in the RMP area.

### Step 6: Estimation of Effects of Alternatives

This step involves estimating and analyzing the environmental effects of implementing each of the alternatives. The effects of implementing each alternative are compared before a preferred alternative is selected.

### Step 7: Selection of the Preferred Alternative

From information generated during Steps 1 through 6, BLM selects a preferred alternative, prepares a draft RMP/EIS, and distributes the draft for public review.

### Step 8: Selection of the Resource Management Plan

From the results of public review and comment, BLM selects a proposed RMP and publishes it with a final EIS. A final decision is made after a 30-day protest period following filing of the proposed RMP/final EIS with the Environmental Protection Agency (EPA).

### Step 9: Monitoring and Evaluation

This step involves the collection and analysis of long-term resource condition and trend data to determine the plan's effectiveness in resolving issues and to assure that the plan is achieving the desired results. Monitoring continues from the time the RMP is adopted until changing conditions require a revision of the whole plan or any portion of it.

### Planning Issues, Criteria, and Management Concerns

The BLM planning regulations, 43 Code of Federal Regulations (CFR) 1600, equate land use planning with problem solving and issue resolution. An issue is defined as an opportunity, conflict, or problem regarding the use or management of public lands and resources.

Planning criteria are the standards, rules, and measures used for data collection and alternative formulation. These criteria guide final plan selection. Planning criteria are taken from laws and regulations, BLM manuals and directives, and concerns expressed in meetings and in consultations with the public and with other agencies.

Management concerns are nonissue-related procedures or land use allocations that have proven during the preparation of this RMP/EIS to need changing. Management concerns focus on use conflicts, requirements, or conditions that cannot be resolved administratively and did not during initial public scoping appear to meet the criteria to qualify as planning issues.

The following planning issues, management concerns, and associated planning criteria were selected for resolution in the Kingman RMP.

### ISSUE 1a: RECREATION PLANNING FOR SPECIAL AREA MANAGEMENT, PROJECT PLANNING, FACILITIES, VISITOR SERVICES AND RECREATION 2000 IMPLEMENTATION

Increasing population, leisure time, mobility, and disposable income are rapidly expanding public demand for recreation opportunities, recreation facilities, visitor services, and resource protection measures in KRA. Most notably, KRA's demographics are rapidly changing. Kingman, Dolan Springs, Meadview, Sacramento Valley, and Bullhead City/Laughlin are growing communities, particularly for retired persons. The median age of the nation's population is increasing, and BLM should address the needs of older citizens in the future. There is an intense interest in recreation on the surrounding public lands.

Commercial and public recreational developments are expected to increase throughout Mohave County on Indian reservations and along the Colorado River. Laughlin, Nevada, is becoming a gambling center rivaling Reno, Nevada, in number of visitors and economic significance. Bullhead City, Arizona, Laughlin's sister city across the river, and the surrounding area are also growing and rapidly becoming a major winter recreation center. BLM must develop strategies to enhance the delivery of commercial and public recreation services and satisfy visitor recreation needs in the Colorado River Valley. The potential to manage and enhance recreation and tourism and develop partnerships with commercial recreation interests are limitless and untapped in the Bullhead City area. In addition, the City of Kingman and Mohave County are highly interested in the recreation potential of the public lands. Tourism may well become the number one industry in Mohave County.

To serve visitor recreation needs, BLM must plan for the management and long-term protection of recreation opportunities. Successful implementation of BLM's Recreation 2000 policies can be achieved through recreation planning and management prescriptions developed

## CHAPTER I

in the Kingman RMP. BLM has received many public comments about recreational use and impacts to public land. Potential management decisions for all resources will affect the availability and quality of public recreation opportunities.

The Kingman RMP will establish an occupancy and camping stay limit on public lands to protect natural resources and to ensure recreation opportunities are open to all visitors. Long-term occupancy during the winter and summer recreation use seasons have created ongoing problems with constant and unauthorized wood collection, off-highway vehicle (OHV) use, and the illegal dumping of trash and sewage holding tanks on public land.

The RMP will evaluate the need for and possible location of long-term visitor use areas. Such areas must meet resource protection needs and provide visitor services, but they should not compete with private, local, or other public recreation facilities.

### Needed Decisions

Which KRA public lands should be designated special recreation management areas (SRMA) and be managed to maintain and enhance their characteristic outdoor recreation opportunities and the natural settings on which these opportunities are based?

What recreational settings should be maintained for the identified recreational opportunities occurring within extensive recreation management areas (ERMA)? The ERMA includes all public land, exclusive of special recreation management areas (SRMA), and those settings where recreation is unstructured and dispersed and requires minimal BLM investment or regulation.

What funding and implementation priorities should be established for areas and facilities for which activity planning has been completed?

On the basis of RMP decisions to establish more developed sites or other recreation program initiatives, what recreation activity planning priorities should BLM establish.

### Planning Criteria

To answer the questions listed above, BLM will consider the following:

- \* KRA's changing demographics, including increasing population (working and retired) and expanding population centers and retirement communities;
- \* potential strategies to improve the delivery of commercial and public recreation services to visitors, including partnerships with commercial, local, and county recreation and tourism agencies;
- \* existing recreation uses, use areas, and facilities;
- \* public demand for more recreation activities, settings, and experiences;
- \* capability of the public lands to provide outdoor recreation;

- \* compatibility with resources and uses on adjacent lands;
- \* effects of recreational uses on, or compatibility with, other resources and uses at the site;
- \* public welfare and safety;
- \* methods for providing handicapped access in developed recreation sites;
- \* existing, planned, and projected commercial and public recreational developments on private, county, other federal, and Indian lands; and
- \* public interest and attitudes.

### ISSUE 1b: OFF-HIGHWAY VEHICLES

Public lands will continue to provide opportunities for the use of off-highway vehicles (OHV). Largely due to the popularity of the vehicles, closeness of users to the public lands, and the extensive network of roads and navigable washes throughout KRA, OHV use will continue to be the fastest growing segment of outdoor recreation. As a result, more intensive management will be needed, and all public lands in the planning area will need to be designated for OHV use or nonuse.

BLM policy (FLPMA, 43 CFR 8340, and Executive Orders 11644 and 11989) requires all public land in the KRA to be designated open, limited, or closed to OHV use. In some locations OHV use is causing soil erosion, damaging cultural artifacts, creating visual scars on the landscape, and disturbing wildlife habitat. In addition, many public comments addressed concern about motorized vehicle use on public land. To continue providing space and opportunity for OHV activities, BLM must manage their use to avoid unacceptable environmental impacts.

### Needed Decisions

Which public lands should be designated as "open" to OHV use?

Which public lands should be designated as "closed" to OHV use?

On which public lands should OHVs be limited to existing or designated roads, trails, and washes? Where should these limited designations be further defined as to season of use, type, or number of vehicles?

### Planning Criteria

To answer the questions listed above, BLM will consider the following:

- \* level of existing use and location of areas being used by OHVs;
- \* demand for more OHV opportunities;
- \* types of OHVs being used;



- \* resources sensitive or susceptible to damage by existing or projected OHV use and their locations;
- \* effects of OHV use on other resources and uses;
- \* effects of OHV restrictions or closures on other uses, i.e., mineral exploration, hunting, sight-seeing;
- \* reliance of OHVs on facilities mainly built for other uses such as range management or mining;
- \* BLM administrative needs;
- \* coordination with local, state, and federal agencies and Indian tribes involved in managing OHVs;
- \* public interest and attitudes;
- \* manageability of an area to accomplish the objectives of a designation; and
- \* public welfare and safety.

- \* effects of nondesignation on resources;
- \* social and economic influences;
- \* public interest and attitudes;
- \* consistency with other BLM designations such as wilderness study areas (WSA), extensive recreation management areas (ERMA), special recreation management areas (SRMA), visual resource management (VRM) classifications, and air quality classifications;
- \* consistency of designations with resource plans of other federal, state, and local governments and Indian tribes; and
- \* consultation with federal, state, and local agencies, the scientific community, and individuals.

**ISSUE 3: WILDLIFE HABITAT/THREATENED AND ENDANGERED SPECIES**

KRA public lands provide one of the rarest and most diverse mosaics of wildlife habitat in the Southwest. The diversity of habitat ranges from the lower Sonoran Desert environs at 1,000 feet elevation near Alamo Lake to the ponderosa pine and mixed conifer habitats in the Hualapai Mountains at 8,400 feet. Such diversity in habitat types provides for a similar diversity of federally or state-listed threatened and endangered wildlife and plant species as well as other unusual and common species.

Other uses of the public lands can damage wildlife habitat if not properly managed. Special attention is needed to restore, maintain, or enhance priority species and habitats. Integration of habitat management with other resource programs requires careful planning to avoid harming these species and habitats while still allowing other compatible uses of the public lands.

**Needed decisions**

What species and habitat should receive management priority? Are maintenance, improvement, and expansion objectives within existing HMPs sufficient for special status species?

What actions should BLM take to achieve objectives for priority species and habitat? Such actions would include specific habitat improvement or maintenance projects as well as management actions for the coordination of competing uses on the public lands.

Are habitat capability goals to support target populations of priority species adequately addressed in existing HMPs? Should any of these goals be updated or revised?

Do any habitat management plans (HMP) need revision? If so, which HMPs and in what priority?

What thresholds should be established for management changes based on monitoring objectives?

What management objectives should BLM establish for state and

**ISSUE 2: SPECIAL AREA DESIGNATIONS**

KRA public lands have a variety of important historic, cultural, scenic, wildlife, botanical, soil, water and recreation values. Designations for special management, such as areas of critical environmental concern (ACEC), including outstanding natural areas, research natural areas, and natural hazard areas may be used to protect these values. Such designations may also be used to identify and manage areas that are hazardous to human life and property.

**Needed Decisions**

Which public lands contain natural resources or hazards requiring special management attention?

What management objectives, strategies, and development or use constraints need to be established?

**Planning Criteria**

To answer the questions listed above, BLM will consider the following:

- \* the importance and relevance of the areas identified by the resource specialists and nominated by members of the public or other agencies.
- \* the degree to which important resources are vulnerable or threatened by natural causes or by existing, planned, or expected land and resource uses;
- \* manageability of an area to preserve its existing or potential resources;
- \* current and potential land uses;
- \* effects of designation on other resources and uses;

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federally listed threatened and endangered (T&E) species? What actions should BLM take to improve habitat conditions and resolve resource conflicts for listed, proposed, and candidate T&E species?

### Planning Criteria

To answer the questions listed above, BLM will consider the following:

- \* applicability of state and federal laws, such as the Endangered Species Act of 1973, as amended;
- \* the presence and relative abundance of state and federally listed and proposed or candidate threatened and endangered (T&E) species;
- \* existing habitat management plans and T&E species recovery plans;
- \* potential strategies for the recovery of state and federally listed T&E species;
- \* goals and objectives of BLM's general wildlife policy as stated in Fish and Wildlife 2000, and related strategic plans (desert tortoise, desert bighorn, waterfowl, and raptors).
- \* input from state and federal agencies, Indian tribes, and the scientific community;
- \* species and habitat of high public or scientific interest;
- \* amount and quality of species and habitat, including current range, key areas, and potential habitat;
- \* species population goals;
- \* habitat management goals;
- \* species habitat requirements;
- \* vegetation communities and habitat condition;
- \* effects of other resource uses; and
- \* the significance of nonconsumptive and consumptive uses of wildlife.



## ISSUE 4: RIPARIAN-WETLAND AREA MANAGEMENT

Riparian-wetland areas are valuable because of their importance for watershed protection, water quality and quantity, aquatic and terrestrial wildlife, threatened and endangered species, recreation opportunities, livestock management, and cultural resources. Special management attention is needed to ensure that these fragile areas are protected and improved while providing for their use.

### Needed Decisions

How will BLM achieve the goal of maintaining or improving condition of riparian areas, as outlined in Riparian-Wetland Initiative for the 90's and the Arizona Riparian-Wetland Area Management Strategy?

What management decisions are necessary to assure the current and potential uses of riparian-wetland areas are compatible with the goal of maintained or improved conditions?

What actions should BLM take to achieve these goals?

### Planning Criteria

To answer the questions listed above, BLM will consider the following:

- \* location and extent of riparian-wetland vegetation through Riparian-wetland Area Condition Evaluation (RACE) inventory;
- \* condition and trend of riparian-wetland communities through RACE inventory;
- \* type of riparian-wetland community;
- \* hydrologic and geomorphic characteristics of streams;
- \* vulnerability or susceptibility of a riparian-wetland community to degradation;
- \* responsiveness or ability of a riparian-wetland community to improve through management;
- \* resources and uses of each riparian-wetland community;
- \* effects of other uses on riparian-wetland communities;
- \* Allotment management plans (AMP) identified through range program summaries (RPS) developed after grazing EIS;
- \* opportunities for cooperative management with private landowners and other land and resource management agencies; and
- \* Executive Orders 11990, Protection of Wetland Habitat, and 11988, Management of Floodplains.

## ISSUE 5: LAND TENURE

During the last 5 years, BLM has carried out an active land exchange program in Mohave County to consolidate public lands into more manageable blocks, acquire valuable natural and cultural resources, and improve service to the public and provide land for community expansion. Roughly 163,000 acres of private land and 107,000 acres of state land have come into public ownership in exchange for 88,000 acres of public lands. At the same time, 178,000 acres of state and 193,000 acres of private subsurface mineral estate have come into public ownership. Other opportunities still exist for land ownership adjustment that would benefit local communities and management of state and public lands.

### Needed Decisions

Which nonfederal lands should be selected for acquisition and managed for a variety of renewable and nonrenewable resource uses?

Which public lands or interests should be selected for disposal to facilitate management of public lands or meet the needs of local communities?

### Planning Criteria

To answer the questions listed above, BLM will consider the following:

- \* land and resource management efficiency;
- \* benefits to the public;
- \* effects on other resources and uses;
- \* surrounding land ownership patterns, i.e., well-blocked public lands;
- \* adjacent land uses;
- \* high value of public resources;
- \* need for public and administrative access;
- \* selecting tracts that meet required sale criteria and that are:
  - difficult and uneconomical to manage,
  - no longer needed for their original purpose, or
  - will serve important public purposes if disposed; and,
- \* need for flexibility in boundaries to make minor adjustments.

Priority for acquisitions will be those areas needed to

- \* bring under federal administration lands with important cultural, recreational, scenic, wildlife, watershed/riparian-wet land, soil and botanical values best managed for the public benefit and protected as public land;

- \* ensure the survival or recovery of special status animal or plant species;
- \* eliminate surface and subsurface inholdings within designated wilderness;
- \* provide for access to large blocks of federal land; and
- \* consolidate surface and subsurface ownership in areas identified for retention.

When selecting lands for disposal, priority will be given to:

- \* public lands needed to meet the needs of local, county, and state governments, or individuals;
- \* public lands whose size, location, or other physical characteristics make them difficult or uneconomical for BLM to manage; and
- \* public lands whose disposal will resolve unintentional unauthorized occupancy.

## ISSUE 6: POTENTIAL FOR OCCURRENCE AND DEVELOPMENT OF SALEABLE, LOCATABLE, OR LEASABLE MINERALS

The minerals industry has had a long and profitable relationship with communities and citizens of those portions of Mohave, Yavapai, and Coconino counties within KRA boundaries. Mountain ranges and intervening valleys throughout the area contain a wealth of minerals, including common variety saleable minerals such as sand and gravel, building stone, common variety clays, quarry rock, cinder, and decorative rock. Minerals locatable under the 1872 Mining Law and also found in mineable amounts in KRA are the precious metals gold, silver, and (geologic conditions indicate the potential for) platinum. Other minerals listed in approximate relative order of occurrence are copper, lead, zinc, molybdenum, tungsten, manganese, uranium, mercury, rare earths, vanadium, and beryllium. Some of the more important locatable industrial minerals are burcite, magnesite, magnesium rich smectite clay, clinoptilolite and mordenite zeolites, fluorspar, vermiculite, perlite, and feldspar. Semiprecious gems such as fire agate, beryls, spessartite and grossularite garnets and gem quality jaspers are also found in KRA. The only known leasable mineral is sodium.

The Mining and Minerals Policy Act of 1970, FLPMA, Research and Development Act of 1980, and National Materials and Minerals Policy all direct BLM to actively encourage and facilitate the development of public land mineral resources by private industry to satisfy local and national needs and provide for economically and environmentally sound exploration, extraction, and reclamation. This policy recognizes that mineral exploration and development can occur while ensuring protection of other resource uses and promotes multiple use of the public lands.

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### Needed Decisions

What actions should BLM take to ensure the development of mineral resources?

Which lands should remain available for saleable, locatable, and leasable mineral development?

Which mechanisms other than withdrawal of lands from mineral entry or production should be used to limit impacts of mining to other resources?

### Planning Criteria

To answer the questions listed above, BLM will consider the following:

- \* relative mineral potential boundaries prepared from published and unpublished geological and mining data, personal contacts, and professional experience;
- \* the approximate boundaries, types and amount of potentially valuable saleable, locatable, and leasable minerals;
- \* the relative importance of mineral commodities to local, state, and national interests;
- \* the rarity of individual mineral commodities and their relative value to consumers;
- \* the value of saleable mineral commodities to local communities;
- \* mineral occurrence and uses, as related to new and historic products;
- \* sensitive resources and needs that conflict with mineral potential areas and the basis for their sensitivity;
- \* probable type of mining method in each mineral potential area to allow impacts to sensitive resources to be evaluated;
- \* strategic stockpile minerals;
- \* industrial standards for mineral operations on a commodity-specific basis and standard stipulations for a given type of operation;
- \* existing BLM policy and guidance.

### MANAGEMENT CONCERN 1: AIR QUALITY

Under the Clean Air Act, public lands were given Class II air quality status. This classification allows for moderate deterioration of air quality associated with moderate, well-controlled industrial and population growth. Some activities on public lands may degrade air quality, but activities must comply with Clean Air Act standards.

### Needed Decisions

What management goals should BLM establish for land uses to help maintain or improve air quality in the area? Are special actions needed to prevent air quality degradation?

What actions should BLM take to achieve these goals?

### Planning Criteria

To answer the questions listed above, BLM will consider the following:

- \* current levels of attainment of air quality standards of the Clean Air Act of 1977, as amended;
- \* EPA air quality standards for Arizona;
- \* current and future land uses that may affect air quality; and
- \* effects of prescribed burning on air quality.

### MANAGEMENT CONCERN 2: ACCESS

Much of KRA remains in a checkerboard pattern of intermingled public, private, and state lands, and the public may often gain access to public lands only by crossing state or private lands. In many cases the public has no legal right to use roads on private and state land, and the land owner can cut off access. Lack of legal access can cause problems with the administration of the public lands.

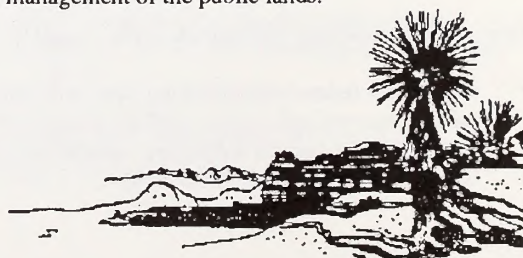
### Needed Decision

What actions should BLM take to provide or acquire access to public lands?

### Planning Criteria

To answer the questions listed above, BLM will consider the following:

- \* existing access;
- \* public needs for access;
- \* administrative needs for access;
- \* effects of access on existing resources and uses;
- \* compatibility with adjoining land uses; and
- \* use and management of the public lands.



**MANAGEMENT CONCERN 3: SEGREGATIONS, CLASSIFICATIONS, WITHDRAWALS**

BLM and other federal agencies have used segregations, classifications, and withdrawals to set aside lands for special uses and to protect existing high-value resources from uses which may cause undue damage. Existing actions need to be analyzed to determine if they are still valid and are accomplishing their goals.

**Needed Decisions**

Which land segregations, classifications, and withdrawals should be terminated and the lands opened to multiple use?

What areas should be protected through segregation, classification, or withdrawal?

**Planning Criteria**

To answer the questions listed above, BLM will consider the following:

- \* The rationale for establishing the original classifications;
- \* changing classifications that no longer enhance resource management;
- \* dropping classifications that would no longer accomplish their stated purposes;
- \* revoking withdrawals that are no longer needed for their intended purposes;
- \* reducing the size of withdrawals determined to encumber more land than is needed to accomplish their intended purposes; and
- \* developing segregations for lands with sensitive resources needing protection.

**MANAGEMENT CONCERN 4: UTILITY CORRIDORS AND COMMUNICATION SITES**

The private sector uses public lands for a variety of purposes, including powerlines; oil, gas, and coal pipelines; and telecommunication sites. Authorization of these uses takes careful planning to ensure that other resources are not significantly harmed.

**Needed Decisions**

Which public lands should be designated right-of-way corridors, communication sites, avoidance areas, and exclusion areas?

Which existing public land transportation and utility corridors should not be designated right-of-way corridors upon plan approval?

**Planning Criteria**

To answer the questions listed above, BLM will do the following:

- \* consider existing rights-of-way routes and communication sites for locating future facilities;
- \* endeavor to authorize rights-of-way and communication sites in locations that cause the least impacts to important resources (e.g., erosive soils, T&E species, critical wildlife habitat, and scenic areas);
- \* evaluate suitability of a communication site from a technical engineering standpoint;
- \* establish a standard width of 2 miles for corridors, unless the protection of critical resources requires a narrower width; and
- \* consider social and economic influences and impacts.

**MANAGEMENT CONCERN 5: VISUAL RESOURCES**

BLM has a stewardship responsibility to identify and protect visual values on public lands. Visual resource management (VRM) objectives (classes) are developed through the RMP process for all public lands. The VRM system provides a way to qualify, describe, rate, measure, and mitigate the potential visual impacts to an acceptable level. Conscientiously applied, the VRM system helps managers make faster, better, and less controversial resource allocation decisions.

In the 10 to 15 years since VRM classes were assigned to KRA's public lands, much land within the more scenic areas has been acquired through exchange. Public awareness and appreciation have greatly increased in respect to the scenic values of KRA's WSAs, riparian-wetland areas, and other expanses of topographically imposing terrain. BLM needs to update and refine the visual resource evaluation data and management schemes within KRA.

**Needed Decisions**

Which KRA public lands should be designated as VRM Class II, Class III, or Class IV?

**Planning Criteria**

To arrive at the VRM class designations called for in the question listed above BLM will do the following:

- \* consider the VRM inventories of the management framework plans (MFPs), and determine if these VRM class designations relate to present and predicted future management goals;
- \* inventory and delineate "scenery units" for all KRA's public lands, ensuring that these units coincide with regional physiographic provinces and the visually recognizable subdivisions of these provinces; and
- \* consider the increase in public awareness of BLM programs and recreational opportunities during the years since the present VRM system was adopted.

**MANAGEMENT CONCERN 6: CULTURAL AND PALEONTOLOGICAL RESOURCES**

Cultural and paleontological resources form an important link with the past. Understanding this link will help BLM plan for the future. BLM manages cultural and paleontological resources to gain scientific and historic information; to protect sociocultural, educational, recreational, and other public values; and to maintain the resources in their present condition or mitigate damage. The RMP presents an opportunity to set direction for managing of these resources on public lands.

**Needed Decisions**

What goals should BLM establish for cultural and paleontological resources management?

What actions should BLM take to achieve these goals?

**Planning Criteria**

To answer the questions listed above, BLM will consider the following:

- \* the National Historic Preservation Act of 1966, American Indian Religious Freedom Act, Archaeological Resources Protection Act of 1979, and other laws, regulations, policies, and guidelines;
- \* relative importance and sensitivity of known and projected cultural and paleontological resources;
- \* geographic distribution and density of cultural and paleontological resources;
- \* feasibility of attaining cultural and paleontological resource management objectives;
- \* need or desirability of management objectives;
- \* threats to cultural and paleontological resources;
- \* concerns of local Native American tribes;
- \* public interest and attitudes; and
- \* effects of cultural and paleontological resource management on other resources and uses.

**MANAGEMENT CONCERN 7: WATERSHED PROTECTION AND ENHANCEMENT**

Soils and watershed protection is one of BLM's major responsibilities. Soils are important to vegetation maintenance for all dependent resources such as wildlife, livestock, and recreation. Reducing soil erosion and stabilizing watersheds are important for protecting downstream facilities through flood control. Maintaining water quality is critical to the well being of the environment, the public, and many BLM programs.

**Needed Decisions**

What areas should receive special management prescriptions to protect high watershed values?

What type of activities should be allowed on fragile or critical watersheds?

What management techniques should be employed to protect and enhance watershed values?

**Planning Criteria**

To answer the questions listed above, BLM will consider the following:

- \* watershed condition and trend;
- \* potential watershed productivity;
- \* resources, uses, and any possible conflicts between them;
- \* monitoring plans to assess impacts of resource uses on watershed condition;
- \* need to focus on watersheds with particular concerns for erosion control or enhancement of riparian-wetland values;
- \* effects of public land watershed management on urban development;
- \* need for maintaining existing erosion control structures or building new ones;
- \* effectiveness of structures and land treatments;
- \* coordination with state and local governments, other agencies, and downstream water users;
- \* need for maintaining and enhancing existing watershed rehabilitation projects;
- \* identifying saline soils;
- \* need to focus on watersheds that have potential for increasing the salinity of the Colorado River;
- \* correlation between intensive grazing management and watershed productivity; and
- \* existing AMPs and the continued future development and implementation of these plans as a primary means of improving watershed condition and trend.



**MANAGEMENT CONCERN 8: VEGETATION MANAGEMENT AREAS**

Vegetation is an integral part of an ecosystem, and its management will affect the health of the total environment. Careful consideration must be given to potential treatment practices used, threatened and endangered species, visual resources, and all existing uses when setting goals for managing vegetation status.

**Needed Decisions**

What management practices should BLM use to improve vegetative cover and composition?

**Planning Criteria**

To answer the questions listed above, BLM will consider the following:

- \* present vegetation and general soils data in assessing ecological status relative to stated goals for land uses;
- \* potential of the site to produce at the level stated in desired goals;
- \* existing and potential resource and uses;
- \* the desired plant communities for major ecological sites and sites in special emphasis areas;
- \* suitability of treatments;
- \* need to maintain or enhance existing project treatment areas;
- \* long-term manageability of project areas;
- \* AMP and HMP;
- \* laws, policy, and manual guidance;
- \* compatibility with adjacent land uses; and
- \* input from state and federal agencies and the scientific community.

**MANAGEMENT CONCERN 9: FORAGE ALLOCATION - ACQUIRED LANDS**

The proper allocation of forage is critical to maintaining vegetation and watershed values in a healthy condition. The needs of all uses and important resources such as T&E species, soil stability, and water quality must be carefully considered.

**Needed Decisions**

What forage allocations should be made on acquired lands where previous allocations were not made?

**Planning Criteria**

To answer the questions listed above, BLM will consider the following:

- \* existing grazing regulations qualifying permittees;
- \* the need for survey information measuring available forage for areas acquired from outside current management boundaries;
- \* rangeland monitoring as the recognized procedure for adjusting all animal numbers to assure a proper level of use in providing for the needs of all species;
- \* historic and present livestock use;
- \* goals for managing wild and free-roaming burros;
- \* goals for populations of important wildlife species such as bighorn sheep, desert tortoise, Hualapai Mexican vole, and bald eagle;
- \* existing allotment management plans (AMP), habitat management plans (HMP), and herd management area plans (HMAP); and
- \* other resources susceptible to damage, such as riparian-wetland areas.

**MANAGEMENT CONCERN 10: EPHEMERAL LICENSING IN T&E HABITATS**

Special status species sharing their limited habitats with livestock, wildlife, wild horses, or burros may compete for food, water, cover, and space. Palatable special status plants may suffer loss of vigor or direct mortality if grazed at the wrong times. BLM must consider the critical needs of rare plants or animals on the public lands to comply with existing regulations and policies concerning special status species.

**Needed Decisions**

Which methods should BLM use in ephemeral and supplemental licensing of livestock to ensure continued availability of adequate forage and habitat for special status species and to ensure that special status plants are not overutilized?

**Planning Criteria**

To answer the questions listed above, BLM will consider the following:

- \* existing habitat management plans;
- \* input from state and federal agencies and the scientific community;
- \* amount and quality of species and habitats, including current distribution, key areas, and potential habitat;

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- \* species population goals and habitat requirements;
- \* the significance of consumptive and nonconsumptive uses of wildlife;
- \* providing forage for livestock;
- \* effects of other resource uses;
- \* similar management programs in existence elsewhere in BLM;
- \* existing regulations, policies and guidance (Desert Tortoise Rangeland Plan, Arizona Desert Tortoise Implementation Strategy, Interagency Desert Tortoise Management Plan);
- \* general needs of the users;
- \* proper range management principles as outlined in existing AMPs; and
- \* existing ephemeral classifications.

### MANAGEMENT CONCERN 11: VEGETATIVE PRODUCTS

Firewood and live plants such as yuccas, Joshua trees, and cacti are in great public demand and should be removed from public lands only under managed and controlled conditions. BLM needs to inventory its fuelwood and yucca and plan for a sustained yield.

#### Needed Decisions

On which public lands should firewood cutting be allowed?

On which public lands should the harvest of *Yucca schidigera* be allowed?

What stipulations should be imposed on the harvest?

When should permits for protected plant species be issued?

#### Planning Criteria

To answer the questions listed above, BLM will consider the following:

- \* vegetation types suitable for firewood cutting;
- \* present and future demand for firewood;
- \* levels of harvest most compatible with sustained yield;
- \* harvest areas and levels having the least impact on other resources, such as wildlife and T&E species;
- \* need to maintain timber stands for nonforest product uses;
- \* competition between an area's suitability for fuelwood cutting and its ability to provide forage for livestock and wildlife through vegetation management practices;
- \* current and potential land uses;
- \* demand for *Yucca schidigera*;
- \* effects of harvest on *Yucca schidigera* populations and other land uses;
- \* laws, regulations, and policy regarding protected plant species;
- \* coordination with other federal and state agencies;
- \* need to salvage protected plant species before surface disturbance;
- \* need for collection permits for scientific and educational purposes.

### MANAGEMENT CONCERN 12: PUBLIC INTEREST IN WATER ON PUBLIC LANDS

Water is often the limiting factor to the use of public lands in the arid Southwest. Demand by water users, ranchers, recreationists, miners, hunters, and municipalities is increasing, and conflicts may arise. Waters of the public lands must be legally and administratively protected and apportioned.

#### Needed Decisions

Where should BLM focus efforts to secure instream flows for riparian-wetland, fisheries, wildlife, wilderness, and recreation purposes?

Should BLM continue to manage special designation areas, such as Unique Waters to maintain or protect the public's interest in water? Should more water quality designations be made?

#### Planning Criteria

To answer the questions listed above, BLM will consider the following:

- \* locating and measuring of water sources occurring on public lands (with special emphasis on acquired lands);
- \* beneficial uses and relative importance of individual water sources;
- \* maintaining of instream flows for water-dependent resources for selected streams;
- \* coordinating with other federal and state agencies and downstream water users;
- \* State of Arizona and federal water quality standards; and
- \* State of Arizona and BLM policies governing water rights appropriations.



## MANAGEMENT CONCERN 13: HAZARDOUS MATERIALS

Hazardous materials pose an everyday threat to public lands and to land users, and create management and liability problems for BLM. Hazardous material impacts come from a variety of authorized and unauthorized public land uses.

### Needed Decisions

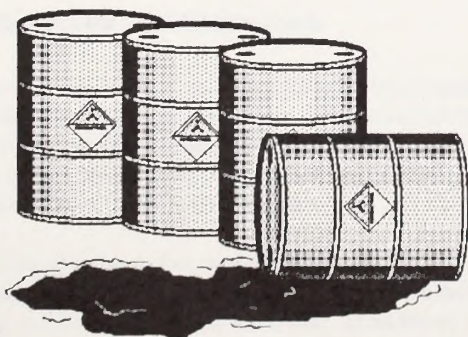
What sites contain potential hazardous materials?

What sites have characteristics making them likely to be used for disposal of hazardous materials in the future?

### Planning Criteria

To answer the questions listed above, BLM will consider the following:

- \* public lands next to private lands that use hazardous materials to process ore;
- \* active mills on public lands that use hazardous materials to process ore under the mining laws;
- \* transportation routes — public lands next to interstate transportation systems that are susceptible to accidental spilling and illegal dumping of hazardous materials;
- \* sanitary landfills;
- \* pipelines;
- \* voltage transformers that use PCBs as a coolant;
- \* any public lands that could be used for illegal drug labs;
- \* pesticide and fertilizer used on agricultural lands, on or next to public lands. Such chemicals may be removed in floodwaters or accumulate in groundwater and contaminate drainages and waterways;
- \* abandoned explosives on or near old mines; and
- \* natural leaching of mine workings, dumps, and tailings.



## MANAGEMENT CONCERN 14: NON-POINT SOURCE POLLUTION

BLM has the responsibility to comply with federal and state laws and regulations concerning non-point source pollution. Being diffuse and difficult to measure, such pollution could affect large areas.

### Needed Decisions

Which activities will be allowed next to or in streams?

What procedures should be used to measure non-point source pollution on public lands?

Which best management practices (BMP) will be implemented to control non-point source pollution in designated areas?

### Planning Criteria

To answer the questions listed above, BLM will consider the following:

- \* potential impacts on other on-site and downstream resources;
- \* coordination with other agencies;
- \* monitoring the effectiveness of best management practices to control non-point source pollution on public lands; and
- \* Clean Water Act Amendment of 1987, Section 319, Non-point Source Management Programs.

### Issues Considered but Not Analyzed.

Some issues identified during the scoping process were dropped because of new information obtained later.

The establishment of long-term visitor areas was a subissue under recreation. It was dropped because the Bullhead City and Golden Shores areas have adequate commercial areas. These areas are expanded or new ones developed as the need increases.

The need for camping limits on public land was another subissue under recreation. The need was fulfilled in November 1989 when the Phoenix District established a 14-day limit set by a notice in the Federal Register, published on November 8, 1989.

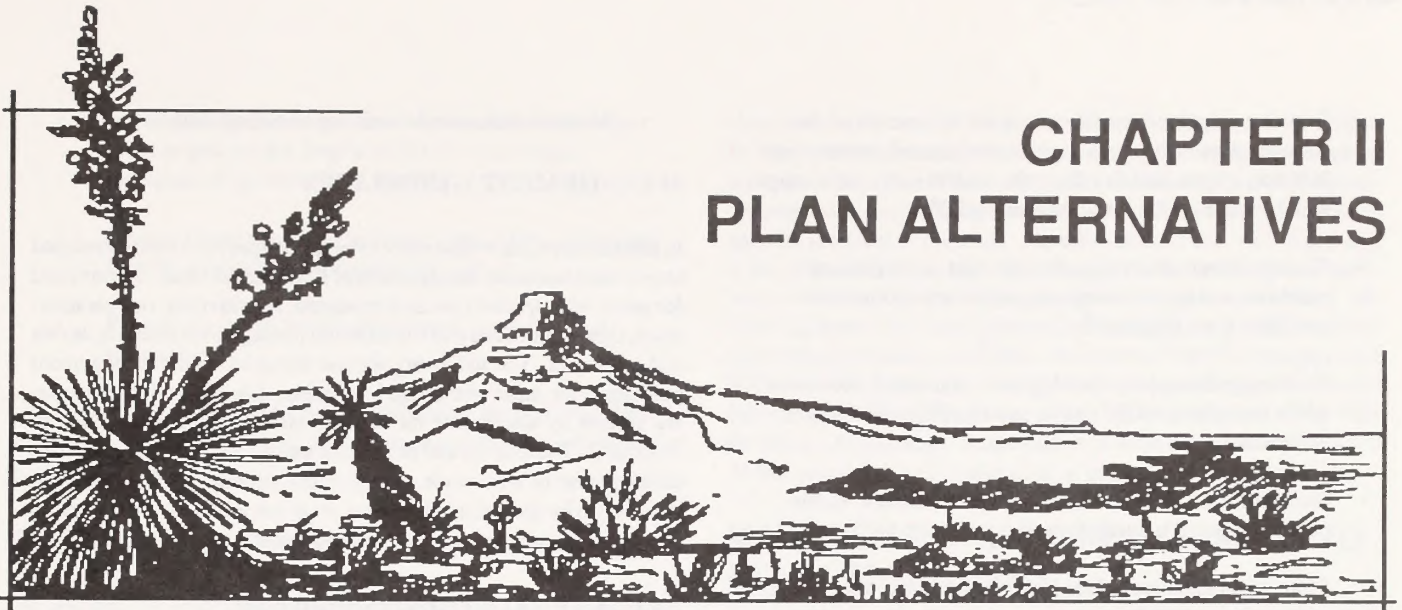
The designation of special management areas is another issue. Several areas were identified by the public, other agencies, resource specialists, and management and later dropped. The Mount Wilson area was dropped because the area's desert bighorn sheep habitat was not threatened and the Mount Wilson WSA will likely be designated wilderness.

The desert mountain meadows were dropped because several are in communication sites and the Hualapai Mountain County Park. The other is within Wabayuma Peak WSA, which is recommended for wilderness designation in the Arizona Wilderness Bill passed by the House of Representatives. The wilderness designation would provide better protection than an ACEC designation.



# CHAPTER II

## PLAN ALTERNATIVES



### INTRODUCTION

Chapter II describes the Kingman Resource Management Plan/Environmental Impact Statement (RMP/EIS) alternatives, including the proposed plan. Each alternative represents a complete plan to guide future management of the public land and resources in the Kingman Resource Area (KRA). Chapter II describes in detail each alternative chosen for study and also includes a section on management guidance common to all alternatives. This management guidance, which the Bureau of Land Management (BLM) is required to adhere to, is based on laws, regulations, and policies. Regardless of the alternative chosen as the approved plan for KRA, BLM will follow this management guidance.

Guidance for the wilderness and livestock management programs is provided by the wilderness recommendations in the Upper Sonoran, Phoenix, and Arizona Mohave final Wilderness EISs and Records of Decision on the Cerbat/Black Mountain and Hualapai-Aquarius Final Grazing EISs. These recommendations and guidance are incorporated into this RMP/EIS by reference. The guidance for the livestock management program in the Cerbat/Black Mountain and Hualapai-Aquarius grazing EISs was for a 20-year planning frame. The RMP will amend this time frame, making it consistent with this RMP.

Chapter II ends with a summary comparing the environmental impacts of the alternatives analyzed in this RMP/EIS, to provide the public with a convenient tool for comparing impacts, defining issues, and reaching conclusions, see Table II-14.

### Plan Objectives and Guidelines

KRA's public lands are rich in wildlife, archaeological, scenic, recreational, mineral, and forage values. The overall goal of KRA is to provide quality multiple use and sustained yield resource management of the public lands. The RMP alternative selected for implementation will accomplish this goal.

General objectives have been established to ensure that the RMP will provide quality management direction that responds to the issues and meets the specific needs of the resources. In addition, a series of guidelines have been defined to achieve these objectives.

### Resource Area Goals

The following objectives have been established to provide comprehensive guidance for all public land uses and management activities.

- Manage public lands and resources under the concept of multiple use to attain the optimum combination of uses.
- Manage to balance the use and conservation of renewable resources to provide sustained productivity.
- Manage public lands in a manner that recognizes the nation's need for domestic sources of energy, minerals, livestock, wildlife, recreation opportunities, and other products from the public lands and the importance of these industries to local and regional economies.
- Provide special management emphasis in areas with unique features or special management needs.
- Implement management prescriptions to restore and maintain riparian-wetland areas so that 75 percent or more are in proper functioning condition and good or better ecological status by 1997.
- Manage cultural resources to maintain and enhance their scientific and public use values.
- Maintain and preserve representative examples of all archaeological site types.
- Maintain cooperative relations and programs with public land users, interest groups, and other government agencies.
- Manage for diverse recreation opportunities for the increasing visitors to public lands.
- Manage livestock grazing to maintain productive rangelands which meet forage, watershed, and wildlife needs by implementing 57 "I and M" category AMPs by 2001.

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- Improve rangeland condition to have 40 percent of the resource area at late seral or potential natural community (climax) stages, and to reduce the area of early seral stage to 10 percent of the resource area by 2009.
- Manage livestock grazing through best management practices and improvements to reduce non-point source pollution from rangelands.
- Encourage the orderly development of mineral resources while protecting, to the extent practicable, nonmineral resources.
- Maintain and enhance wildlife habitat to ensure viable populations and natural diversity.
- Protect and enhance public land resources by suppressing and managing wildfires.
- Use prescribed fire to stabilize soils and improve wildlife habitat, livestock forage, and vegetative cover and composition.
- Enforce the laws and regulations governing protection of public lands and visitors.
- Determine ecological site conditions and potentials; determine what desirable plant communities are attainable on sites for multiple-use management; and manage vegetation to achieve the desired plant community and maintain a thriving natural ecological balance.
- Manage acquired lands according to final RMP decisions in specific areas.
- Maintain the open space, scenic character, and remoteness of public lands.
- Adjust land tenure as needed to improve federal land management effectiveness, improve resources, and provide lands for public and private uses.
- Manage public land resources in consultation with adjacent federal or state management agencies to avoid unnecessary adverse impacts.
- Rehabilitate all surface disturbances to the extent practicable at the end of use to protect soil, vegetation, water, and other environmental values and to blend the disturbed site into surrounding terrain and settings.
- Manage all mineral exploration and development to prevent unnecessary environmental degradation.
- Use special stipulations where applicable and prudent, to minimize long-term impacts to the visual quality of sensitive landscape characteristics.
- To actively manage for healthy, viable populations of wild burros and horses in an ecological balance with other resource values within the 3 existing herd management areas.

- Maintain/enhance the existing visual quality.

### MANAGEMENT GUIDELINES

In addition to resource area objectives, guidelines have been developed to provide consistent management of KRA public lands. Formulated for areas with special resource concerns, sensitivities, or characteristics, these guidelines call for different management intensity levels and emphases. The following section summarizes the management guidelines for these two broad land areas. Locations of these areas are shown by alternative on Special Management Area Maps in Volume 2. These areas and associated guidelines were used to guide development of a resource management alternative. They are not intended to be special management areas but are used to help ensure consistent management in geographic areas.

### GENERAL MANAGEMENT AREAS

Most KRA lands contain a wide variety of resources that require continued multiple use management. Generally lacking unusual characteristics, these lands are not subject to unusual demands requiring special management attention. Management guidelines for these areas would remain similar to current management practices that are considered adequate. Existing laws, regulations, policies, and procedures would be followed. The following management guidelines would apply.

- Designate off-highway vehicle (OHV) use as open or limited to existing roads, trails, and washes.
- Issue sales and free-use permits as appropriate for vegetative products and mineral materials.
- Provide for primitive motorized and nonmotorized recreation.
- Exchange or transfer out of federal ownership lands determined to be needed for community expansion.

### AREAS REQUIRING SPECIAL MANAGEMENT

The remaining lands have characteristics that include important scenic values and exceptional natural features that offer quality recreational opportunities in remote backcountry settings. With few exceptions, these lands are not developed. They have been found by the public and BLM to have unique resources, such as threatened and endangered species, and would require special management.

Management guidelines for these public lands would focus on improving resources while allowing for multiple use. BLM would manage authorized uses and prepare management prescriptions to protect unique resources. The following management guidelines would apply.

- Close and rehabilitate roads where there is no public or administrative need to keep them open.
- Designate OHV use as limited or closed.

- Implement special coordinated resource management plans to protect the fragile character and unique resources of specific areas.
- Do not transfer land out of federal ownership unless the transfer is specifically required by law.
- Provide for primitive motorized and nonmotorized recreation.

Special stipulations would be developed during the National Environmental Policy Act (NEPA) process to ensure that objectives and guidelines are met.

## Development of Alternatives

The alternatives were developed to provide different solutions to the planning issues and management concerns (see Chapter 1). Each alternative provides a complete multiple use plan suitable for guiding management of KRA's public lands and resources. Each alternative plan could be implemented under existing laws, regulations, and policies and within reasonable budgetary limits.

Each plan is believed to be reasonable and feasible although each has a different focus. Each plan would be subject to all applicable laws, executive orders, and regulations, and to the continuation of valid rights for use of public lands or resources existing at the time the RMP becomes final. The public, including state and federal agencies, was invited to provide comments and suggestions for consideration in developing the alternative plans. Public workshops were held in Kingman, Arizona, from November 27 through December 1, 1989 to gather public suggestions and comments. The suggestions and comments were considered during the final development of the alternative plans.

*Alternative 1 (Current Management)* represents the continuation of present management as prescribed in existing management framework plans (MFP) and is summarized in the management situation analysis (MSA). *Alternative 1* is the *No Action Alternative* for the RMP/EIS. *Alternative 2* contains decisions that the interdisciplinary team believes represent the best combination of actions allowing resource uses and still protecting the environment. *Alternative 3* places smaller areas under special management, adds two disposal areas, increases recreation facilities, closes areas to livestock grazing to protect unique resources, and reduces wild horse numbers. Table 2, which follows the description of the alternatives, shows the changes by alternative for each program or activity.

After developing goals for resolving the issues under the different alternatives, the interdisciplinary team looked at the resource management programs administered by BLM in KRA to see what actions would be needed to work toward the goals. Each resource management program was analyzed in the MSA, which described current management under the MFPs, the capability of existing natural resources to respond to demand, and management opportunities present. The objectives for existing management were written down for *Alternative 1*. Then objectives were developed for each of the other alternatives to fit with the overall management goals.

After preparing program and resource management objectives for each alternative, the interdisciplinary team determined how these

objectives could be met. Separate management actions were written for each resource management program to answer the questions or solve problems identified in the MSA. Some actions will remain constant under any alternative selected; these are described for each specific program or resource and other actions that vary according to the alternative discussed (See management common to all alternatives below.) In developing program management actions, the planning team reviewed opportunities for designating areas of critical environmental concern (ACECs). Before this RMP/EIS was prepared KRA resource specialists, other government agencies, and the public submitted ACEC nominations, which BLM considered along with the MSA's preliminary identification of areas. Areas found to have ACEC potential were analyzed in at least one of the alternatives.

## MANAGEMENT GUIDANCE COMMON TO ALL ALTERNATIVES

Although it is impractical to relate the full extent of existing and continuing management guidelines, those that apply to programs receiving substantial public interest are summarized in the following section. More management guidance is included in KRA's MSA, prepared during the early stages of this planning effort. The MSA also contains the KRA's inventory results and a capability analysis section. The MSA may be reviewed at the Kingman Resource Area Office and is incorporated here by reference.

All BLM-authorized land use actions that may affect listed threatened or endangered species must undergo Section 7 consultation with the U. S. Fish and Wildlife Service (USFWS) on a case-by-case basis under the Endangered Species Act of 1973 as amended. Such actions would include the following activities: mining plans of operation, recreational developments (campgrounds, hiking, and biking trails, byways, turnouts), grazing plans, road construction, rights-of-way, communication sites, range improvements, and OHV events.

## ENVIRONMENTAL MANAGEMENT

In compliance with NEPA and CEQ regulations, BLM will prepare site-specific environmental reviews before actions proposed in this RMP/EIS are implemented. The environmental reviews provide site-specific assessments of the impacts of implementing these actions. As appropriate, these reviews are documented in categorical exclusion reviews, environmental assessments and decision records, or environmental impact statements and records of decision. In addition, BLM will assure that clearances for threatened and endangered species and cultural resources are conducted as a part of the environmental review process. The review determines mitigation needed to reduce or eliminate the adverse impacts of implementing a proposed action. All environmental documents are open to public review.

## MINERALS MANAGEMENT

### Introduction

Mineral exploration and development is encouraged on public land in keeping with the BLM's multiple resource use concept. Overall guidance on the management of mineral resources appears in the General Mining Law of 1872; Mining and Minerals Policy Act of 1970; Sec. 102 (a)(12) of the Federal Land Policy and Management Act of 1976 (FLPMA) as amended; National Materials and Minerals

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Policy, Research and Development Act of 1980; and BLM's Mineral Resources Policy of May 29, 1984.

### Locatable Minerals

The 43 CFR 3802 and 3809 regulations provide for mineral exploration and development in conjunction with other resource development. BLM will work with operators towards plan approval. Where an operator does not have the technical resources to develop reclamation measures and measures to prevent unnecessary degradation, BLM will provide technical assistance. Mining within KRA will be administered on a case-by-case basis.

Development work, extraction, and patenting will be allowed in designated wilderness areas only on valid claims existing before designation.

Before BLM can approve mining plans of operation submitted for work in a designated wilderness area, a BLM mineral examiner must verify that a valid claim exists. The mineral examination and mineral report must confirm that minerals have been found and the evidence is of such character that a person of ordinary prudence would be justified in the further expenditure of his labor and means, with a reasonable prospect of success in developing a valuable mine.

### Saleable Minerals

The Material Sale Act of 1947 and 43 CFR 3600 provides for the disposal and regulation of mineral materials. Sales of mineral materials to the public will be administered on a case-by-case basis. Saleable minerals are sold at market prices. Free use permits will continue to be issued to state and federal agencies, local communities, and nonprofit organizations as the need arises.

### Leasable Minerals

The Mineral Leasing Act of 1920, Geothermal Steam Act of 1970, and 43 CFR 3100 to 3500 provide the regulatory framework for issuing mineral leases. These regulations apply where public interest exists for the development of oil, gas, sodium, potassium, and geothermal energy. Where required, stipulations will be attached to leases to mitigate impacts to sensitive species, cultural areas, and other resources susceptible to impacts from leasing-related activities.

### Existing Plans, Decisions, and Objectives

Existing MFPs allow the entire resource area to remain open to mineral leasing, location, and sale except where restricted by wilderness designation and withdrawals.

BLM will provide the communities in or near the resource area with sand and gravel, needed for development in a timely and orderly manner, consistent with environmental considerations.

## LANDS

### Land Tenure Adjustment

BLM's ability to dispose of land proposed for exchange in this RMP/EIS may be constrained by the existence of withdrawals. Not all withdrawals preclude the disposal of the withdrawn land, but in most cases, BLM will not dispose of withdrawn land until the withdrawal

designation has been lifted. FLPMA Sec. 204 (1)(1) requires that all withdrawals affecting public land be administratively reviewed by 1991. Land unencumbered through the withdrawal review process will then come under the guidance of RMP/EIS decisions.

BLM policy is not to dispose of public land encumbered with properly recorded unpatented mining claims. But disposal actions under Sections 203 and 206 of FLPMA and Recreation and Public Purposes Act (R&PPA), as amended, may occur if 1) the mining claims are found to be void due to the claimant's failure to comply with Section 314 of FLPMA, 43 USC 1744 (1982) and 43 CFR 3833.2-1, 2) the mining claimant relinquishes the mining claims to the United States, 3) the mining claim is contested and found to be invalid, or 4) a change in current policy allows for the disposal of public land encumbered with mining claims.

In addition, any land proposed for disposal will be evaluated for significant cultural resources, threatened and endangered species, floodplain/flood hazards, and prime and unique farmland. Mitigation will be accomplished before the land is transferred.

### Communication Sites

Communication site applications will continue to be considered on land proposed for disposal until the land is disposed of. On land retained or acquired, communication facility development will be limited to existing sites. Communication site plans will be developed for all existing sites that are designated for future facility development.

### Land Use Authorizations

Land use authorizations (rights-of-way, leases, permits, easements) will continue to be issued on a case-by-case basis and in accordance with the approved RMP. Rights-of-way will be issued within existing right-of-way routes, including joint use whenever possible.

### Trespass Abatement

BLM will pursue the resolution of long-term trespass and abatement of new trespass.

### Recreation and Public Purposes Act

Under the R&PP Act, BLM has the authority to lease or patent public land to local governments or nonprofit entities for public parks and recreation sites, building sites, schools, or for other public purposes. R&PP leases and patents will be issued in accordance with the approved RMP. To ensure public purpose development of public land slated for R&PP transfer, BLM may require the land first to be leased for a period of time before a patent is issued.

### Utility Corridors

All major utility systems are required to route their systems through the designated corridors under the approved RMP. This requirement will prevent the proliferation of major utility systems across public land and will reduce adverse environmental impacts to sensitive resources.

## Public Land Withdrawals and Classifications

BLM has been congressionally mandated to complete all Sec. 204 (1)(1) of FLPMA withdrawal reviews by 1991.

In general, all actions proposed in this RMP that are not prohibited by specific terms of a withdrawal or classification will be carried out. Actions prohibited by the terms of a withdrawal or classification will not be implemented unless such withdrawals are revoked or classifications terminated.

## Existing Plans and Decisions

The Cerbat Mountains MFP, Hualapai-Aquarius MFP, and Black Mountains MFP are the existing plans that regulate what land actions can occur.

The plans designated 92,678 acres of public lands as suitable for disposal.

The remaining public land was considered suitable for retention for natural resources.

The Black Mountain, Cerbat, and Hualapai-Aquarius MFPs addressed designation of lands for R&PP disposal.

New applications to BLM for communication sites were limited to: the Oatman Peak and Willow Beach sites in the Black Mountain MFP; disallowed in retention, wildlife management or wilderness study areas in the Cerbat Mountain MFP; and respond to site requests on a case-by-case basis in the Hualapai-Aquarius MFP.

The MFPs establish nine utility corridors with widths varying from 1 to 2 miles. These will be retained as designated corridors in this RMP.

## WATERSHED (Soil, Water, Air and Vegetation) RESOURCES

Several laws provide authority for managing soil, water, and air on public land. FLPMA requires that public lands be managed to protect scientific, environmental, air and atmospheric, and water resources. It also requires land use plans to comply with pollution control laws, including state and federal air, water, or other pollution standards.

Some laws that FLMPA requires compliance with are the Soil Conservation and Domestic Allotment Act of 1935; the Watershed Protection and Flood Control Act of 1954; the Colorado River Basin Salinity Control Act of 1974; Wild and Scenic Rivers Act of 1968; the Federal Pollution Control Act with amendments of 1972; Water Quality Act of 1987; and the Safe Drinking Water Act of 1977. The Clean Air Act of 1970 governs air quality. BLM Manual 7000 and several executive orders provide field guidance in managing soil, water, and air.

## Soil Resources

Watershed conditions and soil productivity, salinity, and stabilization problems are addressed mainly through three separate systems:

The management and development of public lands through allotment management plans (AMP) and vegetation monitoring help to establish grazing systems and vegetative standards designed to stabilize runoff/erosion rates.

The environmental assessment (EA) review process helps assure that all proposals for surface disturbance are evaluated and, where appropriate, mitigated to maintain or improve watershed conditions.

Watershed activity plans are written for areas having moderate to critical erosion conditions or other watershed problems and more attention is needed than is provided through the AMP process.

## Floodplain Management

Executive Order 11988 directs federal agencies to "avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development whenever there is a practicable alternative" (Floodplain Management Guidelines, 44 CFR 60, 1978).

*Floodplains:* BLM would continue to retain 100-year base floodplains, as per Executive Order 11988, except under the following conditions:

*When federal, state, public, and private institutions and parties have demonstrated the ability to maintain, restore, and protect the floodplain on a continuous basis.*

*Where transfer of lands, minerals, or subsurface estates is mandated by legislation or Presidential Order.*

BLM procedures may also require more mitigation, which would be discussed in an environmental assessment prepared for specific projects or actions.

## Water Resources

Objectives of the water resource program are to ensure the physical presence and legal availability of water on public lands, ensure that those waters meet or exceed established federal and state water quality standards for specific uses, and mitigate activities to prevent water quality degradation.

The water resource program is divided into three sections: Water Inventory, Water Rights, and Water Quality.

**Water Inventory** - BLM policy is to inventory all water sources on public lands it administers and to document and store this data in its Water Data Management System. KRA has nearly completed the inventory and is incorporating the data into the data base. The objective in KRA is to complete the data base and keep it up-to-date and accurate, giving priority to water sources identified in wilderness management plans, basins under adjudication, and exchanged lands.

**Water Rights** - BLM policy is to file for water rights on all water sources on public and acquired lands in accordance with State of Arizona water laws. Special emphasis is placed on securing instream flow water rights for selected streams. BLM will file for water rights for recreation use, fish and wildlife, livestock, and administrative uses.

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**Water Quality** - Water quality is monitored to assess resource impacts from specific activities and to obtain baseline resource information. Areas receiving priority for monitoring include Unique Waters, riparian areas, and recreational and wilderness water sources.

BLM manages streams on public lands that are designated as Unique Waters by the Arizona Department of Environmental Quality (ADEQ). These streams are managed to protect their high quality and ecological significance, and BLM will continue to conduct compliance monitoring to assure that these streams are not degraded.

BLM manages non-point sources of pollution as required by Section 319 of the Water Quality Act of 1987 (P.L. 100-4). ADEQ is the state agency designated by the Environmental Protection Agency (EPA) to coordinate management of non-point source pollution control on public lands in Arizona. ADEQ reports water quality status to EPA annually. ADEQ prepared an assessment of non-point source pollution in Arizona and developed a statewide non-point source management program. Best management practices (BMP) were prescribed to prevent or reduce impacts to water quality and would be incorporated into BLM management plans through mitigating measures identified in project planning and NEPA review. BLM will coordinate with ADEQ by formal cooperative agreement.

### Air Resources

Objectives of the BLM's air/climate resource program are to maintain or improve air quality within National Ambient Air Quality Standards (NAAQS), to achieve state implementation plan (SIP) goals for non-attainment areas, to reduce emission from point/non-point sources, and to improve BLM's ability to understand and predict the effects of changing climatic regimes and atmospheric conditions that may cause ecological changes in climate-stressed environments.

*Open Areas, Dry Washes, and Riverbeds:* The control of airborne dust from open areas, dry washes and riverbeds is addressed in R9-3-404 A-C (Arizona Rules & Regulations for Air Pollution Control). The requirements of these regulations tie directly into the use of public land. BLM would not restrict or disallow use of open areas, including use by recreational vehicles.

*Roadways and Streets:* R9-3-405 A prohibits the use, repair, construction, or reconstruction of roadways without taking reasonable dust abatement measures. BLM would comply with this regulation through special stipulations as a requirement on new projects and through the use of dust control chemicals in problem areas.

*Mineral Tailings:* Prohibitions on permitting or allowing construction of mineral tailings piles is addressed in R9-3-408. The need for dust abatement would be addressed in mining plans of operations and environmental assessments or impact statements.

*Fire Management:* R9-3-402 and 403 direct federal agencies to follow permitting procedures before setting of any fire, including prescribed burns. ADEQ must be contacted before any prescribed burns. All prescribed burns which may affect the Class I air quality of Grand Canyon National Park are coordinated with the National Park Service.

### Vegetative Resources

KRA is managed under the principles of multiple-use and sustained yield without permanent impairment of the productivity of the land and the quality of the environment.

The amended Material Disposal Act of 1947 provides authority to dispose of timber and forest products. Surface-disturbing activities are subject to the NEPA process and clearance and compliance with the National Historic Preservation Act and Endangered Species Act.

Vegetative treatment projects are implemented where plant cover or soil productivity is being lost, to achieve a desired plant community or to meet activity plan objectives. Such treatments include mechanical treatments (chaining), herbicide applications, prescribed fire, re-seeding, and construction of control structures. Vegetative treatments are subject to NEPA review prior to initiating any action.

### Existing Plans, Decisions, and Objectives

The MFPs provide for harvest of vegetative products by sale to private and commercial operators at fair market value.

Herbicides will not be used until the Vegetative Treatment EIS is completed and then only after a site-specific environmental analysis.

## RANGELAND MANAGEMENT

KRA's grazing program is managed under provisions of the Taylor Grazing Act of 1934, FLPMA, and the Public Rangelands Improvement Act of 1978 (PRIA). These acts authorize the issuing of grazing leases, unauthorized use detection and abatement, use supervision, livestock grazing management, range improvement facilities and treatments, and other actions.

KRA's management of rangeland resources will be guided by the Cerbat/Black Mountain (1978) and Hualapai-Aquarius (1981) Grazing EISs and Range Program Summaries.

The grazing EISs respond to NEPA and FLPMA requirements and cover all public land within the RMP area. These EISs provide guidance for the RMP area grazing management program with the following objectives:

- 1) to restore and improve rangeland condition and productivity,
- 2) to provide for use and development of rangeland,
- 3) to maintain and improve habitat for wildlife
- 4) to control future management actions, and
- 5) to promote sustained yield and multiple use.

All KRA grazing allotments have been assigned to one of three management categories on the basis of present resource condition and management needs, forage potential, conflicts with other resources, and economic potential for improvement. For a more detailed description of the rangeland management program see Appendix 1.



Categorization establishes priorities for distributing rangeland management funds to achieve cost-effective improvement of rangeland conditions and production. The three categories are “M”—Maintain, “I”—Improve, and “C”—Custodial. The 12 “M” category allotments are managed to maintain satisfactory conditions, 45 “I” allotments are managed to improve unsatisfactory conditions, and 26 “C” allotments receive custodial management to prevent resource deterioration. Efforts are concentrated in allotments where monitoring and evaluation find that grazing management actions are needed to improve the basic resource or to resolve serious resource-use conflicts. BLM will recategorize allotments as management needs or objectives shift or potential for improvement changes.

**Existing Plans, Decisions, and Objectives**

BLM will manage rangelands in accordance with the Cerbat/Black Mountains and Hualapai-Aquarius grazing EISs and AMPs, which specify grazing systems, management facilities, and land treatments and develop or revise AMPs to reflect any needed changes as determined through monitoring studies and allotment evaluation. Insecticides are also prescribed to control insects such as grasshoppers and crickets.

All fences will be designed and built for compatibility with wildlife and other multiple resource objectives. Livestock waters will be built or modified to provide safe access for wildlife.

**CULTURAL RESOURCE MANAGEMENT**

An array of laws and regulations mandate the protection and management of cultural resources on public lands. Two of the most important laws are the National Historic Preservation Act (NHPA) of 1966, as amended, and the Archaeological Resources Protection Act (ARPA) of 1979, as amended. Under NHPA, potential impacts to National Register and National Register-eligible properties are identified and measures to avoid or mitigate those impacts are developed in consultation with the Arizona State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP).

ARPA prohibits the attempt or actual excavation, removal, damage, or trafficking of archaeological resources from public land by unauthorized persons and provides for the authorized removal and excavation of cultural resources through a permitting process.

ARPA also requires the Secretary of the Interior to prepare plans to determine the nature and extent of archaeological resources and schedule land surveys in areas likely to contain the most scientifically valuable archaeological resources.

Since 1985, BLM in Arizona has operated under terms of a general compliance programmatic memorandum of agreement with the SHPO and ACHP, which guides inventory and data recovery procedures for sites on all public land, and a specific memorandum of agreement addressing the protection of cultural resources in BLM-state land exchanges.

Cultural resource management programs include participation by both professional and amateur archaeologists. Volunteer agree-

ments currently exist for the preparation of a final report on the Bighorn Cave test excavation with the Museum of Northern Arizona (MNA) and Northern Arizona University (NAU). In 1988, the Arizona Site Stewardship Program was introduced to KRA, and 12 sites are regularly monitored by private citizens. The Mohave Chapter of Arizona Archaeological Society (AAS) has performed cultural resource inventories and encourages awareness of cultural programs.

BLM policy is to have a cultural resource specialist review all surface-disturbing activities on public lands. Cultural reviews describe results of previous inventories and evaluate the probability of cultural resource occurrence in the project area. Generally a cultural resource field inventory is then conducted. Should significant cultural resources be found during the inventory, impacts to them would be mitigated, generally through avoidance. Should it be determined the cultural resources cannot be avoided by the proposed activity, the cultural resources would be evaluated for National Register eligibility. If the values are found to be eligible, a program of mitigation would be developed through consultation between BLM, SHPO and the Advisory Council on Historic Preservation in accordance with the NHPA and 36 CFR 800. Responsibility for inventory, evaluation, and mitigation of impacts to cultural resources rests with BLM. Through this process, all cultural resources of National Register quality would be protected or impacts to them mitigated.

**Existing Plans and Decisions**

Interim Protection Plans (1990) are being completed for the Bighorn Cave and the Carrow-Stephens Ranches.

**Objectives**

The KRA cultural resource management objectives are to protect the scientific information potential of sites, enhance the public use values of sites, and manage sites, when applicable, for conservation. As a continuation of the planning process, KRA will prepare cultural resource management plans (CRMP), in which cultural resources will be allocated to specific use categories assuring management for their most appropriate uses. Certain sites will be selected for cultural resources project plans that will implement specific activities to achieve the objectives and uses of the RMP and CRMPs. The guidelines for management under each objective are found in Appendix 2.

**RECREATION MANAGEMENT**

**Recreation Management**

Recreation programs are managed according to multiple use principles unless otherwise specified by law or BLM policy. The mission of the program is to ensure the continued availability of quality outdoor recreation opportunities and experiences that are not readily available from other sources. Recreation use is managed to protect the health and safety of visitors; to protect natural, cultural, and other resources; to encourage public enjoyment of public lands; and to resolve user conflicts.

A range of outdoor recreation opportunities such as hiking, camping, rock collecting, sight seeing, hunting, recreation vehicle (RV) camping, climbing, picnicking, and recreation 4-wheeling, will

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continue to be provided. Developed recreation sites, interpretive sites, trails, and roads will continue to be maintained and developed where needed to enhance recreation opportunities and allow public use.

### Existing Plans and Decisions

#### Recreation Project Plans:

- Burro Creek Recreation Site

#### Improvements:

- Wild Cow Springs Recreation Site
- Burro Creek Overlook Interpretive Site
- Hualapai Highlights Trail System

#### Sign Plans:

- Burro Creek Recreation Site
- Wild Cow Springs Recreation Site

#### Maintenance Plans:

- Burro Creek Recreation Site
- Wild Cow Springs Recreation Site
- Packsaddle Recreation Site
- Windy Point Recreation Site

#### National Back Country Byways:

- Historic Route 66 (nominated)
- Hualapai Mountains

### Wilderness Management

All KRA's wilderness study areas (WSA) will continue to be managed under the BLM Interim Management Policy (IMP) until Congress either releases them from review or designates them wilderness. Those released will be managed according to decisions in the approved RMP. Those added to the wilderness system will be managed according to the Wilderness Act of 1964 as well as under provisions of the designating legislation. Wilderness management plans will be prepared for each wilderness area. Implementing these plans will begin immediately upon their final approval and will be ongoing throughout the life of this RMP, regardless of the alternative selected.

## WILDLIFE HABITAT MANAGEMENT

### Wildlife

Legislation including FLPMA, the Endangered Species Act, the Public Rangelands Improvement Act, and the Sikes Act have directed BLM to manage habitat to meet wildlife needs in the face of increasing demands for basic energy supplies, building materials, food products, and recreational opportunities. BLM's responsibility is to recognize opportunities to maintain, improve, and expand wildlife habitat for both consumptive and nonconsumptive use and name critical wildlife resources deserving special attention. BLM is also directed to assist state agencies in completing fish and wildlife resource plans.

Recently developed documents also provide program guidance to BLM's wildlife habitat management program. These documents include Fish and Wildlife 2000, Desert Tortoise Management on the

Public Lands: A Rangeland Plan, the Rangeland Plan for Managing Habitat of Desert Bighorn Sheep on Public Lands, Waterfowl Habitat Management on Public Lands: A Strategy for the Future, and the Raptor Habitat Management Plan.

All land use actions occurring on public land in KRA are reviewed and given site-specific analysis during the environmental assessment (EA) process. Assessing impacts to special status and sensitive wildlife species, riparian habitats, and wildlife habitat improvement projects, the EA process is used to develop measures to lessen impacts. The EA process also assesses compatibility with cooperatively developed wildlife habitat management plans (HMPs). All rangeland and watershed improvements will continue to be designed to achieve both range and wildlife objectives.

### Animal Damage Control

Animal damage control on public lands in Arizona is guided by U.S. Department of the Interior policy under a memorandum of understanding with the Animal Plant Health Inspection Service's (APHIS) Animal Damage Control (ADC). ADC has the responsibility for overseeing the program and supervises all control activities. BLM has approval authority for all specific control actions on public lands under the annual ADC plan.

### Habitat Management

Habitat management plans (HMP) are developed in an effort to improve wildlife habitat. Existing HMPs (Hualapai, Aquarius, Cerbat-Music, Black Mountain, Bill Williams-Crossman Peak) will continue to be implemented as funding allows. Existing HMPs are on file and open to public review at the KRA office. HMPs are periodically evaluated to determine if management direction and actions are adequate and if HMPs objectives are being met. Using and considering monitoring data, changed policies and direction, and wildlife and other resource program needs, BLM updates and revises HMPs jointly with the Arizona Game and Fish Department (AGFD). The current HMP process is adequate to incorporate new data, decisions, and changes in management direction and policies.

The Aquarius HMP called for determining the potential for reestablishing bighorn sheep into the Upper Bill Williams drainage. This determination will be made. Management actions outlined in HMPs to improve habitat for mule deer, elk, and javelina are considered adequate and up-to-date and would be implemented under all alternatives.

The desert bighorn sheep and its habitat are important resources on the public lands of Arizona. These resources will be managed in accordance with District policies developed to incorporate the management and protection requirements identified in the desert bighorn sheep range wide plan.

Detailed estimates of big game forage allocations are presented in the Cerbat-Black Mountain and Hualapai-Aquarius Grazing EISs. Both are on file at the BLM office in Kingman. Monitoring of big game habitat by key species utilization will continue to be conducted as part of the rangeland program monitoring plan. The information obtained from vegetative transects will be incorporated into final grazing decisions.

Wildlife habitat management actions (spring developments, exclosures, and game waters) will continue as funding allows. Prescribed burning will be designed to improve wildlife habitat.

Rangeland management practices and rangeland improvements will be designed or modified to maintain or improve wildlife habitat. Livestock grazing management will incorporate the needs of key plant species important to wildlife and safe to use by wildlife in accordance with BLM Standards (Manual Supplement 6516 and BLM handbook H-1741-1).

All new fences will be built to allow for wildlife passage in accordance with BLM fence standards. Any existing fences obstructing wildlife movements will be brought into conformance with the adopted standards.

Wildlife escape devices will be installed on all new and existing water tanks or troughs built for livestock in KRA.

To the extent possible new roads will not be built into crucial wildlife habitats. Roads may be permanently or seasonally closed where problems exist or are expected.

### Existing Plans, Decisions, and Objectives

Since completion of the MFPs, several HMPs have been completed and are being implemented. These include:

- Black Mountain
- Hualapai
- Aquarius
- Cerbat-Music
- Bill Williams-Crossman Peak (prepared jointly with the Havasu Resource Area)

HMPs are periodically evaluated to determine if their objectives are being met, and then updated or revised to meet changing situations or needs. When this RMP becomes final, HMPs will be revised or amended in the following order of priority:

1. Black Mountain
2. Hualapais
3. Acquarius
4. Cerbat-Music
5. Bill Williams-Crossman Peak

### SPECIAL STATUS SPECIES MANAGEMENT

Management of special status species is guided by HMP and recovery plans in cooperation with state and federal agencies and affected parties.

The Endangered Species Act (ESA) of 1973, as amended, is the authority to conserve endangered and threatened species on public lands. Section 4(f) of ESA directs the Secretary of the Interior to develop and implement recovery plans for the conservation and survival of endangered species. Section 7(a)(1) of ESA requires each federal agency to carry out proactive measures to recover listed species and section 7(a)(2) requires each federal agency to avoid jeopardizing the continued existence of listed species through their actions.

Any federally authorized, funded, or implemented actions that may affect listed or proposed species are reviewed in cooperation with USFWS.

BLM policy for special status candidate species is contained in BLM Manual Section 6840. BLM must carry out management consistent with multiple use for conservation of candidate species and their habitats and must ensure that actions authorized, funded, or carried out do not contribute to the need to list any of these species as threatened or endangered (T&E). These actions are also conducted on split-estate lands, if the surface management agency does not have adequate data. It is also policy to systematically gather data on candidate species to determine if a species needs to be listed.

Potential impacts to species are analyzed in an environmental review by BLM for each project. Protection measures may be stipulated in the decision record in the environmental assessment or in the USFWS' biological opinion.

Protection and management of endangered species will continue. Inventory for federal and state candidate species will continue, and monitoring programs will be implemented on known populations of listed and candidate species. Where monitoring finds threats to these populations, actions will be taken to protect the species and its habitat.

### Plant Species

A draft recovery plan has been prepared for Arizona cliffrose (*Purshia subintegra*). When finalized the recovery plan will be implemented.

### Animal Species

State-listed species are managed in cooperation with the AGFD under provisions of the Sikes Act (1974) as amended.

Actions proposed in the RMP will adhere to objectives stated in the bald eagle, peregrine falcon, and Hualapai Mexican vole recovery plans. When revising or developing resource activity plans, specific objectives and actions stated in these recovery plans will be incorporated.

New powerlines will be built to "electrocution proof" specifications, and existing powerlines will be modified to improve raptor habitat.

The desert tortoise and its habitat are important resources on the public lands of Arizona. These resources will be managed in accordance with the Arizona Implementation Strategy developed to incorporate BLM management philosophy from Desert Tortoise Habitat Management on The Public Lands: A Rangeland Plan, dated November 1988. This management effort will include continuing inventory of desert tortoise habitat, monitoring of desert tortoise habitat quality and quantity, categorization of habitat according to guidelines described in the Implementation Strategy, and management of categories of habitat according to the management actions in the Implementation Strategy. Where enough data exists, the Strategy will be implemented through this land use plan. If such data is lacking, the Strategy will be implemented through activity plans or land use plan amendments, following acquisition of the needed data. Management objectives related to habitat quality and quantity for the

## CHAPTER II

desert tortoise will be included in those activity plans, land use plan amendments, or other documents.

### RIPARIAN AREA MANAGEMENT

Legal authority for BLM management of riparian-wetland areas is based on numerous laws and Executive Orders, including the Taylor Grazing Act of 1934, Endangered Species Act of 1973, Federal Land Policy Management Act of 1976, the Emergency Wetland Resources Act of 1986, Water Quality Act of 1987, Executive Order 11988 (Floodplain Management) and Executive Order 11990 (Protection of Wetlands). On January 22, 1987, BLM issued its riparian area management policy which defined the term riparian area, set management objectives, and outlined specific policy direction. This policy is the basis for BLM Manual 1737 (Riparian-Wetland Area Management), the Bureau-wide Riparian-Wetland Initiative for the 1990s and the Arizona Riparian-Wetland Area Management Strategy.

The overall objective is to achieve an advanced ecological status, except where resource management would require an earlier ecological status for such purposes as vegetation diversity.

In addition, the national and state strategy plans outline seven implementation strategies to meet the objective: (1) Inventory/Classification - collect, compile, and evaluate baseline information to determine current status, potential, and condition. (2) Activity Plan Preparation/Revision - Develop/revise plans that involve riparian-wetland areas prescribing actions to meet management objectives. (3) Project Development/Maintenance - Complete projects such as fences, water developments, tree planting, and habitat improvement structures to create, improve and/or maintain riparian-wetland conditions. Maintain projects to continue their beneficial use. (4) Monitoring - Monitor to determine if management action is meeting specific objectives for riparian-wetland areas. (5) Protection/Mitigation - Avoid or mitigate the impact of surface disturbing activities on riparian-wetland areas. (6) Acquisition/Expansion - acquire and expand riparian-wetland areas through exchange, donation, or purchase. (7) Public Outreach - The development and presentation of workshops to the citizens of Arizona including school children, livestock interests and conservation groups. The intent of the workshops will be to educate the public and to gain their support for BLM riparian management efforts.

These strategies will be implemented on an interdisciplinary team basis. Since numerous highly valued resources depend on riparian-wetlands, it is important that specialists such as hydrologists, wildlife biologists, soil scientists, range conservationists and recreation planners work cooperatively to develop management strategies to allow areas to be used and yet meet the identified objective.

The decisions in the Burro Creek Riparian Management Plan, May 1983, and the Bill Williams Riparian Management Area Plan, August 1989, will be incorporated into the RMP.

### HAZARDOUS MATERIALS (HAZMAT) MANAGEMENT

The three laws most commonly associated with HAZMAT include the Resource Conservation and Recovery Act (RCRA), or PL 94-

580; the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), or PL 96-510, otherwise known as the Super Fund Act; and the Super Fund Amendment Reauthorization Act (SARA), Title III (E.O. 12580, 1986). BLM responsibilities under these acts include conformance with federal RCRA enforcement regulations pertaining to the storage, handling, and disposal of hazardous materials and reporting unpermitted HAZMAT discharges under the provisions of CERCLA. Action by BLM includes reporting, necessary site security, coordination of procedural cleanup steps, and monitoring results of the cleanup.

All proposed actions occurring on public land will be analyzed for their potential to release hazardous materials into the environment. Appropriate stipulations will be incorporated into permitting documents to ensure prevention of hazardous incidents.

### Existing Plans and Decisions

Phoenix District Hazardous Material Response Plan.

This plan covers public lands within the Phoenix District. It is subordinate to the Environmental Protection Agency's (EPA) Region IX Contingency Plan and in turn the National Contingency Plan. The Bureau's State Contingency Plan is the framework and part of the individual district's plans. The HAZMAT contingency plan was revised in 1989 with ADEQ as the first responder by agreement with EPA.

This plan provides the guidance for BLM employees to act in the event of a HAZMAT incident to ensure public and employee health and safety, protect the environment, and comply with state and federal laws. If there is no identifiable responsible party (RP) or the RP refuses to take action, BLM will act to effect a clean up. These actions are to include limiting access to the site to ensure safety of Bureau employees and the public, contracting for the cleanup/removal of the materials, and gathering evidence to assist solicitors in future litigation of the RPs. At no time will BLM employees remove or transport hazardous materials.

Actions by Bureau employees on hazardous material (HAZMAT) matters are limited to reporting, maintaining site security, and coordinating procedural steps. The ADEQ has the overall responsibility, under agreement with EPA, to ensure that all HAZMAT incidents are properly abated on federal lands. EPA may defer clean up actions to BLM on minor incidents. In these situations, EPA will provide technical assistance, and BLM's role is to assure that either a responsible party or a contractor cleans up the site.

### WILD AND FREE-ROAMING HORSE AND BURRO MANAGEMENT

Public Law 92-195, December 15, 1971 (USC 1331-1340, as amended), made BLM responsible for the welfare and protection of unbranded and unclaimed horses and burros found on public land at the time of the act's passage. The management of horses and burros on public land requires their removal from adjacent private or state land when requested, the development of a herd management area plan (HMAP), the maintenance of a herd inventory, and the removal and disposal of excess animals to the public by adoption. Horses and

burros on public land are maintained at the lowest level needed to assure the herd's free-roaming character, health, and self-sustaining ability.

Title 43 code of Federal Regulations, Subpart 4710.5(b) mandates all public lands inhabited by wild horses or burros shall be closed to grazing under permit or lease by domestic horses and burros.

**Existing Plans, Decisions, and Objectives**

The HMAPs for the Black Mountain and the Big Sandy herds require the removal of excess burros to maintain the Black Mountain herd at 400 head and the Big Sandy herd at 135 head.

**FIRE MANAGEMENT**

Approved in September 1989, the Phoenix District Fire Management Activity Plan describes the current district policy for fire management in KRA. The plan may be for reviewed at the Phoenix District and KRA Offices.

**Fire Management Objectives**

Suppression objectives for fires occurring during the summer (May to September) in the grassland vegetation fuel type (NFDRS Fuel Model A) are to hold 85 percent of the fires to 300 acres or less. During the non-summer months, the protection objectives require holding 90 percent of the fires to 1,000 acres or less.

Suppression objectives for fires occurring during the summer in the Chaparral and Riparian fuel types (NFDRS Fuel Model F) are to hold 85 percent of all fires to 50 acres or less. During the non-summer months, projection objectives require holding 90 percent of the fires to 200 acres or less.

Suppression objectives for fires occurring during the summer in the Mohave/Sonoran desert type (NFDRS Fuel Model T) are to hold 80 percent of all fires to 50 acres or less. During the non-summer months, protection objectives require holding 90 percent of all fires to 200 acres or less.

**Priority Suppression Areas**

Priority areas where fire suppression is required to prevent unacceptable resource damage or loss of life and property are:

- A. Areas of sensitive and critical resource values.
  - Burro Creek (endangered Burro Creek cliffrose)
  - Grapevine Mesa (Joshua Tree Forest, National Natural Landmark)
  - Hualapai Mountains (endangered vole)
  - Lake Alamo (endangered southern bald eagle).
- B. Critical areas with potential for loss of life and property.
  - Golden Horseshoe subdivision,
  - Dolan Springs,
  - Truxton,
  - Pinyon Pine subdivision,

- Pine Lake subdivision, and
- Mohave County Park.

**Prescribed Fire**

The use of prescribed fire to achieve management objectives would be subject to development of a prescribed fire plan and NEPA review prior to initiating the action. Suitable areas where this type of treatment may be considered, include dense chaparral sites in the Hualapai, Music, and Cerbat Mountains, blackbrush sites at various locations and big sagebrush sites in the Music Mountains.

**Fuel Management Areas**

Removal of decadent chaparral brush along ridge tops to create fuel breaks in the Hualapai Mountain range, would benefit the fire suppression program. Lack of roads in the Hualapai Mountains limits the strategy of using roads for anchor points and fire lines.

**Constraints**

The following conditions restrict and constrain fire suppression activities on public lands.

- Wilderness study areas. All suppression activities in WSA's and ACEC's will be conducted in compliance with BLM interim policy (IMP) on minimum tool use and limited use of motorized equipment.
- Threatened and endangered habitat. Sensitive habitat for T&E species must be protected. Suppression tactics will be utilized that limit the damage or disturbance to habitat.
- Archaeological sites. All sites must be protected from disturbance. If heavy equipment use is anticipated to construct fire line, an archaeologist if available, will work in conjunction with heavy equipment to protect the site.

**Emergency Fire Rehabilitation**

A site specific emergency fire rehabilitation plan will be prepared by an interdisciplinary team, for each burn that requires emergency rehabilitation to protect soil, water, vegetation resources, or to prevent unacceptable on site or off site damages.

When wildfire occurs within KRA, procedures for rehabilitation outlined in BLM Manual Handbook H-1742-1 will be implemented. These procedures include formation of an interdisciplinary team to assess both on- and off-site resource damage and potential for future damage. The team would also prescribe measures necessary to minimize resource losses following wildfire. Available resource inventory data and land use planning objectives would be used in this assessment. Consideration would be given to sensitive resources in preparation of the rehabilitation plan, including wilderness, Special Management Areas, fragile soils, cultural resources and Special Status species. Rehabilitation measures may include, but would not be limited to seeding, water barring of firelines, scattering of litter, diversion structures or sediment catchments, and control of grazing by livestock, wild horses, burros, and wildlife. The need for emergency rehabilitation measures would be discretionary dependent on the size of the area burned.

### ALTERNATIVE 1 (CURRENT MANAGEMENT)

*Alternative 1* consists of managing public lands using current policies, MFP guidance, and existing resource allocations. The MFPs were written in 1974, 1975 and 1980. Many MFP actions have been implemented. Public use has increased substantially, and public interest and concern about public land management have become intense. Under *Alternative 1* changing circumstances would be handled on a case-by-case basis and would require MFP amendments.

For *Alternative 1* Special Management Areas and Land Use Restrictions, see maps in Volume 2.

#### MINERALS

##### *Objectives*

The objective of the minerals program is to provide for orderly exploration and development of minerals.

##### *Plan Actions*

Oil and gas exploration and development would be encouraged on KRA public land. Oil and gas leasing would continue to be allowed without restrictions except on 327,000 acres of federal minerals currently subject to no surface occupancy (NSO) restrictions to protect bighorn sheep habitat. Locatable mineral development would continue to be allowed on public land. A total of 19,400 acres are withdrawn from mineral entry at Alamo Lake. Mineral materials and free use permits would be issued on a case-by-case basis.

#### LANDS

##### *Objectives*

KRA has an active lands and realty program with an objective of adjusting land ownership to improve manageability of the public lands and their resources while authorizing a variety of land use proposals.

##### *Plan Actions*

#### Land Tenure Adjustments

The Federal Land Policy and Management Act (FLPMA) provides authority for land ownership adjustments by sale, exchange, and withdrawal. FLPMA also requires these adjustments to conform to existing land use plans.

The Black Mountain, Cerbat, and Hualapai-Aquarius MFPs have all selected disposal blocks where public lands would be disposed over the long term. See Appendix 3 and Map II-1. These plans have also identified retention blocks of larger, more manageable areas of public land. These lands would remain in public ownership and be managed under the principles of multiple use. Non-public lands in these retention areas would generally be considered suitable for acquisition to consolidate public lands.

#### Public Land Exchange

KRA has had an active land exchange program, and several areas have been blocked into solid public and private ownership. Retention areas where BLM has substantially increased acreages of public lands include the Hualapai Mountains, central and southern Black Mountains, Goodwin Mesa in Aquarius Mountains, and lands bordering Lake Mead National Recreation Area and the Hualapai Indian Reservation.

Disposal areas where BLM has conveyed large amounts of public land into private ownership include Golden Valley, Hualapai Valley south of Red Lake, portions of Detrital Valley, and land east of Bullhead City.

The exchange program in Arizona was suspended in April 1989 to allow regulations pursuant to the Federal Land Exchange Facilitation Act (FLEFA) of 1988 to be established. These regulations are awaiting final approval, and their implementation will reenact the KRA exchange program. BLM has implemented a statewide priority ranking system, which considers natural resources, special designations such as wilderness and areas of critical environmental concern (ACECs), elimination of threats to resources, public access, and the opportunity to acquire lands in all pending and future exchange proposals.

Since 1975 KRA has completed private exchanges that transferred 43,377 acres of public land to private ownership within the disposal areas designated by the MFPs. These exchanges reconveyed 223,291 acres of private lands to the United States within designated retention areas.

The exchange program between BLM and the State of Arizona consolidates land ownership to block up public lands for better management of natural resources and block up state lands to maximize revenue-producing development. A memorandum of understanding between BLM and the State of Arizona establishing procedural guidelines for land exchanges was signed December 31, 1984. The state exchanges were processed under FLPMA, Arizona Revised Statutes 37-604 and 37-722, and the Navajo-Hopi Relocation Act of 1980. But on March 30, 1990, the Arizona Supreme Court issued an opinion that state land exchanges are unconstitutional. A constitutional amendment approved by the voters of Arizona will be needed to allow further state land exchanges. The voters are expected to decide this issue in late 1990 or early 1991.

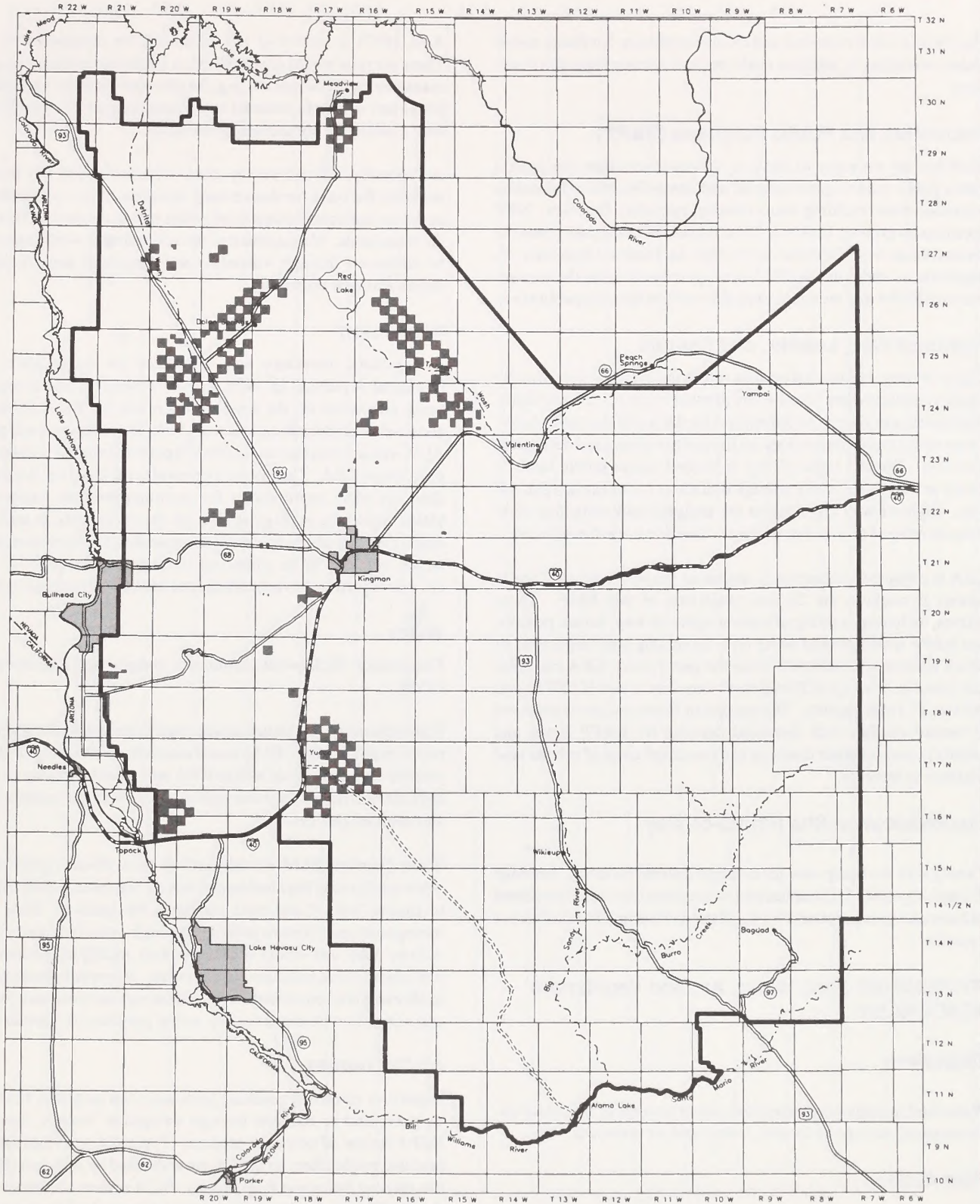
Since 1975 BLM has transferred 102,774 acres of public land to the state and acquired 338,815 acres from the state.


#### Land Withdrawals and Classifications

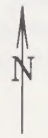
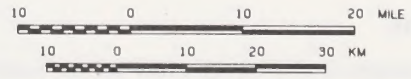
Although BLM follows a policy of multiple use management on public lands, certain conditions such as public safety or protection of special uses and resources may require restricting or eliminating incompatible uses on some public lands.

Withdrawals generally close the land to entry under all or some of the public land laws. Withdrawals may transfer jurisdiction of the land to another federal agency and designate public lands for a particular purpose, project, or use. KRA's withdrawals and classifications have been entered into the Geographic Information System (GIS).

# LAND DISPOSALS - ALTERNATIVE 1



 LANDS PROPOSED FOR FUTURE DISPOSAL



Map II-1

## CHAPTER II

They have been inventoried and recommendations for future termination, retention, or addition made and incorporated into this document.

### Recreation and Public Purposes (R&PP)

BLM has the authority to lease or convey at less than fair market value, public land to governmental and nonprofit entities for public recreation sites, building sites, schools, and other facilities. MFP decisions to provide lands for local entities when a public need is demonstrated will continue under this alternative (Appendix 4). Applications under the R&PP Act are processed under the requirements of NEPA and are subject to public review through publication.

### Rights-of-Way, Leases, and Permits

Rights-of-way, leases, and permits to use the least environmentally sensitive routes where possible are granted to qualified individuals, businesses, and governmental entities for the use of the public lands. Large utility transmission lines are limited to existing and designated corridors. When a right-of-way is needed across public lands to access private lands, every attempt is made to use existing rights-of-way. Right-of-way applications are analyzed and mitigation measures developed to avoid or protect cultural or natural resources.

KRA is expected to continue to authorize the above types of realty actions throughout the 20-year projection of this RMP. These actions, including granting of routine rights-of-way, leases, permits, and R&PP actions would occur on a continuing basis regardless of which alternative is selected. Over the past 5 years, KRA each year has issued an average of 20 rights-of-way, one or two R&PP leases, and two FLPMA permits. The number of future actions is expected to remain similar, with increased demand for R&PP leases and patents as communities continue to expand and costs of private land continue to increase.

### Communication Site Rights-of-Way

Twenty sites are being used for communications facilities. See Map II-2 and Appendix 5. Communication site plans have been developed and site user groups formed for the Hayden Peak and Potato Patches 1 and 2.

## WATERSHED (Soil, Water, Air, and Vegetation) RESOURCES

### Objectives

Watershed management objectives are to prevent or minimize environmental damage to the soil, water, and air resources.

### Plan Actions

#### Soils

A completed soil survey exists for the southern KRA (Mohave County, southern part-Survey Area #627, unpublished) and the eastern KRA (Yavapai County, Western Part-Survey Area #637). A soil survey for the northern KRA (Mohave County, Central-Survey

Area #697) is underway and scheduled for completion in 1993. These surveys would enable BLM to locate areas requiring special management consideration (e.g. fragile or saline soils, wetland soils, prime and unique farmlands) and would provide information on an area's suitability for surface disturbance.

Additionally, the soil survey along with ecological site inventory provides the basis for determining desirable plant communities for optimum multiple use/sustained yields within the ecological sites on the rangelands. Management of the soil resource would continue to be addressed through watershed and rangeland activity plans to assure resource protection.

### Vegetation

A vegetation inventory was completed for the southern KRA (Hualapai-Aquarius) in 1979, and an ecological site inventory is being conducted for the northern KRA (Cerberus/Black Mountains) and is scheduled for completion in 1993. These surveys will provide BLM with information on current and potential vegetative conditions throughout KRA. The inventory provides the basis for determining desirable plant communities for optimum multiple use/sustained yields within the ecological sites on the rangelands in addition to healthy watershed conditions. Management of the vegetation resource would continue to be addressed through activity plans to obtain desired vegetative cover conducive to healthy watershed conditions.

### Water

*Floodplains:* BLM would continue to comply with Executive Order 11988.

*Water Quantity:* To secure an adequate water supply for a variety of needs on public lands, BLM would maintain an inventory of all water sources on public lands within KRA and would continue to pursue applications/claims for water rights through the state appropriations/adjudication process.

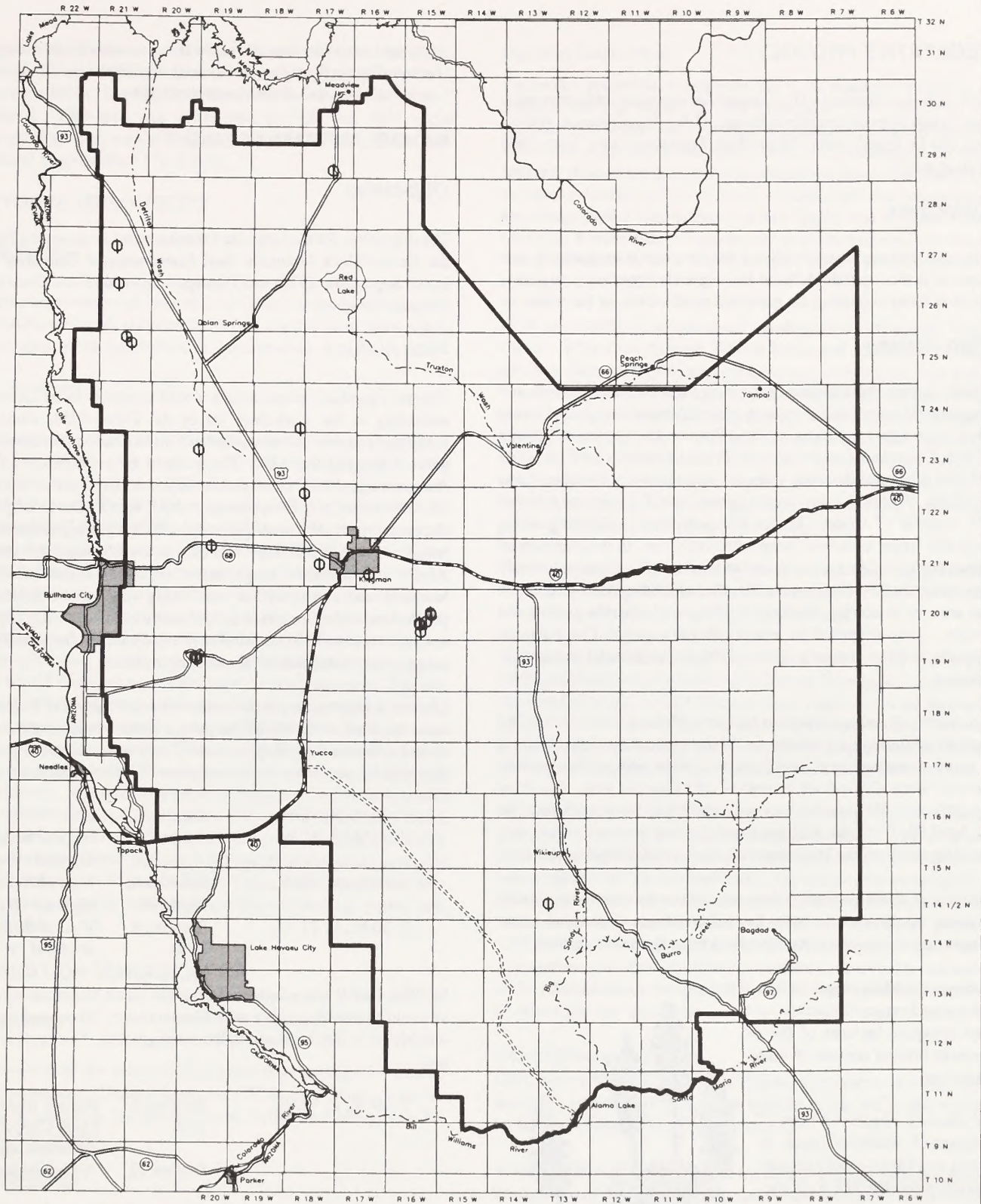
*Water Quality:* BLM would continue to establish a good baseline water quality data base and ensure that all waters on public land meet or exceed federal and state standards for quality. BLM would manage non-point source pollution through watershed and rangeland activity plans and would coordinate with ADEQ to incorporate its non-point source pollution requirements. Adverse impacts to water quality would be prevented or reduced through environmental analysis and mitigative measures for any action proposed for public lands.

### Air Resources

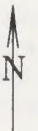
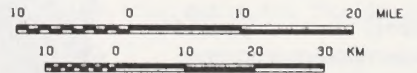
Impacts to air quality resulting from activities on public land would be prevented or reduced through mitigation brought forward in NEPA review of proposed projects. Typically, activities on public land that might affect air quality are addressed by Article 4 (R9-3) of the Arizona Rules and Regulations. BLM actions or actions authorized by BLM and addressed in the regulations include land treatments, prescribed burning, road building, construction of mineral tailings piles, surface disturbing rights-of-way, and dust emissions from vehicles passing over unsurfaced roads. The NEPA review process ensures compliance with these regulations. For identification and coordination purposes, BLM refers to the state implementation plan goals for air quality nonattainment areas.



# DESIGNATED COMMUNICATION SITES



⊕ DESIGNATED COMMUNICATION SITES



## CHAPTER II

### VEGETATIVE PRODUCTS

This section addresses public demand for vegetative resources other than vegetation used mainly as forage. Other discussions on vegetation can be found under "Watershed Resources" and "Rangeland Management."

#### Objectives

The objective under *Alternative 1* for the vegetative products program is to meet public demand for vegetative resources on public lands without impairing the sustained productivity of the resource.

#### Plan Actions

Under current management, KRA designates separate private and commercial woodcutting areas in pinyon/juniper stands and issues permits on a demand basis, with no limit on the number of permits issued. Commercial woodcutting is allowed from May 1 to September 30, and other woodcutting areas are open between October 1 and April 30. Within the woodcutting areas, specific units are selected for removal of wood. In the personal use woodcutting areas, typically larger trees have been selectively cut. In the commercial areas, permit holders are required to clearcut all juniper and mature pinyon trees within designated units, after which they must rehabilitate the area, by scattering slash and seeding with suitable grasses and shrubs. Areas proposed for woodcutting are analyzed for potential impacts to other resources through the environmental assessment process.

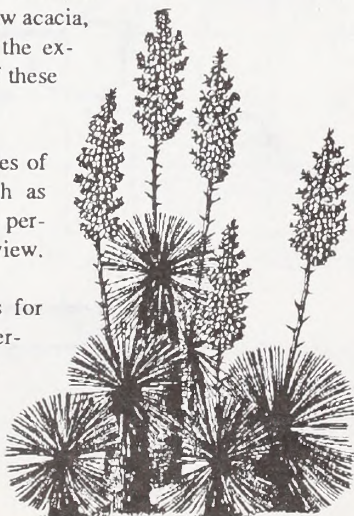
Commercial harvest of *Yucca schidigera* (Mohave yucca) was being authorized through annual permit. Mohave yucca is used to produce a water retention agent, fertilizer, and plant mulch. In the past, permits were allowed for harvest of 200 tons per year. But most recently, only 50 tons have been authorized for harvest each year. As of April 30, 1990, the Mohave yucca harvest has been suspended, pending study on the long-term sustained availability of this plant.

Harvest of desert vegetation for personal use and commercial landscaping would continue to be limited to salvage operations where vegetation is destined to be destroyed by surface disturbance.

Permits would no longer be issued for removing ironwood, catclaw acacia, and mesquite because of the extremely limited amount of these resources.

Small-scale negotiated sales of vegetative products (such as seeds and fruits) would be permitted, subject to NEPA review.

Removal of native plants for private residence or commercial landscaping must comply with state laws governing the harvest and transport of native plants. All protected na-



tive plants are to be tagged before being removed and transported (Arizona Native Plant law, Arizona Revised Statutes, title 3, chapter 7; section 3-901 to 3-910 as amended 1989).

### RANGELAND MANAGEMENT

#### Objectives

The objectives for the rangeland management program are listed in the Cerbat/Black Mountain final Environmental Statement (published September 1978) and Hualapai-Aquarius Final Grazing EIS (August 1981).

#### Plan Actions

Current rangeland management would continue to be carried out according to the guidelines set in the above EISs, along with rangeland program summary updates for both areas published in the years following the EIS. The volume of information in these documents prohibits a complete synopsis within this document, but all publications may be reviewed in the KRA Office. Briefly, these documents provide for categorization of KRA grazing allotments for management at different levels of intensity, a schedule for developing AMPs, and associated range improvements on higher priority allotments, and a program for monitoring vegetative conditions on public lands used for grazing. Adjustments to carrying capacity, season of use, and class or kind of livestock may be negotiated with range users on the basis of monitoring results.

Livestock grazing on public lands within the Lazy YU B allotment was cancelled in 1986. These public lands would continue to be closed to livestock grazing, because of their unmanageability and the potential for conflict with homeowners. The lands affected are:

|                     |                         |                                   |
|---------------------|-------------------------|-----------------------------------|
| T. 18 N., R. 18 W., | Section 2               | All                               |
| T. 18 N., R. 17 W., | Section 6               | West of Railroad<br>Right-of -Way |
| T. 19.N., R. 17 W., | Sections 6,<br>18, & 30 | West of Railroad<br>Right-of -Way |
| T. 20 N., R. 17 W., | Sections 8<br>& 30      | West of Railroad<br>Right-of -Way |

In 1986, Unit B was eliminated from the Black Mountain allotment to avoid potential conflict with homeowners. These public lands would continue to be closed to livestock grazing. The lands affected are:

|                     |                   |   |
|---------------------|-------------------|---|
| T. 20 N., R. 17 W., | Sections 5<br>& 6 | Portion south of<br>Cook Canyon<br>allotment boundary |
|                     | Section 12        | All public land                                       |

The following unallotted parcels of public land would also remain closed to livestock use to avoid conflicts with homeowners.

|                     |                                     |  |
|---------------------|-------------------------------------|--|
| T. 21 N., R. 17 W., | Section 18<br>Sections 20<br>and 30 | All<br>Northwest of<br>Cook Canyon<br>allotment boundary |
|---------------------|-------------------------------------|--|

A total of 165,872 acres of public land at the south end of the Black Mountains would remain closed to livestock grazing to reserve forage for wildlife. See Land Use Restrictions - *Alternative 1* map in Volume 2. This area was established in 1974 and 1976 under authority of grazing regulations in effect at that time (Title 43 Code of Federal Regulations 4111.3-1(b)).

## CULTURAL RESOURCES

### Objectives

Cultural resource management objectives are to protect the scientific information potential, enhance the public use values of sites, and to manage sites, when applicable, for conservation.

### Plan Actions

Cultural resources would continue to be evaluated on a case-by-case basis in accordance with laws, regulations, and BLM policy when inventories are required. Cultural resource management plans (CRMP) and cultural resource project plans (CRPP) would continue to be developed. National Register of Historic Places listing would continue for significant sites with the Swale Tank Archaeological District currently (1990) being nominated. BLM archaeologists would continue to educate the public about the importance of cultural resources through the public school systems and local groups. Education would continue in the form of slide presentations to schools, museums, and civic groups. Archaeological teaching materials would continue to be distributed to local teachers. Regular coverage in local newspapers concerning cultural resources and the laws protecting them would continue. Bighorn Cave would receive more testing and evaluation. The Carrow-Stephens historic ranch would continue to be developed for the public as an interpretive and recreation site. The Site Stewardship Program would continue with BLM contributing suggestions for more sites to be monitored. Coordination with local Indian tribes would continue. Signs marking points of interest would continue to be placed and replaced, especially along Historic Route 66 and the Beale Wagon Road. And certain sites would continue to be protected by signing, fencing, patrol, and surveillance.

## RECREATION MANAGEMENT

### Objectives

The objective of the recreation program is to manage for quality outdoor recreation. Under *Alternative 1* BLM would manage public land as described in the Management Guidance Common to All Alternatives section.

### Plan Actions

Recreation management within KRA is addressed under three broad program headings; *general recreation, visual resources, and wilderness*. The following describes the current status and management direction of these programs.

### General Recreation

Recreation programs would continue to be managed according to multiple use and sustained yield principles. The mission of the program is to ensure continued quality outdoor recreation opportunities and experiences that cannot be readily obtained from other sources. Recreation use would be managed to protect the health and safety of visitors; to protect natural, cultural, and other resources; to encourage public enjoyment of public lands; and to resolve user conflicts. Responding to inquiries and providing timely information would continue to be an important part of the overall recreation management effort.

KRA has four BLM-administered developed recreation sites: Burro Creek, Wild Cow Springs, Windy Point, and Packsaddle Campgrounds. Recreation project plans have been completed for the Burro Creek and Wild Cow Springs recreation sites. These plans outline proposed improvements for each facility. A recreation project plan would be completed for Windy Point and Packsaddle recreation sites. The Burro Creek Interpretive Overlook recreation project plan, completed several years ago, has not been implemented. These recreation projects have a long history of sustained public use, pressing maintenance, and need for enlargement.

The Hualapai Highlights Trail System Plan has been completed for developing biking trails at the northern end of the Hualapai Mountains. This activity plan would be implemented.

BLM has designated one route as a national back country byway, the Hualapai Mountains National Back Country Byway, which includes segments of county and BLM-maintained roads within the Hualapai Mountains. Historic Route 66 has been nominated as a National Scenic Byway, including a scenic and historic segment of Old Route 66/Oatman Road through the Black Mountains west of Kingman.

All public land outside developed recreation and interpretive sites is part of the extensive recreation management area (ERMA). Most extensive (dispersed) recreational opportunities would continue to be managed on an "on-demand" basis. On-site investment and public information efforts on public lands would continue to be provided in response to short-term demand. Special recreation use permits (SRUP) would be required for commercial and competitive events. Management attention would be directed at the most visible examples of recreational resource degradation and at the most pressing instances of recreation user conflicts.

### Off-Highway Vehicles

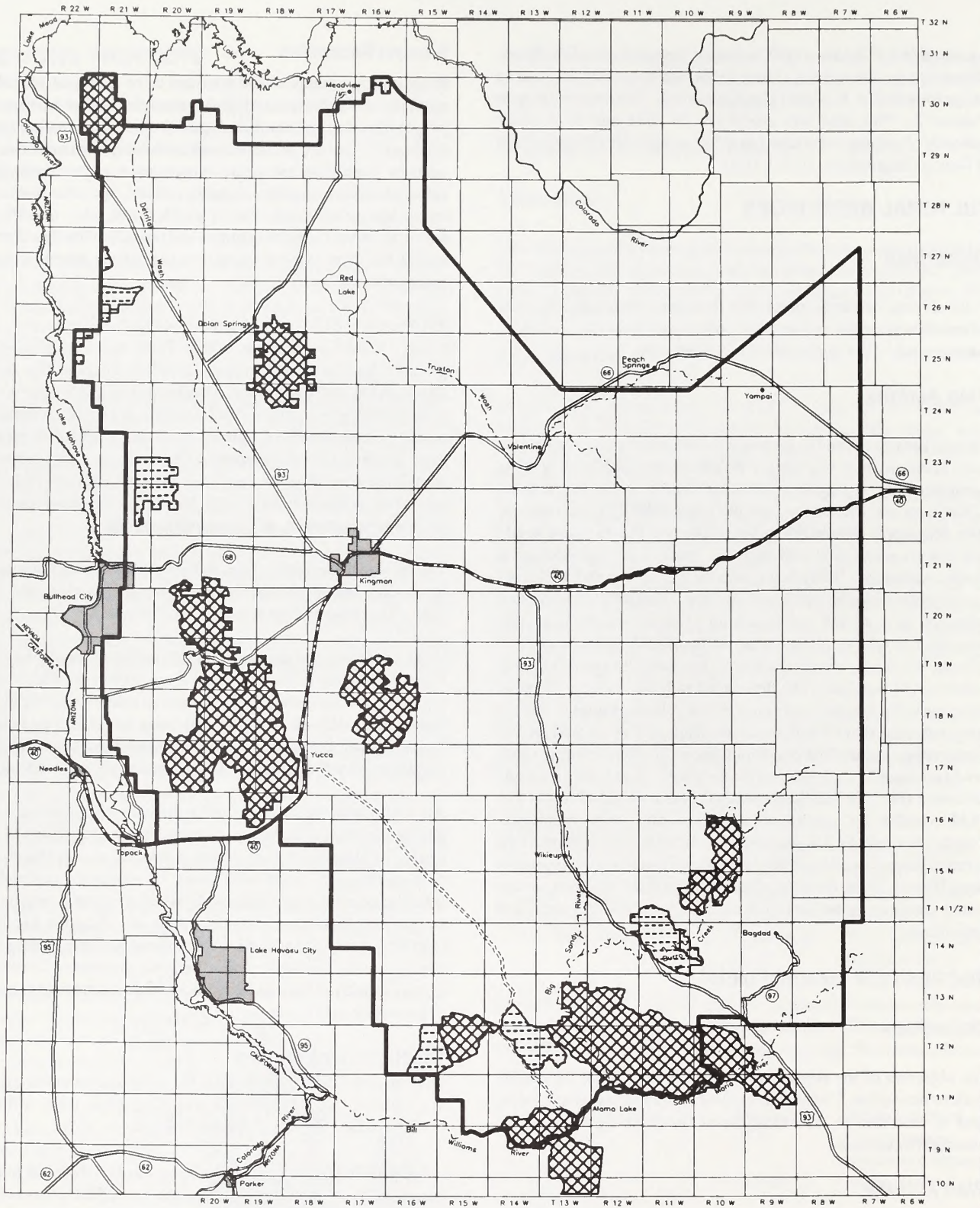
OHV use on 522,717 acres in 18 WSAs is limited to existing ways and trails, and would be limited to existing roads, trails, and washes on the remaining 1,983,283 acres in KRA.

A total of 409,377 acres would be closed to OHV use following designation of wilderness by Congress, and 2,096,623 acres would be limited to OHV use on roads, trails, and washes. See Map II-3.

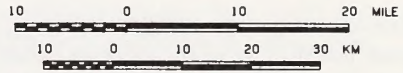
### Visual Resources

The visual resource management (VRM) classes established under the MFPs will remain the same. Application of the VRM System would continue to rely on the use of the standard visual contrast rating worksheet and on the resource specialist involved in permitting or project planning.

# OFF-HIGHWAY VEHICLE CLASSES - ALTERNATIVE 1



- UNSHADED AREAS WITHIN RMP BOUNDARY ARE OPEN
- EXISTING WAYS & TRAILS UNTIL WILDERNESS DESIGNATION - THEN CLOSED
- EXISTING WAYS & TRAILS UNTIL RELEASED FROM WILDERNESS CONSIDERATION - THEN OPEN



**WILDLIFE HABITAT MANAGEMENT**

**Objectives**

The objective of the wildlife habitat management program is to ensure optimum populations and natural abundance and diversity of wildlife on public lands by restoring, maintaining, and enhancing habitat conditions through management plans and actions integrated with other uses of public lands through coordination with other programs and states and through habitat improvement projects.

**Plan Actions**

Management of wildlife habitat would continue unchanged. KRA would continue to develop general program priorities using existing planning documents and directives and guidance at BLM state and national levels.

**General Wildlife Habitat**

KRA would continue to review land use actions and recommend stipulations and mitigating measures to management to lessen impacts to wildlife and wildlife habitat. Non-game, small game, and general wildlife habitats are extensive and will benefit from these mitigating measures.



**Big Game**

Desert bighorn sheep, mule deer, and antelope habitat would continue to receive high priority for management, as outlined in existing HMPs.

Allotments wholly or partially within a 20-mile buffer of bighorn sheep habitat would not be permitted for domestic sheep or goat grazing to avoid the spread of disease to bighorn sheep populations. BLM would immediately impound domestic sheep and goats found on these allotments.

Under the Rangewide Plan for Desert Bighorn Sheep, burros would be managed under the existing HMAP, at the lowest possible number, to mitigate impacts to bighorn sheep habitat. Such management would be in accordance with the Wild Free Roaming Horse and Burro Act of 1971, which implies that burro numbers would be set at a level to protect the natural ecological balance of all wildlife species using the land. Table II-1 shows the bighorn sheep numbers proposed for each habitat area in existing HMPs.

**Table II-1  
Bighorn Sheep Numbers On Public Lands \*  
Within KRA**

|                    | AGFD Census Data |              |              |
|--------------------|------------------|--------------|--------------|
|                    | BLM HMPs         | 1980**       | 1989**       |
| <b>Black Mtns.</b> | 600              | 816          | 869          |
| <b>Mt Wilson</b>   | 100              | 190          | 110          |
| <b>Aubrey Peak</b> | 75               | 25           | 25           |
| <b>Total</b>       | <b>775</b>       | <b>1,031</b> | <b>1,004</b> |

\* Includes lands administered by BLM and does not include private and state lands or National Park Service-administered lands outside KRA.

\*\* AGFD Game Management Units:

- 15C-north, 40% of unit on public lands
- 15B-west, 33% of unit on public lands
- 15C-south, all of unit on public lands
- 15D, all of unit on public lands
- 16A, 30% of unit on public lands

Pronghorn antelope habitat on public land would be managed according to existing HMPs to support 100 antelope on Goodwin Mesa and 75 head around Cherokee Point.

Special emphasis would target proposed projects involving cooperating agencies and matching funding from state and private sectors. The assistance and cooperation from these groups would determine the level of continued attention directed towards big game habitat management through the NEPA process.

**SPECIAL STATUS SPECIES MANAGEMENT**

**Objectives**

The objective of the special status species program is to provide for recovery of the species and to improve habitats.

**Plan Actions**

**Plant Species**

The Phoenix District has addressed the protection of special status species in several ways, including habitat management plans and monitoring plots.

Current management direction is to handle specific habitat problems or conflicts on a case-by-case basis. Federally listed threatened,

## CHAPTER II

endangered, or candidate species or species listed under the Arizona Native Plant Law are given special management protection. AGFD Nongame Branch (Arizona Natural Heritage Program) has recommended a list of seven plant species for designation as BLM Sensitive Plant Species in KRA (Appendix 6). These sensitive species would be afforded protective measures on a par with federal candidate species. Impacts to protected plant populations would be projected through environmental assessments prepared after on-site inspections of areas proposed for development.

### Animal Species

Priority species would continue to receive management attention. More emphasis would be placed on desert tortoise as a result of BLM's rangewide plan for management of desert tortoise habitat and the recent federal listing of this endangered species in California, Nevada, Utah, and portions of Arizona.

Other special status wildlife species not discussed here would be managed to avoid the need to list them. They would not receive intensive management attention other than that provided for in HMPs, unless elevated to threatened or endangered species status (Appendix 6).

### Endangered Species

*Bald Eagles:* BLM would continue to promote enhanced habitat conditions for this species by implementing actions from recovery plans. BLM would also participate in the multi-agency Southwestern Bald Eagle Management Committee in cooperation with other federal and state agencies and private groups.

*Peregrine Falcon:* BLM would implement applicable actions from recovery plans and continue monitoring efforts in cooperation with federal and state agencies. Any future dramatic declines in the population of peregrine falcons could result in higher priority efforts targeted at protecting this species.

*Hualapai Mexican Vole:* BLM would implement applicable actions from recovery plans and continue to monitor vole habitats once or twice a year. More inventory or monitoring would be carried out in cooperation with the USFWS and AGFD.

### Federal Candidate Species

*Ferruginous Hawk:* Monitoring for this species would continue on a limited basis by volunteers.

*Spotted Owl:* An inventory and monitoring program would be initiated in cooperation with state and federal wildlife agencies. From inventory results, special management actions to improve habitat conditions would be developed and implemented.

*Yavapai Leopard Frog:* An inventory and monitoring program would be initiated in cooperation with state and federal wildlife agencies. From inventory results, special management actions to improve habitat conditions would be developed and implemented.

*Desert Tortoise:* Inventory, monitoring, and other research projects would increase. Category I areas would receive highest priority for habitat management.

Unavoidable impacts or land use actions resulting in net loss in the quality or amount of desert tortoise habitat in Category I or II areas, would require compensation in the form of other equally suitable tortoise habitat in KRA.

On all allotments containing Category I and II tortoise habitat, livestock grazing would be managed to ensure adequate and suitable perennial and ephemeral forage and cover for tortoises throughout the year.

Livestock utilization of forage and cover plants important to maintenance of desert tortoise would be managed at a level which ensures long-term plant vigor and adequate standing vegetation for late spring and summer-fall tortoise use.

In Category I and II tortoise habitat, only range improvements for livestock which will not conflict with tortoise populations or habitat would be allowed. Mitigation for such conflicts is permissible to make the net effect of the improvements positive or neutral to the tortoise. Conflicting improvements would be removed or modified to mitigate the conflict as opportunities arise.

### State-listed Species

*Common Black-hawk:* Monitoring of this species is expected to remain very light.

*Northern Goshawk:* Monitoring activities targeting this species would remain minimal.

*Roundtail Chub:* Once-a-year monitoring (AGFD October Fish Count) on a volunteer basis would continue if enough people volunteer.

## RIPARIAN AREA MANAGEMENT

### Objective

The objective for management of riparian-wetland areas is to restore and maintain these areas so that 75 percent or more are in proper functioning condition by 1997. The overall objective is to achieve an advanced ecological status, except where resource management would require an earlier ecological status for such purposes as vegetation diversity. This status will be achieved by implementing the seven step process outlined in the Management Common to all Alternatives Section. Riparian areas are shown in Appendix 7.

### Plan Actions

To achieve the above objective, current conditions must first be known. KRA will complete the remaining 40 percent of the Riparian Area Condition Evaluation (RACE) inventory by 1992. Inventory steps will include at least the following:

1. Describe present vegetation and physical features of the riparian area.
2. Determine the degree to which riparian area structural conditions and functions are performing satisfactorily.
3. Provide a reference point for establishing and monitoring management objectives.
4. Meet the inventory requirements addressed in the Federal Land Policy and Management Act (FLPMA) of 1976, Public Rangeland Improvement Act of 1978 (PRLA) and BLM policy.
5. Determine whether riparian condition and function are satisfactory or unsatisfactory for each site.
6. Determine the cause of the unsatisfactory condition for each area.

Riparian areas falling within wilderness will also be covered under a wilderness management plan.

All applications for other uses such as mining, rights-of-way, roads, and water withdrawals affecting public lands would be reviewed and actions taken to reduce or eliminate impacts to riparian areas.

Riparian-wetland areas would be monitored to determine if management objectives are being met. Monitoring methods and schedules would be as outlined in activity plans.

Water rights needed to support healthy functioning riparian-wetland areas would be measured to support application to the Arizona State Division of Water Resources for state appropriated rights for:

- Burro Creek
- Big Sandy River
- Santa Maria River
- Bill Williams River
- Wright Creek

**SPECIAL MANAGEMENT AREAS**

*Alternative 1* would not designate special management areas. All areas would continue to receive nearly equal management attention.

**WILD HORSE AND BURRO MANAGEMENT**

**Objectives**

Manage for a viable population of wild, free-roaming horses and burros to achieve and maintain a thriving natural ecological balance on the public lands, and to protect all wildlife species which inhabit such lands. Maintain and preserve the habitat in a suitable condition for continued multiple use.

**Plan Actions**

The two Wild Burro Herd Management Areas (HMA) would continue to be managed under the existing HMAPs. The plans set the maintenance levels at 320-480 head (400 +/- 80) head for the Black Mountain HMA and 132 head for the Big Sandy HMA. The two HMAPs may be reviewed at the KRA Office.

The draft Cerbat HMAP was written in 1989 but cannot be implemented until this RMP is completed. The Cerbat/Black Mountain EIS analyzed the impact of 14 head of horses in the Cerbat HMA, but the program summary for the EIS did not allocate forage for these 14 animals. The 1990 estimated horse population was 130. See Map II-4.

**Other Herd Management Areas**

Besides the three HMAs previously mentioned, a fourth KRA area is used by wild burros. This is the Alamo HMA, which includes the area north of the Santa Maria River and Alamo Lake and is managed by the Lower Gila Resource Area (LGRA), Phoenix District. LGRA will start developing a RMP/EIS for the area in 1991 and will address the Alamo HMA.

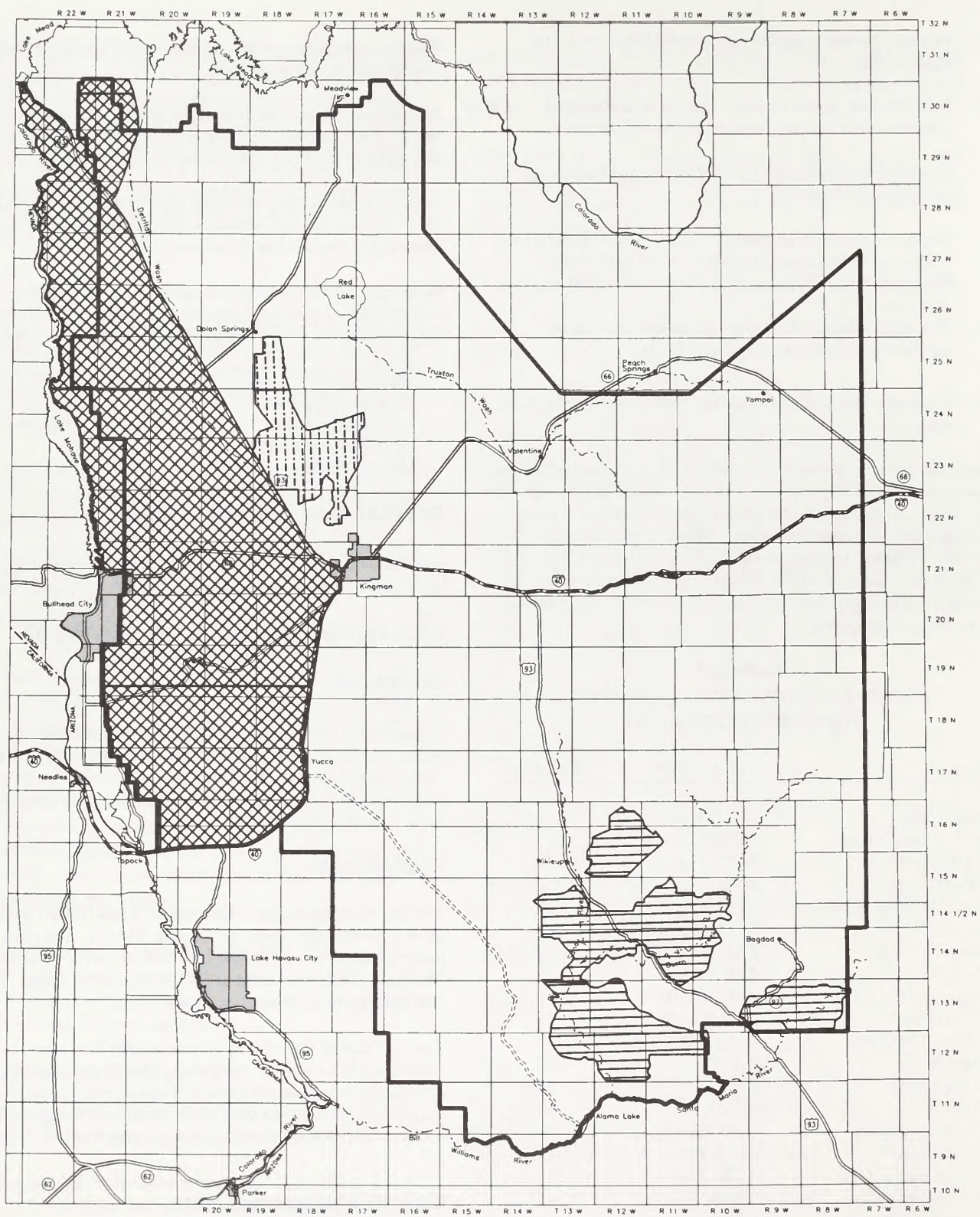
Implementation of management on riparian-wetland areas will be based on the order of priority as shown in Table II-2. This list will be continually updated as new areas are inventoried and as riparian-wetland improvements are made. Management objectives and actions involving riparian-wetland areas will be included in all activity plans such as AMPs, HMPs, Riparian Area Management Plans (RAMP), watershed management plans (WMP), or coordinated activity plans as appropriate.




**Table II-2  
Implementation of Management on  
Riparian-Wetland Areas**

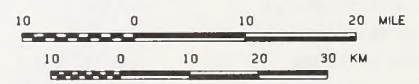
| <b>Name</b>         | <b>Type of Action*</b> | <b>Priority</b> |
|---------------------|------------------------|-----------------|
| Burro Creek         | ACEC Plan              | 1               |
| Bill Williams River | ACEC Plan              | 2               |
| Big Sandy River     | ACEC Plan              | 3               |
| Wright Creek        | ACEC Plan              | 4               |
| Santa Maria River   | ACEC Plan              | 5               |
| Boulder Creek       | ACEC Plan              | 6               |
| Antelope Creek      | RAMP                   | 7               |
| Moss Wash           | AMP/RAMP               | 8               |
| Grapevine Springs   | AMP/RAMP               | 9               |
| Francis Creek       | AMP/RAMP               | 10              |
| Conger Bull Creek   | AMP/RAMP               | 11              |
| Cedar Wash          | RAMP                   | 12              |
| Kaiser Spring       | RAMP                   | 13              |
| Soap Canyon         | RAMP                   | 14              |
| Cottonwood Creek    | ACEC Plan              | 15              |
| Crozier Wash        | ACEC Plan              | 16              |
| Deluge Wash         | ACEC Plan              | 17              |
| Walnut Creek        | RAMP                   | 18              |
| Grapevine Canyon    | RAMP                   | 19              |
| Grapevine Wash      | RAMP                   | 20              |
| Sycamore Creek      | AMP/RAMP               | 21              |
| Truxton Wash        | HMP/RAMP               | 22              |

\* RAMP - Riparian Area Management Plan  
AMP - Allotment Management Plan

# WILD HORSE & BURRO HERD MANAGEMENT AREAS



-  BIG SANDY HERD MANAGEMENT AREA
-  BLACK MOUNTAIN HERD MANAGEMENT AREA
-  CERBAT HERD MANAGEMENT AREA



Map II-4



**SUPPORT SERVICES**

**Access**

Legal vehicular access would be acquired across private and state lands on 76 roads (see Appendix 8).

**Acquisition**

Lands to be acquired for their wildlife, recreation, wilderness, and other values are shown in Table II-3 and Appendix 9. Listed in HMPs and wilderness EISs, these lands may be acquired by exchange, donation, or direct purchase through the Land and Water Conservation Fund.

**ALTERNATIVE 2  
(PREFERRED ALTERNATIVE)**

*Alternative 2* is BLM's preferred resource management plan, designed to respond to the issues and management concerns to provide a balanced approach to multiple use management. *Alternative 2* is an attempt to allow important resources to be used while protecting the environment and sensitive resources that are easily destroyed. Consumptive uses allowed by law would be managed in an orderly manner, and impacts would be mitigated.

For *Alternative 2* Special Management Areas and Land Use Restrictions, see maps in Volume 2.

**MINERALS**

**Objectives**

The objective of the minerals program is to provide for orderly exploration and development of minerals by allowing high- and medium-potential areas to remain open to appropriation under the mineral laws, with few restrictions.

**Plan Actions**

A total of 2,131,242 acres are open to locatable mineral exploration and development of federal minerals. Most plans of operation would be reviewed within 30 days unless resource conflicts require additional review and mitigation is needed. See Appendixes 10 and 11.

Over the life of the plan roughly 1,700 acres are expected to be disturbed by mining operations.

A total of 2,136,874 acres are open to mineral leasing of federal minerals with standard lease terms. See Appendixes 10 and 11.

No more than 10 exploratory wells would be drilled for oil and gas within the area during the life of the RMP. Production, if it occurs, is not expected to lead to field development. Production development would be limited to tank batteries with oil and gas picked up and hauled by tanker truck. Site-specific environmental analysis would be conducted when applications for permit to drill (APD) are submitted.

A total of 1,833,306 acres are open to mineral material disposals of federal minerals. See Appendixes 10 and 11.

**Table II-3  
Resource Acquisitions**

| Resource             | Alternative 1  | Alternative 2  | Alternative 3  |
|----------------------|----------------|----------------|----------------|
| Wilderness           | 3,226          | 3,226          | 3,226          |
| Recreation           | 7,805          | 11,589         | 11,589         |
| Wildlife Habitat     | 101,022        | 122,339        | 121,339        |
| Wildlife Corridors   | 0              | 42,840         | 42,840         |
| Cultural             | 0              | 3,735          | 3,735          |
| Special Status       |                |                |                |
| Species (Plants)     | 0              | 20,247         | 20,247         |
| Riparian             | 0              | 45,817         | 45,817         |
| ACECs                |                |                |                |
| Surface and Minerals | 0              | 86,667         | 65,860         |
| Nonfederal Minerals  | 0              | *65,429        | *61,093        |
| <b>Total</b>         | <b>112,053</b> | <b>336,460</b> | <b>314,653</b> |
| Duplications         | 1,125          | 85,720         | 47,673         |
| Net Acquisitions     | 110,928        | 250,740        | 266,980        |

\* Not included in total

Source: KRA files

No acquired lands would be withdrawn in *Alternative 1*. Acquired lands in *Alternatives 2 and 3* to be withdrawn are listed in Appendixes 10, 11, and 28.

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### LANDS

#### Objectives

The objectives for the lands program under *Alternative 2* are to provide lands for community expansion through land exchanges and R&PP leases and patents, acquire lands with high natural resource values, block up federal ownership through exchange and provide for uses of public lands in accordance with regulations and compatibility with other resources.

#### Plan Actions

#### Land Ownership Adjustments Public Land Exchanges

Because of exchanges, certain disposal areas designated in the MFPs have been or are changing to private ownership. To increase the amount of public land for future exchanges, 83,760 acres of public land would be added as disposal areas. See Map II-5 and Appendix 12.

These lands have been selected for disposal because they lack high-value natural resources and are located near existing communities and would be needed for community expansion.

Public land in the proposed disposal area near Yucca in Dutch Flat (Appendix 12) would be disposed of only in exchange for private lands in the Hualapai Mountains, Dutch Flat, and McCracken Mountains, which have been classified for desert tortoise habitat, Hualapai Mexican vole historic and occupied habitat, and other high natural values.

The proposed new disposal area north of Dolan Springs would provide public lands to exchange for only private checkerboard lands surrounding the disposal area, such as the White Hills.

Sections 26 and 34, T. 24N., R. 17W., G&SRM were considered for addition to KRA's disposal area, but this proposal was rejected because the lands lie within the Cerbat Wild Horse HMA and BLM has been acquiring lands to block up public lands in the area. Disposing of lands would conflict with HMA objectives.

In retention areas having a checkerboard land pattern and other areas containing scattered parcels of public land, exchanges would be considered to acquire lands with high resource values and to create a more manageable land pattern.

#### Public Lands In Coconino County

KRA administers 7,687 acres of public lands in Coconino County (Appendix 14). Northeast of Flagstaff near the western boundary of the Navajo Reservation, most of the lands are powersite and Central Arizona Project (CAP) withdrawals. Unless supporting justification to retain these powersite withdrawals is provided by the withdrawing agency, they will be recommended for termination as no longer needed.

The 1,230 acres (T.30N., R.1E., Section 7 & 8) are isolated and uneconomical to manage and will be identified for disposal through exchange (Appendix 14).

#### State Land Exchanges

When the State of Arizona can resume exchanges with BLM, these exchanges would be processed to acquire resources and consolidate land ownership for better resource management and to block up state lands to maximize revenue producing development.

#### Land Withdrawals and Classifications

All actions proposed in this RMP would be carried out if not prohibited by the terms of a withdrawal or classification. Any action prohibited by a withdrawal or classification would remain in effect until such withdrawals are revoked or classifications terminated. Appendix 15 shows the acreages of the withdrawals described below.

The recommendation is to retain withdrawals and classifications on 3,279.90 acres of public land and 867.10 acres of Hualapai Indian Reservation on three scattered parcels.

Revocation of 510.08 acres of additional withdrawals is recommended because they are no longer needed and are not in use.

On July 2, 1948, PLO 492 withdrew 19,403.12 acres for the Corps of Engineers for the Alamo Dam and Reservoir on the Bill Williams River. The lands were withdrawn from all forms of appropriation under the public laws, including the mining and mineral leasing laws.

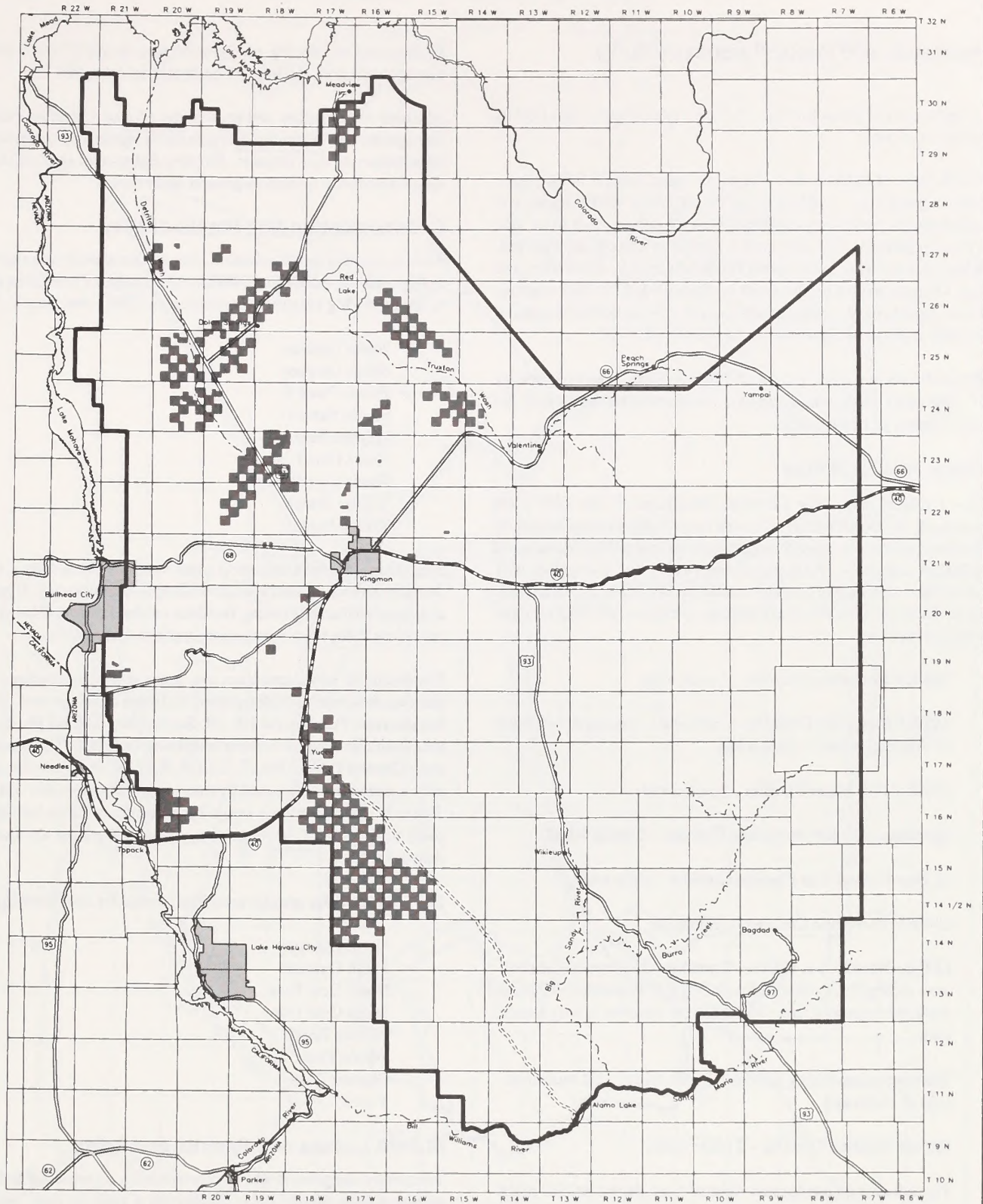
The Federal Energy Regulatory Commission (FERC) had a 41,889-acre withdrawal that overlapped the northwest portion of the Alamo Dam withdrawal. This land was withdrawn in 1927 for conducting a feasibility study for hydroelectric power. On December 14, 1983, 26,104 acres of these lands were restored to the operation of the public laws and opened to location under the mining laws and to mineral leasing under the mineral leasing laws.


Application AR 0-35844 was filed April 27, 1966, to add 3,488.62 acres to the lands withdrawn to PLO 492. In 1982 KRA recommended dropping 2,093.86 acres from this application, but a decision was not made.

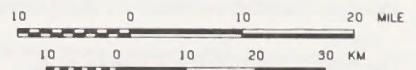
BLM would prepare a memorandum of understanding (MOU) to acquire management of the wildlife habitat on the COE withdrawal. If an MOU is not feasible, the recommendation is to revoke PLO 492 and grant the COE a right-of-way for the portion of land in this withdrawal needed for dam operation and maintenance. A R&PP lease would be granted to the State of Arizona Department of Parks and Recreation on the lands leased by them from the COE for Alamo Lake State Park. A new withdrawal would be recommended to remove minerals from entry.

The recommendation is to retain 250 acres withdrawn as public water reserves. These withdrawals were made to retain springs and other important water sources in public ownership. These withdrawals are needed for BLM's application for water rights to be adjudicated by the State of Arizona.

# LAND DISPOSALS - ALTERNATIVE 2



 LANDS PROPOSED FOR FUTURE DISPOSAL



**Recreation and Public Purposes (R&PP)**

Classification of lands for lease and conveyance under the R&PPs would continue.

On the basis of KRA review and public input, certain lands within each disposal area would be set aside for future R&PP leases and conveyances, preventing the disposal of all public lands in an area without preserving lands for future community purposes and growth. Additionally, certain lands east of Bullhead City, Golden Valley, and near Oatman would be disposed of through R&PP conveyances. These parcels have pending applications, current R&PP leases, or requests from local communities have been received.

The lands to be retained for future R&PP needs are listed in Appendix 17. No other lands within retention areas will be considered for R&PP leases or conveyances.

**Linear Rights-of Way**

Nine right-of-way utility corridors designated in the MFPs are incorporated into this RMP. Future large rights-of-way would be confined to these designated corridors and more corridors designated under this alternative. An application for a major utility right-of-way not within a designated corridor would be subject to a plan amendment. Existing and proposed corridors are shown on Map II-6 and described below.

500 KV Powerline Corridor - 1 mile wide.

345 KV Powerline Corridor - 1 mile wide. Also a portion south of Wikieup is only 1 mile wide.

230 KV Powerline Corridor - 2 miles wide.

Combined 230 KV Powerline Corridor - 2 miles wide.

El Paso Natural Gas Pipeline Corridor-1 mile wide.

230 KV Powerline Corridor-1 mile wide.

El Paso Natural Gas Pipeline Corridor - that portion located west of Big Sandy-Bridle Creek 345 KV Powerline is 2 miles wide, while east of this powerline, the corridor is only 1 mile wide.

Transportation-Utility Corridor 1 mile wide - (1/2 mile each side of highway).

El Paso Pipeline Corridor - 2 miles wide.

The following corridor and right-of-way shown on GIS maps and described below would be designated.

The coal slurry pipeline - 1 mile wide.

The AT&T fibre optic line corridor - 1 mile wide.

Lake Mead (Gregg's Hideout) to Kingman Proposed Water Pipeline Right-of-way (map location not exact).

Restrictions on placing of rights-of-way in ACECs are listed in management prescriptions for each area in Appendix 18.

All other minor utility and road rights-of-way would be evaluated through the NEPA process and granted or rejected on a case-by-case basis reflecting their impacts. Existing rights-of-way would be used when possible to minimize ground disturbance.

**Communication Site Rights-of-Way**

Twenty existing communication sites are designated sites and shown in Appendix 5. Additional facilities (Appendix 19) would be limited to the following existing communication sites. See Map II-2.

- North Oatman
- South Oatman
- Potato Patch I
- Potato Patch II
- Hayden Peak
- North Getz Peak
- South Getz Peak
- Willow Beach
- Windy Point

The other 11 communication sites would have no new facility development (additional towers, buildings, or equipment). Upgrading and maintenance of existing facilities on these sites will be allowed, providing there is no unnecessary surface disturbance.

Comments of communication site users at public meetings reveal that two sites need to be designated for future development. The first is a site near Yucca in the NE 1/4, Section 20, T.16 1/2 N., R.18 W., that would be used for cellular telephone facilities. The second site is on Cherum Peak in Sec. 7, T.23 N.,R.17 W. and would be limited to low power coverage used by microwave repeaters and AM radio. Tower height restrictions would be implemented on a case-by-case basis through the NEPA process. These two sites are shown in Appendix 19.

Site plans and user groups would be formed for the following sites:

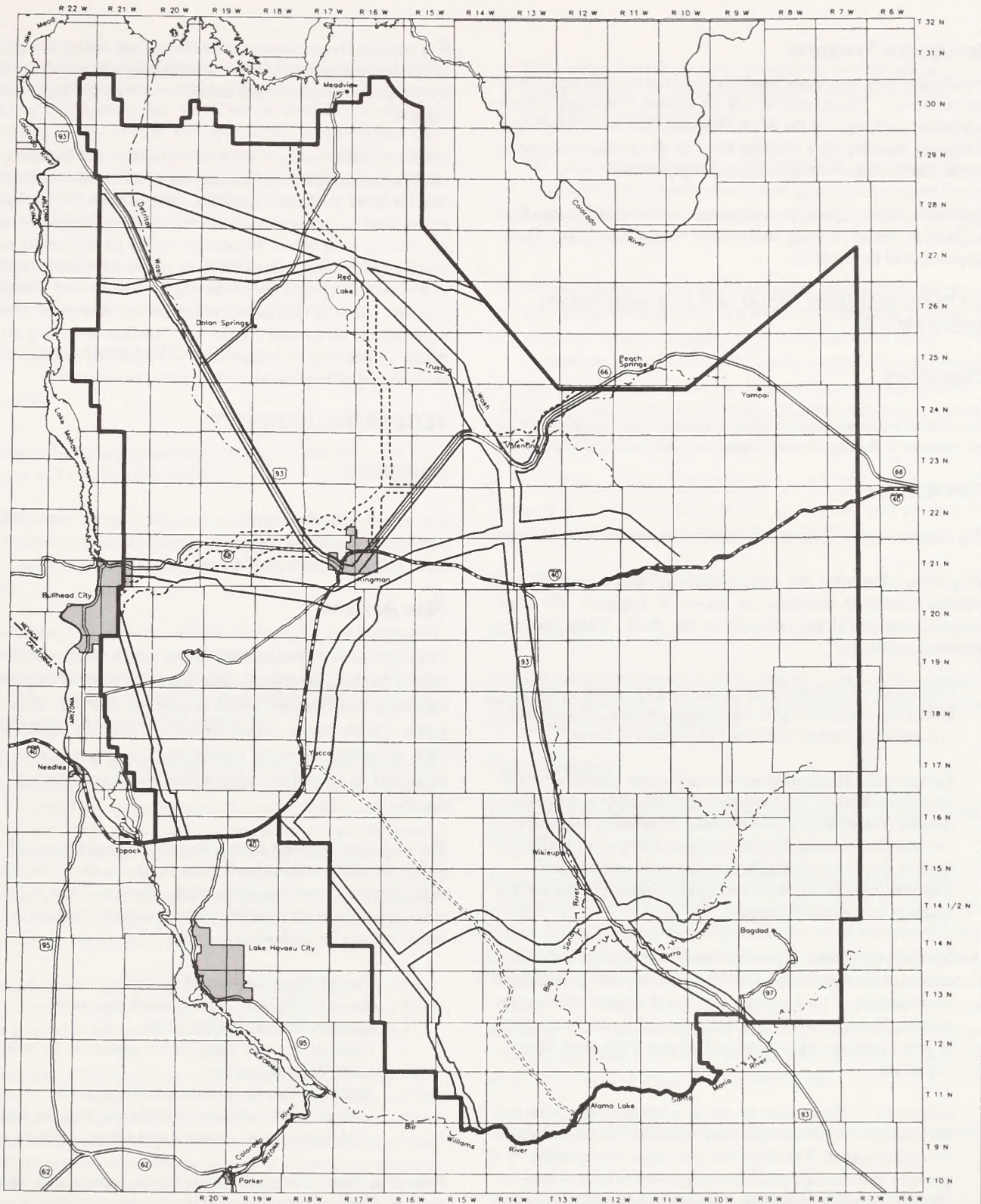
- North Oatman
- South Oatman
- North Getz Peak
- South Getz Peak
- Willow Beach
- Windy Point
- Cherum Peak
- Yucca

**FLPMA Leases and Permits and Sales**

Temporary use permits and leases, including commercial and recreational leases, would be evaluated on a case-by-case basis and approved if found to be needed and to meet KRA resource management objectives.

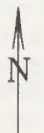
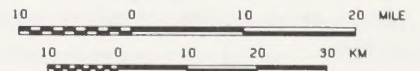
Sales would be occasionally used to resolve inadvertent long-term trespass cases, but no vacant public lands are recommended for FLPMA sale. Because of the amount of public lands proposed for disposal through the exchange program, the sale of more parcels was not deemed necessary.

# UTILITY CORRIDORS



----- PROPOSED UTILITY CORRIDORS (ALT. 2 & 3)

———— EXISTING UTILITY CORRIDORS (ALT. 1)



## CHAPTER II

### Occupancy Trespass

Existing and new trespasses would be resolved through removal or authorization. Trespassers would be removed through current regulations and policy in the BLM Trespass Abatement Handbook. Consisting possibly of a lifetime lease or direct sale, occupancy would also be authorized according to regulations.

Specific known occupancy trespasses include two near Oatman, four in Chloride, one at Nothing, and several near Alamo Lake. These trespasses will be resolved.

### WATERSHED (Soil, Water, Air and Vegetation) RESOURCES

#### Objectives

The objectives for watershed management are to prevent or minimize environmental damage to soil, water, and air/climate resources.

#### Plan Actions

This alternative is the same as *Alternative 1* except for the following:

All grazing allotments are categorized according to current and potential watershed condition, as shown in Appendix 20. This categorization would be validated in the field. Categories are described as follows.

*Category I* - These areas are in satisfactory condition and have a low vulnerability to accelerated erosion. The objective is to maintain current land use and vegetative cover.

*Category II* - These areas are in satisfactory condition; over all erosion is slight, but the areas are susceptible to accelerated erosion. The objective is to maintain or enhance vegetative cover and to monitor the area to detect the onset of localized erosion problems on fragile or saline soils. All surface disturbance proposals will be evaluated for their impacts to silt loading in localized drainages.

*Category III* - These areas are not in satisfactory condition, have critical erosion problems, and have no reasonable potential for improvement. There are only very few localized areas on the district. The objective is to develop special management plans to protect soil and vegetation and prevent these areas from expanding.

*Category IV* - These areas are not in satisfactory condition and have moderate to severe erosion problems but do have potential for improvement. The objective is to improve vegetative ground cover through grazing management or land treatments. Developing and maintaining activity plans for these areas is a priority, as is evaluating and mitigating impacts to active water sources.

This categorization process would be used in setting grazing allotment priorities for AMP development or revision, as well as for developing watershed activity plans.

Key ecological communities would be studied and monitored to gain an understanding of species and system adaptations and functioning for predicting future changes likely to result from changing climate regimes.

In areas of saline soils, management prescriptions in activity plans would have the objective of maintaining an optimum water infiltration rate for soils to reduce sediment load in runoff. An optimum infiltration rate would be maintained by keeping forage utilization of key species at or below 40 percent and by implementing rotation grazing systems to eliminate yearlong grazing in pastures, a common source of soil compaction. On highly erosive soils these same practices may be applied to maintain the maximum protective vegetative cover capable for the site. Surface disturbing activities would be required to reclaim sites to a suitable condition using a combination of vegetation, management, or structures.

### VEGETATIVE PRODUCTS

#### Objectives

The objective for the vegetative products program is to meet public demand for vegetative resources on public land on a sustained yield basis without impairing resources.

#### Plan Actions

Ponderosa pine, mixed conifer, and riparian habitats would receive priority for long-term protection. Resource activities significantly disturbing these habitats would be eliminated or their effects mitigated. Timber harvest would be allowed only if a significant area were threatened by insect infestation. Grazing would be strictly controlled to maximize reproduction and regeneration of timber stands.

The large-scale harvest of any vegetative products would not be permitted until an analysis has been undertaken to determine suitability of the lowest harvest activity desired. Harvest would be limited to areas determined to be suitable. Criteria used to determine suitability would include the following:

- Percent slope less than 15 percent
- Accessibility from existing roads and trails
- Conformance with VRM policy
- Consistency with management objectives for wilderness or ACEC designations
- Ability to harvest on a sustained yield basis
- Lack of unmitigable impacts to soils, cultural resources, T&E species, riparian areas, and other sensitive resources

Following determination of suitability for harvest of a vegetative product, a management plan would be developed to identify program objectives, long-range goals, and necessary mitigation to minimize resource conflicts and potential resource damage.

Small-scale negotiated sales of vegetative products would continue to be subject to NEPA review but would not require a management plan.

When demand for a product exceeds the supply on a sustained yield basis, permitting for harvest would be carried out through a sealed-bid procedure. This procedure would not be used for harvesting of desert vegetation for private and commercial landscaping. The harvest of landscape plants would continue to be allowed only through salvage where vegetation would be destined for destruction because of surface disturbance. Public demands for these plants would be handled through a waiting list.

Any demand for desert plants in future years would be subject to compliance with the NEPA process before permits are issued and compliance with state law as described for *Alternative 1*.

## RANGELAND MANAGEMENT

### Objectives

The objectives for rangeland management under *Alternative 2* would be the same as those for *Alternative 1*.

### Plan Actions:

This alternative would be the same as *Alternative 1* except for the following.

Rangeland trend and utilization studies would continue to be installed where a need arises. These needs would arise as new lands are acquired in areas where more studies are needed to respond to changes on the allotment or to provide supportable data for evaluating progress in meeting multiple use objectives.

AMPs for allotments wholly or partially within ACECs would be reviewed and revised, as needed, to meet the goals and objectives of each ACEC plan. Priority listing of allotments for AMP development or revision would be based on management issues such as wilderness, ACECs, watershed rating, riparian values, and T&E species.

Grazing systems or prescriptions would be developed on allotments without AMPs and wholly or partially within ACECs to meet the goals and objectives of each ACEC plan.

Upon completion of the soil survey and ecological site inventory, new data would be used to review and revise the ephemeral line. Affected perennial-ephemeral allotments would be reclassified.

Livestock grazing would no longer be allowed on the Chino Springs, Silver Creek, and Alamo allotments, including the portion of the Alamo allotment in the Lower Gila Resource Area. However, when fences are built to exclude neighboring livestock from these ungrazed areas, minor intrusions into these areas may be allowed, if needed, to facilitate fence construction and maintenance. Having high values for wildlife and wild burro habitat and relatively low values for livestock grazing, these allotments have historically been licensed on an ephemeral basis and have been or will be voluntarily relinquished by the grazing permit holder. As opportunities arise in the future, other allotments with sufficient values could be similarly reserved for wildlife.

Where public lands are acquired through the land exchange program, available forage on those lands would be allocated as follows:

Where state land is acquired, forage will be allocated to livestock at the same grazing capacity as had been set by the State prior to exchange.

Where private land is acquired which BLM recognized as "controlled" by a grazing permittee, grazing capacity on those lands would be set at a rate comparable with public land on the affected allotment.

Where private or State land is acquired which BLM had not recognized as "controlled" by a grazing permittee, grazing capacity would be determined by field survey of forage production on those lands, followed by analysis of forage needs for wildlife, wild horses and burros. After consideration of these needs, a proper forage allocation for domestic livestock would be made.

In all situations where public lands are acquired and forage is allocated to livestock, monitoring of grazing use will be used to adjust stocking rates to achieve proper use of forage resources.

## CULTURAL RESOURCES

### Objectives

Cultural resource management objectives are to protect the scientific information potential of sites, enhance the public use values of sites, and manage sites for conservation.

### Plan Actions

This alternative would be the same as *Alternative 1* except for the following.

Six areas with significant cultural values would be included in ACEC designations to ensure proper management and protection. The Carrow-Stephens Ranches and Mineral Park would become SRMAs for their historical values. Part of the justification for the Joshua Tree Forest-Grand Wash Cliffs ACEC is based on important cultural values. For details of special designations see Table II-5 and Appendix 18. Class II (random sampling) inventories would be initiated, and cultural resource project plans (CRPPs) or activity plans would be developed for designated areas.

A total of 3,350 acres containing important cultural resources would be acquired.

Two interpretive sites, one near Kingman and one near Dolan Springs, would be developed for public education and enjoyment of petroglyph sites. Historic mines and other features in and around Mineral Park would be developed for interpretation as a public use area.

Studies would be initiated using extensive existing ethnographic reports to precisely locate historic Hualapai, Yavapai, Chemehuevi, Paiute, and Mojave sites.

## CHAPTER II

Class III (intensive) inventories and research would be conducted in concentrated areas of historic or prehistoric mining. KRA has several hundred historic mines and is one of the few areas of the Southwest that has several prehistoric mines.

An expanded cultural resource educational program would be developed to include BLM, law enforcement, judges, and attorneys as well as the public.

Little data exists on the cultural resources of the Aquarius Mountains and Alamo Lake regions. These areas would be selected for inventory by volunteers (members of the Arizona Archaeological Society).

Cultural resource protection systems involving fencing, stabilization, and education, would be developed for selected sites that have either a high level of significance or a history of vandalism. Selected sites would be stabilized or restored to stop erosion.

### RECREATION MANAGEMENT

#### *Objectives*

The objective of the recreation management program is to provide more outdoor recreation opportunities for the public, while continuing KRA's policy of providing dispersed and backcountry recreation.

#### *Plan Actions*

The recreation program actions under *Alternative II* would be the same as under *Alternative I* with the addition of the actions listed below. A recreation project plan would be prepared for each site.

The concession RV park at Boundary Cone and the developed campground at Thimble Butte would concentrate recreation use in the Black Mountains, away from bighorn sheep habitat. The campground at Moss Wash would provide important additional facilities near to the growing population of Hualapai and Golden valleys (Kingman).

A concession for a RV park and campground would be developed somewhere along Historic Route 66 in T. 19N., R. 20W., Sections 27, 28, 32, or 33, north of Boundary Cone. These facilities would provide a stopping place for people visiting Oatman and the surrounding area.

A developed campground near Thimble Butte, in T.19N., R.19W., Section 14 would provide a stopping place for fall, winter, spring visitors and recreationists.

A concession for a RV park and campground would be developed at Mineral Park T23N.; R. 18 W., Section 24. These facilities would provide a stopping place for people visiting the historic mining area.

A concession for a RV park would be developed north of the Carrow-Stephens Ranches ACEC, west of state highway 93 in T.17N., R.13W., Section 35, SE1/4 SW1/4. This RV park would provide a stopping place for winter visitors and recreationists passing through the area and a base for people visiting the Carrow-Stephens living history facilities.

Pine Flat interpretive picnic/campground (Hualapai Mountains), T.18N., R.15W., Section 7. Facilities would include an interpretive kiosk to educate the public in environmental protection, including the protection of endangered species. Among the facilities would be chemical toilets, picnic tables, ramadas, and cooking grills.

Moss Wash (east slope of Hualapai Mountains) day-use picnic area and campground, T.19N., R.15W., Section 14, would include such facilities as chemical toilets, picnic tables, ramadas, cooking grills, and fire rings.

Boulder Springs (6 miles south of Kingman) day-use picnic area and developed campground, T.20N., R.17W., Section 21, NE1/4NE1/4 would be located in a scenic landscape of giant granite boulders. Facilities would include chemical toilets, picnic tables, ramadas, and cooking grills.

Antelope Springs: A day-use picnic area/trailhead access and parking area, T. 26 N., R. 18 W. Section 28 SE1/4SE1/4, would serve residents of Dolan Springs and other visitors to the spectacular Cerbat Pinnacles.

Six-Mile Crossing: A primitive campground would help accommodate an increasing number of RV-equipped winter visitors in this area. This campground would help control indiscriminate camping within the riparian zone along Burro Creek.

A 40-acre parcel containing each recreation site would be withdrawn from mineral entry, and mineral material sales would not be allowed. Mineral leasing would be allowed only with no surface occupancy (NSO).

The Hualapai Mountains National Back Country Byway would continue to be managed as a four-wheel drive road limited to high clearance vehicles.

The existing Burro Creek Interpretive Overlook recreation project plan, completed several years ago, would be implemented. The following new interpretive overlook sites would be proposed under *Alternative 2*. Recreation project plans would be prepared for each of the following sites.

Sitgreaves Pass Overlook Interpretive Site (on the Historic Route 66 National Back Country Byway).

Grapevine Mesa Joshua Tree Forest-Grand Wash Cliffs Overlook Interpretive Site (on Pearce Ferry Road just north of Diamond Bar Road Junction).

Boundary Cone Scenic/Interpretive Pullout (on the Historic Route 66 National Back Country Byway just south of Oatman).

Cerbat Pinnacles-Red Lake Scenic/Interpretive Pullout (on Stockton Hill Road near the Cane Springs Ranch turnoff).

Black Mountain Escarpment Overlook Interpretive Site (just south of Cottonwood Road at the edge of the escarpment).

Thimble Butte Scenic/Interpretive Pullout (on Historic Route 66 National Back Country Byway, west side of Sacramento Valley).



Black Mountains West Scenic/Interpretive Pullout (on Highway 68 between Union Pass and Bullhead City).

Recreation Site Sign Plans (RSSPs) have been prepared for two of the existing four developed recreation sites. The Burro Creek RSSP has been implemented. The Wild Cow Springs RSSP would be implemented with the completion of the projects called for under the Wild Cow Springs Recreation Site Improvements recreation project plan, thus creating the need for updated signing.

RSSPs would also be prepared and implemented for Packsaddle and Windy Point Recreation Sites, and for the Burro Creek Overlook Interpretive Site. RSSPs would be prepared as part of the overall new recreation site and interpretive site planning. Maintenance plans have been prepared for the four existing KRA developed recreation sites. These plans consist of a "Schedule of Operational and Corrective Maintenance" (1986-1996). These plans are being implemented in an ongoing process. These existing plans would need periodic upgrading as the two existing recreation site improvement plans are implemented and as other circumstances or maintenance requirements change. As recreation project plans are implemented for new developed recreation sites and interpretive sites, a maintenance plan would be prepared for each.

Seven special recreation management areas (SRMA) would be established, and plans would be prepared for each area, see Special Management Areas - *Alternative 2* map in Volume 2. These plans would consider all the SMRA uses and resources and would outline measures to protect and enhance the recreational opportunities, historic features, and scenic resources found in the area. The seven proposed SRMA's are shown in Table II-9.

A regional park would be established in the mountains immediately west of the Kingman city limits. The park would include 6,137 acres of public land, 2,051 acres of land owned by the City of Kingman, 3,784 acres of other private land, and 344 acres of state land. BLM may acquire the 3,784 acres of private land through exchange. A master plan for the regional park would be prepared in cooperation with the City of Kingman and Mohave County. Local, state, and federal funding would be sought for implementing the plan. This area would also be designated as a cooperative recreation management area (CRMA).

The Kingman Regional Park would also be designated as a SRMA and would incorporate a major camping area, picnicking site, parking and restroom facilities, and a system of recreational biking/hiking/equestrian trails. BLM and the cooperating government agencies would jointly develop a cooperative management agreement (CMA) detailing the role of each agency.

If BLM and the City of Kingman exchange lands for other beneficial public purposes and all lands owned by the city are removed from the park, BLM would then assume total management of the park.

Through public meetings, recreationists have stated a need to establish a system of hiking/equestrian/mountain bike trails within KRA. The trails shown in Table II-5 would fill these needs.

BLM would continue to encourage and accommodate individual volunteers and organized groups wishing to perform developed recreation site improvements maintenance. The Burro Creek Recre-

ation Site would continue to be staffed with volunteer campground hosts. In addition to continuing these present volunteer efforts, the following volunteer programs would be established:

1. Schedule individuals or groups to perform a regular program of WSA site monitoring and compliance.
2. Maintain an ongoing roster of groups or individuals that wish to assist BLM in building and maintaining hiking and equestrian trails.
3. Schedule and logistically support volunteer trail construction and maintenance projects for trails having completed recreation project plans.

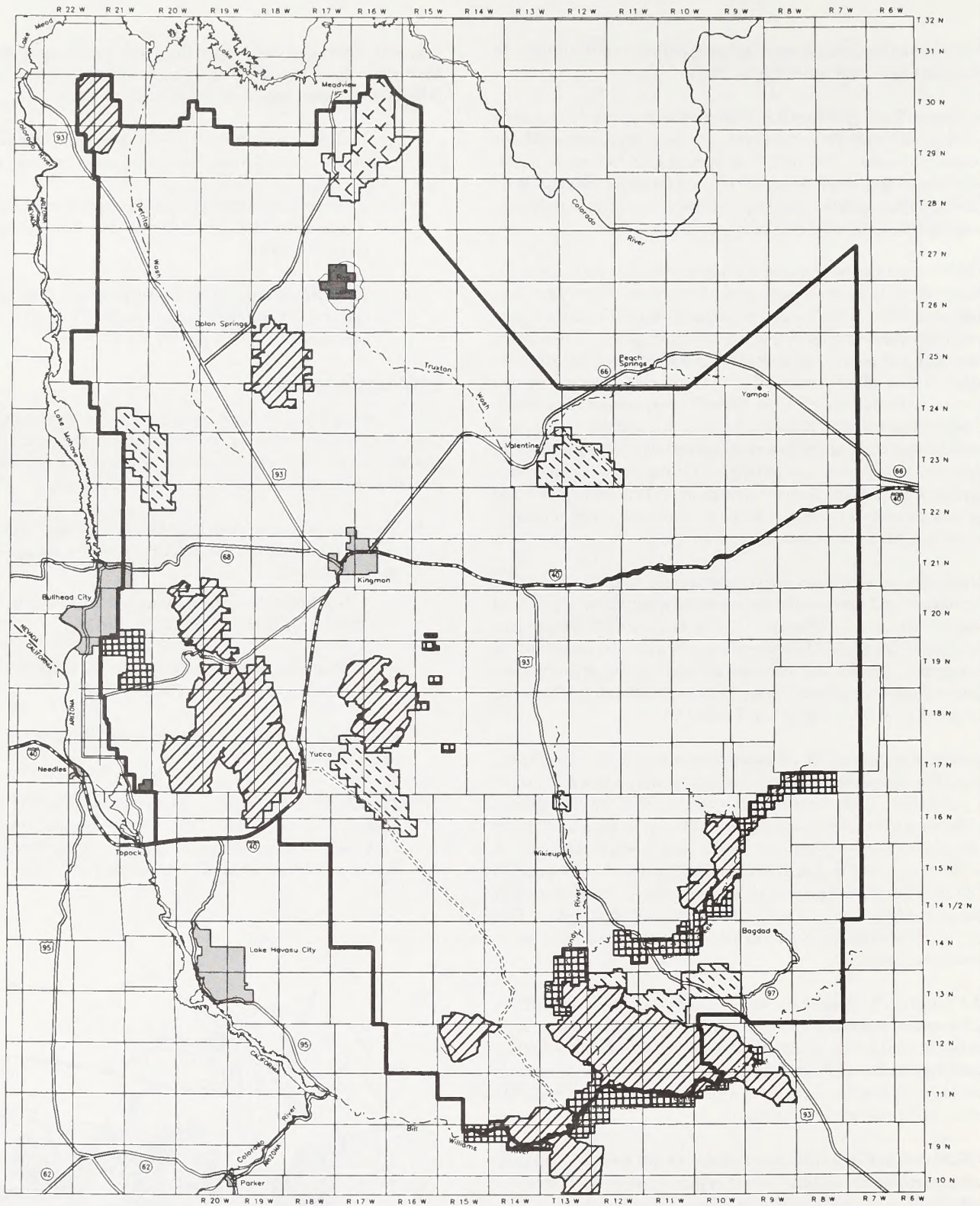
### OHV Designation

The following OHV designations would best balance the whole range of motorized vehicular access needs with the restoration and protection of wildlife, soils, vegetation, scenic values, nonmotorized recreation opportunities, and cultural/historical values:

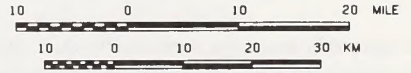
- \* Two areas would be open to OHV use following section 106 and T&E inventories, and development of a management plan, see Map II-7:
  1. North of Golden Shores along old Highway 66. Section 36 all, 35, E2, and 25, S2 T17N, R21W
  2. Red Lake. Sections 26, 27, 34, 36 T27N, R17W Sections 2, 4, 10, 11, 12 T26N, R17W
- \* Only designated wilderness areas would be closed to OHV use.
- \* Most ACECs, including riparian areas and desert tortoise Category 1 areas, contain OHV use designations specific to each area. These designations are listed in the management prescriptions for each area in Appendix 18.



# OFF-HIGHWAY VEHICLE CLASSES - ALTERNATIVE 2



- |   |  |   |                                   |
|---|--|---|-----------------------------------|
|  | OPEN   |  | EXISTING ROADS & TRAILS           |
|  | CLOSED   |  | DESIGNATED ROADS, TRAILS & WASHES |
|  | UNSHADED AREAS WITHIN<br>RMP BOUNDARY ARE<br>EXISTING ROADS, TRAILS & WASHES |  | DESIGNATED ROADS & TRAILS         |



Map II-7

\* OHV use on the rest of the planning area would be limited to existing roads, trails, and navigable washes. Acres for each OHV designation are listed in Table II-4.

**Table II-4  
Alternative 2  
OHV Designations**

| Without Wilderness                             | Acres            |
|--|------------------|
| Open   | 5,760            |
| Limited to existing roads, trails and washes   | 2,179,230        |
| Limited to existing roads and trails           | 132,944          |
| Limited to designated roads, trails and washes | 39,085           |
| Limited to designated roads and trails         | 148,981          |
| <b>Total</b>                                   | <b>2,506,000</b> |

| With Wilderness                                | Acres            |
|--|------------------|
| Open   | 5,760            |
| Limited to existing roads, trails, and washes  | 1,834,653        |
| Limited to existing roads, trails, and washes  | 119,175          |
| Limited to designated roads, trails and washes | 39,085           |
| Limited to designated roads, and trails        | 97,950           |
| Closed by wilderness designation               | 409,377          |
| <b>Total</b>                                   | <b>2,506,000</b> |

**Visual Resources**

The need to update KRA's existing VRM inventory was one of the issues identified in the earliest phases of the RMP process. This inventory includes the lands BLM acquired through exchange. The reinventory process yielded a set of maps which show the 82 scenery units, final visual resource management classes, and a brief summary narrative of the scenery units.

Use of the Visual Contrast Rating Worksheet permits the systematic visual evaluation of a proposed action. This assessment process provides a means for determining visual impacts and for selecting measures to mitigate these impacts.

**WILD AND SCENIC RIVERS**

The descriptions, classifications, and management prescriptions for river segments determined to meet the eligibility criteria to be studied for inclusion in the National Wild and Scenic Rivers System are shown in Appendix 22 and Map II-8. The management prescriptions are designed to protect KRA rivers found to be eligible and for which

suitability determination is being deferred until completion of the RMP. This protection would assure all lands affected by the Wild and Scenic Rivers Act (WSRA) are managed consistently with the act, so as not to diminish outstanding values. In no event will the free-flowing characteristics of the eligible river be modified.

The following rivers have been classified as scenic under the eligibility criteria in WSRA:

- Bill Williams River
- Santa Maria River
- Big Sandy River
- Burro Creek/Francis Creek
- Wright Creek

**WILDLIFE HABITAT MANAGEMENT**

**Objectives**

The objective of the wildlife habitat management program is to ensure optimum populations and natural abundance and diversity of wildlife resources on public lands by restoring, maintaining, and enhancing habitat conditions through management plans and actions integrated with other public land uses through coordination with other programs and states and through direct habitat improvement projects.

**Plan Actions**

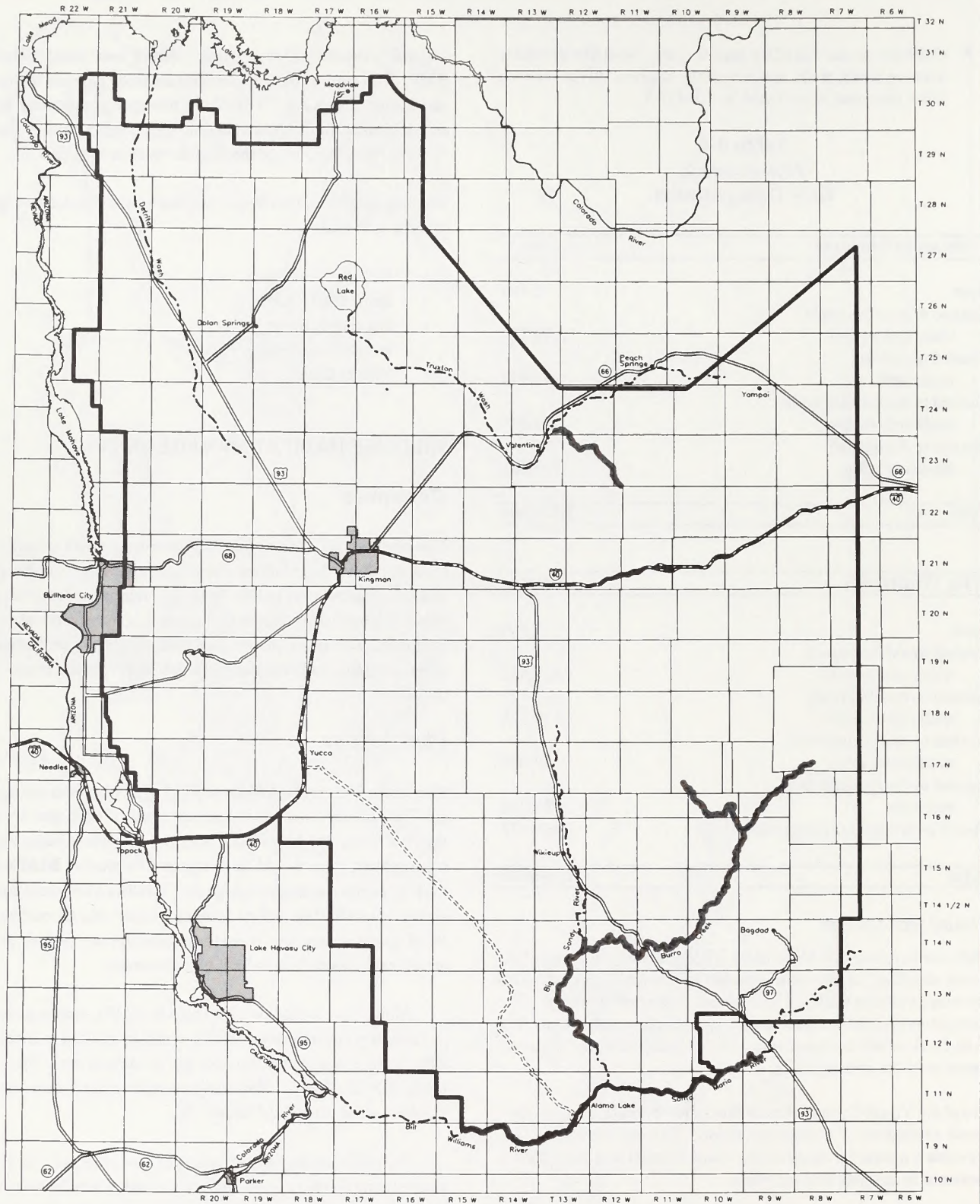
*Alternative 2* is similar to *Alternative 1* with increased management emphasis on improvement and maintenance of T&E species habitat, riparian areas, and habitat for priority big game species. Special management areas would be designated to provide BLM with the tools to achieve management goals. Wildlife movement corridors would be established and maintained. Under this alternative, other BLM resource programs would minimize impacts of their program activities on watershed and wildlife resources.

Monitoring would be intensified in HMPs, emphasizing new projects and maintenance. HMPs would be revised to incorporate RMP decisions and prescriptions and to include new objectives to implement the RMP. New projects and maintenance would be emphasized to meet HMP objectives.

Ten wildlife movement corridors are proposed for KRA to ensure biotic diversity is maintained. Specifications for the corridors have been derived from research information developed for the Central Arizona Project and a similar program in Florida called "Landscape Linkages." The minimum width for a movement corridor would be 2 miles, and the optimum width would be 3 miles. Movement corridors have been proposed for the following locations:

1. Highway 68, reestablishing movement between separated portions of the Black Mountains across Union Pass. An

# WILD AND SCENIC RIVER NOMINATIONS



**█** ELIGIBLE WILD & SCENIC RIVER AREAS

**- - -** STREAMS STUDIED

overpass across highway 68 would be planned, funded and built cooperatively by BLM, and state agencies. Two possible locations are SW1/4NW1/4 and NW1/4SW1/4 of Section 11, T. 21 N., R. 20 W.; and SW1/4SE1/4 of Section 10, T.21 N., R. 20 W.

2. Highway 93 north, connecting the Cerbat and Black Mountains.
3. Highway 93 south, linking the Hualapai and Aquarius Mountains.
  - a. Carrow Ranch
  - b. Burro Creek
  - c. Between Poachie Range and Grayback Mountains.
4. I-40, connecting the Black Mountains and the Hualapai Mountains
  - a. Walnut Creek
  - b. Haviland
  - c. Buck Mountain Wash
5. Highway 66, linking the Cottonwood and Music Mountains.
6. Pierce Ferry Road, linking the Cerbat Mountains and Lake Mead.
7. Cottonwood Road linking portions of the Black Mountains north and south of the road.
8. Highway 93 north near Kingman (Coyote Pass), linking the Cerbat and Hualapai Mountains.
9. Alamo Road, linking the McCracken and Hualapai Mountains.
10. I-40 near McConico, linking the Hualapai and Cerbat Mountains.

Within KRA the Casteneda, McCracken, Aubrey, Rawhide, and Arrastra Mountains are currently well linked. These links would remain in public ownership. Across resource area boundaries the Bill Williams, Mohave, and Buckskin Mountains are also well linked with the above mountain ranges, and these links would remain in public ownership. Future rights-of-way, especially road development, would not fragment these mountain ranges because they are critical to the ongoing survival of wildlife in this region.

These corridors would be managed to maintain, develop, or reestablish natural movement of wildlife species, while minimizing the death of these animals. Construction of overpasses or underpasses, culvert modification, and fencing designed to allow wildlife movement would be requested of the Arizona Department of Transportation. A total of 42,839 acres would need to be acquired for management and retention of the corridors (Appendix 21).

### General Wildlife Habitat

Management of general wildlife habitat would preserve habitat integrity under all types of land uses. Clearances would continue as proposed under *Alternative 1*.

### Big Game

In addition to activities proposed for *Alternative 1*, priority big game (desert bighorn sheep and pronghorn antelope) habitats would be designated as ACECs.

Bighorn sheep and pronghorn antelope habitat would be improved and maintained at its optimum potential. Monitoring studies would be conducted to determine optimum numbers consistent with habitat potential and other resources. BLM would continue to work with AGFD to keep animal numbers consistent with habitat conditions. The Black Mountain HMP would be revised to include annual monitoring of bighorn sheep habitat, conducted cooperatively with the monitoring of burro habitat.

Activities which could harm lambing or rearing of new-born bighorn sheep in the Black Mountains or on Aubrey Peak would be excluded from December 1 to May 31 (Appendix 18).

Mineral leasing would be allowed on identified lambing grounds and in riparian areas with special stipulations and on the rest of KRA with stipulations to protect resources.

The following guidelines would be used to develop mineral leasing stipulations:

- Soil moisture conditions
- Soil characteristics
- Time of year or season

A total of 41,104 acres would have a NSO stipulation.

### SPECIAL STATUS SPECIES MANAGEMENT

#### Objectives

The objective of special status species management is to provide for the recovery of listed species, to manage other species to avoid the need to federally list them, and to improve habitat of special status species.

#### Plan Actions

Special management areas are proposed to protect special status species. Other areas may be established to meet the need to protect habitat of other species as determined by further studies and inventory.

#### Plant Species

This alternative is the same as *Alternative 1* with the additional protective management specified below. For specific management prescriptions, see Appendix 18.

## CHAPTER II

A. A 1,113-acre ACEC would be designated to preserve habitat for the endangered Arizona cliffrose (*Purshia subintegra*).

B. Management prescriptions to protect habitat for the Cerbat beard-tongue (*Penstemon bicolor* var. *roseus*) would be incorporated within the Black Mountain ACEC plan.

C. A 36,480 acre ACEC and prescriptions to protect habitat for the white-margined penstemon (*Penstemon albomarginatus*) would be combined with a desert tortoise habitat management area and removed from consideration for land disposal.

### Animal Species

Special status species would be protected as proposed under *Alternative 1*. In addition, several ACECs would be designated to protect federally listed, threatened, or endangered species. More detailed descriptions of relevance, importance, goals, objectives, and management prescriptions are found in Table II-5 and Appendix 18.

KRA contains important habitat for the peregrine falcon. Nesting pairs are common as near as the Grand Canyon, and several pairs are known to have recently established within KRA. The USFWS Peregrine Falcon Recovery Plan would be incorporated into the habitat management plan, and actions implemented including a monitoring program. The area surrounding the nest for a distance of 1 mile would be closed to any surface disturbance from March 1 to June 15, and large organized activities such as group camping would not be allowed.



## RIPARIAN AREA MANAGEMENT

### Objectives

The objective of riparian area management is to place even greater emphasis on protecting riparian resources.

### Plan Actions

Same as *Alternative 1*, except KRA's most significant riparian areas, (Burro, Wright, and Cottonwood Creeks, the Big Sandy, Santa Maria, and Bill Williams Rivers, and Alamo Lake) would be designated as ACECs. More detailed information is provided in Table II-5 and Appendix 18. Mineral closures for ACECs are found in Appendixes 10 and 11.

## SPECIAL MANAGEMENT AREAS

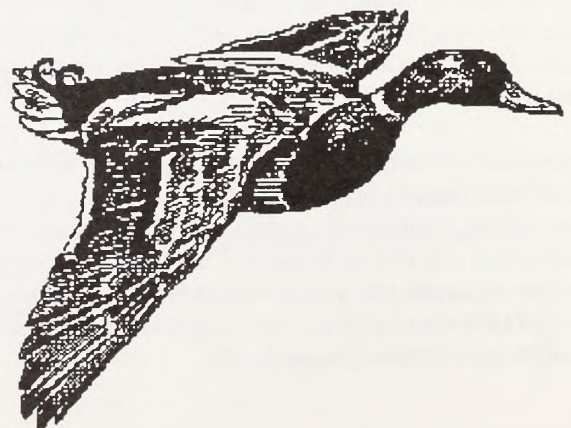
### Objectives

Special designations are proposed to help protect special status plants and animals, cultural values, scenic values, and wildlife and riparian resources.

### Plan Actions

Fourteen ACECs are proposed, totalling 569,700 acres. One ACEC (Joshua Tree Forest-Grand Wash Cliffs) is also proposed as a national conservation area (NCA), covering 39,085 acres. See Map II-9. Another ACEC (Carrow-Stephens) is also proposed as a SRMA, covering 1,795 acres.

In the proposed ACECs, 169,349 acres which overlap WSAs, would be dropped when designated wilderness by Congress, because wilderness designation would eliminate much of the threat to sensitive resources. Management prescriptions not covered by wilderness designation would be added to the wilderness management plans. See Table II-6.



**Table II-5**  
**ALTERNATIVE 2 SUMMARY OF MANAGEMENT PRESCRIPTIONS FOR AREAS OF CRITICAL ENVIRONMENTAL CONCERN (ACEC)**

Special designations are proposed to help protect special status plants and animals, cultural values, scenic values, and wildlife and riparian resources. Thirteen ACECs are proposed, totalling 440,000 acres. One NCA is proposed, totalling 37, 195 acres. One SRMA is proposed, totalling 1, 795 acres.

| Site Name and Designation   | Values  | Lands   | Minerals   | Range & Watershed Management   | Cultural                             | Recreation and OHVs   | Wildlife and T&E   | Riparian   | Vegetative Products   |
|---|---|---|--|--|--------------------------------------|---|--|--|---|
| <b>Joshua Tree Forest-Grand Wash Cliffs ACEC</b><br>(39,085 acres)* | Unique vegetation; outstanding scenic values; rare cultural resources; peregrine falcon eyrie.  | Acquire private and state lands; do not allow R&PP and communication sites; Route ROWs away from the ACEC; acquire non-federal minerals.                                      | Withdraw prime Joshua tree areas from mineral entry; require MPOs and mandatory bonding; allow mineral leasing subject to stipulations; do not allow mineral material disposals. | Revise existing AMP to incorporate Joshua tree desired plant community objectives.   | Prepare site project plans.          | Limit OHVs to designated roads, trails, and washes; plan scenic overlooks and interpretive sites; recreation facilities would be in harmony with the natural environment and protect scenic values. | No intensive recreation within 1/4 mile of eyrie from 3-1 to 6-15; prohibit helicopter flights within 1/2 mile of eyrie from 3-1 to 6-15.                  |  | Prohibit removal of native plants except for salvage operations.  |
| <b>Black Mountains ACEC</b><br>(219,428 acres)*                     | Premiere bighorn sheep habitat; federal candidate plant species habitat; outstanding scenic values; open space near major population centers rare and outstanding cultural resources; high locatable mineral potential. | Acquire identified state and private lands; confine new major ROWs to existing corridors; limit new communication facilities to existing sites; acquire non-federal minerals. | Require MPOs and mandatory bonding; allow mineral leasing subject to stipulations; do not allow new mineral material disposals.  | Manage livestock and burro grazing to achieve bighorn sheep and Cerbat beard-tongue desired plant community description objectives and improve Cerbat beard-tongue habitat; classify allotments within 20 miles of big-horn sheep habitat, for grazing by cattle only. | Prepare specific site project plans. | Limit OHVs to existing roads, trails, and washes; to roads and trails in Cerbat beard-tongue habitat; do not allow developed campgrounds; manage for dispersed recreation.                          | Revise existing HMP, manage bighorn sheep habitat at its optimum potential; inventory and map Cerbat beard-tongue populations and develop a recovery plan. | Maintain existing riparian exclosures around springs; fence Burns Spring Wash riparian zone; improve riparian conditions elsewhere as opportunities arise. | Harvest of native plants must be compatible with other resources values or limitations/ exclusions will be imposed. |

\* Public land surface acres

Table II-5 (continued)

ALTERNATIVE 2 SUMMARY OF MANAGEMENT PRESCRIPTIONS FOR AREAS OF CRITICAL ENVIRONMENTAL CONCERN (ACEC)

| Site Name and Designation   | Values  | Lands  | Minerals  | Range & Watershed Management   | Cultural  | Recreation and OHVs   | Wildlife and T&E  | Riparian  | Vegetative Products  |
|---|---|--|---|--|---|---|---|---|--|
| <b>Western Bajada Tortoise and Cultural ACEC</b><br>(15,866 acres)*           | Excellent habitat for desert tortoise; rare cultural resources; open space near major population centers. | Acquire private land; route new ROWs around the ACEC; implement recommended withdrawal decisions; acquire nonfederal minerals. | Withdraw from mineral entry and leasing; do not allow mineral material disposals.   | Classify all AUMs for wildlife.  | Prepare specific site project plans; seek a cooperative agreement to manage sites on private land not acquired. | Limit OHVs to designated roads and trails; discourage camping and other intensive uses of the area    | Prepare an ACEC plan including tortoise habitat improvement objectives. |   | Prohibit removal of native plants, except for salvage operations.  |
| <b>Wright-Cottonwood Creeks Riparian and Cultural ACEC</b><br>(27,300 acres)* | Rare and outstanding cultural resources; outstanding potential riparian resources.                        | Acquire private land; confine new ROWs to existing corridors; acquire nonfederal minerals.                                     | In riparian zone, withdraw from mineral entry, allow mineral leasing with NSO, and do not allow mineral material disposals; require MPOs and mandatory bonding. | Manage livestock grazing to achieve riparian desired plant community objectives.                     | Prepare specific site project plans, conduct inventories, evaluate sites, and conduct historical research.      | Limit OHV use to existing roads & trails; do not allow developed campgrounds in 100-year flood plain. |   | File for instream flow water rights; continue RACE inventory; designate Wright Creek as a demonstration riparian area and develop a demonstration plan. | Prohibit removal of native plants.   |
| <b>Cherokee Point Antelope Habitat ACEC</b><br>(54,457 acres)*                | Important potential to improve antelope habitat.  | Acquire private land; confine new ROWs to existing corridors; acquire nonfederal minerals.                                     | Require MPOs and mandatory bonding; allow mineral leasing subject to stipulations.  | Manage livestock grazing to achieve antelope habitat desired plant community description objectives. |   | Limit OHVs to existing roads, trails, and washes.   | Manage antelope habitat at its optimum potential.                       |   | Harvest of native plants must be compatible with other resource values or limitations/ exclusions will be applied. |

\* Public land surface acres



Table II-5 (continued)  
 ALTERNATIVE 2 SUMMARY OF MANAGEMENT PRESCRIPTIONS FOR AREAS OF CRITICAL ENVIRONMENTAL CONCERN (ACEC)

| Site Name and Designation   | Values  | Lands  | Minerals  | Range & Watershed Management   | Cultural  | Recreation and OHVs  | Wildlife and T&E   | Riparian  | Vegetative Products   |
|---|---|--|---|--|---|--|--|---|---|
| <b>Hualapai Mountain Research Natural Area ACEC</b><br>(3,300 acres)* | Important habitat for federally listed voles; riparian resources. | Acquire private land; do not allow communication sites; route ROWs around the ACEC; acquire nonfederal minerals. | Withdraw from mineral entry and do not allow mineral material disposals; allow mineral leasing with NSO.                    | Exclude livestock from crucial habitat; graze surrounding watersheds to accomplish vole habitat desired plant community description objectives and reduce soil and flood damage to vole habitat. |   | Limit OHVs to designated roads and trails; allow limited facilities at Pine Flat and do not allow developed facilities in the rest of the areas, develop interpretive and educational materials. | Implement a species recovery plan; develop a cooperative agreement with other agencies; promote public appreciation of endangered species. | File for instream flow water rights.                    | Prohibit removal of native plants.                                |
| <b>White-Margined Penstemon Reserve ACEC</b><br>(17,493)*             | Crucial habitat for the white-margined penstemon.                 | Acquire private and state land; confine new major ROWs to existing corridors; acquire nonfederal minerals.       | Require MPOs and mandatory bonding; allow mineral leasing subject to stipulations; do not allow mineral material disposals. | Manage livestock grazing to achieve white-margined penstemon desired plant community objectives.   |   | Limit OHVs to designated roads & trails; do not allow developed recreation facilities.   | Develop a recovery plan.   |   | Prohibit removal of native plants, except for salvage operations. |
| <b>Carrow-Stephens Ranches ACEC</b><br>(1,795 acres)*                 | Excellent historic sites and paleontological resources.           | Confine ROWs to the area west of state highway 93; acquire nonfederal surface and sub-surface.                   | Withdraw from mineral entry; allow mineral leasing with NSO; do not allow mineral material disposals.                       | Fence the area and remove it from consideration for public livestock grazing.  | Prepare a site project plan; plan inventories and interpretation of existing resources. | Limit OHVs to existing roads and trails; develop plans for recreation facilities and visitor use in a SRMA plan.   |  | File for water rights on springs and for instream flow. | Prohibit removal of native plants.                                |

\* Public land surface acres

**Table II-5 (continued)**  
**ALTERNATIVE 2 SUMMARY OF MANAGEMENT PRESCRIPTIONS FOR AREAS OF CRITICAL ENVIRONMENTAL CONCERN (ACEC)**

| Site Name and Designation  | Values  | Lands  | Minerals  | Range & Watershed Management  | Cultural | Recreation and OHVs  | Wildlife and T&E  | Riparian | Vegetative Products   |
|--|---|--|---|---|----------|--|---|----------|---|
| <b>McCracken Desert Tortoise Habitat ACEC</b><br>(23,720 acres)* | Excellent habitat for desert tortoise; scenic values; important backcountry recreation opportunities. | Acquire private and state land; confine ROWs to existing corridors; do not allow communication sites; acquire nonfederal minerals.           | Require MPOs and mandatory bonding; do not allow mineral material disposals; allow mineral leasing subject to stipulations. | Manage livestock grazing to achieve desert tortoise desired plant community objectives. |          | Limit OHVs to existing roads, trails, and washes; do not allow developed recreation facilities; plan for dispersed backcountry recreation. | Conduct inventory and monitor habitat condition; assess impacts of livestock grazing, and make necessary adjustments in livestock numbers and grazing season. |          | Prohibit removal of native plants except for salvage operations.  |
| <b>Poachie Desert Tortoise Habitat ACEC</b><br>(44,521 acres)*   | Excellent habitat for desert tortoise; scenic values; important backcountry recreation opportunities. | Acquire private and state land; confine new major ROWs to existing corridors; do not allow communication sites; acquire nonfederal minerals. | Require MPOs and mandatory bonding; do not allow mineral material disposals; allow mineral leasing subject to stipulations. | Manage livestock grazing to achieve desert tortoise desired plant community objectives. |          | Limit OHVs to existing roads, trails; do not allow developed recreation facilities; plan for dispersed backcountry recreation.             | Conduct inventories; monitor habitat condition and assess impacts of livestock grazing; make necessary adjustments in livestock numbers and grazing season.   |          | Prohibit removal of native plants, except for salvage operations. |
| <b>Aubrey Peak Bighorn Sheep Habitat ACEC</b><br>(10,413 acres)* | Excellent bighorn sheep habitat; outstanding scenic values.   | Route new ROWs around ACEC; do not allow communication sites; acquire nonfederal minerals.   | Require MPOs and mandatory bonding; do not allow mineral material disposals; allow mineral leasing subject to stipulations. | Manage livestock grazing to achieve bighorn sheep desired plant community objectives.   |          | Limit OHVs to existing roads, trails, and washes; do not allow developed recreation facilities; plan for dispersed backcountry recreation. | Monitor habitat improvement projects (water developments) annually; manage bighorn sheep habitat at its optimum potential.                                    |          | Prohibit removal of native plants.                                |

\* Public land surface acres

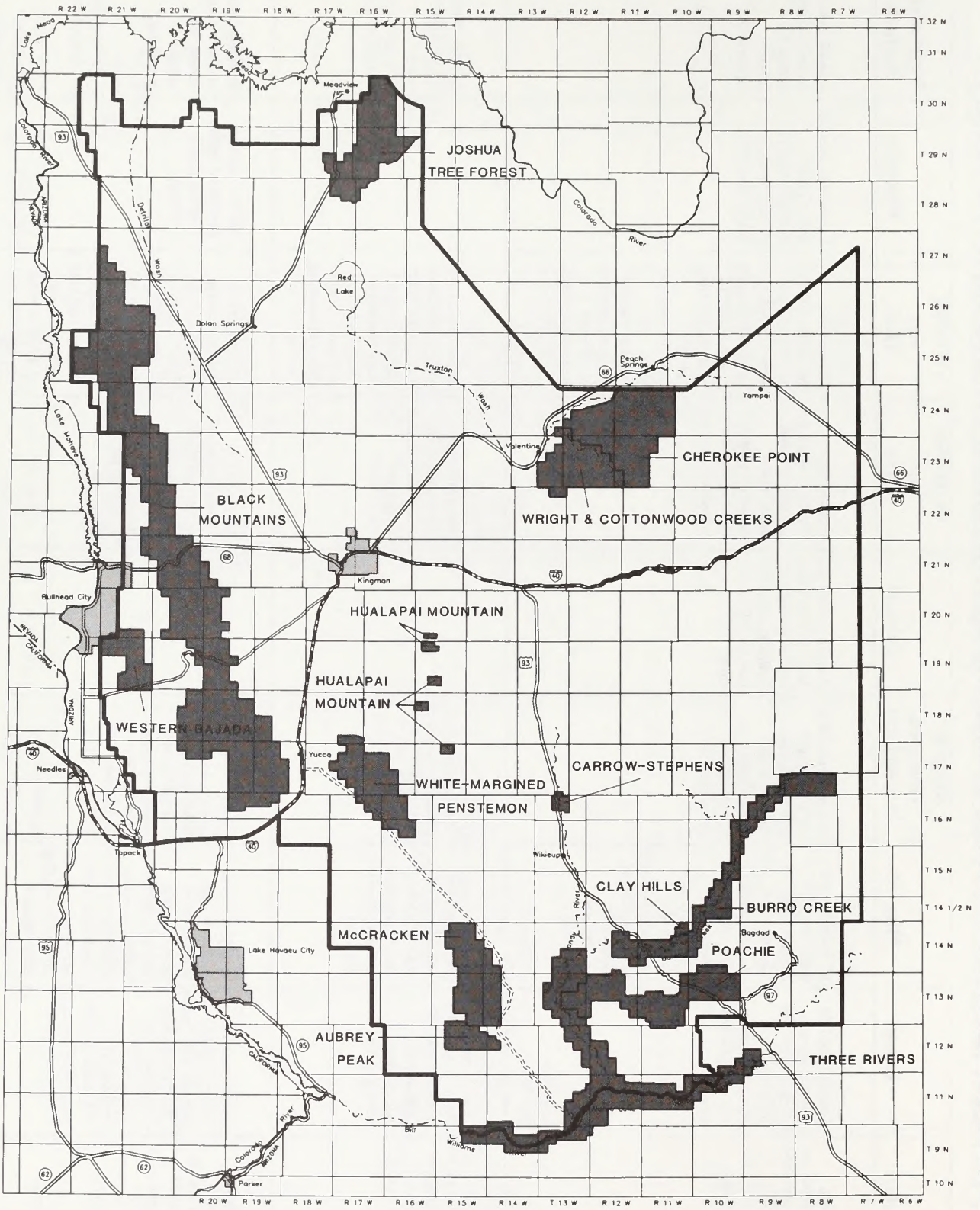
Table II-5 (continued)


ALTERNATIVE 2 SUMMARY OF MANAGEMENT PRESCRIPTIONS FOR AREAS OF CRITICAL ENVIRONMENTAL CONCERN (ACEC)

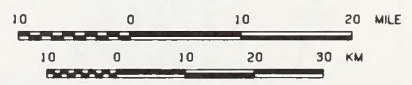
| Site Name and Designation  | Values  | Lands  | Minerals  | Range & Watershed Management   | Cultural  | Recreation and OHVs  | Wildlife and T&E   | Riparian  | Vegetative Products   |
|--|---|--|---|--|---|--|--|---|---|
| <b>Burro Creek Riparian and Cultural ACEC</b><br>(37,070 acres)* | Outstanding riparian resources; rare and outstanding cultural resources; important T&E habitat. | Acquire identified private and state lands; confine new major ROWs to existing corridors; acquire nonfederal minerals.                                       | In riparian zone, withdraw from mineral entry, allow mineral leasing with NSO, and do not allow mineral material disposals; require MPOs and mandatory bonding and allow mineral leasing with stipulations elsewhere. | Manage livestock & burro grazing to achieve T&E and riparian habitat desired plant community objectives. | Prepare specific site project plans; plan for inventories and evaluate, sign, and monitor selected sites. | Limit OHVs in Riparian Areas to designated roads, trails, and crossings; plan facilities outside 100-year floodplain.            | No intensive recreation within 1/4 mile of eyeie from 1-1 to 6-1; prohibit helicopter flights within 1/2 mile of eyeie from 1-1 to 6-1; assist in statewide bald eagle nestwatch program; monitor black-hawk breeding activities.    | Continue to monitor water quality, including heavy metals; continue RACE inventory. | Prohibit removal of native plants, except for salvage operations. |
| <b>Clay Hills Research Natural Area ACEC</b><br>(1,113 acres)*   | Crucial habitat for Arizona cliffrose.  | Route new ROWs around the ACEC; seek voluntary relinquishment of mining claims.  | Withdraw from mineral entry and mineral leasing; and do not allow mineral material disposals.   | Continue to exclude grazing by livestock and burros.   |   | Limit OHVs to designated roads and trails; prohibit camping.   | Implement recovery plan; post the area with Native Plant protection signs; monitor status of <i>Purshua</i> within enclosure; monitor effects of browsing <i>Purshua</i> .   |   | Prohibit removal of native plants.                                |
| <b>Three Rivers Riparian ACEC</b><br>(74,139 acres)*             | Outstanding existing and potential riparian resources; T&E habitat; recreation values.          | Acquire private and state land; confine new major ROWs to existing corridors; implement withdrawal decisions; acquire nonfederal minerals in riparian areas. | In riparian zone, withdraw from mineral entry, allow mineral leasing with NSO, and do not allow mineral material disposals; require MPOs and mandatory bonding allow mineral leasing with stipulations elsewhere.     | Manage livestock grazing to achieve T&E and riparian habitat desired plant community objectives.         |   | Limit OHV in riparian areas to designated roads and trails; plan developed recreation facilities outside of 100-year floodplain. | No Intensive recreation within 1/4 mile of eyeie from 1-1 to 6-1; prohibit helicopter flights within 1/2 mile of eyeie from 1-1 to 6-1; assist in the statewide bald eagle nest-watch program; monitor and assess habitat condition. | File for instream flow water rights; continue RACE inventory.                       | Prohibit removal of native plants except for salvage operations.  |

\* Public land surface acres

# ALTERNATIVE 2 ACECs



 ALTERNATIVE 2 ACEC



Map II-9

**Table II-6**  
**Alternative 2 ACECs**  
**Public Land Acres With and Without Wilderness Designation**

| ACEC   | Without Wilderness | With Wilderness |
|--|--------------------|-----------------|
| Joshua Tree Forest-<br>Grand Wash Cliffs           | 39,085             | 39,085          |
| Black Mountains                                    | 219,428            | 122,832         |
| Western Bajada Tortoise<br>and Cultural Resource   | 15,866             | 15,866          |
| Wright-Cottonwood<br>Creeks Riparian &<br>Cultural | 27,300             | 27,300          |
| Cherokee Point<br>Antelope Habitat                 | 54,457             | 54,457          |
| Hualapai Mountain<br>Research Natural Area         | 3,300              | 3,300           |
| White-Margined<br>Penstemon Reserve                | 17,493             | 17,493          |
| Carrow-Stephens Ranches                            | 1,795              | 1,795           |
| McCracken Desert<br>Tortoise Habitat               | 23,720             | 22,354          |
| Poachie Desert<br>Tortoise Habitat                 | 44,521             | 32,118          |
| Aubrey Peak Bighorn<br>Sheep Habitat               | 10,413             | 2,460           |
| Burro Creek Riparian<br>and Cultural               | 37,670             | 28,089          |
| Clay Hills Research<br>Natural Area                | 1,113              | 1,113           |
| Three Rivers Riparian                              | 74,139             | 32,089          |
| <b>Total</b>                                       | <b>569,700</b>     | <b>400,351</b>  |

The relevance and importance criteria, which qualify each area to be an ACEC are included in Appendix 18. Also shown are the goals, objectives, and management prescriptions required to protect and improve the sensitive resources of each ACEC. Table II-5 summarizes the management prescriptions for each ACEC, showing how the prescriptions would benefit or constrain important resources. Acquisitions for ACECs are found in Appendix 25.

A total of 56,758 acres of federal minerals would be proposed for withdrawal from mineral entry to protect sensitive resources listed in

ACECs (Appendixes 10 and 11). Areas withdrawn from mineral entry are subject to valid existing rights. ACEC designations would require bonding and plans of operations for all activities (other than casual use) conducted under the 1872 Mining Laws.

A total of 35,864 acres of nonfederal minerals are within the withdrawn areas. They are not subject to withdrawal restrictions, but are proposed for acquisition. Once these are acquired they would be withdrawn from mineral entry, see Appendixes 10 and 11.

For restrictions on mineral leasing and mineral material disposals, see Table II-7.

**Table II - 7**  
**Alternative 2 Mineral Closures**

| ACEC Name                                      | Closed to Mineral Material Disposals | Withdrawn from Mineral Entry | Mineral Leasing No Surface Occupancy | Withdrawn from Mineral Leasing |
|--|--------------------------------------|------------------------------|--------------------------------------|--------------------------------|
| Joshua Tree Forest - Grand Wash Cliffs         | 22,898                               | 5,632                        | 0                                    | 0                              |
| Black Mountains                                | 192,050                              | 0                            | 0                                    | 0                              |
| Western Bajada Tortoise and Cultural           | 8,909                                | 8,909                        | 0                                    | 8,909                          |
| Wright-Cottonwood Creeks Riparian and Cultural | 3,925                                | 3,925                        | 3,925                                | 0                              |
| Cherokee Point Antelope Habitat                | 0                                    | 0                            | 0                                    | 0                              |
| Hualapai Mountain                              | 2,183                                | 2,183                        | 2,183                                | 0                              |
| White-Margined Penstemon                       | 13,980                               | 0                            | 0                                    | 0                              |
| Carrow-Stephens Ranches                        | 1,172                                | 1,172                        | 1,172                                | 0                              |
| McCracken Desert Tortoise Habitat              | 20,409                               | 0                            | 0                                    | 0                              |
| Poachie Desert Tortoise Habitat                | 43,886                               | 0                            | 0                                    | 0                              |
| Aubrey Peak Bighorn Sheep Habitat              | 10,345                               | 0                            | 0                                    | 0                              |
| Burro Creek Riparian and Cultural              | 5,826                                | 5,826                        | 5,826                                | 0                              |
| Clay Hills Research Natural Area               | 1,113                                | 1,113                        | 0                                    | 1,113                          |
| Three Rivers Riparian                          | 27,678                               | 27,678                       | 27,678                               | 0                              |
| Campgrounds                                    | 320                                  | 320                          | 320                                  | 0                              |
| <b>Total Public Land Acres*</b>                | <b>354,694</b>                       | <b>56,758</b>                | <b>41,104</b>                        | <b>10,022</b>                  |

\* The acreages were obtained from GIS.

**HAZARDOUS MATERIALS MANAGEMENT**

**Objectives**

Reduce hazards to the public and natural resources on public lands from toxic materials.

**Plan Actions**

Boundaries of groundwater basins would be mapped and locations of land uses which use or generate toxic chemicals would be plotted. Existing problems, for example, the water quality of wells around Chloride would also be plotted along with the location of operating and abandoned mines and land fills on public land, which are discharging hazardous materials into drainage channels or riparian zones.

Through an interdisciplinary team effort, outline known or possible conditions which might contaminate aquifers or riparian systems would be outlined. All land use authorizations will be monitored to assure the amount of toxic materials in soil, water, and air are within acceptable levels to protect riparian, fishery, recreation, and wildlife habitat values.

Criteria for determining mitigation measures to prevent unnecessary or undue degradation associated with mining or other land use authorizations, would be developed to protect resources within each hydrologic basin or riparian zone. All mines using hazardous materials would be required to institute measures to meet the requirements of all pertinent environmental laws as addressed in 43 CFR 3809.2-2.

**WILD HORSE AND BURRO MANAGEMENT**

Same as *Alternative 1* except that increased forage resulting from improved habitat conditions would be reserved for bighorn sheep and other wildlife. Also, the wild horse herd in the Cerbat HMA would be managed at 90 head, with maximized breeding efficiency.

To correct the over-obligation of forage in the Cerbat HMA, forage would be allocated for 90 horses. Grazing limits would be established at 30 percent utilization of key species in areas where livestock are absent. Utilization and trend would be studied on browse plants. Dietary studies are needed to determine the extent of diet overlaps between horses and deer.

If utilization exceeds 30 percent in areas grazed only by wild horses and deer, horse numbers in that area will be reduced accordingly.

Where horses and livestock share the range, use limits would be established at 50 percent. Utilization and trend studies on browse plants will occur. Dietary studies are needed to determine the extent of diet overlaps between horses, cattle, and deer. If the use limits are exceeded after the population limit of 90 horses has been reached, livestock and deer numbers would be reduced.

**SUPPORT SERVICES**

**Objective**

The objective of support services is to provide the services needed to support all the resource programs and the assistance needed to meet their program objectives.

**Plan Actions**

**Access**

The following actions would be implemented to resolve the access concern.

1. Acquire legal vehicular access across private and state lands on 21 roads and trails (see Appendix 24).
2. Acquire legal administrative and public access on the Burro Creek hiking/equestrian trail across the private lands in Sections 10, 11, 15, 23, and 24, T. 14 N., R. 12 W., and in Section 35, T. 15 N., R. 12 W.
3. Reserve legal access for administrative and public vehicular use on Putman Road when the public land in Sections 16 and 22, T. 24 N., R. 19 W. is conveyed out of federal ownership.
4. Improve 10 roads and trails (see Appendix 19).
5. Build hiking/equestrian trail systems identified in Table II-9.

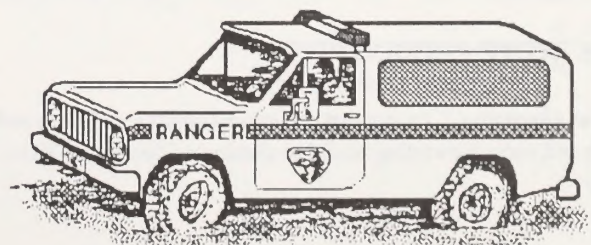
**Acquisitions**

Appendix 25 describes proposed acquisitions to be obtained through exchange, donation, or purchase with LWCF funds including lands with high values in wildlife, recreation, wilderness, cultural, riparian, and special status plant and animal resources.

**Law Enforcement**

KRA would need more rangers to provide the area with resource protection and public safety through on-the-ground patrols. With growth projected at 200 to 300 percent in the next 10 to 15 years, the use of public land and resources will increase at roughly the same rate. Reported fuelwood and native plant thefts, vandalism, occupancy trespass, and illegal dumping are increasing. Also, wilderness designation would increase the need for patrolling wilderness areas.

KRA would develop a law enforcement plan that would determine the number of rangers needed and duties of the resource area law enforcement staff.



## CHAPTER II

### ALTERNATIVE 3

*Alternative 3* would be less restrictive throughout KRA, providing for the use of resources, while still offering some protection for sensitive resources. *Alternative 3* also reflects planning for a greatly increased demand by a more urban public.

For *Alternative 3* Special Management Areas and Land Use Restrictions, see maps in Volume 2.

#### MINERALS

Same as *Alternative 2*, except 2,110,431 acres would remain open to mineral entry.

#### LANDS

##### *Objectives*

The objective is to allow more land disposal through exchange with the State of Arizona to help consolidate public lands in areas where the state now holds lands with values desirable to BLM management programs. See Map II-10.

##### *Plan Actions*

#### Ownership Adjustments

A demand for more development lands near Bullhead City and Golden Valley would increase the land proposed for disposal. Lands southeast of Bullhead City and in northeastern Golden Valley (Appendix 26) would be identified as disposal areas in addition to the disposal areas proposed in *Alternative 2*. Public lands in these

two areas would be disposed of only through state exchange.

Appendix 27 shows lands within the *Alternative 3* disposal areas which would be retained for future R&PP needs.

#### Withdrawals:

*Alternative 3* would approve the U.S. Army Corps of Engineers application to add 3,488.62 acres to its existing withdrawal.

#### WATERSHED (Soil, Water, Air and Vegetation) RESOURCES

Same as *Alternative 2*.

#### VEGETATIVE PRODUCTS

Same as *Alternative 2*, except that private and commercial firewood cutting and yucca harvesting would be eliminated throughout KRA.

### RANGELAND MANAGEMENT

Same as *Alternative 2*, except that livestock grazing would be discontinued on those allotments or portions of allotments within the McCracken and Poachie Desert Tortoise Habitat ACECs.

### CULTURAL RESOURCES

Same as *Alternative 2*, except the size of four ACECs proposed by *Alternative 2* would be reduced, and three cultural ACECs would be created to protect high cultural resource values that would otherwise receive no special designation. See Table II-8.

1. The Silver Creek ACEC would protect early historic mining and habitation sites on the west side of the Black Mountains. Other significant cultural resources not included in the reduced Black Mountains ACEC would be protected under wilderness designation.
2. The Cottonwood Mountains ACEC would protect extensive petroglyph sites and other cultural resources in the Wright Creek-Cottonwood Creek complex.
3. The Black Butte ACEC would include the significant Prescott Culture pueblos and an extensive obsidian source in the upper Burro Creek area.

### RECREATION MANAGEMENT

The objective is to intensively develop areas which can provide full recreational opportunities. To respond to a future high rate of population growth and growing public awareness, BLM would provide a broad spectrum of recreation opportunities for public land visitors such as developed campgrounds, interpretive centers, and concessionaire/leases.

#### *Plan Action*

*Alternative 3* would follow the general scope and proposals of *Alternative 2* in addition to the following:

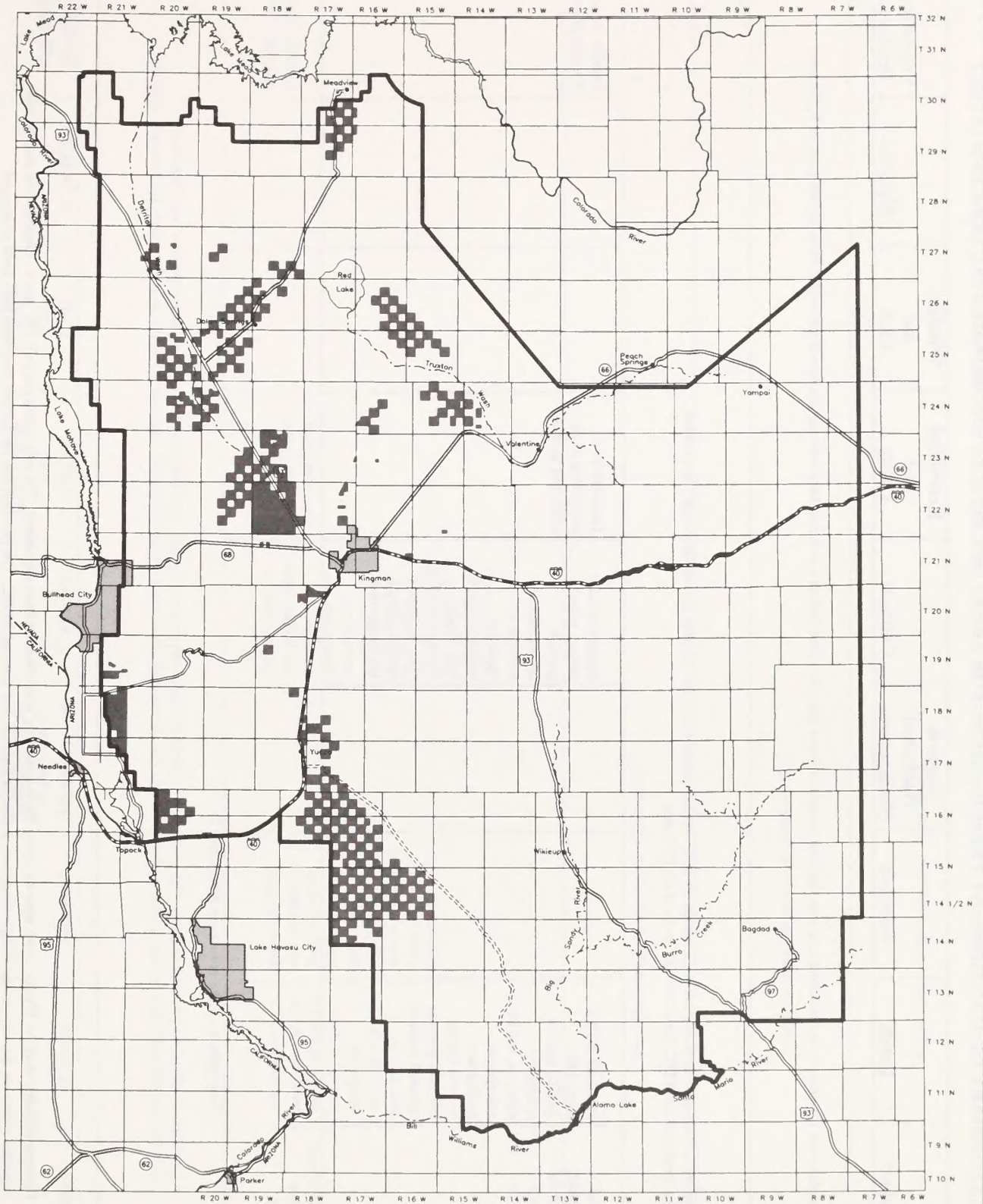
The Burro Creek Interpretive Overlook Recreation Project Plan would be updated and redesigned to accommodate a major fully developed RV campground and ancillary facilities.

In addition to the seven special recreation management areas (SRMA) previously addressed in *Alternative 2*, three more SRMAs would be added to highlight recreational and scenic aspects of certain areas. See Table II-9.

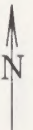
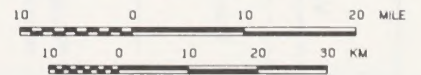
The Packsaddle/Windy Point, Mount Nutt, and Cerbat Pinnacles SRMAs would be expanded to include developed campground facilities. The decision to place and implement the facilities would be based on future needs assessment, existing uses, and resource conflicts.



# LAND DISPOSALS - ALTERNATIVE 3



LANDS PROPOSED FOR FUTURE DISPOSAL



**Table II-8**  
**ALTERNATIVE 3 SUMMARY OF MANAGEMENT PRESCRIPTIONS FOR AREAS OF CRITICAL ENVIRONMENTAL CONCERN (ACEC)**

| Site Name and Designation   | Values  | Lands   | Minerals | Range & Watershed Management | Cultural   | Recreation and OHVs                                | Wildlife and T&E | Riparian | Vegetative Products               |
|---|---|---|----------|------------------------------|--|--|------------------|----------|-----------------------------------|
| <b>Joshua Tree Forest ACEC</b>  | Prescriptions are the same as in alternative 2, except the area covered includes only the prime Joshua tree forest, thus reducing the size of the ACEC from 39,085 acres to 8,510 acres.  |   |          |                              |  |  |                  |          |                                   |
| <b>Black Mountains ACEC</b>   | Prescriptions are the same as in Alternative 2, except the area covered includes only the lambing grounds and high-value habitat, reducing the size of the ACEC from 219,428 acres to 66,132 acres.   |   |          |                              |  |  |                  |          |                                   |
| <b>Silver Creek Cultural Resources ACEC</b><br>(601 acres)*<br>In Alt. 2, this area is included in the Black Mountains ACEC | Rare and outstanding cultural and historical resources  | Route all ROW's around the ACEC, acquire nonfederal minerals, and do not open to mining law, mineral leasing law, and Mineral Material Sales Act. |          |                              | Prepare specific project plans; promote inventories and research by qualified institutions and individuals; develop an ACEC plan, including patrols, signing, and monitoring | Limit OHVs to designated roads, trails, and washes |                  |          | Prohibit removal of native plants |
| <b>Western Bajada Desert Tortoise-Cultural Resource ACEC</b>  | Prescriptions are the same as in Alternative 2.   |   |          |                              |  |  |                  |          |                                   |
| <b>Wright Creek ACEC</b>  | This area includes only the Wright Creek riparian zone. The surrounding watershed has been eliminated. The area is reduced to 9,236 acres. Prescriptions dealing with riparian values are the same as the Wright-Cottonwood Creeks Riparian and Cultural ACEC. The prescriptions for cultural resources have been eliminated. |   |          |                              |  |  |                  |          |                                   |

\* Public land surface acres

**Table II-8 (continued)**  
**ALTERNATIVE 3 SUMMARY OF MANAGEMENT PRESCRIPTIONS FOR AREAS OF CRITICAL ENVIRONMENTAL CONCERN (ACEC)**

| Site Name and Designation   | Values   | Lands  | Minerals  | Rangeland & Watershed Management | Cultural  | Recreation and OHVs                                 | Wildlife and T&E | Riparian | Vegetative Products                |
|---|--|--|---|----------------------------------|---|---|------------------|----------|------------------------------------|
| <b>Cottonwood Creek Riparian ACEC</b>   | This area includes only the Cottonwood Creek riparian zone. The surrounding watershed has been eliminated. The area is reduced to 4,924 acres. Prescriptions dealing with riparian values are the same as the Wright-Cottonwood Creeks Riparians and Cultural ACEC. The prescriptions for cultural resources have been eliminated. |  |   |                                  |   |   |                  |          |                                    |
| <b>Cottonwood Mountains Cultural Resources ACEC</b><br>(1,278 acres)<br>In Alt. 2, this area is included in the Wright-Cottonwood Creeks ACEC | Rare and outstanding cultural resources.   | Acquire private land; route major ROWs around the ACEC; acquire nonfederal minerals and do not open to Mineral Material Sales Act. | Require MPOs and mandatory bonding; allow mineral leasing subject to stipulations; do not allow mineral material disposals. |                                  | Prepare specific site project plans; promote inventories and qualified institutions and individuals; develop an ACEC plan including patrols, signing, and monitoring. | Limit OHVs to designated roads, trails, and washes. |                  |          | Prohibit removal of native plants. |
| <b>Cherokee Point Antelope ACEC</b>   | Prescriptions are the same as in Alternative 2.  |  |   |                                  |   |   |                  |          |                                    |
| <b>Hualapai Mountain Natural Area Resource ACEC</b>   | Prescriptions are the same as in Alternative 2.  |  |   |                                  |   |   |                  |          |                                    |
| <b>White-Margined Penstemon Reserve ACEC</b>  | Prescriptions are the same as in Alternative 2.  |  |   |                                  |   |   |                  |          |                                    |

\* Public land surface acres

Table II-8 (continued)

ALTERNATIVE 3 SUMMARY OF MANAGEMENT PRESCRIPTIONS FOR AREAS OF CRITICAL ENVIRONMENTAL CONCERN (ACEC)

| Site Name and Designation   | Values  | Lands   | Minerals  | Rangeland & Watershed Management | Cultural  | Recreation and OHVs                                 | Wildlife and T&E | Riparian | Vegetative Products                    |
|---|---|---|---|----------------------------------|---|---|------------------|----------|--|
| Carrow-Stephens Ranches ACEC  | Prescriptions are the same as in Alternative 2.   |   |   |                                  |   |   |                  |          |  |
| McCracken Desert Tortoise Habitat ACEC  | Prescriptions are the same as in Alternative 2.   |   |   |                                  |   |   |                  |          |  |
| Poachie Desert Tortoise Habitat ACEC  | Prescriptions are the same as in Alternative 2.   |   |   |                                  |   |   |                  |          |  |
| Aubrey Peak Bighorn Sheep Habitat ACEC  | Prescriptions are the same as in Alternative 2.   |   |   |                                  |   |   |                  |          |  |
| Burro Creek Riparian ACEC   | Prescriptions are the same as in Alternative 2, except the eastern third of the area, from the eastern WSA boundary, east to the McElhaney area has been eliminated from the ACEC, reducing the size of the area to 16,049 acres. |   |   |                                  |   |   |                  |          |  |
| Black Butte Cultural Resources ACEC<br>(1,280 acres)*<br>In Alt. 2, this area is included in the Burro Creek ACEC | Rare and outstanding cultural resources.  | Route major ROW's around the ACEC; acquire nonfederal minerals and do not open to Mineral Material Sales Act. | Require MPOs and mandatory bonding; allow mineral leasing subject to stipulations; do not allow mineral material disposals. |                                  | Prepare specific site project plans; promote inventories and research by qualified institutions and individuals; develop an ACEC plan including patrols, signing, and monitoring. | Limit OHVs to designated roads, trails, and washes. |                  |          | Do not allow removal of native plants. |

\* Public land surface acres

**Table II-8 (continued)**  
**ALTERNATIVE 3 SUMMARY OF MANAGEMENT PRESCRIPTIONS FOR AREAS OF CRITICAL ENVIRONMENTAL CONCERN (ACEC)**

| Site Name and Designation                   | Values  | Lands | Minerals | Rangeland & Watershed Management | Cultural | Recreation and OHVs | Wildlife and T&E | Riparian | Vegetative Products |
|---|---|-------|----------|----------------------------------|----------|---------------------|------------------|----------|---------------------|
| Clay Hills Research Natural Area            | Prescriptions are the same as in Alternative 2.   |       |          |                                  |          |                     |                  |          |                     |
| Big Sandy Riparian ACEC (13,948 acres)*     | Prescriptions are the same as Three Rivers Riparian ACEC in Alternative 2, except that the Alamo Lake area has been eliminated and Big Sandy, Santa Maria, and Bill Williams Rivers have been placed in separate ACECs. |       |          |                                  |          |                     |                  |          |                     |
| Santa Maria Riparian ACEC (20,674 acres)*   | Prescriptions are the same as Three Rivers Riparian ACEC in Alternative 2, except that the Alamo Lake area has been eliminated and Big Sandy, Santa Maria, and Bill Williams Rivers have been placed in separate ACECs. |       |          |                                  |          |                     |                  |          |                     |
| Bill Williams Riparian ACEC (10,916 acres)* | Prescriptions are the same as Three Rivers Riparian ACEC in Alternative 2, except that the Alamo Lake area has been eliminated and Big Sandy, Santa Maria, and Bill Williams Rivers have been placed in separate ACECs. |       |          |                                  |          |                     |                  |          |                     |

\* Public land surface acres

Table II-9  
Changes by Alternatives

| MINERALS MANAGEMENT  |  |  |  |
|--|--|--|--|
| Change Agent   | Alternative 1 (Current Management)   | Alternative 2 (Preferred Alternative)  | Alternative 3  |
| Leasing Categories   | 118,408 Acres open to lease subject to no surface occupancy to protect bighorn sheep habitat. Remaining acres open to leasing subject to standard lease terms and conditions (Appendix 9). | 2,136,874 acres open to lease subject to standard lease terms and conditions; 41,104 acres open to lease with no surface occupancy; and 10,022 acres would be withdrawn from mineral leasing (Table II-7).   | 2,150,024 acres open to lease subject to standard lease terms and conditions; 27,954 acres open to lease with no surface occupancy; and 10,022 acres would be withdrawn from mineral leasing (Table II-12).  |
| Mining Law   | Entire KRA open to exploration and development subject to surface management regulations.  | 92,622 acres closed to mineral entry including 35,864 acres of nonfederal minerals would be acquired and closed to mineral entry (Appendix 10 and 11) Special stipulations would be added to exploration and development plans to maintain unique features and wildlife habitat. | 71,548 acres closed to mineral entry including 24,940 acres of nonfederal minerals would be acquired and closed to mineral entry (Appendix 10 and 28) Special stipulations would be added to exploration and development plans to maintain unique features and wildlife habitat. |
| Material Disposal  | Entire KRA open to disposal of mineral materials on a case-by-case basis.  | 354,694 acres closed to mineral material disposal. Remainder of KRA open to disposal of mineral materials on a case-by-case basis, (1,833,306 acres).  | 185,496 acres closed to mineral material disposal. Remainder of KRA open to disposal of mineral materials on a case-by-case basis, (2,002,504 acres).  |
| LANDS  |  |  |  |
| Designation of Areas Suitable for Disposal Through Exchange  | Would remain as presently designated in MFPs (Appendix ).  | Reduce disposal areas if resources warrant it (Appendix 13 ).  | Same as <i>Alternative 2</i> .   |
| Designate Lands as Suitable for Future Lease or Conveyance under R&PP Act.                           | Some areas have no lands left for future disposal under R&PP Act for the community purposes.   | List legal descriptions of lands (Appendix 17 ).   | Same as <i>Alternative 2</i> .   |
| Options to Resolve Trespass Situations Not Clearly Stated in MFPs.                                   | Resolution may not be possible if not defined in MFP.  | Existing and new trespass cases will be resolved by removal or authorization such as FLPMA lease or sale after evaluation on a case-by-case basis. Trespass may be resolved through sale within retention areas.   | Same as <i>Alternative 2</i> .   |
| Option of Allowing Commercial or Recreational Leasing on Retention Area Lands not Discussed in MFPs. | Proposals cannot be considered because the MFPs did not address this type of land use.   | Proposals for commercial or recreational FLPMA leases will be evaluated on a case-by case-basis to see if they are needed and appropriate and meet KRA resource management objectives.   | Same as <i>Alternative 2</i> .   |

Table II-9 (continued)  
Changes by Alternatives

| LANDS (continued)   |  | Alternative 1 (Current Management)   | Alternative 2 (Preferred Alternative)   | Alternative 3                  |
|---|--|--|---|--------------------------------|
| Designating Existing ROW Utility Corridors.                                   | The nine R/W utility corridors designated in the MFPs are incorporated into this RMP.  | Same as <i>Alternative 1</i> .   | Same as <i>Alternative 1</i> .  | Same as <i>Alternative 1</i> . |
| Additional ROW Corridors Need Designation for Future Growth.                  | A plan amendment could be needed.  | Corridors below are designated for transportation, utility, and pipeline corridors:<br>coal slurry pipeline and AT&T fibre optic line (1 mile wide).   | Same as <i>Alternative 2</i> .  | Same as <i>Alternative 2</i> . |
| Designating Existing Communication Sites.                                     | Some existing communication sites have not been clearly designated in the MFPs.  | The 20 sites presently in use are designated as existing sites.  | Same as <i>Alternative 2</i> .  | Same as <i>Alternative 2</i> . |
| Limiting New Applications to Certain Communication Sites.                     | All existing sites are open to further development.  | Additional facilities will be limited to the following sites: South Oatman, North Oatman, Potato Patch I, Potato Patch II, Hayden Peak, North Getz Peak, Willow Beach, Windy Point, Cherum Peak.   | Same as <i>Alternative 2</i> .  | Same as <i>Alternative 2</i> . |
| Reserving Areas for Future Communication Site Expansion.                      | Proposals from public on future communication site needs have not been included in MFPs.   | 1. Site near Yucca for future cellular telephone use. NE1/4, Section 20, T. 161/2 N., R. 18W.<br>2. Cherum Peak site for low power coverage for Golden Valley. S1/2 N1/2, Sec7., T. 23 N., R. 17 W., G + SRM.  | Same as <i>Alternative 2</i> .  | Same as <i>Alternative 2</i> . |
| Developing Communication Site Plans and User Groups.                          | Present situation of crowded sites with no plans will continue. Present situation of retaining unneeded withdrawals will continue to make management difficult in certain areas. | Develop communication site plans for the following communication sites and any new sites located in the future: North Oatman, South Oatman, North Getz, South Getz, Willow Beach, Windy Point. Recommend 4,397 acres for retention & 531 acres for revocation or rejection as shown in Appendixes 15 and 16. | Same as <i>Alternative 2</i> .  | Same as <i>Alternative 2</i> . |
| Recommendations to Retain or Revoke Withdrawals and Classifications Required. | Present situation of retaining unneeded withdrawals will continue to make management difficult in certain areas.   | Recommend 4,397 acres for retention and 531 acres for revocation or rejection as shown in Appendixes 15 and 16.  | Same as <i>Alternative 2</i> . Approve Army Corps of Engineers application AR-035844 for entire 3,488.62 acres applied for. | Same as <i>Alternative 2</i> . |
| WATERSHED (SOIL, WATER, AIR, AND VEGETATION) MANAGEMENT                       |  |  |   |                                |
| Management Direction  | No Change.   | Same as <i>Alternative 1</i> , except upon completion of the soil survey and ecological site inventory (EIS) areas for potential vegetation treatments will be identified and priorities will be set.  | Same as <i>Alternative 2</i> .  | Same as <i>Alternative 2</i> . |

**Table II-9 (continued)  
Changes by Alternatives**

| <b>LANDS (continued)</b>              |   | <b>Alternative 1 (Current Management)</b>  | <b>Alternative 2 (Preferred Alternative)</b>  | <b>Alternative 3</b> |
|---------------------------------------|---|--|---|----------------------|
| <b>VEGETATIVE PRODUCTS MANAGEMENT</b> |   |  |   |                      |
| Management Direction                  | No change   | Woodcutting, yucca harvest, or other large-scale harvesting subject to inventory and development of management plans before authorized. Where demand exceeds supply, permits will be issued on a sealed bid bases.   | Same as <i>Alternative 1</i> , except private and commercial fuelwood cutting and yucca harvest would be eliminated throughout KRA. |                      |
| <b>RANGELAND MANAGEMENT</b>           |   |  |   |                      |
| Management Direction                  | Review and revise AMPs, as necessary, to incorporate goals and objectives of the RMP. | Monitoring studies continue to be installed as needs arise.<br>AMPs or grazing systems developed or revised, as needed on allotments within ACECs or SMAs to meet ACEC or SMA goals and objectives.<br>Priority for AMP development or revision based on management issues.<br>Ephemeral line would be reviewed and revised to reflect forage availability, following completion of the soil survey and ecological site inventory. Affected allotments would be reclassified.<br>Three grazing allotments would be closed to livestock grazing and the forage reserved for wildlife.<br>Two grazing allotments would be closed to livestock grazing because of conflict between livestock and homeowners.<br>Domestic sheep or goats on public land within 20 miles of bighorn sheep habitat subject to immediate impoundment. | Same as <i>Alternative 2</i> .  |                      |
| <b>CULTURAL RESOURCE MANAGEMENT</b>   |   |  |   |                      |
| Management Direction                  | No change   | Initiate Class II inventory and develop CRPPs for areas designated.<br>Acquire 3,350 acres of priority cultural resource lands.<br>Develop two petroglyph sites and the Mineral Park Historic area for public use.<br>Initiate ethnographical studies.   | Same as <i>Alternative 2</i> .  |                      |



Table II-9 (continued)  
Changes by Alternatives

| CULTURAL RESOURCE MANAGEMENT (continued)  |   |   |   |
|---|---|---|---|
| Change Agent  | Alternative 1 (Current Management)  | Alternative 2 (Preferred Alternative)   | Alternative 3   |
| Designations  | Designate 57.5 acres at Carrow-Stephens Ranch as an interpretive area.  | Promote inventories and research in mining areas. Develop expanded cultural resource education program.<br>Promote inventories in poorly known areas by qualified volunteers.<br>Develop site protection systems.   | Designate the following special management areas:<br><b>NAME</b><br>Black Mountain ACEC 66,132<br>Silver Creek ACEC 601<br>Cottonwood Mountains ACEC 1,278<br>Burro Creek Riparian and Cultural ACEC 16,049<br>Black Butte Cultural Resource ACEC 1,280<br><br>Management actions would be the same as in <i>Alternative 2</i> .  |
| <b>RECREATION MANAGEMENT</b>  |   |   |   |
| Management Direction<br>Developed Recreation Sites<br>and Associated Recreation<br>Project Plans (RPPs) | Implement the two completed RPP's. Prepare RPP's for the two existing developed sites currently without such plans. | Same as <i>Alternative 1</i> . Also prepare and implement of recreation project plans for the following new developed recreation site:<br>1. Boulder Springs. Day-use picnic area and campground.<br>2. Antelope Springs. Day-use picnic area/trail head access and parking area.<br>3. Six-Mile Crossing (Burro Creek) primitive campground.<br>4. Thimble-Butte (Black Mountains) campground.<br>5. Pine Flat (Hualapai Mountain) interpretive site, picnic area, and campground. | Same as <i>Alternative 2</i> and the following:<br>1. Boulder Springs railroad crossing access acquisition.<br>2. Antelope Springs campground and larger picnic area.<br>3. Six-Mile Crossing developed campground.<br>4. Burro Creek overlook and RV campground.<br>5. Grand Wash Cliffs overlook and developed campground.<br>6. Hualapai Valley (Music Mountains) overlook and developed campground.<br>7. Walnut Spring (Music Mountains) developed campground and day-use picnic area.<br>8. Grapevine Spring (Music Mountain) developed campground. |

Table II-9 (continued)  
Changes by Alternatives

| RECREATION MANAGEMENT (continued) |  |  |   |
|-----------------------------------|--|--|---|
| Change Agent                      | Alternative 1 (Current Management)   | Alternative 2 (Preferred Alternative)  | Alternative 3   |
|                                   |  | <p>6. Boundary Cone (Black Mountain) concession RV campground and picnic area.</p> <p>7. Carrow-Stephens concession RV campground and picnic area.</p> <p>8. Moss Wash (east slope of Hualapai Mountains) day-use picnic area and developed campground.</p>  | <p>9. Wright Creek (south of Truxton) day-use picnic area and developed campground.</p> <p>10. Cottonwood Creek (south of Truxton) developed campground.</p> <p>11. Canyon Station Spring (east side of Cerbat Mountains) day-use picnic area.</p> <p>12. Natural Corral Wash (west of Wikieup) developed campground.</p> |
| Interpretive Sites                | <p>A recreation project plan has been prepared for a Burro Creek Overlook Interpretive Site. This recreation project plan has not been implemented to date. Implement the Burro Creek Overlook Interpretive Site Plan.</p>   | <p>Same as <i>Alternative 1</i>. Also prepare and implement Recreation Project Plans for the following interpretive overlook sites:</p> <ol style="list-style-type: none"> <li>1. Sitgreaves Pass Overlook Interpretive Site</li> <li>2. Grapevine Mesa Joshua Tree Forest-Grand Wash Cliffs Overlook Interpretive Site</li> <li>3. Boundary Cone Scenic/Interpretive Pullout</li> <li>4. Cerbat Pinnacles-Red Lake Scenic/Interpretive Pullout</li> <li>5. Black Mountain Escarpment Overlook Interpretive Site</li> <li>6. Thimble Butte Scenic/Interpretive Pullout</li> <li>7. Black Mountains West Scenic/Interpretive Pullout</li> </ol> | <p>Same as <i>Alternative 2</i>.</p>  |
| Sign Plans                        | <p>Sign plans have been prepared for two of the existing four developed recreation sites. One of the sign plans has been implemented. Implement the other completed sign plan. Prepare and implement sign plans for the two developed recreation sites that lack such plans.</p> | <p>Same as <i>Alternative 1</i>. Also prepare and implement sign plans for new developed recreation sites and interpretive sites.</p>  | <p>Same as <i>Alternative 2</i>.</p>  |
| Recreation Maintenance            | <p>Maintenance plans have been prepared for all four developed recreation sites. All four plans are being implemented.</p>   | <p>Same as <i>Alternative 1</i>. Also prepare and implement maintenance plans for new developed recreation sites.</p>  | <p>Same as <i>Alternative 2</i>.</p>  |

Table II-9 (continued)  
Changes by Alternatives

| RECREATION MANAGEMENT (continued)   |   |   |  |               |             |        |                |        |                   |        |                 |  |                |       |                       |        |                                      |        |                              |     |   |             |               |                          |       |          |    |                  |    |
|---|---|---|--|---------------|-------------|--------|----------------|--------|-------------------|--------|-----------------|--|----------------|-------|-----------------------|--------|--------------------------------------|--------|------------------------------|-----|---|-------------|---------------|--------------------------|-------|----------|----|------------------|----|
| Change Agent  | Alternative 1 (No Action)   | Alternative 2 (Preferred Alternative)   | Alternative 3  |               |             |        |                |        |                   |        |                 |  |                |       |                       |        |                                      |        |                              |     |   |             |               |                          |       |          |    |                  |    |
| National Back Country Byway Program   | Designate the following two National Back Country Byways:<br>Hualapai Mountains National Back Country Byway.<br>Historic Route 66 National Back Country Byway nominated.  | Same as <i>Alternative 1</i> , except for the additional back country byways:<br>Diamond Bar Road<br>Alamo Road   | Same as <i>Alternative 2</i> .                                       |               |             |        |                |        |                   |        |                 |  |                |       |                       |        |                                      |        |                              |     |   |             |               |                          |       |          |    |                  |    |
| Designations National Conservation Area (NCA)   | No Action   | Propose congressional designation of 39,085 acres at Joshua Tree Forest-Grand Wash Cliffs as an NCA.  | Same as <i>Alternative 2</i> .                                       |               |             |        |                |        |                   |        |                 |  |                |       |                       |        |                                      |        |                              |     |   |             |               |                          |       |          |    |                  |    |
| Special Recreation Management Areas (SRMA).   | No SRMA are designated within KRA.  | Designate six special recreation management areas (SRMA's):<br><br><table border="0"> <tr> <td><u>NAME</u></td> <td><u>ACRES*</u></td> </tr> <tr> <td>Burro Creek</td> <td>26,032</td> </tr> <tr> <td>Hualapai Crest</td> <td>20,595</td> </tr> <tr> <td>Historic Route 66</td> <td>10,970</td> </tr> <tr> <td>Carrow-Stephens</td> <td></td> </tr> <tr> <td>Historic Ranch</td> <td>2,401</td> </tr> <tr> <td>Kingman Regional Park</td> <td>12,316</td> </tr> <tr> <td>Joshua Tree Forest-Grand Wash Cliffs</td> <td>44,255</td> </tr> <tr> <td>Mineral Park Historic Mining</td> <td>624</td> </tr> </table> | <u>NAME</u>  | <u>ACRES*</u> | Burro Creek | 26,032 | Hualapai Crest | 20,595 | Historic Route 66 | 10,970 | Carrow-Stephens |  | Historic Ranch | 2,401 | Kingman Regional Park | 12,316 | Joshua Tree Forest-Grand Wash Cliffs | 44,255 | Mineral Park Historic Mining | 624 | Same as <i>Alternative 2</i> , except for the additional areas.<br><br><table border="0"> <tr> <td><u>NAME</u></td> <td><u>ACRES*</u></td> </tr> <tr> <td>Pack Saddle/Windy Points</td> <td>6,193</td> </tr> <tr> <td>Mt. Nutt</td> <td>45</td> </tr> <tr> <td>Cerbat Pinnacles</td> <td>36</td> </tr> </table> | <u>NAME</u> | <u>ACRES*</u> | Pack Saddle/Windy Points | 6,193 | Mt. Nutt | 45 | Cerbat Pinnacles | 36 |
| <u>NAME</u>   | <u>ACRES*</u>   |   |  |               |             |        |                |        |                   |        |                 |  |                |       |                       |        |                                      |        |                              |     |   |             |               |                          |       |          |    |                  |    |
| Burro Creek   | 26,032  |   |  |               |             |        |                |        |                   |        |                 |  |                |       |                       |        |                                      |        |                              |     |   |             |               |                          |       |          |    |                  |    |
| Hualapai Crest  | 20,595  |   |  |               |             |        |                |        |                   |        |                 |  |                |       |                       |        |                                      |        |                              |     |   |             |               |                          |       |          |    |                  |    |
| Historic Route 66   | 10,970  |   |  |               |             |        |                |        |                   |        |                 |  |                |       |                       |        |                                      |        |                              |     |   |             |               |                          |       |          |    |                  |    |
| Carrow-Stephens   |   |   |  |               |             |        |                |        |                   |        |                 |  |                |       |                       |        |                                      |        |                              |     |   |             |               |                          |       |          |    |                  |    |
| Historic Ranch  | 2,401   |   |  |               |             |        |                |        |                   |        |                 |  |                |       |                       |        |                                      |        |                              |     |   |             |               |                          |       |          |    |                  |    |
| Kingman Regional Park   | 12,316  |   |  |               |             |        |                |        |                   |        |                 |  |                |       |                       |        |                                      |        |                              |     |   |             |               |                          |       |          |    |                  |    |
| Joshua Tree Forest-Grand Wash Cliffs  | 44,255  |   |  |               |             |        |                |        |                   |        |                 |  |                |       |                       |        |                                      |        |                              |     |   |             |               |                          |       |          |    |                  |    |
| Mineral Park Historic Mining  | 624   |   |  |               |             |        |                |        |                   |        |                 |  |                |       |                       |        |                                      |        |                              |     |   |             |               |                          |       |          |    |                  |    |
| <u>NAME</u>   | <u>ACRES*</u>   |   |  |               |             |        |                |        |                   |        |                 |  |                |       |                       |        |                                      |        |                              |     |   |             |               |                          |       |          |    |                  |    |
| Pack Saddle/Windy Points  | 6,193   |   |  |               |             |        |                |        |                   |        |                 |  |                |       |                       |        |                                      |        |                              |     |   |             |               |                          |       |          |    |                  |    |
| Mt. Nutt  | 45  |   |  |               |             |        |                |        |                   |        |                 |  |                |       |                       |        |                                      |        |                              |     |   |             |               |                          |       |          |    |                  |    |
| Cerbat Pinnacles  | 36  |   |  |               |             |        |                |        |                   |        |                 |  |                |       |                       |        |                                      |        |                              |     |   |             |               |                          |       |          |    |                  |    |
| Extensive Recreation Management Area (ERMA). (ERMA would include all public lands within the KRA that are not within SRMA.) | Allow for dispersed recreation.<br><br>Enhance opportunities for high quality, backcountry recreation experiences. Maintain sign inventory and develop sign plans to be compatible with the objectives of the area. | * Includes nonfederal land to be acquired.  | * Includes nonfederal land to be acquired.                           |               |             |        |                |        |                   |        |                 |  |                |       |                       |        |                                      |        |                              |     |   |             |               |                          |       |          |    |                  |    |
| Visual Resource Management Classes (VRM Classes)  | No change. The VRM classes established under the existing MFPs would remain unchanged.  | Same as <i>Alternative 1</i> .<br><br>Designate VRM classes for KRA as follows:<br>- Designate 0 acres Class I;<br>- Designate 881,569 acres Class II;<br>- Designate 781,334 acres Class III;<br>- Designate 3,281,290 acres Class IV.   | Same as <i>Alternative 1</i> .<br><br>Same as <i>Alternative 2</i> . |               |             |        |                |        |                   |        |                 |  |                |       |                       |        |                                      |        |                              |     |   |             |               |                          |       |          |    |                  |    |

Table II-9 (continued)  
Changes by Alternatives

| RECREATION MANAGEMENT (continued)       |  |   |  |
|---|--|---|--|
| Change Agent                            | Alternative 1 (Current Management)   | Alternative 2 (Preferred Alternative)   | Alternative 3  |
| Off-Highway Vehicle (OHV) Designations  | OHV designations have not been made.   | Designate OHV use areas for KRA as follows:<br>Open 5,760 Acres<br>Limited to existing roads, trails and washes 2,179,230 Acres<br>Limited to existing roads and trails 132,944 Acres<br>Limited to designated roads, trails and washes 39,085 acres.<br>Limited to designated roads and trails 148,981 acres.  | Designate OHV use areas as follows:<br>Open 25,760 acres<br>Limited to existing roads, trails, and washes 2,281,529 acres<br>Limited to existing roads, and trails 107,683 acres<br>Limited to designated roads, trails, and washes 11,669 acres<br>Limited to designated roads, and trails 99,359 acres |
| Long-Term Visitor Area (LTVA)           | No LTVAs have been designated within KRA.  | Same as <i>Alternative 1</i> .  | Same as <i>Alternative 1</i> .   |
| Regional Park                           | Public lands have been consolidated in this area looking towards a regional park, but would not establish such a park. | Designate the Kingman Regional Park as a cooperative recreation management area (CRMA) and a special recreation management area (SRMA).   | Same as <i>Alternative 2</i> .   |
| Hiking Trails                           | No trails  | Implement a reduced and somewhat re-directed trail construction effort including the following:   | Same as <i>Alternative 2</i> .   |
| Hiking Trails                           | No change/no other hiking trails are planned.  | <ol style="list-style-type: none"> <li>1. Hualapai Crest (modified) trail system</li> <li>2. Kingman Regional Park trail system</li> <li>3. Wabayuma Peak Access Trail</li> <li>4. Mount Nutt East-to-West Trail</li> <li>5. Burro Creek-Hell's Half Acre-Kaiser Wash Loop Trail</li> <li>6. Grand Wash Cliffs/Grapevine Mesa Areas</li> <li>7. Cerbat Crest (Packsaddle Mountain to Cerbat Pinnacles via Mount Tipton)</li> <li>8. Aubrey Peak Loop Trail</li> <li>9. Black Mountains Escarpment/Portland Wash Area Trail</li> <li>10. Black Mesa to Eagle Point overlook Trail</li> </ol> | Same as <i>Alternative 2</i> .   |
| Recreation/Wilderness Volunteer Program | No change. Continue to staff Burro Creek Recreation Site with full-time volunteer campground hosts.                    | Same as <i>Alternative 1</i> and implement a greatly expanded volunteer program to assist in managing visitor use in the resource area and to maintain a quality environment by involving the public in its care.   | Same as <i>Alternative 2</i> .   |

Table II-9 (continued)  
Changes by Alternatives

| WILDLIFE HABITAT MANAGEMENT  |  |  |  |
|------------------------------|--|--|--|
| Change Agent                 | Alternative 1 (Current Management)   | Alternative 2 (Preferred Alternative)  | Alternative 3  |
| Management Direction         | Continue to manage wildlife habitats in accordance with existing HMPs, guidance documents, the district's wildlife policy, and the needs as determined through monitoring and HMP evaluations.   | Intensify HMP monitoring; emphasize project monitoring and maintenance. Increase emphasis on most sensitive wildlife resources: T&E species, riparian habitat, and bighorn sheep.  | Same as <i>Alternative 2</i> .   |
| Desert Bighorn Sheep         | Manage identified bighorn sheep habitat as outlined in existing HMPs and the BLM Rangeland Plan for Desert Bighorn Sheep to support 600 head in the Black Mountains, 75 head around Aubrey Peak. | Bighorn sheep habitat would be improved and maintained at its optimum potential, while conducting monitoring studies to determine and adjust to optimum numbers consistent with habitat potential and other resource values.   | Same as <i>Alternative 2</i> .   |
| Changes in Kind of Livestock | No change.   | Change in kind of livestock actions from cattle to domestic sheep or goats would not be authorized within or adjacent to occupied bighorn sheep habitats. Feral goats or domestic sheep would be prohibited from all established bighorn sheep ranges.   | Same as <i>Alternative 2</i> .   |
| Lambing                      | No change.   | Land uses which could adversely affect lambing or rearing of new-born bighorn sheep in the Black Mountains or on Aubrey Peak would be excluded in lambing grounds from December 1 through May 31.  | Same as <i>Alternative 2</i> .   |
| Antelope                     | Manage habitat to support 100 antelope on Goodwin Mesa and 75 around Cherokee Point.   | Antelope habitat would be improved and maintained at its optimum potential, while conducting monitoring studies to determine and adjust to the optimum numbers consistent with habitat potential and other resource values.  | Same as <i>Alternative 2</i> .   |
| Designations                 | No action.   | Manage the following areas as ACECs recognizing the identified natural values:<br>Black Mountain ACEC<br>Cherokee Point Antelope Habitat ACEC<br>Aubrey Peak Bighorn Sheep Habitat ACEC<br>Burro Creek Riparian and Cultural ACEC<br>Three Rivers Riparian ACEC<br><br>See Table II-5 for management prescriptions and Map II-9 for locations. | Same as <i>Alternative 2</i> , except Black Mountain, Wright Creek, Cottonwood Creek, and Burro Creek ACECs would be smaller in area. Alamo Lake would be eliminated from the Three Rivers Riparian ACEC. See Table II-8 for management prescriptions and Map II-12 for locations. |

Table II-9 (continued)  
Changes by Alternatives

| SPECIAL STATUS SPECIES MANAGEMENT - Plant Species           |  |  |
|---|--|--|
| Change Agent  | Alternative 1 (Current Management)   | Alternative 2 (Preferred Alternative)  |
| Management Direction  | No change.   | Same as Alternative 1  |
| Designation   | None.  | The Clay Hills ACEC to protect Arizona cliffrose ( <i>Purshia sabinegrae</i> ). The White-Margined Penstemon Reserve ACEC to protect <i>Penstemon albomarginatus</i> . The Cerbat beard-tongue ( <i>Penstemon bicolor var. roseus</i> ) would be protected in the Black Mountain ACEC. |
| Alternative 3<br>Same as Alternative 1.                     |  |  |
| Alternative 2.<br>Same as Alternative 2.                    |  |  |
| SPECIAL STATUS SPECIES MANAGEMENT -Animal Species           |  |  |
| Desert Tortoise   | Rangewide Plan and Arizona Implementation Plan would be implemented.   | Designate the following ACECs:<br>Western Bajada Tortoise and Cultural ACEC<br>McCracken Desert Tortoise Habitat ACEC<br>Poachie Desert Tortoise Habitat ACEC.   |
|   |  | Same as Alternative 2.<br>Grazing would be eliminated from McCracken and Poachie ACECs.  |
| RIPARIAN AREA MANAGEMENT                                    |  |  |
|   | Implementation of the BLM Riparian Management Strategy. Inventory and classification of all riparian areas in KRA. | Same as Alternative 1 plus: prioritization of unsatisfactory areas, and subsequent intensive management actions to bring areas into satisfactory condition. Some priority areas in unsatisfactory condition will be corrected before completion of inventory and classification.       |
|   |  | Same as Alternative 2.   |
| HAZARDOUS MATERIALS (HAZMAT) MANAGEMENT                     |  |  |
| Management Direction  | No Change.   | Same as Alternative 1.   |
|   |  | Same as Alternative 2.   |
| WILD HORSE AND BURRO MANAGEMENT                             |  |  |
| Management Direction<br>Black Mountain Herd Management Area | No Change.   | Same as Alternative 1.   |
| Big Sandy Herd Management Area                              | No Change.   | Same as Alternative 1.   |

Table II-9 (continued)  
Changes by Alternatives

| <b>WILD HORSE AND BURRO MANAGEMENT (continued)</b> |   |   |   |
|--|---|---|---|
| <b>Change Agent</b>                                | <b>Alternative 1 (Current Management)</b>   | <b>Alternative 2 (Preferred Alternative)</b>  | <b>Alternative 3</b>  |
| Cerbat Herd Management Area                        | The Cerbat/Black Mountain EIS analyzed the impact of 14 head of horses in the Cerbat Herd Management Area. The Program Summary for the EIS did not allocate forage for the 14 animals. The 1990 estimated horse population was 130. | The draft herd management area plan calls for managing a minimum viable population of wild horses (79-101) in the Cerbat Mountains and limits utilization of key vegetation species to 30 percent in areas not grazed by livestock (50 percent in areas grazed by livestock). Identify and project critical water sources. Eliminate authorized grazing use by domestic horses or burros on public land. Redefine horse use area boundaries to include portions of the Mount Tipton allotment to more truly reflect use patterns. | The Cerbat/Black Mountain EIS would be accepted as written, and the wild horse population reduced to 14 animals. Manage for two horses in Marble Canyon, 6 horses on the west slope, and 6 horses on the east slope. Remove all other horses and place them with private individuals through the Adopt-a-Horse program. Manage the remaining horses until they become extinct and then eliminate the horse use area from herd management area status. |

## CHAPTER II

In addition, the following areas have been identified for intensive campground/interpretive site development:

- Antelope Springs day-use picnic area and developed campground in T.26N., R.18W Section 28 SE1/4 SE1/4. Facilities would include a well for water, flush toilets, picnic tables, ramadas, and cooking grills.
- Grand Wash Cliffs overlook and developed camping site in T.30N., R.16W., Section 26, SE1/4 SW1/4 - Facilities would include chemical toilets, picnic tables, cooking grills, and fire pits, and a small interpretive panel with an information kiosk.
- Walnut Spring developed campground day-use picnic area, T.,24N., R.13W., Section 28, SW1/4 facilities would include chemical toilets, picnic tables cooking grills and fire pits. Public access is available above Crozier in the NE1/4 of Section 34, T. 24N., R. 13W.
- Hualapai Valley overlook and developed campground, T. 24N., R. 13W. east center Section 19. Facilities include chemical toilets, picnic tables, cooking grills and fire pits.
- Grapevine Spring (Music Mountain) developed campground - NW 1/4, Section 8, T. 24N., R. 13W. Facilities would include chemical toilets, picnic tables, cooking grills and fire pits. Three additional miles of road improvement would be required from the Hualapai Valley overlook.
- Wright Creek (south of Truxton) day use picnic area and developed campground, T.23N., R. 12W., Section 10 - Facilities would include a well for water, flush toilets, picnic tables, ramadas and cooking grills.
- Cottonwood Creek (south of Truxton) developed campground, T. 23N., R. 12W., Section 30 - Facilities would include chemical toilets, picnic tables, ramadas, and cooking grills.
- Canyon Station Spring day-use picnic area (east side of Cerbat Mountains), T. 23N., R. 17W., Section 35, SW1/4, - Facilities would include a well for water, flush toilets, picnic tables, ramadas, and cooking grills.
- Natural Corrals Wash (west of Wikieup) developed campground, T. 16N., R. 14W., Section 12- Facilities would include chemical toilets, picnic tables, ramadas, and cooking grills.

## OHV Designations

The acres under each OHV designation are listed in Table II-10, see Map II-11.

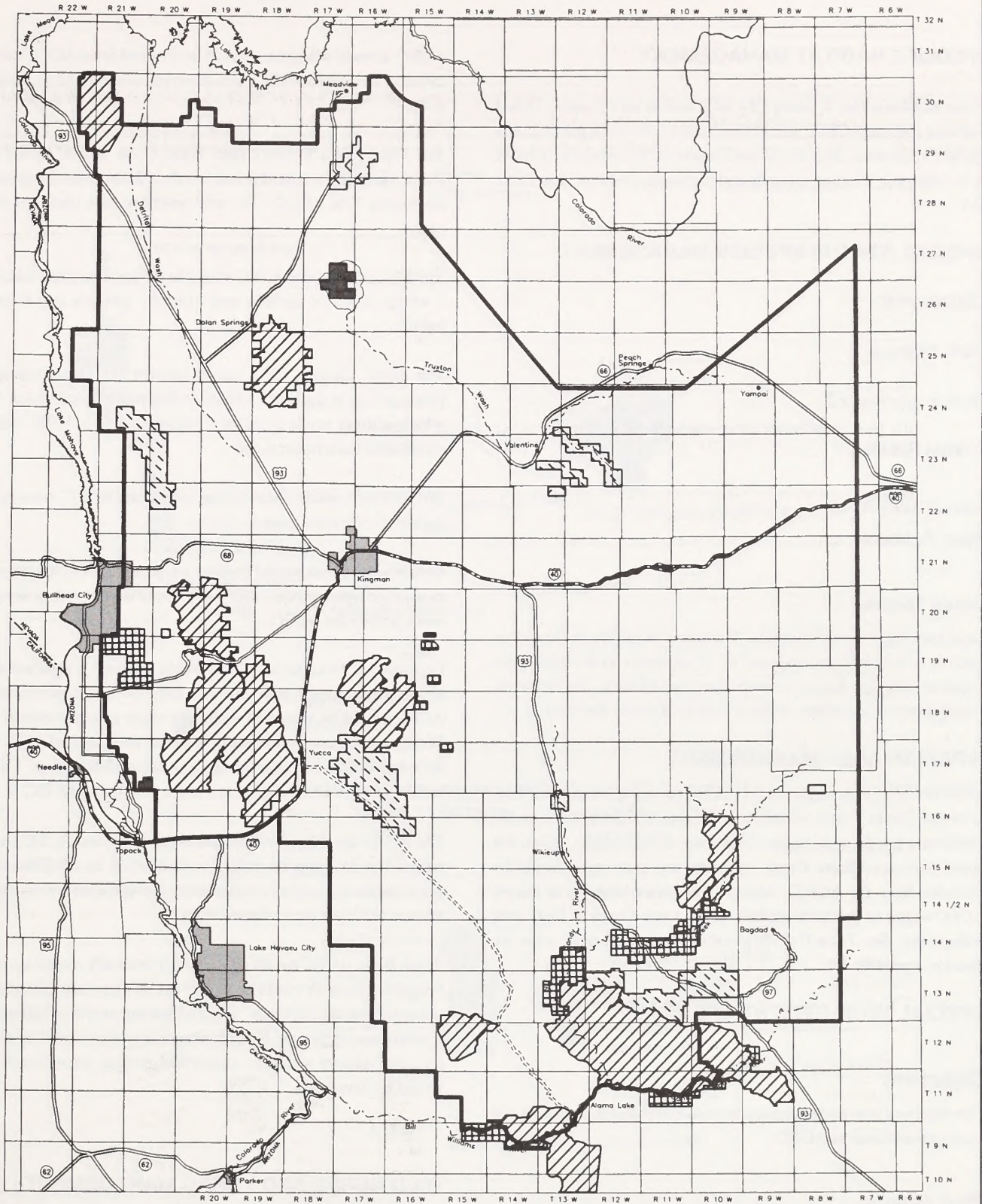
**Table II-10  
Alternative 3  
OHV Designation**

| <b>Without Wilderness Designation</b>              |                  |
|--|------------------|
| <b>Acres</b>                                       |                  |
| Closed   | 0                |
| Open   | 5,760            |
| Limited to existing roads,<br>trails, and washes   | 2,281,529        |
| Limited to existing roads<br>and trails            | 107,683          |
| Limited to designated roads,<br>trails, and washes | 11,669           |
| Limited to designated roads<br>and trails          | 99,359           |
| <b>Total</b>                                       | <b>2,506,000</b> |
| <b>With Wilderness Designation</b>                 |                  |
| <b>Acres</b>                                       |                  |
| Closed   | 409,377          |
| Open   | 5,760            |
| Limited to existing roads,<br>trails, and washes   | 1,913,296        |
| Limited to existing roads<br>and trails            | 93,914           |
| Limited to designated roads,<br>trails, and washes | 11,669           |
| Limited to designated roads<br>and trails          | 71,984           |
| <b>Total</b>                                       | <b>2,506,000</b> |

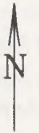
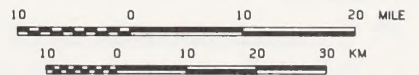




# OFF-HIGHWAY VEHICLE CLASSES - ALTERNATIVE 3



- |   |  |   |                                   |
|---|--|---|-----------------------------------|
|  | OPEN   |  | EXISTING ROADS & TRAILS           |
|  | CLOSED   |  | DESIGNATED ROADS, TRAILS & WASHES |
|  | UNSHADED AREAS WITHIN RMP BOUNDARY ARE EXISTING ROADS, TRAILS & WASHES |  | DESIGNATED ROADS & TRAILS         |



Map II-11

## CHAPTER II

### WILDLIFE HABITAT MANAGEMENT

Same as *Alternative 2*, except the McCracken and Poachie Desert Tortoise Habitat ACECs would be closed to livestock grazing, and the Black Mountain Bighorn Sheep Habitat ACEC would be reduced to include only lambing grounds and high-value habitat. See Table II-8.

### SPECIAL STATUS SPECIES MANAGEMENT

#### *Objectives*

#### *Plant Species*

Same as *Alternative 2*.

#### *Animal Species*

Same as *Alternative 2*.

#### *Plan Actions*

#### *Desert Tortoise*

Land exchanges would continue. Resources would be evaluated on lands to be acquired and disposed of. If resources on the lands to be acquired outweigh the resources on the disposal lands, the exchange would proceed regardless of the presence of desert tortoises.

### RIPARIAN AREA MANAGEMENT

Same as *Alternative 2*, except the ACEC covering Wright and Cottonwood Creeks would include only the area immediately along the creeks and not the area further back from the drainages. Also, the upper portion of Burro Creek on public and state lands would be excluded from the ACEC. Alamo Lake area of the Three Rivers ACEC would be dropped because of the Army Corps of Engineers withdrawal. See Table II-8. Mineral closures in riparian areas are listed in Appendix 28.

### SPECIAL MANAGEMENT AREAS

#### *Objectives*

The objective is to protect critical resources by designating only the most critical areas as ACECs.

#### *Plan Actions*

Same as *Alternative 2*, except for the following changes. Management prescriptions would remain the same as outlined in Table II-8 and Appendix 18, except where changes are specifically mentioned. See Map II-12. Land acquisitions are listed in Appendix 29. If no wilderness is designated by Congress, 326,228 acres would be designated as ACECs. If all WSAs are designated wilderness,

49,097 acres of wilderness would be dropped from ACEC status and the total acreage of ACECs would be reduced to 277,131. See Table II-11.

The Joshua Tree Forest-Grand Wash Cliffs ACEC would be restricted to only the area of prime stands of Joshua trees, and be called the Joshua Tree ACEC. The area would remain closed to mineral entry.

The Black Mountains ACEC would be the same as under *Alternative 2* except it would include only lambing grounds and high-value habitat.

The Silver Creek ACEC would contain the same management prescriptions as the Black Mountain Bighorn Sheep Habitat ACEC, which address needs of cultural resources. The ACEC would be withdrawn from mineral entry.

Wright Creek would be designated a separate ACEC, encompassing mainly the riparian zone.

Cottonwood Creek would become a separate ACEC, encompassing mainly the riparian zone. OHV use would be allowed on designated roads within the ACEC.

Cottonwood Mountains ACEC would become a separate ACEC, encompassing lands with critically important cultural values. This ACEC would be managed under the same prescriptions as would Wright and Cottonwood Creeks Riparian and Cultural ACEC under *Alternative 2*, which address needs of cultural resources. OHV use would be allowed on designated roads within the ACEC.

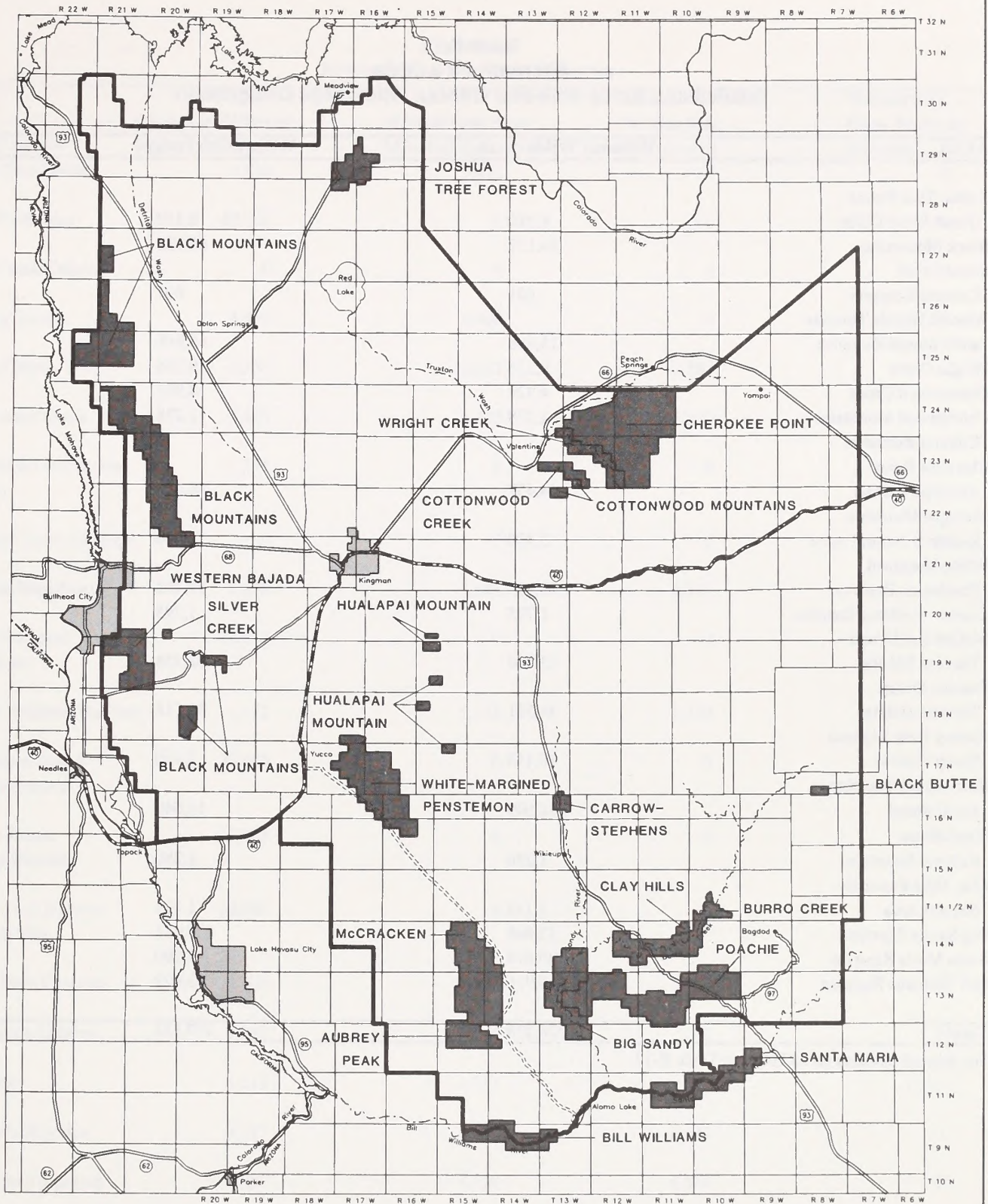
The size of the Burro Creek Riparian and Cultural ACEC would be reduced by dropping the upland watershed on the McElhane allotment and the segment of creek passing through state and private land, all east of Upper Burro Creek WSA.


Black Butte ACEC would include only critically important cultural features. The area would be closed to OHV use, mineral entry, and mineral material disposals. Mineral leasing would be allowed with no surface occupancy. No communication sites would be allowed, no rights-of-way would be authorized, and no recreation facilities would be developed.

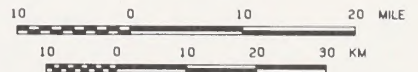
### WILD HORSE AND BURRO MANAGEMENT

Same as *Alternative 2*, except the Cerbat/Black Mountain EIS would be accepted as written, and the wild horse population reduced to 14 animals: 2 horses in Marble Canyon, 6 horses on the west slope, and 6 horses on the east slope. All other horses and places would be removed for adoption through the Adopt-a-Horse program. The remaining horses would be managed until they become extinct. Then the horse use area would lose its herd management area status.

# ALTERNATIVE 3 ACECs



 ALTERNATIVE 3 ACEC



**Table II-11**  
**Alternative 3 ACECs**  
**Public Land Acres With and Without Wilderness Designation**

| ACEC   | Without Wilderness | With Wilderness |
|--|--------------------|-----------------|
| Joshua Tree Forest-<br>Grand Wash Cliffs         | 8,510              | 8,510           |
| Black Mountains                                  | 66,132             | 66,132          |
| Silver Creek<br>Cultural Resource                | 601                | 601             |
| Western Bajada Tortoise<br>and Cultural Resource | 15,868             | 15,868          |
| Wright Creek                                     | 9,236              | 9,236           |
| Cottonwood Creek                                 | 4,924              | 4,924           |
| Cottonwood Mountains<br>Cultural Resource        | 1,278              | 1,278           |
| Cherokee Point<br>Antelope Habitat               | 54,457             | 54,457          |
| Hualapai Mountain<br>Research Natural Area       | 3,300              | 3,300           |
| White-Margined<br>Penstemon Reserve              | 17,493             | 17,493          |
| Carrow-Stephens Ranches                          | 1,795              | 1,795           |
| McCracken Desert<br>Tortoise Habitat             | 23,720             | 22,354          |
| Poachie Desert<br>Tortoise Habitat               | 44,521             | 32,118          |
| Aubrey Peak Bighorn<br>Sheep Habitat             | 10,413             | 2,460           |
| Burro Creek Riparian<br>and Cultural             | 16,049             | 16,049          |
| Black Butte<br>Cultural Resource                 | 1,280              | 1,280           |
| Clay Hills Research<br>Natural Area              | 1,113              | 1,113           |
| Big Sandy Riparian                               | 13,948             | 7,051           |
| Santa Maria Riparian                             | 20,674             | 7,190           |
| Bill Williams Riparian                           | 10,916             | 3,922           |
| <b>Total</b>                                     | <b>326,228</b>     | <b>277,131</b>  |

For mineral closures on ACECs see Table II-12.

**Table II-12  
Alternative 3 Mineral Closures**

| <b>ACEC Name</b>                     | <b>Closed to Mineral<br/>Material Disposal</b> | <b>Withdrawn from<br/>Mineral Entry</b> | <b>Mineral Leasing<br/>No Surface<br/>Occupancy</b> | <b>Withdrawn<br/>from Mineral<br/>Leasing</b> |
|--------------------------------------|--|---|---|---|
| Joshua Tree Forest                   | 8,510  | 5,632                                   | 0   | 0   |
| Black Mountains                      | 47,169   | 0                                       | 0   | 0   |
| Silver Creek Cultural                | 0  | 0                                       | 0   | 0   |
| Western Bajada                       | 8,909  | 8,909                                   | 0   | 8,909   |
| Wright Creek                         | 2,553  | 2,553                                   | 2,553   | 0   |
| Cottonwood Creek                     | 1,435  | 1,435                                   | 1,435   | 0   |
| Cottonwood Mountains<br>Cultural     | 1,278  | 0                                       | 0   | 0   |
| Cherokee Point Antelope              | 0  | 0                                       | 0   | 0   |
| Hualapai Mountains                   | 2,188  | 2,188                                   | 2,188   | 0   |
| White-Margined<br>Penstemon          | 13,980   | 0                                       | 0   | 0   |
| Carrow-Stephens Ranches              | 1,172  | 1,172                                   | 1,172   | 0   |
| McCracken Desert<br>Tortoise Habitat | 20,409   | 0                                       | 0   | 0   |
| Poachie Desert<br>Tortoise Habitat   | 43,886   | 0                                       | 0   | 0   |
| Aubrey Peak Bighorn<br>Sheep Habitat | 10,345   | 0                                       | 0   | 0   |
| Burro Creek Riparian                 | 5,826  | 5,826                                   | 5,826   | 0   |
| Black Butte Cultural                 | 1,280  | 0                                       | 0   | 0   |
| Clay Hills                           | 1,113  | 1,113                                   | 0   | 1,113   |
| Big Sandy Riparian                   | 4,237  | 4,132                                   | 4,132   | 0   |
| Santa Maria Riparian                 | 7,058  | 6,554                                   | 6,554   | 0   |
| Bill Williams Riparian               | 3,508  | 3,454                                   | 3,454   | 0   |
| Campgrounds                          | 640  | 640                                     | 640   | 0   |
| <b>Total Public<br/>Land Acres*</b>  | <b>185,496</b>                                 | <b>43,608</b>                           | <b>27,954</b>                                       | <b>10,022</b>                                 |

\* The acreages were obtained from GIS.

## CHAPTER II

### SUPPORT SERVICES

#### Access

In addition to the actions described in *Alternative 2*, the following actions would be implemented to resolve the access concern.

- Acquire legal vehicular access on the Canyon Station Spring Road across the private and State lands in Sections 26, 27, and 35, T. 23 N., R. 17 W.
- Construct 3 miles of new road in Sections 8, 16, 17, and 21, T. 20 N., R. 17 W., from Interstate Route 40 to the proposed Boulder Spring days use picnic area and developed campground.
- Improve the Walnut Spring Road in Sections 8, 17, 18, 19, 20, 27, 28, 29, 33, and 34, T. 24 N., R. 13 W. - 7 miles.

#### Acquisitions

Appendix 29 describes proposed acquisitions to be obtained through exchanges, donation, or purchase with LWCF funds including land with high values in wildlife, recreation, wilderness, cultural, riparian, and special status plant and animal resources.

#### Law Enforcement

Same as *Alternative 2*.

### ALTERNATIVES CONSIDERED BUT NOT ANALYZED

The alternatives described below were considered by the team and management but were dropped from further consideration after the Preferred Alternative was developed. The Preferred Alternative incorporates the goal and objectives of the biodiversity and recreation alternatives. Alternative 3 includes more recreation development than did the original recreation alternative.

#### Biodiversity Alternative

The goal of this alternative was to manage resources and uses to resolve planning issues. This alternative would place the highest priority on maintaining and improving watershed (natural environment) values. Resource uses would be allowed only if they would not significantly impair such watershed values as soil, water, vegetation, rangeland, wildlife, and riparian habitat.

#### Recreation Alternative

The goal of this alternative was to resolve planning issues, while emphasizing developed and undeveloped recreation opportunities, without significantly impairing watershed values. Use of other resources would be allowed as described for the Biodiversity Alternative.

### RESOURCE MONITORING

Table II-13 contains a proposed monitoring schedule for the resource area.



**Table II-13**  
**Resource Monitoring and Evaluation Plan**

| <b>Element</b>  | <b>Item</b>  | <b>Location</b>   | <b>Technique</b>                           | <b>Unit of Measure</b>   | <b>Frequency &amp; Duration</b>       | <b>Information Warranting Review of Decision or Activity Plan</b>                      |
|-----------------|--|---|--|--|---------------------------------------|--|
| <b>Minerals</b> | Material sales   | All active material sale sites                                  | Standardized appraisal methods             | Tons   | Annually                              | Depletion of material from pit area  |
|                 | Mineral exploration and development activities other than casual use | All 3802 and 3809 activities other than casual use              | Site inspection                            | Acres of disturbance   | Annually                              | Adverse impacts to protected resources and values                                      |
| <b>Lands</b>    | Recreation & public purpose conveyances                              | Various   | Inspect R&PP plan of development (POD)     | Compare on the ground development and uses with POD                  | Every 5 years                         | If lands not being used for purpose granted or following POD, lands reconveyed to U.S. |
|                 | Classification   | North 1/2 of resource area                                      | SCS Soil Survey                            | Map units by soil series   | One-time effort. Ongoing through 1993 | Estimations of suitability and productivity of soils for land use actions              |
| <b>Water</b>    | Soil loss  | Benchmark soils, selected vegetative areas                      | Erosion plots at key locations             | Tons/acre/year   | Pre- and post vegetative treatment    | Soil loss not reduced in treated areas   |
|                 | Quality  | Riparian areas with-Field in SMAs, unique waters, scenic rivers | Field and/or lab analysis                  | Constituents (pH, parts/million, etc.) compared to quality standards | Quarterly or biannually               | Progressive decline in water quality below Arizona standards                           |
| <b>Climate</b>  | Quantity   | Same  | Stream gauging                             | Flow (c.f.s.)  | Same                                  | Significant change in flow   |
|                 | Influence on forage growing condition                                | Strategic sites and NOAA stations                               | Precipitation and temperature measurements | Inches of precipitation  | Quarterly on year-round basis         | Excessively poor or good growing season factors  |
|                 |  |   |  | High and low temperatures  |                                       |  |

**Table II-13 (continued)**  
**Resource Monitoring and Evaluation Plan**

| <b>Element</b>              | <b>Item</b>                | <b>Location</b>                 | <b>Technique</b>                           | <b>Unit of Measure</b>  | <b>Frequency &amp; Duration</b>        | <b>Information Warranting Review of Decision or Activity Plan</b> |
|-----------------------------|----------------------------|---------------------------------|--|---|--|---|
| <b>Vegetative Products</b>  | Available biomass          | Where product is located        | Inventory Cruising                         | Pounds; cords; number of plants   | As demands develop                     | Situations where demand is exceeding sustained yield              |
|                             | Sustained production       | Where product is located        | Growth measurements                        | Pounds; cords; number of plants   | Annually                               | Same  |
|                             | Actual use                 | Where permits are issued        | Field observation; law enforcement patrols | Specific problem areas  | As time allows                         | Recurrent problem areas   |
| <b>Rangeland Vegetation</b> | Shrub utilization          | 58 "I" and "M" allotments       | Key forage plant method                    | Percent of forage removed   | Up to three times annually             | Utilization exceeding use limits                                  |
|                             | Grass and forb utilization | Same                            | Grazed photo class guide method            | Percent of forage removed   | Same                                   | Utilization exceeding use limits                                  |
|                             | Trend                      | Same                            | Pace frequently method                     | Relative abundance (frequency) of plant species and ground cover            | Five year intervals                    | Significant changes in percent frequency of key species           |
| <b>Livestock Use</b>        | Trend                      | Chapparral and Blackbrush sites | Photo plots                                | Visual changes in plant composition   | Five year intervals                    | Significant change to composition                                 |
|                             | Ecological condition       | Resource area wide              | Ecological site inventory                  | Relative abundance of plant species (by annual production); condition class | Initial effort to be completed by 1993 | Areas not meeting desired plant community objectives              |
|                             | Actual use                 | Same                            | Certified actual use reports               | Animal units  | Annually                               | Actual use causing over-utilization                               |



**Table II-13 (continued)**  
**Resource Monitoring and Evaluation Plan**

| <b>Element</b>                | <b>Item</b>                         | <b>Location</b>   | <b>Technique</b>                               | <b>Unit of Measure</b>  | <b>Frequency &amp; Duration</b>           | <b>Information Warranting Review of Decision or Activity Plan</b> |
|-------------------------------|-------------------------------------|---|--|---|---|---|
| <b>Livestock Use (cont.)</b>  | Actual use                          | All grazing allotments  | Field compliance checks                        | Animal units  | As time allows                            | Compliance counts not similar to authorized use                   |
|                               | Site vandalism including OHV damage | Black Mountains<br>Silver Creek<br>Burro Creek<br>Mineral Park<br>Carrow-Stephens Ranches | Site inspection with documentation             | Number of sites disturbed<br>Major disturbances on given site | Annually                                  | Trends indicating increased disturbance                           |
| <b>Cultural Resources</b>     | Natural degradation                 | Same  | Site inspection with photo documentation       | Number of deteriorating features                              | Annually                                  | Significant site deterioration                                    |
|                               | ERMAs                               | Area wide   | Patrol, area inspections                       | Visitor days  | Biannually                                | Data reveals significant user conflicts                           |
|                               | SRMAs                               | 7 sites   | Patrol, visitor registration, traffic counters | Visitor days  | Weekly in heavy use periods, then monthly | Data indicates visitor use significantly higher than expected     |
| <b>Recreation (continued)</b> | Developed campgrounds and RV parks  | 9 sites   | Patrol, visitor registration, traffic counters | Visitor days  | Weekly in heavy use periods, then monthly | Data indicates visitor use significantly higher than expected     |
|                               | OHV                                 | Closed and designated areas   | Aerial reconnaissance and ground patrol        | Number of violators   | Biannually                                | Repeated violations noted   |
|                               | Wilderness study areas              | 18 WSAs   | Aerial reconnaissance                          | Intrusions  | Monthly                                   | Wilderness area designated  |

Table II-13 (continued)  
Resource Monitoring and Evaluation Plan

| Element               | Item                 | Location                                   | Technique                              | Unit of Measure                      | Frequency & Duration | Information Warranting Review of Decision or Activity Plan |
|-----------------------|----------------------|--|--|--------------------------------------|----------------------|--|
| <b>Riparian Areas</b> |                      |  |  |                                      |                      |  |
| Satisfactory Areas    | Ecological condition | Priority riparian areas                    | PDO riparian area condition evaluation | Miles                                | 5 Year intervals     | Decline in condition class                                 |
| Unsatisfactory Areas  | Ecological condition | Priority riparian areas                    | PDO riparian area condition evaluation | Miles                                | 3 year intervals     | No improvement from unsatisfactory to satisfactory         |
|                       | Trend                | Perennial waters along seven creeks/rivers | Greenline transects                    | Change in percent of plant community | Yearly               | Decline in trend   |
| <b>Wildlife</b>       |                      |  |  |                                      |                      |  |
| Desert bighorn sheep  | Population estimate  | Black Mountains, Aubrey Peak Mt. Wilson    | AGFD population survey information     | Estimate total number                | Annually             | Significant population changes                             |
| Pronghorn             | Habitat condition    | Black Mountains, Aubrey Peak               | Utilization studies                    | Percent Utilization                  | Annually             | Significant population changes                             |
|                       | Habitat condition    | Goodwin Mesa Truxton                       | Utilizations                           | Percent Utilization                  | Annually             | Overutilization of key species                             |

Table II-13 (continued)  
Resource Monitoring and Evaluation Plan

| Element                         | Item                | Location                                    | Technique                             | Unit of Measure   | Frequency & Duration | Information Warranting Review of Decision or Activity Plan |
|---------------------------------|---------------------|---|---------------------------------------|---|----------------------|--|
| Wildlife (cont.)<br>Mule deer   | Population estimate | KRA-wide                                    | AGFD population survey information    | Estimate of total                                       | Annually             | Significant population changes                             |
|                                 | Habitat condition   | Cerbat Wild horse area                      | Utilizations                          | Percent Utilization                                     | Annually             | Overutilization of key species                             |
|                                 | Population estimate | KRA-wide                                    | AGFD population survey information    | Estimate of total                                       | Annually             | Significant population changes                             |
| Special Status Species: Animals | Desert tortoise     | Category I & II habitats                    | Square mile plots, 3 mile transects   | Number per square mile                                  | 5 year intervals     | Change in habitat category                                 |
|                                 | Habitat condition   | Category I & II habitats                    | Pace frequency                        | Percent cover composition                               | 5 - 7 year intervals | Change in habitat category                                 |
|                                 | Bald eagles         | Breeding areas<br>Alamo Lake<br>Burro Creek | Arizona bald eagle nest watch program | Number of young fledged<br>Number of active territories | Annually             | Discovery of new nesting territories                       |

**Table II-13 (continued)**  
**Resource Monitoring and Evaluation Plan**

| Element  | Item                             | Location                         | Technique  | Unit of Measure  | Frequency & Duration                                | Information Warranting Review of Decision or Activity Plan   |
|--|----------------------------------|----------------------------------|--|--|---|--|
| <b>Special Status Species: Animals (continued)</b> |                                  |                                  |  |  |   |  |
| Hualapai Mexican vole                              | Habitat condition                | Hualapai Mountains               | Photo points, ocular recon, other to be determined | Not yet determined   | Annually  | Significant habitat deterioration  |
| Peregrine falcon                                   | Breeding areas                   | Music Mountains Cerbat Mountains | AGFD monitoring program                            | Number of active territories<br>Number of young fledged        | Annually  | Discovery of new nesting territories   |
| Common black hawk                                  | Breeding success                 | Burro Creek                      | Nest surveys                                       | Number of active territories<br>Number of young fledged        | Annually  | Significant increase or decline in reproductive success  |
| <b>Special Status Species: Plants</b>              |                                  |                                  |  |  |   |  |
|  | Population and habitat stability | Habitat area wide                | Field survey                                       | Occurrence, number of counts, density, age/class, distribution | Varies by species and degree of security of habitat | Five year downward trend in population numbers, age/class disparity, shrinking distribution or range contraction |
| <b>HAZMAT</b>                                      | Tailings                         | Mineral Park                     | Visual   | Tons   | Annually  | Tailings erosion   |
|  | Water quality                    | Bagdad (Cyprus)                  | Visual   | ppm  | Biannually  | Surface water discharge  |

**Table II-13 (continued)**  
Resource Monitoring and Evaluation Plan

| Element                        | Item  | Location      | Technique                | Unit of Measure           | Frequency & Duration | Information Warranting Review of Decision or Activity Plan |
|--------------------------------|---|---------------|--------------------------|---------------------------|----------------------|--|
| HAZMAT (continued)             | Water quality   | Portland Mine | Visual/ADEQ wells        | ppm                       | Biannually           | Surface water discharge<br>Ground water quality            |
|                                | Cyanide use   | All use sites | Visual                   | None                      | Quarterly            | Cyanide use, heap leach pad design                         |
|                                | Suspected Hazmat Throughout KRA incidences<br>Inventory abandoned mining operations |               | Visual                   | None                      | On demand            | Presence of hazardous materials                            |
| <b>Wild Horse &amp; Burros</b> |   |               |                          |                           |                      |  |
| Burros                         | Population  | Herd area     | Helicopter mark recount  | Number of individuals     | 5 year intervals     | 30% chance in population                                   |
|                                | Forage use  | Same          | Key forage plant method  | Percent of forage removed | Annually             | Grass/shrub utilization greater than 30%                   |
| Horses                         | Population  | Herd area     | Helicopter sight/resight | Number of individuals     | 3 year intervals     | 20% change in population less than 10% juveniles           |
|                                | Forage use  | Herd area     | Key forage plant method  | Percent of forage removed | Annually             | Grass/shrub utilization greater than 30%                   |

Table II-14  
Summary of Impacts by Alternatives

| Resource Impacted                      | Alternative 1<br>(Current Management)   | Alternative 2<br>(Preferred Management)  | Alternative 3   |
|--|---|--|---|
| <b>Minerals</b>                        | <p>With the exception of land disposals planned in the existing MFPs, the continued management as prescribed in this alternative would encourage mineral resource development on the public lands. Lands would generally remain open to mineral resource development with the exception of the NSO leasing status.</p>  | <p>The designation of 14 ACECs would leave 97 percent of the federal minerals open to entry and mineral leasing and 84 percent open to mineral material disposals.</p>   | <p>Most high value mineral potential lands are open to mineral entry, mineral leasing and mineral material disposals. MPOs and mandatory bonding in ACECs constrain mineral developers but would lead to orderly development.</p> |
| <b>Lands</b>                           | <p>Private and state exchange programs have increased the public lands in KRA by 562,100 acres.</p>   | <p>Additional public lands would be identified for R&amp;PP grants and leases. Communication site development would be limited to 9 sites. Three more utility corridors would be designated. New rights-of-way in desert tortoise habitat would cost more.</p> | <p>Impacts are similar to <i>Alternative 2</i> except additional lands would be made available for exchange with the State of Arizona.</p>  |
| <b>Local Economy</b>                   | <p>The impacts to the local economy from the land ownership adjustment program would be minimal.</p>  | <p>The disposal of public land to private ownership would increase the tax base for Mohave County.</p>   | <p>Same as <i>Alternative 2</i>.</p>  |
| <b>Watershed (Soil, Water and Air)</b> | <p>Surface disturbing activities would all cause increased runoff and erosion problems, reduced vegetation cover, reduced soil productivity, and dust production affecting air quality. Development of AMPs, habitat improvement projects, such as exclosures, and spring developments, and seeding of firewood clearcuts would maintain or improve vegetative cover, reduce runoff and erosion, and increase soil productivity. Land acquisition would create opportunities for better watershed management. Watershed improvement projects would be constrained by the presence of sensitive resources.</p> | <p>Limitations on surface disturbing activities would reduce soil loss, improve water quality, and increase the vegetative cover.</p>  | <p>Same as <i>Alternative 2</i>.</p>  |

**Table II-14 (continued)  
Summary of Impacts by Alternatives**

| Resource Impacted          | Alternative 1<br>(Current Management)  | Alternative 2<br>(Preferred Management)   | Alternative 3  |
|----------------------------|--|---|--|
| <b>Vegetative Products</b> | <p>Surface disturbing activities would provide opportunities for salvage of desert vegetation. Land exchanges would cause both losses and gains in vegetative products available for harvest. Suitability of areas for vegetative harvest would be subject to review of compatibility with other sensitive resource values on each site.</p>   | <p>Impacts similar to <i>Alternative 1</i>, except, more area would be available for salvage of native plants. Increased ranger patrols would reduce the illegal removal of native plants.</p>  | <p>Impacts are similar to <i>Alternative 2</i>, except that the additional acreage slated for disposal would cause further losses and gains in lands containing vegetative products available for harvest. The addition of further intensive recreational facilities would create more areas where incompatibility with vegetative harvest will exist. Acreage reductions on 2 ACECs would result in less restrictions on harvests.</p>  |
| <b>Range Management</b>    | <p>Surface disturbing activities would cause reduced vegetative productivity through destruction of vegetation and through decreased soil productivity. Land exchanges would cause changes in grazing preference, changes in ownership of range improvements, and would increase management efficiency where public lands are consolidated. Grazing management and construction of range improvements would be constrained by the presence of sensitive resources.</p> | <p>Impacts would be similar to <i>Alternative 1</i>, except that limitations on surface disturbing activities for mineral exploration and development and vegetative harvest would result in less loss to vegetative productivity and disruption to grazing livestock. Designation of special management areas for unique resource values throughout the resource area would place constraints on construction of range improvements and impose limitations on grazing use on affected allotments. Grazing allotments located in the Cerbat Wild Horse HMA would be subject to grazing preference adjustments where over-obligation of available forage exists.</p> | <p>Impacts would be similar to <i>Alternative 2</i>, except that the additional acreage slated for disposal would further affect grazing preference and ownership of range improvements on 4 additional grazing allotments. The elimination of yucca and firewood harvest would lessen impacts to vegetative productivity. Closure of the Poachie and McCracken ACECs to livestock grazing would affect grazing operations on 6 grazing allotments. Additional intensive recreational areas proposed would increase livestock/public interaction and associated problems. Decreases in acreages for several special management areas would reduce the degree of limitations and constraints pertaining to grazing practices. Setting a herd level of 14 wild horses in the Cerbat Wild Horse HMA would result in less forage competition with livestock.</p> |
| <b>Cultural Resources</b>  | <p>Continuation of current management would harm priority cultural areas with moderate to high losses of cultural properties over the life of the RMP.</p>   | <p>Implementation of <i>Alternative 2</i> would benefit the most significant cultural resources but would result in some losses to vandalism, OHV activity, and natural processes. Impacts would be lower in areas designated as ACECs and SRMAs due to increased management emphasis.</p>  | <p>Implementation of <i>Alternative 3</i> would generally benefit cultural resources by establishing special management areas that would include or design to protect priority cultural resource areas. Reducing the size of the ACECs proposed for <i>Alternative 2</i> would probably be less beneficial especially for the reduced Joshua Tree Forest ACEC.</p>   |

Table II-14 (continued)  
Summary of Impacts by Alternatives

| Resource Impacted           | Alternative 1<br>(Current Management)   | Alternative 2<br>(Preferred Management)   | Alternative 3  |
|-----------------------------|---|---|--|
| <b>Recreation Resources</b> | <p>Surface disturbing activities would impact the visual and aesthetic values of the area. Improved soil, vegetation and habitat conditions would improve the scenic quality of the area.</p>   | <p>Protection for riparian, T&amp;E, and cultural values afforded by management prescriptions associated with proposed ACECs would result in improved scenic values and recreation facilities and would greatly expand recreation opportunities.</p>  | <p>Additional opportunities for recreation in developed campgrounds would be offered to the public but less protection is afforded scenic values on ACECs.</p>   |
| <b>Wildlife Habitat</b>     | <p>The existing vegetative products program significantly affects wildlife habitat, particularly private woodcutting, which is not managed on a sustained yield basis. surface disturbance, soil erosion and increased human presence all contribute to a decline in wildlife habitat quality. Range programs seek to incorporate wildlife needs and objectives, but existing planning documents are outdated and in need of revision, including the incorporation of updated resource information. An aggressive, fast-moving recreation program, including back country byways and biking trails, will increase the presence of humans in traditionally low use areas, disturbing wildlife and lessening the quality of habitat. Intensive recreation use would not be routed away from sensitive species habitat and OHV use would not be controlled. Wilderness designation would generally protect wildlife habitat improvement projects. Existing riparian management would allow short-term deterioration of wildlife habitat but benefit wildlife habitat in the long- term. Impacts to wildlife from Wild Burros are unknown at this time, but once attained, management levels are expected to affect wildlife habitat slightly to moderately, depending on climatic conditions. Follow-up monitoring will be needed for several years to determine actual impacts.</p> | <p>Mineral withdrawals, requiring mining plans of operation (MPO) and mandatory bonding of mining operations, livestock grazing to meet ACEC objectives, restricting rights-of-way in some ACECs, and ACEC management prescriptions would greatly improve wildlife habitat. Establishing wildlife movement corridors would ensure genetic diversity of species. Increased recreation use would increase people-wildlife interactions, but developed sites would serve to mitigate impacts. Proposed horse numbers in the Cerbats would continue to impact wildlife.</p> | <p>Impacts would be similar to <i>Alternative 2</i> except for additional disposal areas have moderate to high wildlife resource values. Elimination of woodcutting and yucca harvest would maintain wildlife habitat in a stable condition. Reducing wild horses in the Cerbats would result in improved wildlife habitat conditions. the sized of special management areas would be reduced, resulting in less protection of wildlife habitat and important adjacent habitats eliminated from aCEC proposals under <i>Alternative 2</i>, would not have additional protection.</p> |

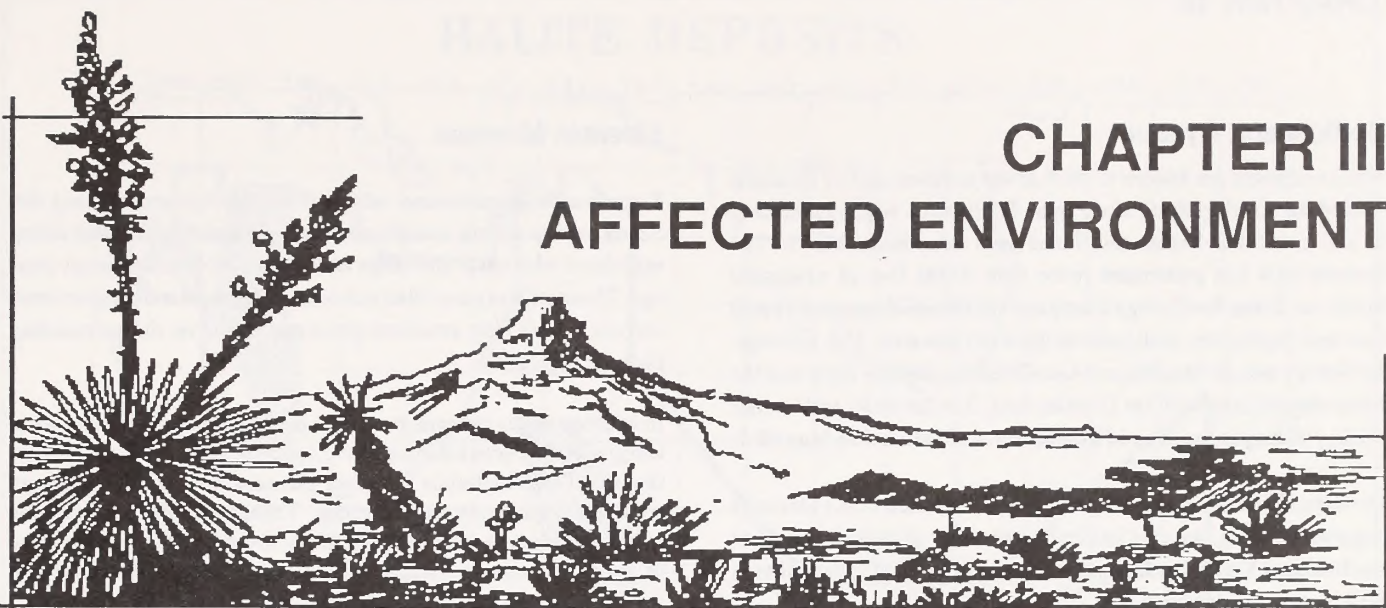


**Table II-14 (continued)  
Summary of Impacts by Alternatives**

| Resource Impacted                      | Alternative 1<br>(Current Management)  | Alternative 2<br>(Preferred Management)  | Alternative 3   |
|--|--|--|---|
| <b>Special Status Species</b>          | <p>Surface disturbing activities would cause minor losses to special status species and/or their habitat and would be minimized through NEPA review. Land exchanges would cause both losses and gains of habitat for special status species. Management of soil and vegetation would cause improvement in habitat condition.</p>   | <p>Impacts are similar to <i>Alternative 1</i>, except a greater degree of protection would be provided for special status plant and animal habitat. This protection includes withdrawals from mineral entry in ACEC proposals, OHV limitations, restrictions on new rights-of-way, and law enforcement patrols. Land exchanges would cause similar impacts to <i>Alternative 1</i>, but would be greater in degree. Increased recreational activity may occur within the Clay Hills ACEC when the Burro Creek camp-ground is developed.</p> | <p>Impacts would be similar to <i>Alternative 2</i>, except that elimination of firewood cutting would eliminate the impacts to speckled milk vetch habitat. Reduction of acreage in 2 ACECs would reduce the amount of acreage providing protection for habitat of special status species.</p> |
| <b>Riparian Area Management</b>        | <p>Mineral development would have short-term impacts on riparian areas. Rights-of-way would not be restricted in sensitive riparian areas. Riparian habitat would not improve in some areas where AMPs are in need of updating. Recreation program activities would focus more human activities in riparian areas. Wildlife habitat management goals and objectives are compatible with riparian area management. Allowing the wild horse population to fluctuate without management would continue the downward trend in condition of riparian areas within wild horse range.</p> | <p>Withdrawal from mineral entry, requiring MPOs and mandatory bonding of mining operations, grazing to meet ACEC objectives, restricting rights-of-way to corridors, and ACEC management prescriptions designed to improve wildlife habitat and riparian area would result in greatly improved riparian conditions. Recreation activities and proposed wild horse numbers would impact riparian-wetland areas.</p>  | <p>Impacts would be similar to <i>Alternative 2</i>, except the smaller riparian ACECs would afford less protection for riparian areas and elimination of the wild horse herd would lead to improved riparian-wetland conditions in the Cerbat Mountains.</p>                                   |
| <b>Special Management Areas</b>        | <p>No special management areas proposed.</p>   | <p>Impacts are outlined in each of the affected resource activities</p>  | <p>Same as <i>Alternative 2</i>.</p>  |
| <b>Wild Horse and Burro Management</b> | <p>The unmanaged wild horse herd would continue to degrade the habitat. No impacts were identified by the burro management programs.</p>   | <p>The proposed horse numbers would result in a viable wild horse population.</p>  | <p>Keeping wild horse numbers to the figure identified in the Cerbat-Black Mountain grazing EIS would eliminate the herd.</p>   |



# CHAPTER III AFFECTED ENVIRONMENT



## INTRODUCTION

Chapter III describes the resources that would be significantly affected by implementing the alternatives only in as much detail as needed to explain the effects of implementation. Where impacts would be slight or nonexistent, the descriptions are brief or omitted. More detailed descriptions of the KRA's resources are in the Management Situation Analysis (MSA), which can be reviewed at the KRA office.

## MINERAL RESOURCES

### Physiography

The KRA covers roughly 2.6 million acres of federal minerals in west-central Arizona, mostly within the Basin and Range physiographic province and parts of the Transition Zone and Colorado Plateau. KRA has widespread igneous and metamorphic mountain ranges generally separated by shallow alluvial basins and plains, with extensive faulting and folding.

### Minerals and Mineral Potential

The KRA's mineral potential has been rated using the guidance in Bureau 3031 Manual. A summary of the rating for all mineral resources is presented in Table III-1. A description of the potential and certainty levels are given in Appendix 30. The data show the highest rating for a resource within the area but does not imply the resource has the potential for uniform occurrence throughout the area.



TABLE III-1  
Mineral Resources Potential Rating\*

| Mineral Resource  | Level of Potential | Level of Certainty |
|-------------------|--------------------|--------------------|
| Coal              | No Potential       | D                  |
| Oil and Gas       | Zero/unknown       | B                  |
| Geothermal        | Low                | C                  |
| Sodium            | High               | D                  |
| Potassium         | High               | C                  |
| Metallic Minerals | High               | D                  |
| Uranium           | Mod                | D                  |
| Non-Metallic      | High               | D                  |
| Common Varieties  | High               | D                  |

\* For rating explanation see Appendix 30.

Source: *Kingman Resource Area files.*

### Oil and Gas

No economic occurrences of oil or gas have been encountered in wells drilled in the planning area, but only 14 wells have been drilled. The first well was completed in 1957, while the last was completed in 1970. Most of the wells are shallow, and no wells have tested rocks below 6,000 feet. Four wells were drilled in the portion of the resource area lying in the Transition Zone in the Red Lake area. Hydrocarbon shows have not been reported from any of the wells drilled.

Ryder (1983) and Butler (1988) rated the oil and gas potential of the KRA as zero or unknown on the basis of widely distributed outcrops and extensive exposures of Precambrian gneiss, schist, granite, and Tertiary volcanic rocks that extend over most of the planning area. If oil and gas accumulations occur, they would be in structural or stratigraphic traps. Because of the absence of deep sequences of Mesozoic and Paleozoic marine sediments and the lack of oil shows reported from KRA wells, the potential for oil and gas accumulations is considered low to zero.

### Sodium and Gypsum

Hallite deposits are known to exist in the northern end of Hualapai Valley occupied by Red Lake Playa. Exploration began in this area in 1958, and four exploratory holes have since been drilled. The deepest well has penetrated more than 4,000 feet of evaporitic horizons. Trans Am Energy Company has obtained approval to drill four new exploratory drill holes in the Red Lake area. U.S. Geological Survey and El Paso Natural Gas Company studies show that the halite deposit may be 10 to 12 miles long, 5 miles wide, and 2 miles thick, yielding as much as 120 cubic miles of halite. See Map III-1.

Geology, drill hole data, and geophysical evidence in the literature suggest the Red Lake area has known reserves of halite. Therefore the Hualapai Valley has high mineral resource potential for halite as well as gypsum deposits.

### Geothermal (areawide)

Evaluation of 33 thermal and nonthermal waters of the Kingman-Williams region has shown no evidence for the existence of large geothermal systems or high temperatures (greater than 150° C) (Hahman, 1978). The temperatures and volumes of each system might be suitable for local space heating/greenhouse applications. Larger volumes of water, if discovered, could supply industrial process water for low-temperature applications (less than 100° C). The potential for the use of the geothermal resource is considered low because of the remote locations of the thermal waters.

### Coal

KRA has no known coal occurrences.

### Metallic And Nonmetallic Minerals

Mineral exploration and production in KRA dates back to the mid 1860s. Metals recovered include copper, gold, iron, lead, manganese, molybdenum, niobium, silver, tungsten, uranium, and zinc. Non-metallic commodities include fluorite, feldspar, lime, sand and gravel, salts, silica, and stone. Other elements or commodities reported but never produced commercially include yttrium, bismuth, barite, lithium, arsenic, antimony and rare-earth elements.

Past production figures for KRA are among the highest in the state in manganese, copper, tungsten, silver, and gold and show significant totals for lead, zinc, and uranium. Appendix 31 summarizes the recorded production from the principal mining districts. Ten districts have recorded cumulative production up to or exceeding \$1 million before 1980 with the Oatman, Walapai, Eureka, and Old Dick districts far exceeding this figure. But for the most part these figures do not reflect the production from relatively recently discovered volcanic and gneiss-hosted precious metals deposits that have become the focus of exploration interest in the region.

Three major copper producers are operating in KRA: Cyprus Bagdad, Cyprus Mineral Park, and Emerald Isle. The Portland Mine (gold) in the Black Mountains halted production in March 1989. Several leaching operations are reprocessing old mine tailings for gold recovery.

### Saleable Minerals

Three major intermontane valleys (Detrital, Sacramento, and Big Sandy) are structural troughs formed by block faulting and tilting associated with basin and range tectonism 17-14 million years (my) ago. These valleys were filled with silt, sand, gravel and conglomerate derived in part from erosional processes acting on the surrounding bedrock highlands.

In addition to the material resources of the three major basins, sand and gravel resources are found along pediments of the major mountain ranges. These materials are often thin and discontinuous and are confined to relatively narrow zones. These resources may serve as material for smaller short-term projects. From the known occurrence of gravel in these environments, these areas have high favorability for the occurrence of this resource. See Map III-2.

KRA has 14 mineral material sale sites for sand and gravel and decorative stone. The most significant use of sand and gravel has been for highway construction along highways 68 and 93.

As population centers continue to grow, so will the demand for mineral materials. Mineral materials sites will need to be designated in or around communities for both commercial and residential uses.

### Leasable Minerals

Only two leasable mineral resources have been explored in KRA: oil and gas and sodium.

Fourteen oil and gas exploration wells have been drilled in KRA since the first well was drilled in 1957, but none have found oil and gas. Disturbance associated with each well, including access, typically totals between 5 and 10 acres. Assuming an average of 8 acres disturbed per well, roughly 112 acres have been disturbed for oil and gas exploration.

Typical well drilling operations may last as long as 4 months, though deep wells may take longer to drill. As no oil or gas has been produced from this area, all exploration disturbance has been reclaimed immediately after exploration. Complete reclamation of this disturbance may take from 5 to 10 years.

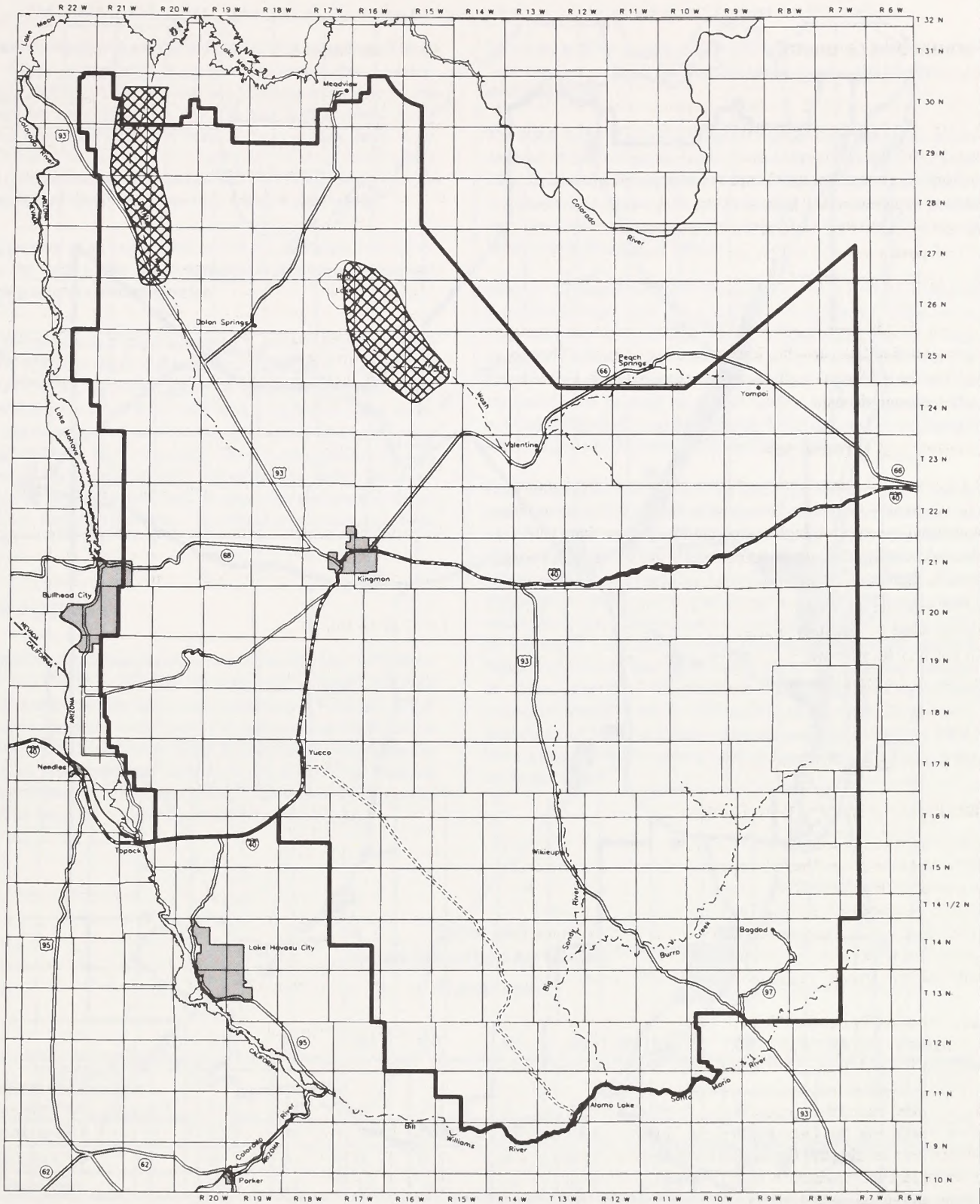
### Locatable Minerals

Locatable minerals are contained in a variety of geologic deposit types, including porphyry copper, epithermal precious metals, flat-fault gold, polymetallic veins, hot springs gold, and volcanic and gneiss-hosted systems. Metals recovered in KRA include copper, gold, iron, lead, manganese, molybdenum, niobium, silver, tungsten, uranium, and zinc.

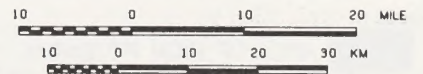
Major copper producers operating in KRA include Cyprus Bagdad, Cyprus Mineral Park, and Emerald Isle. Cyprus Bagdad and Mineral Park mine copper ore from predominantly patented property. Only small areas of public land are involved in these operations.

Western State's heap leach gold operation at the Portland Mine in the Black Mountains halted production in March 1989. Western States is now reclaiming the site. Several small leaching operations are reprocessing tailings piles of old mines for gold recovery.

# HALITE DEPOSITS

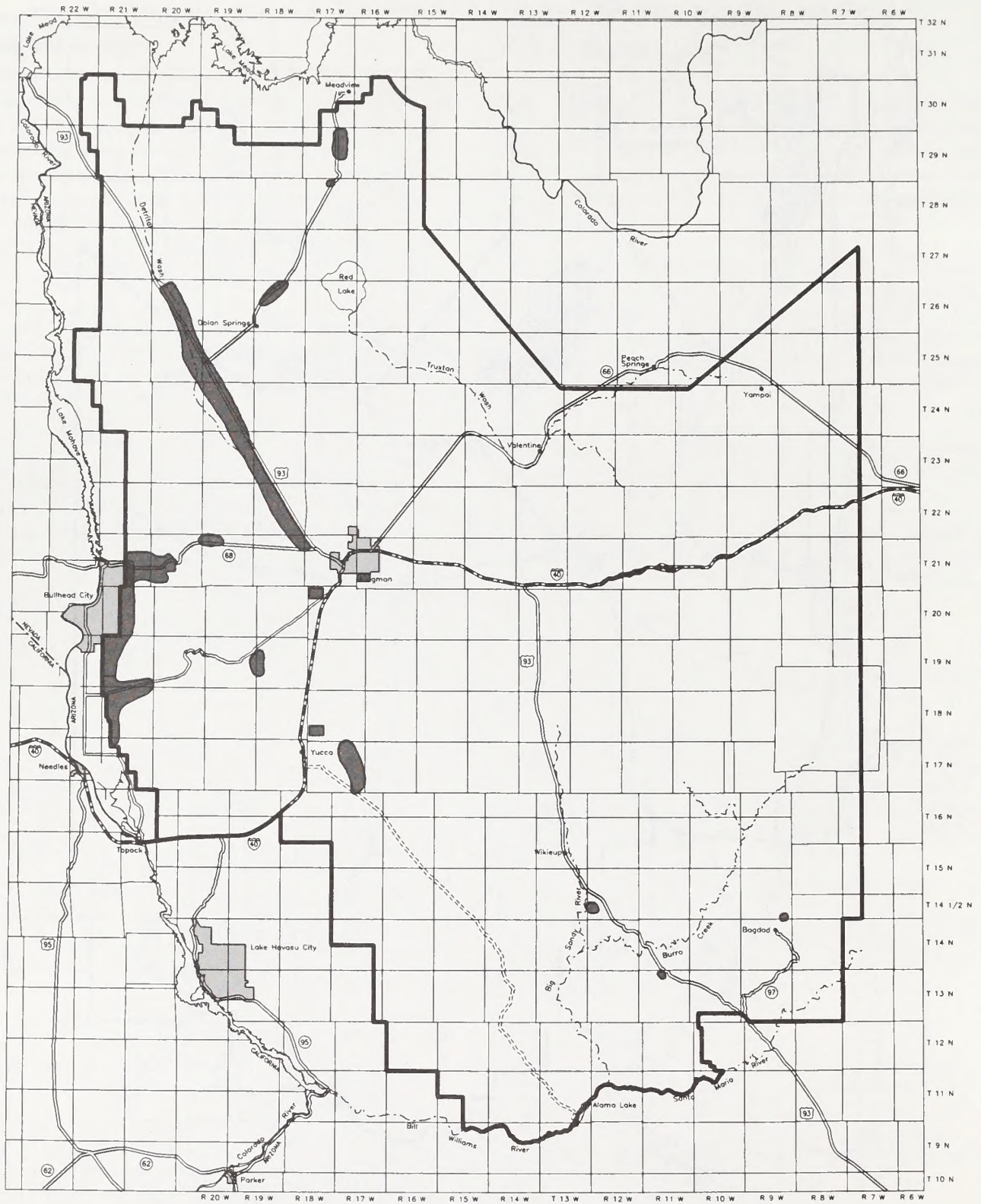


 AREA OF HALITE (SALT) DEPOSIT

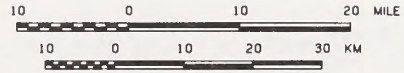


Map III-1

# SAND & GRAVEL



**AREA OF HIGH POTENTIAL FOR SAND & GRAVEL OCCURANCE**



Complete reclamation of a disturbed site in KRA takes from 5 to 15 years. After a compliance inspection determines that a site is completely reclaimed, the operator and claimant are released from obligation for reclaiming that site. A site is determined to be reclaimed when measures have been taken to reshape lands to an appropriate contour, and where necessary, to revegetate the disturbed areas to control erosion. New roads built for mining exploration or development are reclaimed when they are no longer needed.

Over 70 percent of all exploration on KRA's public lands is attributable to the small miner. Most activities involve prospecting and performing annual assessment work.

For the 366 notices and plans submitted between fiscal years 1980 and 1989, 864 acres were disturbed. See Table III-2. Exploration consists of drilling, trenching, and creating temporary access. Sites not yet reclaimed include those undergoing exploration and development and these where future re-entry is planned. Of the 864 acres disturbed, 436 have been reclaimed. The remaining mine sites will be reclaimed when exploration and development cease. Reclamation generally begins immediately or soon after the operator determines that no further exploration is warranted or production has been completed.

**LANDS ACTIONS**

KRA administers roughly 2.9 million acres of public land in Mohave, Yavapai, and Coconino counties. Existing land ownership patterns within KRA are shown on the planning area maps in Volume 2. KRA public land is generally well-blocked in such areas as the Hualapai Mountains, central and southern Black Mountains, Goodwin Mesa in the Aquarius Mountains, and lands bordering Lake Mead National Recreation Area and the Hualapai Indian Reservation. Elsewhere in KRA public lands are scattered in checkerboard patterns.

State land in KRA is generally in a checkerboard pattern except for well blocked areas in the far northwest quarter and southeast of Bullhead City.

The KRA lands and realty program has been responsive to public demand. Much of this demand has come from near Kingman in the form of right-of-way requests, recreation and public purpose (R&PP) applications, and other land use proposals. In addition, the private and state land exchange programs have contributed to blocking up federal lands throughout KRA.

Between 1975 and 1989, 223,291 acres of private lands and 338,815 acres of state lands were added to KRA in designated retention areas. Disposal areas were created for use in land exchanges as trading stock. Public lands in the Golden Valley, Topock, and Bullhead City disposal areas have been either conveyed out of public ownership or are included in pending exchanges and exchange proposals. The remaining disposal areas have public lands that can be exchanged when Arizona BLM resumes its exchange program.

The Payments in Lieu of Taxes Act (PILT) provides money to county governments as compensation for the loss of property tax revenue on tax-exempt federal land. BLM has been delegated the responsibility of administering this act. These payments supplement other federal receipt sharing funds local governments may be receiving. These payments are based on the number of acres of "entitlement land" within the county. Entitlement land consists of land administered by the Bureau of Land Management, National Park System, National Forest System, and land dedicated to use of federal water resource development projects. The payments made to Mohave County have increased from \$971,656 in 1985 to \$997,187 in 1989. These values include all of Mohave County, and not only the portion in KRA. During this time frame several land exchanges added acreage to the entitlement land.

**Table III-2  
Acres Disturbed by Mining  
Fiscal Year**

|   | 80 | 81   | 82 | 83 | 84   | 85 | 86   | 87   | 88    | 89 | Total |
|---|----|------|----|----|------|----|------|------|-------|----|-------|
| <b>Activity</b>                             |    |      |    |    |      |    |      |      |       |    |       |
| Notices submitted                           | 0  | 11   | 12 | 12 | 7    | 8  | 43   | 56   | 69    | 64 | 282   |
| * Avg Acres Dist                            |    | 16.5 | 18 | 18 | 10.5 | 12 | 64.5 | 84   | 103.5 | 96 | 423   |
| Notices Open                                |    | 0    | 0  | 0  | 0    | 0  | 2    | 7    | 25    | 34 |       |
| Acres reclaimed                             |    | 16.5 | 18 | 18 | 10.5 | 12 | 61.5 | 73.5 | 66    | 45 | 321   |
| <b>Total Acres not reclaimed</b>            |    |      |    |    |      |    |      |      |       |    |       |
| * Average of 1.5 acres disturbed per notice |    |      |    |    |      |    |      |      |       |    |       |
| Plan of Operations                          | 2  | 7    | 15 | 3  | 3    | 7  | 5    | 11   | 21    | 12 | 84    |
| Plan-open                                   |    |      | 3  | 1  | 1    | 4  | 2    | 7    | 13    | 9  |       |
| Acres disturbed                             | 5  | 17   | 47 | 17 | 8    | 31 | 10   | 190  | 41    | 75 | 441   |
| Acres Reclaimed                             | 5  | 17   | 47 | 12 | 3    | 14 | 2    | 7    | 7     | 1  | 115   |
| <b>Total Acres not reclaimed</b>            |    |      |    |    |      |    |      |      |       |    |       |

## CHAPTER III

R&PP leases and patents have been granted to several local government entities and nonprofit organizations for recreational or public purposes. A total of 3,184 acres have been appropriated for these uses.

Transportation and utility rights-of-way are granted to qualified individuals, businesses, and government entities for electrical powerlines; roads; and oil, gas, and coal slurry pipelines. Major transportation and utility systems, including an interstate highway, pipelines, and 230kv and high-voltage transmission lines, have been restricted to nine major utility corridors within KRA. These corridors are shown on Map II-6.

Smaller road rights-of-way and local power and telephone lines to residential areas are issued on a case-by-case basis. Right-of-way plans of development are evaluated to determine what stipulations are needed to protect natural and cultural resources. When feasible, BLM issues rights-of-way on existing disturbed areas and encourages joint use.

Rights-of-way have also been issued for communication sites throughout KRA. Twenty sites are now being used for communications facilities. Communication site management plans have been developed for Hayden Peak and Potato Patch I and II. In conjunction with the Hualapai Mountain User's Group, consisting of all the site users, these plans govern allowable uses and road maintenance agreements for these sites.

Other land use authorizations have been granted after environmental evaluation. These authorizations include FLPMA permits and leases for short- and long-term authorizations for uses ranging from beekeeping to authorizing unintentional trespass.

### SOIL AND VEGETATION RESOURCES

The State of Arizona is divided into major land resource areas (MLRA) and subresource areas as described in the Soil Conservation Service (SCS) Handbook 269 and the SCS National Range Handbook. These subresource areas are geographic areas of similar topography, climate, soils, and vegetation. Four MLRAs occur within the KRA, and within these four MLRAs are seven subresource areas. The soils and potential natural vegetation for each of the seven subresource areas are described herein to give a general overview of the KRA (Table III-3). More specific soil and vegetation information follows.

#### Soil Resources

KRA's soils are extremely diverse. Fairly detailed descriptions of soils are included in completed SCS soil surveys in the southern and eastern portions of the planning area. A soil survey is under way for the northern portion of the planning area and should be completed in 1993. Management decisions requiring soil information are based on detailed information from these surveys. A complete description of the KRA's soil is not practical in this document because of the volume of information involved. Specific information may be obtained from the KRA Office or the Soil Conservation Service Office in Kingman.

## WATER AND AIR RESOURCES

### Water Resources

All of KRA lies within the lower Colorado River basin and includes portions of the Bill Williams River basin, Detrital Wash, Truxton/Hualapai Wash, and Sacramento Wash. The following descriptions of BLM water resources focus on floodplain management, water availability, and water quality.

#### Floodplains

A base floodplain is an area expected to be inundated by flood waters on the average of once in 100 years. As to be expected, these floodplains occur throughout KRA, in and next to waterways.

Theoretically, every small wash and gully has a base floodplain associated with it. The task of delimiting each of these, much less managing them, would be impractical. For this reason, flood insurance rate maps (FIRM) prepared by the Federal Emergency Management Agency (FEMA) are generally accepted as the best delineations of base floodplains. The Phoenix District has coverage for most of KRA.

#### Water Quantity

KRA has many small springs, seeps, wells, and stockponds. The most typical uses of water on public lands include wildlife and livestock watering, nonconsumptive recreational uses, maintenance of riparian vegetation, and mining. Future conflicts for water are expected as municipal, industrial, and agricultural consumptive demands increase and compete with nonconsumptive instream flow requirements of important streams.

Legal availability of water is provided by the assertion of public water reserve doctrine and compliance with state water law. BLM has filed for instream flow water rights with the Arizona Department of Water Resources (ADWR) in support of fish and wildlife and recreation beneficial uses on Burro and Francis Creeks in 1984 and the Bill Williams River in 1988. Other important perennial streams in KRA (e.g. Big Sandy River, Wright Creek, Trout Creek) may need this protection in the near future.

BLM will assert its claim to water in conjunction with the State of Arizona adjudication effort. In the adjudication process, the court will determine the legal right to use water, the amount authorized, and the priority of that right. Like any other water user, BLM is required to claim water sources it believes it is entitled to use. Accordingly, BLM will submit claims as required by the court to protect its water uses.

#### Water Quality

Although the Arizona Department of Health Services (ADHS) documented that surface quality was generally good overall in the state (ADHS, 1984), the lack of data was cited as a major hindrance to assessing water quality in Arizona. ADHS called for other agencies to become more involved in water quality assessment and coordination.



Table III-3

Description of Major Land Resource Areas (MLRA) and Subresource Units in KRA

| Mapping Unit  | Representative Soils   | Potential Natural Vegetation   |
|---|--|--|
| <p>MLRA D30 -<br/>SONORAN BASIN AND RANGE<br/>Subresource Area D30-2<br/>(Mohave Desert Shrub)</p>                          | <p><b>Soils</b><br/>Typic Calciorthisds that are deep and range in texture from gravelly sandy loam to gravelly loam make up a large part of the area (Gunsight and Rillito series). Deep Typic Torrifuvents ranging in texture from moderately coarse to fine are along the flood plains and low alluvial fans in the area (Anhuo, Indio, Holtville, Ripley and Glenbar series). Other Typic Torrifuvents occur along the flood plain of the Colorado River that are primarily moderately fine or textured, deep and high in soluble salt accumulations (Gadsen and Indio series, saline phases). Typic Torrorthents (Carrizo and Laposa series) vary in depth from deep to moderately deep and range in texture from cobbly sand to gravelly loam. These soils occur in desert washes, flood plains and low hills and mountains respectively. Typic Durorthids (Cheroni series) and Lithic Haplargids (Gachado series) are shallow, medium textured soils that dominate the volcanic hills and mountains.<br/>Typic Torrripsamments that are coarse textured and deep occur on drainage ways, fans and dunes (Lagumia and Rosita series). Fine textured and deep Ventic Torrifuvents also occur in bottom positions along the Colorado River (Gadsen and Kofa series).</p> | <p><b>Potential Natural Vegetation</b><br/>The soils in this area will generally support a Mohave Desert Shrub plant community. Dominant shrubs on upland soils include creosotebush, white bursage, ratany, Mormonitea, paloverde, brittlebush and various cactus species. Important grasses on upland soils include big galleta, bush muhly, slim tridens, perennial threearns and dropseeds. Bottomland soils, with the exception of the saline soils adjacent to the Colorado river, are dominated by perennial midgrasses including big galleta, bush muhly and perennial threearns. Dominant shrubs on bottomland soils include screwbean mesquite, catclaw acacia, paloverde, burrobush, smoketree and wolfberry. Salt influenced bottomland soils are almost exclusively shrub and tree sites. These soils are dominated by arrowweed, salt cedar, saltbush and mesquite. Salt cedars are not native, but have become naturalized to the area. Wet periods particularly in the spring months will produce large quantities of annual vegetation that is important to livestock operators. These plants are annual grasses and forbs and include lupine, desert indian wheat, primroses, needle grama, six weeks grama and sixweeks fescue.</p> |
| <p>Subresource Area D30-3<br/>(Grand Canyon Desert Shrub)</p>   | <p><b>Soils</b><br/>Typic Torrifuvents, that are deep and range in texture from moderately coarse to fine, make up a large part of the area (Anthony, Gila, Glendale, Vinton, Agua and Grabe series). Some of these Typic Torrifuvents occupy a large portion of valley areas in fan and terrace positions. Typic Haplargids are deep and range in texture from moderately coarse to fine (Continental, Eba, Mohave, Bitter Spring and Comville series). Typic Calciorthisds which are deep, high in lime and generally medium textured occur as rolling hills and plains dissected by numerous desert washes (Latene, Nickel and Whitlock series). Other soils very high in lime are very shallow and generally medium textured. These soils are Typic Paleorthids (Tencee and Cave series). Lithic Torrorthents, ranging in depth from very shallow to shallow and in texture from coarse to medium, occur on low volcanic hills and mountains (House Mountain series). Other Lithic Torrorthents occur on granitic hills and mountains (Cellar series).</p>   | <p><b>Potential Natural Vegetation</b><br/>The soils in this area will support Mohave Desert Shrub and mixed grassland plant communities. Blackbrush can dominate some upland soils in the northern portion of the area. Dominant shrubs on other upland soils include Joshua tree, creosotebush, ratany, yucca, white bursage, winterfat and various cactus species. Dominant midgrasses on upland soils include big galleta, bush muhly, black grama, Indian ricegrass, desert needlegrass, dropseeds, and perennial threearns. Bottomland soils are dominated by perennial midgrasses including big galleta, bush muhly, Indian ricegrass, desert needlegrass, perennial threearns and dropseeds. Fine textured bottom land soils are dominated by alkali sacaton, tobosa, vine-mesquite, fourwing saltbush and shadscale. Wet periods, particularly in the spring months, will produce large quantities of annual vegetation important for livestock forage. Some of the more important annual plants include mares fat, desert indian wheat, other edible forbs, sixweeks grama, sixweeks fescue and red sprangletop.</p>   |
| <p>MLRA D35 -<br/>(COLORADO AND GREEN RIVER PLATEAUS)<br/>Subresource Area D35-1<br/>Colorado Plateau Mixed Grass Plain</p> | <p><b>Soils</b><br/>Torrorthents ranging in texture from coarse to fine and in depth from very shallow to deep make up a large part of the area (Moenkopic, Shalet, Claysprings, Fruitland and Winona series). Deep Torrifuvents ranging in texture from coarse to fine are along the flood plains and low alluvial fans (Tinal, Ives, Tours and Navajo series). Torrripsamments (Sheppard series) occur in much of the area, along with a rather large percentage of rock outcrop. Haplargids (Boysag series) are shallow, well drained, dark colored soils over Kaibab limestone and closely associated with the Winona series. Also in the unit are small areas of Badland (Miscellaneous Area) where geologic erosion keeps pace with soil development in the soft shales of the Chinle Formation. Camborthids (Moenkopic-like soils having a cambic horizon) also are present in the unit.</p>  | <p><b>Potential Natural Vegetation</b><br/>The upland soils in this area will support mid- and short-grasses dominated by needlegrasses, Indian ricegrass, galleta and blue grama. The bottom soils are characterized by alkali sacaton, western wheatgrass and vine mesquite. Important shrubs and half shrubs are fourwing saltbush, winterfat, and Bigelow sagebrush. Some scattered open savannahs exist on shallow soils and are dominated by one-seed juniper and cliffrose.</p>   |

Table III-3  
Description of Major Land Resource Areas (MLRA) and Subresource Units in KRA

| Mapping Unit   | Representative Soils  | Potential Natural Vegetation  |
|--|---|---|
| <p>Subresource Area D35-3<br/>(Colorado Plateau<br/>Sagebrush -Grassland)</p>  | <p>Moenkopic soils are very shallow, and shallow, well-drained, moderately coarse to medium textured soils over sandstone and sandy shale. Shale soils are shallow and very shallow, well-drained, moderately fine-textured soils residual on shale. Claysprings soils are shallow, well-drained, fine-textured soils over Chinle Shale. The Fruitland soils are deep, well-drained, moderately coarse textured soils formed in moderately coarse, calcareous alluvial sediments derived from sandstone, shale, siltstone and deposits of Quaternary alluvium. The Winona soils are very shallow, shallow well-drained, carbonatic soils over Kaibab limestone. The coarse textured Trail soils, moderately coarse-textured lvs, moderately fine-textured Tours and fine-textured Navajo soils are well-drained, deep soils formed in recent alluvium. Sheppard soils are coarse-textured, somewhat excessively drained, deep soils formed in coarse-textured, wind-worked materials.</p> <p><b>Soils</b><br/>Lithic Torriorthents, Lithic Torripsamments, Ustic and Typic Torrifluents, Ustic Torripsamments, Lithic Ustollic Haplargids and Aridic and Lithic Arguistolls are the major soils in the area. Lithic Torriorthents (Winona, Moenkopic and Phute) are shallow and very shallow, loamy and sandy soils on limestone, sandy shale and sandstone uplands and plateaus respectively. Lithic Torripsamments (Schooner) are shallow and very shallow sandy soils on sandstone uplands. Ustic and Typic Torrifluents (Redbank, Navajo and Tours) are deep, coarse and fine textured soils on flood plains. Ustic Torripsamments (Mespun) are deep sandy soils on uplands. Lithic Ustollic Haplargids (Daze) are very shallow soils with clayey subsols.</p>  | <p><b>Potential Natural Vegetation</b><br/>The soils in this area will support mid- and short-grasses as well as shrubs. Sparse stands of juniper and pinyon are found on some sites. Indian ricegrass, needle and thread, and western wheatgrass are the dominant cool-season grasses. Galleta, black grama, blue grama and sand dropseed are the major warm-season grasses. Winterfat, fourwing saltbush and big sagebrush are the important shrubs in this area.</p>   |
| <p>MLRA - D39<br/>ARIZONA AND NEW MEXICO<br/>MOUNTAINS<br/>Subresource Area D39-1<br/>(Mogollon Plateau Coniferous<br/>Forest)</p> | <p><b>Soils</b><br/>Mollic Eutroboralfs are probably the most extensive soils in this subresource area. They are moderately deep to deep, stony to cindery, and well drained, and have textures ranging from loam to clay. Mineralogy is both mixed and montmorillonitic. Dandrea soils, formed on schist, are in a subhumid moisture regime and are generally dry in May and June. The loamy-skeletal (Ess) soils, fine-loamy (Sponseller) soils and fine (Brolliar) soils are formed on basalt, cinders and bombs. They are in a subhumid climate and generally dry in May and June. The fine (Hogg) soils are formed on sandstone.</p> <p>Cryoborolls occur on the higher mountains and in concave sites on the high plateaus where air drainage is restricted. The Argic Pachic (Gordo) soils have gravely loam textures and are on the steep high mountain slopes. The clayey-skeletal (Tatyeec) soils are on nearly level to moderately sloping meadows at high elevations. Extensive areas of Cryoboralfs have been formed in sandstone and exposed areas of cherty limestone. The clayey-skeletal, Glosic (Soldier) soils have formed in a cherty limestone member of the Kaibab formation. They are deep and moderately well drained. The fine (McVickers) soils have formed on sandstone and are deep and well drained. They are usually dry in May and June.</p> <p>The frigid, Typic Ustorthents are gravelly, moderately coarse textured soils formed on granitic geologic materials. The Mirabal soils are moderately deep, well drained and are not dry for more than half of the growing season in most years. Moderately coarse textured, gravelly and cobbly Cryorthents occur on the steep slopes of the higher mountains. Baldy soils are deep and well drained. Precipitation is generally 30 inches or more per year.</p> | <p><b>Potential Natural Vegetation</b><br/>Ponderosa pine dominates the area. Other important tree species include Gambel oak, Arizona walnut, sycamore, aspen, Douglas fir, and blue spruce. Important understory grasses include Arizona and sheep fescue, mountain and screwleaf muhly, Junegrass, mutongrass, pine dropseed, and dryland sedges. On wet-and-dry meadows dominated by cool-season grasses, rushes and sedges occur, scattered throughout the area. Principal plant species in these meadows include reedtop, hairgrass, bluegrasses, rushes, sedges, willows, wildrose, and other forbs.</p> |

Table III-3 (continued)  
Description of Major Land Resource Areas (MLRA) and Subresource Units in KRA

| Mapping Unit  | Representative Soils   | Potential Natural Vegetation  |
|---|--|---|
| <p>Subresource Area D39-4<br/>(Arizona Interior Chaparral - Grassland)</p>  | <p><b>Soils</b><br/>Dominant soils are Orthents - very shallow and shallow, gravelly and cobbly, medium and moderately fine textured, thermic soils with mixed mineralogy. They are Lithic Torriorthents (Cellar, Courthouse, House Mountain and Moano series). The Cellar soils are formed on granite and granite-related rocks on hills and low mountains with rolling to steep slopes. The Courthouse soils are formed on sandstone on undulating-to-steep hills and low mountains. The House Mountain soils are formed on basalt and related rocks and are on nearly-level to steep plains, hills and low mountains. The Moano soils are formed on schist and are on rolling-to-steep hills and mountains.</p> <p>Ustolls are nearly as prevalent as the Orthents and are very shallow and shallow, gravelly and cobbly, medium textured, thermic and mesic soils with dark surfaces. They are Lithic Haplustolls (Faraway and Tortugas series). The Faraway soils are formed on rhyolite, andesite and granitic, dominantly acid igneous rocks on hills and low mountains with rolling-to-very-steep slopes and mixed mineralogy. The Tortugas soils are formed on dolomitic limestone on undulating-to-steep hills and low mountains with carbonatic mineralogy. Ustolls - shallow, gravelly and cobbly, fine-textured soils with mesic temperature regimes and montmorillonitic mineralogy, are important. They are Lithic Argiustolls (Luzena and Cabezon series). The Luzena soils are formed on hills and low mountains of andesite, rhyolite and associated tuffs with undulating-to-steep slopes. The Cabezon soils are on nearly-level to rolling basalt plains. Cumulic Haplustolls (Lynx series) are present along the swales and drain age ways. Lynx soils are deep, moderately-fine textured and nearly level with mixed mineralogy and mesic temperature regimes.</p> | <p><b>Potential Natural Vegetation</b><br/>Potential plant communities are mixed shrub-grasslands. The percentage of shrubs increase on sites with shallow soils and in areas with rock outcrops. Important upland grasses include Junegrass, bottlebrush squirreltail, needle and thread, desert needlegrass, sideoats, black, blue and hairy grama, cane bluestem, muttongrass, New Mexico needlegrass, tobosa and curly mesquite. Bottomland soils are characterized by grassland plant communities dominated by western wheatgrass, sacaton, vine mesquite, spike muhly, sideoats grama and sedges. Major shrubs are birchleaf mountain mahogany, desert ceanothus, sugar sumac, skunkbush sumac, shrubby buckwheat, turbinella oak, Emory oak, and Arizona white oak, manzanita, silktassel, canotia, and jojoba.</p>  |
| <p>MLRA - D40 - CENTRAL<br/>ARIZONA BASIN AND RANGE<br/>Subresource Area D40-3<br/>(Central Arizona Desert Grassland-Shrub)</p> | <p><b>Soils</b><br/>The soils in subresource area D40-3 are thermic. Lithic Haplargids (Lehmans series), Lithic Torriorthents (Cellar and House Mountain series) and Rock outcrop make up about 60 percent of the area. Haplargids (Mohave, Tres Hermanos and Vekol series), and Calciorhids (Latene and Rillimo series) comprise about 30 percent of the area. Torrifluvents (Glendale, Gila, Anthony and Vinton series) make up the final 10 percent.</p>  | <p><b>Potential Natural Vegetation</b><br/>The soils in this area will generally support a short- and mid-grass grassland and a mixed Mohave desert shrub-grassland. Upland soils are dominated by grass species such as big galleta, bush muhly, black grama, sideoats grama, desert needlegrass, slim tridens and dropseeds. Dominant upland shrubs include yucca, winterfat, woolly and white bursage, flattop buckwheat, shrubby buckwheat, Mormon tea, and range ratany. Paloverde and Joshua are the dominant tree species. Low-lying soils receive extra run-in moisture and are dominated by midgrasses, including tobosa, big galleta, bush muhly, vine mesquite, western wheatgrass and sideoats grama. Important shrubs include catclaw (acacia), desert willow, twinberry, false mesquite, Mormon tea, and fourwing saltbush.</p> <p>The production of annual grasses and forbs may be important, some years, following good precipitation periods.</p> |

## CHAPTER III

BLM generally monitors water quality where it has special resource management responsibility for fish, wildlife, riparian vegetation, and developed recreation. In 1983 BLM contracted with ADHS for a study in Burro Creek to detect effects from mining on water quality. The Phoenix District currently implements a Unique Waters compliance monitoring program that began on Burro and Francis Creeks in 1986.

Non-point source pollution problems appear to be the most significant type of water pollution in KRA. Surface pollution typically includes turbidity (sediment), heavy metals, total dissolved solids, nutrients, and bacteria. Potential sources of these pollutants from BLM lands include natural dissolution of soil salts, livestock grazing, recreation (OHVs and dispersed camping near water), and mining.

### Air Resources

Under the National Ambient Air Quality Standards (NAAQS), most BLM-administered lands within KRA are rated Class II. BLM manages no Class I areas, but one Class I area lies contiguous to KRA-Grand Canyon National Park. (See Section 162 of the Clean Air Act, as amended in 1977.)

## WATERSHED MANAGEMENT

The U.S. Geological Survey has delineated watershed management units for the State of Arizona, based on topographical features (see USGS Hydrologic Unit Map-1974, State of Arizona). These units are generally large areas. For more effective resource management, KRA determined allotment boundaries to be the logical management boundaries for site-specific watershed treatments. Current watershed condition has been evaluated on each KRA grazing allotment. This evaluation considered current erosion conditions, potential erosion hazards, and the soil temperature/moisture regime.

Appendix 15 lists the assigned watershed category for each KRA grazing allotment. The watershed categories are defined in Table III-4.

**Table III-4**  
**KRA Watershed Categories**

| Category | Description  |
|----------|--|
| I        | Watershed units are in satisfactory erosion condition and are not especially susceptible to wind and water erosion.  |
| II       | Watershed units are in satisfactory erosion condition but are susceptible to wind and water erosion following disturbance.                                   |
| III      | Watershed units are in unsatisfactory erosion condition, but because of the soil temperature/moisture regime these soils would be unresponsive to treatment. |
| IV       | Watershed units are in unsatisfactory erosion condition, and the soils would be responsive to treatment.   |

Allotments in either Category I or II are in satisfactory or better erosion condition, and these watersheds are functioning properly. Soil cover is adequate for that range site. Moderate peak runoffs are maintained because of good infiltration and the absence of numerous gullies. Erosion is within acceptable levels. But Category II watersheds are particularly vulnerable to surface disturbances. Management of Category II watersheds would therefore focus on preventing undue surface disturbances.

Allotments in Categories III and IV are in unsatisfactory erosion condition. Typified by poor soil cover; accelerated erosion; and increased runoff, sediment yield, and salinity discharge, these allotments contribute to the degradation of both air and water quality. Watersheds in Category III are too hot and dry for land treatments, such as seedings, to be successful. Category IV watersheds have climatic conditions that make them suitable for rehabilitation.

Soil salinity was not a classification criterion in this categorization. Rather, the relationship between erosion condition and sediment yield was inferred to have yet another relationship with salinity discharge. A highly eroded watershed will carry more sediments downstream. Where the watershed has saline soils, those sediments will also be saline. Salinity becomes important in planning management of erosion-prone or debilitated watersheds.

The exact locations and extent of KRA's salt-affected soils will be determined from ongoing and unpublished soil survey data as it is released. Map III-3 shows approximate locations of KRA's slightly saline areas.

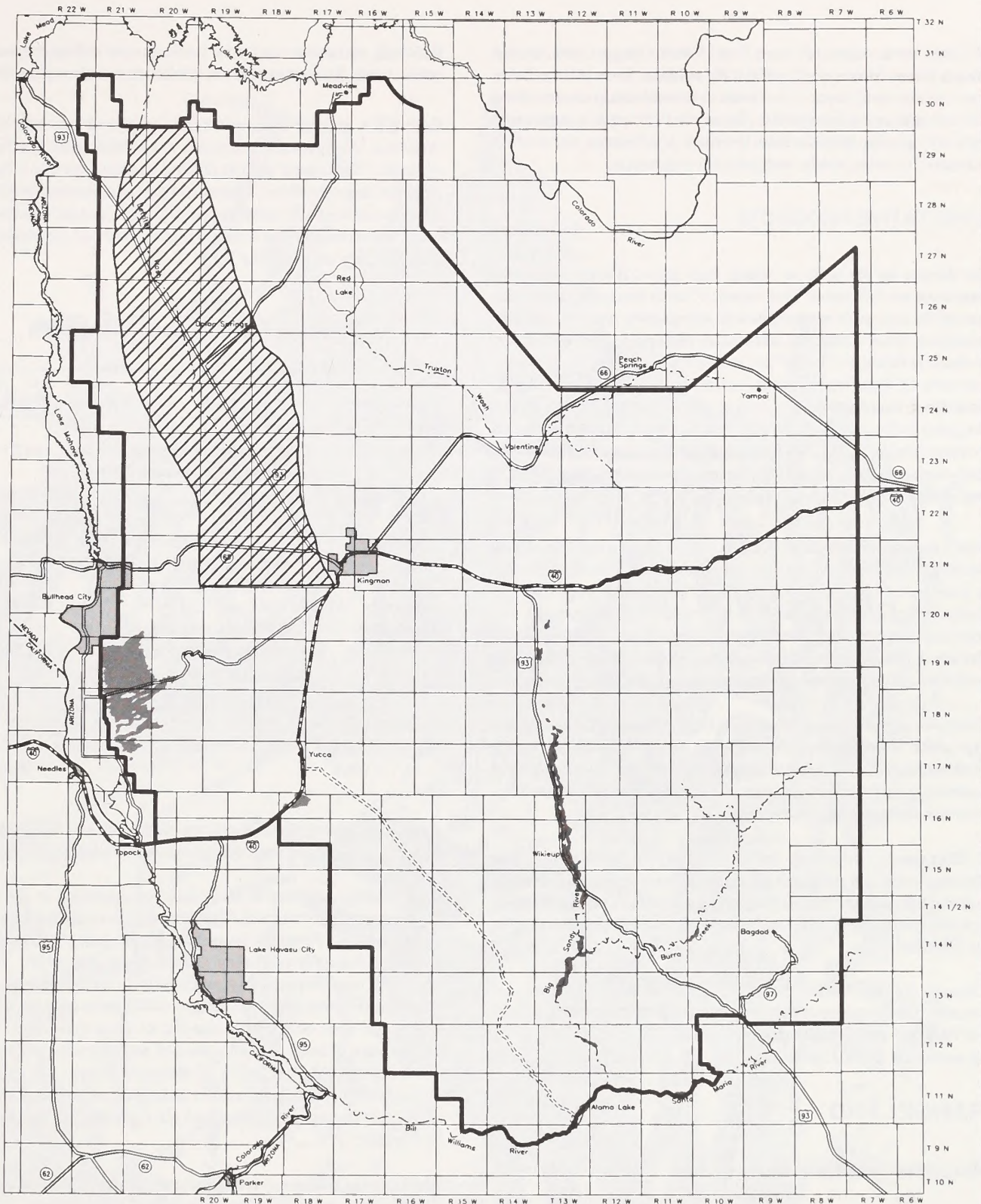
Slightly saline soils occur in Detrital Valley, Sacramento Valley, Dutch Flat, Grapevine Wash, and Little Colorado River. Exact acreage figures can be obtained on completion of the ongoing soil survey.




Erosion in KRA is caused by both wind and water. But wind erosion is only occasionally severe, when open, bare, or almost bare desert areas become dry and subjected to strong winds. Erosion due to water action in KRA is relatively minor except for localized sheet and gully erosion. The basic potential for water erosion is generally low because of the following characteristics.

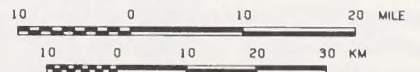
1. A lack of steep slopes. Most topography in KRA consists of moderately to strongly sloping uplands, dissected with coalescing alluvial fans and nearly level, broad valley floors interrupted by several low to moderate elevation mountain ranges;
2. Soils of a relatively coarse texture with a moderate to moderately rapid permeability rate; and
3. A relatively low annual rainfall, of which more than half falls as gentle winter rains.

Areas of severe/critical erosion occur on alluvial fans near Wikieup, the Big Sandy River Valley, the Burro Creek area, the lands next to the Santa Maria River/Alamo Lake areas, the Dutch Flat area and small areas in the Sacramento, Detrital, and Hualapai Valleys, Hackberry, and Truxton. Erosion conditions in most of the areas in the severe/critical class have been caused by geologic structure formations, drought, wind, and overuse by livestock.

# SOIL SALINITY



-  SURVEYED SOILS – NON TO SLIGHTLY SALINE
-  SURVEYED SOILS – SLIGHTLY TO STRONGLY SALINE
-  UNSURVEYED SOILS WITH POTENTIAL FOR SALINITY



Map III-3

## CHAPTER III

Riparian zones, especially along Burro Creek, Conger Creek, the Big Sandy River, Trout Creek, and the Santa Maria River/Alamo Lake, have several small areas of moderate to severe/critical erosion along streambanks and in floodplains. Erosion in these areas is aggravated by heavy grazing pressure from livestock, wild burros, and wildlife attracted by water, shade, and palatable vegetation.

### VEGETATIVE PRODUCTS

As diverse as the soils in which they grow, KRA's vegetative resources are influenced by a variety of other interrelated environmental factors, such as precipitation, topography, and management practices. KRA's southern and eastern portions have been mapped in detail to delineate "range" or "ecological" sites, which, as unique products of their environmental factors, differ in their ability to produce a characteristic vegetative community. Ecological site mapping in the northern portion of the KRA is ongoing and should be completed in 1993. This ecological site information provides the basic ecological data for planning the use, development, rehabilitation, and management of KRA's rangeland.

Aside from the livestock production demand for forage a variety of other KRA native plants are also in demand. One of the most notable is firewood. Public lands support fairly large stands of pinyon and juniper trees in the northeast near Truxton. The extent of this resource has not yet been determined, in part because the demand for firewood has only recently escalated. KRA issues 400 private woodcutting permits and 12 commercial permits each year.

A large demand has also developed for *Yucca schidigera*, a large desert-type plant. This plant is used as a water retention agent, a livestock feed supplement, and for fertilizer and plant mulch. KRA has issued a permit to harvest 50 tons of this plant each year. The extent of this resource has not yet been inventoried.

A large demand also exists for native plants for landscaping. This demand comes not only from commercial landscapers and nurseries but also from individuals wanting to landscape their yards. KRA has limited these requests to salvage operations where land is destined to be disturbed.

Demand for hardwoods such as catclaw acacia, mesquite, and ironwood has also increased in recent years. These woods are desired for firewood and also for artistic purposes. These species occur on an extremely limited basis within KRA.

### RANGELAND

#### Rangeland Management

At present, KRA has 57 ranch operators holding permits or leases on 83 grazing allotments. See Map III-4. A total of 135,411 animal unit months (AUMs) of active grazing use is allocated to these allotments. Roughly 2,279,000 acres of public land are being grazed in KRA. Most of the grazing use involves cattle, but some involves horses. Past licensing has also included a small amount of sheep or goat grazing.

Ranching operations tend to be yearlong cow-calf enterprises on public lands. Some ranchers use public lands only seasonally.

Each KRA grazing allotment has been placed into one of three "selective management" categories to establish priorities for management. The criteria used in placing an allotment into a category included range condition, present and potential resource production, resource use conflicts, and the opportunity for economic returns from public investments. The three categories used and the objective for each category are shown in Table III-5.

Table III-5  
Selective Management Categories

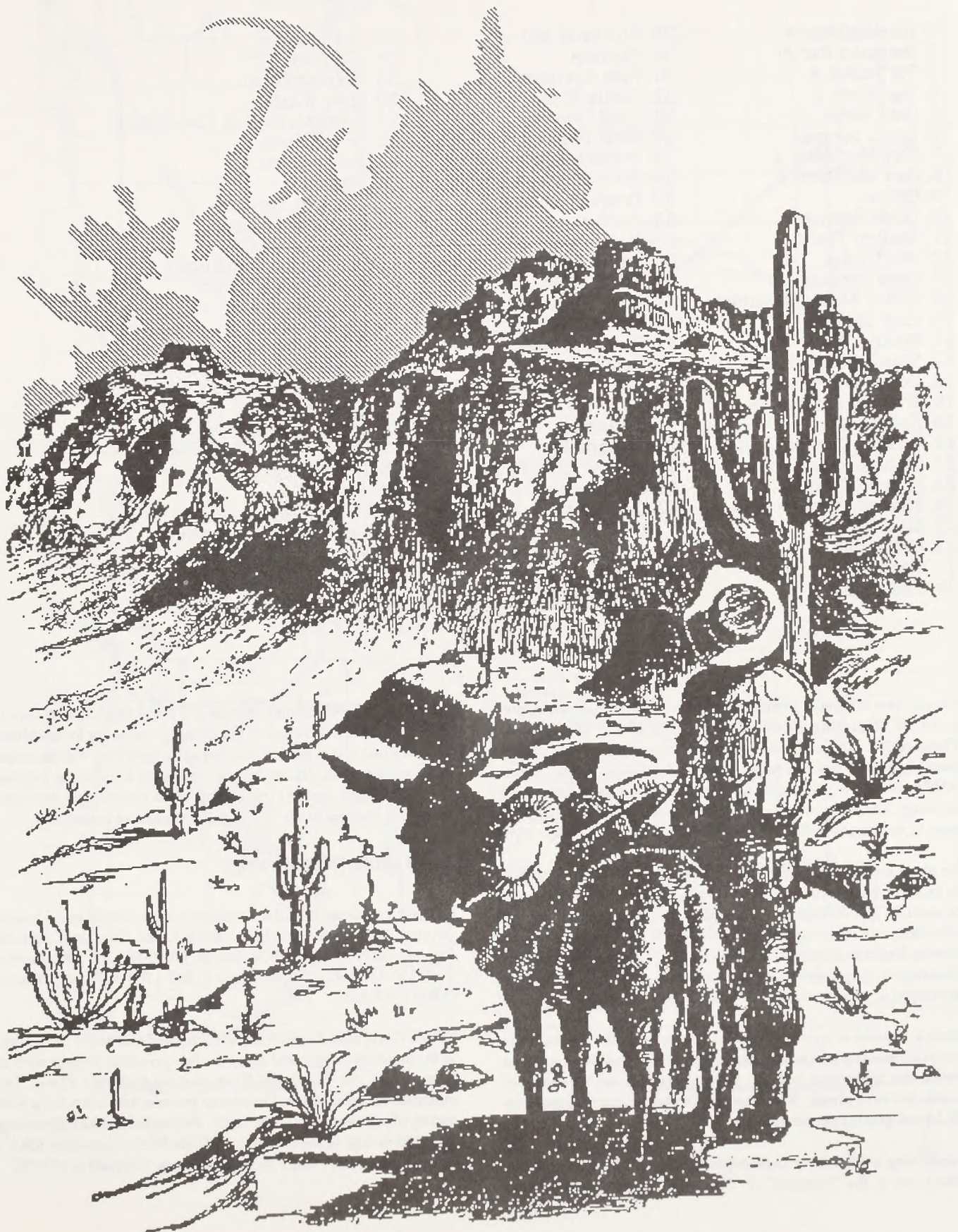
| Category  | Objective   | No of Allotments |
|-----------|---|------------------|
| Maintain  | Maintain current satisfactory resource conditions             | 12               |
| Improve   | Improve current unsatisfactory resource conditions            | 46               |
| Custodial | Manage custodially, while protecting existing resource values | 24               |

Source: KRA files

A complete listing of KRA grazing allotments and the categories into which they have been placed can be found in Appendix 1.

Each grazing allotment is also classified according to the type of forage available to livestock. Two classifications are used: perennial and ephemeral. Perennial forage is available consistently each year through perennially producing grasses, forbs, and shrubs. Ephemeral forage consists of annual grasses and forbs that become productive only in response to adequate spring moisture and warm temperatures. Allotments have been placed into one of these two categories or a combination of both. The allocation of active grazing preference is based only on the availability of perennial forage. On ephemeral allotments, grazing is authorized only when ephemeral forage is abundant. The designation for each KRA grazing allotment appears in Appendix 1.

BLM grazing preference is allocated to qualified parties who own or control "base property" that meets federal requirements. In KRA, livestock water serves as base property for most authorized grazing use. On scattered public land parcels at the KRA's far eastern end land serves as the qualifying base for the grazing preference. The type of qualifying base property for each KRA allotment is shown in Appendix 1.



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| 21. Crozier Canyon        | 49. Boriana B         | 77. D.O.R.                   |
| 22. Canyon Ranch A        | 50. Happy Jack Wash   | 78. Hot Springs              |
| 23. Canyon Ranch B        | 51. La Cienega        | 79. Alamo                    |
| 24. Mineral Park          | 52. Diamond Joe       | 80. Palmerita                |
| 25. Mud Springs           | 53. Big Sandy         | 81. Santa Maria Community    |
| 26. Gediondia             | 54. Cane Springs Wash | 82. Primrose                 |
| 27. Portland Springs      | 55. Sandy             |                              |
| 28. Thumb Butte           | 56. Little Cane       |                              |

Twenty-two allotment management plans (AMP) have been prepared for 26 grazing allotments, completed mostly in the 1980s. These AMPs call for developing range improvements and implementing pasture rotation to provide rest for forage plants. These AMPs are in various stages of implementation, and some need revising. Appendix 1 shows the allotments with AMPs. AMPs still need to be completed for 31 categories I and M allotments.

An abundance of range improvement work has taken place in KRA to improve the effectiveness of livestock grazing. Most allotment boundaries are defined by fences except where natural barriers effectively control livestock. Many allotments are further divided by interior fences to form pastures, which control livestock movement. Numerous springs, wells, dirt tanks and rain catchments have been developed to provide water for livestock and wildlife.

Several vegetation treatments have been undertaken to change the composition of the plant community. These treatments have involved herbicides, prescribed burning, roller chopping, and reseeding of exotic or native plants. Range improvements have been funded by BLM and grazing permittees.

Monitoring studies have been established on all 57 KRA grazing allotments in the "Improve" or "Maintain" selective management

categories. These studies include (1) collecting climate data to determine the effectiveness of the growing season for forage plants, (2) collecting actual grazing use data to be compared with measures of forage removed, (3) conducting utilization transects to estimate forage removed, and (4) conducting trend transects to determine long-term changes in the health of the vegetative community.

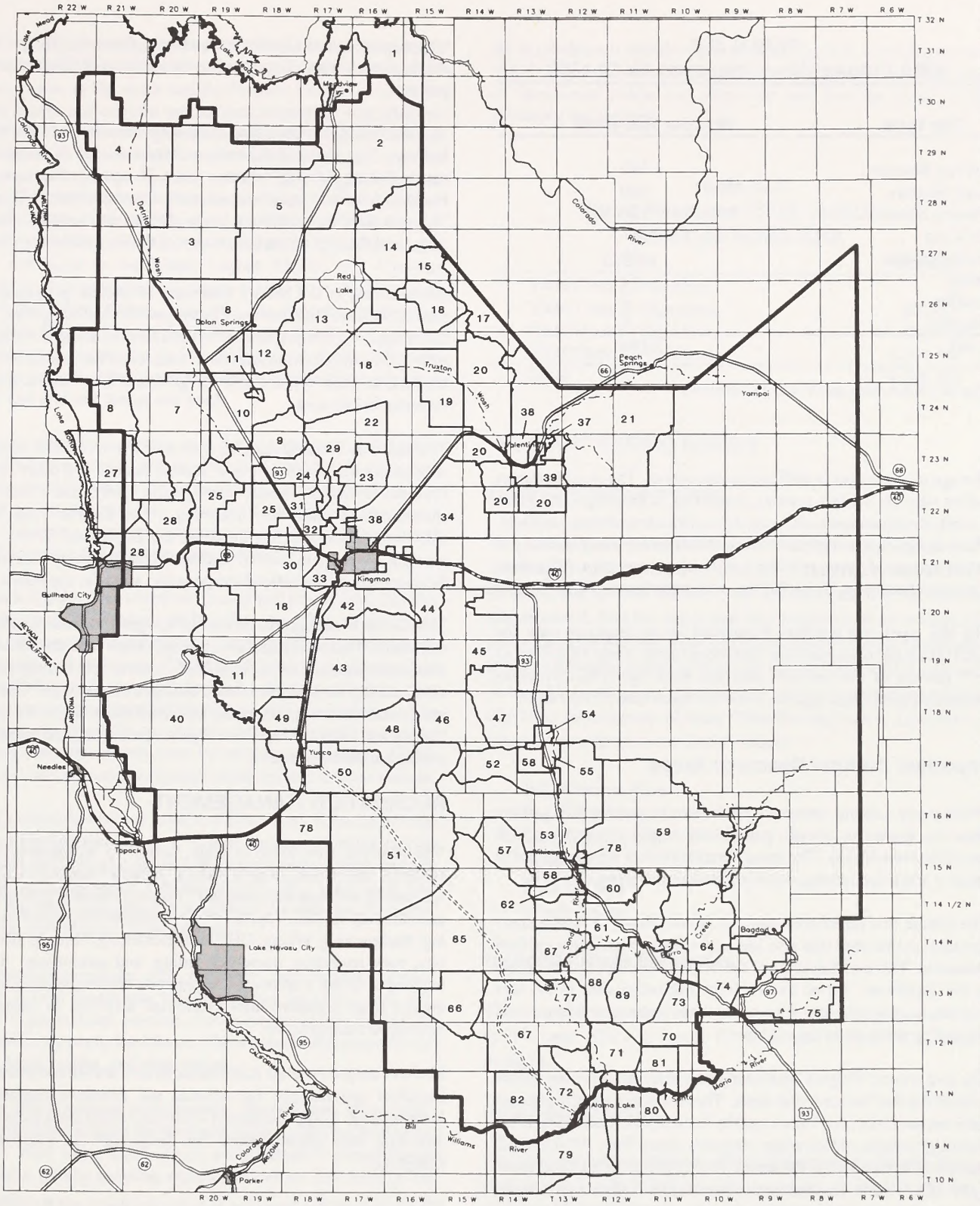
### CULTURAL RESOURCES

Cultural resources in KRA developed from centuries of human occupation, which have been divided into five time periods: Paleoindian (9500-7000 BC), Archaic (7000 BC-AD 500), Formative (500-1300 AD), Protohistoric (1300-1700 AD), and Historic (1700-1945 AD).

KRA cultural sites are generally concentrated near seeps and springs in the mountain ranges and along the few perennial streams such as Burro Creek, the Big Sandy River, and the Colorado River. The mountainous areas are also important because they provided a wide variety of plant and animal resources. Prehistoric and historic mining occurred mainly in the mountains. Table III-6 summarizes KRA's cultural resources, mainly in the mountains, recorded as of 1990.

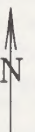


# ALLOTMENT BOUNDARIES



— ALLOTMENT BOUNDARY

10 0 10 20 MILE  
10 0 10 20 30 KM



**TABLE III-6**  
**KRA Cultural Sites Recorded As Of 1990**

| Site Type         | Number Recorded |
|-------------------|-----------------|
| Artifact Scatters | 740             |
| Rock Shelters     | 140             |
| Historic Sites    | 130             |
| Rock Art          | 37              |
| Rock Features     | 30              |
| Trails            | 12              |
| Pueblos           | 7               |
| Quarries          | 6               |
| <b>Total</b>      | <b>1,102</b>    |

*Source:* KRA files and Class I overviews

The age of most sites is difficult to determine. The most common Indian sites are artifact scatters, consisting of nondiagnostic lithic (stone), sherd (ceramic), and groundstone (metate and mano) artifacts. Much of the lithic and groundstone technology remained unchanged for thousands of years, making it difficult to date sites. The most common sherd type, Tizon Brown, was made from 700-1870 AD.

The site types and numbers mentioned above represent only the KRA's cultural resources that have been found. Only 48,450 acres or 2 percent of the resource area has been surveyed. From an extrapolation of these figures, KRA has more than 67,000 sites.

### Important Cultural Resource Areas

While many cultural resources are known to exist in KRA, some areas are known to contain particularly significant or have high concentrations of sites. The areas described below are recognized as priority areas, but other areas of cultural significance also exist.

The Joshua tree forest area near the Grand Wash Cliffs is a spectacularly scenic area that also has some highly significant cultural resources. This area has some of the largest (5m diam.) roasting pits in the Southwest, but no known large habitation sites in the area account for this activity. Who made these impressive features and when they were made are unknown.

The area around Wright Creek near Truxton is one of the few places in the KRA that had perennial water. The area is also a transition zone between the Colorado Plateau and the Great Basin. Culturally, KRA has a high density of Cohonina campsites dating from 700-1150 AD that are mixed with a few Prescott Culture pueblos dating from 1000-1250 AD. This is the westernmost extension of these two cultures that were influenced by the Anasazi culture to the north and east.

The Black Mountains have a variety of significant sites. KRA's oldest known site (Bighorn Cave-1500 BC) is located in this area. At least two other rock shelters have yielded rare prehistoric baskets. The Black Mountains have polychrome pictographs (rock paintings) and many petroglyph sites. The Beale-Mojave Road, a combination

wagon road and old Indian trail, crosses the area. Early (1860s) Anglo stone cabins of prospecting troops from Ft. Mojave are also present.

The Bullhead City area is one of the main homelands of the Mojave Indians. The major prehistoric activity recorded is an extensive macro-flaking industry where, over a 36 square mile area, large boulders were broken and shaped into blanks for metates and pestles. The area also has prehistoric trails, shrines, petroglyphs, and rock rings, and the best preserved section of the Beale-Mojave Road.

Burro Creek, in the KRA's southeast, is another perennial water source. This area has Prescott Culture pueblos and campsites. Burro Creek has several obsidian sources used for prehistoric tool manufacturing. Several historic mines have been recorded, and the use of the arrastra, an early type of mill for gold and silver extraction, was common in this area.

The area near Wikieup has a 25-mile long Pleiocene lake containing well-preserved fossils of birds, horses, camels, and other animals. Prehistoric Indian camps, petroglyphs, and lithic (stone) tool manufacturing have been recorded. The historic 19th century Carrow/Stephens ranches lie along the Big Sandy River. These ranches are well preserved and are suitable for restoration and development as recreation/interpretation areas for the public.

The Cerbat Mountains northwest of Kingman contain hundreds of old mines. Prehistoric Indian turquoise mines with dozens of stone picks and hammers have been found. Historic 19th century gold and silver mining sites are also found throughout the range. One of the most concentrated mining areas, Mineral Park, was also the Mohave County seat from 1877 to 1887. This area also has good potential for public use development.

### RECREATION MANAGEMENT

The resource area offers a wide variety of topography, terrain features, vegetation, scenic values, historic resources, wildlife, wilderness, and riparian resources. These all combine to make KRA an extremely valuable region for such recreational pursuits as camping, backpacking, hiking, OHV use, picnicking, hunting, photography, rock hounding, horseback riding, and swimming. Visitors wishing to enjoy a recreation experience on the public lands may choose from primitive and unconfined activities to camping in developed campgrounds.

Much of the public lands in the resource area are remote and provide excellent opportunities for solitude and primitive camping and backpacking. A large number of wilderness study areas were studied and nine were recommended for designation as wilderness by Congress.

KRA is located in a transition between the Basin and Range and the Colorado Plateau physiographic provinces. The Black, Cerbat, Hualapai, McCracken, and Aquarius Mountains trend north and south with long, linear valleys in between. The area contains many scenic features such as the Grand Wash Cliffs, Cerbat Pinnacles, Mount Nutt, Hualapai Mountains, Burro Creek Canyon, and Aubrey Peak. A number of geologic formations are highly mineralized, resulting in spectacular scenery.

KRA's vegetation communities are as diverse as its topography, soils, and elevations. KRA is in a transition zone between the Sonoran Desert to the south and the Mohave Desert to the north. Saguaro cactus and ocotillo can be seen intermixed with Mohave yucca and juniper in the region surrounding Burro Creek. Desert scrub vegetation (creosotebush, yucca, and bursage) grows in the valleys and on the lower mountains and foothills of higher mountain ranges. Grasslands occur at mid-elevations such as the Hualapai Valley, Cherokee Point, and Goodwin and Bozarth Mesas. Juniper woodland occurs in the foothills of the Hualapai Mountains and at higher elevations in the Black, Cerbat, Music, and Aquarius Mountains. Pinyon is intermixed with juniper in the higher elevations of the Music, Cerbat, Hualapai, and Aquarius Mountains. Chaparral is found on the Hualapai Mountains as well as ponderosa pine, oak woodland, and spruce-fir at the highest elevations. Riparian vegetation such as cottonwood and willow grows along perennial streams and around springs and seeps.

The lower elevations provide excellent recreation opportunities during the cooler months; the mid-elevations are used by visitors in the spring and fall; and the higher elevations are used extensively in the spring, summer, and fall. The diverse vegetation provides a variety of scenery, supports a variety of wildlife, and offers a broad range of camping and photography experiences.

The area is highly mineralized and was mined by the early Spanish explorers, and later European settlers since the 1860s. Many of the mountain areas contain a rich historical heritage of mining equipment, mine portals, and buildings. Chloride, Oatman, Gold Road, Gold Basin, and Mineral Park were early mining districts and towns, now important to people interested in history and photography. The mining industry has built an intricate network of roads and trails, which are now extensively used by off-highway vehicle (OHV) enthusiasts, and as access for hunters, campers, and day-use visitors.

Water is a valuable resource in the arid Southwest. KRA has several important riparian areas, such as Wright and Burro Creeks and the Big Sandy, Santa Maria and Bill Williams Rivers, which provide excellent habitat for desert fisheries and wildlife. These areas also provide excellent recreation opportunities for hunting, camping, picnicking, swimming, and photography.

KRA's diverse topography, soils, vegetation, and elevations provide excellent habitat for diverse wildlife species, including deer, elk, antelope, bighorn sheep, javelina, coyote, mountain lion, bald eagle, black-hawk, and peregrine falcon. These species are important for hunting, photography, and observation.

KRA has four developed campgrounds. Burro Creek, along Highway 93, provides facilities for recreation vehicles (RV) as well as for campers. Wild Cow, Windy Point, and Packsaddle campgrounds offer a more remote camping experience and are also suitable for picnicking.

### Visual Resource Management (VRM)

BLM is responsible for recognizing and protecting visual values on public lands. The VRM system provides a way to qualify and quantify the potential visual impacts to an acceptable level. The VRM system helps managers make resource allocation decisions.

BLM administers visual resources on public lands according to four VRM class objectives. Table III-7 shows the total acreages by class of inventoried public and nonpublic land that the recent VRM inventory has yielded.

**Table III-7  
Visual Resource Class Objective  
Acreages Within KRA**

| <b>Class</b>             | <b>Acreage</b>   |
|--------------------------|------------------|
| VRM Class I Objectives   | 0                |
| VRM Class II Objectives  | 882,491          |
| VRM Class III Objectives | 781,928          |
| VRM Class IV Objectives  | 3,284,344        |
| <b>Total</b>             | <b>4,948,763</b> |

### WILD AND SCENIC RIVERS

#### Eligible River Segments

All rivers within KRA were analyzed through the scoping process in accordance with the Wild and Scenic Rivers Act, December 23, 1980, (WSRA) and IM NO. 87-615 (July 23, 1987) and IM No. 88-670 (September 8, 1988) to determine their eligibility to be studied for inclusion in the National Wild and Scenic Rivers System (Appendix 20). The following rivers, as shown on Maps of Special Management Areas - *Alternative 2* and *Alternative 3*, were determined to meet the eligibility requirements of being "free flowing" and to have one or more "outstandingly remarkable" values:

- Bill Williams River
- Big Sandy River
- Santa Maria River
- Burro Creek
- Francis Creek
- Wright Creek

#### Ineligible River Segments

The following segments of rivers were considered for inclusion in the National Wild and Scenic Rivers system but were considered ineligible.

#### Santa Maria River:

Segment description: The Santa Maria River segment from the KRA boundary in T.14N, R.8W, sec. 36 downstream to Highway 93 and the Santa Maria bridge was determined not to be eligible because of the lack of resource inventory data and because of 11 out of 17 river miles are state or privately owned.

#### Big Sandy River:

Segment Description: The Big Sandy River segment from its headwaters at the confluence of Trout Creek and Knight Creek

## CHAPTER III

downstream to Highway 93 at the Big Sandy bridge was determined not to be eligible because of the lack of resource inventory data and because of 23 out of 25 river miles are state or privately owned.

### Cottonwood Creek:

Segment Description: This segment from its headwaters in the Cottonwood Cliffs downstream to where it empties into Truxton Wash was determined not to be eligible because it is not “free flowing”.

## WILDLIFE HABITAT MANAGEMENT

KRA’s wildlife habitat management program is guided by the objectives and goals of a bureauwide policy document entitled Fish and Wildlife 2000. The accomplishment of such goals and objectives is achieved principally by the development of wildlife activity plans known as habitat management plans (HMPs). Five HMPs have been developed covering the entire resource area. These documents include detailed descriptions of wildlife resources; resource conflicts; and proposed projects, goals, and objectives.

Five major components of the wildlife habitat management program are summarized below:

- Unique Wildlife Habitats
- General Wildlife Habitat
- Big Game
- Resource Conflicts with Wildlife
- Wildlife Habitat Improvement Projects

### Unique Wildlife Habitats

Wildlife inventories have found 20 standard habitat sites (SHS) within KRA. These habitats are specified and discussed in the Hualapai-Aquarius Grazing EIS and associated documents. Similar SHSs occur in the Cerbat/Black Mountain EIS area.

The predominant vegetative types in the Cerbat and Black Mountain Planning Units are described in their respective HMPs. The SHS methodology used in the Hualapai-Aquarius Grazing EIS had not been developed when planning for these areas was undertaken.

Several habitat types are especially important to KRA’s wildlife. These are ponderosa pine-Gambel’s oak, ponderosa pine-mixed conifer, and cottonwood-willow riparian.

Common standard habitat types are important in sustaining wildlife resources such as small and big game populations and common birds and reptiles.

The extremely limited riparian and “mountain island” habitats provide habitat for a wealth of wildlife species, including rare, threatened, and endangered species, as well as big game and other common wildlife.

Because of their rarity in KRA and their critical importance to wildlife, management attention is often focused on these unique

wildlife habitat areas, concentrating on conservation and preservation of these resources.

### General Wildlife Habitat

BLM administers general habitat for wildlife management on a day-to-day basis by focusing on ecosystem management, seeking to maintain and enhance existing wildlife resources. BLM manages for a diversity of plant and animal resources, assuring long-term viability of otherwise fragile desert ecosystems.

Although management attention often spotlights rare species and their habitats, continuous efforts are made to ensure the health and productivity of all KRA wildlife habitats, including widespread habitat types such as chaparral, saguaro-paloverde, and creosote-bursage.

### Big Game

Big game species are an important aesthetic and economic resource in KRA. Key big game species in KRA are listed in Table III-8. The management of big game habitat is a cooperative effort between BLM and the AGFD. Information on quality and amount of big game habitats, existing and future population targets, and population trends is presented in existing MFPs, HMPs, and AGFD’s Big Game Strategic Plan and annual big game surveys. HMPs are periodically revised to incorporate new information, including updates in the status of big game populations, habitat improvement projects, transplant proposals, and habitat monitoring efforts.

In the Black Mountains, KRA has one of Arizona’s premier herds of desert bighorn sheep. These animals have been used in studies and to reestablish sheep herds in regions where they have been extirpated. They also provide some of Arizona’s best bighorn sheep hunting. Bighorn also inhabit the extreme southern part of the Hualapai Planning Unit near Aubrey Peak, the Casteneda Hills, and the McCracken and Rawhide Mountains. This isolated herd has recently been bolstered by supplemental transplants from the Black Mountain herd. See Map III-5.

Bighorn have been extirpated from portions of the Aquarius Planning Unit, especially the upper Bill Williams drainage.

State and federal agencies, as well as private individuals and organizations, have invested heavily in time and money to maintain bighorn sheep.

Pronghorn antelope also occur in the resource area. The herds in the Truxton area and on Goodwin Mesa have viable numbers, and HMPs have proposed projects to further improve their habitat.

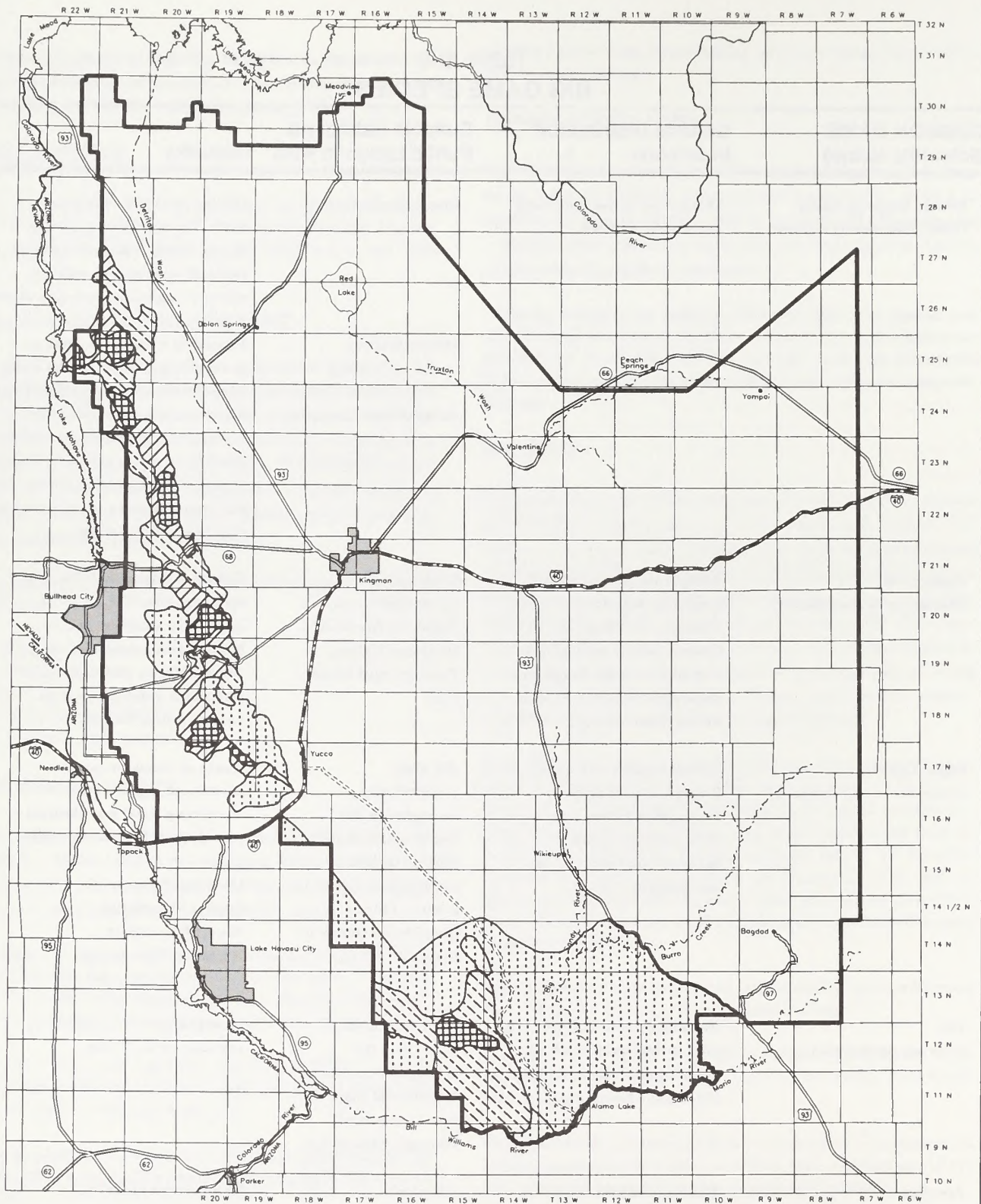
Mule deer are found throughout KRA but are concentrated in the Hualapai, Cerbat, and Music Mountains. These areas and others within KRA provide ample opportunities for hunters, photographers, and sightseers.





Table III-8  
BIG GAME SPECIES

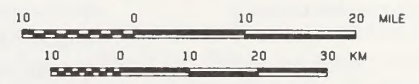
| COMMON NAME<br>(Scientific Name)                           | General Distribution<br>in Arizona  | Suitable Habitat on<br>Public Lands in KRA  | Remarks  |
|--|---|---|--|
| Desert Bighorn Sheep<br>( <i>Ovis canadensis nelsoni</i> ) | Mountains in southern and southwest Arizona   | Black Mountains<br><br>Mount Wilson<br><br>Aubrey Peak Complex  | One of Arizona's premier naturally occurring bighorn sheep herds. Extensive investment of time and money by resource agencies and concerned public.<br><br>Primarily a ram area next to good sheep habitat on the Lake Mead National Recreational Area.<br><br>Southern Hualapai complex incorporating several "mountain islands" used by bighorn. Recently sheep have been transplanted into this population to try to boost this region's low densities. |
| Pronghorn<br>( <i>Antilocapra americana</i> )              | Temperate grasslands of southeast and northern Arizona, the Great Basin deserts scrub of northern Arizona, and the Sonoran deserts scrub on the Cabeza Prieta Game Range. | Grassland communities on Goodwin Mesa, in Hualapai Valley, Truxton, and Dutch Flat.   | Goodwin Mesa and Truxton areas provide KRA's most important antelope habitat. Private and state lands in Round Valley provide important antelope habitat next to public lands.   |
| Mule Deer<br>( <i>Odocoileus hemionus</i> )                | Boreal forests of Kaibab Plateau, San Francisco Peaks, and White Mountains to creosote - bursage communities of the Sonoran Desert.                                       | All plant communities through-out the Basin and Range portion of KRA provide mule deer habitat. Densities range from sparse to high.    | Areas of blocked lands contribute significantly sustaining local populations (medium to high densities).<br><br>Hualapai Mountains<br>Cerberat Mountains<br>Music Mountains<br>Aquarius Mountains  |
| Elk<br>( <i>Cervus canadensis</i> )                        | Introduced into Arizona, now throughout much of the Mogollon Rim, and the Hualapai Mountains.   | Remnant herd persists in the Hualapai Mountains. Occasional dispersal into Cerbat and Peacock Mountains.                                | Hualapai herd is nonnative, introduced in 1920s.   |
| Javelina<br>( <i>Dicotyles tajacu</i> )                    | Throughout central, southcentral, and southeast Arizona, especially in riparian deserts scrub habitats.   | All plant communities in the Basin and Range portion of the resource area provide javelina habitat. Densities vary from sparse to high. | The present Javelina population is the result of introductions which were especially successful in the Hualapai Mountains and Burro Creek.   |

Source: Arizona Game & Fish Commission, Arizona Game & Fish Department. "Big Game Strategic Plans 1980-83" 1980. Phoenix, Arizona.

# BIGHORN SHEEP HABITAT



-  LAMBING GROUNDS
-  HIGH VALUE HABITAT
-  MEDIUM VALUE HABITAT
-  MARGINAL HABITAT



Javelina have been introduced into several KRA locations, primarily in the Hualapai Mountains and the Burro Creek drainage. These transplants have been successful, and javelina are now common throughout the Hualapai Mountains and along the upper Bill Williams watershed, including Burro Creek, Alamo Lake, and the Big Sandy River.

### Resource Conflicts

Plant and animal resource conservation efforts conflict with some other uses but are in harmony with still others. Wilderness and cultural resource management and prescribed burning are generally harmonious with wildlife conservation.

Other resource uses (mineral exploration and development, livestock and burro grazing, and OHVs), usually require intensive evaluation and coordination to avoid adverse impacts to wildlife. Frequently, adverse impacts are unavoidable and can only be partly offset by mitigation.

There is concern over fragmentation of wildlife habitats and the perpetuation of wildlife habitat islands surrounded by human development and encroachment. Such fragmentation of wildlife habitats restricts necessary wildlife movements, diminishing the potential for long-term maintenance of biodiversity, viable populations, and interactions among species. The loss of movement corridors leads to isolation, which can result in inbreeding, loss of reproductive ability, and ultimately extinction.

The rapid growth of human populations often precludes consideration of wildlife and their movement needs. Highway 68 is known to have already eliminated movement of bighorn sheep between the northern and southern Black Mountains. Road development, increased traffic, and urban encroachment block natural movement corridors, may result in "death traps" for wildlife, and more importantly lead to the ultimate genetic isolation of wildlife populations.

### Wildlife Habitat Improvement Projects

A major part of KRA's wildlife program involves the development of wildlife habitat improvement projects. These include spring developments, rainwater catchments, exclosures, fence modifications, prescribed burns, and tree plantings.

### SPECIAL STATUS SPECIES MANAGEMENT

Special status species include federally listed and proposed species, federal candidate species, and state-listed threatened species (Appendix 6). Sixteen plant and 33 animal special status species may occur in KRA, as listed in Appendix 6. Of the animals, 22 species are either historic, unverified, only transient on public land, or are known to occur only on nonfederal land. BLM manages significant habitat for bald eagle, peregrine falcon, Hualapai Mexican vole, desert tortoise, ferruginous hawk, black-hawk, roundtail chub, spotted owl, leopard frog, northern goshawk, Arizona cliffrose, roaring springs prickly poppy, Fraziers wild buckwheat, Wiggins cholla, white-margined penstemon, Cerbat beard-tongue, Welsh phacelia, and broom rape.

KRA provides both a Mohave and Sonoran Desert habitat for the desert tortoise. The Mohave Desert habitat is limited to extensive mesas and steep talus slopes of the Black Mountains. Vegetation is predominantly Mohave desert shrub, represented by several plant communities, including creosote and yucca associations. Tortoises most typically use the washes in the foothill regions and the bajadas. Washes are crucial to tortoise survival in the Black Mountains because of a lack of suitable cover elsewhere. See Map III-6.

Tortoise populations in the southern portion of KRA occur in Sonoran Desert, an area of boulder-strewn hillsides and Sonoran desert scrub vegetation, with scattered interior chaparral biotic communities. South-facing slopes are typically occupied by saguaro, palo-verde, teddybear cholla, ocotillo, nolina, canotia, beavertail cactus, and narrowleaf yucca. Tortoises typically occupy the more boulder-strew regions where cover and forage conditions are favorable.

Nine federally listed, proposed, and candidate plant species are either known to occur or could occur in KRA. These species are shown in Appendix 6.

The State of Arizona's Natural Heritage Program also maintains a list of plant species which have been recommended for sensitive designation to BLM. The species being considered are listed in Appendix 6.

### RIPARIAN AREA MANAGEMENT

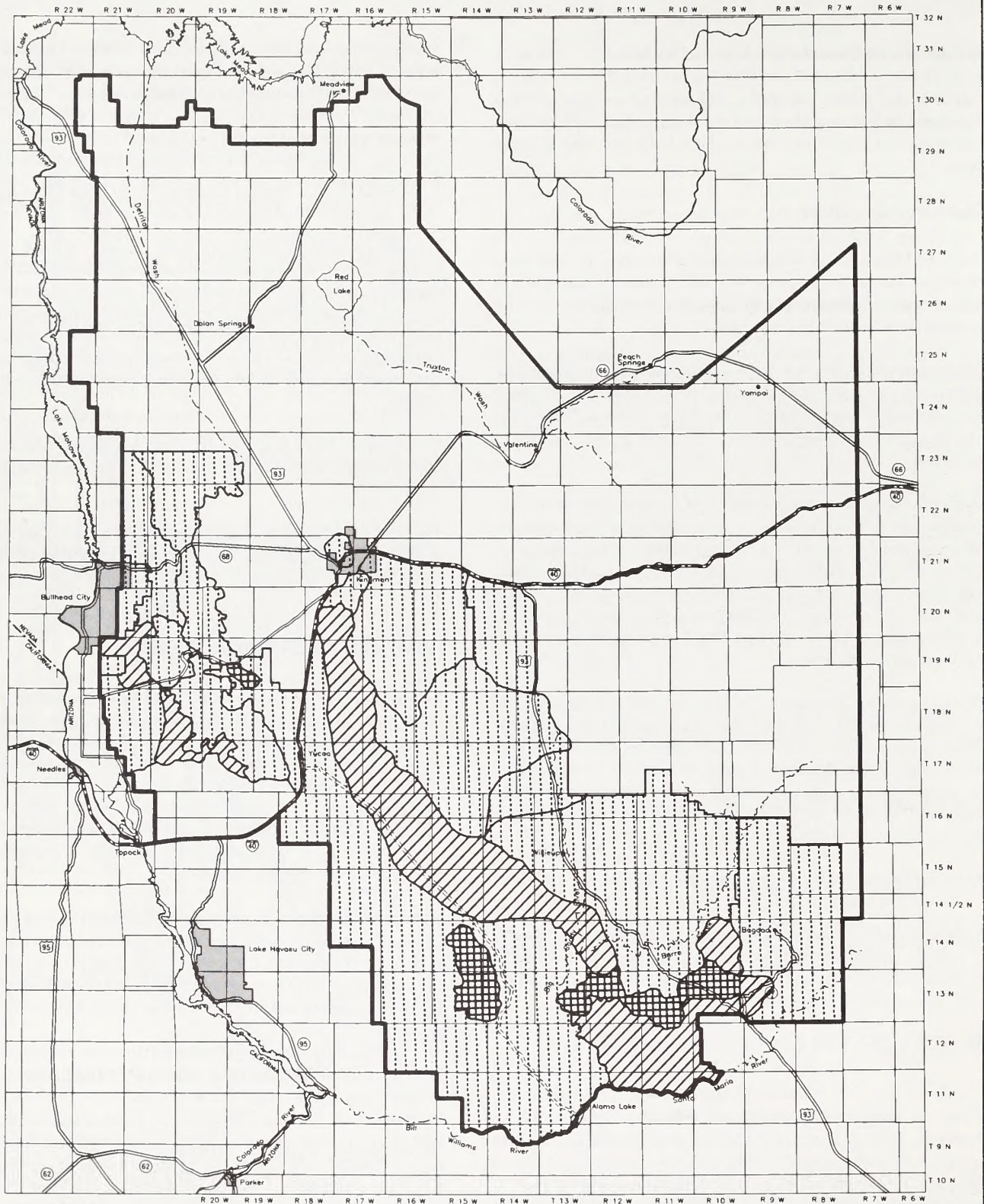
Among the most productive and important ecosystems, riparian areas make up less than 1 percent of the public lands. Characteristically, riparian areas display a greater diversity of plant, fish, wildlife and other animal species and vegetative structure than adjoining ecosystems. Healthy riparian systems filter and purify water as it moves through the riparian zone, reduce sediment loads and enhance stream bank stability, provide microclimate moderation when contrasted to extremes in adjacent areas, and contribute to groundwater recharge and base flow.




At least 465 miles of potential riparian habitat have been identified in KRA. Appendix 7 shows the KRA's riparian areas, mileages, and associated reference maps. The mileages include public, private, and state lands. Of the 225 miles inventoried, 60 percent are in unsatisfactory condition and 40 percent are in satisfactory condition.

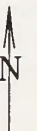
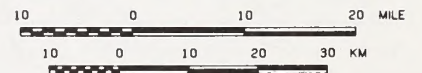
The best developed and most extensive riparian deciduous forest communities on KRA's public lands occur along the upper Bill Williams watershed (Burro Creek, Francis Creek, Big Sandy River, Santa Maria River), the Bill Williams River, Wright Creek, and smaller creeks in the Hualapai Mountains. Perennial surface flows are most commonly found along these drainages, making them KRA's most valuable and highest potential riparian areas. They make up 165 miles of KRA's total of 502 miles of riparian areas. Elsewhere in KRA, riparian deciduous trees grow most often in small clusters or as scattered individuals interspersed with riparian scrub vegetation.

Dominant trees in these riparian deciduous forest communities are cottonwood, willow, sycamore, ash, alder, walnut, and netleaf hackberry. Dominant trees and shrubs found in riparian scrub communities include salt cedar, seep willow, and squaw baccharis.

# DESERT TORTOISE HABITAT CATEGORIES



-  CATEGORY I TORTOISE HABITAT
-  CATEGORY II TORTOISE HABITAT
-  CATEGORY III TORTOISE HABITAT





**WILD HORSES AND BURROS**

The Wild and Free-Roaming Horse and Burro Act became law on December 15, 1971, authorizing BLM's management of wild horses and burros on public land. This act provided that wild and free-roaming horses and burros be protected from unauthorized capture, branding, harassment, or death, and considered wild horses and burros an integral part of the natural system based upon their 1971 distribution. KRA has three wild horse and burro herd management areas (HMAs).

**Black Mountain Herd Management Area**

The Black Mountain HMA is in the Black Mountains and the associated valleys to the east and west. The HMA is nearly 20 miles wide at its widest point and extends nearly 100 miles from Interstate 40 on the south, to Hoover Dam on the north (see Table III-9). The management level set for the burro population in the Black Mountain Herd Management Area Plan (HMAP) is 320-480 animals (400 ± 80). A viable population limit for wild burros is presently unknown. Other large animals (wild horses, bighorn sheep) in the area require a population of at least 120 animals to ensure a viable breeding population. Highway 68 and its right-of-way fences divide the Black Mountains into separate areas with two separate burro populations, and each population requires at least 120 animals to ensure its genetic viability. The smallest genetically viable burro population for the Black Mountains would be 250. The Black Mountains HMAP became effective in 1981.

The Black Mountain HMA has an estimated 500 burros and it is expected to be at maintenance level (400 head) at the end of FY 91. See Table III-10.

**Big Sandy Herd Management Area**

Lying south of Wikieup, the Big Sandy HMA includes lands along to the Big Sandy River and Burro Creek. The Big Sandy HMA is bordered by the Alamo HMA to the south and extends east to the confluence of Copper Creek and Burro Creek and from 1 to 10 miles west of the Big Sandy River. See Table III-9. The Big Sandy HMAP has set management levels at 135 burros. See Table III-10.

**Table III-9  
Acres Within Herd  
Management Areas**

| Herd Mgmt Area | Public         | Private        | State         | Total            |
|----------------|----------------|----------------|---------------|------------------|
| Black Mtn.     | 586,533        | 225,554        | 25,296        | 837,383          |
| Big Sandy      | 192,030        | 31,822         | 20,410        | 244,262          |
| Cerbat         | 57,879         | 21,462         | 4,160         | 83,501           |
| <b>Total</b>   | <b>836,442</b> | <b>278,838</b> | <b>49,866</b> | <b>1,165,146</b> |

Source: KRA Files

The Big Sandy HMAP was implemented in 1983. The HMA has an estimated 100-200 burros and the herd is expected to be at maintenance level (135 head) by October 1992.

**Cerbat Herd Management Area**

The Cerbat HMA is north of Kingman in the Cerbat Mountains. The HMA is roughly 20 miles long and 16 miles wide. Horses occur on both sides of the main ridge line of the Cerbat Mountains. Cherum Peak is the focal point for the horse population. See Table III-9.

The Cerbat/Black Mountain EIS proposed forage for 14 wild horses. At present the Cerbat Mountains have an estimated population of 130 horses. See Table III-10.

Early genetic tests on a small sample of the horse population in the Cerbat Mountains found these animals to be unique. To preserve this uniqueness, a viable population level must be determined and maintained. To maintain a viable population, BLM's Wild Horse and Burro Guidance (1983) suggests a minimum effective breeding population of 50 animals. With the current herd structure, a population of 120 horses would have to be maintained to ensure 50 effective breeders in the population. Through manipulation of the sex ratio and selective removal of non breeders while still allowing for 50 effective breeders and young replacement animals in the herd, a viable population could be maintained with a herd of 90 horses. See Table III-10.

To correct the current overobligation of forage, forage would have to be allowed for 90 horses. This allocation would be based on removing animals in excess of the 90 horses allowed. Forty horses would have to be removed from the estimated 1990 population of 130.

**Summary**

KRA has an estimated 205 excess wild horses and burros (animals above management levels). All herd management areas should be at management levels (625 animals) by October 1992.

**Table III-10  
Wild Horse and Burro Populations**

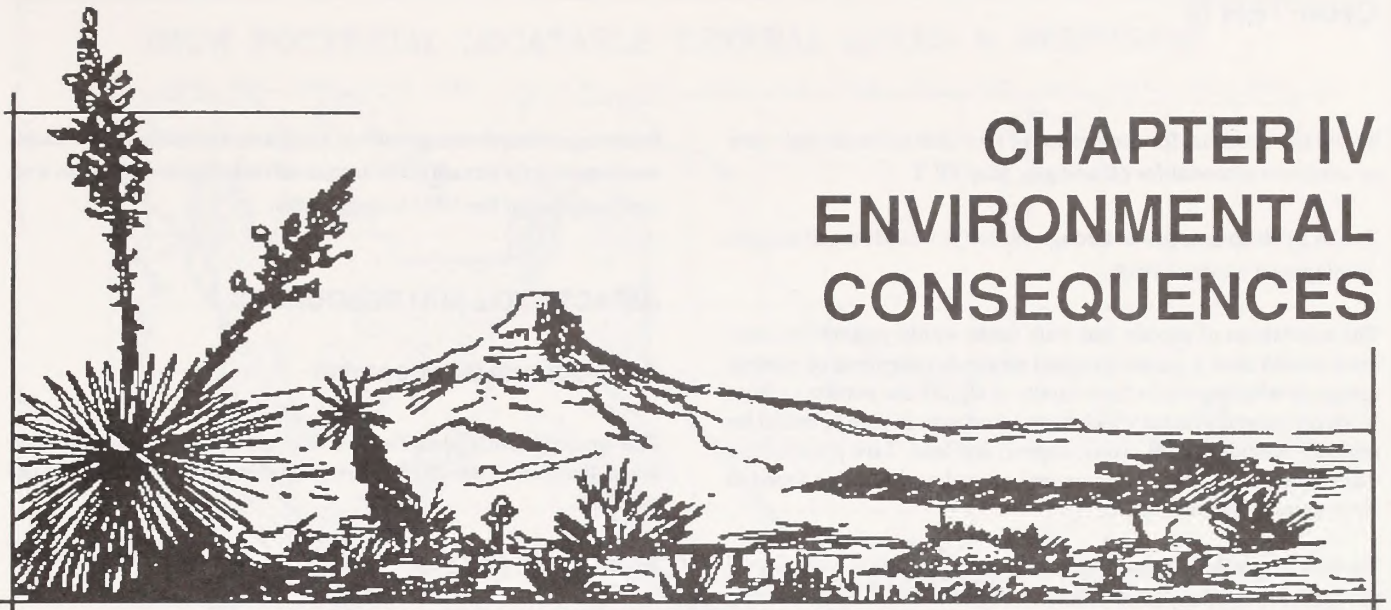
| Herd Mgmt. Area | Mgmt Level | Present Population | Excess Population |
|-----------------|------------|--------------------|-------------------|
| Black Mtn.      | 400        | 500                | 100               |
| Big Sandy       | 135        | 200                | 65                |
| Cerbat          | 90*        | 130                | 40                |
| <b>Total</b>    | <b>625</b> | <b>830</b>         | <b>205</b>        |

\*Minimum Viable Population

Source: KRA Files



# CHAPTER IV ENVIRONMENTAL CONSEQUENCES



## INTRODUCTION

Chapter IV discusses the environmental consequences of the alternatives described in Chapter II. Implementation of the alternatives will create impacts of varying degrees. The purpose of this chapter is to estimate and analyze significant impacts and identify appropriate mitigations to reduce or eliminate adverse impacts. The interdisciplinary team analyzed expected impacts normally associated with oil and gas exploration and development. Impacts were found to be insignificant except in areas of critical environmental concern (ACEC). In these areas, management prescriptions would reduce impacts to an insignificant level. Impacts are summarized in Table II-14 in Chapter II.

## ANALYSIS GUIDELINES

The environmental base line is *Alternative 1* (Current Management); it represents no change from current management. The change to each environmental component that would occur by the year 2011 is described under each alternative. Cumulative impacts are addressed at the end of the discussion of each alternative. All proposed plan actions are analyzed.

## GENERAL ASSUMPTIONS

In order to analyze the impacts of each alternative it was necessary to make general assumptions. These assumptions are as follows:

1. BLM will have the funding and work force to implement the selected alternative.
2. Impacts are direct unless otherwise noted.
3. Short-term impacts would occur within 5 years and long-term impacts would occur from 5 to 20 years after the plan is implemented.
4. All impacts are long-term unless otherwise noted.

5. Environmental assessments will be conducted before any activity plans are implemented.
6. All disposal land is free of encumbrances and can be disposed of.
7. Land identified for disposal would go into private ownership unless otherwise noted.
8. KRA's rangeland management program will be as described in the range program summaries for the Final Cerbat/Black Mountain (BLM 1978) and Hualapai-Aquarius Grazing (BLM 1981) EISs.
9. RMP decisions within wilderness study areas (WSA) would be implemented only in WSAs not designated as wilderness.

## IMPACT ANALYSIS BY ALTERNATIVES

### ALTERNATIVE 1 - CURRENT MANAGEMENT

#### IMPACTS TO MINERAL DEVELOPMENT

##### From Lands Actions

##### Ownership Adjustments

The transfer of roughly 93,000 acres of public land identified as disposal blocks (See Appendix 3) in the Black, Cerbat an Hualapai/ Aquarius Mountains MFPs would negatively impact the exploration and development of minerals on these lands. But most of these lands

## CHAPTER IV

have a low potential for occurrence of locatable minerals and a low or unknown potential for oil and gas, Map IV-1.

The 562,106 acres acquired through exchange would benefit mineral development on these lands.

The acquisition of private and state lands within present retention areas would have a positive impact on the development of mineral resources which underlie these lands. A significant portion of these lands are located in areas which have a moderate to high potential for minerals including gold, silver, copper, and lead. Low potential for other resources such as uranium and oil and gas was also found in some areas within the KRA.

The blocking of land ownership patterns has simplified the approval process for mineral exploration and development activities by reducing the number of parties mining operators must work with.

### From Special Status Species and other Wildlife Resources

Based on the existing Oil & Gas Leasing in Bighorn Sheep Habitat Environmental Assessment (EA), roughly 327,000 acres of public minerals are currently in the no surface occupancy (NSO) leasing category. This was for protection of bighorn sheep habitat in the Black Mountains, Mt. Wilson and Aubrey Peak areas. The NSO has an impact on the exploration and development of oil and gas resources. The size of the NSO status makes it prohibitive to directional drill from many areas of the outer boundaries to tap any reserves. Little is known about the potential for any oil and gas accumulations in this region of the state but it is thought to be low. Exploration to increase knowledge would be curtailed if these lands were leased for oil and gas encumbered by the NSO leasing category.

Locatable mineral development would be impacted in areas where threatened or endangered species were encountered under a Mining Notice or Plan of Operations. Under a Notice, the operator may proceed, if he wishes to develop measures to eliminate the conflict with a T&E species. The amount of time involved in coordinating with BLM biologists, geologists, and USFWS, during the process of developing mitigating measures, would result in delays to the operator.

When proceeding under a Plan of Operations, it is revealed a potential conflict exists with a T&E species or its habitat, the plan cannot be approved until BLM complies with Section 7 of the Endangered Species Act. If the operator wishes to develop mitigation measures to eliminate the conflict, he must do so in conjunction with BLM and USFWS. If the conflict cannot be resolved, the plan must be rejected. The mitigation measures developed may be so restrictive it would not be economically feasible for the operator to make a profit and rejection of the plan would totally preclude any development of the mining property.

### Conclusions

With the exception of land disposals planned in the existing MFPs, the continued management as prescribed in this alternative would

encourage mineral resource development on the public lands. Lands would generally remain open to mineral resource development with the exception of the NSO leasing status.

## IMPACTS TO LAND RESOURCES

### From Mineral Development

The lands presently identified for disposal are in valleys and other lower-lying areas which have low locatable mineral and oil and gas potential.

### From Land Actions

#### Ownership Adjustments

Both private and state land exchanges have added 562,106 acres to the public lands in KRA. These acquired lands are now subject to management under multiple use policies. More efficient and consistent management of resources is possible on well consolidated blocks of public lands. This improved management would provide a highly beneficial impact to the resources involved. These acquisitions have eliminated the need for land users to work with two government agencies for the same use on adjoining lands.

Many of the public lands within the existing disposal areas have been conveyed out of public ownership, leaving no further public lands available for community recreational and public purpose (R&PP) uses such as parks, schools, community centers, churches, and municipal administration facilities. The increased demand for lands for R&PP use due to development of lands in disposal areas, has led to restrictions on community growth and recreational and public education opportunities.

The lack of public lands in the existing disposal areas would result in lands being transferred out of federal ownership in areas growing at a slower pace than the Golden Valley and Bullhead City areas. These fast growing areas do not have enough land to meet community expansion and residential development needs.

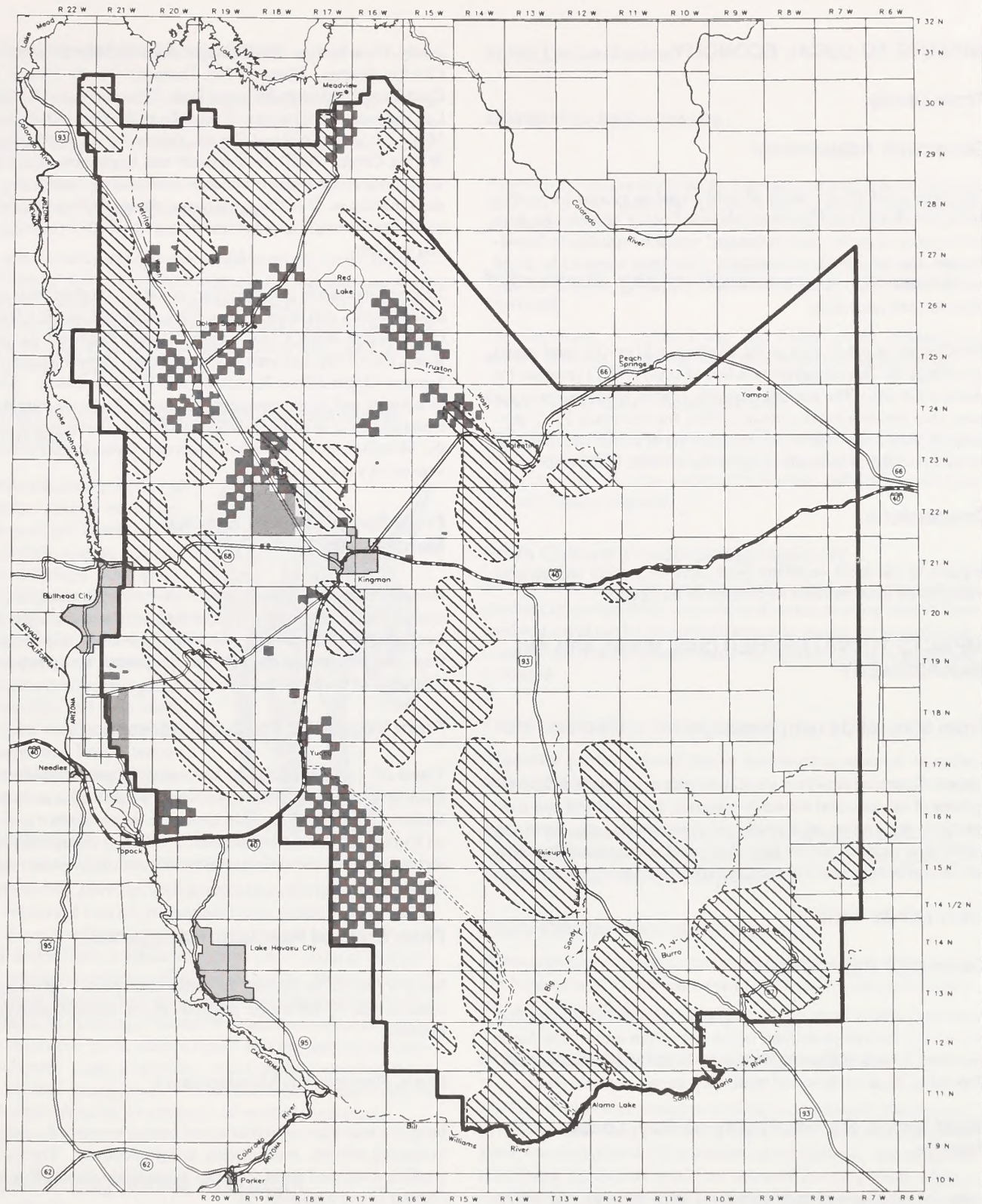
### Right-of-Way Corridors

Major linear facilities are currently placed in designated right-of-way corridors to avoid the impacts of such facilities extending haphazardly over vast areas of landscape. Confining similar uses to a single corridor would provide social and economic benefits. Utility companies have an economic benefit of being able to utilize existing data. However, these corridors would adversely impact other incompatible uses.

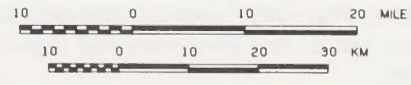
### Conclusions

The private and state exchange programs have increased public land in KRA by 562,106 acres. Utility companies benefit from the use of existing rights-of-way corridors.

# HIGH POTENTIAL LOCATABLE MINERAL AREAS & DISPOSALS



- LANDS PROPOSED FOR DISPOSAL IN ALTERNATIVES 2 & 3
- ADDITIONAL LANDS PROPOSED FOR DISPOSAL IN ALTERNATIVE 3
- AREAS OF HIGH POTENTIAL FOR LOCATABLE MINERALS



Map IV-1

## CHAPTER IV

### IMPACTS TO LOCAL ECONOMY

#### From Lands

##### Ownership Adjustments

The disposal of 92,658 acres of public land to private ownership through exchange would increase Mohave County's tax base because the majority of public land exchanged would be suitable for development thus increasing its valuation. The lands acquired by BLM would be wildlands suitable for livestock grazing, wildlife habitat, fisheries, and recreation.

The disposal of public land or the acquisition of private land would not change the federal payment in lieu of taxes (PILT) program for Mohave County. The amount of public land in Mohave County is more than the maximum amount needed for maximum PILT payments to the county. However, the disposal of public land has, and would continue, to increase property tax revenue to the county.

##### Conclusions

Impacts to the local economy from land ownership adjustments would result in an increase of revenue to the county.

### IMPACTS TO WATERSHED (Soil, Water, and Air) MANAGEMENT

#### From Mineral Development

Surface disturbing activities associated with exploration and development of oil, gas, and locatable minerals, i.e., road and pad construction, stockpiling of topsoil, pit construction, etc., have the potential to increase soil erosion and loss of soil productivity and a decrease in both groundwater and surface water quality and quantity.

#### From Lands Actions

##### Ownership Adjustments

Acquiring lands in a watershed would allow treatment of a watershed as a whole, instead of treating isolated problem areas. The lands identified for disposal are primarily in the lower basins, therefore, disposal of these lands would minimally impact the watershed.

##### Withdrawals, R&PPs, Rights-of-Way, Leases and Permits

Surface disturbing activities associated with these actions would adversely affect soil, water and air resources through increased erosion, and by restricting watershed improvement or treatment options.

#### From Rangeland Management

Twenty-three allotments are in satisfactory condition, but highly vulnerable to surface disturbance. These allotments include Big

Sandy, Cane Springs Wash, Canyon Ranch, Cedar Canyon, Cerbat, Chicken Springs, Diamond Joe, Diamond Bar A, Francis Creek, Gold Basin, Hackberry, Hualapai Peak, Hibernia Peak A, La Cienega, Los Molinos, Mud Springs, Music Mountain, Quail Springs, Upper Music Mountain, Walapai Ranch, Yellow Pine, Cane Springs, and Walnut Creek. AMP development and implementation on these allotments would assure maintenance of existing satisfactory watershed conditions. The Crozier Canyon allotment is in unsatisfactory condition but would improve under a new AMP, thus reducing runoff and soil loss.

Thirteen allotments in satisfactory condition contain local areas in unsatisfactory condition. These allotments include Big Ranch A, Cane Springs Wash, Cedar Canyon, Cerbat, Diamond Bar A, Gold Basin, Hackberry, La Cienega, Mud Springs, Music Mountains, Pine Springs, Upper Music Mountain, and Walapai Ranch. AMP development and implementation on these allotments would insure maintenance of existing satisfactory conditions and would improve the identified local watershed problems through improvement of vegetative cover.

#### From Special Status Species Management

Habitat improvement projects such as exclosures and spring developments would improve the general condition of the watershed by increasing vegetative cover and reducing erosion. Construction of watershed improvements and land treatments would require consideration of special status species.

#### From Vegetative Products Harvesting

Travel off existing roads and harvesting by permit holders would result in reduced vegetative cover which would lead to increased soil erosion. This impact becomes greater in degree when travel occurs on fragile soils during wet periods. Seeding of clearcut areas in the commercial fire wood cutting areas would result in increased vegetative cover.

#### From Cultural Resource Management

Impacts would be limited to constraints placed on design and construction of watershed projects where cultural resources are located.

#### From Recreation Management

Intensive recreation activities would impact watershed condition by increasing erosion, and reducing soil productivity. The most susceptible watershed areas are those in condition classes II & IV, see Chapter II and Appendix 20.

Construction of watershed improvement projects would continue to be constrained by the guidelines of the VRM system.

#### From Wilderness Management

Construction and maintenance of watershed improvements and monitoring stations would be constrained by the guidelines of the Wilderness Management Policy.

### From Wildlife Habitat Management

Controlling animal use and maintaining wildlife habitats would benefit overall watershed conditions. Water quality and quantity would benefit from the development and protection of water sources for wildlife.

### From Riparian Area Management

Surface water quality and quantity would benefit from the management of riparian areas. Increased vegetation would decrease water temperatures, stabilize base flow regimes, reduce high flow energies, reduce sedimentation, and stabilize streambanks. Shifting livestock from riparian areas to upland watershed areas would increase short term erosion and surface disturbance.

### From Wild and Free-Roaming Horse and Burro Management

Wild horse numbers in excess of the carrying capacity would degrade watershed condition in Canyon Ranch, Cerbat, Mineral Park, Quail Springs, Mt. Tipton, and Turkey Track allotments by reducing vegetative cover, disturbing soils, and concentrating use in riparian areas. Where excessive burros concentrate, plants such as ocotillo and palo verde are killed and soils are disturbed. At management levels burros would not reduce watershed condition.



### Conclusions

Surface disturbing activities such as mineral exploration and development, vegetative harvest, recreational uses, realty actions, cattle, and wild horse and burro grazing would all cause increased runoff and erosion problems, reduced vegetative cover, reduced soil productivity, and dust production affecting air quality. Development of AMPs, habitat improvement projects such as exclosures and spring developments and seeding of firewood clearcuts would maintain or improve vegetative cover, reduce runoff and erosion and increase soil productivity. Land acquisition would create opportunities for better watershed management. Watershed improvement projects would be constrained by the presence of sensitive resources.

## Impacts to Vegetative Products Harvesting

### From Mineral Development

Surface disturbance of mineral exploration and development would continue to allow the salvage of desert plants for landscaping.

### From Lands Action

#### Ownership Adjustments

Vegetative products could not be harvested on public lands that are disposed of, but could be harvested on lands acquired through exchange.

#### Withdrawals, R&PPs, Rights-of-Way, Leases and Permits

The permitting of rights-of-way and leases would increase the amount of desert plants that could be salvaged for landscaping.

#### From Watershed Management

Protection of watershed values would constrain the harvesting of affected vegetative products, season of use, access routes, amounts of harvest allowed, areas suitable for harvest, and amount and type of rehabilitation required.

#### From Cultural Resource Management

BLM would evaluate the suitability of an area for harvest of vegetative products for compatibility with cultural resources objectives. Where conflicts could not be mitigated harvesting would not be permitted. Constraints would be placed on harvest operations where mitigation is needed.

#### From Recreation Management

Vegetative products would not be harvested in areas of intensive recreational use.

Harvest of vegetative products would be subject to evaluation of compatibility with visual class ratings. Where incompatibility exists, harvesting would not be permitted.

#### From Wildlife Habitat Management

Where conflicts exist and no mitigation is possible, harvesting would not be permitted. Constraints would be placed on harvesting where mitigation is needed.

#### From Special Status Species Management

Harvest of vegetative products would be constrained by the presence of special status plant or animal species. Where special status plants grow, harvesting would be restricted or not allowed. Season of use restrictions on harvest would be imposed during periods when a special status species would be damaged by harvesting. Salvage operations for protected plant species would have to comply with state laws.

#### From Riparian Area Management

Suitability of an area for harvest of vegetative products would be evaluated for compatibility with riparian area management objectives. Where conflicts could not be mitigated, harvesting would not be permitted. Constraints would be placed on harvest operations where mitigation is needed.

**Conclusions**

Surface disturbing activities would provide opportunities for salvage of desert vegetation. Land exchanges would cause both losses and gains in vegetative products available for harvest. Suitability of areas for vegetative harvest would be subject to review of compatibility with other sensitive resource values on each site.

**IMPACTS TO RANGELAND MANAGEMENT**

**From Mineral Development**

Well drilling and pumping for the purpose of water use in mining activity might harm nearby springs or wells by breaching or draining aquifers, on which livestock grazing depends. In some areas, exploration and mining would result in the availability of additional stock water, which would assist in improving distribution of grazing animals. New or upgraded mineral exploration roads would improve access. Throughout the life of the plan, roughly 1,700 acres of grazing lands would be temporarily disturbed as a result of locatable mineral exploration and development. Reclamation of disturbed areas would restore vegetation production, and no long-term impacts are expected.

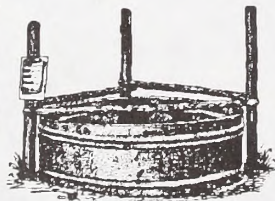
**From Land Actions**

**Ownership Adjustments**

Transferring public lands to private ownership would disrupt ranch operations through loss of range improvements and grazing privileges. Where development does not occur, grazing could continue, but grazing fees might be much higher. Consolidation of public lands would increase management efficiency by eliminating the need for coordination with other land holders and by reducing the amount of conflict between livestock grazing and private property owners within an allotment. The livestock operator would also benefit from lower grazing fees on private lands transferred to public ownership.

**From Watershed Management**

Completion of soil surveys and vegetation inventory would provide baseline data for future rangeland management. Maintenance of a water source inventory would assist future planning of range water improvement projects. Successful BLM claim to water rights on public lands would assure availability of water for livestock.



**From Vegetative Products Harvesting**

Off-highway travel would increase soil compaction and erosion, reducing forage productivity. This impact would intensify when OHVs cross fragile soils during wet periods. Seeding of clearcuts in commercial firewood cutting areas would result in more forage for livestock.

**From Cultural Resource Management**

Impacts would be limited to constraints placed on design and construction of range improvements near cultural resources.

**From Recreation Management**

Intensive recreation would disrupt livestock. Gates may be left open making it hard to keep livestock confined to proper pastures.

The building of range improvements would continue to be constrained by VRM guidelines.

**From Wildlife Habitat Management**

Wildlife habitat considerations would affect the design and construction of range improvements, stocking rates, class and/or kind of livestock permitted, forage utilization, season of use, and the use of grazing rotation techniques.

Prohibiting domestic sheep and goat grazing within 20 miles of bighorn sheep habitat would reduce the ability of affected ranches to respond to future changes in market demand. This action would affect the following grazing allotments:

- |                    |                         |
|--------------------|-------------------------|
| Gold Basin         | Yellow Pine             |
| Big Ranch A & B    | Hibernia Peak           |
| Dolan Springs      | Boriana A               |
| Mt. Tipton         | Happy Jack Wash         |
| Cane Springs       | Diamond Joe             |
| Cedar Canyon       | Big Sandy               |
| Canyon Ranch       | La Cienega              |
| Stockton Hill      | Chicken Springs         |
| Mineral Springs    | Bateman Springs         |
| Cerbat             | Los Molinos             |
| Quail Springs      | Wikieup                 |
| Turkey Track       | Hot Springs             |
| Ft. Mac Ewen A & B | Francis Creek           |
| Portland Springs   | Burro Creek             |
| Thumb Butte        | Bagdad                  |
| Gediondia          | Yolo Ranch              |
| Mud Springs        | Byner Cattle            |
| Curtain            | Kellis Lease            |
| Cook Canyon        | Gibson                  |
| Pine Springs       | Black Mesa A & B        |
| Castle Rock        | Gray Wash               |
| Feldspar           | Groom Peak              |
| Hualapai Peak      | Greenwood Pk. Community |
| Lazy YU A          | Greenwood Community     |
| Black Mountain     | Artillery Range         |
| Boriana B          | D.O.R.                  |
| Walnut Creek       | Burro Creek Ranch       |
| Arrastra Mountain  | Alamo Crossing          |
| West Peacock       |                         |

**From Special Status Species Management**

Protection of certain plants and animal species would constrain the building of range improvements, season of grazing use, forage utilization, stocking rates, and livestock management, including limiting, precluding, or deferring livestock use.





**IMPACTS TO CULTURAL RESOURCES**

**From Minerals Development**

Most of the resource area would remain open for mineral entry and development. Current laws and regulations provide for mitigating of adverse impacts to cultural resources.

**From Lands Action**

The land exchange program would benefit cultural resources in that more lands would be inventoried before being exchanged, and adverse impacts would be mitigated or significant cultural properties would be retained. In addition more cultural resources would come under BLM protection after being acquired from private or state ownership.

**From Recreation Management**

Cross-country vehicle use would harm cultural resources. Vehicles would directly damage artifacts, historic trails, and most site types. Increased erosion from OHV use would further disturb cultural resource sites.

Artifact collection, pothunting, and the damaging, altering, and defacing of cultural resources are most likely to increase, especially on the western slopes of the Black Mountains due to increased recreation use. The Arizona Site Stewardship Program would continue, but priority cultural areas would not benefit from aggressive protective measures.

**From Vegetative Products Harvesting**

Although BLM inventories cultural resources and takes site avoidance measures on all private and commercial woodcutting areas, impacts could result from a variety of activities. Trees marked for avoidance could be cut, driving off road could cause erosion, trees could be cut outside of marked areas, and artifacts, within and outside of the areas could be illegally collected.

**Conclusions**

Continuation of current management would harm priority cultural areas with moderate to high losses of cultural properties over the life of the RMP (Table IV-1).

**From Riparian Area Management**

Restricting livestock grazing within riparian areas could result in less access to water for livestock. Implementing intensive grazing management systems on allotments with riparian areas would require more movement of livestock, more work for grazing permittees in moving cattle, and increase expenditures for range improvements to control grazing. Proper riparian management would result in possible dramatic improvement of riparian vegetation, which consequently would cause increased forage availability, increased water availability, and improved water quality.

**From Wild Horse and Burro Management**

Where demand for forage by livestock and wild horses or burros exceeds supply, livestock numbers would have to be reduced, resulting in economic losses for affected permittees.

**From Support Services Management**

Forage on lands identified for acquisition in Appendix 9 would be available for grazing if grazing is found to be compatible with other resources.

**Conclusions**

Surface disturbing activities such as mineral exploration and development, realty actions, recreational uses and vegetative products harvest would cause reduced vegetative productivity through destruction of vegetation and through decreased soil productivity. These uses would also cause disruption to grazing livestock and cause management problems. Land exchanges would cause changes in grazing preference, changes in ownership of range improvements, and would increase management efficiency where public lands are consolidated. Grazing management and construction of range improvements would be constrained by the presence of sensitive resources.



**TABLE IV-1  
IMPACTS TO PRIORITY CULTURAL RESOURCE  
AREAS  
BY ALTERNATIVE**

| Cultural Area                 | Deterioration Type | Alternative |     |     |
|-------------------------------|--------------------|-------------|-----|-----|
|                               |                    | 1           | 2   | 3   |
| Joshua Tree/Grand Wash Cliffs | I                  | Low         | Low | Low |
|                               | II                 | Mod         | Low | Mod |
|                               | III                | Mod         | Low | Mod |
|                               | IV                 | Low         | Low | Low |
| Wright Creek                  | I                  | Mod         | Low | Mod |
|                               | II                 | Mod         | Low | Mod |
|                               | III                | Mod         | Low | Low |
|                               | IV                 | Low         | Low | Low |
| Black Mountains               | I                  | High        | Mod | Mod |
|                               | II                 | Mod         | Low | Low |
|                               | III                | Mod         | Low | Low |
|                               | IV                 | Mod         | Low | Low |
| Bullhead City/Western Bajada  | I                  | High        | Mod | Mod |
|                               | II                 | High        | Mod | Mod |
|                               | III                | Mod         | Low | Low |
|                               | IV                 | Mod         | Low | Low |
| Burro Creek                   | I                  | Mod         | Low | Low |
|                               | II                 | Low         | Low | Low |
|                               | III                | Mod         | Low | Low |
|                               | IV                 | Low         | Low | Low |
| Carrow-Stephens Ranches       | I                  | Mod         | Low | Low |
|                               | II                 | Low         | Low | Low |
|                               | III                | Mod         | Low | Low |
|                               | IV                 | High        | Low | Low |
| Mineral Park                  | I                  | Mod         | Low | Low |
|                               | II                 | Mod         | Low | Low |
|                               | III                | Low         | Low | Low |
|                               | IV                 | Mod         | Low | Low |

Impacts represented are estimates and do not reflect a higher negative impact that may affect cultural resources in certain sites, categories or in areas outside the ACECs.

Deterioration Type I = Vandalism, II = OHV, III = BLM (permits & projects), IV = Natural Processes.

**IMPACTS TO RECREATION MANAGEMENT**

**From Mineral Development**

Most mining activities would have a visual impact on recreation settings and opportunities for backcountry outdoor activities. Mining access roads would improve recreation access.

**From Lands Actions**

Some lands actions, such as communication sites, rights-of-way, land use authorizations, R&PP actions, and withdrawals would affect visual resources.

**From Watershed Management**

Improved soil and vegetative conditions would enhance aesthetic values.

**From Vegetative Products Harvesting**

Commercial and personal use firewood cutting would increase soil and vegetation disturbance and increase noise levels. Personal use firewood gathering would continue to provide family-centered recreation opportunities.

**From Rangeland Management**

Improved soil and vegetative conditions resulting from grazing management would enhance aesthetic values. But continuous grazing would cause a deterioration in soil and vegetative conditions and degrade aesthetic values.

**From Cultural Resource Management**

Development of the Carrow-Stephens historic ranches as an interpretive and recreation site would provide enhanced opportunities for the public to enjoy important historic resources.

The presence of historic artifacts would constrain construction of recreation sites.

**From Recreation Management**

Application of the VRM system would influence where recreation and interpretive sites could be placed.

**From Wildlife Habitat Management**

Improved condition of wildlife habitat would increase wildlife numbers, increase opportunities for hunting and viewing of wildlife and improve overall aesthetics.

**Conclusions**

Surface disturbing activities would impact the visual and aesthetic values of the area. Improved soil, vegetation, and habitat conditions would improve the scenic quality of the area.

**IMPACTS TO WILDLIFE HABITAT**

**From Minerals Development**

Over the past 10 years only 864 acres of public land have been disturbed by mining activities. Of this, approximately half of the disturbed acres have been reclaimed. Most of these areas are small

and scattered over the entire resource area. Over the life of the plan it is projected that an additional 1,700 acres would be disturbed by mining activities. Due to the small amount of disturbance projected there would be no long-term impacts to wildlife from mining activities accomplished under 43 CFR 3809.1 - A (b)(3).

For casual use where a notice or plan of operation is not required, minor surface disturbance would occur.

Policies concerning the protection of special status species would be applied to notices of intent to conduct geophysical operations, applications for permit to drill (APDs), and sundry notices that amend APDs.

Through the above process no long-term impacts would result from leasable mineral activities. In the short term, brief but intense human activity would harm special status species.

Currently imposed restrictions on oil and gas leases in bighorn sheep habitat protect known resources from surface disturbance.

Surface disturbance such as road building and mining would have a short-term adverse impact on wildlife habitat.

## From Lands Actions

### Ownership adjustments

Areas planned for disposal include important wildlife habitat in the Yucca area and along Truxton Wash. Disposal of these lands would remove this habitat from public ownership.

The exchange program between the State of Arizona and BLM has resulted in consolidation of important wildlife habitats into public ownership. Acquiring important wildlife habitat provides better long-term protection.

### Right-of-Way Corridors

The issuing of rights-of-way, leases, and permits result in surface disturbance, road building, and soil erosion. The use of existing roads or other disturbed areas for rights-of-way lessens alteration or destruction of wildlife habitat.

### Communication Sites

Many of the existing communication sites are on mountain peaks, which also serve as "mountain islands." These islands typically have more vegetation and water and are inhabited by an often diverse array of unusual plant and animal species. Development of communication sites on mountain islands results in increased human access and presence, direct loss of habitat, soil erosion, and displacement of some species.

### From Watershed Management

The ongoing soil survey and ecological site inventory would provide baseline data leading to the protection of fragile soils and vegetation important for wildlife habitat.

Maintaining an optimum water infiltration rate in areas of saline soils would result in less soil erosion and better water quality and quantity. Keeping forage utilization to less than 50 percent of key species would result in better habitat conditions for wildlife.

BLM's acquisition of water rights would ensure adequate protection of critical riparian areas and water sources, important for fish and wildlife habitat.

The maintenance of water quality would benefit wildlife and improve riparian habitat.

## From Vegetative Products Harvesting

The personal use woodcutting area has a desirable, diverse mix of piñon and juniper trees and a variety of understory shrubs, forbs and grasses. Almost all trees recognized as important wildlife habitat for food, nesting, resting, or escape, have been removed by fuelwood cutting in the personal use area southeast of Truxton. Woodcutting in this area lowers the quality of habitat for wildlife and increases cross-country travel, erosion, and the presence of humans. No effort has been made to rehabilitate the area.

Cutting in the commercial fuelwood area is more closely controlled and monitored than in personal use areas. Mature piñon and all juniper trees are removed in 20-acre blocks, leaving 5 acres for wildlife cover. Because of the general lack of understory, there is less impact from woodcutting on forage and cover for wildlife, but soil erosion still exists.

Allowing the public to salvage plants that would otherwise be destroyed builds rapport and understanding between the public and BLM and allows plants to continue living.

## From Rangeland Management

Existing priorities do not provide for needed revisions of AMPs on important wildlife habitat such as riparian areas. Existing grazing programs in key wildlife habitat would continue without adequate resource considerations resulting in further declines in habitat condition.

Prohibiting domestic sheep and goat grazing within 20 miles of bighorn sheep habitat has lessened the bighorn sheep susceptibility to disease.

## From Recreation Management

The Hualapai Mountain biking trail would concentrate humans in previously undisturbed wildlife habitat, including historic habitat for the endangered Hualapai Mexican vole. Biking on this trail would result in loss of vegetation and increased soil erosion.

The Hualapai Mountain Backcountry Byway would concentrate more people in Hualapai Mexican vole habitat, which is already heavily used and limited in acreage. Habitat for this species is extremely fragile and cannot withstand even casual use without impeding essential movement corridors used by this species.

## CHAPTER IV

### From Riparian Management

Management emphasis on riparian areas would lead to long-term improvement of this habitat. More riparian acreage in better condition would support larger and healthier wildlife populations.

In the short-term, riparian areas would continue to decline until intensive management is implemented.

### From Wild Horse and Burro Management

The current burro management philosophy is a dispersed population at a light stocking rate. Such burro management benefits wildlife habitat by resulting in increased forage production and availability, better habitat quality and condition, and reduced competition. The presence of a large introduced, exotic species does pose some threats to native species, primarily by competing for food, water, and space and by altering habitat. Under current management this threat is minimal, except during periods of prolonged drought. Under current management wild horses would be allowed to increase or decline on their own. Wildlife habitat, including riparian areas would decline in condition. Animal condition, including that of wild horses, would decline. Habitat and rangeland conditions for wildlife, livestock, and wild horses would be unmanaged and would eventually decline to poor condition for all affected species.

### From Support Services Management

Under the land acquisition program, consolidation of important wildlife habitats would enhance management capabilities and effectiveness.

### Conclusions

The existing vegetative products program significantly affects wildlife habitat, particularly private woodcutting, which is not managed on a sustained yield basis. Surface disturbance, soil erosion and increased human presence all contribute to a decline in wildlife habitat quality.

Range programs seek to incorporate wildlife needs and objectives, but existing HMPs and AMPs are outdated and in need of revision, including the incorporation of updated resource information.

An aggressive, fast-moving recreation program, including back country byways and biking trails, will increase the presence of humans in traditionally low use areas, disturbing wildlife and lessening the quality of habitat. Intensive recreation use would not be routed away from sensitive species habitat and OHV use would not be controlled. Wilderness designation would generally protect wildlife habitat improvement projects.

Existing riparian management would allow short-term deterioration of wildlife habitat but benefit wildlife habitat in the long-term.

Burros would be managed at maintenance levels. Impacts to wildlife are unknown at this time, but once attained, management levels are expected to affect wildlife habitat slightly to moderately, depending on climatic conditions. Follow-up monitoring will be needed for several years to determine actual impacts.

## IMPACTS TO SPECIAL STATUS SPECIES

### From Mineral Development

Oil and gas exploration and development would have minor adverse impacts on most federal candidate and BLM sensitive plant species. Review and possible modifications of individual project proposals would minimize the likelihood of any action (or cumulative impacts from a series of actions) causing a plant species to be listed as threatened or endangered.

Locatable mineral development would have minor impacts on most federal candidate and BLM sensitive plant species. Review and possible modification of mining plans of operation would minimize the likelihood of any action (or cumulative impact of a series of actions) causing a plant species to be listed as threatened or endangered.

Development of mining claims within the habitat of the Arizona cliffrose could exterminate the population.

### From Lands Actions

#### Ownership Adjustment

BLM's acquiring land with special status species habitats would promote the recovery of listed and candidate species.

Disposal of public land would eliminate BLM control of approximately 8,300 acres of the northwest portion of the habitat of the white-margined penstemon (T&E candidate).

Disposal of public land would eliminate BLM control of one small population of the Arizona prickly poppy (T&E candidate).

#### Withdrawals, R&PPs, Rights-of-Way, Leases, and Permits

Surface disturbance could impact federal candidate and BLM sensitive plant species. Review and possible modification of individual project proposals would minimize cumulative impacts.

### From Watershed Management

During soil and vegetation inventory, previously undiscovered populations of special status plants may be located.

Management of soil and vegetation resources to create healthy watersheds would result in better habitat conditions for special status plants with subsequent healthier and more vigorous populations of some plants over the long-term.

### From Vegetative Products Harvesting

Permitting of firewood cutting on the east side of the planning area could impact the freckled milk-vetch (T&E candidate). Because this species is reported to occur at the same elevation as juniper trees, OHV use associated with wood gathering could destroy some plants of these species.

The permitted harvesting of other plant products could have similar impacts on other special status plants.

## From Rangeland Management

Existing rangeland program priorities do not provide for needed revisions of AMPs on important areas supporting special status species such as desert tortoise, raptors, and T&E plants. Existing grazing programs in key special status species areas would continue without adequately considering resource values, resulting in further declines in condition.

## From Recreation Management

OHV use would continue to cause impacts to federal candidate and BLM sensitive plant species over the long term. Cumulative impacts to the Cerbat beard-tongue (federal candidate) and the white-margined penstemon, particularly OHV use in wash habitat, would contribute to the need to list those species as threatened or endangered.

## From Wildlife Habitat Management

Protection of BLM sensitive species and their habitats before they are listed as endangered may prevent their ultimate listing by the USFWS.

Placing more emphasis on desert tortoise management may help prevent this species from being listed as threatened or endangered in the KRA.

The Southwestern Bald Eagle Management Committee has been successful in promoting and preserving southern bald eagles and their habitats. This population has expanded significantly and ultimately may be removed from the endangered species list.

Peregrine falcons would continue their ongoing recovery. Monitoring and inventory participation with the AGFD and USFWS will be critical for the continued recovery of this species.

The Hualapai Mexican vole is in need of immediate aggressive management action. By not focusing additional management attention on voles and their habitat, *Alternative 1* would not prevent continuing declining conditions for the species.

BLM has recognized the plight of the desert tortoise. Responsible actions must be implemented quickly to prevent the continued decline of this species. Several Category II areas with tremendous potential would receive less under *Alternative 1* than under *Alternative 2*.

An intensive annual inventory of black-hawks would provide a good indicator of the overall health of riparian ecosystems, especially Burro Creek. *Alternative 1*, however, would not provide an adequate level of monitoring to document significant changes in black-hawk populations.

Roundtail chubs are believed to be seriously declining in KRA and elsewhere. *Alternative 1* would not provide adequate information for managers and biologists on the status of this species and its management needs.

## From Riparian Area Management

Implementing management of riparian areas where special status plants occur would improve habitat quality for those plants and health and vigor of those plant populations.

## From Wild Horse and Burro Management

Concentrated burro use in some locations would have minor adverse impacts on most federal candidate and BLM sensitive plant species over the long term. Burros would graze and trample plants, possibly destroying them.

## From Support Services Management

Acquiring lands listed in Appendix 9 would place habitat of certain special status plants under BLM management, allowing further management possibilities for perpetuating these species.

## Conclusions

Surface disturbing activities such as mineral exploration and development, realty actions, vegetative products harvest, recreational uses and grazing by cattle, wild horses and burros would cause minor losses to special status plants and/or their habitat and would be minimized through NEPA review. Land exchanges would cause both losses and gains of habitat for special status plants. Management of soil and vegetation would cause improvement in habitat condition.

## IMPACTS TO RIPARIAN AREAS

### From Mineral Development

Mineral exploration and development would result in short-term surface disturbance, destroying vegetation, increasing soil erosion, reducing streambank stability, and lowering water quality.

### From Lands Actions

BLM's exchange program consolidates land ownership resulting in acquisition of important riparian areas and more effective management of areas already in public ownership. Improved management would allow greater control of surface disturbing activities such as livestock grazing, mineral exploration and development, and OHV use.

### From Watershed Management

The ongoing soil survey and ecological site inventory would provide baseline data for the protection of fragile soils and vegetation in riparian areas.

BLM's acquisition of instream flow water rights would ensure adequate water supplies to maintain critical riparian areas.

The maintenance of water quality under current management promotes improved riparian habitat conditions by controlling activities that could harm these areas.

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### From Rangeland Management

Existing rangeland program priorities do not provide for needed revisions of AMPs for important riparian areas. Existing grazing programs in riparian areas would continue without adequate consideration of resource values, resulting in further declines in riparian condition.

### From Recreation Management

The Hualapai Mountain Back Country Byway and portions of the Hualapai Highlights Trail System would invite more people to the area surrounding small riparian areas already overused by visitors. Increased presence of humans would cause more trailing, trash, camping, and soil erosion.

OHVs would harm riparian areas by causing surface disturbance, creating noise and increasing human activity.

### From Wildlife Management

Under normal climatic conditions, wildlife program activities complement the management of riparian areas. During drought conditions, there may be some minor impacts from wildlife feeding, watering, and resting near water. However, this seldom results in serious loss of soil or forage because of the small hooves and light weight of game animals, and their intrinsic characteristic of dispersed grazing. Under current management, riparian areas would be recognized as high priority and actions benefitting both wildlife and riparian values would be implemented.

### From Special Status Species Management

The preservation of habitat for the southern bald eagle, common black-hawk, Hualapai Mexican vole, and roundtail chubs would supplement management efforts to promote riparian habitat.

### From Wild Horse and Burro Management

At current management levels, burros will be generally dispersed throughout their range. But during droughts burro use of riparian areas would increase and some damage to vegetation and soils would occur. Keeping burro numbers at management levels would reduce the level of impacts. However, a prolonged drought coupled with burro use of riparian areas would impede the rate of recovery or establishment of riparian vegetative species such as cottonwood and willow. Excessive removal of vegetation within a riparian system impedes the vegetative functions of sediment filtering, water storage, water release, and shading. As a result, the aquatic and vegetative components of riparian systems would not improve.

Unmanaged wild horses, would harm riparian areas by destroying vegetation, trampling streambanks, and reducing water quantity and quality.

### Conclusions

Mineral development would have short-term impacts on riparian areas. Rights-of-way would not be restricted in sensitive riparian

areas. Riparian habitat would not improve in some areas where AMPs are in need of updating. Recreation program activities would focus more human activities in riparian areas. Wildlife habitat management goals and objectives are compatible with riparian area management. Allowing the wild horse population to fluctuate without management would continue the downward trend in condition of riparian areas within wild horse range.

## IMPACTS TO WILD HORSE AND BURRO MANAGEMENT

### Cerbat Herd Management Area

Allowing a population of wild horses to remain unchecked would harm the population itself. Wild horses with no natural predators expand beyond the limits of their habitat and the habitat fails to support them they would begin a population die-off. At this stage other animal species would either be experiencing or have already experienced die-offs. The habitat destruction would accelerate soil loss, which would in turn reduce the habitat's potential to support viable plant communities.

### Big Sandy Herd Management Area

Impacts of the wild burro population in the Big Sandy HMA has been covered in the grazing and wilderness EISs (BLM 1981 and 1987) for this area. Other proposed actions within the RMP would not have significant impacts on wild burros.

### Black Mountain Herd Management Area

Impacts concerning the wild burro population in the Black Mountain HMA have been discussed in the grazing and wilderness EISs (BLM 1978 and 1989) for this area. Other proposed actions within the RMP would not significantly affect wild burros.

### Conclusions

Wild burro management would be unaffected by this alternative.

## ALTERNATIVE 2 - PREFERRED ALTERNATIVE

### IMPACTS TO ALL RESOURCES

#### From Law Enforcement

The increased presence of BLM rangers in the resource area would enhance public safety, awareness and appreciation of natural resources by the public, and orderly use and protection of natural resources. BLM rangers would add to the overall protection and safety of the public using the resource area, by their presence and the cooperation of other federal, state, and local law enforcement agencies.

Increased BLM ranger presence would enhance public contact, interpretation of BLM resource management programs, and education of the public in low impact use and enjoyment of natural resources. Ranger presence would also deter vandalism, unauthorized surface disturbing activities, occupancy trespass, and illegal dumping.

## IMPACTS TO MINERAL DEVELOPMENT

### From Lands Actions

#### Ownership Adjustments

Disposal of roughly 101,000 acres of public land would prevent exploration and development of minerals. Most lands proposed for disposal, however, have a low to moderate potential for occurrence of locatable minerals and a low to unknown potential for oil and gas.

The acquisition of roughly 365,000 acres of nonfederal mineral estate would affect the development of mineral resources by consolidating land into well blocked areas and reducing potential conflicts between mining operators and landowners. Some of these lands have a moderate to high potential for the occurrence of locatable minerals and a low potential for oil and gas.

#### From Special Management Areas

The designation of 14 ACECs would: (1) leave 2,131,242 acres of federal minerals open to entry, close 56,758 acres to entry (36,283 acres of high mineral potential), and acquire 35,864 acres of nonfederal minerals to be closed to entry; (2) Leave 2,136,872 acres of federal minerals open to leasing with standard lease terms, 41,104 acres open to leasing with no surface occupancy, and close 10,022 acres to leasing; and (3) Leave 1,833,306 acres of federal minerals open to mineral material disposals and close 354,694 acres to mineral material disposal.

Joshua Tree Forest-Grand Wash Cliffs ACEC has a moderate potential for gold; the Clay Hills ACEC has a high potential for bentonite; and the remaining areas proposed for withdrawal have a low or unknown mineral potential. Withdrawals would preclude any future exploration except on valid existing claims. Designating ACECs not proposed to be withdrawn from mineral entry would require submitting a plan of operations for any activities exceeding casual use. This plan would require an environmental assessment before its approval, causing time delays.

All or portions of the Joshua Tree Forest-Grand Wash Cliffs and Western Bajada Desert Tortoise Habitat ACECs have a high potential for the occurrence of saleable minerals near areas of substantial population growth. Although this growth results in the need and demand for sand and gravel, designation of the ACECs would prohibit disposal of mineral materials in the ACEC. Other sources are available nearby.

### From Special Status Species and other Wildlife Resources

Imposing special stipulations, no surface occupancy (NSO), and withdrawals would cause delays in exploration and developing making mineral resources less available.

Impacts from locatable mineral activities would be the same as for *Alternative 1*.

### From Hazardous Materials Management

Mining operations may expect increased operating costs to adequately mitigate impacts from using hazardous materials. Mining operations will be monitored, at a minimum, according to the schedule contained in the BLM's Inspections Enforcement Policy, and those operations which are causing unnecessary or undue degradation will be served a notice of noncompliance as described in 43 CFR 3809.3-2.

## Conclusions

The *Preferred Alternative* would restrict or preclude mineral resources exploration and development in certain areas to protect or accommodate other resources and uses. Land disposals would discourage mineral resource exploration in some areas, while land acquisitions would encourage exploration in others.

ACEC designations would encumber locatable mineral resource exploration and development through delays for plan approvals. Portions or all of 8 ACECs would be withdrawn from mineral entry, all or portions of 5 ACECs are NSO, and 13 ACECs are closed to mineral material disposals.

## IMPACTS TO LANDS ACTIONS

### From Mineral Development

The presence of valid mining claims in disposal areas would delay the exchange program by requiring the area to be cleared of claims.

### From Lands Actions

#### Ownership Adjustments

Making more public lands available for exchange and recreation and public purposes (R&PP) leases or grants would ensure enough lands for community growth. Land exchanges would place in public ownership lands with higher or more diverse resources than the lands disposed of.

The acquisition of state and private lands and subsurface estate would consolidate large blocks of public lands allowing more efficient and consistent resource management and requiring public land users to work with only one government agency for the same use of the lands.

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### Communication Sites

Development of additional facilities would be limited to 9 of the 20 sites now in use. Two more sites would be located near Yucca and on Cherum Peak. Limiting future facilities to designated sites would have a negative impact on applicants finding other sites suitable for their needs.

The development of communication site plans for these eight sites would establish technical standards for current and future site users and improve management of communication sites.

### Right-of-Way Corridors

Designating of three more corridors for the existing coal slurry, AT&T fibre optic lines, and the proposed Lake Mead to Kingman water pipeline project would eliminate the need for a plan amendment and add corridors to direct future users.

### Occupancy Trespass

Resolving occupancy trespass will eliminate illegal use of public land.

### From Wildlife

Designation of wildlife movement corridors would require acquisition of 42,839 acres of non-public land. New rights-of-way outside of right-of-way corridors, which would impact wildlife would be allowed only if impacts are mitigated. The rights-of-way that cross desert tortoise habitat would increase in cost due to the mitigation required.

### Conclusions

Additional public land would be identified for R&PP grants and leases. New communication facilities would be limited to 9 of the 20 sites now in use. Three new utility corridors would be designated. New rights-of-way in desert tortoise habitat would be cost more.

## IMPACTS TO LOCAL ECONOMY

### From Lands

#### Ownership Adjustments

The proposed disposal of 100,795 acres of lands in *Alternative 2* will have similar impacts as described under *Alternative 1*. The increase of 8,117 acres in the disposal area should add revenue to the county due to increased taxes when BLM lands become private.

The lands above and those in Appendix 17 and identified for disposal under the Recreation and Public Purposes Act (R&PP) would be made available for lease or conveyance to local governmental entities and non-profit groups at low or reduced cost.

A beneficial economic or social impact would be realized by these disposals. Site specific EA's would determine specific impacts.

### Conclusions

The disposal of public lands to private ownership would increase the tax base for Mohave County and more public land would be made available for R&PP grants or leases.

## IMPACTS TO WATERSHED (Soil, Water, and Air) MANAGEMENT

### From Mineral Development

Impacts to watershed management would be similar to those under *Alternative 1*, except the withdrawing of land from mineral entry would protect and maintain water quality and quantity, air quality, and soil productivity, and would reduce surface disturbance and hazardous material introductions.

### From Land Ownership Adjustments

Same as under *Alternative 1*.

### Withdrawals, R&PPs, Rights-of-Way, Leases and Permits

Same as under *Alternative 1*.

### From Rangeland Management

Impacts would be the same as *Alternative 1*, except that implementing AMPs and grazing systems in special management areas would improve soil and vegetative conditions.

### From Special Status Species Management

Same as under *Alternative 1*. Also see Special Management Areas in *Alternative 2*.

### From Vegetative Products Harvesting

An inventory and management plan would give greater consideration to resource protection and minimize damage to soil and vegetation.

### From Cultural Resource Management

Same as under *Alternative 1*.

### From Recreation Management

Same as *Alternative 1*. In addition, the limiting of OHV use would lower the rate of soil and vegetation loss, salt yield, and fugitive dust.



**From Visual Resource Management**

Same as under *Alternative 1*.

**From Wildlife Habitat Management**

Same as under *Alternative 1*.

**From Riparian Area Management**

Same as under *Alternative 1*, and also see Special Management Areas in *Alternative 2*.

**From Hazardous Material Management**

Implementation of a hazardous material management program would minimize incidents of discharges of hazardous materials from contained sites and therefore reduce pollution of surface and groundwater.

**From Wild Horse and Burro Management**

Same as under *Alternative 1*.

**From Special Management Areas**

Special management areas, which limit surface disturbing activities (OHV, mining road and facility construction), would protect and maintain water quality and quantity.

**Conclusions**

Impacts would be similar to *Alternative 1*, except that a greater degree of protection would be provided for watershed components. Limitations on surface disturbing activities for mineral exploration and development and OHV uses would reduce runoff and soil losses, reduce degradation of water quality and air quality, reduce vegetative losses, and increase soil productivity. Development of management plans for vegetative harvest would provide greater consideration of watershed values.

**IMPACTS TO VEGETATIVE PRODUCTS HARVESTING**

**From Mineral Development Management**

Same as under *Alternative 1*.

**From Land Ownership Adjustments**

Same as under *Alternative 1*.

**From Land Withdrawals, R&PPs, Rights-of-Ways, Leases and Permits**

Impacts would be similar to those under *Alternative 1*, but might be more intense because of more identified corridors.

**From Watershed Management**

Same as under *Alternative 1*.

**From Cultural Resource Management**

Same as under *Alternative 1*.

**From Recreation Management**

Impacts would be the same as under *Alternative 1* in areas of intensive recreational use. OHV use designations would limit vegetation harvesting where travel off of existing roads, trails, and washes would not be permitted.

**From Wildlife Habitat Management**

Impacts would be the same as under *Alternative 1*, except on SMAs identified for high priority wildlife habitat, vegetative products harvesting might be limited or prohibited if it would conflict with the resource.

**From Special Status Species Management**

Impacts would be the same as under *Alternative 1*. In addition, ACEC designation to protect Arizona cliffrose, white-margined penstemon, bald eagles, desert tortoise, and black-hawks would close those areas to any harvesting of vegetative products.

**From Riparian Area Management**

Impacts would be the same as under *Alternative 1*. On ACECs identified for high priority riparian values, vegetative products could not be harvested.

**From Special Management Areas**

Designations would remove ACECs from the harvest of vegetative products, other than salvages. Designation of the Cherokee Point Antelope Habitat as an ACEC would limit harvest of vegetative products if harvesting conflicts with management objectives.

Fewer vegetative products should be harvested because of areas withdrawn from mineral entry and closed to mineral material disposals.

**From Support Services Management**

Implementing of law enforcement patrolling of the public lands would reduce the amount of theft of vegetative products, and result in better compliance with permit stipulations. Patrolling would also reduce the amount of environmental damage caused by driving off designated roads, driving on muddy roads, or removing vegetative products from outside designated areas.

**Conclusions**

Impacts would be similar to *Alternative 1*, except that additional salvage operations would become available because of additional utility corridors identified. Special Management Areas identified

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would reduce the amount of area where harvests may occur. Limitations on OHV use and greater consideration of sensitive resources would impose greater limitations on suitability of harvest activities. Law enforcement patrolling would provide better control of harvest activities and lessen environmental damage.

### IMPACTS TO RANGELAND MANAGEMENT



#### From Mineral Development

Impacts to livestock grazing would be similar to those *Alternative 1*, but less disturbance would occur because of areas withdrawn from mineral entry and closed to mineral material disposals.

#### From Land Ownership Adjustments

Impacts to livestock grazing would be similar to those under *Alternative 1* but would be more intense because of more acreage designated as suitable for disposal.

#### From Watershed Management

Same as under *Alternative 1*.

#### From Vegetative Products Harvesting

An inventory and management plan would give greater consideration to resource values and result in increased forage production and less soil disturbance and erosion.

#### From Cultural Resource Management

Cultural resource management would have similar impacts to those described for *Alternative 1*. Designation of an ACEC/SRMA at the Carrow-Stephens Ranches would exclude 1,795 acres from grazing on the Big Sandy Grazing Allotment, requiring a reduction of active grazing preference in this allotment.

#### From Recreation Use Management

Same as under *Alternative 1*.

#### From Wildlife Management Habitat Management

Impacts would be similar to those described for *Alternative 1*. The

degree of impact would be greatly increased in areas designated as ACECs because of unique or high values. Where Category I and II Desert Tortoise habitat is found, constraints on construction of range improvements would be imposed where unresolvable conflicts occur with tortoise needs. Limitations on grazing use would be possible to assure adequate forage for tortoise. Presence of Category I and II tortoise habitat would give priority to affected allotments for AMP development.

### From Special Status Species Management

Impacts would be similar to those described for *Alternative 1*, except

- Designation of the white-margined penstemon habitat as an ACEC would constrain construction of range improvements and would limit livestock grazing within this area, affecting portions of the Happy Jack Wash, La Cienega, and Boriana A grazing allotments.
- Designating an SMA within the Black Mountain ACEC for Cerbat beard-tongue habitat would constrain the building of range improvements and limit livestock grazing within this area affecting portions of the Gediondia, Fort MacEwen A, and Fort MacEwen B grazing allotments.
- Designating the McCracken and Poachie Desert Tortoise ACECs would constrain construction of range improvements and limit grazing within these areas affecting the Chicken Springs, Bateman Springs, Artillery Range, Greenwood Community, Burro Creek Ranch, and Arrastra Mountain grazing allotments.
- Designating the Hualapai Mountain Research Natural Area ACEC would constrain construction of range improvements and limit livestock grazing within these areas, affecting portions of the La Cienega, Yellow Pine, and Hualapai Peak grazing allotments.
- Designating the Wright and Cottonwood Creeks Riparian and Cultural, Burro Creek Riparian and Cultural, and Three Rivers Riparian ACECs would protect riparian habitat by constraining construction of range improvements and limiting livestock grazing, affecting portions of the following allotments:

Crozier  
Valentine  
7L (McElhaney)  
JJJ  
Burro Creek  
Bagdad  
Greenwood Peak Community  
Greenwood Community  
Burro Creek Ranch  
Artillery Range  
D.O.R.  
Chicken Springs  
Santa Maria (Lower Gila Resource Area)  
Van Keuren (Lower Gila Resource Area)  
Primrose (Lower Gila Resource Area)

### From Riparian Area Management

Impacts would be similar to those described for *Alternative 1*, except designating three riparian ACECs (Burro Creek, Three Rivers, and Wright and Cottonwood Creeks) would affect grazing allotments as described under Special Status Species management. Affected allotments would be given priority for intensive management.

### From Special Management Areas

Impacts resulting from designation of the 14 ACECs are discussed under the originating resource: cultural resources, recreation, wild-life, and special status species.

### From Wild Horse and Burro Management

Same as under *Alternative 1*, except that if proper utilization levels on key forage species within the Cerbat Herd Management Area are exceeded, grazing preference would have to be adjusted or grazing management changed on the Quail Springs, Mount Tipton, Mineral Park, Canyon Ranch, Cerbat, and Turkey Track allotments.

### Conclusions

Impacts would be similar to *Alternative 1*, except that limitations on surface disturbing activities for mineral exploration and development and vegetative harvest would result in smaller losses of vegetative productivity and disruption to grazing livestock. There would be a greater degree of change in grazing preference, ownership of range improvements and management efficiency because of additional acreage designated for disposal. Designation of special management areas for unique resource values throughout the resource area would place constraints on construction of range improvements and would impose limitations on grazing use on affected allotments. Similar constraints and limitations would occur where Category I and II desert tortoise habitat occurs. Grazing allotments located in the Cerbat Wild Horse HMA would be subject to grazing preference adjustments where over-obligation of available forage exists.

## IMPACTS TO CULTURAL RESOURCES

### From Mineral Development

Western Bajada Tortoise and Cultural Resource and part of the Joshua Tree-Grand Wash Cliffs ACECs would be withdrawn from mineral entry, subject to valid existing rights, resulting in greater protection for cultural resources. Mining would require approved plans of operations, allowing adequate time for mitigation and cultural resource inventories.

### From Lands Actions

Impacts under the *Preferred Alternative* would be the same as under *Alternative 1*, with the additional benefit of adding certain cultural properties to BLM's priority list for acquisition. These sites include the Neal petroglyphs, Barth Bighorn Cave access, X-Bar-1 petroglyphs, and Mineral Park historical mining area.

### From Recreation Management

Prehistoric and historic trails and other sensitive cultural resources would be protected by closing or limiting OHV use in ACECs. Two open OHV areas would reduce the level of indiscriminate use throughout the resource area.

### From Vegetative Products Management

Cultural resources would benefit from the curtailment or reduction of woodcutting while a fuelwood management plan was being developed. The subsequent plan would also consider protection of sensitive sites.

### From Special Management Areas

Long-term beneficial impacts would result from management prescriptions in the Joshua Tree Forest-Grand Wash Cliffs, Black Mountains, Western Bajada Tortoise and Cultural Resource, Wright and Cottonwood Creeks Riparian and Cultural, Carrow-Stephens, and Burro Creek Riparian and Cultural ACECs and the Mineral Park SRMA, designed to help BLM protect, preserve, and enhance cultural resources.

Some degree of vandalism could increase because of the attention brought to previously unknown areas. Increased protective measures outlined in ACEC plans, however, would more than balance adverse impacts.

### Conclusions

*Alternative 2* would benefit the most significant cultural resources but would result in some losses to vandalism, OHV activity, and natural processes. Negative impacts would be lower in areas designated as ACECs and SRMAs due to increased management emphasis.

## IMPACTS TO RECREATION MANAGEMENT

### From Mineral Development

Impacts to recreation would be the same as under *Alternative 1*; but management prescriptions and mineral withdrawals under ACEC designations would minimize adverse impacts to visual resources.

### From Lands Actions

Impacts would be similar to those under *Alternative 1*. The exchange program would benefit recreation by bringing into public ownership high-value scenic lands and wildlands suitable for outdoor recreation. Increases in demand for rights-of-way, such as the coal slurry pipeline and the AT&T fibre optic line, would degrade visual resources, but improve access across private and state lands. The elimination of occupancy trespass would improve scenic quality and release occupied areas for recreation use by the general public.

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### From Watershed Management

Impacts would be similar to those described for *Alternative 1* and categorization of current and potential watershed conditions and erosion (see Appendix 20) would assist BLM to improve soil and vegetative conditions, resulting in improved scenic values and wildlife habitat. Increased wildlife would provide greater opportunities for hunting, photographing, and watching wild animals.

### From Vegetative Products Management

Woodlands are a very important limited resource to the recreation program in KRA. They add greatly to the scenic diversity and provide recreation opportunities at mid- to upper elevations. Following the criteria outlined for selection of suitable harvest sites for woodland products would ensure removal of trees is compatible with soil, vegetation, slope, aspect, and visual resources, which directly impact scenic and other recreation values.

### From Rangeland Management

Impacts would be the same as under *Alternative 1*, except elimination of livestock grazing on portions of the Chino Springs, Silver Creek, and Alamo allotments would improve vegetative cover and result in increased scenic and recreation related wildlife habitat values.

### From Cultural Resources Management

Impacts would be similar to those described for *Alternative 1*, plus designating 6 special management areas, with significant cultural values and developing interpretive sites, would enhance the recreation program by giving the public more opportunities to learn about and experience historic values.

### From Recreation Management

Developing more projects such as RV parks, Kingman Regional Park, campgrounds, picnic areas, interpretive pullout sites, trails and expansion of existing recreation sites would improve recreational opportunities. In addition, participation by volunteers would benefit the public, by serving as campground hosts, maintaining and cleaning facilities, building and maintaining trails and providing backcountry users with information and emergency assistance.

The VRM inventory update would provide important data for planning of potential projects, to reduce negative impacts on visual resources.

### From OHV Designation

Limited OHV use on 2,500,000 acres (see Table II-4), would reduce damage to vegetative cover and soils on upland areas, control erosion, and result in improved scenic values. This designation would still allow extensive OHV use on an established network of roads, trails, and washes over much of the resource area. Unrestricted OHV use on 5,760 acres would allow cross-country activities by all-terrain vehicles to occur.

### From Scenic Rivers

Rivers designated as eligible to be considered for inclusion in the National Wild and Scenic Rivers System (Appendix 22), would receive considerable protection throughout the suitability determination period, from designation of the Three Rivers, Burro Creek Riparian, and Wright and Cottonwood Creeks Riparian and Cultural ACECs. The free-flowing nature and outstanding values of those streams would be protected until suitability can be determined, and the shorelines and adjacent watersheds would be kept largely primitive and undeveloped.

Protection of these streams would enhance not only these riparian systems but lands and communities next to and downstream from these systems. Long-term protection of these rivers is a valuable investment in the human, cultural, wildlife, riparian, recreational, scenic, and future ecological health of wildlands and communities.

### From Wildlife Habitat Management

Impacts would be similar to those described for *Alternative 1*, except improved wildlife habitat resulting from ACEC designation, grazing management, and removal of grazing would result in increased wildlife populations and benefit hunting, photography, and opportunities to view wild animals.

### From Special Status Species Management

Protection of special status plant and animal species would improve recreation opportunities to learn about and view these important aspects of our environment. An informed and educated public would benefit from a greater diversity of plant and animal life on wild lands.

### From Special Management Areas

Designation of 14 ACECs would constrain or eliminate surface disturbing activities associated with mineral exploration and development on important riparian areas, T&E habitat, and cultural sites. Grazing would also be managed according to ACEC objectives and other surface disturbing activities such as communication sites, powerlines, pipelines, and roads would be confined to corridors. These actions would result in protection of/or improvement in existing scenic values and recreation related wildlife habitat values.

### From Support Services

#### Access:

Acquiring legal access to recreation sites would allow for the development and building of new recreation sites.

#### Acquisition:

Acquiring private and state lands through exchange, in areas planned for new or improved recreation sites, would increase recreational opportunities.

## Fire Management:

The suppression of wild fires would protect developed recreation sites and retain scenic values.

## Conclusions

Protection for riparian, T&E, and cultural values afforded by management prescriptions associated with proposed ACECs would result in improved scenic values and recreation-related wildlife habitat. Development of recreation facilities would greatly expand recreation opportunities.

## IMPACTS TO WILDLIFE HABITAT

### From Mineral Development

Impacts to wildlife would be similar to those of *Alternative 1*, except the withdrawal of 56,758 acres from mineral entry, requirements for MPOs, mandatory bonding, no surface occupancy stipulations on 41,104 acres, and seasonal restrictions would protect these areas from destruction or alteration of habitat, and the increased presence of people. Mandatory bonding would ensure that damaged areas are reclaimed.

Special stipulations on mineral leasing would prevent undue surface disturbance from occurring. The cumulative impact of up to 10 wells drilled during the life of the plan would not be significant.

### From Lands Actions

Impacts would be the same as in *Alternative 1*, except that public lands in the Yucca and Dutch Flat areas, would only be exchanged for habitat supporting desert tortoise, Hualapai Mexican vole, or other high value natural resources.

Identifying lands within disposal areas for R&PP purposes would put less pressure on surrounding wildlands, which are proposed for retention to protect natural resource values.

### From Watershed Management

Same as under *Alternative 1*.

### From Vegetative Products Harvesting

Because the objectives of vegetative harvesting would include habitat enhancement or mitigation, destruction of wildlife habitat during harvesting would be prevented. Some of the rarest and most valuable habitats would receive long-term protection from human disturbance and habitat alteration.

### From Rangeland Management

Impacts would be the same as under *Alternative 1*, except the review and revision of AMPs affecting ACECs would address the impacts of livestock grazing on sensitive areas. Better grazing management would lead to improved wildlife habitat conditions.

A more accurate ephemeral boundary would result in more appropriate range management practices leading to improved wildlife habitat conditions, such as improved vegetative cover, vigor, and frequency of desirable species.

The elimination of grazing on Chino Springs, Silver Creek, and Alamo allotments would improve habitat conditions for dependant wildlife species in riparian and upland areas.

### From Recreation Management

Increased use of proposed recreation developments would disturb individual animals in the immediate area around each site. Impacts would be greatest around Boundary Cone, Moss Wash, Pine Flat, Antelope Spring, Six Mile Crossing, Black Mountains, Hualapai Mountains, and Aubrey Peak. However, managing unrestricted recreation activities already occurring in these areas by encouraging use in developed recreation sites, would concentrate visitor use in smaller areas, reducing impacts to the overall habitat used by species.

A 40-acre mineral withdrawal around each recreation site would reduce the potential for surface disturbance, soil erosion, and habitat disturbance from mining.

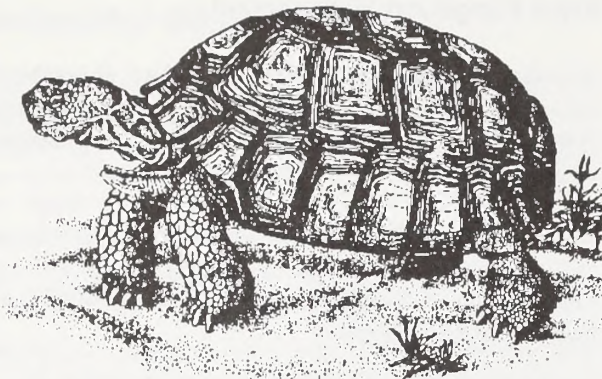
The proposal for a regional park near Kingman would give some measure of protection to wildlife in this area. A wildlife movement corridor proposed in this area would give the public a place near Kingman to experience nature.

Intensive OHV use would alter soil and surface conditions and ultimately preclude the use of Red Lake by waterfowl in wet years when the lake holds water. As an "open" area, access and increased human activity would occur in the washes draining into Red Lake. These washes are important habitat for raptors, especially breeding Swainson's and ferruginous hawks.

Limiting OHVs in ACECs and throughout KRA would protect sensitive wildlife habitat from surface disturbance. Cross-country travel would not be allowed. Less surface disturbance would mean less disturbance to wildlife. Limiting OHV use in the planning area to existing trails and washes would allow reasonable access to hunters and other recreationists.

### From Special Status Species

The protection of special status species through ACEC designation, fencing, mineral withdrawal, and land retention and acquisition would also protect wildlife associated with these areas.



### From Wildlife Management

Establishing ACECs would focus management attention and budget priorities into critical wildlife areas.

### From Riparian Management

The increased management emphasis in riparian areas would result in better habitat conditions and improved reproduction for wildlife, including reduced erosion, improved vegetative cover and composition, increased forage, cooler air and water, improved water quality, and expanded riparian acreage.

### From Special Management Areas

All ACEC proposals would preserve or improve wildlife habitat by eliminating or controlling surface disturbing activities.

### From Hazardous Material Management

Implementation of a hazardous material management program would minimize incidents of discharges of hazardous materials from contained sites and therefore reduce pollution of fisheries.

### From Wild Horse and Burro Management

For burros, same as under *Alternative 1*.

The Cerbat mountain island provides important habitat for mule deer and other wildlife. On the basis of BLM's determination of available forage prepared for the Cerbat/Black Mountain EIS, the forage in the wild horse range is overallocated. Forage has been allocated for livestock, deer, and 14 horses. With no reduction in livestock allocation, the current deer population of approximately 875 head, and numbers kept at 79-101 wild horses, the range would be overgrazed and wildlife habitat would deteriorate and upset the thriving ecological balance of the area. Riparian areas supporting numerous dependant wildlife species would be especially hard hit by the combination of horses, livestock, and mule deer.

Waiting to adjust the carrying capacity of livestock and wild horses, while monitoring the impacts of 79-101 wild horses would take

several years, during which range conditions would further deteriorate. Poorer wildlife habitat conditions would result, and certain species might be lost to the area.

### From Support Services Management

Acquiring access across certain state and private roads would improve BLMs management abilities to build and maintain wildlife habitat improvement projects and would benefit recreational wildlife users.

Reserving public access on Putnam Road would also benefit recreationists and the building and maintenance of wildlife projects.

Acquiring lands to establish wildlife movement corridors would reduce the possibilities of habitat fragmentation and the loss of important species. Deterioration in genetic diversity would be avoided. Movement corridors would lessen the need for listing candidate species and aid in the recovery of listed species. Under federal ownership, movement corridors can be maintained, developed, or reestablished.

More law enforcement personnel would provide better protection for wildlife resources.

### Conclusions

Mineral withdrawals, requiring mining plans of operation (MPO) and mandatory bonding of mining operations, livestock grazing to meet ACEC objectives, restrictions on location of communication sites, restricting rights-of-way to corridors or keeping rights-of-way out of some ACECs, and ACEC management prescriptions would greatly improve wildlife habitat. Establishing wildlife movement corridors would ensure genetic diversity of species. Increased recreation use would increase people-wildlife interactions, but developed recreation sites would serve to mitigate impacts. Proposed livestock, horse, and deer numbers in the Cerbat could negatively impact the habitat.

### IMPACTS TO SPECIAL STATUS SPECIES

#### From Mineral Development

Impacts of mineral development would be the same as under *Alternative 1* except for the following.

It is anticipated that the number of surface disturbing mining activities would be reduced through the requirements of filing Plan of Operations and mandatory bonding.

Withdrawal of the Arizona cliffrose habitat from mineral entry would reduce the potential for destroying the habitat. Successful BLM acquisition of mineral rights on existing mining claims on the Clay Hills ACEC would further ensure a viable population of Arizona cliffrose.

Withdrawal of ACECs from mineral entry would protect special species habitat. The requirement for MPOs in ACECs would reduce the amount and degree of surface disturbance.

Restricting surface disturbance in peregrine falcon breeding areas along the Grand Wash Cliffs would give the birds a chance to carry out their breeding cycle without human interference.

Not allowing mineral material disposals would promote habitat recovery and provide habitat protection for the Cerbat beard-tongue, white-margined penstemon, desert tortoise, Arizona cliffrose, bald eagle, and black-hawk special status species.

### From Lands Actions

Impacts would be the same as under *Alternative 1*, except the proposed disposal area south of Yucca would be made available only in exchange for lands in Dutch Flat, and the Hualapai and McCracken Mountains, which contain high value natural resources. Category III and some category II desert tortoise habitat would be taken out of public ownership in Dutch Flat, west of the Alamo Road. But this impact would be more than offset by acquisition of private lands east of Alamo Road, creating Category I desert tortoise habitat out of existing Category II habitat.

Enlarging the land disposal area near the town of Chloride would impact BLM control of 3 square miles of potential habitat for the freckled milk-vetch.

### From Watershed Management

Impacts would be similar to those described for *Alternative 1*.

### From Vegetative Products Harvesting

Impacts would be similar to those described for *Alternative 1*.

### From Rangeland Management

Same as under *Alternative 1*.

### From Recreation Management

Impacts would be the same as under *Alternative 1* except that restricting OHVs to designated roads and trails inside the Cerbat beard-tongue and white-margined penstemon ACECs would protect and stabilize fragile wash and floodplain habitat for these two species. Likewise, ACEC restrictions on OHVs would reduce the incidental destruction of Arizona cliffrose by OHVs.

A developed campground at Burro Creek may increase recreation use within the Clay Hills ACEC. A possible result may be increased soil disturbance and trampling of Arizona cliffrose seedlings by foot traffic. Education of the public through interpretive sites and increased ranger presence could mitigate impacts.

### From Riparian Area Management

Impacts would be similar to those described for *Alternative 1*.

### From Special Management Areas

Not allowing any new rights-of-way within the Arizona cliffrose habitat would prevent further habitat degradation.

Designating ACECs establishes the management priority and direction to implement land exchange proposals, OHV restrictions, mineral withdrawals and acquisition, and other protective management actions. Through these actions BLM could implement recovery plans, which could stabilize endangered species and help them recover. BLM would establish significant biological reserves to sustain viable populations of the Cerbat beard-tongue and white-margined penstemon in Arizona. This action might prevent the need for federal listing of either of these species as threatened or endangered.

### From Wild Horse and Burro Management

Impacts would be similar to those described for *Alternative 1*.

### From Support Services Management

Acquisition of lands listed in Appendix 23 would place habitat of certain special status plant species into BLM management control, allowing further protection of these species.

The increase in ranger patrols on public lands would ensure greater public compliance with OHV regulations, reducing the amount of habitat damage caused by OHV.

### Conclusions

Impacts are similar to *Alternative 1*, except that a greater degree of protection would be provided for special status plant and animal habitat. This protection includes withdrawals from mineral entry in ACEC proposals, closure of areas to mineral material disposals, OHV limitations, restrictions on new rights-of-way, and law enforcement patrols. Land exchanges would cause similar impacts to *Alternative 1*, but would be greater in degree. Increased recreational activity may occur within the Clay Hills ACEC when the Burro Creek campground is developed.

## IMPACTS TO RIPARIAN AREAS

### From Mineral Development

Mineral development would affect riparian areas under the *Preferred Alternative* the same as under *Alternative 1*, except that withdrawal of 57,000 acres from mineral entry in ACECs, and the requirements for MPOs, mandatory bonding, and seasonal restrictions outside the withdrawals, would protect riparian areas from unnecessary destruction or alteration of habitat and increased human presence. Mandatory bonding would ensure the reclaiming of disturbed areas.

### From Lands Actions

Same as under *Alternative 1*, except identifying lands within disposal areas for R&PP leases or grants would put less pressure on surrounding wildlands, which are proposed for retention to protect natural resource values.

## CHAPTER IV

### From Watershed Management

Same as under *Alternative 1*

### From Vegetative Products Harvesting

Same as under *Alternative 1*, except riparian habitats would receive higher priority for long-term protection.

### From Rangeland Management

The review and revision of AMPs affecting ACECs would address the impacts of livestock grazing on key riparian areas. Better grazing management would lead to increased soil stability and improved plant cover and species composition.

The elimination of livestock grazing in the Chino Springs, Silver Creek, and Alamo allotments would improve conditions for riparian habitat and wildlife-dependant species.

### From Recreation Management

The proposed recreation developments would increase surface disturbance and degrade water quality around the sites. Impacts would be greatest in Moss Wash, Antelope Spring, Pine Flat, Six Mile Crossing, and the Hualapai Mountains. Developed sites would concentrate use in small areas and reduce impacts to the rest of the riparian zone.

A 40-acre mineral withdrawal around each recreation site would reduce the potential for surface disturbance, soil erosion, and habitat disturbance.

The proposal for a regional park within 30 minutes of Kingman would offer the public an opportunity to see and experience riparian habitat. Riparian habitat in this area is unmanaged and has tremendous potential for recovery and public education.

Limiting OHVs in ACECs and throughout KRA would protect sensitive riparian areas from surface disturbance. Less surface disturbance would mean less disturbance to wildlife.

### From Wildlife Habitat Management

Excellent riparian conditions are synonymous with excellent wildlife habitat. Improving wildlife habitat in riparian areas results in improved riparian conditions.

An intensive annual inventory of black-hawks would provide an excellent indication of the overall health of the Burro Creek riparian ecosystem.

### From Special Management Areas

Management prescriptions outlined in ACEC plans would assist

BLM to protect and improve KRA's most significant riparian ecosystems.

### From Wild Horse and Burro Management

#### Cerbat Herd Management Area

Several years would be required in waiting to adjust the carrying capacity of livestock and wild horses, while monitoring the impacts of 79-101 wild horses. During this time range conditions would deteriorate further resulting in poorer riparian habitat conditions and the possible loss of certain plant and wildlife species.

#### Big Sandy Herd Management Area

Same as under *Alternative 1*

#### Black Mountain Herd Management Area

Same as under *Alternative 1*

### From Support Services Management

Proposed acquisitions would benefit riparian management by consolidating ownership, and making land management more efficient. These actions would also protect riparian ecosystems supporting rare plant and wildlife communities.

More law enforcement personnel would better protect riparian resources.

## Conclusions

Withdrawal from mineral entry, requiring MPOs and mandatory bonding of mining operations, grazing to meet ACEC objectives, restricting rights-of-way to corridors, and ACEC management prescriptions designed to improve wildlife habitat and riparian areas would result in greatly improved riparian conditions. Recreation activities and proposed wild horse numbers would impact riparian-wetland areas.

## IMPACTS TO SPECIAL MANAGEMENT AREAS

Impacts are outlined in each of the affected resource activities.

## IMPACTS TO WILD HORSE AND BURRO

### Cerbat Herd Management Area

Managing for a viable wild horse population would benefit the existing wild horse population. The habitat would be monitored ensuring that food and water are available. Their habitat would be allowed to improve under light to moderate grazing pressure. The initial reduction of horses to obtain management levels (79-101)



would decrease intraspecies competition for food, water, and space by over 30 percent, eliminating stress caused by overcrowding. Wilderness designations would benefit wild horses by limiting people-horse contacts to people on horseback or foot. Protecting of riparian areas by supplying water outside of the protected areas would reduce the availability of some forage but help to protect sources of potable water.

**Conclusions**

The proposed horse numbers would result in a viable wild horse population.

**ALTERNATIVE 3**

**IMPACTS TO MINERAL DEVELOPMENT**

**From Lands Actions**

**Ownership Adjustments**

The transfer of up to 128,000 acres of public land would impede mineral development on these lands because these lands would leave federal ownership and would not be open to mineral exploration and development. Most disposal lands have a low potential for the occurrence of locatable minerals and a low to unknown potential for oil and gas resources. On the other hand, BLM's acquiring of 231,000 acres of combined surface and subsurface estate and 26,000 acres of nonfederal subsurface estate would open these lands to mineral exploration and development.

**From Special Status Species and other Wildlife Resources**

Impacts to minerals resources development would be the same as under *Alternative 2*.

**From Special Management Areas**

Designation of 20 ACECs would:

- Leave 2,141,392 acres of federal minerals open to entry, close 46,608 acres to federal minerals to entry (24,403 acres of high mineral potential), and propose acquiring 24,940 acres of nonfederal minerals to be closed to entry.
- Leave 2,150,024 acres of federal minerals open to leasing with standard lease terms, 27,954 acres open to leasing with no surface occupancy, and 10,022 acres closed to leasing.
- Leave 2,002,504 acres of federal minerals open to mineral materials disposal and 185,496 acres closed to mineral material disposals.

The Joshua Tree Forest ACEC has a moderate potential for gold; the Clay Hills ACEC has a high potential for bentonite; and the remaining areas proposed for withdrawal have a low or unknown mineral potential. Withdrawals would preclude any future exploration except on valid existing claims. Designating ACECs not proposed to be withdrawn from mineral entry would require submitting a plan of operations for any activities exceeding casual use. An environmental assessment would be required before approval of any operation, causing time delays.

All or portions of the Joshua Tree Forest and Western Bajada Tortoise and Cultural ACECs have a high potential for the occurrence of saleable minerals near areas of substantial populations growth. Although this growth results in the need and demand for sand and gravel, implementing ACEC plans would prohibit development of these resources. However, other sources are available nearby.

**Conclusions**

Most high value mineral potential lands are open to mineral entry, mineral lease and mineral material disposals. MPOs and mandatory bonding in ACECs would constrain developers but would also lead to orderly development.

**IMPACTS TO LAND RESOURCES**

**From Lands Actions**

**Ownership Adjustments**

Impacts would be the same as *Alternative 2*, except the addition of the two disposal areas proposed in *Alternative 3* would remove 24,700 more acres from public ownership. These lands would be acquired by the State of Arizona.

**From Rangeland Management**

Disposal of the lands in the northeast portion of Golden Valley would affect the allottee because a major portion of the allotment would leave federal ownership. If the land is transferred to the state, livestock grazing would possibly continue. But BLM and the allottee have spent a great deal of time and money implementing holistic resource management (HRM) practices on this part of the allotment.

**From Wildlife Resources**

Same as under *Alternative 2*.

**From Special Status Species**

Same as under *Alternative 2*.

**Conclusions**

Impacts are similar to *Alternative 2* except additional lands would be made available for exchange with the State of Arizona.

## CHAPTER IV

### IMPACTS TO LOCAL ECONOMY

#### From Lands

#### Ownership Adjustments

Same as *Alternative 2*.

### IMPACTS TO WATERSHED (Soil, Water, and Air) MANAGEMENT

Same as *Alternative 2*.

### IMPACTS TO VEGETATIVE PRODUCTS MANAGEMENT

#### From Mineral Development Management

Same as under *Alternative 2*.

#### From Land Ownership Adjustments

Impacts would be similar to *Alternative 2*, but to a greater degree because of additional acreage slated for disposal.

#### From Watershed Management

Same as under *Alternative 2*.

#### From Rangeland Management

Same as under *Alternative 2*.

#### From Cultural Resources Management

Same as under *Alternative 2*.

#### From Recreation Management

Impacts would be similar to those under *Alternative 2*, but to a greater degree because of the three more SRMAs and numerous campground/interpretive sites planned for development.

#### From Wildlife Habitat Management

Same as under *Alternative 2*.

#### From Special Status Species Management

Same as under *Alternative 2*.

#### From Riparian Area Management

Same as under *Alternative 2*.

#### From Special Management Areas

Impacts would be the same as under *Alternative 2*, except a reduction of the total acreage in the Black Mountain ACEC would result in fewer restrictions on harvest of vegetative products.

Breaking up the Wright and Cottonwood Creeks Riparian and Cultural ACEC and reducing the total acreage would result in fewer restrictions on the harvest of vegetative product.

#### From Support Services Management

Same as under *Alternative 2*.

### Conclusions

Impacts are similar to *Alternative 2*, except that the additional acreage slated for disposal would cause further losses and gains in lands containing vegetative products available for harvest. The addition of further intensive recreational facilities would create more areas where incompatibility with vegetative harvest will exist. Acreage reductions on 2 ACECs would result in less restrictions on harvests.

### IMPACTS TO RANGELAND MANAGEMENT

#### From Mineral Development Management

Same as under *Alternative 2*.

#### From Land Ownership Adjustments

Impacts would be similar to those under *Alternative 2*, except that disposal of more land in northeast Golden Valley would cause a corresponding loss of public land grazing on the Mud Springs, Pine Spring, Curtain and Castle Rock grazing allotments.

Disposal of public lands southeast of Bullhead City would not affect livestock grazing.

Disposal of public lands in the Curtain Allotment would remove BLM's only example of HRM in KRA. This local classroom and demonstration area for applying the multiple use philosophy and practices (including livestock grazing, wildlife, and recreation programs) would be lost.

#### From Watershed Management

Same as under *Alternative 2*.

### From Vegetative Products Harvesting

Eliminating firewood and yucca harvesting throughout the resource area would lessen the potential for impacts to soils and vegetation caused by such harvesting.

### From Rangeland Management

Same as under *Alternative 2*, except that closing of the Poachie and McCracken Desert Tortoise Habitat ACECs to livestock grazing would disturb operations in the following grazing allotments:

- Chicken Springs
- Bateman Springs
- Artillery Range
- Greenwood Community
- Burro Creek Ranch
- Arrastra Mountain

### From Cultural Resource Management

Same as under *Alternative 2*.

### From Recreation Management

Same as under *Alternative 2*, except further development of intensive use campgrounds, interpretive sites and SRMAs would further increase livestock-public interactions and related problems.

### From Wildlife Management Habitat Management

Impacts under *Alternative 3* would be similar to those under *Alternative 2*, except that reducing the size of the Black Mountain ACEC would reduce the degree of impacts to rangeland management described for *Alternative 2*.

### From Special Status Species Management

Impacts to rangeland management from management of special status species would be similar to those under *Alternative 2*, except that closing the Poachie and McCracken Desert Tortoise Habitat ACECs to livestock grazing would affect six grazing allotments, as described above under Rangeland Management.

### From Riparian Area Management

Impacts would be similar to those described for *Alternative 2*, except that a decrease in acreage within the Wright and Cottonwood Creeks Riparian and Cultural and Burro Creek Riparian and Cultural ACECs might reduce the degree of impact to rangeland management on the affected allotments.

### From Special Management Areas

Impacts would be similar to those described for *Alternative 2*, except that a reduction in the acreage of the Joshua Tree Forest ACEC would reduce the degree of impact to rangeland management as described in *Alternative 2* on the Diamond Bar A Allotment.

A reduction in acreage for the Black Mountain ACEC is discussed under impacts to Rangeland Management from Wildlife Habitat Management.

A reduction in acreage for the Wright and Cottonwood Creeks Riparian and Cultural ACEC is described under Riparian Area Management above.

A reduction in acreage for the Burro Creek Riparian and Cultural ACEC is discussed under Riparian Area Management, above.

### From Wild Horse and Burro Management

Management of a herd of only 14 horses in the Cerbat HMA would result in less cattle-horse competition for forage in dual use areas. At a herd level of 14 horses, more forage may be available to allocate to livestock on the affected allotments if use is within management objectives.

### From Support Services Management

Same as under *Alternative 2*.

### Conclusions

Impacts would be similar to *Alternative 2*, except that the additional acreage slated for disposal would further affect grazing preference and ownership of range improvements on 4 additional grazing allotments. The elimination of yucca and firewood harvest would lessen impacts to vegetative productivity. Closure of the Poachie and McCracken Desert Tortoise ACECs to livestock grazing would affect grazing operations on 6 grazing allotments. Additional intensive recreational areas proposed would increase livestock/public interaction and associated problems. Decreases in acreages for several special management areas would reduce the degree of limitations and constraints pertaining to grazing practices. Setting a herd level of 14 wild horses in the Cerbat Wild Horse HMA would result in less forage competition with livestock.



## CHAPTER IV

### IMPACTS TO CULTURAL RESOURCES

#### From Lands Actions

Same as *Alternative 2*, except one of the additional disposal areas south of Bullhead City probably has a large number of cultural resources. Nearby areas have a large number of sites and isolated artifacts. New sites and data would be recorded and mitigation of adverse impacts would be done on any significant sites. Although mitigation measures would be beneficial, public use and conservation values would be lost.

#### From Vegetative Products Management

Cultural resources would benefit from the elimination of both commercial and private firewood cutting, which would eliminate the adverse impacts of these activities.

#### From Special Designations

The main impacts would be a loss of increased management for the preservation and enhancement of significant cultural resources that probably exist near the relatively small ACECs. Most of the known major sites would receive more protection and management under the proposed ACECs except for the reduced Joshua Tree Forest ACEC, which would not include the Grand Wash Cliffs and adjacent lands to the east. These excluded lands contain large and unique prehistoric roasting pits.

#### Conclusions

*Alternative 3* would generally benefit cultural resources by establishing special management areas that would include or be designed to protect priority cultural resource areas. Reducing the size of the ACECs proposed for *Alternative 2* would probably be less beneficial especially for the reduced Joshua Tree Forest ACEC.

### IMPACTS TO RECREATION MANAGEMENT

#### From Minerals Management

Same as under *Alternative 2*.

#### From Lands Actions

Same as under *Alternative 2*.

#### From Watershed Management

Impacts would be similar to *Alternative 2*.

#### From Vegetative Products Management

Same as under *Alternative 2*, except eliminating private and commercial firewood cutting yucca harvesting would enhance esthetics for recreational users, but remove private use woodcutting as a source of local family recreation.

#### From Rangeland Management

Same as under *Alternative 2*, except discontinuing livestock grazing on certain allotments within the McCracken and Poachie Desert Tortoise ACECs would improve primitive recreation opportunities in these allotments.

#### From Cultural Resources Management

Same as under *Alternative 3*.

#### From Recreation Management

Same as under *Alternative 2*, and additional development and implementation of special recreation management areas would increase recreational uses and opportunities. In addition, intensive campground/ interpretive site development would benefit other resources by providing additional facilities for a growing population and increased visitor use in the resource area.

#### From Wildlife Management Habitat Management

Same as under *Alternative 2*.

#### From Special Management Areas

Same as under *Alternative 2*, except the smaller ACECs may reduce protection to the environment and thus affect scenic values.

#### From Support Services Management

Same as *Alternative 2*, except providing access for the public on Canyon Station Springs Road would improve recreation opportunities near Kingman.

#### Conclusions

Additional opportunities for recreation in developed campgrounds would be offered to the public but less protection is afforded scenic values on ACECs.



## IMPACTS TO WILDLIFE HABITAT

### From Lands Actions

Same as under *Alternative 2*, except that *Alternative 3* would dispose of a long-term grazing research study area, which has benefited wildlife. Desirable vegetation has been reestablished, and overall range condition is improving dramatically. These benefits would be permanently lost through disposal.

### From Vegetative Products Management

Prohibiting woodcutting and Mohave yucca harvest would benefit wildlife by eliminating potentially serious damage to wildlife habitats in the form of erosion and loss of cover and nesting habitat.

### From Recreation Management

Same as under *Alternative 2*, except additional campgrounds would increase both the harmful and beneficial impacts to wildlife.

### From Special Status Species Management

Same as under *Alternative 2*, except disposal of the area southeast of Bullhead City would lead to the disturbance of desert tortoise habitat as the lands are subdivided and sold. Residents would increase their recreational use of the bajadas east of the disposal area and might disturb the tortoise in this Category III habitat.

### From Special Management Areas

The smaller Joshua Tree Forest ACEC would protect less wildlife habitat from surface disturbance than the larger ACEC proposed for *Alternative 2*.

The modified Black Mountains ACEC proposal would protect only the most critical portions of bighorn sheep habitat. Lambing grounds and high value areas would receive maximum protection, but other areas also providing open space, forage, water, and cover would not be protected. It would not protect important medium- and low-value bighorn sheep habitat. The proposal would further fragment habitat and increase human encroachment into bighorn range. Impacts in medium and low value habitat would be similar to those under *Alternative 1*. Restrictions on other uses within the ACEC would adequately protect these areas from alteration. Less habitat would be protected under *Alternative 3* than *Alternative 2*.

### From Wild Horse and Burro Management

Phasing out wild horses in the Cerbat Mountains would eliminate competition with native wildlife. The impacts of wild horses on native wildlife habitat in the Cerbats has never been fully documented. Riparian areas have been overgrazed. Eliminating wild horses would allow for habitat restoration. Deer populations would increase as habitat improves and competitive factors are removed.

## Conclusions

Additional disposal areas have moderate to high wildlife resource values. Elimination of woodcutting and yucca harvest would maintain wildlife habitat in a stable condition. Reducing wild horses in the Cerbats would result in improved wildlife habitat conditions.

The size of special management areas would be reduced, resulting in less protection of wildlife habitat and important adjacent habitats eliminated from ACEC proposals under *Alternative 2*, would not have additional protection.

## IMPACTS TO SPECIAL STATUS SPECIES

### From Mineral Development Management

Same as under *Alternative 2*.

### From Land Ownership Adjustments

Same as under *Alternative 2*.

### From Watershed Management

Same as under *Alternative 2*.

### From Vegetative Products Management

Eliminating commercial and private firewood collecting would end the threat of damage to freckled milk-vetch plants and their habitat. Ending yucca harvest would eliminate potential damage to other special status species and their habitats.

### From Rangeland Management

Same as under *Alternative 2*.

### From Cultural Resource Management

Same as under *Alternative 2*.

### From Recreation Management

Impacts are similar to those under *Alternative 2*.

### From Wildlife Management

Same as under *Alternative 2*.

### From Riparian Area Management

Same as under *Alternative 2*.

### From Special Management Areas

A reduction in the size of the Black Mountain ACEC to include only areas of high-value habitat and lambing grounds would reduce by roughly 4.5 sections the acreage protecting Cerbat beard-tongue habitat.

A reduction in acreage for the Burro Creek Riparian and Cultural ACEC would reduce the amount of area protected from surface disturbance by mineral, lands, and recreation activities and increase the potential for damage to habitat of special status species.

### From Wild Horse & Burro Management

Same as under *Alternative 2*.

### From Support Services Management

Same as under *Alternative 2*.

### Conclusions

Impacts would be similar to *Alternative 2*, except that elimination of firewood cutting would eliminate the impacts to speckled milk vetch habitat. Reduction of acreage in 2 ACECs would reduce the amount of acreage providing protection for habitat of special status species.

## IMPACTS TO RIPARIAN AREAS

### From Lands Actions

Same as under *Alternative 2*.

### From Recreation Management

The development of campgrounds and interpretive sites in riparian habitats would increase interactions between sensitive wildlife species and humans around the sites. However, developed sites would tend to concentrate recreation activities in smaller areas and reduce use over larger expanses of important wildlife and T&E habitat.

### From Wild Horse and Burro Management

Phasing out wild horses in the Cerbat Mountains would significantly ease grazing pressure in riparian habitat, which has been overgrazed. Eliminating wild horses would allow habitat recovery.

### From Special Management Areas

The Wright and Cottonwood Creeks ACEC proposal would prescribe special management solely on the riparian ecosystems. Surrounding uplands would not be managed as a related habitat contributing to the development of the riparian ecosystems.

The reduced Burro Creek Riparian and Cultural ACEC proposal would not protect or recognize the role of the upstream or headwaters in the downstream system. This proposal would lessen total management emphasis on the entire riparian ecosystem and focus on smaller, fragmented portions.

### Conclusions

Impacts would be similar to *Alternative 2*, except the smaller riparian ACECs would afford less protection for riparian areas and elimination of the wild horse herd would lead to improved riparian-wetland conditions in the Cerbat Mountains.

## IMPACTS TO WILD HORSES AND BURROS

### Cerbat Herd Management Area

Reducing the population to 14 scattered individual horses, would effectively eliminate the horse population through inbreeding and its negative effects on reproduction. Allowing a population to breed itself out of existence would be an adverse impact.

### Big Sandy Herd Management Area

Same as under *Alternative 2*.

### Black Mountain Herd Management Area

Same as under *Alternative 2*.

### Conclusions

Keeping wild horse numbers to the figure identified in the Cerbat-Black Mountain grazing EIS would eliminate the herd.

## Cumulative Impacts

This section addresses the degree and extent of the cumulative impacts on the physical, biological, and socio-economic environment. Cumulative impacts include the impact on the environment which results from the incremental changes from the various actions when added to other past, present and reasonably foreseeable changes. Cumulative impacts can also result from individually minor, but collectively significant actions taking place over a period of time.

### Reasonably Foreseeable Impacts (1992-2012)

Reasonably foreseeable impacts are those impacts anticipated to occur if *Alternative 2* is chosen as the management strategy. To facilitate this analysis, all environmental parameters are grouped into four categories; physical (surface disturbance), biological, remoteness (recreation settings and experience opportunities), and socio-economic.

### Physical Component

Proposed designation of 14 ACECs would result in closing three percent of the planning area to mineral entry and mineral leasing subject to no surface occupancy, including 10,000 acres closed to mineral leasing. The mineral exploration and development would disturb 1,700 acres over the next 20 years, but would be rehabilitated under mining notices and mining plans of operation. There could be as many as 10 wells drilled but no production is anticipated.

### Biological Component

The designation of 14 ACECs would protect five potential wild and scenic rivers, five major riparian areas, special status species habitat (including desert tortoise and desert bighorn sheep habitat), and cultural resources. Mineral development, livestock grazing and OHV use would be controlled or restricted in order to meet the goals and objectives for each ACEC.

### Remoteness Component

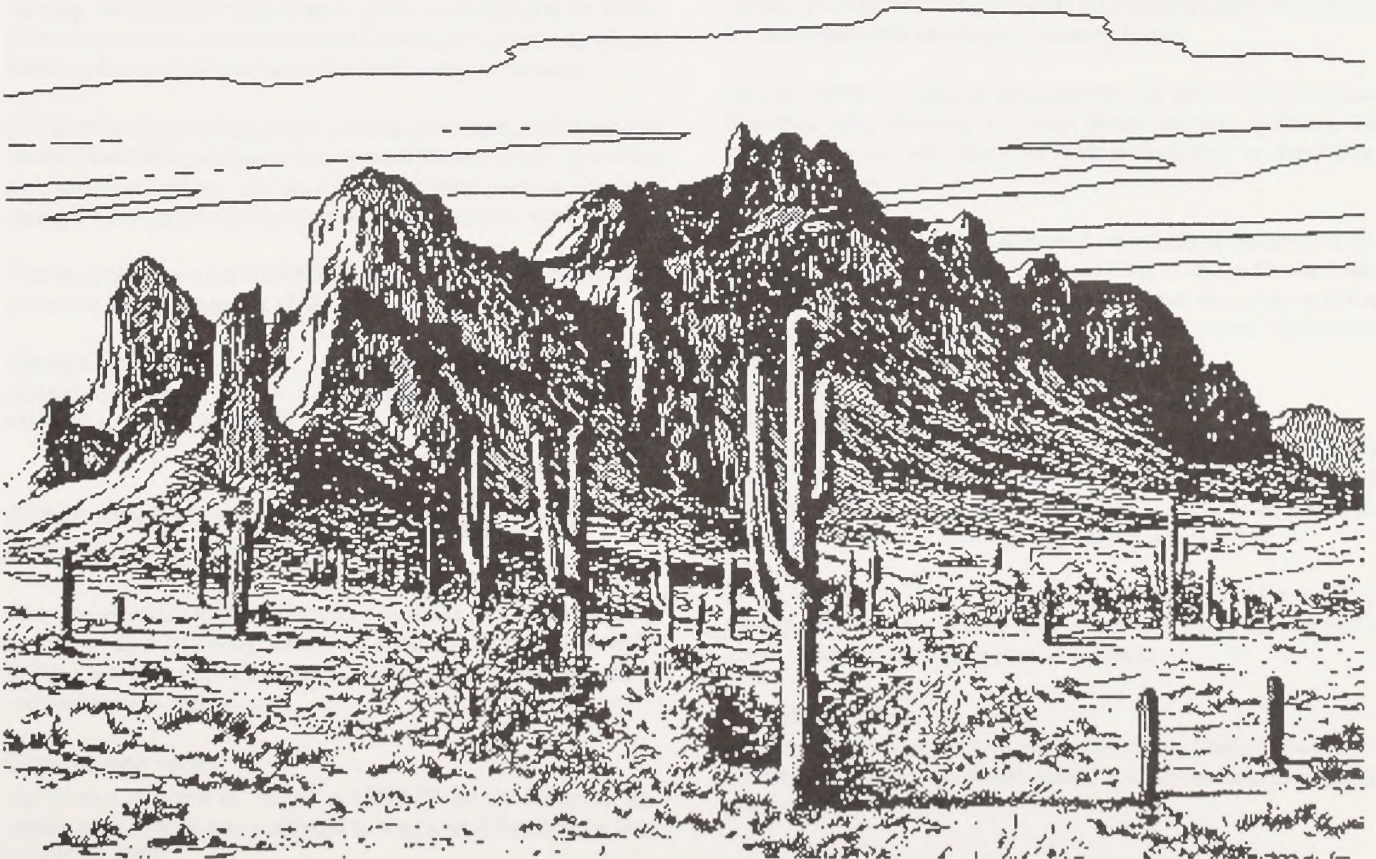
The designation of ACECs and the proposed acquisition of 250,000 acres of nonfederal land would preserve the remoteness of the area and provide for back country dispersed recreation. The OHV limitations would improve the solitude of back country hiking and undeveloped camping. The designation of potential wild and scenic rivers would preserve the areas for future generations.

### Socio-Economic Component

The disposal of 83,760 acres of public land by private exchange would increase the tax base for Mohave County. The proposed acquisition of 250,740 acres of nonfederal land would improve the management of rangelands, wildlife habitat, riparian areas, minerals and recreation use in the planning area by consolidating ownership.

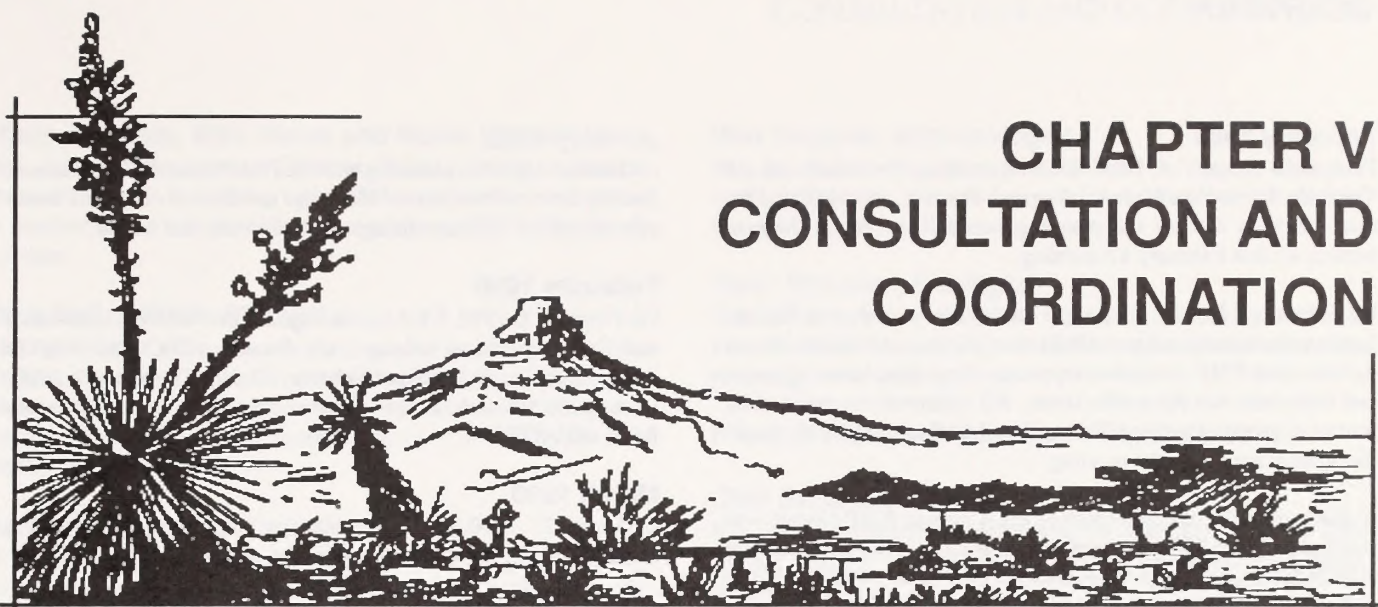
The designation of three new rights-of-way corridors would provide the utility companies with sufficient space in corridors for the life of the plan.

The development of additional campgrounds throughout the planning area would provide the estimated increase in population with developed recreation areas to prevent over-crowding of existing sites.









# CHAPTER V CONSULTATION AND COORDINATION

## INTRODUCTION

Resource specialists in the Kingman Resource Area (KRA), prepared The Kingman Resource Management Plan/Environmental Impact Statement (RMP/EIS). The Phoenix District Office and the Arizona State Office resource specialists provided technical and policy reviews and suggestions. Preparation of this RMP/EIS began in September 1988.

### Scoping (Issue Identification)

Scoping identified the significant issues to be analyzed in the RMP/EIS and de-emphasized or eliminated from detailed study insignificant issues or issues addressed in earlier environmental reviews.

KRA held public scoping meetings to help determine public concerns about issues. Using professional judgement, BLM resource specialists also identified issues. As part of the scoping process, resource managers and an interdisciplinary team reviewed all issues.

The scoping process for the RMP/EIS area involved several phases, extending from September 1988 to June 1990.

The significant environmental issues were incorporated into a range of alternatives, and the effects of implementing the alternatives were analyzed in this draft RMP/EIS.

### Public Involvement and Consultation during Development of the Draft RMP/EIS

From the start this RMP/EIS has had an active public participation program. The following section lists the public meetings, RMP updates issued, and RMP team member/BLM management meetings with individuals and groups.

#### September 1988

The Notice of Intent to prepare a RMP/EIS for the Kingman Resource Area (KRA) was published in the Federal Register on September 27, 1988.

#### October 1988

Letters were sent October 24, 1988, to people on the KRA mailing list informing them that KRA was starting the RMP/EIS, and asking if they wished to be on a mailing list for the planning effort. The letter identified the time and location of the first public scoping meetings to be held in November, 1988

#### November 1988

On November 2, 1988, a presentation was given at a Phoenix District Advisory Council meeting outlining the planning process and asking for participation in developing planning issues.

On November 3, 1988, a presentation was given at a Kingman Resource Area Grazing Advisory Board meeting outlining the planning process and asking for their participation in developing planning issues.

In November 1988, public meetings were held in Bullhead City, Kingman, Dolan Springs, Lake Havasu City, Wikieup, Phoenix, and Bagdad. A slide program was shown to orient the public to KRA resources, management concerns, and planning issues. The public was invited to participate in the planning process.

#### December 1988

On December 1 a meeting was held with 21 members of the Mohave Lions Club of Kingman to discuss the planning process, preliminary planning issues, and management concerns. Lions Club participation was requested in developing planning issues.

On December 22, 1988, a meeting was held with the Kingman City Council to discuss planning issues and to request the Council's participation in developing planning issues.

#### January 1989

KRA representatives attended the Bullhead City Council meeting on January 3, 1989, to request the Council's involvement in developing planning issues.

## CHAPTER V

### February 1989

February 6 through 14, 1989, KRA representatives visited with the Colorado River, Fort Mohave, Yavapai-Prescott, and Hualapai Indian tribes to discuss the planning process and invite them to participate in a February 17 meeting.

On February 17, 1989, 40 people attended a workshop to discuss issues and concerns and provide BLM with ideas and information to include in the RMP. Attendees represented agencies, interest groups, and clubs who use the public lands. All information generated by four work groups was compiled and distributed to the 100 individuals and groups invited to the meeting.

In February 1989, the first issue of the Kingman RMP Update was sent to more than 600 interested individuals and groups. The update explained the planning process, outlined preliminary planning issues and management concerns, and asked for public involvement in developing issues.

### March 1989

On March 7, 1989, a presentation at the Kingman Resource Area Grazing Advisory Board meeting discussed progress in developing the RMP.

### April 1989

In April 1989, the second issue of the Kingman RMP Update was used to provide the public with the list of approved planning issues and management concerns and the planning criteria to guide the development of the Kingman RMP.

### May 1989

On May 15, 1989, BLM representatives met with park rangers from the four affected districts of the Lake Mead National Recreation Area, which borders the KRA, to discuss mutual concerns, including OHV use.

### October 1989

On October 1989, the third issue of the Kingman RMP Update explained important information in the Management Situation Analysis, discussed possible alternative plans, and introduced several proposed areas of critical environmental concern (ACEC).

### November-December 1989

A series of public workshops was held from November 27 through December 1, 1989 where interested public land users met to discuss proposed actions affecting cultural resources, recreation, wildlife, mineral development, riparian management, OHV use, land tenure, and special area designations. One night meeting was held for those who could not make the daytime sessions. The meetings were well publicized by radio, television, and newspaper.

On December 7, 1989, the District Advisory Council toured several key areas representing the diversity of resource issues facing BLM land managers.

On December 18, 1989, BLM representatives met with Arizona State Land Department representatives to discuss disposal areas and issues that would affect future land exchanges.

### January 1990

On January 12, 1990, a meeting with the President of the International Society for the Protection of Mustangs and Burros discussed issues affecting KRA's future management of horses and burros.

### February 1990

On February 8, 1990, KRA representatives met with Arizona Game and Fish Department managers to discuss ACECs and wildlife management issues. Again on February 22, 1990, important wildlife issues were discussed at the annual coordination meeting between BLM and AGFD.

### March 1990

On March 21, 1990, there was a meeting with representatives from the Corps of Engineers to discuss issues relating to Alamo Lake.

On March 21, 1990, KRA representatives met with the citizens of Meadview, Arizona to discuss ACECs and recreation planning in the RMP.

On March 28, 1990, BLM Arizona recreation specialists met to discuss recreation plans.

## List of Preparers

### Bruce Asbjorn, Supervisory Range Conservationist

B.S. in Range/Forest Management, Colorado State University. Member of the core team and prepared the rangeland management, vegetative products, soils and watershed, and special status species (plants) sections. Has worked 12 years with BLM.

### Josie Behl, Cartographic Technician

12 years federal service, 7 years with BLM. Currently attending Mohave Community College for computer science courses. Served as assistant GIS coordinator. In May 1990, Josie became GIS Coordinator. She digitized resource information and produced maps and graphics for the RMP/EIS.

### R. Gordon Bentley, Team Leader

B.S. in Forest Management, Northern Arizona University, M.S. Range Management, University of Arizona, Gordon has 26 years experience as a resource specialist and manager with BLM. Assisted in preparing the special management areas and recreation sections.

### Bill Carter, Technical Coordinator

B.S. Agronomy, Kansas State University, Bill wrote Chapters 1 and 5 and assisted in preparing the RMP/EIS. He has worked 24 years for BLM.

### Larry J. Davis, Computer Specialist

Worked 35 years as a visual information specialist and graphics designer, 15 of these with BLM. He prepared all illustrations and prepared the camera ready copy.

**Kelly Grissom, Wild Horse and Burro Specialist**

B.S. in Range Management, Oklahoma State University and has 14 years with BLM, 11 working with wild burros and horses. Kelly is a member of the core team and prepared the wild horse and burro section.

**Bob Hall, Wildlife Biologist**

B.S. in Wildlife Management, Minors in Range Management and Natural Resource Conservation from Humboldt State University. Bob is a member of the core team and prepared the wildlife, special status species (animals) and riparian sections of the RMP/EIS. Bob has 13 years with BLM.

**Mary Harrison, GIS Coordinator**

B.S. in Geology, 4 years private industry, 13 years federal service of which 4 have been with BLM. Mary was in charge of digitizing and entering resource information in the Geographic Information System.

**Chris Horyza, District LIS/ARD Coordinator**

B.S. Range Management, Washington State University. 12 years with BLM. Chris came to the Phoenix District in March 1990 and helped coordinate the GIS effort in the final phases of plan development.

**Cathle Jensen, Realty Specialist**

A.S. in Forestry from Southeastern Illinois College and attended the BLM Lands School at the Phoenix Training Center. She prepared the land and realty sections. Cathie has worked 9 years for BLM.

**Mike Klemann, Outdoor Recreation Planner**

B.S. Outdoor Education/Recreation Planning, Southern Illinois University. He has worked 11 years for BLM, 3 years as a National Park Planner with the Smithsonian Peace Corps Environmental Program, and 1 1/2 years with the National Park Service in Carlsbad, New Mexico. Mike was a member of the core team, and assisted in preparing the recreation section.

**H. Kenneth McGinty, Writer-Editor**

B.A. in History, Duke University, M.A. in Geography, Clark University, 14 years with BLM. Edited the document.

**Rebecca L. Peck, Wildlife Biologist**

B.S. Wildlife Management, Humboldt State University, California. She worked a year for the Soil Conservation Service and has worked for BLM a total of 11 years. She assisted in preparing the wildlife and riparian sections and prepared the scenic river section.

**Janna Paronto, Word Processor Operator**

13 years federal service, 1 year with BLM. Janna performed word processing responsibilities for the RMP/EIS.

**Diane Russell, Word Processor Operator**

Completing A.A.S. in Computer Information Systems from Mohave Community College. She worked 3 years at the college before coming to BLM 5 months ago. Diane completed the word processing of the RMP/EIS and assisted in preparing the camera-ready copy.

**Don Simonis, Archaeologist**

M.A. in Anthropology from Arizona State University. Don is a member of the core team and prepared the cultural section. He has worked 11 years for BLM.

**Scott Spooner, Geologist**

B.S. in Geology from Utah State University. Scott has worked 7 years for BLM. Scott is a member of the core team and assisted in preparing the minerals section.

**Phoenix District Office Special Assistance**

**Clair Button, Botanist**

B.S. in Natural Resources, University of Michigan, 13 years with BLM. Assisted in preparing the special status species (plants) section.

**Lin D. Fehiman, Water Rights Specialist**

B.S. in Secondary Education from University of Maryland. Lin has worked 8 years with BLM. Lin assisted in developing the water rights portion.

**Russ Krapf, Soil Scientist**

B.S. in Chemistry from California Western University, M.S. in Agricultural Chemistry and Soils from University of Arizona, and Ph.D. in Soil Science from University of Idaho. Russ assisted in developing the soils and watershed portion.

**Barry Long, Hydrologist**

B.S. in Watershed Science from Colorado University and M.S. in Forest Hydrology from Oregon State University. Barry assisted in developing the watershed water quality and water quantity portion.

**Jack Ragsdale, Outdoor Recreation Planner**

B.S. Agriculture, University of Arizona, 15 years with BLM. Assisted in preparing the recreation section.

**Kingman Resource Assistance**

Elaine Marquis, Area Manager  
 Jesse Juen, Assistant Area Manager  
 Cowboy Denton, Range Conservationist  
 Duane Ferneau, Civil Engineering Technician  
 Joyce Bailey, Realty Specialist  
 Grant Drennan, Range Conservationist  
 Rebecca L. Peck, Wildlife Management Biologist

**Phoenix District Office Assistance**

Henri Bisson, District Manager  
 Paul Buff, Associate District Manager Minerals/P&EC  
 Bill Childress, Associate District Manager Resources  
 Ted Cordery, Wildlife Management Biologist  
 Glenn Joki, Fire Management Officer

## CHAPTER V

### Arizona State Office Assistance

Lynn H. Engdahl, Associate State Director  
Beaumont C. McClure, Deputy State Director,  
Land and Renewable Resources  
Larry P. Bauer, Deputy State Director, Mineral Resources  
Alan Rabinoff, Chief Branch of Mining Law Administration  
Eugene Dahlem, Wildlife Management Biologist  
Keith L. Pearson, Planning and Environmental Coordinator  
George W. Ramey, Jr., Range Conservationist  
Gary D. Stumpf, Archaeologist  
Bruce B. Talbot, Outdoor Recreation Planner  
Marvin E. Weiss, Natural Resource Specialist  
Robert E. Archibald, Jr., Reality Specialist  
Sue F. Richardson, Natural Resource Specialist

### List of Agencies, Organizations and Persons to Whom Copies of The Draft RMP/EIS Will be Sent

BLM is requesting comments on the draft RMP/EIS from interested individuals, federal and state agencies and interest groups. Because of the size of the mailing list (650), only a partial list of those who will receive the document follows.

#### Federal Agencies

Advisory Council on Historic Preservation  
Council on Environmental Quality  
Department of Agriculture  
Forest Service  
Soil Conservation Service  
Department of Defense  
Army Corps of Engineers  
U.S. Air Force  
Department of Energy  
Department of the Interior  
Bureau of Indian Affairs  
Bureau of Mines  
Bureau of Reclamation  
Fish and Wildlife Service  
Geological Survey  
Minerals Management Service  
National Park Service  
Environmental Protection Agency

#### Arizona State Agencies

Arizona Commission of Agriculture and Horticulture  
Arizona Department of Environmental Quality  
Arizona Department of Health Services  
Arizona Department of Library, Archives, and Public Records  
Arizona Department of Mines and Mineral Resources  
Arizona Department of Transportation  
Arizona Department of Water Resources  
Arizona Game and Fish Department  
Arizona Geological Survey  
Arizona Office of Economic Planning and Development

Arizona Oil and Gas Commission  
Arizona Outdoor Recreation Coordinating Commission  
Arizona State Clearinghouse  
Arizona State Historic Preservation Officer  
Arizona State Land Commissioner  
Arizona State Land Department  
Arizona State Mine Inspector  
Arizona State Parks Board  
Arizona Water Resources Department  
Bureau of Geology and Mineral Technology  
Governor's Commission on Arizona Environment  
Mineral Resource Department

#### Local Agencies

Bullhead City  
City of Kingman  
Coconino County Board of Supervisors  
Mohave County Board of Supervisors  
Mohave County Parks Department  
Mohave County Planning and Zoning Commission  
Northern Arizona Council of Governments  
Yavapai County Board of Supervisors  
Yavapai County Planning and Zoning Department

#### Indian Tribes and Councils

Animal Protection Institute  
Ak-Chin Indian Community  
Colorado River Indian Tribes  
Fort McDowell Mohave-Apache Community Council  
Gila River Indian Community  
Hualapai Indian Tribes  
Havasupai Tribal Council  
Hopi Tribal Council  
Mohave Tribal Council  
Navajo Tribal Council  
Pascua Yaqui Tribal Council  
Salt River Pima-Maricopa Community Council  
Tohono O'Odham Council  
Truxton Canyon Agency  
Yavapai-Apache Community Council  
Yavapai Indian Tribe  
Yavapai-Prescott Board of Directors

#### Interest Groups

American Horse Breeders  
American Mustang and Burro Association  
American Horse Protection Association  
Animal Protection Institute  
Arizona Archaeological Society  
Arizona Humane Society  
Arizona State Horsemen Association  
Arizona State Association of Four-Wheel-Drive Clubs, Incorporated  
Arizona Cattle Growers Association  
Arizona Desert Bighorn Sheep Society  
Arizona Desert Racing Association  
Arizona Mining Association  
Arizona Mining and Prospecting Association

Arizona Mountaineering Club  
Arizona Nature Conservancy  
Arizona Native Plant Society  
Arizona Outdoor Coalition  
Arizona Prospectors and Small Mine Operators Association  
Arizona Public Service  
Arizona Wildlife Federation  
Audubon Society  
Bureau of Land Management Advisory Board  
Cypress-Bagdad Copper Company  
Defenders of Wildlife  
Desert Donkey and Mule Club  
Desert Tortoise Council  
El Paso Natural Gas Company  
Foundation for North American Wild Sheep  
International Society for the Protection of  
Mustangs and Burros  
Kingman Grazing Advisory Board  
League of Women Voters  
Maricopa Audubon Society  
National Audubon Society  
National Wildlife Federation  
Natural Resources Defense Council, Inc.  
New Mexico and Arizona Land and Cattle Company  
News Media  
Oil and Gas Companies  
ORV Clubs  
Phoenix District Advisory Council  
Public Lands Council  
Rockhound Clubs  
Spanish Mustang Association  
Santa Fe Railroad Company  
Sierra Club, Grand Canyon Chapter  
Sierra Club, Plateau Group  
Sierra Club, Southwest Office

The Nature Conservancy  
United Four-Wheel-Drive Association  
Walapai Four-Wheelers, Inc  
Wild Horse Organized Assistance  
Wild Burro Protection Association  
The Wilderness Society  
Union Pacific Resources  
Wildlife Society  
Yavapai Cattle Growers  
Yuma Audubon Society

### **Elected Representatives**

#### **Federal**

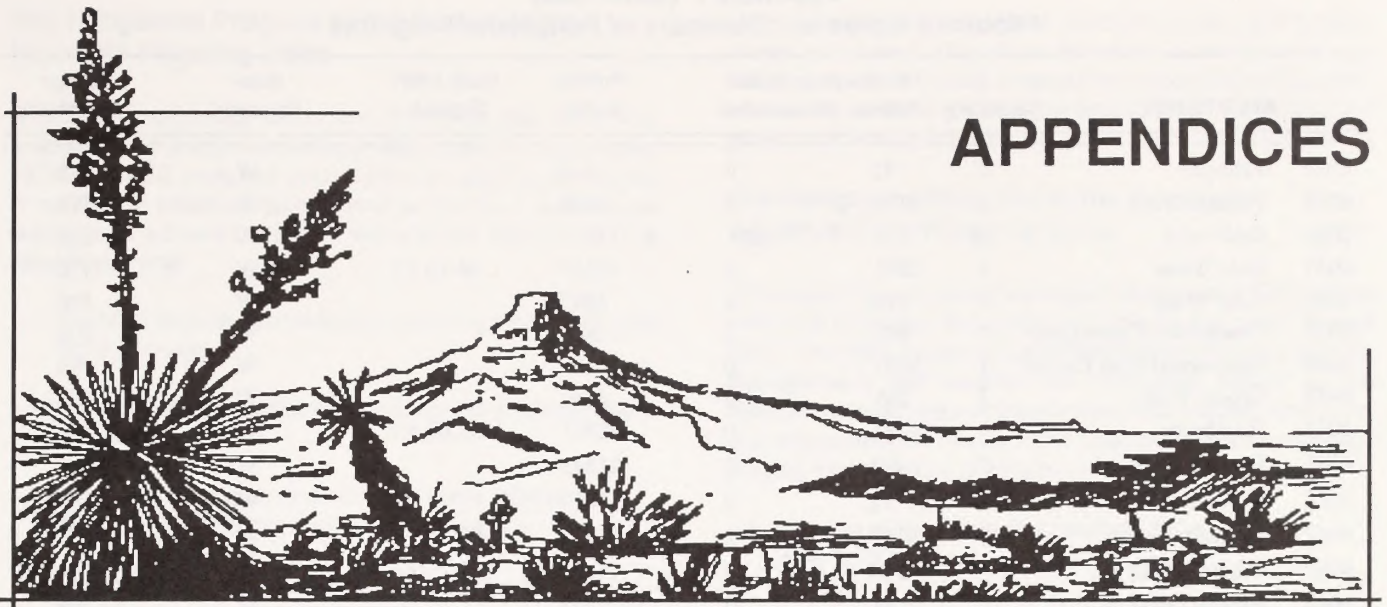
Senator Dennis DeConcini  
Senator John McCain  
Representative Jim Kolbe  
Representative Jon Kyl  
Representative Bob Stump  
Representative Morris K. Udall  
Representative John J. Rhodes III

#### **State**

Governor Rose Mofford  
Senator Tony Gabaldon  
Senator John Hays  
Senator James Osborn  
Representative Donald Aldridge  
Representative Karen English  
Representative Herb Guenther  
Representative Robert J. McLendon  
Representative John Wettau



# APPENDICES



Appendix 1  
Allotment Status and Summary of Rangeland Programs

| ALLOTMENT | Category          | Preference-AUMs |           | Public Acres | Date AMP Signed | Base Property | Forage Availability |     |
|-----------|-------------------|-----------------|-----------|--------------|-----------------|---------------|---------------------|-----|
|           |                   | Active          | Suspended |              |                 |               |                     |     |
| 0001      | Alamo Crossing    | I               | 0         | 0            | 21906           | W             | E                   |     |
| 0002      | Arrastra Mountain | I               | 1995      | 0            | 24050           | 08-26-83      | W                   | P/E |
| 0003      | Artillery Range   | I               | 4016      | 0            | 76171           |               | W                   | P/E |
| 0005      | Bagdad            | I               | 1740      | 702          | 26000           |               | W                   | P/E |
| 0006      | Bateman Springs   | M               | 540       | 660          | 18646           |               | W                   | P/E |
| 0007      | Big Ranch A       | I               | 5397      | 363          | 110542          | 09-09-82      | W                   | P/E |
| 0081      | Big Ranch B       | C               | 0         | 0            | 114504          |               | W                   | E   |
| 0008      | Big Sandy         | I               | 6084      | 1901         | 64913           |               | W                   | P/E |
| 0009      | Black Mesa A & B  | I               | 2712      | 463          | 30845           | 09-01-84      | W+L                 | P/E |
| 0010      | Black Mountain A  | I               | 1247      | 1735         | 52904           | 02-05-85      | W                   | P/E |
| 0011      | Boriana A         | M               | 2279      | 0            | 27570           |               | W                   | P/E |
| 0079      | Boriana B         | C               | 0         | 0            | 10220           |               | W                   | E   |
| 0013      | Burro Creek       | I               | 880       | 0            | 6352            | 09-12-83      | W                   | P/E |
| 0014      | Burro Creek Ranch | I               | 1674      | 0            | 34967           |               | W                   | P/E |
| 0015      | Middle Water      | M               | 553       | 200          | 14536           |               | W                   | P/E |
| 0016      | Cane Springs Wash | C               | 120       | 69           | 2310            |               | W                   | P/E |
| 0017      | Canyon Ranch      | I               | 1822      | 0            | 18419           |               | W                   | P/E |
| 0018      | Castle Rock       | I               | 297       | 0            | 5128            | 08-17-82      | W                   | P/E |
| 0019      | Cedar Canyon      | M               | 3797      | 0            | 44958           |               | W                   | P/E |
| 0020      | Cerbat            | I               | 1953      | 0            | 19086           | 09-01-80      | W                   | P/E |
| 0021      | Chicken Springs   | I               | 3456      | 1763         | 94953           |               | W                   | P/E |
| 0022      | Chino Springs     | I               | 0         | 0            | 18992           |               | W                   | E   |
| 0023      | Clay Springs      | M               | 406       | 0            | 6770            |               | W                   | P   |
| 0024      | Cook Canyon       | I               | 269       | 0            | 4583            |               | W                   | P/E |
| 0026      | Crozier Canyon    | I               | 14439     | 0            | 106175          | 10-01-80      | W                   | P   |
| 0027      | Curtain           | I               | 195       | 0            | 3250            | 09-01-81      | W                   | P/E |
| 0028      | Diamond Joe       | I               | 1404      | 917          | 16223           |               | W                   | P/E |
| 0029      | Diamond Bar A     | I               | 3088      | 390          | 63073           | 08-19-82      | W                   | P/E |
| 0080      | Diamond Bar B     | C               | 0         | 0            | 0               |               | W                   | E   |
| 0030      | Dolan Springs     | M               | 1752      | 0            | 37222           | 09-10-82      | W                   | P/E |
| 0031      | DOR               | C               | 0         | 0            | 1269            |               | W                   | E   |
| 0032      | Feldspar          | C               | 72        | 0            | 640             |               | W                   | P/E |

**Appendix 1 (continued)**  
**Allotment Status and Summary of Rangeland Programs**

| ALLOTMENT | Category            | Preference-AUMs |           | Public Acres | Date AMP Signed | Base Property | Forage Availability |     |
|-----------|---------------------|-----------------|-----------|--------------|-----------------|---------------|---------------------|-----|
|           |                     | Active          | Suspended |              |                 |               |                     |     |
| 0032      | Feldspar            | C               | 72        | 0            | 640             |               | W                   | P/E |
| 0035      | Francis Creek       | I               | 9750      | 0            | 77948           |               | W                   | P/E |
| 0036      | Gediondia           | M               | 552       | 221          | 13643           |               | W                   | P/E |
| 0037      | Gold Basin          | I               | 2592      | 0            | 48153           | 08-19-82      | W                   | P/E |
| 0038      | Gray Wash           | I               | 373       | 0            | 8887            |               | W                   | P/E |
| 0039      | Greenwood Community | I               | 993       | 0            | 15842           |               | W                   | P/E |
| 0040      | Greenwood Peak Comm | I               | 2080      | 0            | 36180           |               | W                   | P/E |
| 0041      | Groom Peak          | I               | 265       | 0            | 4861            |               | W                   | P/E |
| 0042      | Hackberry           | I               | 3781      | 0            | 32881           | 03-01-83      | W                   | P/E |
| 0043      | Happy Jack Wash     | C               | 1082      | 0            | 21343           |               | W                   | P/E |
| 0046      | Hot Springs         | C               | 52        | 0            | 1057            |               | W                   | P/E |
| 0047      | Hualapai Peak       | I               | 2052      | 432          | 24914           | 08-26-83      | W                   | P   |
| 0050      | Hibernia Peak A     | I               | 380       | 0            | 14600           | 11-20-84      | W                   | P   |
| 0083      | Hibernia Peak B     | C               | 120       | 0            | 335             |               | W                   | P/E |
| 0051      | La Cienega          | I               | 2400      | 4353         | 72877           | 07-07-89      | W                   | P/E |
| 0052      | Lazy Yu A           | M               | 941       | 0            | 12852           |               | W                   | P/E |
| 0054      | Los Molinos         | I               | 2256      | 564          | 17600           |               | W                   | P/E |
| 0055      | Mineral Park        | I               | 824       | 0            | 11123           | 09-01-81      | W                   | P/E |
| 0056      | Mud Springs         | I               | 1564      | 627          | 30998           | 08-08-83      | W                   | P/E |
| 0057      | Music Mountain      | I               | 1824      | 627          | 18664           | 09-01-80      | W                   | P   |
| 0058      | Mt. Tipton          | I               | 618       | 63           | 8564            |               | W                   | P   |
| 0059      | Peacock Mountain    | C               | 132       | 0            | 1169            |               | W                   | P   |
| 0060      | Pine Springs        | I               | 583       | 0            | 6601            | 08-13-82      | W                   | P/E |
| 0062      | Quail Springs       | I               | 2614      | 0            | 31304           | 09-01-81      | W                   | P/E |
| 0064      | Sandy               | C               | 60        | 138          | 1524            |               | W                   | P/E |
| 0066      | Stockton Hill       | M               | 444       | 108          | 2912            | 09-01-81      | W                   | P/E |
| 0067      | Turkey Track        | C               | 62        | 0            | 713             |               | W                   | P/E |
| 0068      | Thumb Butte         | C               | 0         | 0            | 18050           |               | W                   | E   |
| 0070      | Truxton Canyon A    | I               | 294       | 294          | 5645            |               | W                   | P   |
| 0088      | Truxton Canyon B    | C               | 18        | 0            | 414             |               | W                   | P   |
| 0071      | Upper Music Mtn     | I               | 2503      | 0            | 43677           | 09-01-80      | W                   | P/E |
| 0072      | Valentine           | M               | 648       | 0            | 5160            |               | W                   | P   |
| 0074      | West Peacock        | C               | 204       | 0            | 1849            |               | W                   | P   |
| 0076      | Wikieup             | I               | 684       | 0            | 8446            |               | W                   | P/E |
| 0077      | Walapai Ranch       | C               | 1020      | 0            | 10794           |               | W                   | P/E |
| 0078      | Yellow Pine         | I               | 5940      | 0            | 58506           |               | W                   | P/E |
| 0087      | Little Cane         | C               | 372       | 0            | 5542            |               | W                   | P/E |
| 0086      | Cane Springs        | I               | 2661      | 2164         | 40590           | 09-01-81      | W                   | P/E |
| 0101      | C. O. Bar           | C               | 792       | 0            | 5265            |               | L                   | P   |
| 0102      | Chambers Lease      | C               | 132       | 0            | 852             |               | L                   | P   |
| 0103      | Gibson Cattle Co.   | M               | 1968      | 0            | 16784           |               | L                   | P/E |
| 0104      | Globe Ranch         | C               | 240       | 0            | 1274            |               | L                   | P   |
| 0105      | JJJ Corporation     | C               | 24        | 36           | 29017           |               | L                   | P/E |
| 0107      | Kellis Lease        | C               | 48        | 216          | 1745            |               | L                   | P/E |
| 0111      | 7L Cattle Co.       | M               | 1800      | 0            | 9688            |               | L                   | P/E |
| 0115      | Yolo Ranch Lease    | C               | 564       | 0            | 3704            |               | L                   | P/E |
| 0116      | Byner Cattle Co.    | C               | 564       | 312          | 3928            |               | L                   | P/E |
| 0034      | Fort Mac Ewen A     | I               | 1796      | 726          | 34929           | 09-01-80      | W                   | P/E |
| 0082      | Fort Mac Ewen B     | C               | 0         | 0            | 31174           |               | W                   | E   |
| 0061      | Portland Springs    | C               | 0         | 0            | 8709            |               | W                   | E   |
| 0073      | Walnut Creek        | I               | 5843      | 2026         | 79701           |               | W                   | P/E |

I = Improve    C = Custodial    M = Maintain    E = Ephemeral only    P/E = Perennial/Ephemeral  
P = Perennial only    W = Water base    L = Land base

Source: KRA Files



## The Rangeland Program in the Cerbat-Black Mountain Planning Units

A final environmental statement (FES) for this area was prepared and made available to the public in September, 1978. The FES analyzed several different alternative courses of action and selected *Alternative B* as the most realistic and workable to achieve the stated multiple-use objectives. The objectives were:

- Sustain livestock production by providing more and better quality forage.
- Improve wildlife habitat by providing more forage, cover and water.
- Reduce soil erosion and increase water infiltration by increasing vegetative ground cover and litter.
- Enhance recreational values by increasing the abundance and vigor of vegetation.

The actions to be carried out to achieve the above objectives were:

- Initial adjustments to stocking rates based on range survey.
- Reviewing and rewriting the proposed AMPs.
- Building range improvements as needed.
- Limiting grazing use on key species to 50 percent of current years' growth.

By September 1980, grazing use adjustments had been completed on 26 allotments in the Cerbat-Black Mountain planning units, either as proposed in the range survey or through agreement on a different number based on additional field review. Three additional allotments retained their ephemeral designation (Portland Spring, Thumb Butte, Silver Creek) and eight additional allotments were placed in custodial management, with no adjustments to grazing use made (Cook Canyon, Jones Spring, Valentine, Walapai Ranch, Feldspar, Long Mountain, Peacock Mountain, West Peacock).

Sixteen AMPs on 19 grazing allotments were written and signed in the years from 1980 to 1985. Grazing permits were cancelled on Silver Creek, Jones Spring, and Long Mountain grazing allotments. The Middle Water, Big Ranch B, Diamond Bar B, Fort Mac Ewen B and Truxton Canyon B allotments were created as a result of subdividing existing allotments. An active land exchange program within KRA has substantially altered land ownership patterns and has caused numerous changes to grazing preference.

A change in BLM range management policy in the early 1980s required categorization of grazing allotments to facilitate prioritizing them for management. Currently there are 21 "I" allotments, 7 "M" allotments and 11 "C" allotments. See Table above this appendix.

Numerous range improvement projects have been constructed on public lands to facilitate implementation of AMPs.

Monitoring studies have been installed on all I and M allotments within the Cerbat-Black Mountain planning units, with the purpose of detecting changes in vegetation composition, measuring levels of grazing use and determining distribution patterns of livestock grazing.

## The Rangeland Program in the Hualapai-Aquarius (H/A) Planning Units

A final grazing environmental impact statement (FEIS) for this area was prepared and made available to the public August 1981. The FEIS analyzed five different alternatives for grazing management, and selected the "Proposed Action" as the alternative which best met the planning area's social, economic, and environmental needs. The objectives of the proposed grazing management program were:

- Improve range and watershed condition, and water quality.
- Increase forage production and ensure long-term stability of public land livestock operators.
- Protect wild burro and wildlife habitat and riparian communities.
- Protect special status species habitat and areas of special natural, scenic, historic, cultural, and scientific value.

The actions to be carried out to achieve the above objectives were:

- Allocation of vegetation to livestock, wildlife, burros, watershed protection, recreation and plant maintenance based on a 1979-80 rangeland inventory, management framework plan recommendations, additional field studies, and consultation with affected interests.
- Limiting grazing use on key forage plants from 40 to 60 percent.
- Designation of 51 grazing allotments into 1 of 4 levels of grazing management.
- Development of AMPs on 28 high priority allotments.
- Development of range improvements to meet management objectives on individual allotments.
- Use of mitigation and resource enhancement measures in the range program.
- Monitoring to document condition and trend and to evaluate management programs.
- Consideration of proposals under the experimental stewardship program.
- Cooperation with livestock operators, SCS, Arizona State Land Department, Arizona Range Research Task Force, University of Arizona Extension Service and other affected interests.

Changes in the Code of Federal Regulations and the issuance of a new BLM grazing management policy in 1982 caused two important changes to the proposed action in the FEIS. The first was that livestock numbers would not be adjusted solely on the basis of the range survey, but would be based on rangeland monitoring over time. The second was that grazing allotments would not be managed according to the four levels proposed in the FEIS, but would be placed into 1 of 3 selective management categories.

By September 1983, 47 grazing use adjustments had been completed. Shortly thereafter, four more grazing use adjustments were finalized, three of which were settled before an administrative law judge.

All allotments were placed into selective management categories in 1983, with there being 2 "M" allotments, 25 "I" allotments and 23 "C" allotments.

An active land exchange program within KRA has substantially altered land ownership patterns and has caused numerous changes to grazing preference. Allotment boundary adjust-

ments and public land losses resulting from exchange have caused several allotments to be eliminated (Fancher Mountain, Kayser Wash, Round Valley, Trout Creek, White Hills, Bottleneck Wash, Yellow Pine B, Cane Springs Wash B, and Sandy B). Lazy YU B allotment was cancelled, pending land exchange proposals. Presently, there are 5 "M" allotments, 24 "I" allotments and 12 "C" allotments in the Hualapai-Aquarius Planning Unit (see Appendix 1).

Six AMPs on seven grazing allotments have been completed and signed (Arrastra Mountain, Burro Creek, Hualapai Peak, Black Mesa/Lines, Hibernia Peak and La Cienega). Of these, only the Burro Creek AMP has been implemented. Numerous range improvement projects have been constructed on public lands to facilitate implementation of AMPs.

Monitoring studies have been installed on all "I" and "M" allotments within the H/A planning units, with the purpose of detecting changes in vegetative composition, measuring levels of grazing use and determining distribution patterns of grazing livestock.

## Appendix 2

### Cultral Resource Management Guidelines

#### Manage For Information Potential

Cultural resources included under this objective are capable of contributing useful scientific, historic, or management information. This information potential is to be protected to the extent needed, by physical or administrative means, until the potential has been realized through appropriate study.

Cultural resources which would be managed for their information potential have one or both of the following characteristics:

- 1) They are suitable for scientific study using currently available research techniques, including study that would result in their physical alteration.
- 2) They are suitable for controlled experimental studies which would aid in the management of other cultural properties; studies, for example, that are aimed at understanding the effects of natural or human-caused impacts to cultural properties, effectiveness of protection or monitoring efforts and similar objectives.

Cultural properties to be managed for their information potential may be studied for one or a combination of the following:

- They are suitable for study for satisfying the needs of an academic research proposal.
- They are suitable for short or long-term establishment of archaeological field schools.
- They are subjects of data recovery designed to mitigate the impacts of a competing land use.
- They are suitable for monitoring the effects of natural or human-caused impacts to cultural properties.

Such studies must be in accordance with BLM-approved research designs, data recovery plans, and recordation standards. Bureau and non-bureau personnel using cultural resources for this purpose must comply with the provisions of the Archaeological Resources Protection Act of 1979. Uses which will affect National Register-listed or eligible properties will require consultation in accordance with 36 CFR 800 and applicable Memoranda of Agreement.

The information potential of cultural resources managed under this objective will be protected through monitoring of selected geographical areas or high-value sites, and occasional monitoring of others. Stabilization, fencing, signing, electronic, aerial and ground surveillance as well as public awareness efforts will be employed to achieve this objective.

#### Manage for Conservation

Cultural resources included under this objective have overriding scientific, prehistoric, and/or historic importance. Because of scarcity, a research potential that surpasses the current state-of-the-art, singular historic or architectural interest or comparable reasons, such resources are not considered appropriate subjects of studies which would result in their physical alteration. They will be managed to maintain their present condition and protect them from potentially conflicting land or resource uses.

The National Register listed archaeological site known as Bighorn Cave will partially be managed under the conservation objective. The site has been altered by both authorized research and by vandalism but, it is believed that intact deposits remain that with advanced methods of data collection and analysis may yield new information that has potential to advance our knowledge of the Archaic to Formative transition time periods

At least some archaeological sites from selected classes of cultural properties representing transition time periods may be identified in future activity plans to create a data bank to be managed under this objective. The purpose is to preserve some of these sites for future study when analytical techniques are more sophisticated and the research contributions of these resources can be maximized. Management emphasis will be placed on protecting these resources with their cultural material in place. Only non-destructive studies and analysis will be permitted.

The management objective for these cultural properties may be changed from conservation to information potential upon determining that their research values can be realized through state-of-the-art methods of data collection and analysis. Such studies would then be subject to the standards and provisions identified under management for information potential.

Cultural properties of this class may be managed under the public values objective if their information potential has been achieved to the point where educational, recreational and other public values would not result in the loss of important scientific values. Interpretive efforts such as trails, signs, and brochures may be considered for Bighorn Cave after any additional test excavations have been completed and access to the interior of the site has been controlled. Other interpretive efforts for cultural properties under this management category may be considered but, would not have a high priority.

Measures to conserve these cultural resources for the future will include, but not be limited to, high-priority status for monitoring ((electronic, aerial, and ground) and evaluating access that does not

conflict with other resource uses. Stabilization efforts, such as erosion control, will be implemented as needed.

## Manage for Public Values

Cultural resources included under this objective are particularly useful for their sociocultural, educational, recreational or other public values. Their locations will be managed in a manner that gives adequate consideration to these values.

Cultural resources which would generally be managed for public values possess one or both of the following characteristics:

1. They are perceived by a social and/or cultural group as having attributes which contribute to maintaining the heritage or existence of that group. Locations of traditional cultural or religious importance to Native Americans or historical sites connected with living pioneer descendants, for examples, would be of this kind.

2. They are appropriate for interpretive development as exhibits in place for educational and recreational uses by members of the general public. Cultural resources of this kind which have been identified in the RMP area are the Carrow-Stephens Ranches, the Neal petroglyphs, the Dolan Springs petroglyphs, and the Mineral Park historic mining area.

Accessibility, public demand, public sensitivity, cost-effectiveness and feasibility will be considered, among other factors, in managing cultural properties of this kind for educational or recreational use. Management might include signs, self-guided interpretive trails, brochures, supervised archaeological excavation, mapping and other forms of recordation, stabilization, visitor facilities, on-site public tours, and long-term group stewardships.

Cultural resources identified by contemporary social and/or cultural groups would take into account the concerns and sensitivities of the groups involved. Information on such resources would be protected from public disclosure to the extent allowed by statute.

Management of cultural resources for public values will be carried out with an awareness of any information potential such resources might possess. Any development of a cultural property for educational or recreational use will be done in such a manner as to safeguard important scientific information and will be subject to the requirements of appropriate laws and regulations.

## Cultural Resource Plans

Cultural resources in the RMP area will be allocated to specific uses in the subsequent Cultural Resource Management Plan. Project plans containing detailed management prescriptions for selected cultural properties will be developed after use allocations have been made. Cultural properties to be managed for conservation will receive the highest priority for project planning. Areas for which project plans will be prepared are in priority order: Bighorn Cave, Carrow-Stephens Ranches, Bullhead City/Western Bajada including the Beale-Mojave Road, Black Mountains, Dolan Springs petroglyphs, Burro Creek, Wright Creek, Joshua Tree/Grand Wash Cliffs, Neal petroglyphs, and Mineral Park historic area.

## Classes of Cultural Properties in the RMP Area

I. Habitation (includes, not limited to):

A. Houses

- 1) pithouses (prehistoric Indian; Amacava and Cohonina)
- 2) rock (Prescott Culture pueblos, early mining and ranching)
- 3) wood (historic mining, ranching, homesteads, and towns)
- 4) log (historic mining, homesteads)
- 5) brush (prehistoric and historic Indian; Cerbat, Hualapai, Paiute, Yavapai, and Mojave)
- 6) adobe (historic mining, ranching, homesteads, and towns)
- 7) metal (corrugated tin for historic mining, ranching, homesteads, and towns)

B. Camps (often with cleared areas for wickiups, tents, and sleeping)

C. Rock Shelters and Caves

II. Agriculture (includes, not limited to):

A. Fields

B. Irrigation canals

C. Aqueducts

D. Dams

E. Terraces

F. Orchards

III. Resource Utilization (includes, not limited to):

A. Artifact scatters

B. Mines and/or mills

C. Quarries

D. Roasting pits

E. Trash middens

F. Isolated bedrock grinding slicks

G. Storage cists

IV. Sociocultural

A. Transportation and Trade

1) trails (prehistoric and historic)

2) roads

3) railroads

a) standard gauge

b) narrow gauge

B. Rock Art

C. Historic Inscriptions

D. Community rooms (kivas, schoolhouses, townhalls, etc.)

E. Mortuary (cemeteries, cremation areas, etc.)

F. Shrines

**Appendix 3**  
**Alternative 1 Public Lands Identified For Disposal**

| Township and Range                          | Section        | Subdivision  | Acreage |
|---|----------------|--|---------|
| <b>Black Mountains/Detrital Valley Area</b> |                |  |         |
| T. 27N., R. 20W.,                           | 16             | N1/2 NE1/4, SE1/4 NE1/4                                  | 120     |
|   | 18             | All  | 633     |
|   | 28             | All  | 640     |
|   | 30             | All  | 635     |
| T. 27N., R. 21W.,                           | 24             | E1/2, W1/2 SW1/4   | 400     |
|   | 36             | NE1/4 NE1/4  | 40      |
| <b>White Hills Area</b>                     |                |  |         |
| T. 27N., R. 19W.,                           | 16             | All  | 640     |
|   | 20             | All  | 640     |
| T.26N., R.18W.,                             | 4              | All  | 640     |
|   | 6              | All  | 632     |
|   | 8              | SW1/4  | 40      |
|   | 10             | All  | 640     |
|   | 18             | All  | 637     |
|   | 20             | All  | 640     |
| 30  | E1/2, E1/2W1/2 | 480  |         |
| <b>Dolan Springs Area</b>                   |                |  |         |
| T.26N., R.19W.,                             | 12             | All  | 640     |
|   | 14             | All  | 640     |
|   | 22             | All  | 640     |
|   | 24             | All  | 640     |
|   | 26             | All  | 640     |
|   | 28             | All  | 640     |
|   | 32             | All  | 640     |
|   | 34             | S1/2,S1/2N1/2,NE1/4NE1/4,,N1/2NW1/4                      | 600     |
|   | T.25N., R20W., | 4  | SE1/4   |
| 8   |                | All  | 640     |
| 10  |                | N1/2   | 320     |
| 12  |                | N1/2, SE1/4  | 480     |
| 16  |                | All  | 640     |
| 20  |                | All  | 640     |
| 22  |                | All  | 640     |
| 24  |                | W1/2   | 320     |
| 26  |                | All  | 640     |
| 28  |                | All  | 640     |
| 32  |                | All  | 640     |
| 34  |                | All  | 640     |
| 36  |                | All  | 640     |
| T.25N., R.19W.,                             | 4              | W1/2   | 320     |
|   | 6              | N1/2, N1/2 SW1/4   | 395     |
|   | 10             | All  | 640     |
|   | 12             | All  | 640     |
|   | 14             | All  | 640     |
|   | 16             | E1/2 NW1/4, E1/2 W1/2 NW 1/4, W1/2 W1/2 N1/2 NW1/4, S1/2 | 475     |
|   | 22             | All  | 640     |
|   | 26             | All  | 640     |
|   | 28             | All  | 640     |
|   | 32             | N1/2, SW1/4  | 480     |

**Appendix 3(continued)**  
**Alternative 1 Public Lands Identified For Disposal**

| <b>Township and Range</b> | <b>Section</b>    | <b>Subdivision</b>                   | <b>Acreage</b>    |
|---------------------------|-------------------|--------------------------------------|-------------------|
| T. 24N., R. 20W.,         | 4                 | All                                  | 566               |
|                           | 10                | SE1/4                                | 160               |
|                           | 12                | N1/2, E1/2 SW1/4, SE1/4              | 560               |
|                           | 14                | NW1/4, S1/2                          | 480               |
|                           | 15                | W1/2 NE1/4, NE1/4 NW1/4              | 120               |
|                           | 16                | All                                  | 640               |
|                           | 22                | All                                  | 640               |
|                           | 24                | All                                  | 640               |
|                           | 28                | All                                  | 640               |
|                           | 34                | W1/2                                 | 320               |
|                           | 36                | All                                  | 640               |
|                           | T. 24N., R. 19W., | 8                                    | SW1/4 NW1/4, S1/2 |
| 18                        |                   | All                                  | 604               |
| 20                        |                   | All                                  | 640               |
| 30                        |                   | All                                  | 606               |
| <b>Hualapai Valley</b>    |                   |                                      |                   |
| T. 25N., R. 15W.,         | 4                 | All                                  | 637               |
|                           | 6                 | All                                  | 638               |
|                           | 8                 | All                                  | 640               |
|                           | 10                | All                                  | 630               |
|                           | 14                | All                                  | 640               |
|                           | 18                | All                                  | 639               |
|                           | 20                | All                                  | 640               |
|                           | 22                | All                                  | 640               |
|                           | 24                | All                                  | 640               |
|                           | 26                | All                                  | 640               |
|                           | 30                | All                                  | 640               |
|                           | 34                | All                                  | 640               |
|                           | 36                | All                                  | 640               |
|                           | T. 26N., R. 15W., | 30                                   | All               |
| 32                        |                   | All                                  | 640               |
| T. 24N., R. 15W.,         | 4                 | All                                  | 716               |
|                           | 8                 | All                                  | 640               |
|                           | 10                | All                                  | 640               |
|                           | 12                | All                                  | 640               |
|                           | 13                | N1/2NW1/4; SE1/4NW1/4;<br>NE1/4SW1/4 | 160               |
|                           | 14                | All                                  | 640               |
|                           | 22                | All                                  | 640               |
|                           | 24                | All                                  | 640               |
|                           | 26                | E1/2                                 | 320               |
|                           | 28                | All                                  | 640               |
| T. 25N., R16W.,           | 2                 | All                                  | 642               |
|                           | 12                | All                                  | 640               |
| T. 24N., R. 14W.,         | 18                | All                                  | 640               |
|                           | 20                | E1/2                                 | 320               |
|                           | 30                | All                                  | 640               |
|                           | 32                | N1/2 NE1/4                           | 80                |
| T. 24N., R. 16W.,         | 16                | All                                  | 640               |
|                           | 20                | All                                  | 640               |
|                           | 30                | east of Stockton Hill Road           | 720               |
|                           | 32                | All                                  | 640               |

**Appendix 3 (continued)**  
**Alternative 1 Public Lands Identified For Disposal**

| <b>Township and Range</b>   | <b>Section</b> | <b>Subdivision</b>  | <b>Acreage</b> |
|-----------------------------|----------------|---|----------------|
| <b>North of Kingman</b>     |                |   |                |
| T. 22N., R. 17W.,           | 2              | east of Stockton Hill Road                                | 223            |
|                             | 11             | W1/2 NW1/4, SE1/4 NW1/4                                   | 120            |
|                             | 14             | S1/2 SW1/4, SW1/4 SE1/4                                   | 120            |
|                             | 26             | All   | 640            |
| <b>East of Merit Spring</b> |                |   |                |
| T. 23N., R. 16W.,           | 20             | NE1/4 NE1/4   | 40             |
| <b>Sacramento Valley</b>    |                |   |                |
| T. 22N., R. 19W.,           | 12             | All   | 640            |
|                             | 14             | All   | 640            |
|                             | 20             | All   | 640            |
|                             | 30             | NE1/4, E1/2 E1/2 NW1/4, N1/2 NW1/4 ,<br>NE1/4 NW1/4 NE1/4 | 320            |
| <b>West of Kingman</b>      |                |   |                |
| T. 21N., R. 18W.,           | 8              | W1/2 NW1/4, portion of E1/2 NE1/4                         | 140            |
| <b>Meadview</b>             |                |   |                |
| T. 30N., R. 17W.,           | 24             | All   | 640            |
|                             | 26             | All   | 640            |
|                             | 34             | All   | 640            |
|                             | 36             | All   | 640            |
| T. 29N., R. 17W.,           | 2              | All   | 640            |
|                             | 10             | All   | 640            |
|                             | 12             | All   | 640            |
|                             | 14             | All   | 640            |
| <b>West of McConnico</b>    |                |   |                |
| T. 20N., R. 17W.,           | 6              | South of I-40   | 961            |
| T. 20N., R. 18W.,           | 12             | N1/2 N1/2 S1/2, portions of S1/2 S1/2                     | 510            |
| <b>Shingle Canyon</b>       |                |   |                |
| T. 19N., R. 18W.,           | 8              | All   | 640            |
| <b>Walnut Creek</b>         |                |   |                |
| T. 18N., R. 18W.,           | 2              | All   | 624            |
| <b>Yucca Area</b>           |                |   |                |
| T. 18N., R. 18W.,           | 36             | West of I-40  | 520            |
| T. 18N., R. 17W.,           | 20             | All   | 640            |
|                             | 28             | All   | 640            |
|                             | 30             | All   | 1,114          |
|                             | 34             | All   | 640            |
| T. 17N., R. 18W.,           | 1              | NE1/4, portion of NW1/4 NW1/4 NW1/4<br>SE1/4              | 168            |
| T. 17N., R. 17W.,           | 2              | All   | 636            |
|                             | 4              | All   | 637            |
|                             | 8              | All   | 640            |
|                             | 10             | All   | 640            |

**Appendix 3(continued)**  
**Alternative 1 Public Lands Identified For Disposal**

| <b>Township and Range</b>  | <b>Section</b> | <b>Subdivision</b>                                  | <b>Acreage</b> |
|----------------------------|----------------|---|----------------|
| T. 17N., R. 17W.,          | 14             | All   | 640            |
|                            | 16             | All   | 640            |
|                            | 20             | All   | 640            |
|                            | 22             | All   | 640            |
|                            | 24             | All   | 640            |
|                            | 26             | All   | 640            |
|                            | 28             | All   | 640            |
|                            | 30             | All   | 1,118          |
|                            | 32             | All   | 640            |
|                            | 34             | All   | 640            |
|                            | 36             | All   | 640            |
| T. 17N., R. 16W.,          | 18             | All   | 640            |
|                            | 20             | All   | 640            |
|                            | 30             | All   | 639            |
|                            | 32             | All   | 640            |
| <b>East of Fort Mojave</b> |                |   |                |
| T. 19N., R. 21W.,          | 20             | N1/2N1/2S1/2  | 85             |
|                            | 29             | S1/2 N1/2 S1/2                                      | 400            |
|                            | 30             | S1/2 NE1/4; N1/2NW1/4SE1/4;<br>N1/2SW1/4,NW1/4SE1/4 | 105            |
| T. 18N., R. 21W.,          | 6              | S1/2 SE1/4  | 80             |
|                            | 7              | E1/2  | 320            |
|                            | 18             | E1/2  | 320            |
|                            | 19             | NE1/4; E1/2SE1/4                                    | 240            |
| <b>East of Topock</b>      |                |   |                |
| T. 16N., R., 20 1/2W.,     | 1              | All   | 640            |
|                            | 3              | E1/2  | 311            |
|                            | 10             | E1/2  | 310            |
|                            | 11             | N1/2, N1/2 SW1/4, SE1//4 SW1/4,<br>SE1/4            | 600            |
|                            | 12             | All   | 640            |
| T. 16 1/2N., R. 20 1/2W.,  | 22             | E1/2  | 330            |
|                            | 23             | All   | 670            |
|                            | 25             | All   | 640            |
|                            | 26             | All   | 640            |
|                            | 27             | E1/2  | 314            |
|                            | 34             | E1/2  | 313            |
|                            | 35             | All   | 640            |
| T.. 16 1/2 N., R. 20W.,    | 30             | All   | 617            |
|                            | 32             | All   | 640            |
| T. 16N., R. 20W.,          | 6              | All   | 619            |
|                            | 15             | All   | 625            |
| T. 16N., R. 19W.,          | 18             | All   | 624            |
| <b>Total</b>               |                |   | <b>91,751</b>  |



**Appendix 4**  
**Alternative 1 R&PP Disposal Areas**

| <b>Township and Range</b> | <b>Section</b> | <b>Subdivision</b>  | <b>Acreage</b> |
|---------------------------|----------------|---------------------|----------------|
| <b>Golden Valley</b>      |                |                     |                |
| T. 22 N., R. 18 W.,       | 8              | W1/2NW1/4,E1/2NE1/4 | 160            |
| <b>Dolan Springs</b>      |                |                     |                |
| T. 26 N., R. 18 W.,       | 8              | SW1/4               | 160            |
| T. 25.N., R. 19 W.,       | 10             | South 1/2           | 320            |
| <b>Yucca</b>              |                |                     |                |
| T. 17 N., R. 17 W.,       | 28             | All                 | 640            |
| <b>Detrital Valley</b>    |                |                     |                |
| T. 27 N., R. 19 W.,       | 16             | All                 | 640            |
| <b>Hualapai Valley</b>    |                |                     |                |
| T. 24 N., R. 14 W.,       | 18             | All                 | 640            |
| <b>Meadview</b>           |                |                     |                |
| T. 30 N., R. 17 W.,       | 26             | All                 | 640            |
| T. 29 N., R. 17 W.,       | 14             | All                 | 640            |
| <b>Total</b>              |                |                     | <b>3,840</b>   |

**Appendix 5**  
**Alternative 1 Communication Sites**

| <b>Township and Range</b>                                | <b>Section</b>        | <b>Subdivision</b>                             | <b>Acreage</b> |
|--|-----------------------|--|----------------|
| <b>Groom Peak</b><br>T. 15N., R. 13W.,                   | 20                    | SE1/4SE1/4                                     | .003           |
| <b>South Oatman</b><br>T. 19N., R. 20W.,                 | 13                    | SW1/4NW1/4; NW1/4SW1/4; W/12W1/2               | .72            |
| <b>North Oatman</b><br>T. 19N., R. 20W.,                 | 14                    | SE1/4NE1/4                                     | 1.681          |
| <b>North Getz Peak</b><br>T. 20N., R. 15W.,              | 17                    | NE1/4SE1/4                                     | .84            |
| <b>South Getz Peak</b><br>T. 20N., R. 15W.,              | 17                    | SE1/4SE1/4                                     | 2.28           |
| <b>Potato Patch II</b><br>T. 20N., R. 15W.,              | 19                    | SW1/4SE1/4                                     | 6.8            |
| <b>Potato Patch I</b><br>T. 20N., R. 15W.,               | 30                    | NW1/4NE1/4; SW1/4SE1/4                         | 10.15          |
| <b>Hayden Peak</b><br>T. 20N., R. 15W.,                  | 30                    | SW1/4SE1/4                                     | 3.71           |
| <b>Coyote Pass</b><br>T. 21N., R. 17W.,                  | 8                     | SE1/4NE1/4                                     | .53            |
| <b>Union Pass</b><br>T. 21N., R. 19W.,                   | 8                     | W1/2NW1/4                                      | 5.20           |
| <b>South Mineral Park</b><br>T. 23N., R. 18W.,           | 8, (Pending FAA Apln) | NE1/4NE1/4                                     | 1.00           |
| <b>West of Grasshopper Junction</b><br>T. 23N., R. 20W., | 12                    | W1/2SE1/4                                      | 2.99           |
| <b>Windy Point</b><br>T. 24N., R. 18W.,                  | 36                    | SW1/4NE1/4, SE1/4NW1/4, NE1/4SW1/4, NW1/4SE1/4 | 1              |
| <b>North of Mount Perkins</b><br>T. 25N., R. 21W.,       | 3                     | NW1/4NE1/4, E1/2SE1/4, W1/2SW1/4               | 5.76           |
| <b>Mount Perkins</b><br>T. 25N., R. 21W.,                | 10                    | SE1/4NE1/4                                     | .038           |
| <b>Mohave Mine</b><br>T. 26N., R. 21W.,                  | 4                     | NW1/4  | 1.40           |
| <b>Willow Beach</b><br>T. 27N., R. 21W.,                 | 16<br>17              | SW1/4NW1/4<br>NE1/4                            | 2.00           |
| <b>Paterson Slope</b><br>T. 29N., R. 17W.,               | 34                    | NE1/4NE1/4, NW1/4NE1/4, NE1/4NW1/4             | 2.6            |
| <b>Sawmill Canyon</b><br>T. 21N., R. 16W.,               | 30                    | NE1/4  | .090           |
| <b>AT&amp;T</b><br>T. 20N., R. 15W.,                     | 20                    | S1/2SW1/4                                      | .53            |

**Appendix 6**  
**SPECIAL STATUS SPECIES**  
(Federally Listed, Proposed, and Candidate Species of known or possible occurrence).

**Plant Species:**

| Common Name<br>(Scientific Name)  | <sup>1</sup> Status | General Distribution  | Suitable Habitat on<br>Public Lands in KRA                                 | <sup>2</sup> Presence | Remarks  |
|---|---------------------|---|--|-----------------------|--|
| Arizona cliffrose<br>( <i>Purshia subintegra</i> )                                      | E                   | Two miles west of Six mile Crossing at Burro Creek  | Two miles west of Six mile Crossing at Burro Creek                         | Conf.                 | Occurs on limy tuff soils derived from Tertiary freshwater lakebed deposits on low, arid hillside between 2,050 to 3,400 feet elevation. |
| Roaring Springs prickly poppy<br>( <i>Argemone arizonica</i> )                          | C-2                 | Vermillion Cliffs, Grand Canyon National Park, and Dolan Springs vicinity.                                | Vicinity of Dolan Springs  | Conf.                 | Dry washes and disturbed soil sites.   |
| Freckled milk vetch<br>( <i>Astragalus lentiginosus</i> var. <i>ambiguus</i> )          | C-2                 | Near Chloride, AZ   | Near Chloride, AZ<br>South of Truxton, AZ                                  | Pot.                  | Hillsides of limestone or granite, 4,200-5,300 feet. Not relocated since 1941.   |
| Fickeisen Navajo Cactus<br>( <i>Pediocactus peeblesianus</i> var. <i>fickeiseniae</i> ) | C-1                 | Northern AZ, hills in northeast Mohave County to Grand Canyon & southeast to Gray Mtn in Coconino County. | Vicinity of Gray Mtn   | Conf.                 | May occur south of Grand Canyon near Hualapai Reservation.   |
| Frazier's wild buckwheat<br>( <i>Eriogonum ripleyi</i> )                                | C-2                 | Known from four isolated localities in Mohave, Coconino, and Yavapai counties.                            | Grand Wash Cliffs from Peach Springs northwest to Pearce Ferry.            | Pot.                  | Calcareous clay slopes.  |
| Wiggin's cholla<br>( <i>Opuntia wigginsii</i> )   | C-2                 | Southern Mohave and counties east to near Palo Verde, AZ.   | Near Davis Dam, Near Burns Springs   | Conf.                 | Uncertain taxonomic status, may be a hybrid cholla.  |
| White-margined penstemon<br>( <i>Penstemon albomarginatus</i> )                         | C-2                 | Near Yucca, AZ  | Near Yucca, AZ   | Conf.                 | One population in Arizona.   |
| Cerbat beard-tongue<br>( <i>Penstemon bicolor</i> subsp. <i>roseus</i> )                | C-2                 | Black Mountains west to Colorado River.   | Black Mountains.   | Conf.                 | Dry washes and steep north-facing slopes.  |
| Welsh Phacelia<br>( <i>Phacelia welshii</i> )   | C-2                 | Near Gray Mountain  | Near Gray Mountain   | Conf.                 | Scientific and historical importance of type locality for species on BLM land.   |
| Broom Rape<br>( <i>Drobanche uniflora</i> ssp. <i>occidentalis</i> )                    | SS                  | Hualapai Mountains and Sierra Ancha Mtn   | Hualapai Mts   | Conf.                 | Found in moist humus of stream banks   |
| Indian Paintbrush<br>( <i>Castilleja stenantha</i> )                                    | SS                  | Hualapai Mtn, near Prescott, Bradshaw Mts   | Horse Canyon Hualapai Mts, Unidentified Canyon, east side of Hualapai Mtns | Conf.                 | Riparian Habitat<br>Rare Occurrences   |

**Appendix 6**  
**SPECIAL STATUS SPECIES (continued)**  
(Federally Listed, Proposed, and Candidate Species of known or possible occurrence).

**Plant Species: (continued)**

| Common Name<br>(Scientific Name)   | <sup>1</sup> Status | General Distribution   | Suitable Habitat on<br>Public Lands in KRA                    | <sup>2</sup> Presence | Remarks  |
|--|---------------------|--|---|-----------------------|--|
| Roundleaf Rabbitbrush<br>( <i>Chrysothamnus teretifolius</i> )               | SS                  | Black Mts, Union Pass south to Black Mesa.                             | Black Mts, Union Pass south to Black Mesa                     | Conf.                 | Lacking good description of habitat needs or population numbers. |
| Simpson's Pediocactus<br>( <i>Pediocactus simpsonii</i> )                    | SS                  | Near Wupatki National Monument   | Grey Mtn Vicinity   | Pot.                  | Only one specimen found in State                                 |
| Mohave Cottonthorn<br>( <i>Tetradymia stenolepis</i> )                       | SS                  | Black Mts  | Black Mts north WSA   | Conf.                 | Several records near WSA lacking population and habitat data     |
| Arivaipa Wood Fern<br>( <i>Thelypteris puberula</i> var. <i>sonorensis</i> ) | SS                  | Aravaipa Canyon, Santa Catalina Mts, Peoples Canyon, Santa Maria River | Canyon Tributary to Santa Maria River                         | Pot.                  | Restricted to wet, shaded canyons below 3000 ft.                 |
| Striped Cotton-thorn<br>( <i>Tetradymia argyrea</i> )                        | SS                  | Cerbat Mts, Gold Basin   | Mount Tipton, Cerbat Mts Gold Basin 40 miles north of Kingman | Conf.                 | Only two records in State  |

**Animal Species:**

|   |      |  |   |   |  |
|---|------|--|---|---|--|
| Bald Eagle<br>( <i>Haliaeetus leucocephalus</i> ) | E(E) | Winter migrants statewide near lakes and streams; nests along Salt and Verde Rivers, and Bill Williams drainage. | Alamo Lake, Burro Creek, Francis Creek, tributaries | V | Occupied breeding area. BLM manages livestock mining, and wild burros.       |
|   |      |  | Burro Creek, Francis Creek, tributaries             | V | Recently discovered breeding area in Burro Creek. Important wintering areas. |
| Peregrine Falcon<br>( <i>Falco peregrinus</i> )   | E(C) | Statewide in migration; resident in areas near area tall cliffs and water.                                       | Black Mountains                                     | P | Breeding known on adjacent NPS lands.  |
|   |      |  | Burro Creek   | P | Suitable habitat, breeding status unknown.                                   |
|   |      |  | Cerbats, "Pinnacles"                                | P | Very high prairie falcon density. One recently discovered peregrine eyrie.   |
|   |      |  | Grand Wash Cliffs                                   | P | Excellent cliff habitat, breeding documented                                 |
|   |      |  | Alamo Lake  | P | Peregrines repeatedly observed during breeding season.                       |

**Appendix 6**  
**SPECIAL STATUS SPECIES (continued)**  
(Federally Listed, Proposed, and Candidate Species of known or possible occurrence).

| <b>Animal Species: (continued)</b>                                      |                     |   |   |                       |  |
|---|---------------------|---|---|-----------------------|--|
| Common Name<br>(Scientific Name)  | <sup>1</sup> Status | General Distribution  | Suitable Habitat on<br>Public Lands in KRA  | <sup>2</sup> Presence | Remarks  |
| Hualapai Mexican Vole<br>( <i>Microtus mexicanus hualpaiensis</i> )     | E(E)                | Known only from a few isolated spring sites in the Hualapai Mountains, principally in mixed conifer and ponderosa pine forests.   | Hualapai Mountains  | V                     | Habitat severely damaged by livestock grazing and erosion.                                 |
|   |                     |   | Music Mountain  | P                     | Unverified, but possible.  |
| Arizona Southwest Toad<br>( <i>Bufo microscapho microscaphus</i> )      | C-2                 | Occurs sporadically throughout northern Arizona.  | Burro and Francis Creek   | V                     | No realistic handle on the status of this species in KRA                                   |
| Yavapai Leopard Frog<br>( <i>Rana yavapaiensis</i> )                    | C-2                 | Recent taxonomic split of species statewide.  | Burro and Francis Creeks  |                       | Much concern over statewide decline of <i>Rana yavapaiensis</i>                            |
| Desert Tortoise<br>( <i>Gopherus agassizi</i> )                         | C-2 (C)             | Typically in Sonoran desertscrub and semidesert grassland - occurs primarily on rocky slopes and less often on lower bajadas and flats. Also in extreme eastern Mohave Desert in northwest/central Arizona. | Paloverde - mixed Cacti Cresosotebush-Bursage communities throughout the resource area. | V                     | Suitable habitat abundant. Distribution and habitat categorization data recently acquired. |
| Mexican Garter Snake<br>( <i>Thamnophis eques</i> )                     | C-2                 | Central and southeastern Arizona.   | 1904 record in Mohave Valley now extirpated from Mohave County.                         |                       | Historic location on the Colorado River.   |
| White-Faced Ibis<br>( <i>Plegadis chihi</i> )                           | C-2                 | Occurs as vagrant statewide.  | Dirt tanks, Alamo Lake.   |                       |  |
| Ferruginous Hawk<br>( <i>Buteo regalis</i> )                            | C-2 (T)             | Uncommon but widely distributed summer resident of grassy plains; fairly common winter resident in northern and southeastern Arizona.   | Grassland communities in Huaiapal Valley, Bozarth and Goodwin Mesas.                    | V                     | More common in recent years. Does not breed in Arizona.                                    |
|   |                     |   |   | V                     | Extremely rare as a breeder. Widely distributed winter resident.                           |
| California Black Rail<br>( <i>Laterallus jamaicensis coturniculus</i> ) | C-1                 | Bill Williams River, Mittry Lake.   | Alamo Lake  | P                     | Unlikely to occur in KRA.  |
| Mountain Plover<br>( <i>Charadrius montanus</i> )                       | C-2                 | Statewide or migrant.   | KRA wide  | P                     | Possible as migrant, unverified.   |
| Long-billed Curlew<br>( <i>Mumenius americanus</i> )                    | C-2                 | Sporadic Arizona distribution.  | Dirt Tanks, Alamo Lake, ponds, stream   | V                     | Uncommon but has been verified.  |

**Appendix 6**  
**SPECIAL STATUS SPECIES (continued)**  
(Federally Listed, Proposed, and Candidate Species of known or possible occurrence).

| <b>Animal Species: (continued)</b>                                     |                     |  |   |                       |   |
|--|---------------------|--|---|-----------------------|---|
| Common Name<br>(Scientific Name)                                       | <sup>1</sup> Status | General Distribution   | Suitable Habitat on<br>Public Lands in KRA                      | <sup>2</sup> Presence | Remarks   |
| Spotted Owl<br>( <i>Strix occidentalis</i> )                           | C-2 (T)             | Breeds locally in steep, wooded canyons of mountain and high mesas, principally in the northeastern half of Arizona. | Hualapai Mountains  | V                     | Very rare. No recent breeding records.                    |
| Southwestern Willow Flycatcher<br>( <i>Empidonax trailii extimus</i> ) | C-2                 | Likely to occur as migrant statewide.  | Unknown for KRA   | P                     | Unverified in KRA.  |
| Mexican Long-tongued Bat<br>( <i>Choenycteris mexicana</i> )           | C-2                 | Arizona distribution unknown.  | Unknown   | P                     | Unverified in KRA.  |
| California Leaf nose Bat<br>( <i>Myotis lucifugus</i> )                | C-2                 | Common in western Arizona.   | Burro Creek, Black Mountains                                    | V                     | Commonly encountered in mine shafts.                      |
| Occult Little Brown Bat<br>( <i>Myotis lucifugus occultus</i> )        | C-2                 | Central, eastern Arizona   | Possible in eastern part of Cerbat and Aquarius planning units. | P                     | Unverified  |
| Southwestern Cave Myotis<br>( <i>Myotis velifer brevis</i> )           | C-2                 | Includes central Arizona.  | Unknown   | P                     | Taxonomic questions exist.                                |
| Spotted Bat<br>( <i>Euderma maculatum</i> )                            | C-2                 | Yuma to the Kaibab Plateau, sparsely distributed.  | Unknown   | P                     | Unverified  |
| Greater Western Mastiff-bat<br>( <i>Eumops perotis californicus</i> )  | C-2                 | Includes western Arizona.  | Secret Pass, Black Mountains, Hualapai / Aquarius P.U.          | V                     |   |
| Hualapai Pocket Gopher<br>( <i>Thomomys umbrinus hualpaiensis</i> )    | C-2                 | Known only from the Hualapai Mountains, Mohave County.   | Hualapai Mountains  | P                     | No recent records   |
| Yavapai Arizona Pocket Mouse<br>( <i>Perognathus amplus amplus</i> )   | C-2                 | Includes west-central Arizona.   | Lower Big Sandy River, Alamo Lake areas.                        | V                     |   |
| MacNeill Sooty Wing Skipper<br>( <i>Hesperopsis graciellae</i> )       | C-2                 | Extreme western Arizona.   | Unknown   | P                     | Feeds only on <i>Atriplex lentiformes</i> , "Quail-bush". |
| Wandering Skipper<br>( <i>Pseudocopaeodes eunus eunus</i> )            | C-2                 | Unknown  | Unknown   | P                     | Suspected in Arizona. Prefers seeps, desert saltgrasses.  |
| Kingman Springsnail  | C-2                 | Black Mountains  | Burns Spring  | V                     | Endemic species.  |
| Common Black-hawk<br>( <i>Buteo anthracinus anthracinus</i> )          | (C)                 | Locally distributed - summer resident along some perennial streams with well developed broadleaf forest stands.      | Burro, Francis Creeks   | V                     | Highest breeding assemblage in North America.             |

**Appendix 6**  
**SPECIAL STATUS SPECIES (continued)**  
(Federally Listed, Proposed, and Candidate Species of known or possible occurrence).

**Animal Species: (continued)**

| Common Name<br>(Scientific Name)  | <sup>1</sup> Status | General Distribution  | Suitable Habitat on<br>Public Lands in KRA                            | <sup>2</sup> Presence | Remarks  |
|---|---------------------|---|---|-----------------------|--|
| Osprey<br>( <i>Pandion haliaetus carolinensis</i> )                         | (T)                 | As a migrant it may appear almost anywhere; nests below Mogollon Rim; rare summer resident along Colorado River; uncommon winter resident along Colorado River. | Burro Creek Alamo Lake  | V                     | Uncommon migrant. No documented breeding on resource area.                                     |
| Colorado River Roundtail Chub<br>( <i>Gila robusta robusta</i> )            | (E)                 | Streams of west-central Arizona/Arizona Game & Fish Commission "Threatened native wildlife in Arizona".   | Burro and Francis Creeks  | V                     | Population trend unknown.  |
| Great Egret<br>( <i>Casmerodius albus</i> )                                 | (E)                 | Breeding colonies are principally restricted to a few sites along the Colorado River below Bullhead City.   | Bill Williams drainage (Alamo Lake, Burro Creek, Bill Williams River) | V                     | Uncommon migrant. No documented breeding activity.   |
| Snowy Egret<br>( <i>Egretta thula</i> )                                     | (T)                 | Breeding colonies very local, and largely restricted to a few sites along the Colorado River below Bullhead City.   | Bill Williams drainage (Alamo Lake, Burro Creek, Bill Williams River) | V                     | Uncommon migrant. No documented breeding activity.   |
| Northern Goshawk<br>( <i>Accipiter gentilis</i> )                           | (C)                 | Nests locally in coniferous forests of the mountains and high mesas in the eastern half of Arizona.   | Hualapai Mountains  | V                     | Rare breeder.  |
| Clark's Grebe<br>( <i>Aechmophorus clarkii</i> )                            | (C)                 | Breeding colonies restricted to two locations on the Colorado River.  | Alamo Lake  | V                     | No breeding records.   |
| Western Yellow-billed cuckoo<br>( <i>Coccyzus americanus occidentalis</i> ) | (T)                 | Nests along wooded streams primarily in central and southern parts of Arizona. Extirpated from most lower Sonoran localities.                                   | Big Sandy River, Burro Creek  | V                     | Very rare. Last recorded in 1979. Taxonomic questions on validity of monotypic species status. |

<sup>1</sup> Status - E-Federally Endangered (E) State Endangered  
P-Federally Proposed  
(T)-State Threatened  
C1-Category 1 Candidate  
C2-Category 2 Candidate  
(C)-State Candidate  
(SS)-BLM Recommended Sensitive Species from the Arizona Natural Heritage Program plant list.

<sup>2</sup> Presence -Conf - Confirmed  
Pot - Potential  
V - Verified  
P - Probable

Source: KRA Files

**Appendix 7**  
**Riparian Areas**

| Stream Name           | Approximate<br>Length (miles) | Approximate<br>Acreage | RACE Inventory<br>(fiscal year) |
|-----------------------|-------------------------------|------------------------|---------------------------------|
| Adjacent to           |                               |                        |                                 |
| Grapevine Springs     | 0.9                           | 23                     | 88                              |
| Alamo Lake            | 5.5                           | 138                    | 89                              |
| Antelope Wash         | 6.6                           | 165                    | 88                              |
| Aquarius Canyon       | 2.5                           | 63                     | 92                              |
| Bar Wash              | 7.5                           | 190                    | 92                              |
| Beecher Well          | 3.6                           | 90                     | 90                              |
| Big Sandy River       | 34.9                          | 871                    | 90                              |
| Bill Williams River * | 6.5                           | 163                    | 89                              |
| Blue Tank             | 13.9                          | 348                    | 91                              |
| Boulder Creek         | 12.3                          | 308                    | 88                              |
| Bull Canyon           | 12.9                          | 323                    | 91                              |
| Burro Creek           | 50.5                          | 1263                   | 89                              |
| Burro Springs         | 2.8                           | 70                     | 90                              |
| Cane Springs          | 12.6                          | 315                    | 92                              |
| Cataract Creek        | 4.9                           | 123                    | 92                              |
| Cedar Wash            | 4.9                           | 123                    | 88                              |
| Cholla Spring Canyon  | 2.2                           | 55                     | 92                              |
| Conger Bull Creek     | 7.3                           | 183                    | 88                              |
| Cottonwood Canyon     | 2.4                           | 60                     | 90                              |
| Cottonwood Creek      | 2.8                           | 70                     | 91                              |
| Cottonwood Creek      | 1.9                           | 48                     | 89                              |
| Cow Creek             | 4.6                           | 115                    | 90                              |
| Creamery Canyon       | 2.7                           | 68                     | 91                              |
| Crow Canyon           | 7.1                           | 178                    | 90                              |
| Crozier Wash          | 5.4                           | 135                    | 88                              |
| Deluge Wash           | 6.5                           | 163                    | 89                              |
| Devil's Canyon        | 14.8                          | 370                    | 90                              |
| Dugwell Canyon        | 2.4                           | 60                     | 91                              |
| Francis Creek         | 18.9                          | 472                    | 90                              |
| Grand Springs         | 0.5                           | 13                     | 90                              |
| Grapevine Canyon      | 1.4                           | 35                     | 88                              |
| Grapevine Wash        | 3.1                           | 78                     | 88                              |
| Grave Yard Wash       | 6.0                           | 150                    | 92                              |
| Groom Spring Wash     | 5.7                           | 143                    | 92                              |
| Hair Clipper          | 6.5                           | 163                    | 92                              |
| Hibernia Canyon       | 10.9                          | 273                    | 91                              |
| Horse Canyon          | 3.9                           | 98                     | 90                              |
| Santa Maria River *   | 12.0                          | 300                    | 89                              |
| Kaiser Spring         | 2.0                           | 50                     | 89                              |
| Moss Wash             | 5.2                           | 130                    | 88                              |
| Pipeling Springs      | 2.5                           | 63                     | 90                              |
| Sawmill Creek         | 2.8                           | 70                     | 90                              |
| Silver Creek          | 2.4                           | 60                     | 92                              |



Appendix 7 (continued)

Riparian Areas

| Stream Name                       | Approximate Length (miles) | Approximate Acreage | RACE Inventory (fiscal year) |
|-----------------------------------|----------------------------|---------------------|------------------------------|
| Soap Canyon                       | 2.5                        | 63                  | 88                           |
| Stone Spring Canyon               | 3.0                        | 75                  | 91                           |
| Sycamore Creek                    | 17.7                       | 443                 | 90                           |
| Tanker Wash                       | 6.5                        | 163                 | 92                           |
| Tompkins Canyon                   | 2.4                        | 60                  | 92                           |
| Trout Creek                       | 14.8                       | 370                 | 92                           |
| Truxton Wash                      | 12.8                       | 320                 | 88                           |
| Unnamed                           | 0.6                        | 15                  | 92                           |
| Unnamed<br>(Adj to Union Pass)    | 0.8                        | 20                  | 91                           |
| Unnamed<br>(E of Finger Butte)    | 1.7                        | 43                  | 92                           |
| Unnamed<br>(E of Mount Nutt)      | 2.1                        | 53                  | 92                           |
| Unnamed<br>(N of Standard Mine)   | 1.9                        | 48                  | 90                           |
| Unnamed<br>(N of Thimble Mtn)     | 0.9                        | 23                  | 90                           |
| Unnamed<br>(S of Century Mine)    | 2.1                        | 53                  | 90                           |
| Unnamed<br>(S of Hibernia Canyon) | 0.5                        | 13                  | 91                           |
| Wagon Wheel                       | 3.6                        | 90                  | 90                           |
| Walnut Creek                      | 7.2                        | 180                 | 92                           |
| Wheeler Wash                      | 6.8                        | 170                 | 88                           |
| Wilder Creek                      | 2.2                        | 55                  | 92                           |
| Willow Creek                      | 2.7                        | 68                  | 92                           |
| Willow Creek                      | 1.5                        | 38                  | 92                           |
| Wright Creek                      | 9.5                        | 238                 | 88                           |
| Yellow Flower                     | 2.8                        | 70                  | 92                           |
| <b>Total</b>                      | <b>432.9</b>               | <b>10,462</b>       |                              |

\* Denotes streams that form resource area boundaries

Source: KRA Files

**Appendix 8**  
**Alternative 1 Legal Vehicular Access Acquisitions**

| Name                  | Town & Range  | Section                                   |
|-----------------------|---|---|
| Antelope Spring       | T. 26 N., R. 18 W.,   | 8, 16, 17, 21, 28, 34                     |
| Antelope Well         | T. 19 N., R. 13 W.,   | 19, 20, 28, 29                            |
| Aubrey Peak           | T. 15 N., R. 14 W.,   | 8   |
| Bar I-L Wash          | T. 17 N., R. 16 W.,   | 15, 27                                    |
| Barth                 | T. 20 N., R. 20 W.,   | 23  |
| Basin Well            | T. 22 N., R. 20 W.,   | 2, 3, 15, 27                              |
| Big Sandy with Spur   | T. 17 N., R. 13 W.,   | 14, 26                                    |
| Black Rock            | T. 19 N., R. 17 W.,   | 15  |
| Buck Mountain         | T. 16 N., R. 18 W.,<br>T. 16.5 N., R. 18 W.,                      | 3, 15<br>27                               |
| Burro Loop with Spurs | T. 13 N., R. 13 W.,<br>T. 14 N., R. 13 W.,                        | 3<br>5, 15, 17, 21, 23, 29, 33            |
| Butcher Camp          | T. 27 N., R. 18 W.,<br>T. 27 N., R. 19 W.,<br>T. 28 N., R. 19 W., | 7, 9, 15, 23<br>1, 2, 3, 5<br>31, 33, 35  |
| Cactus Mountain       | T. 17 N., R. 17 W.,   | 9, 18                                     |
| Cave Spring           | T. 21 N., R. 19 W.,   | 33  |
| Cedar Spring          | T. 25 N., R. 15 W.,<br>T. 25 N., R. 16 W.,                        | 15, 19, 21<br>25                          |
| Chapin Wash           | T. 11 N., R. 13 W.,<br>T. 12 N., R. 13 W.,                        | 4, 6, 11<br>31, 32, 33                    |
| Clay Springs          | T. 26 N., R. 15 W.,<br>T. 27 N., R. 15 W.,                        | 5, 7<br>15, 21, 33                        |
| Cliff Wash            | T. 23 N., R. 14 W.,   | 1, 11                                     |
| Copper Spring         | T. 17 N., R. 16 W.,   | 3   |
| Copperville           | T. 17 N., R. 14 W.,<br>T. 17 N., R. 15 W.,<br>T. 17 N., R. 16 W., | 3, 4, 5, 7, 9, 11, 13<br>13, 15, 17<br>23 |

**Appendix 8 (continued)**  
**Alternative 1 Legal Vehicular Access Acquisitions**

| Name                    | Town & Range   | Section  |
|-------------------------|--|--|
| Corral                  | T. 14 N., R. 14 W.,  | 7, 17  |
| Cottonwood Canyon       | T. 19 N., R. 20 W.,  | 3  |
| Coyote                  | T. 25 N., R. 20 W.,<br>T. 25 N., R. 21 W.,   | 21, 29, 31<br>35   |
| Creamy Canyon with Spur | T. 16 N., R. 16 W.,<br>T. 16.5 N., R. 16 W.,   | 2, 11, 14, 15, 22, 27<br>21, 23, 25, 35, 36                |
| Crescent                | T. 23 N., R. 14 W.,<br>T. 24 N., R. 14 W.,   | 5<br>31  |
| Crozier Spring          | T. 24 N., R. 13 W.,  | 5, 26, 27  |
| Detrital Wash           | T. 23 N., R. 19 W.,<br>T. 23 N., R. 20 W.,<br>T. 24 N., R. 20 W.,                            | 7, 18<br>1<br>7, 17, 21, 26, 27, 35                        |
| Devil's Canyon          | T. 28 N., R. 16 W.,  | 34, 35   |
| Eagle Rock Well         | T. 15 N., R. 14 W.,<br>T. 16 N., R. 15 W.,   | 7, 8<br>36   |
| Falls Spring            | T. 20 N., R. 15 W.,<br>T. 21 N., R. 15 W.,   | 5, 6<br>32   |
| Fig Spring              | T. 19 N., R. 18 W.,<br>T. 19 N., R. 19 W.,<br>T. 20 N., R. 19 W.,<br>T. 21 N., R. 19 W.,     | 6<br>1, 2, 3<br>3, 9, 15, 21, 27, 33<br>29, 33, 34         |
| Flattop with Spur       | T. 16 N., R. 16 W.,<br>T. 16 N., R. 17 W.,<br>T. 16.5 N., R. 17 W.,<br>T. 16.5 N., R. 18 W., | 18, 19, 20, 28<br>3, 5, 11, 13, 15<br>31<br>21, 23, 25, 27 |
| Getz Peak               | T. 20 N., R. 15 W.,  | 20   |
| Goldbug Mine            | T. 13 N., R. 13 W.,  | 17   |
| Goldroad Well           | T. 19 N., R. 19 W.,  | 21   |
| Goodwin Mesa            | T. 16 N., R. 11 W.,  | 22   |
| Granite Peak            | T. 16.5 N., R. 15 W.,<br>T. 17 N., R. 15 W.,   | 19, 29, 33<br>33   |

**Appendix 8 (continued)**  
**Alternative 1 Legal Vehicular Access Acquisitions**

| Name              | Town & Range          | Section                       |
|-------------------|-----------------------|-------------------------------|
| Grapevine Canyon  | T. 30 N., R. 15 W.,   | 33                            |
|                   | T. 30 N., R. 16 W.,   | 13, 25                        |
| Grapevine Spring  | T. 24 N., R. 13 W.,   | 5, 29                         |
| Hibernia Canyon   | T. 18 N., R. 14 W.,   | 2, 10, 11, 14, 15, 16, 17, 19 |
|                   | T. 18 N., R. 15 W.,   | 11, 13, 15                    |
| Hualapai Canyon   | T. 20 N., R. 15 W.,   | 9                             |
|                   | T. 21 N., R. 15 W.,   | 28                            |
| Little Cottonwood | T. 23 N., R. 13 W.,   | 27, 29, 33, 36                |
| Lost Cabin Spring | T. 24 N., R. 20 W.,   | 17                            |
| McConnico         | T. 20 N., R. 17 W.,   | 9                             |
| McCracken         | T. 14 N., R. 15 W.,   | 14, 15, 21                    |
| Middle            | T. 25 N., R. 20 W.,   | 7, 15, 19, 21                 |
|                   | T. 25 N., R. 21 W.,   | 1                             |
| Mount Perkins     | T. 25 N., R. 21 W.,   | 1                             |
|                   | T. 26 N., R. 21 W.,   | 22                            |
| Mud Spring        | T. 16 N., R. 16 W.,   | 4, 9, 13, 14, 15              |
|                   | T. 16.5 N., R. 16 W., | 29, 33                        |
|                   | T. 17 N., R. 16 W.,   | 35                            |
| North Tank        | T. 28 N., R. 15 W.,   | 29                            |
| Old Camp Well     | T. 19 N., R. 16 W.,   | 33                            |
| Old Trails        | T. 18 N., R. 17 W.,   | 19, 21                        |
|                   | T. 18 N., R. 18 W.,   | 25                            |
| Pearson Falls     | T. 17 N., R. 13 W.,   | 2, 10, 11                     |
| Pilgrim Mine      | T. 23 N., R. 19 W.,   | 2                             |

**Appendix 8 (continued)**  
**Alternative 1 Legal Vehicular Access Acquisitions**

| Name                     | Town & Range   | Section   |
|--------------------------|--|---|
| Pine Lake                | T. 20 N., R. 15 W.,  | 20, 21  |
| Pipeline                 | T. 16.5 N., R. 18 W.,<br>T. 17 N., R. 17 W.,<br>T. 18 N., R. 17 W.,<br>T. 21 N., R. 16 W.,   | 21<br>5, 17, 18, 19, 31<br>29<br>28, 32                                       |
| Porter Mine              | T. 26 N., R. 21 W.,  | 3   |
| Portland Mine            | T. 23 N., R. 21 W.,<br>T. 24 N., R. 21 W.,   | 14, 15<br>25  |
| Potts Mountain with Spur | T. 11 N., R. 14 W.,<br>T. 12 N., R. 14 W.,   | 4, 9<br>28  |
| Red Horn Spring          | T. 24 N., R. 12 W.,  | 19  |
| Roadside Tank            | T. 15 N., R. 15 W.,  | 21, 29, 31  |
| Rock Creek               | T. 17 N., R. 17 W.,<br>T. 18 N., R. 17 W.,   | 15<br>9, 11   |
| Secret Pass              | T. 21 N., R., 19 W.,   | 29  |
| Senator Mine             | T. 27 N., R. 19 W.,<br>T. 27 N., R. 20 W.,<br>T. 28 N., R. 19 W.,  | 5, 7<br>13<br>3, 11, 14, 15, 16, 21, 29                                       |
| Senator Mountain         | T. 29 N., R. 19 W.,<br>T. 27 N., R. 20 W.,<br>T. 28 N., R. 20 W.,  | 23, 25, 35<br>15, 16, 21<br>13, 25, 35  |
| Shot Up Tank             | T. 15 N., R. 16 W.,<br>T. 16 N., R. 16 W.,   | 5, 7<br>27, 28, 33  |
| Shot Up Well             | T. 14 N., R. 17 W.,<br>T. 15 N., R. 17 W.,<br>T. 16 N., R. 17 W.,<br>T. 16.5 N., R. 17 W.,<br>T. 16.5 N., R. 18 W.,<br>T. 17 N., R. 17 W., | 3, 10, 15, 16<br>7, 17, 29, 33<br>7, 19, 31<br>19, 31<br>24<br>17, 20, 29, 33 |
| Stone Corral             | T. 24 N., R. 14 W.,  | 23, 27, 29  |

**Appendix 8 (continued)**  
**Alternative 1 Legal Vehicular Access Acquisitions**

| Name                   | Town & Range          | Section                            |
|------------------------|-----------------------|------------------------------------|
| Stouts Well            | T. 14 N., R. 15 W.,   | 3, 11                              |
|                        | T. 15 N., R. 14 W.,   | 8                                  |
|                        | T. 15 N., R. 15 W.,   | 35                                 |
| Sugarloaf Mountain     | T. 21 N., R. 20 W.,   | 16                                 |
|                        | T. 22 N., R. 20 W.,   | 31                                 |
|                        | T. 22 N., R. 21 W.,   | 25, 35                             |
| Thumb Butte            | T. 20 N., R. 20 W.,   | 27, 28                             |
|                        | T. 21 N., R. 20 W.,   | 28, 29, 32, 33                     |
| Township Line          | T. 14 N., R. 15 W.,   | 5                                  |
|                        | T. 14 N., R. 17 W.,   | 1, 3, 5                            |
|                        | T. 15 N., R. 15 W.,   | 31, 33                             |
|                        | T. 15 N., R. 16 W.,   | 31, 33, 35                         |
|                        | T. 15 N. R. 17 W.,    | 31, 33, 35                         |
| Twin Mills             | T. 21 N., R. 19 W.,   | 2, 11                              |
|                        | T. 22 N., R. 19 W.,   | 18, 19, 29, 33, 34, 35             |
|                        | T. 22 N., R. 20 W.,   | 2, 13                              |
|                        | T. 23 N., R. 20 W.,   | 9, 11, 23, 27, 35                  |
| Vock Canyon            | T. 23 N., R. 17 W.,   | 3, 4, 5, 8, 9                      |
|                        | T. 24 N., R. 17 W.,   | 35, 36                             |
| Wabayuma Peak          | T. 18 N., R. 16 W.,   | 11                                 |
| Walnut Creek           | T. 19 N., R. 16 W.,   | 7                                  |
|                        | T. 19 N., R. 17 W.,   | 7, 15, 18                          |
| Water Tank             | T. 15 N., R. 16 W.,   | 23, 27, 29, 31, 33                 |
| Willow Creek with Spur | T. 16 N., R. 17 W.,   | 1                                  |
|                        | T. 16.5 N., 17 W.,    | 35                                 |
| Various Unnamed Roads  | T. 16.5 N., R. 18 W., | 27, 33                             |
|                        | T. 20 N., R. 16 W.,   | 2, 5, 8, 9, 10, 11, 15, 27, 28, 29 |

**APPENDIX 9**  
**Alternative 1 Acquisitions by Resource Activity**

| <b>Township and Range</b> | <b>Section</b> | <b>Subdivision</b>   | <b>Acreage</b> |
|---------------------------|----------------|--|----------------|
| <b>WILDERNESS</b>         |                |  |                |
| T. 20N., R. 20W.,         | 23             | SW1/4, S1/2NW1/4, NW1/4NW1/4,<br>W1/2SW1/4SE1/4                            | 300            |
| T. 18N., R. 16W.,         | 11             | N1/2N1/2; N1/2SW1/4NW1/4, E1/2<br>SE1/4SW1/4NW1/4, SE1/4NW1/4              | 225            |
| T. 12N., R. 11W.,         | 16             | Mining Claim   | 16             |
| T. 25N., R. 18 W.,        | 17             | NW1/4, N1/2NE1/4,<br>SE1/4NE1/4  | 280            |
| T. 16N., R. 10W.,         | 25             | Mining Claim   | 5              |
| T. 25N., R. 18W.,         | 4              | SW1/4NW1/4   | 40             |
| T. 25N., R. 18W.,         | 20             | SE1/4SE1/4   | 40             |
| T. 20N., R. 20W.,         | 35             | Mining Claim   | 5              |
| T. 19N., R. 20W.,         | 2              | Mining Claim   | 5              |
| T. 25N., R. 18W.,         | 33             | All  | 640            |
| T. 24N., R. 18W.,         | 9              | All  | 640            |
| T. 18N., R. 16W.,         | 5              | S1/2SW1/4  | 80             |
| T. 18N., R. 16W.,         | 8              | NW1/4NW1/4   | 40             |
| T. 18N., R. 16W.,         | 15             | NE1/4SE1/4, SW1/4NW1/4, NW1/4SE1/4NW1/4,<br>W1/2NW1/4SW1/4, W1/2NE1/4SW1/4 | 210            |
| T. 18N., R. 16W.,         | 17             | N1/2NW1/4, SW1/4, W1/2SE1/4, W1/2NE1/4<br>SE1/4, SE1/4SE1/4                | 380            |
| T. 18N., R. 16W.,         | 21             | NW1/4NW1/4, SE1/4SE1/4   | 80             |
| T. 18N., R. 16W.,         | 23             | NE1/4NW1/4   | 40             |
| T. 18N., R. 16W.,         | 27             | S1/2SW1/4  | 80             |
| T. 18N., R. 16W.,         | 29             | SE1/4NE1/4   | 40             |
| T. 18N., R. 16W.,         | 31             | W1/2NE1/4  | 80             |
| <b>Total</b>              |                |  | <b>3,226</b>   |
| <b>RECREATION</b>         |                |  |                |
| T. 29N., R. 17W.,         | 25             | All  | 640            |
| T. 29N., R. 17W.,         | 35             | N1/2   | 320            |
| T. 20N., R. 19W.,         | 33             | All  | 640            |
| T. 20N., R. 20W.,         | 2              | All  | 525            |
| T. 20N., R. 20W.,         | 3              | SE1/4SW1/4, N1/2SW1/4, SE1/4   | 280            |
| T. 14N., R. 12W.,         | 23             | All  | 640            |
| T. 14N., R. 12W.,         | 24             | W1/2   | 320            |
| T. 28N., R. 17W.,         | 3              | All  | 640            |
| T. 29N., R. 16W.,         | 19             | NW1/4NW1/4   | 40             |
| T. 18N., R. 15W.,         | 7              | N1/2,N1/2S1/2, SW1/4SW1/4,SW1/4SE1/4                                       | 560            |
| T. 29N., R. 17W.,         | 27             | All  | 640            |
| T. 30N., R. 16W.,         | 23             | All  | 640            |
| T. 29N., R. 16W.,         | 29             | All  | 640            |
| T. 29N., R. 16W.,         | 31             | S1/2   | 320            |
| T. 30N., R. 16W.,         | 31             | E1/2   | 320            |
| T. 30N., R. 16W.,         | 29             | All  | 640            |
| <b>Total</b>              |                |  | <b>7,805</b>   |
| <b>WILDLIFE</b>           |                |  |                |
| <b>Pine Peak</b>          |                |  |                |
| T. 17N., R. 15W.,         | 3              | All  | 643            |
|                           | 9              | All  | 640            |
|                           | 11             | All  | 640            |

**Appendix 9 (continued)**

| <b>Township and Range</b>    | <b>Section</b> | <b>Subdivision</b>                  | <b>Acreage</b> |
|------------------------------|----------------|-------------------------------------|----------------|
| <b>WILDLIFE (continued)</b>  |                |                                     |                |
| <b>Union Pass</b>            |                |                                     |                |
| T. 21N., R. 20W.,            | 11             | All                                 | 640            |
|                              | 12             | N1/2                                | 298            |
| <b>Hualapai Foothills II</b> |                |                                     |                |
| T. 20N., R. 17W.,            | 19             | East of I-40 right-of-way           | 310            |
|                              | 28             | Mining claim in SW1/4NW1/4          | 20             |
|                              | 29             | NW1/4;S1/2                          | 480            |
| T. 17N., R. 16W.,            | 1              | NW1/4 NW1/4; SE1/4 NE1/4            | 80             |
|                              | 3              | S1/2 NE1/4; SE1/4; S1/2&NE1/4 SW1/4 | 360            |
|                              | 8              | All                                 | 640            |
|                              | 9              | N1/2                                | 320            |
|                              | 15             | All                                 | 640            |
|                              | 17             | All                                 | 640            |
| T. 16.5N., R. 17W.,          | 25             | All                                 | 640            |
| T. 16.5N., R. 16W.,          | 19             | All                                 | 521            |
|                              | 21             | All                                 | 521            |
|                              | 23             | All                                 | 522            |
|                              | 25             | All                                 | 640            |
|                              | 27             | All                                 | 640            |
|                              | 29             | All                                 | 640            |
|                              | 31             | All                                 | 636            |
|                              | 32             | SW1/4; SW1/4 SE1/4                  | 200            |
|                              | 33             | All                                 | 640            |
|                              | 35             | All                                 | 640            |
|                              | 36             | NW1/4 NW1/4                         | 40             |
| T. 16.5N., R. 15W.,          | 31             | All                                 | 623            |
| T. 16N., R. 16W.,            | 1              | All                                 | 639            |
|                              | 2              | All                                 | 638            |
|                              | 3              | All                                 | 637            |
|                              | 4              | All                                 | 638            |
|                              | 5              | All                                 | 638            |
|                              | 6              | All                                 | 635            |
|                              | 8              | All                                 | 640            |
|                              | 9              | All                                 | 640            |
|                              | 10             | All                                 | 640            |
|                              | 11             | All                                 | 640            |
|                              | 12             | All                                 | 640            |
|                              | 13             | All                                 | 640            |
|                              | 14             | All                                 | 640            |
|                              | 15             | All                                 | 640            |
|                              | 17             | All                                 | 640            |
|                              | 20             | All                                 | 640            |
|                              | 21             | All                                 | 640            |
|                              | 22             | All                                 | 640            |
|                              | 23             | All                                 | 640            |
|                              | 24             | All                                 | 640            |
|                              | 25             | All                                 | 640            |
|                              | 26             | All                                 | 640            |
|                              | 27             | All                                 | 640            |
|                              | 35             | All                                 | 640            |
|                              | 36             | E1/2; W1/2SW1/4; N1/2& SW1/4 NW1/4  | 520            |



## Appendix 9 (continued)

| Township and Range          | Section           | Subdivision                              | Acreage     |     |
|-----------------------------|-------------------|--|-------------|-----|
| <b>WILDLIFE (continued)</b> |                   |  |             |     |
| T. 16N., R. 15W.,           | 5                 | W1/2; W1/2 E1/2; NE1/4 NE1/4; E1/2SE1/4  | 598         |     |
|                             | 6                 | All                                      | 622         |     |
|                             | 7                 | All                                      | 623         |     |
|                             | 8                 | All                                      | 640         |     |
|                             | 9                 | All                                      | 640         |     |
|                             | 17                | All                                      | 640         |     |
|                             | 19                | All                                      | 622         |     |
|                             | 21                | All                                      | 640         |     |
|                             | 29                | All                                      | 640         |     |
|                             | 31                | All                                      | 625         |     |
|                             | 33                | All                                      | 640         |     |
|                             | 36                | All                                      | 640         |     |
|                             | T. 16N., R. 14W., | 27                                       | All         | 640 |
|                             | T. 15N., R. 15W., | 1  | SE1/4 NW1/4 | 160 |
| 2                           |                   | All                                      | 638         |     |
| 3                           |                   | All                                      | 638         |     |
| 5                           |                   | All                                      | 639         |     |
| T. 15N., R. 15W.,           | 7                 | All                                      | 629         |     |
|                             | 9                 | All                                      | 640         |     |
|                             | 11                | All                                      | 640         |     |
|                             | 14                | SE1/4                                    | 160         |     |
|                             | 15                | All                                      | 640         |     |
|                             | 17                | All                                      | 640         |     |
|                             | 19                | All                                      | 632         |     |
|                             | 21                | All                                      | 640         |     |
|                             | 23                | E1/2; E1/2 W1/2; NW1/4 NW1/4; W1/2 SW1/4 | 600         |     |
|                             | 35                | All                                      | 640         |     |
| T. 15N., R. 14W.,           | 1                 | N1/2; W1/2 SW1/4                         | 399         |     |
|                             | 4                 | All                                      | 638         |     |
|                             | 5                 | S1/2; S1/2 NE1/4                         | 300         |     |
| T. 15N., R. 14W.,           | 7                 | All                                      | 627         |     |
|                             | 8                 | All                                      | 640         |     |
|                             | 9                 | All                                      | 640         |     |
|                             | 13                | W1/2 NW1/4                               | 80          |     |
|                             | 17                | SE1/4 SE1/4                              | 40          |     |
|                             | 19                | All                                      |             |     |
|                             | 23                | SW1/4 NW1/4                              | 40          |     |
| 30                          | W1/2NW1/4         | 74                                       |             |     |
| T. 15N., R. 13W.,           | 19                | SW1/4                                    | 154         |     |
|                             | 24                | W1/2 NE1/4; W1/2 SE1/4; E1/2             | 480         |     |
|                             | 25                | SW1/4                                    | 160         |     |
|                             | 27                | All                                      | 640         |     |
|                             | 29                | S1/2; S1/2 N1/2                          | 480         |     |
|                             | 33                | All                                      | 640         |     |
|                             | 35                | All                                      | 640         |     |
| T. 14N., R. 12W.,           | 5                 | N1/2                                     | 323         |     |
|                             | 7                 | All                                      | 633         |     |
|                             | 9                 | All                                      | 640         |     |
|                             | 17                | S1/2                                     | 320         |     |
|                             | 19                | All                                      | 634         |     |
|                             | 21                | All                                      | 640         |     |
|                             | 27                | E1/2                                     | 320         |     |
|                             | 29                | N1/2; SW1//4; NE1/4 NE1/4& S1/2 SE1/4    | 600         |     |
|                             | 31                | All                                      | 636         |     |
|                             | 33                | All                                      | 640         |     |

**Appendix 9 (continued)**

| <b>Township and Range</b>   | <b>Section</b>    | <b>Subdivision</b>                                    | <b>Acreage</b> |
|-----------------------------|-------------------|---|----------------|
| <b>WILDLIFE (continued)</b> |                   |   |                |
| T. 18N., R. 17W.,           | 9                 | S1/2 N1/2; W1/2&NE1/4 SW1/4                           | 280            |
|                             | 11                | All   | 640            |
|                             | 35                | All   | 640            |
| T. 18N., R. 16W.,           | 31                | W1/2 NE1/4; NW1/4 NW1/4                               | 120            |
| T. 17N., R. 16W.,           | 19                | All   | 638            |
|                             | 31                | All   | 640            |
| T. 16.5N., R. 17W.,         | 23                | All   | 516            |
| <b>McCracken Mtns</b>       |                   |   |                |
| T. 14N., R. 14W.,           | 19                | All   | 632            |
|                             | 31                | All   | 634            |
| T. 14N., R. 15W.,           | 3                 | All   | 637            |
|                             | 9                 | All   | 640            |
|                             | 11                | All   | 640            |
|                             | 13                | All   | 640            |
|                             | 23                | All   | 640            |
|                             | 25                | All   | 640            |
|                             | 27                | All   | 640            |
|                             | 35                | All   | 640            |
|                             | T. 13N., R. 15W., | 3   | S1/2           |
| 11                          |                   | All   | 640            |
| 13                          |                   | W1/2;NE1/4 NE1/4                                      | 360            |
| 15                          |                   | All   | 640            |
| 23                          |                   | W1/2  | 320            |
| T. 13N., R. 14W.,           | 5                 | All   | 640            |
| <b>Pine Flat</b>            |                   |   |                |
| T. 18N., R. 15W.,           | 7                 | N1/2; N1/2 S1/2; N1/2& SW1/4 SE1/4; N1/2& SW1/4 SW1/4 | 543            |
| <b>Black Mtns HMP</b>       |                   |   |                |
| T. 26N., R. 21W.,           | 22                | All   | 640            |
|                             | 33                | NE1/4   | 160            |
|                             | 36                | All   | 640            |
| T. 25N., R. 22W.,           | 25                | All   | 640            |
|                             | 27                | All   | 640            |
| T. 25N., R. 21W.,           | 1                 | Mining Claims in N1/2                                 | 120            |
| T. 24N., R. 21W.,           | 9                 | All   | 640            |
|                             | 33                | NW1/4 SW1/4   | 40             |
| T. 23N., R. 20W.,           | 21                | All   | 640            |
|                             | 33                | All   | 640            |
| T. 22N., R. 20W.,           | 4                 | SE1/4 SE1/4   | 40             |
|                             | 9                 | E1/2  | 320            |
|                             | 15                | All   | 640            |
|                             | 17                | All   | 640            |
|                             | 19                | All   | 637            |
|                             | 21                | All   | 640            |
|                             | 29                | All   | 640            |
|                             | 31                | N1/2; N1/2 S1/2                                       | 478            |
|                             | 33                | All   | 640            |
|                             | T. 22N., R. 21W., | 13  | All            |
| 25                          |                   | All   | 640            |

**Appendix 9 (continued)**

| <b>Township and Range</b>               | <b>Section</b> | <b>Subdivision</b>                         | <b>Acreage</b> |
|---|----------------|--|----------------|
| <b>WILDLIFE (continued)</b>             |                |  |                |
| T. 20N., R. 20W.,                       | 2              | All  | 685            |
|   | 3              | SE1/4; E1/2& NW1/4 SW1/4                   | 280            |
|   | 23             | SW1/4; W1/2 SW1/4 SE1/4; S1/2&NW1/4 NW1/4  | 300            |
| T. 20N., R. 19W.,                       | 21             | All  | 640            |
|   | 33             | All  | 640            |
| T. 19N., R. 19W.,                       | 21             | All  | 640            |
| <b>Cerbat Mtn HMP</b>                   |                |  |                |
| T. 28N., R. 16W.,                       | 11             | NW1/4 SW1/4                                | 40             |
| T. 23N., R. 13W.,                       | 5              | All  | 639            |
| T. 23N., R. 14W.,                       | 3              | All  | 640            |
|   | 9              | N1/2; SE1/4; E1/2 SW1/4                    | 560            |
|   | 11             | All  | 640            |
| T. 24N., R. 14W.,                       | 11             | All  | 640            |
|   | 13             | All  | 364            |
|   | 17             | All  | 640            |
|   | 21             | All  | 640            |
|   | 23             | All  | 640            |
|   | 25             | All  | 365            |
| T. 24N., R. 16W.,                       | 7              | All  | 1017           |
| T. 25N., R. 14W.,                       | 9              | All  | 640            |
|   | 11             | All  | 640            |
|   | 25             | All  | 640            |
|   | 31             | All  | 640            |
|   | 35             | All  | 640            |
| T. 25N., R. 15W.,                       | 27             | All  | 640            |
|   | 28             | All  | 640            |
|   | 29             | All  | 640            |
|   | 36             | All  | 640            |
| T. 25N., R. 18W.,                       | 4              | SW1/4 NW1/4                                | 40             |
| <b>Hualapai Mtn</b>                     |                |  |                |
| T. 20N., R. 15W.,                       | 9              | NW1/4 NE1/4; NE1/4 NW1/4;<br>Mining Claims | 135            |
|   | 16             | All  | 640            |
|   | 21             | S1/2 SW1/4                                 | 80             |
| T. 13N., R. 16W.,                       | 23             | All  | 640            |
|   | 25             | All  | 640            |
|   | 26             | SE1/4; SW1/4 NE1/4; SE1/4 NW1/4; E1/2SW1/4 | 320            |
|   | 27             | All  | 640            |
|   | 35             | All  | 640            |
| T. 13N., R. 15W.,                       | 29             | All  | 640            |
|   | 31             | All  | 639            |
| <b>Total</b>                            |                |  | <b>101,022</b> |
| <b>Total Alternative 1 Acquisitions</b> |                |  | <b>112,053</b> |

**Appendix 10**  
**Mineral Closures to Protect Critical Resources**

| Township & Range   | Section | Subdivision                  | Acreage      |
|--|---------|------------------------------|--------------|
| <b>JOSHUA TREE HABITAT</b>                                   |         |                              |              |
| <b>Federal Minerals to be Closed to Entry</b>                |         |                              |              |
| T. 29 N., R. 17 W.,  | 24      | All                          | 640          |
|  | 26      | All                          | 640          |
|  | 34      | E1/2                         | 320          |
|  | 35      | S1/2                         | 320          |
|  | 36      | All                          | 640          |
| T. 29 N., R. 16 W.,  | 18      | All                          | 638          |
|  | 20      | All                          | 640          |
|  | 30      | All                          | 639          |
|  | 32      | All                          | 640          |
| T. 28 N., R. 17 W.,  | 10      | N1/2N1/2NE1/4; N1/2NW1/4     | 120          |
| T. 28 N., R. 16 W.,  | 6       | N1/2                         | 167          |
| <b>Total</b>   |         |                              | <b>5,404</b> |
| <b>Acquire Non-federal Minerals - Close to Mineral Entry</b> |         |                              |              |
| T. 29 N., R. 17 W.,  | 25      | All                          | 640          |
|  | 27      | E1/2                         | 320          |
|  | 35      | N1/2                         | 320          |
| T. 29 N., R. 16 W.,  | 7       | E1/2                         | 320          |
|  | 19      | All                          | 638          |
|  | 21      | All                          | 640          |
|  | 29      | All                          | 640          |
|  | 31      | All                          | 640          |
| T. 28 N., R. 17 W.,  | 1       | N1/2N1/2                     | 162          |
|  | 2       | All                          | 642          |
|  | 3       | All                          | 640          |
|  | 11      | N1/2N1/2N1/2                 | 80           |
| <b>Total</b>   |         |                              | <b>5,682</b> |
| <b>CULTURAL &amp; HISTORICAL</b>                             |         |                              |              |
| <b>Federal Minerals to be Closed to Entry</b>                |         |                              |              |
| T. 17 N., R. 13 W.,  | 36      | W1/2SW1/4                    | 80           |
| T. 16.5 N., R. 13 W.,  | 21      | W1/2; SW1/4SE1/4             | 276          |
|  | 22      | E1/2; E1/2W1/2               | 414          |
|  | 27      | E1/2; NW1/4; NW1/4SW1/4      | 520          |
|  | 28      | SW1/2NE1/4; NW1/4; N1/2SW1/4 | 280          |
| <b>Total</b>   |         |                              | <b>1,570</b> |

**Appendix 10 (continued)**  
**Mineral Closures to Protect Critical Resources**

| Township & Range   | Section | Subdivision                  | Acreage |
|--|---------|------------------------------|---------|
| <b>CULTURAL &amp; HISTORICAL (continued)</b>                 |         |                              |         |
| <b>Acquire Non-federal Minerals - Close to Mineral Entry</b> |         |                              |         |
| T. 20 N., R. 20 W.,  | 33      | All                          | 640     |
| T. 17 N., R. 13 W.,  | 35      | SE1/4                        | 160     |
| T. 16.5 N., R. 13 W.,  | 21      | NE1/4; N1/2SE1/4; SE1/4SE1/4 | 235     |
|  | 22      | W1/2W1/2                     | 138     |
|  | 27      | NE1/4SW1/4                   | 40      |
|  | 28      | N1/2NE1/4; SE1/4NE1/4        | 120     |
|  |         | Total                        | 1,333   |

**CULTURAL & CATEGORY 1 DESERT TORTOISE HABITAT**

**Federal Minerals to be Closed to Entry**

|                     |    |                        |       |
|---------------------|----|------------------------|-------|
| T. 20 N., R. 21 W., | 34 | All                    | 640   |
|                     | 35 | All                    | 640   |
| T. 19 N., R. 21 W., | 2  | All                    | 641   |
|                     | 4  | All                    | 645   |
|                     | 6  | All                    | 641   |
|                     | 8  | All                    | 640   |
|                     | 10 | All                    | 640   |
|                     | 14 | All                    | 640   |
|                     | 22 | All                    | 640   |
|                     | 24 | All                    | 640   |
|                     | 26 | All                    | 640   |
|                     | 28 | E1/2; S1/2NW1/4; SW1/4 | 560   |
|                     | 34 | All                    | 640   |
|                     | 36 | All                    | 640   |
|                     |    | Total                  | 8,887 |

**Appendix 10 (continued)**  
**Mineral Closures to Protect Critical Resources**

| Township & Range   | Section | Subdivision                 | Acreage       |
|--|---------|-----------------------------|---------------|
| <b>Acquire Non-federal Minerals - Close to Mineral Entry</b> |         |                             |               |
| T. 20 N., R. 21 W.,  | 32      | S1/2                        | 320           |
|  | 33      | All                         | 640           |
| T. 19 N., R. 21 W.,  | 3       | All                         | 507           |
|  | 5       | All                         | 497           |
|  | 7       | E1/2; NW1/4; N1/2SW1/4      | 562           |
|  | 9       | All                         | 640           |
|  | 11      | All                         | 640           |
|  | 15      | All                         | 640           |
|  | 23      | All                         | 640           |
|  | 25      | All                         | 640           |
|  | 27      | All                         | 640           |
|  | 33      | All                         | 640           |
|  | 35      | All                         | 640           |
|  |         | Total                       | 7,646         |
| <b>THREATENED &amp; ENDANGERED SPECIES HABITAT</b>           |         |                             |               |
| <b>Federal Minerals to be Closed to Entry</b>                |         |                             |               |
| T. 20 N., R. 15 W.,  | 32      | All                         | 640           |
| T. 19 N., R. 15 W.,  | 4       | W1/2NW1/4; SW1/4; W1/2SE1/4 | 321           |
|  | 6       | E1/2E1/2                    | 161           |
|  | 28      | All                         | 640           |
| T. 17 N., R. 15 W.,  | 2       | W1/2                        | 321           |
| T.14 N., R. 11 W.,   | 1       | All                         | 639           |
|  | 2       | SE1/4                       | 160           |
|  | 11      | NE1/4                       | 160           |
|  | 12      | N1/2N1/2                    | 160           |
|  |         | Total                       | 3,202         |
| <b>Acquire Non-federal Minerals - Close to Mineral Entry</b> |         |                             |               |
| T. 20 N., R. 15 W.,  | 33      | NW1/4                       | 160           |
| T. 19 N., R. 15 W.,  | 5       | All                         | 644           |
| T. 17 N., R. 15 W.,  | 3       | All                         | 643           |
|  |         | Total                       | 1,447         |
| <b>Total Federal Minerals Closed to Mineral Entry</b>        |         |                             | <b>19,063</b> |
| <b>Total Non-Federal Minerals Acquired-Not Open to Entry</b> |         |                             | <b>16,108</b> |

**Appendix 11**  
**Alternative 2 Mineral Closure in Riparian Areas**

**Wright Creek Riparian Area of the Wright and Cottonwood Creeks ACEC**

| Township & Range                                      | Section | Subdivision                                     | Acreage      |
|---|---------|---|--------------|
| <b>Federal Minerals to Be Closed to Mineral Entry</b> |         |   |              |
| T. 24 N., R. 13 W.,                                   | 36      | S1/2N1/2; N1/2/S1/2; SW1/4SW1/4                 | 361          |
| T. 23 N., R. 12 W.,                                   | 6       | E1/2  | 312          |
|   | 8       | S1/2NE1/4; NW1/4NE1/4; NW1/4; NE1/4SW1/4; SE1/4 | 480          |
|   | 9       | W1/2SW1/4                                       | 80           |
|   | 10      | S1/2N1/2; N1/2SW1/4; NE1/4                      | 400          |
|   | 14      | W1/2NW1/4; NE1/4NW1/4; S1/2                     | 440          |
|   | 24      | NW1/4; N1/2 SW1/4; SW1/4SW1/4                   | 400          |
|   |         | W1/2SE1/4SE1/4                                  | 400          |
|   | 36      | E1/2NE1/4                                       | 80           |
| <b>Total</b>  |         |   | <b>2,553</b> |

**Acquire Non-federal Minerals - Close to Mineral Entry**

|                     |    |   |              |
|---------------------|----|---|--------------|
| T. 24 N., R. 12 W., | 31 | S1/2NW1/4; SW1/4; W1/2SE1/4; SE1/4SE1/4   | 351          |
| T. 23 N., R. 12 W., | 5  | SW1/4                                     | 160          |
|                     | 9  | S1/2N1/2; E1/2SW1/4; N1/2 SE1/4           | 320          |
|                     | 15 | NE1/4                                     | 160          |
|                     | 23 | N1/2NE1/4; SE1/4NE1/4                     | 120          |
|                     | 25 | W1/2                                      | 320          |
| T. 23 N., R. 11 W., | 31 | Lots 6, 7, 15, 16, 17, 18, 19, 20, 21, 22 | 430          |
| <b>Total</b>        |    |   | <b>1,861</b> |

**Cottonwood Creek Riparian Area of the Wright and Cottonwood Creeks ACEC**

**Federal Minerals to Be Closed to Mineral Entry**

|                     |    |                              |              |
|---------------------|----|------------------------------|--------------|
| T. 23 N., R. 13 W., | 22 | NE1/4SW1/4; N1/2SE1/4        | 120          |
|                     | 24 | S1/2N1/2; S1/2               | 480          |
| T. 23 N., R. 12 W., | 19 | S1/2NW1/4                    | 81           |
|                     | 28 | S1/2SW1/4                    | 80           |
|                     | 30 | NE1/4; NE1/4NW1/4; N1/2SE1/4 | 594          |
|                     | 32 | N1/2NE1/4                    | 80           |
| <b>Total</b>        |    |                              | <b>1,435</b> |

**Acquire Non-federal Minerals - Close to Mineral Entry**

|                     |    |                      |              |
|---------------------|----|----------------------|--------------|
| T. 23 N., R. 13 W., | 23 | S1/2N1/2; N1/2S1/2   | 320          |
| T. 23 N., R. 12 W., | 19 | W1/2SW1/4; S1/2SE1/4 | 159          |
|                     | 29 | S1/2NW1/4; S1/2      | 400          |
|                     | 33 | W1/2E1/2; W1/2       | 480          |
| <b>Total</b>        |    |                      | <b>1,359</b> |

**Appendix 11 (continued)**  
**Alternative 2 Mineral Closure in Riparian Areas**

| <b>Burro Creek Riparian ACEC</b>                             |                |  |                |
|--|----------------|--|----------------|
| <b>Township &amp; Range</b>                                  | <b>Section</b> | <b>Subdivision</b>   | <b>Acreage</b> |
| <b>Federal Minerals to Be Closed to Mineral Entry</b>        |                |  |                |
| T. 15 N., R. 10 W.,  | 27             | NW1/4; N1/2SW1/4   | 240            |
|  | 28             | N1/2; W1/2SW1/4  | 400            |
|  | 29             | E1/2E1/2   | 160            |
| T. 14 N., R. 10 W.,  | 6              | E1/2E1/2   | 160            |
|  | 7              | SW1/4SW1/4   | 39             |
|  | 18             | W1/2NW1/4  | 77             |
| T. 14 N., R. 11 W.,  | 12             | SE1/4SE1/4   | 40             |
|  | 13             | N1/2; N1/2S1/2   | 480            |
| T. 14 n., R. 11 W.,  | 14             | N1/2; SW1/4; W1/2SE1/4; NE1/4SE1/4                                 | 600            |
|  | 15             | SW1/4SW1/4; E1/2SE1/4  | 120            |
|  | 16             | W1/2SW1/4; SE1/4SE1/4  | 120            |
|  | 17             | SW1/4NE1/4; S1/2NW1/4; S1/2  | 440            |
|  | 18             | SE1/4NE1/4; E1/2SE1/4  | 120            |
|  | 19             | E1/2NE1/4; SW1/4NE1/4; SE1/4NW1/4; SW1/4;<br>W1/2SE1/4; NE1/4SE1/4 | 418            |
|  | 20             | NE1/4; W1/2NW1/4; NW1/4; NW1/4SW1/4                                | 280            |
|  | 21             | N1/2; N1/2SW1/4  | 400            |
|  | 22             | N1/2; N1/2SW1/4;;NW1/4SE1/4  | 440            |
|  | 23             | NW1/4  | 160            |
|  | 30             | NW1/4  | 138            |
| T. 14 N., R. 12 W.,  | 10             | S1/2SE1/4  | 65             |
|  | 11             | SW1/4SW1/4   | 39             |
|  | 14             | W1/2NW1/4; SE1/4NW1/4; SW1/4;<br>W1/2SE1/4SE1/4                    | 269<br>389     |
|  | 15             | NE1/4; S1/2NW1/4; NW1/4NW1/4;<br>N1/2SW1/4;; NW1/4SE1/4            | 379            |
|  | <b>Total</b>   |  |                |
| <b>Acquire Non-federal Minerals - Close to Mineral Entry</b> |                |  |                |
| T. 15 N., R. 10 W.,  | 29             | SE1/4SW1/4; SW1/4SE1/4   | 80             |
|  | 32             | All  | 640            |
| T. 14 N., R. 10 W.,  | 5              | NE1/4NE1/4; W1/2NE1/4; NW1/4;SW1/4                                 | 441            |
|  | 7              | SW1/4NE1/4; SE1/4NW1/4;SW1/4                                       | 232            |
| T. 14 N., R. 10 W.,  | 8              | NW1/4  | 160            |
|  | 18             | NW1/4NE1/4   | 40             |
| T.14 N., R. 12 W.,   | 13             | SW1/4SW1/4   | 40             |
|  | 23             | N1/2N1/2; SE1/4NE1/4;; NE1/4SE1/4                                  | 240            |
| <b>Total</b>   |                |  | <b>1,873</b>   |



**Appendix 11 (continued)**  
**Alternative 2 Mineral Closure in Riparian Areas**

**Three Rivers Riparian ACEC**

| Township & Range                                      | Section        | Subdivision                             | Acreage |
|---|----------------|---|---------|
| <b>Federal Minerals to Be Closed to Mineral Entry</b> |                |   |         |
| T. 14 N., R. 13 W.,                                   | 24             | N1/2; W1/2SW1/4                         | 400     |
|   | 26             | E1/2NE1/4; SW1/4NE1/4; S1/2NW1/4;       |         |
|   |                | E1/2SW1/4                               | 280     |
|   | 34             | SE1/4SW1/4                              | 40      |
|   | 35             | S1/2SW1/4; NE1/4SW1/4                   | 120     |
| T. 13 N., R. 13 W.,                                   | 2              | W1/2NW1/4                               | 80      |
|   | 4              | E1/2SE1/4                               | 80      |
|   | 10             | W1/2NE1/4; NE1/4NE1/4; NW1/4;           |         |
|   |                | N1/2SW1/4; SW1/4SW1/4                   | 400     |
|   | 15             | W1/2NW1/4                               | 80      |
|   | 16             | NE1/4; E1/2W1/2; N1/2SE1/4; SW1/4SE1/4  | 440     |
|   | 22             | SW1/4NW1/4; W1/2SW1/4                   | 120     |
|   | 26             | S1/2NW1/4; SW1/4                        | 240     |
|   | 28             | N1/2NE1/4                               | 80      |
|   | 34             | E1/2E1/2                                | 160     |
|   | 35             | W1/2; S1/2SE1/4                         | 400     |
|   | 36             | S1/2SW1/4                               | 80      |
| T. 12 N., R. 13 W.,                                   | 2              | E1/2; NW1/4; SE1/4SW1/4                 | 368     |
|   | 3              | NE1/4                                   | 84      |
|   | 11             | E1/2; E1/2 W1/2; SW1/4NW1/4; NW1/4SW1/4 | 560     |
|   | 12             | SW1/4; SW1/4SE1/4                       | 120     |
|   | 13             | NE1/4; N1/2NW1/4; SE1/4NW1/4; N1/2SE1/4 | 360     |
| T. 12 N., R. 12 W.,                                   | 17             | SW1/4NW1/4; W1/2SW1/4                   | 120     |
|   | 18             | S1/2NE1/4; W1/2; SE1/4                  | 554     |
|   | 19             | E1/2; E1/2W1/2                          | 480     |
|   | 20             | W1/2W1/2                                | 160     |
|   | 28             | W1/2SW1/4                               | 80      |
|   | 29             | NW1/4NW1/4; S1/2NW1/4; S1/2             | 440     |
|   | 30             | E1/2; E1/2NW1/4; NE1/4SW1/4             | 440     |
|   | 31             | NE1/4NE1/4                              | 40      |
|   | 33             | 3/2N1/2; N1/2SE1/4; SE1/4SE1/4          | 440     |
|   | W1/2E1/2; W1/2 | 480                                     |         |
| T. 11 N., R. 14 W.,                                   | 32             | SE1/4SW1/4; S1/2SE1/4                   | 126     |
| T. 11 N., R. 13 W.,                                   | 12             | SE1/4SW1/4; E1/2SE1/4; SW1/4SE1/4       | 160     |
|   | 13             | All                                     | 640     |
|   | 14             | S1/2NE1/4; SE1/4SW1/4; SE1/4            | 280     |
|   | 22             | S1/2SW1/4; SE1/4                        | 240     |
|   | 23             | E1/2; E1/2W1/2; SW1/4NW1/4; NW1/4SW1/4  | 560     |
|   | 24             | N1/2; N1/2S1/2; S1/2SW1/4               | 560     |
|   | 25             | SE1/4NE1/4; W1/2NW1/4; E1/2SW1/4; SE1/4 | 360     |
|   | 26             | N1/2; SW1/4; W1/2SE1/4                  | 560     |

**Appendix 11 (continued)**  
**Alternative 2 Mineral Closure in Riparian Areas**

**Three Rivers Riparian ACEC**

| Township & Range                                      | Section             | Subdivision                                  | Acreage               |     |
|---|---------------------|--|-----------------------|-----|
| <b>Federal Minerals to Be Closed to Mineral Entry</b> |                     |  |                       |     |
| T. 11 N., R. 13 W.,                                   | 27                  | E1/2; E1/2W1/2                               | 480                   |     |
|   | 34                  | W1/2NE1/4; E1/2NW1/4; SW1/4; W1/2SE1/4       | 400                   |     |
|   | 35                  | NW1/4  | 160                   |     |
| T. 11 N., R. 12 W.,                                   | 4                   | W1/2E1/2; W1/2                               | 420                   |     |
|   | 5                   | E1/2E1/2                                     | 140                   |     |
|   | 7                   | SE1/4NE1/4; S1/2                             | 355                   |     |
| T. 11 N., R. 12 W.,                                   | 8                   | NE1/4NE1/4; S1/2N1/2; S1/2                   | 520                   |     |
|   | 9                   | NE1/4  | 160                   |     |
|   | 10                  | S1/2NW1/4; N1/2SE1/4; SE1/4SE1/4             | 200                   |     |
|   | 11                  | S1/2S1/2                                     | 320                   |     |
| T. 11 N., R. 12 W.,(continued)                        | 12                  | S1/2S1/2                                     | 320                   |     |
|   | 13                  | Portion North of River                       | 170                   |     |
|   | 14                  | Portion North of River                       | 110                   |     |
|   | 15                  | SE1/4SW1/4; SE1/4SE1/4                       | 80                    |     |
| T. 11 N., R. 11 W.,                                   | 7                   | S1/2S1/2                                     | 158                   |     |
|   | 8                   | S1/2S1/2                                     | 160                   |     |
|   | 10                  | S1/2S1/2                                     | 160                   |     |
|   | 11                  | S1/2S1/2                                     | 160                   |     |
|   | 12                  | SE1/4NE1/4; S1/2SW1/4; SE1/4                 | 280                   |     |
|   | 13                  | SW1/4; W1/2SE1/4                             | 240                   |     |
|   | 14                  | S1/2   | 320                   |     |
|   | 15                  | N1/2; N1/2S1/2                               | 480                   |     |
|   | 16                  | NE1/4; N1/2NW1/4                             | 240                   |     |
|   | T. 11 N., R. 11 W., | 17   | N1/2S1/2              | 160 |
| 18  |                     | S1/2NW1/4NE1/4; NW1/4                        | 176                   |     |
| T. 11 N., R. 10 W.,                                   | 3                   | NW1/4NE1/4; NW1/4; W1/2SW1/4                 | 280                   |     |
|   | 4                   | SE1/4NE1/4; S1/2SW1/4; S1/2SE1/4; NE1/4SE1/4 | 240                   |     |
|   | 5                   | S1/2   | 320                   |     |
|   | 6                   | S1/2SW1/4; SE1/4                             | 228                   |     |
|   | 7                   | NE1/4; W1/2                                  | 458                   |     |
|   | 8                   | N1/2N1/4                                     | 160                   |     |
|   | 9                   | N1/2   | 320                   |     |
|   | T. 12 N., R. 10 W., | 25   | S1/2SE1/4; NE1/4SE1/4 | 120 |
|   |                     | 34   | SE1/4SW1/4; SE1/4     | 200 |
| 35  |                     | S1/2NE1/4; SE1/4NW1/4; S1/2                  | 440                   |     |
| 36  |                     | N1/2; SW1/4                                  | 480                   |     |

**Appendix 11 (continued)**  
**Alternative 2 Mineral Closure in Riparian Areas**

**Three Rivers Riparian ACEC**

| Township & Range                                      | Section | Subdivision   | Acreage |
|---|---------|---|---------|
| <b>Federal Minerals to Be Closed to Mineral Entry</b> |         |   |         |
| T. 12 N.,m R. 9 W.,                                   | 19      | S1/2SE1/4   | 80      |
|   | 20      | SW1/4SW1/4  | 40      |
|   | 29      | S1/2NE1/4; NW1/4; N1/2S1/2  | 354     |
|   | 30      | E1/2; SW1/4   | 474     |
|   | 31      | NW1/4   | 160     |
| T. 10 N., R. 15 W.,                                   | 3       | SE1/4SE1/4; S1/2  | 360     |
| T. 10 N., R. 14 W.,                                   | 4       | SE1/4NW1/4; E1/2SW1/4; W1/2SE1/4                                      | 200     |
|   | 5       | N1/2NE1/4; N1/2NW1/4; SW1/4NW1/4                                      | 198     |
| T. 10 N., R. 14 W.,                                   | 6       | NE1/4; S1/2NW1/4  | 236     |
|   | 9       | S1/2NE1/4; NW1/4NE1/4; E1/2NW1/4;<br>NE1/4SW1/4; N1/2SE1/4Se1/4SE1/4  | 360     |
|   | 10      | W1/2SW1/4; SE1/4SW1/4; SW1/4SE1/4                                     | 160     |
|   | 13      | N1/2  | 324     |
|   | 14      | N1/2  | 320     |
|   | 15      | NE1/4; N1/2NW1/4; SE1/4NW1/4  | 280     |
| T. 10 N., R. 13 W.                                    | 1       | NE1/4; W1/2; N1/2SE1/4  | 561     |
|   | 2       | All   | 643     |
|   | 3       | All   | 642     |
|   | 4       | E1/2SW1/4; SE1/4  | 240     |
|   | 7       | S1/2NE1/4; NE1/4NE1/4;<br>NE1/4SW1/4; S1/2SW1/4; N1/2SE1/4;SW1/4SE1/4 | 363     |
|   | 8       | N1/2; N1/2SW1/4   | 400     |
|   | 9       | NE1/4; N1/2NW1/4; SE1/4NW1/4  | 280     |
|   | 10      | N1/2  | 320     |
|   | 18      | W1/2NW1/4NE1/4NW1/4   | 127     |

**Total** **27,949**

**Acquire Non-federal Minerals - Close to Mineral Entry**

|                     |    |  |     |
|---------------------|----|--|-----|
| T. 14 N., R. 13 W., | 23 | E1/2E1/2; S1/2SW1/4; SW1/4SE1/4                    | 280 |
|                     | 24 | E1/2SW1/4; SE1/4                                   | 240 |
|                     | 25 | N1/2NW1/4; SW1/4NW1/4                              | 120 |
|                     | 26 | NW1/4NE1/4; N1/2NW1/4; SW1/4SW1/4                  | 160 |
|                     | 27 | E1/2; SE1/4NW1/4; E1/2SW1/4                        | 440 |
|                     | 34 | E1/2   | 320 |
|                     | 35 | W1/2NE1/4; NW1/2; NW1/4SW1/4                       | 280 |
| T. 13 n., R. 13W.,  | 3  | All  | 641 |
|                     | 9  | E1/2   | 320 |
|                     | 21 | W1/2NE1/4; SE1/4NE1/4; W1/2NW1/4;NE1/4SW1/4; SE1/4 | 400 |
|                     | 27 | W1/2NE1/4; SE1/4NE1/4; NW1/4;N1/2SE1/4; SE1/4SE1/4 | 400 |

**Appendix 11 (continued)**  
**Alternative 2 Mineral Closure in Riparian Areas**

| <b>Three Rivers Riparian ACEC</b>                             |                  |  |                |
|---|------------------|--|----------------|
| <b>Township &amp; Range</b>                                   | <b>Section</b>   | <b>Subdivision</b>                                 | <b>Acreage</b> |
| <b>Acquire Non-federal Minerals - Close to Mineral Entry</b>  |                  |  |                |
| T. 12 N., R. 9 W.,  | 29               | Mining Claims in E1/2                              | 46             |
| T. 11 N., R. 13 W.,   | 24               | S1/2SE1/4  | 80             |
|   | 25               | W1/2NE1/4; E1/2NW1/4                               | 160            |
|   | 26               | E1/2SE1/4  | 80             |
|   | 34               | E1/2E1/2   | 160            |
|   | 35               | E1/2; SW1/4  | 480            |
|   | 36               | All  | 640            |
| T. 11 N., R. 12 W.,   | 9                | NW1/4; S1/2  | 480            |
|   | 10               | SW1/4; SW1/4SE1/4                                  | 200            |
|   | 13               | N1/2 South of River; S1/2SW1/4; E1/2SE1/4          | 300            |
|   | 14               | S1/2NE1/4; NW1/4; E1/2SE1/4                        | 320            |
|   | 15               | N1/2; W1/2SW1/4; NE1/4SW1/4; W1/2SE1/4; NE1/2SE1/4 | 120            |
|   | 16               | All  | 640            |
|   | 17               | All  | 640            |
|   | 18               | E1/2SE1/4; SW1/4SE1/4                              | 360            |
|   | 19               | All  | 640            |
|   | 20               | N1/2; N1/2SW1/4                                    | 400            |
|   | 21               | NW1/4  | 160            |
|   | 29               | SW1/4; SW1/4SE1/4                                  | 200            |
|   | 30               | All  | 633            |
|   | 31               | N1/2; N1/2S1/2                                     | 476            |
| 32  | NW1/4; N1/2SW1/4 | 240  |                |
| T. 11 N., R. 11 W.,   | 15               | S1/2S1/2   | 160            |
|   | 16               | S1/2NW1/4; S1/2                                    | 400            |
|   | 17               | N1/2   | 320            |
|   | 18               | NE1/4NE1/4   | 40             |
| T. 10 N., R. 15 W.,   | 1                | SW1/4NW1/4; S1/2                                   | 356            |
|   | 2                | S1/2N1/2; S1/2                                     | 480            |
|   | 11               | NE1/4NE1/4   | 40             |
| T. 10 N., R. 15 W.,   | 12               | N1/2N1/2   | 160            |
| T. 10 N., R. 14 W.,   | 4                | SW1/4NW1/4; W1/2SW1/4                              | 120            |
|   | 5                | S1/2NE1/4; SE1/4NW1/4; N1/2S1/2                    | 280            |
|   | 6                | SW1/4; N1/2SE1/4; SW1/4SE1/4                       | 276            |
| T. 10 N., R. 14 W.,   | 9                | NW1/4NW1/4   | 40             |
|   | 14               | N1/2S1/2   | 160            |
|   | 15               | N1/2SE1/4  | 80             |
| T. 10 N., R. 13 w.,   | 11               | N1/2   | 320            |
|   | 12               | NW1/4  | 160            |
| <b>Total</b>  |                  |  | <b>14,448</b>  |
| <b>Federal Minerals Closed to Mineral Entry</b>               |                  |  | <b>37,910</b>  |
| <b>Non-federal Minerals Acquired - Close to Mineral Entry</b> |                  |  | <b>19,541</b>  |

**APPENDIX 12**  
**Alternative 2 Proposed New Disposal Areas**

| Township and Range                          | Section | Subdivision | Acreage |
|---|---------|-------------|---------|
| <b>Yucca Area</b>                           |         |             |         |
| T. 16 1/2 N., R. 17 W.,                     | 20      | All         | 519     |
|   | 28      | All         | 640     |
|   | 30      | All         | 626     |
|   | 32      | All         | 640     |
|   | 34      | All         | 640     |
|   | 36      | All         | 640     |
| <b>Golden Valley</b>                        |         |             |         |
| T. 21 N., R. 19W.,                          | 4       | All         | 641     |
|   | 5       | All         | 641     |
|   | 6       | All         | 639     |
|   | 7       | N1/2        | 319     |
|   | 8       | All         | 640     |
|   | 9       | All         | 640     |
|   | 6       | All         | 640     |
| <b>Highway 93 (Above Curtain Allotment)</b> |         |             |         |
| T. 22 N., R. 19W.,                          | 2       | All         | 676     |
|   | 10      | All         | 640     |
|   | 16      | All         | 640     |
| T. 23N., R. 19W.,                           | 13      | All         | 616     |
|   | 23      | All         | 640     |
|   | 24      | All         | 624     |
|   | 26      | All         | 640     |
|   | 34      | All         | 640     |
|   | 36      | All         | 637     |
| T. 23 N., R. 18W.,                          | 3       | All         | 640     |
|   | 4       | All         | 640     |
|   | 5       | All         | 640     |
|   | 8       | All         | 640     |
|   | 9       | All         | 640     |
|   | 10      | All         | 640     |
|   | 16      | All         | 640     |
|   | 20      | All         | 640     |
|   | 27      | All         | 640     |
|   | 28      | All         | 640     |
|   | 30      | All         | 640     |
|   | 32      | All         | 640     |
|   | 34      | All         | 640     |
| T. 22 N., R. 18W.,                          | 2       | All         | 691     |
|   | 3       | All         | 691     |
| <b>Dutch Flat Area</b>                      |         |             |         |
| T. 16 N., R. 18W.,                          | 2       | All         | 640     |
|   | 4       | All         | 640     |
|   | 10      | All         | 640     |
|   | 12      | All         | 640     |
|   | 14      | All         | 640     |

APPENDIX 12 (continued)

Alternative 2 Proposed New Disposal Area

| Township and Range | Section                      | Subdivision       | Acreage |
|--------------------|------------------------------|-------------------|---------|
| T. 16 N., R. 17W., | 2                            | S1/2 NW1/4, SW1/4 | 240     |
|                    | 4                            | All               | 640     |
|                    | 6                            | All               | 627     |
|                    | 8                            | All               | 640     |
|                    | 10                           | All               | 640     |
|                    | 12                           | All               | 640     |
|                    | 14                           | All               | 640     |
|                    | 16                           | All               | 640     |
|                    | 18                           | All               | 627     |
|                    | 20                           | All               | 640     |
|                    | 22                           | All               | 640     |
|                    | 24                           | All               | 640     |
|                    | 26                           | All               | 640     |
|                    | 28                           | All               | 640     |
|                    | 30                           | All               | 629     |
|                    | 32                           | E1/2              | 320     |
|                    | 34                           | All               | 640     |
| 36                 | SE1/4NE1/4, W1/2, S1/2 SE1/4 | 440               |         |
| T. 16 N., R. 16W., | 32                           | All               | 640     |
| T. 15 N., R. 16W., | 2                            | All               | 639     |
|                    | 4                            | All               | 638     |
|                    | 6                            | All               | 636     |
|                    | 8                            | All               | 640     |
|                    | 10                           | All               | 640     |
|                    | 12                           | All               | 640     |
|                    | 14                           | All               | 640     |
|                    | 16                           | All               | 640     |
|                    | 18                           | All               | 640     |
|                    | 20                           | All               | 640     |
|                    | 22                           | All               | 640     |
|                    | 24                           | All               | 640     |
|                    | 26                           | All               | 640     |
|                    | 28                           | All               | 640     |
|                    | 30                           | All               | 640     |
|                    | 32                           | All               | 640     |
|                    | 34                           | All               | 640     |
| 36                 | All                          | 640               |         |
| T. 15 N., R. 17W., | 2                            | All               | 641     |
|                    | 4                            | All               | 641     |
|                    | 6                            | All               | 629     |
|                    | 8                            | All               | 640     |
|                    | 10                           | All               | 640     |
|                    | 12                           | All               | 640     |
|                    | 14                           | All               | 640     |
|                    | 16                           | All               | 640     |
|                    | 18                           | All               | 629     |
|                    | 20                           | All               | 640     |
|                    | 22                           | All               | 640     |
|                    | 24                           | All               | 640     |
|                    | 26                           | All               | 640     |
|                    | 28                           | All               | 640     |
|                    | 30                           | All               | 630     |
|                    | 32                           | All               | 640     |
|                    | 34                           | All               | 640     |
| 36                 | All                          | 640               |         |

**APPENDIX 12 (continued)**  
**Alternative 2 Proposed New Disposal Area**

| Township and Range        | Section | Subdivision                               | Acreage |
|---------------------------|---------|---|---------|
| T. 14 N., R. 17W.,        | 2       | All                                       | 640     |
|                           | 4       | All                                       | 641     |
|                           | 6       | All                                       | 631     |
|                           | 8       | All                                       | 640     |
|                           | 12      | All                                       | 640     |
|                           | 16      | N1/2, W1/2SW1/4, SW1/4SW1/4,<br>W1/2SE1/4 | 500     |
|                           | 18      | All                                       | 632     |
| <b>Dolan Springs Area</b> |         |   |         |
| T. 27 N., R. 18W.,        | 26      | All                                       | 640     |
|                           | 28      | All                                       | 640     |
|                           | 34      | All                                       | 640     |
|                           | 36      | All                                       | 640     |
| <b>Hualapai Valley</b>    |         |   |         |
| T. 26 N., R. 16 W.,       | 10      | All                                       | 640     |
|                           | 14      | All                                       | 640     |
|                           | 16      | All                                       | 640     |
|                           | 22      | All                                       | 640     |
|                           | 24      | All                                       | 640     |
|                           | 28      | All                                       | 640     |
|                           | 34      | All                                       | 640     |
|                           | 36      | All                                       | 640     |
| T. 26 N., R. 15 W.,       | 30      | All                                       | 640     |
|                           | 32      | All                                       | 640     |
| T. 25 N., R. 16W.,        | 2       | All                                       | 640     |
|                           | 12      | All                                       | 640     |
| T. 25 N., R. 15 W.,       | 4       | All                                       | 640     |
|                           | 6       | All                                       | 638     |
|                           | 8       | All                                       | 640     |
|                           | 10      | All                                       | 640     |
|                           | 14      | All                                       | 640     |
|                           | 18      | All                                       | 639     |
| T. 24 N., R. 16W.,        | 16      | All                                       | 640     |
|                           | 20      | All                                       | 640     |
|                           | 30      | East of Stockton Hill Road                | 900     |
|                           | 32      | All                                       | 640     |
| T. 24 N., R. 15 W.,       | 4       | All                                       | 640     |
|                           | 8       | All                                       | 640     |
|                           | 10      | All                                       | 640     |
|                           | 12      | All                                       | 640     |
|                           | 13      | N1/2NW1/4, SW1/4NW1/4,<br>NE1/4SW1/4      | 160     |
|                           | 14      | All                                       | 640     |
|                           | 22      | All                                       | 640     |
|                           | 24      | All                                       | 640     |
|                           | 26      | All                                       | 640     |
|                           | 28      | E1/2                                      | 320     |

**APPENDIX 12 (continued)**

**Alternative 2 Proposed New Disposal Area**

| <b>Township and Range</b> | <b>Section</b> | <b>Subdivision</b>     | <b>Acreage</b> |
|---------------------------|----------------|------------------------|----------------|
| T. 21 N., R. 16 W.,       | 13             | North of I-40          | 360            |
| T. 24 N., R. 14 W.,       | 18             | All                    | 640            |
|                           | 28             | E1/2                   | 320            |
|                           | 30             | All                    | 640            |
|                           | 32             | E1/2                   | 320            |
| T. 23 N., R. 16 W.,       | 20             | NE1/4NE1/4             | 40             |
| T. 22 N., R. 17 W.,       | 11             | SE1/2NW1/4             | 40             |
|                           | 14             | S1/2SW1/4, SW1//4SE1/4 | 120            |
|                           | 20             | NE1/4NE1/4             | 40             |
|                           | 26             | All                    | 640            |
| T. 22 N., R. 15 W.,       | 34             | S1/2NE1/4              | 80             |
| T. 24 N., R. 16 W.,       |                | <b>Total</b>           | <b>93,683</b>  |

**APPENDIX 13**

**Alternative 2 Lands Removed from MFP Disposal Areas**

|                           |    |  |               |
|---------------------------|----|--|---------------|
| <b>Hualapai Valley</b>    |    |  |               |
| T.25N., R.15W., G&SRM     | 20 | All  | 640           |
|                           | 22 | All  | 640           |
|                           | 24 | All  | 640           |
|                           | 26 | All  | 640           |
|                           | 30 | All  | 640           |
|                           | 34 | All  | 640           |
| <b>Yucca Area</b>         |    |  |               |
| T. 18N., R. 17W.,         | 28 | All  | 640           |
|                           | 34 | All  | 640           |
| T. 17N., R. 17W.,         | 2  | All  | 636           |
|                           | 10 | All  | 640           |
|                           | 14 | All  | 640           |
|                           | 16 | All  | 640           |
|                           | 22 | All  | 640           |
|                           | 24 | All  | 640           |
|                           | 26 | All  | 640           |
|                           | 36 | All  | 640           |
| T. 17N., R. 16W.,         | 18 | All  | 637           |
|                           | 20 | All  | 640           |
|                           | 30 | All  | 639           |
|                           | 32 | All  | 640           |
| <b>Sacramento Valley</b>  |    |  |               |
| T. 22N., R. 19W.,         | 20 | All  | 640           |
|                           | 30 | NE1/4, E1/2E1/2SE1/4 NW1/4, N1/2 NW1/4,<br>NE1/4 NE1/4 NE1/4 SW1/4 | 250           |
| <b>Dolan Springs Area</b> |    |  |               |
| T. 26N., R. 18W.,         | 4  | All  | 641           |
|                           |    | <b>Total</b>   | <b>14,323</b> |



**Appendix 14**  
**Public Lands in Coconino County**

| Township and Range | Section | Subdivision                     | Encumbrances                      | Acreage  |
|--------------------|---------|---------------------------------|-----------------------------------|----------|
| T. 18N., R. 11E.,  | 23      | Lot 1                           | None                              | 40.60    |
| T. 23N., R. 10E.,  | 36      | All                             | R&PP Lease AZA-22307              | 640.00   |
| T. 24N., R. 11 E., | 8       | Lots 1-4                        | pwsite wdl                        | 114.59   |
|                    |         | NW1/4; E1/2SW1/4                | pwsite wdl                        | 240.00   |
| T. 25N., R. 11E.,  | 18      | Lots 1-4                        | pwsite wdl                        | 145.43   |
|                    | 30      | Lots 1-4                        | pwsite wdl                        | 121.69   |
|                    |         | E1/2W1/2; SW1/4SE1/4            | pwsite wdl                        | 200.00   |
|                    | 32      | Lots 1-4                        | pwsite wdl                        | 151.72   |
|                    |         | SW1/4SW1/4                      | pwsite wdl                        | 40.00    |
| T. 26., R. 10E.,   | 4       | Lots 1-6                        | CAP wdl                           | 197.42   |
|                    |         | S1/2NW1/4; SW1/4                | CAP wdl                           | 240.00   |
|                    | 8       | E1/2                            | CAP wdl                           | 320.00   |
|                    | 22      | Lots 1-4                        | CAP wdl                           | 138.57   |
|                    | 28      | All                             | CAP wdl NE1/4NE1/4-Pwsite wdl     | 640.00   |
|                    | 34      | Lots 1-4                        | CAP & pwsite wdl                  | 178.21   |
|                    |         | SW1/4SE1/4                      | CAP & pwsite wdl                  | 40.00    |
|                    |         | E1/2NW1/4                       | pwsite wdl                        | 80.00    |
| T. 27N., R. 9E.,   | 24      | All                             | None                              | 640.00   |
| T. 27N., R. 10E.,  | 4       | Lots 1-4                        | CAP wdl                           | 162.88   |
|                    |         | S1/2N1/2; S1/2                  | CAP wdl                           | 480.00   |
|                    |         | (Lot 1, SE1/4NE1/4; E1/2 SE1/4) | CAP & pwsite wdl                  |          |
|                    | 8       | All                             | CAP wdl                           | 640.00   |
|                    | 10      | Lots 1-3                        | pwsite wdl                        | 61.30    |
|                    | 16      | E1/2NE1/4                       | pwsite wdl                        | 80.00    |
|                    | 22      | Lots 1-4                        | CAP & pwsite wdl                  | 165.80   |
|                    |         | NW1/4; W1/2SW1/4                | CAP & pwsite wdl except W1/2NW1/4 | 240.00   |
|                    | 28      | Lots 1-5                        | CAP & pwsite wdl                  | 173.49   |
|                    |         | NE1/4NW1/4; SW1/4 NW1/4         | CAP & pwsite wdl                  | 80.00    |
|                    |         | NW1/4SW1/4, SE1/4 SW1/4         | CAP & pwsite wdl                  | 80.00    |
|                    |         | NW1/4NW1/4; SW1/4 SW1/4         | CAP wdl                           | 80.00    |
|                    | 34      | Lot 1                           | pwsite wdl                        | 1.82     |
| T. 30N., R. 1E.,   | 7       | Lots 1-4                        |                                   | 153.60   |
|                    |         | E1/2W1/2; E1/2                  |                                   | 480.00   |
|                    | 8       | All                             |                                   | 640.00   |
| Total Acres        |         |                                 |                                   | 7,687.12 |

**Appendix 15**  
**KRA Withdrawals and Classifications**

| <b>Withdrawals and Classifications to be Retained</b> | <b>Acreage</b>   |
|---|------------------|
| A-6630 Wdl Protect BLM Apln                           | 3,203.60         |
| A-17944 OCL REC + PP                                  | 12.50            |
| A-17945 OCL REC + PP                                  | 9.90             |
| AR034452 OCL REC + PP                                 | 53.90            |
| PLO 492 Wdl for Alamo Dam                             | 19,403.20        |
| AR 035844 Apln to Expand PLO492                       | 1,394.76         |
| <b>Total</b>  | <b>24,077.86</b> |

| <b>Withdrawals to be Retained for the Hualapai Reservation</b> | <b>Acreage</b> |
|--|----------------|
| EO-01368 Wdl Hualapai IR                                       | 60.90          |
| EO-12/30/74 Wdl Hualapai IR                                    | 160.90         |
| EO-12/22/1898 Wdl Hualapai IR                                  | 645.30         |
| <b>Total</b>   | <b>867.10</b>  |

| <b>Withdrawals to be Revoked if Not Needed (See Appendix 16)</b> | <b>Acreage</b> |
|--|----------------|
| PLO 5035 Wdl Reclamation Peacock Substation                      | 155.30         |
| A-13456 Wdl Public Water Reserve 107                             | 224.30         |
| A-17960 Wdl Public Water Reserve 107                             | 37.60          |
| A-17962 Wdl Public Water Reserve 107                             | 93.60          |
| <b>Total</b>   | <b>510.80</b>  |

| <b>Withdrawals to be Revoked</b>            | <b>Acreage</b> |
|---|----------------|
| A-17962 Withdrawal Public Water Reserve 107 | 10.00          |
| <b>Total</b>                                | <b>10.00</b>   |

**Appendix 16**  
**Public Water Reserve 107 Withdrawals to Be Revoked**

| Township & Range                           | Section | Subdivision     | Acreage |
|--|---------|-----------------|---------|
| T. 20 N., R. 20 W.,<br>A-17962 (WL Spring) | 13      | SW1/4SE1/4SW1/4 | 10      |

**Public Water Reserve 107 Withdrawals to Be Amended**

| Township & Range  | Section | Subdivision     | Acreage    |
|---|---------|-----------------|------------|
| <b>Change:</b>  |         |                 |            |
| T. 22 N., R. 18 W.,<br><b>To:</b>                         | 1       | SE1/4SW1/4      | 40         |
| T. 22 N., R. 18 W.,<br>A-17960 (Little Sweetwater Spring) | 1       | SW1/4SE1/4      | 40         |
| <b>Change:</b>  |         |                 |            |
| T. 24 N., R. 21 W.,<br><b>To:</b>                         | 21      | N1W4NE1/4NE1/4  | 10         |
| T. 24 N., R. 21 W.,<br>A-17962 (Master Spring)            | 21      | NE1/4NW1/4NE1/4 | 10         |
| <b>Change:</b>  |         |                 |            |
| T. 19 N., R. 15 W.,<br>(Antelope Canyon)<br><b>To:</b>    | 4       | NE1/4NE1/4      | 40         |
| T. 19 N., R. 15 W.,<br>A-13456 (New Year's Cabin Spring)  | 4       | NW1/4NE1/4      | 40         |
| <b>Change:</b>  |         |                 |            |
| T. 20 N., R. 15 W.,<br><b>To:</b>                         | 9       | W1/2SE1/4SE1/4  | 20         |
| T. 20 N., R. 15 W.,<br>A-13456 (Midway Spring)            | 9       | SW1/4NE1/4SE1/4 | 210        |
| <b>Total</b>  |         |                 | <b>110</b> |

**Public Water Reserve 107 Withdrawals to Be Retained**

| Township & Range                                   | Section | Subdivision     | Acreage    |
|--|---------|-----------------|------------|
| T. 17 N., R. 19 W.,<br>A-17962 (Metate Spring)     | 6       | NW1/4NE1/4NW1/4 | 10         |
| T. 20 N., R. 19 W.,<br>A-17962 (Trough Spring)     | 6       | SW1/4SE1/4      | 40         |
| T. 25 N., R. 21 W.,<br>A-17962 (White Rock Spring) | 4       | SE1/4SW1/4      | 40         |
| T. 19 N., R. 15 W.,<br>A-13456 (Timber Spring)     | 4       | SW1/4SW1/4      | 40         |
| T. 20 N., R. 15 W.,<br>A-13456 (Sand Bee Spring)   | 8       | NW1/4NE1/4      | 40         |
| T. 20 N., R. 15 W.,<br>A-13456 (Dean Mine Spring)  | 9       | SW1/4NE1/4      | 40         |
| T. 20 N., R. 15 W.,<br>A-13456 (Eagele Spring)     | 10      | SW1/4SW1/4      | 40         |
| <b>Total</b>                                       |         |                 | <b>250</b> |

**APPENDIX 17**  
**Alternative 2 Proposed R&PP Disposal Areas**

| <b>Township and Range</b>  | <b>Section</b> | <b>Subdivision</b>                                       | <b>Acreage</b> |
|--|----------------|--|----------------|
| <b>Detrital Valley</b>   |                |  |                |
| T. 27 N., R. 20W.,   | 10             | All  | 640            |
| <b>Hualapai Valley</b>   |                |  |                |
| T. 26 N., R. 16W.,   | 24             | All  | 640            |
| T. 25N., R. 15W.,  | 26             | All  | 640            |
| <b>Hualapai Indian Tribe Cemetery (to be disposed of only to tribe in lieu of special legislation)</b> |                |  |                |
| T. 23 N., R. 13W.,   | 22             | NE1/4NE1/4SE1/4  | 10             |
| <b>Meadview</b>  |                |  |                |
| T. 30 N., R. 17W.,   | 34             | All  | 640            |
| <b>Mohave Valley</b>   |                |  |                |
| T. 17 N., R. 21 W.,  | 5              | SE1/4, S1/2NE1/4, E1/2SW1/4,<br>SE1/4NW1/4, Lots 1,2,3,4 | 518            |
| <b>Oatman</b>  |                |  |                |
| T. 19 N., R. 20 W.,  | 23             | Lots 18, 19, 23, 24, 25, 26, 28                          | 141            |
| <b>Total</b>   |                |  | <b>3,229</b>   |

## APPENDIX 18

### ALTERNATIVE 2, PROPOSED AREAS OF CRITICAL ENVIRONMENTAL CONCERN (ACEC)

#### JOSHUA TREE FOREST - GRAND WASH CLIFFS ACEC

##### RELEVANCE

This area has been recommended as an Area of Critical Environmental Concern (ACEC) by the Phoenix District Advisory Council and the people in Meadview. Approximately 3,200 acres are included in the Grapevine Mesa Joshua Tree Forest National Natural Landmark, which was designated by the Secretary of the Interior in 1967 after a determination that the area possessed "national significance" as defined in 36 CFR 62.5 (National Landmark Criteria).

During the last five to six years, an active land exchange effort has resulted in the blocking up of a significant area of public land making it more manageable. The area does, however, still contain over 5,168 acres of private land.

A variety of immediate threats to the area include: placer claims (gold) which blanket much of the prime stands of Joshua trees; privately owned mineral estate; expanding residential developments located just west of the boundary; a potential for residential development of private lands within the area; the growing need of people living in the surrounding subdivided sections and Meadview for utility rights-of-way through the area; damaging "cross-country" use by off-highway vehicles; and theft of young Joshua trees. A peregrine falcon eyrie has been located in the Grand Wash Cliffs. The peregrine falcon is a federally listed endangered species.

##### IMPORTANCE

This outstandingly scenic area contains the densest stand of large mature Joshua trees in Arizona, and a particularly imposing ten mile long segment of the Grand Wash Cliffs. These 2,000 foot high, massively layered cliffs are one of the most prominent and colorful escarpments in North America. The areas above and below the cliffs were used extensively by early-day native Americans, as evidenced by roasting pits, for a period of at least three thousand years. The resulting cultural resources are very significant to northwestern Arizona.

As an endangered species, peregrines are of national significance. They have demonstrated their worth to human kind as an indicator of environmental quality. Major efforts have been expended on all levels - federal, state and private - in order to bring this species back from the brink of extinction.

##### GOAL

Protect and enhance ecologic, scenic, and cultural and T & E values while providing for recreational and educational experiences.

##### OBJECTIVES

1. Maintain a viable Joshua Tree Forest community.
2. Minimize surface disturbance.
3. Resolve conflicts caused by incompatible activities occurring on private and state lands, which affect management of resources on neighboring public land.
4. Maintain the scenic quality of the Joshua Tree Forest and the Grand Wash Cliffs.
5. Restore the visual quality of degraded areas in the Joshua Tree Forest.
6. Determine the extent and significance of cultural resources.
7. Develop educational materials and interpretative sites to increase public understanding of the areas natural values.
8. Promote opportunities for scientific research of ecological and cultural resources by qualified institutions and individuals.
9. Develop low impact recreation opportunities.
10. Prohibit human activities which may cause potentially adverse disturbances to nesting birds during the breeding season.
11. Propose the area for designation as a National Conservation Area.

## APPENDICES

### MANAGEMENT PRESCRIPTIONS

1. Propose designation of 39,085 acres of public land as an ACEC.
2. Recommend the ACEC for designation as a National Conservation Area (NCA).
3. Limit the use of off-highway vehicles (OHV) to designated roads, trails, and washes.
4. Withdraw identified federal lands from mineral entry, within the area of prime Joshua Tree Forest.
5. Mining Plans of Operation (MPO) and mandatory bonding would be required for all mineral exploration and development activities outside the prime Joshua Tree Forest.
6. Mineral leasing would be allowed, subject to appropriate stipulations designed to protect resource values.
7. Do not allow mineral material disposals.
8. Acquire 5,160 acres of private land (surface and subsurface) and 15,199 acres of nonfederal subsurface estate.
9. Do not issue recreation and public purpose (R&PP) leases or patents.
10. Prohibit location of new communication sites.
11. Route major rights-of-way to the west or south of the ACEC.
12. Recreation facilities will be in harmony with the natural environment and goal to protect ecologic and scenic values.
13. Prohibit camping, hiking, rock climbing, and OHV use within 1/4 mile of a peregrine nest during the breeding season (March 1 - June 15).
14. Prohibit helicopter flights within 1/2 mile of active eyries during the breeding season (March 1 - June 15).
15. Prohibit road development within 1/2 mile of a peregrine eyrie.
16. Review current management to assure livestock grazing is in accordance with goals and objectives of the ACEC. Develop desired plant community descriptions for Joshua tree sites and include these in AMP objectives and design grazing prescriptions to achieve them.
17. Do not allow removal of native plants except for salvage on surface disturbing projects. Require a nursery be set up for each mining operation to hold live plants. Top soil would also be stored and reclamation would involve replacement of soil and planting of nursery stock.
18. Conduct cultural and paleontological inventories and evaluate selected cultural sites.
19. Evaluate all other land use authorizations for compatibility with goals and objectives of the ACEC.
20. Develop an ACEC management plan. This effort will include a recreation project plan specifically addressing interpretive sites, scenic overlooks, educational natural history brochures, OHV designations, and other general recreation issues. The plan will also address cultural resources, land tenure adjustment, mining, and grazing.

### BLACK MOUNTAINS ACEC

#### RELEVANCE

The Black Mountains provide outstanding habitat for one of Arizona's naturally occurring, premier herds of bighorn sheep. Historically, bighorn sheep populations expanded and established today's home ranges under a different set of geologic and climatic circumstances: the ice age. Today, however, such a favorable environment no longer exists, and sheep depend highly on their established ranges for continued existence. Under current circumstances, bighorn sheep cannot employ traditional dispersal characteristics, resulting in an inability to colonize new areas, and genetic isolation of individual populations.

The Black Mountains provide habitat for bighorn sheep in the form of food, cover, space, and water. The habitat area is made up of a unique mix of geographic and topographic features resulting in outstanding bighorn habitat. Lambing grounds are interspersed with general open space habitat and the entire range is dotted with both naturally occurring and manmade water sources.

Human activities are increasing at a tremendous rate in the Black Mountains, including urban development, communication facilities, highway construction and various forms of recreational activities, such as hunting, camping, picnicking, photography, and site-seeing. This human encroachment is occurring at the heart of the bighorn range, on both the east and the west sides of the Black Mountains. Continuing growth of communities along the Colorado River and in Golden Valley west of Kingman, will guarantee continued pressure on sensitive wildlife resources in the Black Mountains.

The northern Black Mountains provide a large contiguous area of relatively undisturbed habitat for the Cerbat beard-tongue (*Penstemon*

*bicolor var. roseus*). It is a federal candidate plant species currently under consideration for listing as threatened or endangered status under the Endangered Species Act of 1973. This species is known only from southern Nevada, northeastern California, and northwestern Arizona. Populations in California and Nevada are apparently rare and declining from a variety of causes associated with development and human activity. Feral burros also appear to browse the plants heavily in poor forage situation. The species was collected in Arizona in 1937, and not redocumented until a collection made in Lost Cabin Wash from the Portland Mine down to Lost Cabin Spring and in Burns Spring Canyon in 1989. The Cerbat beard-tongue occurs on mountainside sites of rhyolite and andesite parent material, and in sandy washes. Its ecological requirements are poorly understood at this time.

The Black Mountains contain several very important cultural resources. Bighorn Cave is listed on the National Register of Historic Places. The area around Mount Nutt contains the best pictographs known to occur in the resource area. Numerous prehistoric rock shelters and camp sites occur in the mountains. Many historical mines occur throughout the mountains. The stone cabins along Silver Creek are the remains of the oldest Anglo habitations in Mohave County (1859-1863) and were occupied by troops from Fort Mojave who had been allowed to prospect for gold by their commanding officer.

## IMPORTANCE

The positive results of intensive management of desert bighorn sheep habitat, has recently led to this species being removed from the Arizona Game and Fish Department's list of Threatened Native Wildlife in Arizona. Nonetheless, this species is extremely sensitive to disturbance. The Black Mountains provide important habitat for a viable population, which is a major source of animals for transplant throughout Arizona, and for important research.

The area also provides approximately 20% of the bighorn hunting permitted annually in Arizona. Bighorn are extremely valuable economically, as well as providing revenue to Mohave County. Hunters annually contribute over \$125,000 for one auctioned hunt and one raffled hunt alone, over and above the cost of traditional tags and fees. Management prescriptions and protection for bighorn sheep also provide an "umbrella" for other wildlife species occurring in the Black Mountains.

With new measures to protect the limited habitat of the Cerbat beard-tongue in Arizona, BLM can ensure the continued survival of this species and prevent the need for listing it as threatened or endangered. The ACEC boundaries include about half of the species' habitat in Arizona. This is adequate to provide habitat for a viable population over the long-term, even with some mining development anticipated.

Cultural resources in the area are extremely rare, unique, fragile, and threatened. Some of the pictographs were incised into volcanic tuff and then painted. These are the only examples of this type of

prehistoric art known in this part of the state. Many of the first troops at Fort Mojave were "49ers" who had later joined the Army. The Moss mine (1863) was one of the richest and most concentrated gold deposits ever found in the west.

## GOAL

Maintain a viable desert bighorn sheep population, and protect and enhance Cerbat beard-tongue habitat and cultural resources, while accommodating increasing resource demands to the maximum extent possible.

## OBJECTIVES

1. Improve and maintain bighorn sheep habitat.
2. Protect and improve Cerbat beard-tongue habitat.
3. Minimize surface disturbance.
4. Resolve conflicts caused by incompatible activities occurring on private and state lands, which affect management of resources on neighboring public land.
5. Manage recreational activities to reduce adverse interactions between people, bighorn sheep, and cultural resources.
6. Minimize conflicts between bighorn sheep and other grazing or browsing animals.
7. Determine the extent and evaluate significance of cultural resources.
8. Promote opportunities for scientific research of ecological and cultural resources.

## MANAGEMENT PRESCRIPTIONS

1. Propose designation of 219,428 acres of public land as an ACEC.
2. Limit OHV use to existing roads, trails, and washes. Limit OHV use within Cerbat beard-tongue habitat to existing roads and trails. Close lambing grounds to construction of new roads.
3. Mining Plans of Operation (MPO) and mandatory bonding would be required for all mineral exploration and development activities. Temporary access needed for mineral exploration and production would remain closed to the public and would be reclaimed when no longer needed by the claimant. In Cerbat beard-tongue

## APPENDICES

- habitat, locate any temporary access for mineral activities out of washes and avoid occupied habitat.
4. Mineral leasing would be allowed, subject to the following stipulations designed to protect resource values:
    - No activity in lambing grounds from December 1 through May 31.
    - Temporary access would be closed to the public to prevent precedent setting OHV use into previously unroaded areas.
    - When no longer needed by the leasee or claimant, roads would be reclaimed and made impassible by deep ripping, berms, boulder placement, etc.
    - Unused roads which are upgraded to provide short-term access to mineral activities would be closed on a case-by-case basis, when no longer needed by the leasee.
    - To avoid harassment and undue disturbance of bighorn sheep, workers would not be allowed to live on-site.
    - Limit well spacing to 160 acres.
  5. Prohibit oil and gas production facilities inside the boundaries of lambing grounds.
  6. Do not allow new areas for mineral material disposals.
  7. Acquire non-federal mineral estate under public land.
  8. Acquire 2,360 acres of state and 8,040 acres of private land (surface and subsurface) and 27,925 acres of nonfederal subsurface identified in Appendix 25.
  9. Prohibit the construction of developed campgrounds, manage for dispersed recreation.
  10. Confine new major rights-of-way to existing corridors.
  11. Limit new communication facilities to designated sites.
  12. Develop desired plant community descriptions for important bighorn sheep habitat and include these in AMP and HMP objectives, and design specific management actions to achieve them. Manage livestock grazing to prevent excess utilization.
  13. Review the existing burro Herd Management Area Plan (HMAP) to ensure it conforms with goals and objectives of the ACEC. Keep burro numbers within 320 to 480 head.
  14. Complete an inventory to determine present extent and density of Cerbat beard-tongue population and monitoring studies to determine habitat conditions and any changes in plant density. Reconsider burro numbers set in the HMAP, if necessary to achieve and maintain good ecological conditions and prevent forage utilization of this species in excess of proper use. Set burro numbers to ensure that habitat is not degraded in drought years.
  15. Classify grazing allotments on or adjacent to the ACEC for use by cattle, prohibiting grazing by feral goats and sheep.
  16. Revise the existing Habitat Management Plan (HMP). Manage bighorn sheep habitat at its optimum potential.
  17. Removal of native plants must be compatible with other resource values or limitations or exclusions will be applied.
  18. Fence Burns Springs Wash riparian area on public land below the spring to exclude burros and livestock to enhance vegetative recovery.
  19. Evaluate all other land use authorizations for compatibility with goals and objectives of the ACEC.
  20. Promote cultural resource inventories and research projects by qualified institutions and individuals.
  21. Develop site specific project plans for important cultural resources.
  22. Develop a Cerbat beard-tongue recovery plan
  23. Develop an ACEC plan.

## WESTERN BAJADA TORTOISE AND CULTURAL ACEC

### RELEVANCE

This area has been identified as Category II habitat for the desert tortoise, as defined in BLM's Rangeland Tortoise Habitat Management Plan. The desert tortoise represents a wildlife resource with a very uncertain future. The tortoise is now listed as a federally endangered species throughout most of its range, with the exception of the Sonoran desert population, which is also a candidate for listing. Under the Rangeland Plan, Category II areas have been identified as habitat which may be essential for the continued existence of a viable population of desert tortoise.



This area contains several very significant historic and prehistoric resources, including the Mojave Road Indian Trail, the Beale Wagon Road, macro-flake sites, and petroglyphs. The Mojave Road has high significance to the Mojave Indians. It was a major trading and communication route between tribes in California, Nevada, Arizona, and New Mexico for over a thousand years. The Beale Wagon Road is of national importance. It was the first wagon road across northern Arizona and is known historically as the site for the US Army's camel experimentation project.

## IMPORTANCE

The desert tortoise has existed for tens of thousands of years and now is said by some to face the threat of extinction. It is now a listed species in most of its range and a candidate for listing throughout the rest of its range. There are few places where a desert tortoise population is considered to be in a healthy, stable, thriving, condition. The future of this species depends on how well BLM manages the remaining desert tortoise habitat.

The plight of the tortoise has gained international attention and is closely monitored by such conservation groups as the Desert Tortoise Council. The ultimate listing by the U.S. Fish and Wildlife Service of the desert tortoise as an endangered species resulted from a petition filed by a coalition of nationally organized conservation groups: The Natural Resources Defense Council, the Environmental Defense Fund, and the Defenders of Wildlife.

All of the historic and prehistoric resources are extremely rare, fragile, irreplaceable, and threatened. The desire for more residential and civic lands by developers and city officials in Bullhead City, right next door, is a major threat to the continued existence of these important cultural resources. Part of the Beale Wagon Road has recently (1986) been damaged by unauthorized construction of access roads. The area contains the last remaining location, on public land, of a large macro-flaking site. Other areas are now in private and state ownership as a result of land exchanges.

## GOAL

Promote long-term viability of a desert tortoise population and protection of cultural resources.

## OBJECTIVES

1. Achieve and maintain diverse plant communities and stable soils.
2. Obtain adequate data on tortoise population dynamics to guide management decisions.

3. Resolve conflicts caused by incompatible activities occurring on private and state lands, which affect management of resources on neighboring public land.
4. Minimize adverse interactions between people, tortoises, and cultural resources.
5. Minimize surface disturbance.
6. Determine the extent and significance of cultural resources.
7. Promote opportunities for scientific study of cultural resources.

## MANAGEMENT PRESCRIPTIONS

1. Propose designation of 15,866 acres of public land as an ACEC.
2. Limit OHV use to designated roads and trails.
3. Withdraw the area from mineral entry and mineral leasing and not allow mineral material disposals.
4. Acquire 6,968 acres of non-federal subsurface.
5. Promote cultural resource inventories and research projects by qualified institutions and individuals.
6. Develop opportunities to cooperatively manage or acquire non-federal land containing significant cultural resources.
7. Route new major rights-of-way around the ACEC.
8. Do not allow removal of native plants except for salvage operations.
9. Prohibit camping and discourage day-use of the area.
10. Evaluate all other land use authorizations for compatibility with goals and objectives of the ACEC.
11. Implement the decisions recommended in the withdrawal and classification section of lands in Alternative 2.
12. Formally classify the forage on the area for use by wildlife.
13. Develop an ACEC Plan.

## APPENDICES

### WRIGHT AND COTTONWOOD CREEKS RIPARIAN AND CULTURAL ACEC

#### RELEVANCE

Wright and Cottonwood Creeks are completely isolated from all other drainages in the resource area which support fish populations. Wright Creek is a perennial stream with exceptional scenic qualities providing habitat for an atypical strain of *Agosia chrysogaster*, the longfin dace. Recent land exchanges have blocked up public lands, making intensive management possible. Recovery of riparian corridors is anticipated to be rapid under proper management.

This area has a unique blend of prehistoric and historic resources. The Beale/Mojave Road runs along the northern boundary. This is a one-thousand year old Indian trail which later became the first wagon road across northern Arizona. This same route was later used for the first railroad and still later for US Route "66". The first cattle ranching homesteads in Mohave County were established in this area in the 1870's.

The area is unique because of the numerous sites of the Cohonina culture dating from approximately A.D. 700 to 1150. It also contains Prescott culture pueblos which date to the same time period. The western Cohonina sites have never been studied. This area offers opportunity to learn about these prehistoric people and see how they interacted with their Prescott neighbors. The area also has a prehistoric agricultural site. Only one other site of this type has been recorded in the resource area. Agricultural activities away from the main rivers were extremely rare in northwestern Arizona.

#### IMPORTANCE

The area has been historically grazed by too many livestock, resulting in the current poor condition of the rangeland and riparian zones. Recent inventories indicate virtually all of Wright Creek is currently in unsatisfactory ecological condition. Since the area is now well blocked public lands, BLM has a unique opportunity to develop management prescriptions designed to reestablish healthy riparian ecosystems.

The area is a cultural and geographic "cross-roads". The diagonally trending mountains of central Arizona, the Colorado Plateau, and the Great Basin all meet here. Major prehistoric Indian trails run east-west and north-south. This is the only area where the unique Cohonina culture is found on BLM administered lands. The area is also near the center of the present-day Hualapai tribe and probably has historic pai sites, which might help answer questions concerning their origin and development.

#### GOAL

Improve and maintain aquatic and riparian habitat conditions. Protect and enhance cultural resources.

#### OBJECTIVES

1. Obtain optimum riparian habitat conditions along Wright and Cottonwood Creeks.
2. Achieve and maintain diverse plant communities and stable soils.
3. Resolve conflicts caused by incompatible activities occurring on private and state lands, which affect management of resources on neighboring public land.
4. Obtain minimum instream flow to support aquatic and riparian habitat.
5. Minimize surface disturbance.
6. Reduce vandalism of selected cultural resources which show evidence of pothunting and surface collecting of artifacts.
7. Determine the nature and degree of interaction between the prehistoric Cohonina and Prescott cultures.
8. Determine the extent and distribution of various cultural resources.

#### MANAGEMENT PRESCRIPTIONS

1. Propose designation of 27,300 acres of public land as an ACEC.
2. Limit OHV use to existing roads and trails.
3. Withdraw riparian zone from mineral entry. Close 3,988 acres of federal minerals to entry and acquire 3,220 acres of non-federal minerals and not open to entry.
4. Acquire 2,697 acres of private land and 545 acres of state land (surface and subsurface) and 10,612 acres of nonfederal subsurface.
5. Mining Plans of Operation (MPO) and mandatory bonding will be required for all mineral exploration and development activities.
6. Mineral leasing would be allowed, in designated lands along Wright and Cottonwood Creeks with no surface occupancy and would be allowed in other areas subject to appropriate stipulations designed to protect resource values.
7. Do not allow mineral material disposals in riparian zones.

8. Acquire non-federal surface and subsurface estates.
9. Confine new major rights-of-way to existing corridors.
10. File on water rights for minimum instream flow on Wright and Cottonwood creeks as determined by five years of monitoring data.
11. Do not allow developed campgrounds in the 100-year flood plain.
12. Do not allow removal of native plants.
13. Manage livestock grazing to achieve goals and objectives of the ACEC. Develop desired plant community descriptions for the riparian zone and design grazing management objectives and grazing system to achieve them.
14. Promote cultural resource inventories and research projects by qualified institutions and individuals, evaluate selected sites, and prepare specific site project plans.
15. Conduct historical research.
16. Evaluate all other land use authorizations for compatibility with goals and objectives of the ACEC.
17. Develop an ACEC plan.

## CHEROKEE POINT ANTELOPE HABITAT ACEC

### RELEVANCE

The high elevation grasslands east of Wright Creek support a native herd of pronghorn antelope. This habitat is in extremely poor condition, and the long-term viability of the antelope population is questionable without immediate, intensive management actions. Potential for habitat improvement is very high. Antelope and other plant and animal species associated with this rare native grassland habitat, contribute significantly to the overall biological diversity of this area. Species diversity within the grassland system will be lost without immediate management.

### IMPORTANCE

The area has been historically grazed by too many livestock, resulting in the current poor condition of the rangeland. The antelope habitat will respond quickly and positively to proper grazing of livestock, including periodic rest periods. Since the area is now well blocked public lands, BLM has a unique opportunity to develop management prescriptions designed to reestablish healthy rangeland ecosystems.

### GOAL

Improve and maintain rangeland habitat conditions.

### OBJECTIVES

1. Achieve and maintain diverse plant communities and stable soils.
2. Resolve conflicts caused by incompatible activities occurring on private and state lands, which affect management of resources on neighboring public land.
3. Minimize surface disturbance.
4. Improve antelope habitat and enhance population viability.
5. Provide high quality livestock forage on a sustained yield basis.

### MANAGEMENT PRESCRIPTIONS

1. Propose designation of 54,457 acres of public land as an ACEC.
2. Limit OHV use to existing roads, trails, and washes.
3. Mining Plans of Operation (MPO) and mandatory bonding would be required for all mineral exploration and development activities.
4. Mineral leasing would be allowed, subject to appropriate stipulations designed to protect resource values.
5. Acquire 1,267 acres of private land and 320 acres of state land (surface and subsurface) and 19,747 acres of nonfederal subsurface estate.
6. Confine new major rights-of-way to existing corridors.
7. Review fuelwood cutting for compatibility with other resource values. Limitations or exclusions could be possible.
8. Manage livestock grazing to achieve goals and objectives of the ACEC. Develop desired plant community descriptions and incorporate these into the AMP. Manage pronghorn antelope habitat at its optimum potential.
9. Evaluate all other land use authorizations for compatibility with goals and objectives of the ACEC.

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10. Develop an ACEC plan.

### HUALAPAI MOUNTAIN RESEARCH NATURAL AREA ACEC

#### RELEVANCE

This area provides habitat for the Hualapai Mexican Vole, *Microtus mexicanus hualpaiensis*, a federally listed Endangered species. Biologists believe this animal is on the brink of extinction. The area includes two intermittent narrow stream bottoms (Grapevine Spring and Upper Bull Flat) and their attendant watersheds.

#### IMPORTANCE

The Hualapai Mexican Vole, is a very rare mammal, currently found in three isolated localities. This proposed ACEC includes locations of the most recent records of voles (Spicer, et al., 1985, The Status of the Hualapai Vole, Arizona Game and Fish Department).

Long-term habitat degradation and recurrent drought are suggested as factors causing the decline of this species. Grazing of cattle, drawn by water developments located in-or-near key vole habitat, are listed as serious threats to the continued existence of current populations.

#### GOAL

Provide optimum habitat for a viable population of the Hualapai Mexican Vole.

#### OBJECTIVES

1. Maintain excellent habitat conditions on occupied sites.
2. Improve habitat conditions on historical sites, especially in riparian and ponderosa pine plant communities.
3. Resolve conflicts caused by incompatible activities occurring on private and state lands, which affect management of resources on neighboring public land.
4. Minimize surface disturbance.
5. Obtain adequate data on vole population dynamics to guide management decisions.
6. Minimize adverse interactions between people and sensitive species.

## MANAGEMENT PRESCRIPTIONS

1. Propose designation of 3,300 acres of public land as an ACEC.
2. Limit OHV use to designated roads and trails.
3. Withdraw the areas from mineral entry and do not allow mineral material disposals.
4. Allow mineral leasing with no surface occupancy.
5. Acquire 1,186 acres of private land (surface and subsurface) and 1,004 acres of nonfederal subsurface estates.
6. Allow construction of limited developed recreation facilities at Pine Flat and design facilities to draw people away from vole habitat. Close the rest of the ACEC to recreation facilities.
7. Develop interpretive and education materials to promote public appreciation and protection of endangered species.
8. Prohibit location of communication sites.
9. Route rights-of-way around the areas.
10. Exclude livestock from occupied and historic vole habitat.
11. Review existing allotment management plans and incorporate objectives designed to protect and enhance watersheds surrounding the ACEC. Develop desired plant community descriptions and design specific management actions to achieve them.
12. Do not allow removal of native plants.
13. Coordinate with the U.S. Fish and Wildlife Service to develop a vole recovery plan.
14. File for water rights and minimum instream flow on occupied and historic sites.
15. Evaluate all other land use authorizations for compatibility with goals and objectives of the ACEC.
16. Pursue development of a memorandum of understanding between Mohave County Parks Department, U.S. Fish and Wildlife Service, and BLM in an effort to reestablish vole populations.

## WHITE-MARGINED PENSTEMON RESERVE ACEC

### RELEVANCE

This area provides crucial habitat for the white-margined penstemon, *Penstemon albomarginatus*. It is a federal candidate plant species, currently under consideration for listing as threatened or endangered status under the Endangered Species Act of 1973. The majority of this species' range is in Arizona near the town of Yucca, but it is also represented by a small known population in northeastern California, and three collections from southern Nevada. In Arizona it occurs on sandy outwash plains, ridges and washes in a narrow elevational range west of the Hualapai Mountains. All populations are threatened by urban development and OHC activity. In Arizona, the checkerboard land ownership pattern intensifies problems of managing the habitat on public lands. Without effective management of the habitat, it may not be possible to maintain a viable population in its native environment over the long term.

The area provides excellent habitat for the Sonoran desert tortoise, which is also being considered for federal listing as threatened or endangered. With acquisition of private lands within the ACEC, this area would meet BLM's criteria for Category 1 tortoise habitat.

### IMPORTANCE

With land exchanges and some simple new measures to protect the limited habitat of the white-margined penstemon in Arizona, BLM can ensure the continued survival of the species and prevent the need for listing the species as threatened or endangered. Because it occurs in such a limited range in Arizona, the ACEC boundaries include about two thirds of the species' habitat. It is designed to include a major portion of a watershed to allow control of factors that could generate soil erosion problems, and also to cover the full range of environmental conditions in which the species occurs. This is adequate to provide habitat for a viable population over the long term, even with some loss of plants and habitat from development anticipated in the area.

The management prescriptions for protection of the white-margined penstemon will also serve to prevent habitat loss for the Sonoran desert tortoise.

### GOAL

Promote long-term viability of the white-margined penstemon and a desert tortoise population.

1. Achieve and maintain diverse plant communities and stable soils and watersheds.
2. Minimize surface disturbance.

3. Resolve conflicts caused by incompatible activities occurring on private and state lands, which affect management of resources on neighboring public land.
4. Minimize adverse interactions between people and sensitive plant and animal species.
5. Obtain adequate data on white-margined penstemon and desert tortoise population dynamics to guide management decisions.
6. Enhance public awareness of the plight of threatened or endangered species and educate them on the importance of protecting their habitat and applying management procedures designed to ensure their long-term existence.

### MANAGEMENT PRESCRIPTIONS

1. Propose designation of 17,493 acres of public land as an ACEC.
2. Limit OHV use in riparian areas to designated roads and trails.
3. Mining Plans of Operation (MPO) and mandatory bonding would be required for all mineral exploration and development activities.
4. Allow mineral leasing, subject to appropriate stipulations designed to protect resource values.
5. Do not allow mineral material disposals in habitat areas.
6. Acquire 749 acres of private (surface only) and 15,289 private and 2,114 acres of state land (surface and subsurface) and acres of nonfederal subsurface estate.
7. Do not allow developed recreation facilities.
8. Do not allow removal of native plants, except for salvage.
9. Confine new major rights-of-way to existing corridors.
10. Develop and implement a livestock management plan to achieve goals and objectives of the ACEC. Develop desired plant community descriptions and include these in the AMP.
11. Evaluate all other land use authorizations for compatibility with goals and objectives of the ACEC, including Reclamation withdrawals.
12. Develop a recovery plan for the white-margined penstemon.

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### CARROW-STEPHENS RANCHES ACEC

#### RELEVANCE

This area contains rare historic cultural resources, consisting of an 1880's two-story adobe ranch house, numerous outbuildings, a system of canals and ditches and irrigated fields, a pioneer cemetery, and a 1930's depression era cannery. Extremely rich early Pleistocene (Ice Age) fossil deposits and prehistoric Indian sites are also found within the area.

#### IMPORTANCE

These irreplaceable historic resources, which are exemplary of late nineteenth century farming and ranching life in northwestern Arizona, have tremendous potential for recreational and educational development. The areas contains physical evidence of three million years of life, which is revealed through unique fossils, prehistoric Indian sites, and two pioneer homesteads.

#### GOAL

Protect, preserve, and develop the historical, prehistorical, and paleontological resources of the area.

#### OBJECTIVES

1. Minimize surface disturbance.
2. Resolve conflicts caused by incompatible activities occurring on private and state lands, which affect management of resources on neighboring public land.
3. Provide a unique living history experience for the public.
4. Provide recreational and educational opportunities.
5. Obtain sufficient water supply to develop and maintain the project.

#### MANAGEMENT PRESCRIPTIONS

1. Propose designation of 1,795 acres of public land and as an ACEC.
2. Limit OHV use to existing roads and trails.
3. Withdraw the area from mineral entry and do not allow mineral material disposals.
4. Mineral leasing would be allowed, with no surface occupancy.

5. Acquire 688 acres of private land (surface and subsurface).
6. Fence the ACEC and remove it from consideration of public livestock grazing.
7. Within the existing corridor, confine new rights-of-way to the area west of state highway 93.
8. File for water rights on springs, wells and for minimum instream flow requirements; three based on five years of monitoring data.
9. Do not allow removal of native plants.
10. Evaluate all other land use authorizations for compatibility with goals and objectives of the ACEC.
11. Promote cultural and paleontological resource inventories, research projects by qualified institutions and individuals, and evaluate site information.
12. Develop an ACEC plan. This effort will include a cultural resource project plan and a special recreation area management plan, specifically addressing educational brochures, interpretive materials for strategic locations, living history activities, and recreation facilities.

### McCRACKEN DESERT TORTOISE HABITAT ACEC

#### RELEVANCE

This area has been identified as Category I habitat for the desert tortoise, as defined in BLM's Rangewide Tortoise Habitat Management Plan. The desert tortoise represents a wildlife resource with a very uncertain future. The tortoise is now listed as a federally endangered species throughout most of its range, with the exception of the Sonoran desert population, which is also a candidate for listing. Under the Rangewide Plan, Category I areas have been identified as habitat essential for the continued existence of a viable population of desert tortoise.

#### IMPORTANCE

The desert tortoise has existed for tens of thousands of years and now is said by some to face the threat of extinction. It is now a listed species in most of its range and a candidate for listing throughout the rest of its range. There are few places where a desert tortoise population is considered to be in a healthy, thriving, stable condition. The future of this species would depend on how well BLM manages the remaining desert tortoise habitat.

The plight of the tortoise has gained international attention and is closely monitored by such conservation groups as the Desert Tortoise Council. The ultimate listing by the U.S. Fish and Wildlife Service of the desert tortoise as an endangered species resulted from a petition filed by a coalition of nationally organized conservation groups: The Natural Resources Defense Council, the Environmental Defense Fund, and the Defenders of Wildlife.

## GOAL

Promote long-term viability of a desert tortoise population.

## OBJECTIVES

1. Achieve and maintain diverse plant communities and stable soils.
2. Minimize surface disturbance.
3. Resolve conflicts caused by incompatible activities occurring on private and state lands, which affect management of resources on neighboring public land.
4. Minimize adverse interactions between people and tortoises.
5. Obtain adequate data on tortoise population dynamics to guide management decisions.

## MANAGEMENT PRESCRIPTIONS

1. Propose designation of 23,720 acres of public land as an ACEC.
2. Limit OHV use to existing roads and trails.
3. Mining Plans of Operation (MPO) and mandatory bonding would be required for all mineral exploration and development activities.
4. Mineral leasing would be allowed, subject to appropriate stipulations designed to protect resource values.
5. Do not allow mineral material disposals.
6. Acquire 11,024 acres of private, 320 acres of state land (surface and subsurface), and 3,638 acres of nonfederal subsurface estate.
7. Do not allow developed recreation facilities, plan for dispersed recreation.

8. Confine new major rights-of-way to existing corridors.
9. Do not allow communication sites.
10. Develop and implement livestock management plans incorporating desired plant community descriptions to achieve goals and objectives of the ACEC on the following allotments:

Chicken Springs 0021,  
Bateman Springs 0006,  
Artillery Range 0003.

11. Manage livestock grazing to ensure adequate and suitable perennial and ephemeral forage and cover for tortoises throughout the year, especially during the spring and late summer-fall.
12. Conduct tortoise inventories, monitor habitat conditions, and assess impacts of livestock grazing. Make necessary adjustments in livestock numbers and grazing season.
13. Do not allow removal of native plants, except for salvage operations.
14. Evaluate all other land use authorizations for compatibility with goals and objectives of the ACEC.

## POACHIE DESERT TORTOISE HABITAT ACEC

### RELEVANCE

This area has been identified as Category I habitat for the desert tortoise, as defined in BLM's Rangewide Tortoise Habitat Management Plan. The desert tortoise represents a wildlife resource with a very uncertain future. The tortoise is now listed as a federally endangered species throughout most of its range, with the exception of the Sonoran desert population, which is also a candidate for listing. Under the Rangewide Plan, Category I areas have been identified as habitat essential for the continued existence of a viable population of desert tortoise.

### IMPORTANCE

The desert tortoise has existed for tens of thousands of years and now is said by some to face the threat of extinction. It is now a listed species in most of its range and a candidate for listing throughout the rest of its range. There are few places where a desert tortoise population is considered to be in a healthy, thriving, stable condition. The future of this species may depend on how well BLM manages the remaining desert tortoise habitat.

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The plight of the tortoise has gained international attention and is closely monitored by such conservation groups as the Desert Tortoise Council. The ultimate listing by the U.S. Fish and Wildlife Service of the desert tortoise as an endangered species resulted from a petition filed by a coalition of nationally organized conservation groups: The Natural Resources Defense Council, the Environmental Defense Fund, and the Defenders of Wildlife.

### GOAL

Promote long-term viability of a desert tortoise population.

### OBJECTIVES

1. Achieve and maintain diverse plant communities and stable soils.
2. Minimize surface disturbance.
3. Resolve conflicts caused by incompatible activities occurring on private and state lands, which affect management of resources on neighboring public land.
4. Minimize adverse interactions between people and tortoises.
5. Obtain adequate data on tortoise population dynamics to guide management decisions.

### MANAGEMENT PRESCRIPTIONS

1. Propose designation of 44,521 acres of public land as an ACEC.
2. Limit OHV use to existing roads and trails.
3. Mining Plans of Operation (MPO) and mandatory bonding would be required for all mineral exploration and development activities.
4. Mineral leasing would be allowed, subject to appropriate stipulations designed to protect other resource values.
5. Do not allow mineral material disposals.
6. Acquire 1,147 acres of private land (surface and subsurface) and 637 acres non-federal subsurface estate.
7. Do not allow developed recreation facilities, plan for dispersed recreation.

8. Confine new rights-of-way to existing corridors.
9. Do not allow communication sites.
10. Develop and implement livestock management plans incorporating desired plant community descriptions to achieve goals and objectives of the ACEC on the following allotments:

Greenwood Community 0039,  
Burro Creek Ranch 0014,  
Arrastra Mountain 0002.

11. Manage livestock grazing to ensure adequate and suitable perennial and ephemeral forage and cover for tortoises throughout the year, especially during the spring and late summer-fall.
12. Conduct tortoise inventory, monitor habitat condition, and assess impacts of livestock grazing. Make necessary adjustments in livestock numbers and grazing season.
13. Do not allow removal of native plants, except for salvage operations.
14. Evaluate all other land use authorizations for compatibility with goals and objectives of the ACEC.

### AUBREY PEAK BIGHORN SHEEP HABITAT ACEC

#### RELEVANCE

Aubrey Peak is a rugged volcanic protrusion rising from the surrounding, relatively flat, Sonoran desert floor. This rugged mountain provides the best escape terrain in the immediate region for a struggling herd of desert bighorn sheep, as well as a crucial lambing ground. The area was originally proposed for ACEC designation in the Hualapai/Aquarius Management Framework Plan.

#### IMPORTANCE

Aubrey Peak is the only bighorn sheep lambing ground in the southern part of the planning area. It is used yearlong as well. Despite continued efforts to protect this area from adverse disturbance, sheep habitat is being adversely impacted, principally by mining activities, and to a lesser extent by wild burros.

Federal, state, and private organizations and individuals have invested significant time and money on habitat improvement projects and bighorn transplants, to encourage the continued existence of sheep in this region.



**GOAL**

Provide critical bighorn sheep lambing habitat on Aubrey Peak, supporting population reestablishment in the surrounding region.

**OBJECTIVES**

1. Manage for optimum bighorn sheep lambing habitat conditions.
2. Minimize surface disturbance.
3. Resolve conflicts caused by incompatible activities occurring on private and state lands, which affect management of resources on neighboring public land.
4. Manage recreational activities to reduce adverse interactions between people and bighorn sheep.
5. Minimize conflicts between bighorn sheep and other grazing or browsing animals

**MANAGEMENT PRESCRIPTIONS**

1. Propose designation of 10,413 acres of public land as an ACEC.
2. Limit OHV use to existing roads, trails, and washes. Close the lambing ground to construction of new roads.
3. Mining Plans of Operation (MPO) and mandatory bonding would be required for all mineral exploration and development activities. Temporary access needed for mineral exploration and production would remain closed to the public and would be reclaimed when no longer needed by the claimant.
4. Allow mineral leasing subject to the following stipulations:
  - No activity in the ACEC from December 1 through May 31.
  - Temporary access would be closed to the public and would be reclaimed and made impossible by deep ripping, berms, boulder placement, etc.
  - Unused roads which are upgraded to provide short-term access to mineral activities would be closed on a case-by-case basis, when no longer needed by the leasee.

- To avoid harassment and undue disturbance of bighorn sheep, workers would not be allowed to live on-site.

- Limit well spacing to 160 acres.

5. Prohibit oil and gas production facilities inside the boundaries of the ACEC.
6. Land uses (excepting mineral entry under the mining laws, which could adversely affect lambing would be excluded from December 1 to May 31.
7. Do not allow mineral material disposals.
8. Acquire 130 acres of non-federal mineral estate.
9. Route new major rights-of-way around the ACEC.
10. Do not allow communication sites.
11. Do not allow developed recreation facilities.
12. Do not allow removal of native plants except for salvage operations..
13. Develop desired plant community descriptions for bighorn sheep habitat and include these in AMP and HMP objectives, and design management objectives to achieve them. Manage habitat at its optimum potential for bighorn sheep.
14. Monitor habitat improvement projects (water developments annually).
15. Evaluate all other land use authorizations for compatibility with goals and objectives of the ACEC.

**BURRO CREEK RIPARIAN AND CULTURAL ACEC****RELEVANCE**

Burro and Francis Creeks are free-flowing perennial streams with outstanding scenic qualities including riparian vegetation, cliffs, and largely undeveloped shorelines uncluttered by activities of man. The creeks provide opportunities for solitude and water-based recreation along different stretches of the streams. Access is provided to some portions of both streams.

This area provides habitat for a wide variety of unique wildlife. Species include fourteen federal, state, and BLM sensitive species, such as the bald eagle, Mexican black-hawk, zone-tailed hawk, and

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the round-tailed chub. The riparian habitat associated with this area supports the greatest recorded diversity of birds of prey anywhere in the U.S.

Despite being set aside as a special management area in 1983, only one Allotment Management Plan has been implemented to date. In the recent past, the Burro Creek drainage has been contaminated by mine wastes along the creek. Heavy metals contamination has killed invertebrates and fish in the creek and in turn has adversely impacted the rest of the food chain, particularly raptors. Such pollution also creates hazards for people engaged in water based recreation provided by Burro Creek.

The western most known occurrence of multi-storied, stone masonry pueblos constructed by the Prescott culture living in 1200 A.D., is along Burro Creek and its headwaters. Several historic and prehistoric peoples used this area together. It was a major source of obsidian for construction of tools. The area also contains important petroglyph sites. It is important because it affords opportunities to study how groups interacted with one another, such as the prehistoric Cerbat and Prescott cultures and the historic Hualapai and Yavapai tribes.

### IMPORTANCE

Riparian habitat is extremely limited throughout the southwest (less than one percent of the land area). Burro and Francis Creeks provide a major stronghold for many of these riparian-dependant species. There are more breeding pairs of Mexican black-hawks in Burro Creek than anywhere else in North America. No other area in Arizona enjoys the same diversity of wildlife.

A wide variety of individuals and organizations have been involved in intensive studies and recreational activities in Burro and Francis Creeks. These include the University of Arizona, Arizona State University, Southwest Hawkwatch, National Audubon Society, Desert Tortoise Council, U.S. Fish and Wildlife Service, Arizona Natural Heritage Program, The Nature Conservancy, Prescott Community College, New Mexico State University, the Arizona Game and Fish Department, Arizona Department of Health Services, Arizona State Land Department, and the U.S. Geological Survey. Recreationists come from all over the U.S. to visit this area. This involvement demonstrates a "more-than-local significance".

The Burro Creek drainage is one of only two known sources of obsidian in northwestern Arizona. The pueblos are very rare and unique, some still having standing walls eight feet high. The area requires special management because of existing vandalism of these examples of the Prescott culture.

### GOAL

Protect and enhance riparian, threatened and endangered, and cultural resources, emphasizing total ecosystem management.

## OBJECTIVES

1. Minimize surface disturbance and erosion.
2. Resolve conflicts caused by incompatible activities occurring on private and state lands, which affect management of resources on neighboring public land.
3. Manage for optimum riparian habitat conditions.
4. Maintain adequate instream flows to support aquatic and riparian resources.
5. Maintain the naturally occurring water quality of Burro Creek.
6. Stop vandalism to cultural resources.
7. Determine extent and significance of cultural resources.
8. Educate the public regarding riparian, cultural, and threatened and endangered species issues and management needs.
9. Provide adequate nesting habitat for threatened and endangered raptors, by establishing native trees through natural reproduction, to replace existing dead and dying old-growth trees. Also, increase the present density of trees.
10. Prohibit human activities which may cause potentially adverse disturbances to nesting birds during the breeding season.

## MANAGEMENT PRESCRIPTIONS

1. Propose designation of 37,070 acres of public land as an ACEC.
2. Limit OHV use in Burro and Francis Creek's riparian areas to designated roads, trails, and crossings.
3. Withdraw the riparian zone from mineral entry. Close 5,973 acres federal minerals and acquire 1,873 acres nonfederal and not open to entry.
4. Mining Plans of Operation (MPO) and mandatory bonding would be required for all mineral exploration and development activities.
5. Allow mineral leasing in the riparian zone with no surface occupancy and in other areas subject to appropriate stipulations designed to protect resource values.
6. Do not allow mineral material disposals in the riparian zone.

7. Acquire 280 acres of non-federal mineral estate under public land.
8. Acquire 7,296 acres of identified parcels of private and 8,996 acres of state land (surface and subsurface).
9. Construct developed campgrounds outside of riparian zone and the 100-year floodplain.
10. Confine new major rights-of-way to existing corridors.
11. Develop and implement livestock management plans incorporating desired plant community descriptions to achieve goals and objectives of the ACEC on the following allotments:  
  
Bagdad 0005,  
Greenwood Peak Community 0039,  
Burro Creek Ranch 0014,  
Artillery Range 0003.
12. Review the existing burro HMAP to ensure it conforms with goals and objectives of the ACEC. Keep burro numbers within the limits set in the HMAP.
13. Acquire water rights to ensure adequate instream flows to support riparian habitat based on the five years of monitoring data.
14. Require monitoring to assess impacts of uses with a potential to adversely impact water quality.
15. Manage land uses to promote an all-aged stand of key native trees, shrubs and grasses.
16. Do not allow removal of native plants, except for salvage operations.
17. Prohibit intensive recreation activities (camping, hiking, and OHV use) within 1/4 mile of a bald eagle nest during the breeding season (January 1 - June 1).
18. Prohibit helicopter flights within 1/2 mile of active eyries during the breeding season.
19. Prohibit road development within 1/2 mile of a bald eagle eyrie.
20. Continue to assist the bald eagle nest watch program.
21. Monitor common black-hawk breeding activities.
22. Continue the riparian area condition evaluation (RACE) inventory.
23. Sign and monitor selected cultural resources.
24. Conduct cultural inventories and evaluations of selected cultural sites.
25. Evaluate all other land use authorizations for compatibility with goals and objectives of the ACEC.
26. Prepare an ACEC plan incorporating existing activity plans. Prepare site specific cultural project plans.

## CLAY HILLS RESEARCH NATURAL AREA ACEC

### RELEVANCE

This area provides crucial habitat for the endemic Arizona cliffrose - *Purshia subintegra*, a federally listed Endangered species. Cliffrose is associated specifically with soils high in lithium and magnesium. This habitat is threatened by mining of montmorillonite clays, off-highway vehicle traffic, and browsing by livestock, burros, and wildlife.

### IMPORTANCE

The presence of a federally listed Endangered species gives a high priority to protection and special management of the area. The unique flora associated with this habitat contributes to the natural diversity of the resource area and the state of Arizona. This population is unique in respect to all other populations of Arizona cliffrose, because it is the only known population occurring on federally administered land. Special management is needed to maintain genetic diversity and thus assure its continued existence.

### GOAL

Maintain a viable population of *Purshia subintegra*.

### OBJECTIVES

1. Prohibit surface disturbing activities adversely impacting *Purshia subintegra*.
2. Educate the public regarding Arizona's native plant laws.
3. Determine population status and life history requirements of *Purshia subintegra*.
4. Prevent overutilization of threatened and endangered plants by browsing and grazing animals.





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### OBJECTIVES

1. Determine the extent and significance of the historic cultural resources.
2. Promote opportunities for scientific study of the historic cultural resources.
3. Resolve conflicts caused by incompatible activities occurring on private lands, which affect management of resources on neighboring public land.
4. Minimize adverse interactions between people and cultural resources.
5. Reduce vandalism.
6. Minimize surface disturbance.

### MANAGEMENT PRESCRIPTIONS

1. Propose designation of 601 acres of public land as an ACEC.
2. Limit OHV use to designated roads, trails, and washes.
3. Acquire 20 acres of private land.
4. Acquire 640 acres of non-federal subsurface estate and do not open to mining laws, mineral leasing law, and Mineral Material Sales Act.
5. Promote cultural resource inventories and research projects by qualified institutions and individuals
6. Route all rights-of-way around the ACEC.
7. Evaluate all other land use authorizations for compatibility with goals and objectives of the ACEC.
8. Develop specific site project plans.
9. Do not allow removal of native plants.
10. Develop an ACEC Plan including patrols, signing, monitoring, etc..

## COTTONWOOD MOUNTAINS CULTURAL RESOURCES ACEC

### RELEVANCE

The area is important because it affords opportunities to study how groups interacted with one another, such as the prehistoric Cerbat and

Prescott cultures and the historic Hualapai and Yavapai tribes. It has the most extensive petroglyph sites known to exist in KRA. The sites are unique for several reasons, in addition to their size. They have a great variety of styles, showing use of the area by several groups over a long period of time. They are located in areas where rock art sites are not usually found. On local Indian reported this area was a neutral region between tribes where they could come together without war. The sites are in excellent condition with almost no vandalism.

### IMPORTANCE

The Cottonwood Mountains are in a transition zone between the Great Basin and the Colorado Plateau. This area is unique because of the numerous sites of the Cohonina culture dating from approximately A.D. 700 to 1150. It also contains Prescott culture pueblos which date to the same time period. The western Cohonina sites have never been studied. This area offers opportunity to learn about these prehistoric people and see how they interacted with their Prescott neighbors. The area also has a prehistoric agricultural site. Only one other site of this type has been recorded in the resource area. Agricultural activities away from the main rivers were extremely rare in northwestern Arizona.

### GOAL

To improve management of the cultural resources and their scientific, public, and conservation values.

### OBJECTIVES

1. Determine the extent and significance of the historic cultural resources.
2. Promote opportunities for scientific study of the historic cultural resources.
3. Resolve conflicts caused by incompatible activities occurring on private lands, which affect management of resources on neighboring public land.
4. Protect cultural sites on private and public lands.
5. Minimize adverse interactions between people and cultural resources.
6. Stop vandalism.
7. Minimize surface disturbance.

### MANAGEMENT PRESCRIPTIONS

1. Propose designation of 1,278 acres of public land as an ACEC.

2. Limit OHV use to designated roads, trails, and washes.
3. Conduct inventories and foster research projects.
4. Mining Plans of Operation (MPO) and mandatory bonding would be required for all mineral exploration and development activities.
5. Allow mineral leasing subject to appropriate stipulations designed to protect resource values.
6. Do not allow mineral material disposals.
7. Acquire 804 acres of private land (surface and subsurface).
8. Promote cultural resource inventories and research projects by qualified institutions and individuals
9. Route major rights-of-way around the ACEC.
10. Do not allow removal of native plants, except for salvage operations.
11. Evaluate all other land use authorizations for compatibility with goals and objectives of the ACEC.
12. Develop an ACEC Plan including patrols, signing, monitoring, etc..

## BLACK BUTTE CULTURAL RESOURCES ACEC

### REVELANCE

This area contains the western most known occurrence of multi-storied, Anasazi-like stone masonry pueblos constructed by the Prescott culture living in 1200 A.D., as evidenced by pueblos with eight foot tall walls still standing in some locations. Several prehistoric peoples used this area together. It was a major source of obsidian for construction of tools.

### IMPORTANCE

Very little scientific research has been conducted in this area. It is one of the most remote and scenic areas in the state. This area may contain the greatest density of rare and unique cultural sites in the entire resource area. It is a prime area for answering questions about the origin and development of both the Hualapai and the Yavapai peoples. The obsidian quarry has unusually large nodules and may have been a major source for several groups. The area requires special management because of existing vandalism of these examples of the Prescott culture.

### GOAL

To improve management of the cultural resources and their scientific, public, and conservation values.

### OBJECTIVES

1. Determine the extent and significance of the historic cultural resources.
2. Promote opportunities for scientific study of the historic cultural resources.
3. Protect cultural sites on public lands.
4. Minimize adverse interactions between people and cultural resources.
5. Stop vandalism.
6. Minimize surface disturbance.

### MANAGEMENT PRESCRIPTIONS

1. Propose designation of 1,280 acres of public land as an ACEC.
2. Limit OHV use to designated roads, trails, and washes.
3. Mining Plans of Operation (MPO) and mandatory bonding would be required for all mineral exploration and development activities.
4. Allow mineral leasing subject to appropriate stipulations designed to protect resource values.
5. Do not allow mineral material disposals.
6. Promote cultural resource inventories and research projects by qualified institutions individuals.
7. Route Major rights-of-way around the ACEC.
8. Do not allow removal of native plants.
9. Evaluate all other land use authorizations for compatibility with goals and objectives of the ACEC.
10. Develop an ACEC Plan including patrols, signing, monitoring, etc.

have been a major source for several groups. The area requires special management because of existing vandalism of these examples of the Prescott culture.



| Name             | Elev. | Loc. | Type | Date |
|------------------|-------|------|------|------|
| Greenwood Peak   | 40-3  | S    | LV   | I    |
| Community        |       |      |      |      |
| Groom Peak       | 40-3  | S    | LV   | I    |
| Hackberry        | 30-3  | S**  | HV   | II   |
| Happy Jack Wash  | 30-3  | S    | LV   | I    |
| Hot Spring       | 40-3  | S    | LV   | I    |
| Hualapai Peak    | 30-3  | S    | HV   | II   |
| Hibernia Peak A  | 39-4  | S    | HV   | II   |
| Hibernia Peak B* |       |      |      |      |
| La Cienega       | 30-3  | S**  | HV   | II   |

Appendix 20 (continued)

| Allotment Name    | MLRA | Watershed |         | Category |
|-------------------|------|-----------|---------|----------|
|                   |      | Condition | Erosion |          |
| Lazy YU A         | 30-3 | S         | LV      | I        |
| Los Molinos       | 40-3 | S         | HV      | II       |
| Mineral Park      | 30-3 | S         | LV      | I        |
| Mud Springs       | 30-3 | S**       | HV      | II       |
| Music Mountain    | 39-2 | S**       | HV      | II       |
| Mt. Tipton        | 39-4 | S         | LV      | I        |
| Peacock Mountain  | 30-3 | S         | LV      | I        |
| Pine Spring       | 30-3 | S**       | LV      | I        |
| Quail Springs     | 30-3 | S         | HV      | II       |
| Sandy             | 40-3 | S         | LV      | I        |
| Stockton Hill     | 39-4 | S         | LV      | I        |
| Turkey Track      | 30-3 | S         | LV      | I        |
| Thumb Butte       | 30-2 | S         | LV      | I        |
| Truxton Canyon A  | 30-3 | S         | LV      | I        |
| Truxton Canyon B* |      |           |         |          |
| Upper Music Mtns  | 39-2 | S**       | HV      | II       |
| Valentine         | 35-1 | S         | LV      | I        |
| West Peacock      | 30-3 | S         | LV      | I        |
| Wikieup           | 40-3 | S         | LV      | I        |
| Walapai Ranch     | 30-3 | S**       | HV      | II       |
| Yellow Pine       | 39-4 | S         | HV      | II       |
| Little Cane       | 40-3 | S         | LV      | I        |
| Cane Springs      | 30-3 | S         | HV      | II       |
| 7 L Cattle Co     | 35-1 | S         | LV      | I        |
| Fort Mac Ewen A   | 30-3 | U         | HR      | I        |
| Fort Mac Ewen B   | 30-2 | S         | LV      | I        |
| Portland Springs  | 30-2 | S         | LV      | I        |
| Walnut Creek      | 30-3 | S         | HV      | II       |
| CO Bar*           |      |           |         |          |
| Chambers Lease*   |      |           |         |          |
| Gibson*           |      |           |         |          |
| Globe Ranch*      |      |           |         |          |
| JJJ*              |      |           |         |          |
| Kellis Lease*     |      |           |         |          |
| Yolo Ranch*       |      |           |         |          |
| Byner*            |      |           |         |          |

II VH \*\*2 30-3

Hidden Peak B\*  
La Cienega

## Appendix 20 (continued)

\* - These allotments were not rated because public land acreage involved is relatively small and parcels are isolated and unmanageable.

**MLRA** Major Land Resource Area - geographic areas having similar topography, climate, soils and vegetation. For example, MLRA #30-2 is characterized as having all hyperthermic soils with less than 8 inches of precipitation. All other MLRAs are characterized as having thermic soils with greater than 8 inches of yearly precipitation.

**S** - Watershed conditions on the allotment are satisfactory.

**S\*\***- Watershed conditions on the allotment are mostly satisfactory, but there are localized problem areas.

**U** - Watershed conditions on the allotment are unsatisfactory.

**LV** - Soils on the allotment generally have a low vulnerability to erosion.

**HV** - Soils on the allotment generally have a high vulnerability to erosion.

**LR** - Soils on the allotment generally have a low responsiveness to treatment for erosion problems

**HR** - Soils on the allotment generally have a high responsiveness to treatment for erosion problems.

Appendix A

State of Oregon - Agricultural Land Use

| County or Range     | Section | Acres                         | Value |
|---------------------|---------|-------------------------------|-------|
| T. 21 N., R. 20 W., | 11      | All                           | 640   |
|                     | 12      | N1/2                          | 298   |
|                     | 8       | S1/2NE1/4; SW1/4NW1/4; SW1/4; | 254   |
|                     |         | SW1/4SE1/4                    | 254   |
| T. 21 N., R. 17 W., | 9       | All                           | 628   |
|                     | 16      | All                           | 625   |
|                     | 17      | All                           | 640   |
|                     |         |                               |       |

Appendix B - Agricultural Land Use

| County or Range     | Section | Acres                         | Value |
|---------------------|---------|-------------------------------|-------|
| T. 21 N., R. 20 W., | 11      | All                           | 640   |
|                     | 12      | N1/2                          | 298   |
| T. 21 N., R. 17 W., | 8       | S1/2NE1/4; SW1/4NW1/4; SW1/4; | 254   |
|                     |         | SW1/4SE1/4                    | 254   |
|                     | 9       | All                           | 628   |
|                     | 16      | All                           | 625   |
|                     | 17      | All                           | 640   |

SCHEDULE 2  
 SCHEDULE 2  
 SCHEDULE 2

| Item No. | Description | Quantity | Unit Price | Total |
|----------|-------------|----------|------------|-------|
| 19       | ...         | All      | 632        | 632   |
| 21       | ...         | All      | 640        | 640   |
| 29       | ...         | All      | 640        | 640   |
| 31       | ...         | All      | 634        | 634   |

**Appendix 21 (continued)**  
**Alternative 2 Acquisitions for Wildlife Corridors**

| Township & Range    | Section | Subdivision                              | Acreage       |
|---------------------|---------|--|---------------|
| T. 14 N., R. 12 W., | 24      | E1/2                                     | 320           |
|                     | 25      | All                                      | 640           |
|                     | 35      | All                                      | 640           |
|                     | 36      | All                                      | 640           |
| T. 13 N., R. 16 W., | 23      | All                                      | 640           |
|                     | 25      | All                                      | 640           |
|                     | 26      | SW1/4NE1/4; SE1/4NW1/4; E1/2SW1/4; SE1/4 | 320           |
|                     | 27      | All                                      | 640           |
|                     | 35      | All                                      | 640           |
| T. 13 N., R. 15 W., | 3       | S1/2                                     | 320           |
|                     | 5       | All 639                                  |               |
|                     | 7       | All                                      | 636           |
|                     | 9       | All                                      | 640           |
|                     | 11      | All                                      | 640           |
|                     | 15      | All                                      | 640           |
|                     | 17      | All                                      | 640           |
|                     | 19      | All                                      | 637           |
|                     | 21      | NE1/4; N1/2SE1/4; SE1/4SE1/4             | 280           |
|                     | 29      | All                                      | 640           |
|                     | 31      | All                                      | 639           |
| T. 13 N., R. 10 W., | 19      | All                                      | 642           |
|                     | 28      | SW1/4                                    | 160           |
|                     | 29      | SE1/4                                    | 160           |
| <b>Total</b>        |         |  | <b>42,840</b> |

## Appendix 22 Wild & Scenic River Classifications

### BILL WILLIAMS RIVER

**Segment Description:** Beginning immediately downstream from Alamo Dam to the resource area boundary (approximately 17 river miles). This river's outstandingly remarkable values are well described in the Relevance and Importance sections of the Three Rivers ACEC in Appendix 18 of this document.

**Classification:** Scenic

**Management Prescriptions:** Management prescriptions would be the same as those proposed for the Three Rivers ACEC in Appendix 18 of this document.

### SANTA MARIA RIVER

**Segment Description:** Beginning at the ACEC boundary on the Santa Maria River downstream to where it empties into Alamo Lake (approximately 19 river miles). This river's outstandingly remarkable values are well described within the Relevance and Importance sections of the Three Rivers ACEC in Appendix 18 of this document.

**Classification:** Scenic

**Management Prescriptions:** Management prescriptions would be the same as those proposed for the Three Rivers ACEC in Appendix 18 of this document.

### BIG SANDY RIVER

**Segment Description:** Beginning at the Big Sandy Highway 93 bridge downstream to where it empties into Alamo Lake (approximately 32 river miles). This river's outstandingly remarkable values are well described in the Relevance and Importance sections of the Three Rivers ACEC in Appendix 18 of this document.

**Classification:** Scenic

**Management Prescriptions:** Management prescriptions for the portion of this segment that falls in the Three Rivers ACEC boundaries would be the same as those proposed for the Three Rivers ACEC in Appendix 18 of this document. For those public lands falling outside of the ACEC boundary the management prescriptions would be the same as those for the Three Rivers ACEC Appendix 18, with the exception that these areas would not be withdrawn from mineral entry in the RMP.

### BURRO & FRANCIS CREEKS

**Segment Description:** Francis Creek: Beginning at T.16 1/2 N, R.10W, on the east-west section line between sections 34 and 35 to the confluence with Burro Creek (approximately 4 river miles). Burro Creek: Beginning approximately at the confluence with Scratch Canyon downstream to the confluence with the Big Sandy River (approximately 62 river miles) Combining Francis Creek and Burro Creek gives this river segment a total of 66 river miles. This river's outstandingly remarkable values are well described within the Relevance and Importance sections of the Burro Creek Riparian ACEC in Appendix 18 of this document.

**Classification:** Scenic

**Management Prescriptions:** Management prescriptions with one exception would be the same as those proposed for the Burro Creek Riparian ACEC in Appendix \_\_ of this document. The portion of this segment that is outside the ACEC boundary is in T.16 1/2 N, R. 10 W, sec. 35, S 1/2 SE 1/4, S 1/2 SW 1/4. This portion is within the boundaries of the Upper Burro Creek WSA and would be managed under IMP guidelines, until designated wilderness or released from wilderness study, to protect this section of the river from degradation of its free flowing nature and its outstandingly remarkable values.

### WRIGHT CREEK

**Segment Description:** Beginning at the east fork of Wright Canyon at T.23N, R.11W, sec. 31 downstream to T.24N, R.13W, sec. 36 (approximately 15 river miles). This river's outstandingly remarkable values are well described in the Relevance and Importance sections of the Wright Creek Canyon Complex Riparian ACEC in Appendix 18 of this document.

**Classification:** Scenic

**Management Prescriptions:** Management prescriptions would be the same as those proposed for the Wright Creek Canyon Complex Riparian ACEC in Appendix 18 of this document.







**Appendix 23 (continued)**  
**Alternative 2 Acquisitions by Resource Activity**

| Township and Range                                     | Priority | Section | Subdivision                 | Acreage |
|--|----------|---------|-----------------------------|---------|
| <b>WILDLIFE ACQUISITION (continued)</b>                |          |         |                             |         |
| <b>DESERT TORTOISE HABITAT CATEGORY II (CONTINUED)</b> |          |         |                             |         |
| T. 19N., R. 17W.,                                      | 4        | 15      | S1/2; NW1/4                 | 80      |
|  |          | 21      | SW1/4 SW1/4                 | 40      |
| T. 18N., R. 17W.,                                      |          | 9       | S1/2 N1/2; W1/2&NE1/4 SW1/4 | 280     |
|  |          | 11      | All                         | 640     |
|  |          | 21      | All                         | 640     |
|  |          | 27      | All                         | 640     |
|  |          | 35      | All                         | 640     |
| T. 18N., R. 16W.,                                      |          | 5       | S1/2 SW1/4                  | 80      |
|  |          | 8       | NW1/4 NW1/4                 | 40      |
|  |          | 17      | N1/2 NW1/4; SW1/4           | 240     |
|  |          | 31      | W1/2 NE1/4; NW1/4 NW1/4     | 119     |
| T. 17N., R. 16W.,                                      |          | 3       | SW1/4 SW1/4                 | 40      |
|  |          | 8       | All                         | 640     |
|  |          | 9       | N1/2                        | 320     |
|  |          | 15      | All                         | 640     |
|  |          | 17      | All                         | 640     |
|  |          | 19      | All                         | 638     |
|  |          | 21      | All                         | 640     |
|  |          | 23      | All                         | 640     |
|  |          | 25      | All                         | 640     |
|  |          | 27      | All                         | 640     |
|  |          | 29      | All                         | 640     |
|  |          | 31      | All                         | 640     |
|  |          | 33      | All                         | 640     |
|  |          | 35      | All                         | 640     |
| T. 17N., R. 15W.,                                      |          | 19      | SW1/4                       | 160     |
|  |          | 31      | All                         | 639     |
| T. 16.5N., R. 17W.,                                    |          | 23      | All                         | 516     |
|  |          | 25      | All                         | 640     |
| T. 16.5N., R. 16W.,                                    |          | 19      | All                         | 511     |
|  |          | 21      | All                         | 521     |
|  |          | 23      | All                         | 522     |
|  |          | 25      | All                         | 640     |
|  |          | 27      | All                         | 640     |
|  |          | 29      | All                         | 640     |
|  |          | 31      | All                         | 636     |
|  |          | 32      | SW1/4; SW1/4 SE1/4          | 200     |
|  |          | 33      | All                         | 640     |
|  |          | 35      | All                         | 640     |
|  |          | 36      | NW1/4NW1/4                  | 40      |
| T. 16.5N., R. 15W.,                                    |          | 19      | SW1/4 SW1/4                 | 36      |
|  |          | 31      | All                         | 622     |
| T. 16N., R. 16W.,                                      |          | 1       | All                         | 639     |
|  |          | 2       | All                         | 638     |
|  |          | 3       | All                         | 637     |
|  |          | 4       | All                         | 638     |
|  |          | 5       | All                         | 638     |
|  |          | 6       | All                         | 595     |
|  |          | 8       | All                         | 640     |
|  |          | 9       | All                         | 640     |
|  |          | 10      | All                         | 640     |
|  |          | 11      | All                         | 640     |
|  |          | 12      | All                         | 640     |
|  |          | 13      | All                         | 640     |
|  |          | 14      | All                         | 640     |
|  |          | 15      | All                         | 640     |
|  |          | 17      | All                         | 640     |
|  |          | 21      | All                         | 640     |

Appendix 23 (continued)  
Alternative 2 Acquisitions by Resource Activity

| Township and Range                                     | Priority | Section | Subdivision                             | Acreage |
|--|----------|---------|---|---------|
| <b>WILDLIFE ACQUISITION (continued)</b>                |          |         |   |         |
| <b>DESERT TORTOISE HABITAT CATEGORY II (CONTINUED)</b> |          |         |   |         |
| T. 16N., R. 16W.,                                      | 4        | 22      | All                                     | 640     |
|  |          | 23      | All                                     | 640     |
|  |          | 24      | All                                     | 640     |
|  |          | 25      | All                                     | 640     |
|  |          | 26      | All                                     | 640     |
|  |          | 27      | All                                     | 640     |
|  |          | 35      | All                                     | 640     |
| T. 16N., R. 15W.,                                      |          | 36      | E1/2; W1/2 W1/2; NE1/4 NW1/4            | 520     |
|  |          | 5       | W1/2; SE1/4; W1/2 & SE1/4NE1/4          | 600     |
|  |          | 6       | All                                     | 622     |
|  |          | 7       | All                                     | 623     |
|  |          | 8       | All                                     | 640     |
|  |          | 9       | All                                     | 640     |
|  |          | 17      | All                                     | 640     |
|  |          | 19      | All                                     | 622     |
|  |          | 21      | All                                     | 640     |
|  |          | 29      | All                                     | 640     |
|  |          | 31      | All                                     | 625     |
|  |          | 33      | All                                     | 640     |
|  |          | 36      | All                                     | 640     |
| T. 16N., R. 14W.,                                      |          | 27      | All                                     | 640     |
| T. 15N., R. 16W.,                                      |          | 1       | All                                     | 639     |
| T. 15N., R. 15W.,                                      |          | 1       | SE1/4 NW1/4                             | 40      |
|  |          | 2       | All                                     | 638     |
|  |          | 3       | All                                     | 638     |
|  |          | 5       | All                                     | 639     |
|  |          | 7       | All                                     | 629     |
|  |          | 9       | All                                     | 640     |
|  |          | 11      | All                                     | 640     |
|  |          | 14      | SE1/4                                   | 160     |
|  |          | 15      | All                                     | 640     |
|  |          | 17      | All                                     | 640     |
|  |          | 19      | All                                     | 632     |
|  |          | 21      | All                                     | 640     |
|  |          | 23      | E1/2; E1/2 W1/2; E1/2SW1/4; NW1/4 SW1/4 | 600     |
| 35   | All      | 640     |   |         |
| T. 15N., R. 14W.,                                      |          | 1       | N1/2; W1/2 SW1/4                        | 399     |
|  |          | 4       | All                                     | 638     |
|  |          | 5       | S1/2; S1/2 NE1/4                        | 400     |
|  |          | 7       | All                                     | 627     |
|  |          | 8       | All                                     | 640     |
|  |          | 9       | All                                     | 640     |
|  |          | 13      | W1/2 NW1/4                              | 80      |
|  |          | 17      | SE1/4 SE1/4                             | 40      |
|  |          | 23      | SW1/4 NW1/4                             | 160     |
|  |          | 30      | W1/2 NW1/4                              | 75      |
| T. 15N., R. 13W.,                                      |          | 19      | SW1/4                                   | 160     |
|  |          | 24      | W1/2 NE1/4; W1/2 SE1/4; E1/2 SW1/4      | 240     |
|  |          | 25      | All                                     | 640     |
|  |          | 27      | S1/2; S1/2 N1/2                         | 480     |
|  |          | 29      | All                                     | 640     |
|  |          | 33      | All                                     | 640     |
| T. 15N., R. 12W.,                                      |          | 35      | All                                     | 640     |
|  |          | 29      | SW1/4                                   | 160     |

**Appendix 23 (continued)**  
**Alternative 2 Acquisitions by Resource Activity**

| <b>Township and Range</b>               | <b>Priority</b> | <b>Section</b>    | <b>Subdivision</b>                          | <b>Acreage</b> |
|---|-----------------|-------------------|---|----------------|
| <b>WILDLIFE ACQUISITION (continued)</b> |                 |                   |   |                |
| T. 14N., R. 12W.,                       |                 | 5                 | N1/2  | 323            |
|   |                 | 7                 | All   | 633            |
|   |                 | 9                 | All   | 640            |
|   |                 | 17                | S1/2  | 320            |
| T. 14N., R. 12W.,                       | 4               | 19                | All   | 634            |
|   |                 | 21                | All   | 640            |
|   |                 | 27                | E1/2  | 320            |
|   |                 | 29                | N1/2; SW1/4; NE1/4 SE1/4; S1/2 SE1/4        | 600            |
|   |                 | 31                | All   | 636            |
|   |                 | 33                | All   | 640            |
| T. 14N., R. 13W.,                       |                 | 1                 | W1/2  | 307            |
|   |                 | 3                 | All   | 612            |
|   |                 | 11                | All   | 640            |
|   |                 | 13                | All   | 640            |
|   |                 | 24                | SE1/4; E1/2 SW1/4                           | 240            |
|   |                 | 25                | E1/2  | 320            |
| T. 13N., R. 10W.,                       |                 | 19                | All   | 642            |
|   |                 | 28                | SW1/4                                       | 160            |
|   |                 | 29                | SE1/4                                       | 160            |
|   |                 |                   | <b>Total</b>                                | <b>68,152</b>  |
| <b>HISTORIC VOLE</b>                    |                 |                   |   |                |
| T. 20N., R. 15W.,                       | 5               | 16                | All   | 640            |
|   |                 | 21                | S1/2 SW1/4                                  | 80             |
|   |                 |                   | <b>Total</b>                                | <b>720</b>     |
| <b>BIGHORN SHEEP BLACK MOUNTAINS</b>    |                 |                   |   |                |
| T. 26N., R. 21W.,                       | 6               | 22                | All   | 640            |
|   |                 | 33                | NE1/4                                       | 160            |
|   |                 | 36                | All   | 640            |
| T. 25N., R. 22W.,                       |                 | 25                | All   | 640            |
|   |                 | 27                | All   | 640            |
| T. 24N., R. 21W.,                       |                 | 9                 | All   | 640            |
|   |                 | 33                | NW1/4 SW1/4                                 | 40             |
| T. 23N., R. 20W.,                       |                 | 21                | All   | 640            |
|   |                 | 33                | All   | 640            |
| T. 22N., R. 20W.,                       |                 | 4                 | SE1/4 SE1/4                                 | 40             |
|   |                 | 9                 | E1/2  | 320            |
|   |                 | 15                | All   | 640            |
|   |                 | 17                | All   | 640            |
|   |                 | 19                | All   | 637            |
|   |                 | 21                | All   | 640            |
|   |                 | 29                | All   | 640            |
|   |                 | 31                | N1/2; N1/2 S1/2                             | 478            |
|   |                 | 33                | All   | 640            |
|   |                 | T. 22N., R. 21W., |   | 13             |
| 25                                      | All             |                   |   | 640            |
| T. 21N., R. 20W.,                       |                 | 11                | All   | 640            |
|   |                 | 16                | All   | 640            |
| T. 20N., R. 20W.,                       |                 | 2                 | All   | 525            |
|   |                 | 3                 | SE1/4; E1/2 & NW1/4 SW1/4                   | 280            |
|   |                 | 23                | SW1/4; W1/2 SW1/4 SE1/4; S1/2 & NW1/4 NW1/4 | 300            |
| T. 20N., R. 19W.,                       |                 | 21                | All   | 640            |
|   |                 | 33                | All   | 640            |
| T. 19N., R. 19W.,                       |                 | 21                | All   | 640            |
|   |                 |                   | <b>Total</b>                                | <b>15,540</b>  |

**Appendix 23 (continued)**  
**Alternative 2 Acquisitions by Resource Activity**

| Township and Range                      | Priority | Section | Subdivision                              | Acres          |
|---|----------|---------|--|----------------|
| <b>WILDLIFE ACQUISITION (continued)</b> |          |         |  |                |
| <b>CASTANEDA HILLS</b>                  |          |         |  |                |
| T. 13N., R. 16W.,                       | 7        | 23      | All                                      | 640            |
|   |          | 25      | All                                      | 640            |
|   |          | 26      | SE1/4;SW1/4 NE1/4;SE1/4NW1/4; E1/2SW1/4  | 320            |
|   |          | 27      | All                                      | 640            |
|   |          | 35      | All                                      | 640            |
| T. 13N., R. 15W.,                       |          | 29      | All                                      | 640            |
|   |          | 31      | All                                      | 639            |
|   |          |         | <b>Total</b>                             | <b>4,159</b>   |
| <b>Cerbat Mtn HMP</b>                   |          |         |  |                |
| T.23 N., R. 13 W.                       |          | 5       | All                                      | 639            |
| T. 23N., R. 14W.,                       | 8        | 3       | All                                      | 640            |
|   |          |         | N1/2; SE1/4; E1/2 SW1/4                  | 560            |
| T. 24N., R. 14W.,                       |          | 11      | All                                      | 640            |
|   |          |         | All                                      | 364            |
|   |          |         | All                                      | 640            |
|   |          |         | All                                      | 640            |
|   |          |         | All                                      | 640            |
|   |          |         | All                                      | 366            |
| T. 24N., R. 16W.,                       |          | 7       | All                                      | 1,017          |
| T. 25N., R. 14W.,                       |          | 9       | All                                      | 640            |
|   |          | 11      | All                                      | 640            |
|   |          | 25      | All                                      | 640            |
|   |          | 31      | All                                      | 640            |
|   |          | 35      | All                                      | 640            |
| T. 25N.,R. 15W.,                        |          | 27      | All                                      | 640            |
|   |          | 28      | All                                      | 640            |
|   |          | 29      | All                                      | 640            |
|   |          | 36      | All                                      | 640            |
|   |          |         | <b>Total</b>                             | <b>12,946</b>  |
| <b>Hualapai Mtns</b>                    |          |         |  |                |
| T. 20N., R. 15W.,                       |          | 9       | NW1/4NE1/4;NE1/4NW1/4; Minning Claims    | 135            |
|   |          | 16      | All                                      | 640            |
| T. 13N., R. 16W.,                       |          | 21      | S1/2SW1/4                                | 80             |
|   |          | 23      | All                                      | 640            |
|   |          | 25      | All                                      | 640            |
|   |          | 26      | SW1/4NE1/4; SE1/4NW1/4; E1/2SW1/4; SE1/4 | 320            |
|   |          | 27      | All                                      | 640            |
| T.13 N., R. 15 W.                       |          | 35      | All                                      | 640            |
|   |          | 29      | All                                      | 640            |
|   |          | 31      | All                                      | 639            |
|   |          |         | <b>Total</b>                             | <b>5,014</b>   |
|   |          |         | <b>Total for Wildlife</b>                | <b>122,339</b> |

**SPECIAL STATUS SPECIES ACQUISITION (Plants)**

|                   |   |    |     |     |
|-------------------|---|----|-----|-----|
| T. 17N., R. 17W., | 1 | 11 | All | 640 |
|                   |   | 13 | All | 640 |
|                   |   | 15 | All | 640 |
|                   |   | 23 | All | 640 |
|                   |   | 25 | All | 640 |
| T. 17N., R. 16W., |   | 17 | All | 640 |
|                   |   | 19 | All | 638 |
|                   |   | 21 | All | 640 |
|                   |   | 26 | All | 640 |
|                   |   | 27 | All | 640 |
|                   |   | 31 | All | 640 |
|                   |   | 33 | All | 640 |

**Appendix 23 (continued)**  
**Alternative 2 Acquisition by Resource Activity**

| Township and Range   | Priority | Section | Subdivision                               | Acreage       |
|--|----------|---------|---|---------------|
| <b>SPECIAL STATUS SPECIES ACQUISITION (Plants) (continued)</b> |          |         |   |               |
| T. 17N., R. 16W.,  |          | 33      | All                                       | 640           |
|  |          | 35      | All                                       | 640           |
| T. 16.5N., R. 17W.,  |          | 23      | All                                       | 516           |
|  |          | 25      | All                                       | 640           |
| T.16.5N., R.16W.,  |          | 19      | All                                       | 511           |
|  |          | 21      | All                                       | 521           |
|  |          | 27      | All                                       | 640           |
|  |          | 29      | All                                       | 640           |
|  |          | 31      | All                                       | 636           |
|  |          | 32      | SW1/4;SW1/4SE1/4                          | 200           |
|  |          | 33      | All                                       | 640           |
|  |          | 35      | All                                       | 640           |
| T. 16N., R. 16W.,  |          | 1       | All                                       | 639           |
|  |          | 2       | All                                       | 638           |
|  |          | 3       | All                                       | 637           |
|  |          | 4       | All                                       | 638           |
|  |          | 5       | All                                       | 638           |
|  |          | 6       | All                                       | 595           |
|  |          | 8       | All                                       | 640           |
|  |          | 9       | All                                       | 640           |
|  |          | 10      | All                                       | 640           |
|  |          | 11      | All                                       | 640           |
|  |          |         |   | <b>Total</b>  |
| <b>RIPARIAN ACQUISITION</b>                                    |          |         |   |               |
| <b>BURRO CREEK</b>   |          |         |   |               |
| T. 15N., R. 10W.,  | 1        | 26      | S1/2 SW1/4                                | 80            |
|  |          | 27      | NW1/4; SE1/4; N1/2 SW1/4; SE1/4 SW1/4     | 440           |
|  |          | 28      | E1/2NW1/4;NW1/4SW1/4;NE1/4                | 280           |
|  |          | 29      | SW1/4                                     | 160           |
|  |          | 32      | All                                       | 640           |
| T. 14N., R. 10W.,  |          | 5       | W1/2; W1/2 NE1/4                          | 400           |
|  |          | 7       | N1/2; SE1/4; E1/2 SW1/4, NW1/4 SW1/4      | 596           |
|  |          | 8       | W1/2 NW1/4                                | 80            |
| T. 14N., R. 12W.,  |          | 9       | S1/2                                      | 320           |
|  |          | 10      | Mining claims                             |               |
|  |          | 11      | Mining claims                             | 49            |
|  |          | 14      | Mining claims                             |               |
|  |          | 15      | Mining claims                             |               |
|  |          | 17      | S1/2                                      | 320           |
|  |          | 19      | All                                       | 634           |
|  |          | 23      | N1/2                                      | 320           |
|  |          | 24      | All                                       | 640           |
|  |          |         | <b>Total</b>                              | <b>26,006</b> |
| <b>BILL WILLIAMS</b>   |          |         |   |               |
| T. 10N., R. 13W.,  | 2        | 18      | Mining claims                             | 88            |
| T. 10N., R. 14W.,  |          | 4       | W1/2 SW1/4; SW1/4 NW1/4                   | 120           |
|  |          | 5       | S1/2NE1/4; SE1/4 NW1/4; N1/2 SE1/4; SW1/4 | 360           |
|  |          | 6       | S1/2                                      | 316           |
|  |          | 9       | W1/2 NW1/4                                | 80            |
|  |          | 14      | S1/2                                      | 320           |
|  |          | 15      | S1/2                                      | 320           |

**Appendix 23 (continued)**

**Alternative 2 Acquisitions by Resource Activity**

| <b>Township and Range</b>                            | <b>Priority</b> | <b>Section</b> | <b>Subdivision</b>                 | <b>Acreage</b> |
|--|-----------------|----------------|------------------------------------|----------------|
| <b>RIPARIAN ACQUISITION (continued)</b>              |                 |                |                                    |                |
| T. 10N., R. 15W.,                                    |                 | 1              | All                                | 627            |
|  |                 | 2              | All                                | 640            |
|  |                 | 10             | All                                | 640            |
|  |                 | 11             | All                                | 640            |
|  |                 | 12             | All                                | 627            |
|  |                 |                | <b>Total</b>                       | <b>4,778</b>   |
| <b>BIG SANDY RIVER FROM COE WITHDRAWAL TO SIGNAL</b> |                 |                |                                    |                |
| T. 13N., R. 13W.,                                    | 3               | 21             | All                                | 640            |
|  |                 | 27             | All                                | 640            |
|  |                 |                | <b>Total</b>                       | <b>1,280</b>   |
| <b>SIGNAL TO HIGHWAY BRIDGE</b>                      |                 |                |                                    |                |
| T. 14N., R. 13W.,                                    | 4               | 1              | W1/2                               | 307            |
| T. 15N., R. 13W.,                                    |                 | 2              | SE1/4 SE1/4                        | 40             |
|  |                 | 11             | NE1/4; E1/2 SE1/4                  | 240            |
|  |                 | 12             | SW1/4                              | 160            |
|  |                 | 13             | All                                | 640            |
|  |                 | 24             | W1/2 NE1/4; E1/2 SW1/4; W1/2 SE1/4 | 240            |
|  |                 | 25             | All                                | 640            |
|  |                 | 35             | All                                | 640            |
|  |                 |                | <b>Total</b>                       | <b>2,907</b>   |
| <b>SANTA MARIA</b>                                   |                 |                |                                    |                |
| T. 11N., R. 10W.,                                    | 5               | 2              | All                                | 641            |
| T. 11N., R. 11W.,                                    |                 | 15             | S1/2 S1/2                          | 160            |
|  |                 | 16             | S1/2; S1/2 NW1/4                   | 400            |
|  |                 | 17             | N1/2                               | 320            |
|  |                 | 18             | NE1/4 NE1/4                        | 40             |
|  |                 |                | <b>Total</b>                       | <b>1,561</b>   |
| <b>BIG SANDY SIGNAL TO HIGHWAY BRIDGE</b>            |                 |                |                                    |                |
| T. 13N., R. 13W.,                                    | 6               | 3              | All                                | 641            |
|  |                 | 9              | All                                | 640            |
| T. 14N., R. 13W.,                                    |                 | 26             | All                                | 640            |
|  |                 | 27             | NW1/4 NE1/4; N1/2 NW1/4            | 120            |
|  |                 | 34             | E1/2                               | 320            |
|  |                 | 35             | E1/2 NW1/4; NW1/4 SW1/4            | 120            |
|  |                 |                | <b>Total</b>                       | <b>2,481</b>   |
| <b>WRIGHT CREEK</b>                                  |                 |                |                                    |                |
| T. 23N., R. 12W.,                                    | 7               | 15             | NE1/4                              | 160            |
|  |                 |                | <b>Total</b>                       | <b>160</b>     |
| <b>COTTONWOOD CREEK</b>                              |                 |                |                                    |                |
| T. 23N., R. 12W.,                                    | 8               | 29             | W1/2 SW1/4                         | 80             |
| T. 23N., R. 13W.,                                    |                 | 22             | N1/2                               | 320            |
|  |                 |                | <b>Total</b>                       | <b>400</b>     |
| <b>SIGNAL TO HIGHWAY BRIDGE</b>                      |                 |                |                                    |                |
| T. 14N., R. 13W.,                                    |                 | 12             | NE1/4 SW1/4; NW1/4 SE1/4           | 80             |
|  |                 | 13             | All                                | 640            |
|  |                 | 23             | SE1/4 SE1/4                        | 40             |
|  |                 | 24             | E1/2 SW1/4; NW1/4 SE1/4            | 120            |
|  |                 |                | <b>Total</b>                       | <b>880</b>     |

**Appendix 23 (continued)**  
**Alternative 2 Acquisitions by Resource Activity**

| Township and Range                              | Priority | Section | Subdivision                        | Acreage        |
|---|----------|---------|------------------------------------|----------------|
| <b>RIPARIAN ACQUISITION (continued)</b>         |          |         |                                    |                |
| <b>UPSTREAM FROM WSA BOUNDARY - BURRO CREEK</b> |          |         |                                    |                |
| T. 17N., R. 9W.,                                | 9        | 25      | E1/2                               | 320            |
|   |          | 35      | E1/2                               | 320            |
|   |          | 36      | N1/2                               | 320            |
| T. 16.5N., R. 9W.,                              |          | 22      | portion of NW1/4                   | 16             |
|   |          | 23      | All                                | 545            |
|   |          | 28      | All                                | 640            |
|   |          | 32      | E1/2                               | 320            |
|   |          | 33      | W1/2                               | 320            |
|   |          |         | <b>Total</b>                       | <b>2,801</b>   |
| <b>UPPER BURRO CREEK</b>                        |          |         |                                    |                |
| T. 16N., R. 9W.,                                |          | 5       | All                                | 639            |
|   |          | 7       | All                                | 621            |
|   |          | 8       | NW1/4                              | 160            |
|   |          | 18      | W1/2                               | 303            |
|   |          | 20      | W1/2                               | 320            |
|   |          |         | <b>Total</b>                       | <b>2,043</b>   |
| <b>MISCELLANEOUS SPRINGS</b>                    |          |         |                                    |                |
| T. 28N., R. 16W.,                               | 10       | 11      | NW1/4 SW1/4                        | 40             |
| T. 25N., R. 18W.,                               |          | 4       | SW1/4 NW1/4                        | 40             |
| T. 17N., R. 16W.,                               |          | 1       | NW1/4 NW1/4; SE1/4 NE1/4           | 80             |
|   |          | 3       | S1/2 NE1/4; SE/4; S1/2&NE1/4 SW1/4 | 360            |
|   |          |         | <b>Total</b>                       | <b>520</b>     |
| <b>Total For Riparian</b>                       |          |         |                                    | <b>45,817</b>  |
| <b>Total Alternative 2 Acquisition</b>          |          |         |                                    | <b>201,646</b> |



**Appendix 24**  
**Alternative 2 Legal Vehicular Access Acquisitions**

Legal access would be acquired across private and state lands for administrative and public vehicular use on the following roads and trails except for Black Butte. On Black Butte, only administrative vehicular use will be acquired.

| Name               | Township & Range      | Section           |
|--------------------|-----------------------|-------------------|
| Black Butte        | T. 16 N., R. 7 W.,    | 7, 18, 19, 20     |
|                    | T. 16 N., R. 8 W.,    | 2, 11, 12         |
| Black Inky Springs | T. 19 N., R. 16 W.,   | 5                 |
|                    | T. 20 N., R. 16 W.,   | 2, 10, 11, 15, 29 |
| Blye Canyon        | T. 24 N., R. 11 W.,   | 7, 19             |
|                    | T. 24 N., R. 12 W.,   | 10                |
| Bull Canyon        | T. 16.5 N., R. 12 W., | 29, 31            |
| Burch Peak         | T. 16 N., R. 15 W.,   | 23, 26            |
|                    | T. 17 N., R. 15 W.,   | 29, 33            |
|                    | T. 17 N., R. 16 W.,   | 15, 17, 25, 27    |
| Devil's Canyon     | T. 28 N., R. 16 W.,   | 34, 35            |
| Goodwin Mesa       | T. 16 N., R. 11 W.,   | 22                |
| Grapevine Canyon   | T. 30 N., R. 16 W.,   | 25                |
| Groom Peak         | T. 15 N., R. 14 W.,   | 1                 |
| Little Cottonwood  | T. 23 N., R. 13 W.,   | 27, 29, 33, 36    |
| Pilgrim Mine       | T. 23 N., R. 19 W.,   | 2                 |
| Pine Lake          | T. 20 N., R. 15 W.,   | 20, 21            |
| Portland Mine      | T. 23 N., R. 21 W.,   | 14, 15            |
|                    | T. 24 N., R. 21 W.,   | 25                |
| Red Horn Spring    | T. 24 N., R. 12 W.,   | 19                |
| Rock Creek         | T. 19 N., R. 17 W.,   | 15                |
|                    | T. 18 N., R. 17 W.,   | 9                 |
| Sixmile Crossing   | T. 14 N., R. 10 W.,   | 17, 18, 20        |
|                    | T. 15 N., R. 12 W.,   | 25, 27            |
| Squaw Peak         | T. 28 N., R. 21 W.,   | 4                 |
|                    | T. 29 N., R. 20 W.,   | 30                |
|                    | T. 29 N., R. 21 W.,   | 34, 35, 36        |

**Appendix 24 (continued)**  
**Alternative 2 Legal Vehicular Access Acquisitions**

| Name              | Township & Range        | Section            |
|-------------------|-------------------------|--------------------|
| Thumb Butte       | T. 20 N., R. 20 W.,     | 27, 28             |
|                   | T. 21 N., R. 20 W.,     | 28, 29, 32, 33     |
| Walnut Creek *    | T. 19 N., R. 16 W.,     | 7                  |
|                   | T. 19 N., R. 17 W.,     | 7, 15, 18          |
| Warm Springs East | T. 16 N., R. 19 W.,     | 5, 8, 9            |
|                   | T. 16.5 N., R. 19 W.,   | 29                 |
| Warm Springs West | T. 16.5 N., R. 20 W.,   | 23, 27, 28, 31, 33 |
|                   | T. 16.5 N., R. 20.5 W., | 36                 |

**Alternative 2 Roads & Trails To Be Improved**

The following roads and trails would be improved at the locations noted below.

| Name                   | Township & Range      | Section                | Miles |
|------------------------|-----------------------|------------------------|-------|
| Bull Canyon            | T. 16.5 N., R. 11 W., | 19, 20, 29, 30         | 3     |
|                        | T. 16.5 N., R. 12 W., | 21, 24                 |       |
| Burro Creek Campground | T. 14 N., R. 11 W.    | 18, 19                 | 2.5   |
| Devil's Canyon         | T. 28 N., R. 16 W.,   | 35                     | 1     |
| Goodwin Mesa           | T. 16 N., R. 11 W.,   | 2, 11, 14, 15          | 7     |
|                        | T. 16.5 N., R. 11 W., | 26, 27, 35             |       |
| Grapevine Canyon       | T. 30 N., R. 15 W.,   | 33                     | 1     |
|                        | T. 30 N., R. 16 W.,   | 36                     |       |
| Hualapai Ridge         | T. 17 N., R. 16 W.,   | 2, 3, 9                | 20    |
|                        | T. 18 N., R. 15 W.,   | 6, 7, 18               |       |
|                        | T. 18 N., R. 16 W.,   | 12, 13, 24, 25, 26, 35 |       |
|                        | T. 19 N., R. 15 W.,   | 4, 5, 6, 7, 8, 19, 20  |       |
| Iron Basin             | T. 28 N., R. 16 W.,   | 9                      | .5    |
| Pine Lake              | T. 21 N., R. 15 W.,   | 20, 21                 | 1     |
| Pinky Tank             | T. 16 N., R. 10 W.,   | 2, 3, 4, 8, 9          | 4     |
| Red Lake               | T. 16 N., R. 10 W.,   | 5, 6, 8, 16            | 5     |
|                        | T. 16 N., R. 11 W.,   | 1, 2                   |       |

**Appendix 25**  
**Alternative 2 Acquisitions for ACECs**

**Joshua Tree Forest-Grand Wash Cliffs**

**Surface and Minerals**

| Township            | Section | Subdivision | Acreage      |
|---------------------|---------|-------------|--------------|
| T. 30 N., R. 16 W., | 23      | All         | 640          |
|                     | 29      | All         | 640          |
|                     | 31      | E1/2        | 320          |
| T. 29 N., R. 17 W., | 21      | E1/2        | 320          |
|                     | 25      | All         | 640          |
|                     | 27      | All         | 640          |
|                     | 35      | N1/2        | 320          |
| T. 29 N., R. 16 W., | 19      | NW1/4NW1/4  | 40           |
|                     | 29      | All         | 640          |
|                     | 31      | S1/2        | 320          |
| T. 28 N., R. 17 W., | 3       | All         | 640          |
| <b>Total</b>        |         |             | <b>5,160</b> |

**Non-federal Minerals**

|                     |                     |                                    |               |     |
|---------------------|---------------------|------------------------------------|---------------|-----|
| T. 30 N., R. 16 W., | 9                   | All                                | 640           |     |
|                     | 11                  | SW1/4; W1/2SE1/4                   | 240           |     |
|                     | 15                  | All                                | 640           |     |
|                     | 17                  | All                                | 640           |     |
|                     | 19                  | E1/2                               | 320           |     |
|                     | 21                  | All                                | 640           |     |
|                     | 27                  | All                                | 640           |     |
|                     | 33                  | All                                | 640           |     |
|                     | 35                  | All                                | 640           |     |
|                     | T. 29 N., R. 16 W., | 3                                  | All           | 639 |
|                     |                     | 5                                  | All           | 639 |
| 7                   |                     | E1/2                               | 320           |     |
| 9                   |                     | All                                | 640           |     |
| 11                  |                     | All                                | 640           |     |
| 15                  |                     | All                                | 640           |     |
| 17                  |                     | All                                | 640           |     |
| 19                  |                     | E1/2; S1/2NW1/4; NE1/4NW1/4; SW1/4 | 639           |     |
| 21                  |                     | All                                | 640           |     |
| 23                  |                     | All                                | 640           |     |
| 31                  |                     | N1/2                               | 320           |     |
| 33                  | All                 | 640                                |               |     |
| T. 28 N., R. 17 W., | 1                   | All                                | 642           |     |
|                     | 2                   | All                                | 642           |     |
|                     | 11                  | All                                | 640           |     |
|                     | 13                  | N1/2; SW1/4; N1/2SE1/4             | 560           |     |
| T. 28 N., R. 16 W., | 5                   | N1/2NE1/4; NW1/4; W1/2SW1/4        | 329           |     |
|                     | 7                   | W1/2                               | 309           |     |
| <b>Total</b>        |                     |                                    | <b>15,199</b> |     |

**Appendix 25 (continued)**  
**Alternative 2 Acquisitions for ACECs**

**Black Mountains ACEC**

**Surface and Minerals**

| <b>Township</b>     | <b>Section</b> | <b>Subdivision</b>                      | <b>Acreage</b> |
|---------------------|----------------|---|----------------|
| T. 26 N., R. 21 W., | 22             | All                                     | 640            |
|                     | 33             | NE1/4                                   | 160            |
|                     | 36             | All                                     | 640            |
| T. 25 N., R. 22 W., | 25             | All                                     | 640            |
|                     | 27             | All                                     | 640            |
| T. 24 N., R. 21 W., | 9              | All                                     | 640            |
|                     | 25             | S1/2NE1/4; W1/2NW1/4; NE1/4SW1/4; SE1/4 | 360            |
|                     | 33             | NW1/4SW1/4                              | 40             |
| T. 22 N., R. 20 W., | 4              | SE1/4SE1/4                              | 40             |
|                     | 9              | E1/2                                    | 320            |
|                     | 17             | All                                     | 640            |
|                     | 19             | All                                     | 637            |
|                     | 27             | All                                     | 640            |
|                     | 29             | All                                     | 640            |
|                     | 31             | N1/2; N1/2S1/2                          | 478            |
|                     | 33             | All                                     | 640            |
| T. 21 N., R. 20 W., | 11             | All                                     | 640            |
|                     | 12             | N1/2                                    | 320            |
|                     | 16             | All                                     | 640            |
| T. 20 N., R. 20 W., | 2              | All                                     | 525            |
|                     | 3              | SE1/4; E1/2SW1/4; NW1/4SW1/4            | 280            |
|                     | 23             | SW1/4; W1/2SW1/4SE1/4; S1/2NW1/4NW1/4   | 200            |
| <b>Total</b>        |                |   | <b>10,400</b>  |

**Non-federal Minerals**

|                     |    |  |     |
|---------------------|----|--|-----|
| T. 26 N., R. 21 W., | 19 | All                                    | 634 |
|                     | 21 | All                                    | 640 |
|                     | 31 | All                                    | 636 |
|                     | 33 | SE1/4                                  | 160 |
| T. 25 N., R. 22 W., | 1  | All                                    | 640 |
|                     | 3  | all                                    | 640 |
|                     | 11 | All                                    | 640 |
|                     | 13 | All                                    | 640 |
|                     | 15 | All                                    | 640 |
|                     | 23 | All                                    | 640 |
| T. 25 N., R. 21 W., | 1  | N1/2; SW1/4; S1/2SW1/4                 | 561 |
|                     | 3  | N1/2NE1/4; W1/2; S1/2SE1/4; NW1/4SE1/4 | 522 |
|                     | 5  | All                                    | 642 |
|                     | 7  | All                                    | 639 |
| T. 25 N., R. 21 W., | 9  | All                                    | 640 |
|                     | 11 | All                                    | 640 |
|                     | 13 | NW1/4NE1/4; W1/2; S1/2SE1/4            | 440 |
|                     | 15 | All                                    | 640 |
|                     | 17 | All                                    | 640 |

**Appendix 25 (continued)**  
**Alternative 2 Acquisitions for ACECs**

**Black Mountains ACEC (continued)**

**Non-federal Minerals**

| Township              | Section | Subdivision                        | Acreage       |
|-----------------------|---------|------------------------------------|---------------|
| T. 25 N., R. 21 W.,   | 19      | All                                | 638           |
|                       | 23      | SE1/4SW1/4; S1/2SE1/4              | 120           |
|                       | 27      | SW1/4                              | 160           |
| T. 24 N., R. 21 W.,   | 1       | All                                | 567           |
|                       | 3       | All                                | 569           |
|                       | 5       | All                                | 577           |
|                       | 15      | W1/2                               | 320           |
|                       | 17      | All                                | 640           |
|                       | 21      | All                                | 640           |
|                       | 27      | All                                | 640           |
|                       | 29      | All                                | 640           |
|                       | 33      | E1/2; NW1/4; E1/2SW1/4; NW1/4SW1/4 | 600           |
| 35                    | All     | 640                                |               |
| T. 24 N., R. 20 W.,   | 31      | All                                | 622           |
| T. 23 N., R. 21 W.,   | 1       | All                                | 640           |
|                       | 3       | All                                | 636           |
|                       | 11      | E1/2; NW1/4                        | 480           |
|                       | 13      | All                                | 640           |
|                       | 15      | W1/2                               | 320           |
|                       | 23      | All                                | 640           |
|                       | 25      | All                                | 640           |
| T. 22 N., R. 21 W.,   | 1       | All                                | 642           |
| T. 22 N., R. 20 W.,   | 5       | All                                | 642           |
|                       | 7       | All                                | 633           |
| T. 20 N., R. 20 W.,   | 32      | All                                | 640           |
| T. 19 N., R. 20 W.,   | 29      | S1/2S1/2                           | 160           |
|                       | 30      | S1/2S1/2                           | 161           |
|                       | 31      | NW1/4; S1/2                        | 486           |
|                       | 36      | All                                | 640           |
| T. 18 N., R. 20 W.,   | 2       | All                                | 626           |
| T. 16.5 N., R. 19 W., | 19      | all                                | 652           |
| <b>Total</b>          |         |                                    | <b>27,925</b> |

**Western Bajada Desert Tortoise Cultural Resource ACEC**

**Surface and Minerals**

|                     |    |     |     |
|---------------------|----|-----|-----|
| T. 20 N., R. 21 W., | 33 | All | 640 |
|---------------------|----|-----|-----|

**Non-federal Minerals**

|                     |   |                        |     |
|---------------------|---|------------------------|-----|
| T. 19 N., R. 21 W., | 3 | All                    | 644 |
|                     | 5 | All                    | 644 |
|                     | 7 | E1/2; NW1/4; N1/2SW1/4 | 560 |

**Appendix 25 (continued)**  
**Alternative 2 Acquisitions for ACECs**

**Western Bajada Desert Tortoise Cultural Resource ACEC (continued)**

**Non-federal Minerals**

| Township                        | Section | Subdivision  | Acreage      |
|---------------------------------|---------|--------------|--------------|
| T. 19 N., R. 21 W., (continued) | 9       | All          | 640          |
|                                 | 11      | All          | 640          |
|                                 | 15      | All          | 640          |
|                                 | 23      | All          | 640          |
|                                 | 25      | All          | 640          |
|                                 | 27      | All          | 640          |
|                                 | 33      | All          | 640          |
|                                 | 35      | All          | 640          |
|                                 |         | <b>Total</b> | <b>6,968</b> |

**Wright and Cottonwood Creeks Riparian and Cultural ACEC**

**Surface and Minerals**

| Township            | Section | Subdivision                 | Acreage      |
|---------------------|---------|-----------------------------|--------------|
| T. 24 N., R. 12 W., | 31      | NE1/4NE1/4                  | 40           |
| T. 23 N., R. 13 W., | 13      | All                         | 640          |
|                     | 22      | N1/2                        | 320          |
|                     | 27      | NW1/4SE1/4                  | 40           |
|                     | 36      | All                         | 640          |
| T. 23 N., R. 12 W., | 15      | NW1/4                       | 160          |
|                     | 19      | W1/2SW1/4                   | 79           |
|                     | 30 & 31 | Mining Claims               | 76           |
|                     | 31      | E1/2NE1/4; E1/2SW1/4; SE1/4 | 315          |
| T. 23 N., R. 12 W., | 33      | NE1/4NE1/4                  | 40           |
|                     | 35      | SE1/4SE1/4                  | 40           |
| T. 23 N., R. 11 W., | 31      | Lot 6                       | 48           |
| T. 22 N., R. 13 W., | 1       | S1/2SW1/4                   | 80           |
|                     | 2       | All                         | 724          |
|                     |         | <b>Total</b>                | <b>3,242</b> |

**Non-federal Minerals**

|                     |    |                                    |     |
|---------------------|----|------------------------------------|-----|
| T. 24 N., R. 12 W., | 31 | NW1/4NE1/4; S1/2NE1/4; NW1/4; S1/2 | 588 |
| T. 23 N., R. 13 W., | 23 | All                                | 640 |
|                     | 25 | N1/2; N1/2SW1/4; NW1/4SE1/4        | 440 |
|                     | 27 | All                                | 640 |
|                     | 35 | S1/2                               | 320 |
| T. 23 N., R. 12 W., | 5  | S1/2                               | 320 |
|                     | 7  | All                                | 635 |
|                     | 9  | N1/2; E1/2SW1/4; SE1/4             | 560 |

**Appendix 25 (continued)**  
**Alternative 2 Acquisitions for ACECs**

**Wright and Cottonwood Creeks Riparian and Cultural ACEC**

**Non-federal Minerals**

| Township                        | Section             | Subdivision   | Acreage                            |     |
|---------------------------------|---------------------|---|------------------------------------|-----|
| T. 23 N., R. 12 W., (continued) | 11                  | W1/2  | 320                                |     |
|                                 | 13                  | NW1/4; W1/2SW1/4                                      | 240                                |     |
|                                 | 15                  | NW1/4; S1/2   | 480                                |     |
|                                 | 17                  | All   | 640                                |     |
|                                 | 19                  | E1/2SW1/4; SE1/4; E1/2 NE1/4                          | 320                                |     |
|                                 | 21                  | All   | 640                                |     |
|                                 | 23                  | NE1/4NE1/4SW1/4NE1/4; NW1/4;<br>NE1/4SW1/4; N1/2SE1/4 | 360                                |     |
|                                 | 25                  | All   | 640                                |     |
|                                 | 27                  | All   | 640                                |     |
|                                 | T. 23 N., R. 12 W., | 29  | All                                | 640 |
|                                 |                     | 33  | S1/2NE1/4; NW1/4NE1/4; NW1/4; S1/2 | 600 |
| 35                              |                     | N1/2; SW1/4; N1/2SE1/4; SW1/4SE1/4                    | 600                                |     |
| T. 23 N., R. 11 W.,             | 31                  | Lots 3, 4, 5; 7, 8, 9, 10; 15 thru 22                 | 989                                |     |
| <b>Total</b>                    |                     |   | <b>10,612</b>                      |     |

**Cherokee Point Antelope Habitat ACEC**

**Non-federal Surface and Minerals**

| Township            | Section | Subdivision            | Acreage      |
|---------------------|---------|------------------------|--------------|
| T. 24 N., R. 12 W., | 15      | South of Santa Fe R/W  | 320          |
|                     | 17      | South of Santa Fe R/W  | 15           |
|                     | 21      | S1/2NW1/4; NE1/4 SE1/4 | 120          |
| T. 24 N., R. 11 W., | 7       | Lots 6, 7              | 92           |
|                     | 19      | Lot 9                  | 40           |
|                     | 21      | SW1/4                  | 160          |
|                     | 25      | NW1/4NW1/4             | 40           |
|                     | 29      | SE1/4SE1/4             | 40           |
|                     | 36      | E1/2                   | 320          |
| T. 23 N., R. 11 W., | 7       | NE1/4NE1/4             | 40           |
|                     | 9       | SE1/4SW1/4             | 40           |
|                     | 10      | E1/2                   | 320          |
|                     | 29      | SE1/4SE1/4             | 40           |
| <b>Total</b>        |         |                        | <b>1,587</b> |

**Non-federal Minerals**

|                     |    |   |     |
|---------------------|----|---|-----|
| T. 24 N., R. 12 W., | 13 | All   | 640 |
|                     | 21 | NE1/4; N1/2NW1/4; SW1/4; W1/2SE1/4;<br>SE1/4SE1/4 | 520 |
|                     | 23 | All   | 640 |
|                     | 25 | All   | 640 |
|                     | 27 | All   | 640 |
|                     | 29 | All   | 640 |
|                     | 33 | All   | 640 |

**Appendix 25 (continued)  
Alternative 2 Acquisitions for ACECs**

**Cherokee Point Antelope Habitat ACEC (continued)**

**Non-federal Minerals**

| <b>Township</b>                 | <b>Section</b> | <b>Subdivision</b>                      | <b>Acreage</b> |
|---------------------------------|----------------|---|----------------|
| T. 24 N., R. 11 W.,             | 35             | All                                     | 640            |
|                                 | 1              | S1/2                                    | 293            |
|                                 | 3              | S1/2                                    | 292            |
|                                 | 5              | S1/2                                    | 295            |
|                                 | 7              | E1/2; Lots 1 thru 5; 8 thru 24          | 1,213          |
|                                 | 19             | E1/2; Lots 1 thru 8; 10 thru 24         | 1,266          |
|                                 | 21             | N1/2; SE1/4                             | 480            |
| T. 24 N., R. 11 W., (continued) | 25             | NE1/4; S1/2NW1/4; NE1/4NW1/4; S1/2      | 600            |
|                                 | 29             | N1/2; SW1/4; N1/2SE1/4; SW1/4 SE1/4     | 600            |
| T. 23 N., R. 12 W.,             | 1              | All                                     | 624            |
|                                 | 13             | E1/2E1/2                                | 160            |
| T. 23 N., R. 11 W.,             | 2              | All                                     | 634            |
|                                 | 4              | All                                     | 633            |
|                                 | 7              | All                                     | 1,309          |
|                                 | 8              | All                                     | 640            |
|                                 | 10             | N1/2; N1/2SW1/4; SW1/4SW1/4; SE1/4      | 600            |
|                                 | 16             | All                                     | 640            |
|                                 | 19             | All                                     | 1,308          |
|                                 | 20             | All                                     | 640            |
|                                 | 22             | All                                     | 640            |
|                                 | 29             | N1/2; SW1/4; N1/2SE1/4; SW1/4SE1/4      | 600            |
|                                 | 31             | E1/2; Lots 1, 2, 11, 12, 13, 14, 23, 24 | 640            |
|                                 | 33             | All                                     | 640            |
| <b>Total</b>                    |                |   | <b>19,747</b>  |

**Hualapai Mountain Research Natural Area ACEC**

**Surface and Minerals**

| <b>Township</b>     | <b>Section</b> | <b>Subdivision</b>                                 | <b>Acreage</b> |
|---------------------|----------------|--|----------------|
| T. 17 N., R. 15 W., | 3              | All  | 643            |
| T. 18 N., R. 15 W., | 7              | N1/2; W1/2SW1/4; NE1/4SW1/4; N1/2SE1/4; NE1/4SE1/4 | 543            |
| <b>Total</b>        |                |  | <b>1,186</b>   |

**Non-federal Minerals**

|                     |    |       |              |
|---------------------|----|-------|--------------|
| T. 20 N., R. 15 W., | 33 | NW1/4 | 40           |
| T. 19 N., R. 15 W., | 5  | All   | 644          |
|                     | 29 | W1/2  | 320          |
| <b>Total</b>        |    |       | <b>1,004</b> |



**Appendix 25 (continued)**  
**Alternative 2 Acquisitions for ACECs**

**Carrow-Stephens Ranches ACEC**

**Surface and Minerals**

| Township              | Section | Subdivision   | Acreage    |
|-----------------------|---------|---|------------|
| T. 17 N., R. 13 W.,   | 35      | SE1/4   | 160        |
| T. 16.5 N., R. 13 W., | 21      | Lots 1, 2; N1/2SE1/4; SE1/4SE1/4<br>Lot 4; W1/2SW1/4<br>E1/2NE1/4; W1/2NW1/4NE1/4; SE1/2 NW1/4NE1/4;<br>S1/2NE1/4NW1/4NE1/4 | 235        |
|                       | 22      |   | 138        |
|                       | 28      |   | 115        |
| <b>Total</b>          |         |   | <b>648</b> |

**McCracken Desert Tortoise Habitat ACEC**

**Surface and Minerals**

| Township            | Section             | Subdivision                  | Acreage       |
|---------------------|---------------------|------------------------------|---------------|
| T. 14 N., R. 15 W., | 3                   | All                          | 638           |
|                     | 9                   | All                          | 640           |
|                     | 11                  | All                          | 640           |
|                     | 13                  | All                          | 640           |
|                     | 14                  | S1/2                         | 320           |
|                     | 15                  | All                          | 640           |
|                     | 17                  | E1/2                         | 320           |
|                     | 21                  | E1/2                         | 320           |
|                     | 23                  | All                          | 640           |
|                     | 25                  | All                          | 640           |
|                     | 27                  | All                          | 640           |
|                     | 35                  | All                          | 640           |
|                     | T. 14 N., R. 14 W., | 19                           | All           |
| 31                  |                     | All                          | 634           |
| T. 13 N., R. 15 W., | 3                   | S1/2                         | 320           |
|                     | 9                   | SE1/4                        | 160           |
|                     | 11                  | All                          | 640           |
|                     | 13                  | NE1/4NE1/4; W1/2             | 360           |
|                     | 15                  | All                          | 640           |
|                     | 21                  | NE1/4; N1/2SE1/4; SE1/4SE1/4 | 280           |
| 23                  | W1/2                | 320                          |               |
| T. 13 N., R. 14 W., | 5                   | All                          | 640           |
| <b>Total</b>        |                     |                              | <b>11,344</b> |

**Non-federal Minerals**

|                     |    |                  |     |
|---------------------|----|------------------|-----|
| T. 13 N., R. 15 W., | 1  | All              | 641 |
|                     | 3  | N1/2             | 321 |
|                     | 21 | W1/2; SW1/4SE1/4 | 360 |
|                     | 23 | E1/2             | 320 |
| T. 13 N., R. 14 W., | 7  | All              | 636 |
|                     | 17 | All              | 640 |
|                     | 19 | E1/2E1/2         | 160 |

**Appendix 25 (continued)**  
**Alternative 2 Acquisitions for ACECs**

**McCracken Desert Tortoise Habitat ACEC (continued)**

**Non-federal Minerals**

| Township            | Section | Subdivision            | Acreage      |
|---------------------|---------|------------------------|--------------|
| T. 13 N., R. 14 W., | 29      | NE1/4; W1/2; E1/2SE1/4 | 560          |
| <b>Total</b>        |         |                        | <b>3,638</b> |

**Poachie Desert Tortoise Habitat ACEC**

**Surface and Minerals**

| Township            | Section                                | Subdivision | Acreage      |
|---------------------|--|-------------|--------------|
| T. 13 N., R. 12 W., | 7                                      | All         | 638          |
| T. 13 N., R. 10 W., | 2                                      | SW1/4       | 160          |
|                     | 3                                      | SE1/4       | 160          |
|                     | Mining claims in sections 1, 2, 11, 12 |             | 189          |
| <b>Total</b>        |  |             | <b>1,147</b> |

**Non-federal Minerals**

|                     |   |     |            |
|---------------------|---|-----|------------|
| T. 13 N., R. 12 W., | 5 | All | 637        |
| <b>Total</b>        |   |     | <b>637</b> |

**Aubrey Peak Bighorn Sheep Habitat ACEC**

**Non-federal Minerals**

| Township            | Section | Subdivision                                  | Acreage   | Township |
|---------------------|---------|--|-----------|----------|
| T. 12 N., R. 14 W., | 17      | SE1/4NE1/4NW1/4; W1/2NE1/4NW1/4; NW1/4 NW1/4 | 70        |          |
| <b>Total</b>        |         |  | <b>70</b> |          |

**Burro Creek Riparian and Cultural ACEC**

**Surface and Minerals**

| Township             | Section | Subdivision  | Acreage             |     |
|----------------------|---------|--|---------------------|-----|
| T. 17 N., R. 9 W.,   | 24      | That portion of SE1/4 south of Boca Float (Surface Only) | 260                 |     |
|                      | 25      |  | W1/2 (Surface Only) | 320 |
|                      | 35      |  | All (Surface Only)  | 680 |
|                      | 36      |  | N1/2                | 320 |
| T. 16.5 N., R. 9 W., | 21      | All (Surface Only)                                       | 546                 |     |
|                      | 22      | All (Surface Only)                                       | 546                 |     |
|                      | 23      | All  | 545                 |     |
|                      | 27      | All  | 640                 |     |
|                      | 28      | All (W1/2 surface only)                                  | 640                 |     |
|                      | 29      | All (Surface Only)                                       | 640                 |     |
|                      | 32      | All  | 640                 |     |
|                      | 33      | All  | 640                 |     |

**Appendix 25 (continued)**  
**Alternative 2 Acquisitions for ACECs**

**Burro Creek Riparian and Cultural ACEC (continued)**

**Surface and Minerals**

| Township            | Section             | Subdivision                                    | Acreage                  |     |
|---------------------|---------------------|--|--------------------------|-----|
| T. 16 N., R. 9 W.,  | 4                   | NW1/4NW1/4 (Surface Only)                      | 40                       |     |
|                     | 5                   | All  | 639                      |     |
|                     | 6                   | All  | 615                      |     |
|                     | 7                   | All  | 621                      |     |
|                     | 8                   | NW1/4NE1/4; NW1/4                              | 200                      |     |
|                     | 18                  | W1/2 (Surface Only)                            | 303                      |     |
|                     | 19                  | W1/2 (Surface Only)                            | 304                      |     |
|                     | T. 15 N., R. 10 W., | 1  | SE1/4 (surface only)     | 160 |
|                     |                     | 26   | S1/2SW1/4 (surface only) | 80  |
| 27                  |                     | NW1/4; E1/2SW1/4NW1/4SW1/4; SE1/4              | 440                      |     |
| 28                  |                     | NE1/4; E1/2NW1/4 (surface only); NW1/4SW1/4    | 280                      |     |
| 29                  |                     | SE1/4NE1/4; SE1/4SW1/4; NE1/4SE1/4; SW1/4SE1/4 | 160                      |     |
| 32                  |                     | All  | 640                      |     |
| T. 14 N., R. 10 W., | 5                   | W1/2NE1/4; NE1/4NE1/4; W1/2                    | 441                      |     |
|                     | 7                   | E1/2; NW1/4; E1/2SW1/4; NW1/4SW1/4             | 596                      |     |
|                     | 8                   | W1/2   | 320                      |     |
|                     | 17                  | W1/2   | 320                      |     |
|                     | 18                  | E1/2; S1/2NW1/4; SW1/4                         | 556                      |     |
| T. 14 N., R. 12 W., | 11                  | N1/2; N1/2SW1/4; SW1/4; SE1/4 (surface only)   | 600                      |     |
|                     | 13                  | All  | 640                      |     |
|                     | 23                  | All  | 640                      |     |
|                     | 24                  | All (surface & minerals SE1/4)                 | 640                      |     |
|                     | 25                  | All (Surface Only)                             | 640                      |     |

**Total** **16,292**

**Non-federal minerals**

|                     |   |                              |     |
|---------------------|---|------------------------------|-----|
| T. 16 N., R. 10 W., | 1 | SW1/4NW1/4; SW1/4; W1/2SE1/4 | 280 |
|---------------------|---|------------------------------|-----|

**Total** **280**

**Three Rivers ACEC**

**Surface and Minerals**

**Big Sandy ACEC**

|                     |    |  |     |
|---------------------|----|--|-----|
| T. 14 N., R. 13 W., | 23 | all  | 640 |
|                     | 24 | W1/2SW1/4; SE1/4                             | 240 |
|                     | 25 | All  | 640 |
|                     | 26 | NW1/4NE1/4; N1/2NW1/4; SW1/4SW1/4; E1/2SW1/4 | 240 |
|                     | 27 | All  | 640 |
|                     | 33 | All  | 640 |
|                     | 34 | E1/2   | 320 |
|                     | 35 | E1/2; NW1/4; NW1/4SW1/4                      | 520 |

**Appendix 25 (continued)**  
**Alternative 2 Acquisitions for ACECs**

**Three Rivers ACEC**

**Big Sandy ACEC (continued)**

Surface and Minerals

| Township            | Section | Subdivision | Acreage      |
|---------------------|---------|-------------|--------------|
| T. 13 N., R. 13 W., | 1       | All         | 640          |
|                     | 3       | All         | 640          |
|                     | 9       | All         | 640          |
|                     | 11      | N1/2        | 320          |
|                     | 17      | All         | 640          |
|                     | 21      | All         | 640          |
|                     | 27      | All         | 640          |
| <b>Total</b>        |         |             | <b>8,040</b> |

**Alamo Lake Area**

Surface and Minerals

| Township            | Section             | Subdivision                                 | Acreage      |
|---------------------|---------------------|---|--------------|
| T. 11 N., R. 12 W., | 9                   | W1/2; SE1/4                                 | 480          |
|                     | 10                  | SW1/4; SW1/4SE1/4                           | 200          |
|                     | 14                  | S1/2NE1/4; E1/2NW1/4; NE1/4SE1/4            | 200          |
|                     | 15                  | N1/2; N1/2S1/2; SW1/4SW1/4; SW1/4SE1/4      | 560          |
|                     | 16                  | N1/2; W1/2SW1/4; N1/2SE1/4; SE1/4SW1/4      | 520          |
|                     | 17                  | NW1/4; NW1/4SW1/4                           | 200          |
|                     | 18                  | NE1/4SE1/4; S1/2SE1/4                       | 120          |
|                     | 19                  | N1/2; SW1/4                                 | 472          |
|                     | T. 11 N., R. 13 W., | 24  | S1/2SE1/2    |
| 25                  |                     | NE1/4NE1/4; W1/2NE1/4; E1/2NW1/2; W1/2SW1/4 | 280          |
| 26                  |                     | E1/2SE1/4                                   | 80           |
| 34                  |                     | E1/2E1/2                                    | 160          |
| 35                  |                     | NE1/4; S1/2                                 | 480          |
| <b>Total</b>        |                     |   | <b>3,832</b> |

**Santa Maria ACEC**

Surface and Minerals

| Township            | Section | Subdivision           | Acreage      |
|---------------------|---------|-----------------------|--------------|
| T. 12 N., R. 9 W.,  | 29      | Mining claims in E1/2 | 46           |
| T. 11 N., R. 11 W., | 15      | S1/2S1/12             | 160          |
|                     | 16      | S1/2NW1/4; S1/2       | 240          |
|                     | 17      | N1/2                  | 320          |
| T. 11 N., R. 10 W., | 2       | All                   | 641          |
| <b>Total</b>        |         |                       | <b>1,407</b> |

**Appendix 25 (continued)**  
**Alternative 2 Acquisitions for ACECs**

**Three Rivers ACEC (continued)**

**Bill Williams ACEC**

**Surface and Minerals**

| Township            | Section | Subdivision                             | Acreage      |
|---------------------|---------|---|--------------|
| T. 10 N., R. 15 W., | 1       | All                                     | 627          |
|                     | 2       | All                                     | 640          |
|                     | 10      | All                                     | 640          |
|                     | 11      | All                                     | 640          |
|                     | 12      | All                                     | 627          |
| T. 10 N., R. 14 W., | 4       | SW1/4NW1/4; W1/2SW1/4                   | 120          |
|                     | 5       | S1/2NE1/4; SE1/4NW1/4; SW1/4; N1/2SE1/4 | 360          |
|                     | 6       | S1/2                                    | 316          |
|                     | 9       | W1/2NW1/4                               | 80           |
|                     | 14      | S1/2                                    | 320          |
|                     | 15      | S1/2                                    | 320          |
| T. 10 N., R. 13 W., | 17 & 18 | Mining Claims in E1/2                   | 182          |
| <b>Total</b>        |         |   | <b>4,872</b> |

**White-margined Beard-tongue Reserve ACEC**

**Surface and Minerals**

| Township              | Section | Subdivision                          | Acreage |
|-----------------------|---------|--------------------------------------|---------|
| T. 18 N., R. 17 W.,   | 35      | All                                  | 640     |
| T. 18 N., R. 16 W.,   | 31      | W1/2NE1/4; NW1/4NW1/4 (Surface Only) | 119     |
| T. 17 N., R. 17 W.,   | 1       | All                                  | 638     |
|                       | 11      | All                                  | 640     |
|                       | 13      | All                                  | 640     |
|                       | 15      | All                                  | 640     |
|                       | 23      | All                                  | 640     |
|                       | 25      | All                                  | 640     |
| T. 17 N., R. 16 W.,   | 8       | All (Surface Only)                   | 640     |
|                       | 9       | N1/2                                 | 320     |
|                       | 17      | All                                  | 640     |
|                       | 19      | All                                  | 638     |
|                       | 21      | All                                  | 640     |
|                       | 27      | All                                  | 640     |
|                       | 29      | All                                  | 640     |
|                       | 31      | All                                  | 640     |
|                       | 33      | All                                  | 640     |
| T. 16.5 N., R. 17 W., | 23      | All                                  | 516     |
|                       | 25      | All                                  | 640     |
| T. 16.5 N., R. 16 W., | 19      | All                                  | 507     |
|                       | 2       | All                                  | 518     |
|                       | 29      | All                                  | 640     |
|                       | 31      | All                                  | 627     |
|                       | 32      | SW1/4; SW1/4SE1/4                    | 200     |
|                       | 33      | All                                  | 640     |

**Appendix 25 (continued)**  
**Alternative 2 Acquisitions for ACECs**

**White-margined Beard-tongue Reserve ACEC (continued)**

**Surface and Minerals**

| Township                              | Section | Subdivision | Acreage       |
|---------------------------------------|---------|-------------|---------------|
| T. 16 N., R. 16 W.,                   | 3       | All         | 637           |
|                                       | 4       | All         | 638           |
|                                       | 5       | All         | 638           |
|                                       | 6       | All         | 636           |
|                                       | 9       | All         | 640           |
|                                       | 10      | All         | 640           |
| <b>Total</b>                          |         |             | <b>18,152</b> |
| <b>Non-federal Minerals</b>           |         |             |               |
| T. 17 N., R. 17 W.,                   | 2       | All         | 636           |
|                                       | 16      | All         | 640           |
|                                       | 36      | All         | 640           |
| T. 17 N., R. 16 W.,                   | 7       | All         | 637           |
|                                       | 9       | S1/2        | 320           |
|                                       | 32      | All         | 640           |
| <b>Total</b>                          |         |             | <b>3,513</b>  |
| <b>Total for Surface and Minerals</b> |         |             | <b>87,306</b> |
| <b>Total for Non-federal Minerals</b> |         |             | <b>65,429</b> |

**APPENDIX 26**  
**Alternative 3 Proposed New Disposal areas**

| Township and Range   | Section | Subdivision               | Acreage       |
|----------------------|---------|---------------------------|---------------|
| <b>Mohave Valley</b> |         |                           |               |
| T. 18 N., R. 21 W.,  | 4       | All                       | 639           |
|                      | 8       | All                       | 640           |
|                      | 9       | All                       | 640           |
|                      | 16      | All                       | 640           |
|                      | 17      | All                       | 640           |
|                      | 20      | All                       | 640           |
|                      | 21      | All                       | 640           |
|                      | 28      | All                       | 640           |
|                      | 29      | All                       | 640           |
|                      | 33      | All                       | 640           |
| T. 17 N., R. 21 W.,  | 4       | All                       | 638           |
|                      | 5       | E1/2&E1/2 W1/2;NW1/4NW1/4 | 519           |
|                      | 9       | All                       | 640           |
| <b>Golden Valley</b> |         |                           |               |
| T. 22 N., R. 18 W.,  | 5       | All                       | 676           |
|                      | 6       | All                       | 671           |
|                      | 7       | All                       | 637           |
|                      | 8       | All                       | 640           |
|                      | 9       | All                       | 640           |
|                      | 11      | All                       | 640           |
|                      | 14      | All                       | 640           |
|                      | 15      | All                       | 640           |
|                      | 16      | All                       | 640           |
|                      | 17      | All                       | 640           |
|                      | 18      | All                       | 637           |
|                      | 19      | All                       | 636           |
|                      | 20      | All                       | 640           |
|                      | 21      | All                       | 640           |
|                      | 22      | All                       | 640           |
|                      | 23      | All                       | 640           |
|                      | 25      | All                       | 712           |
|                      | 26      | All                       | 640           |
|                      | 27      | All                       | 640           |
|                      | 28      | All                       | 640           |
| 29                   | All     | 640                       |               |
| 30                   | All     | 636                       |               |
| 31                   | All     | 636                       |               |
| 32                   | All     | 640                       |               |
| 33                   | All     | 640                       |               |
| 34                   | All     | 640                       |               |
| 35                   | All     | 640                       |               |
| <b>Total</b>         |         |                           | <b>26,237</b> |

**APPENDIX 27**  
**Alternative 3 Proposed R&PP Disposal Areas**

| <b>Township and Range</b> | <b>Section</b> | <b>Subdivision</b> | <b>Acreage</b> |
|---------------------------|----------------|--------------------|----------------|
| <b>Golden Valley</b>      |                |                    |                |
| T. 22N., R. 18W.,         | 9              | All                | 640            |
|                           | 32             | All                | 640            |
| <b>Mohave Valley</b>      |                |                    |                |
| T. 18N., R. 21W.,         | 4              | All                | 639            |
|                           | 7              | SE1/4              | 160            |
| T.17N., R. 21 W.,         | 9              | All                | 640            |
| <b>Total</b>              |                |                    | <b>2,719</b>   |



**Appendix 28**  
**Alternative 3 Mineral Closure in Riparian Areas**

**Wright Creek Riparian ACEC**

| Township & Range                                      | Section | Subdivision                                     | Acreage      |
|---|---------|---|--------------|
| <b>Federal Minerals to Be Closed to Mineral Entry</b> |         |   |              |
| T. 24 N., R. 13 W.,                                   | 36      | S1/2N1/2; N1/2/S1/2; SW1/4SW1/4                 | 361          |
| T. 23 N., R. 12 W.,                                   | 6       | E1/2  | 312          |
|   | 8       | S1/2NE1/4; NW1/4NE1/4; NW1/4; NE1/4SW1/4; SE1/4 | 480          |
|   | 9       | W1/2SW1/4                                       | 80           |
|   | 10      | S1/2N1/2; N1/2SW1/4; NE1/4                      | 400          |
|   | 14      | W1/2NW1/4; NE1/4NW1/4; S1/2                     | 440          |
|   | 24      | NW1/4; N1/2 SW1/4; SW1/4SW1/4                   |              |
|   |         | W1/2SE1/4SE1/4                                  | 400          |
|   | 36      | E1/2NE1/4                                       | 80           |
| <b>TOTAL</b>  |         |   | <b>2,553</b> |

**Acquire Non-federal Minerals - Close to Mineral Entry**

|                     |    |   |              |
|---------------------|----|---|--------------|
| T. 24 N., R. 12 W., | 31 | S1/2NW1/4; SW1/4; W1/2SE1/4; SE1/4SE1/4   | 351          |
| T. 23 N., R. 12 W., | 5  | SW1/4                                     | 160          |
|                     | 9  | S1/2N1/2; E1/2SW1/4; N1/2 SE1/4           | 320          |
|                     | 15 | NE1/4                                     | 160          |
|                     | 23 | N1/2NE1/4; SE1/4NE1/4                     | 120          |
|                     | 25 | W1/2                                      | 320          |
| T. 23 N., R. 11 W., | 31 | Lots 6, 7, 15, 16, 17, 18, 19, 20, 21, 22 | 430          |
| <b>TOTAL</b>        |    |   | <b>1,861</b> |

**Cottonwood Creek Riparian ACEC**

**Federal Minerals to Be Closed to Mineral Entry**

|                     |    |                              |              |
|---------------------|----|------------------------------|--------------|
| T. 23 N., R. 13 W., | 22 | NE1/4SW1/4; N1/2SE1/4        | 120          |
|                     | 24 | S1/2N1/2; S1/2               | 480          |
| T. 23 N., R. 12 W., | 19 | S1/2NW1/4                    | 81           |
|                     | 28 | S1/2SW1/4                    | 80           |
|                     | 30 | NE1/4; NE1/4NW1/4; N1/2SE1/4 | 594          |
|                     | 32 | N1/2NE1/4                    | 80           |
| <b>TOTAL</b>        |    |                              | <b>1,435</b> |

**Acquire Non-federal Minerals - Close to Mineral Entry**

|                     |    |                      |              |
|---------------------|----|----------------------|--------------|
| T. 23 N., R. 13 W., | 23 | S1/2N1/2; N1/2S1/2   | 320          |
| T. 23 N., R. 12 W., | 19 | W1/2SW1/4; S1/2SE1/4 | 159          |
|                     | 29 | S1/2NW1/4; S1/2      | 400          |
|                     | 33 | W1/2E1/2; W1/2       | 480          |
| <b>TOTAL</b>        |    |                      | <b>1,359</b> |

**Appendix 28 (continued)**  
**Alternative 3 Mineral Closure in Riparian Areas**

**Burro Creek Riparian ACEC**

| Township & Range   | Section      | Subdivision  | Acreage      |
|--|--------------|--|--------------|
| <b>Federal Minerals to Be Closed to Mineral Entry</b>        |              |  |              |
| T. 15 N., R. 10 W.,  | 27           | NW1/4; N1/2SW1/4   | 240          |
|  | 28           | N1/2; W1/2SW1/4  | 400          |
|  | 29           | E1/2E1/2   | 160          |
| T. 14 N., R. 10 W.,  | 6            | E1/2E1/2   | 160          |
|  | 7            | SW1/4SW1/4   | 39           |
|  | 18           | W1/2NW1/4  | 77           |
| T. 14 N., R. 11 W.,  | 12           | SE1/4SE1/4   | 40           |
|  | 13           | N1/2; N1/2S1/2   | 480          |
| T. 14 n., R. 11 W.,  | 14           | N1/2; SW1/4; W1/2SE1/4; NE1/4SE1/4                                 | 600          |
|  | 15           | SW1/4SW1/4; E1/2SE1/4  | 120          |
|  | 16           | W1/2SW1/4; SE1/4SE1/4  | 120          |
|  | 17           | SW1/4NE1/4; S1/2NW1/4; S1/2  | 440          |
|  | 18           | SE1/4NE1/4; E1/2SE1/4  | 120          |
|  | 19           | E1/2NE1/4; SW1/4NE1/4; SE1/4NW1/4; SW1/4;<br>W1/2SE1/4; NE1/4SE1/4 | 418          |
|  | 20           | NE1/4; W1/2NW1/4; NW1/4; NW1/4SW1/4                                | 280          |
|  | 21           | N1/2; N1/2SW1/4  | 400          |
|  | 22           | N1/2; N1/2SW1/4;; NW1/4SE1/4                                       | 440          |
|  | 23           | NW1/4  | 160          |
|  | 30           | NW1/4  | 138          |
| T. 14 N., R. 12 W.,  | 10           | S1/2SE1/4  | 65           |
|  | 11           | SW1/4SW1/4   | 39           |
|  | 14           | W1/2NW1/4; SE1/4NW1/4; SW1/4;<br>W1/2SE1/4SE1/4                    | 269<br>389   |
|  | 15           | NE1/4; S1/2NW1/4; NW1/4NW1/4;<br>N1/2SW1/4;; NW1/4SE1/4            | 379          |
|  | <b>TOTAL</b> |  |              |
| <b>Acquire Non-federal Minerals - Close to Mineral Entry</b> |              |  |              |
| T. 15 N., R. 10 W.,  | 29           | SE1/4SW1/4; SW1/4SE1/4   | 80           |
|  | 32           | All  | 640          |
| T. 14 N., R. 10. W.,   | 5            | NE1/4NE1/4; W1/2NE1/4; NW1/4;SW1/4                                 | 441          |
|  | 7            | SW1/4NE1/4; SE1/4NW1/4;SW1/4                                       | 232          |
| T. 14 N., R. 10 W.,  | 8            | NW1/4  | 160          |
|  | 18           | NW1/4NE1/4   | 40           |
| T.14 N., R. 12 W.,   | 13           | SW1/4SW1/4   | 40           |
|  | 23           | N1/2N1/2; SE1/4NE1/4;; NE1/4SE1/4                                  | 240          |
| <b>TOTAL</b>   |              |  | <b>1,873</b> |

**Appendix 28 (continued)**  
**Alternative 3 Mineral Closure in Riparian Areas**

**Big Sandy Riparian ACEC**

| Township & Range                                      | Section | Subdivision   | Acreage      |
|---|---------|---|--------------|
| <b>Federal Minerals to be Closed to Mineral Entry</b> |         |   |              |
| T. 14 N., R., 13 W.,                                  | 24      | N1/2; W1/2SW1/4   | 400          |
| E1/2SW1/4   | 280     | 26E1/2 NE1/4; SW1/4NE1/4; S1/2NW1/4;                    |              |
|   | 34      | SE1/4SW1/4  | 40           |
|   | 35      | S1/2NE1/4; NE1/4SW1/4                                   | 120          |
| T. 13 N., R. 13 W.,                                   | 2       | W1/2NW1/4   | 80           |
|   | 4       | E1/2SE1/4   | 80           |
|   | 10      | W1/2 NE1/4; NE1/4NE1/4; NW1/4;<br>N1/2SW1/4; SW1/4SW1/4 | 400          |
|   | 15      | W1/2NW1/4   | 80           |
|   | 16      | NE1/4; E1/2W1/2; N1/2 & SW1/4SE1/4; N1/2SE1/4           | 440          |
|   | 22      | SW1/4NW1/4; W1/2SW1/4                                   | 120          |
|   | 26      | S1/2NW1/4; SW1/4  | 240          |
|   | 28      | N1/2NE1/4   | 80           |
|   | 34      | E1/2E1/2  | 160          |
|   | 35      | W1/2; S1/2SE1/4   | 400          |
|   | 36      | S1/2SW1/4   | 80           |
| T.12 N., R. 13 W.,                                    | 2       | E1/2; NW1/4; SE1/4SW1/4                                 | 368          |
|   | 3       | NE1/4   | 84           |
|   | 11      | E1/2; E1/2W1/2; SW1/4NW1/4;<br>NW1/4SW1/4               | 560          |
|   | 12      | SW1/4; SW1/4SE1/4                                       | 120          |
| <b>TOTAL</b>  |         |   | <b>4,132</b> |

**Acquire Non-federal Minerals - Close to Mineral Entry**

|                     |    |   |              |
|---------------------|----|---|--------------|
| T. 14 N., R. 13 W., | 23 | E1/2E1/2; S1/2SW1/4; SW1/4SE1/4                       | 280          |
|                     | 24 | E1/2SW1/4; SE1/4                                      | 240          |
|                     | 25 | N1/2NW1/4; SW1/4NW1/4                                 | 120          |
|                     | 26 | NW1/4NE1/4; N1/2NW1/4; SW1/4SW1/4                     | 160          |
|                     | 27 | E1/2; SE1/4NW1/4; E1/2 SW1/4                          | 440          |
|                     | 34 | E1/2  | 320          |
|                     | 35 | W1/2NE1/4; NW1/4; NW1/4SW1/4                          | 280          |
| T. 13 N., R. 13 W.  | 3  | All   | 641          |
|                     | 9  | E1/2  | 320          |
|                     | 21 | W1/2NE1/4; SE1/4NE1/4; W1/2NW1/4<br>NE1/4SW1/4; SE1/4 | 400          |
|                     | 27 | W1/2NE1/4; SE1/4NE1/4; NW1/4; N1/2 & SE1/4SE1/4       | 400          |
| <b>TOTAL</b>        |    |   | <b>3,601</b> |

**Santa Maria Riparian ACEC**

**Federal Minerals to Be Closed to Mineral Entry**

|                     |    |                              |     |
|---------------------|----|------------------------------|-----|
| T. 11 N., R. 11 W., | 8  | S1/2S1/2                     | 160 |
|                     | 10 | S1/2S1/2                     | 160 |
|                     | 11 | S1/2S1/2                     | 160 |
|                     | 12 | SE1/4NE1/4; S1/2SW1/4; SE1/4 | 280 |
|                     | 13 | SW1/4; W1/2SE1/4             | 240 |
|                     | 14 | S1/2                         | 320 |
|                     | 15 | N1/2; N1/2S1/2               | 480 |
|                     | 16 | NE1/4; N1/2NW1/4             | 240 |

**Appendix 28 (continued)**  
**Alternative 3 Mineral Closure in Riparian Areas**

**Santa Maria Riparian ACEC (continued)**

| Township & Range   | Section | Subdivision                                     | Acreage      |
|--|---------|---|--------------|
| <b>Federal Minerals to Be Closed to Mineral Entry</b>        |         |   |              |
| T. 11 N., R. 11 W., (continued)                              | 17      | N1/2S1/2  | 160          |
| T. 11 N., R. 10 W.,  | 3       | NW1/4NE1/4; NW1/4; W1/2SW1/4                    | 280          |
|  | 4       | SE1/4NE1/4; S1/2SW1/4;<br>S1/2SE1/4; NE1/4SE1/4 | 240          |
| T. 11 N., R. 10 W.,  | 5       | S1/2  | 320          |
|  | 6       | S1/2SW1/4; SE1/4                                | 228          |
|  | 7       | NE1/4; W1/2                                     | 458          |
|  | 8       | N1/2N1/2  | 160          |
|  | 9       | N1/2  | 320          |
| T. 12 N., R. 10 W.,  | 25      | S1/2SE1/4; NE1/4SE1/4                           | 120          |
|  | 34      | SE1/4SW1/4; SE1/4                               | 200          |
|  | 35      | S1/2NE1/4; SE1/4NW1/4; S1/2                     | 440          |
|  | 36      | N1/2; SW1/4                                     | 480          |
| T. 12 N., R. 9 W.,   | 19      | S1/2SE1/4                                       | 80           |
|  | 20      | SW1/4 SW1/4                                     | 40           |
|  | 29      | S1/2NE1/4; NW1/4; N1/2S1/2                      | 354          |
|  | 30      | E1/2; SW1/4                                     | 474          |
|  | 31      | NW1/4   | 160          |
| <b>TOTAL</b>   |         |   | <b>6,554</b> |
| <b>Acquire Non-federal Minerals - Close to Mineral Entry</b> |         |   |              |
| T. 12 N., R. 9 W.,   | 29      | Mining claims in E1/2                           | 46           |
| T. 11 N., R. 11 W.,  | 15      | S1/2S1/2  | 160          |
|  | 16      | S1/2NW1/4; S1/2                                 | 400          |
|  | 17      | N1/2  | 320          |
| <b>TOTAL</b>   |         |   | <b>926</b>   |

**Bill Williams Riparian ACEC**

|   |    |  |     |
|---|----|--|-----|
| <b>Federal Minerals to Be Closed to Mineral Entry</b> |    |  |     |
| T.11 N., R. 14 W.,                                    | 32 | SE1/4SW1/4; S1/2SE1/4  | 126 |
| T. 10 N., R. 15 W.,                                   | 3  | SE1/4SE1/4, S1/2   | 360 |
| T. 10 N., R. 14 W.,                                   | 4  | SE1/4NW1/4; E1/2SW1/4; W1/2SE1/4                                       | 200 |
|   | 5  | N1/2NE1/4; N1/2NW1/4; SW1/4NW1/4                                       | 198 |
| T. 10 N., R. 14 W.,                                   | 6  | NE1/4; S1/2NW1/4   | 236 |
|   | 9  | S1/2NE1/4; NW1/4NE1/4; E1/2NW1/4;<br>NE1/4SW1/4; N1/2SE1/4; SE1/4SE1/4 | 360 |
|   | 10 | W1/2SW1/4 SE1/4SW1/4; SW1/4SE1/4                                       | 160 |
|   | 13 | N1/2   | 324 |
|   | 14 | N1/2   | 320 |
|   | 15 | NE1/4; N1/2 & SE1/4NW1/4   | 280 |

**Appendix 28 (continued)**  
**Alternative 3 Mineral Closure in Riparian Areas**

**Bill Williams Riparian ACEC (continued)**

| Township & Range    | Section | Subdivision                          | Acreage      |
|---------------------|---------|--------------------------------------|--------------|
| T. 10 N., R. 13 W., | 7       | S1/2NE1/4; NE1/4NE1/4                | 363          |
|                     | 8       | NE1/4 & S1/2SW1/4; N1/2 & SW1/4SE1/4 | 400          |
|                     | 18      | N1/2; N1/2SW1/4<br>W1/2NW1/4W1/4     | 127          |
| <b>TOTAL</b>        |         |                                      | <b>3,454</b> |

**Acquire Non-federal Mineral - Close to Mineral Entry**

|                     |    |                                 |              |
|---------------------|----|---------------------------------|--------------|
| T. 10 N., R. 15 W., | 1  | SW1/4NW1/4; S1/2                | 356          |
|                     | 2  | S1/2N1/2; S1/2                  | 480          |
|                     | 11 | NE1/4NE1/4                      | 40           |
|                     | 12 | N1/2N1/2                        | 160          |
| T. 10 N., R. 14 W., | 4  | SW1/4NW1/4; W1/2SW1/4           | 120          |
|                     | 5  | S1/2NE1/4; SE1/4NW1/4; N1/2S1/2 | 280          |
|                     | 6  | SW1/4; N1/2SW1/4; SW1/4SE1/4    | 276          |
| T. 10 N., R. 14 W., | 9  | NW1/4NW1/4                      | 40           |
|                     | 14 | N1/2S1/2                        | 160          |
|                     | 15 | N1/2SE1/4                       | 80           |
| <b>TOTAL</b>        |    |                                 | <b>1,992</b> |

**Total Federal Minerals Closed to Mineral Entry 24,101**

**Total Non-Federal Minerals Acquired-Not Open to Entry 11,612**

**Appendix 29**  
**Alternative 3 Acquisitions for ACECs**

**Joshua Tree Forest ACEC**

**Surface and Minerals**

| Township & Range    | Section | Subdivision | Acreage      |
|---------------------|---------|-------------|--------------|
| T. 29 N., R. 17 W., | 25      | All         | 640          |
|                     | 27      | E1/2        | 320          |
|                     | 35      | N1/2        | 320          |
| T. 29 N., R. 16 W., | 29      | All         | 640          |
|                     | 31      | S1/2        | 320          |
| T. 28 N., R. 17 W., | 3       | All         | 640          |
| <b>Total</b>        |         |             | <b>2,880</b> |

**Non-federal Minerals**

|                     |    |                                    |              |
|---------------------|----|------------------------------------|--------------|
| T. 29 N., R. 16 W., | 7  | E1/2                               | 320          |
|                     | 19 | E1/2; S1/2NW1/4; NE1/4NW1/4; SW1/4 | 639          |
|                     | 21 | All                                | 640          |
|                     | 31 | N1/2                               | 320          |
| T. 28 N., R. 17 W., | 1  | N1/2N1/2                           | 162          |
|                     | 2  | All                                | 642          |
|                     | 11 | N1/2N1/2                           | 160          |
| <b>Total</b>        |    |                                    | <b>2,883</b> |

**Black Mountain ACEC**

**Surface and Minerals**

| Township & Range    | Section | Subdivision                             | Acreage      |
|---------------------|---------|---|--------------|
| T. 26 N., R. 21 W., | 33      | NE1/4                                   | 160          |
| T. 24 N., R. 21 W., | 9       | All                                     | 640          |
|                     | 25      | S1/2NE1/4; W1/2NW1/4; NE1/4SW1/4; SE1/4 | 360          |
| T. 22 N., R. 20 W., | 4       | SE1/4SE1/4                              | 40           |
|                     | 9       | E1/12                                   | 320          |
|                     | 17      | All                                     | 640          |
|                     | 19      | All                                     | 637          |
|                     | 21      | All                                     | 640          |
|                     | 27      | W1/2                                    | 320          |
|                     | 29      | All                                     | 640          |
|                     | 33      | All                                     | 640          |
| T. 19 N., R. 19 W., | 16      | SE1/4SW1/4                              | 40           |
|                     | 17      | All (Surface Only)                      | 640          |
|                     | 21      | W1/2 (Surface Only)                     | 320          |
| <b>Total</b>        |         |   | <b>6,037</b> |

**Non-federal Minerals**

|                     |    |       |     |
|---------------------|----|-------|-----|
| T. 29 N., R. 21 W., | 21 | All   | 640 |
|                     | 33 | SE1/4 | 40  |

**Appendix 29 (continued)**  
**Alternative 3 Acquisitions for ACECs**

**Black Mountain ACEC (continued)**

**Non-federal Minerals**

| Township & Range    | Section | Subdivision                           | Acreage |
|---------------------|---------|---------------------------------------|---------|
| T. 25 N., R. 22 W., | 1       | All                                   | 641     |
|                     | 11      | S1/2                                  | 320     |
|                     | 13      | All                                   | 640     |
|                     | 15      | All                                   | 640     |
|                     | 23      | All                                   | 640     |
| T. 25 N., R. 21 W., | 3       | N1/2NE1/4;W1/4; S1/2SE1/4; SW1/4SE1/4 | 522     |
|                     | 5       | All                                   | 642     |
|                     | 7       | All                                   | 639     |
|                     | 9       | All                                   | 640     |
|                     | 15      | All                                   | 640     |
|                     | 17      | All                                   | 640     |
|                     | 19      | All                                   | 638     |
| T. 24 N., R. 21 W., | 3       | S1/2                                  | 320     |
|                     | 5       | S1/2                                  | 320     |
|                     | 15      | W1/2                                  | 320     |
|                     | 17      | All                                   | 640     |
|                     | 21      | All                                   | 640     |
|                     | 27      | All                                   | 640     |
|                     | 29      | All                                   | 640     |
|                     | 33      | N1/2                                  | 320     |
|                     | 35      | All                                   | 640     |
| T. 24 N., R. 20 W., | 31      | All                                   | 622     |
| T. 23 N., R. 21 W., | 1       | All                                   | 642     |
|                     | 11      | E1/2; NW1/4                           | 480     |
|                     | 13      | All                                   | 640     |
|                     | 25      | E1/2                                  | 320     |
| T. 22 N., R. 21 W., | 1       | E1/2                                  | 321     |
| T. 22 N., R. 20 W., | 5       | All                                   | 642     |
|                     | 7       | All                                   | 633     |

**Total 16,702**

**Silver Creek ACEC**

**Non-federal Minerals**

|                     |    |     |     |
|---------------------|----|-----|-----|
| T. 20 N., R. 20 W., | 32 | All | 640 |
|---------------------|----|-----|-----|

**Total 640**

**Western Bajada Desert Tortoise Cultural Resource ACEC**

**Non-federal Minerals**

|                     |    |                        |     |
|---------------------|----|------------------------|-----|
| T. 19 N., R. 21 W., | 3  | All                    | 644 |
|                     | 5  | All                    | 644 |
|                     | 7  | E1/2; NW1/4; N1/2SW1/4 | 560 |
|                     | 9  | All                    | 640 |
|                     | 11 | All                    | 640 |
|                     | 15 | All                    | 640 |

**Appendix 29 (continued)**  
**Alternative 3 Acquisitions for ACECs**

**Western Bajada Desert Tortoise Cultural Resource ACEC (continued)**

**Non-federal Minerals**

| Township                       | Section | Subdivision | Acreage                  |
|--------------------------------|---------|-------------|--------------------------|
| T. 19 N., R. 21 W.,(continued) | 23      | All         | 640                      |
|                                | 25      | All         | 640                      |
|                                | 27      | All         | 640                      |
|                                | 33      | All         | 640                      |
|                                | 35      | All         | 640                      |
| <b>Total</b>                   |         |             | <b>6,968<sup>x</sup></b> |

**Wright Creek Riparian ACEC**

**Surface and Minerals**

|                     |    |            |            |
|---------------------|----|------------|------------|
| T. 24 N., R. 12 W., | 31 | NE1/4NE1/4 | 40         |
| T. 23 N., R. 12 W., | 15 | NE1/4      | 160        |
| T. 23 N., R. 11 W., | 31 | Lot 6      | 48         |
| <b>Total</b>        |    |            | <b>248</b> |

**Non-federal Minerals**

|                     |    |   |              |
|---------------------|----|---|--------------|
| T. 24 N., R. 12 W., | 31 | NW1/4NE1/4; S1/2NE1/4; NW1/4; S1/2                        | 588          |
| T. 23 N., R. 12 W., | 5  | S1/2  | 320          |
|                     | 7  | E1/2  | 320          |
|                     | 9  | N1/2; E1/2SW1/4; SE1/4                                    | 560          |
|                     | 11 | W1/2  | 320          |
|                     | 15 | SE1/4   | 160          |
|                     | 23 | SE1/4NE1/4  | 40           |
|                     | 25 | All   | 160          |
| T. 23 N., R. 11 W., | 31 | Lots 3, 4, 5; 7, 8, 9, 10; 15, 16, 17, 18, 19, 20, 21, 22 | 623          |
| <b>Total</b>        |    |   | <b>3,091</b> |

**Cottonwood Creek Riparian ACEC**

**Surface and Minerals**

|                     |         |               |            |
|---------------------|---------|---------------|------------|
| T. 23 N., R. 13 W., | 22      | N1/2          | 320        |
| T. 23 N., R. 12 W., | 19      | W1/2SW1/4     | 79         |
|                     | 30 & 31 | Mining Claims | 76         |
|                     | 33      | NE1/4NE1/4    | 40         |
| <b>Total</b>        |         |               | <b>515</b> |

**Non-federal Minerals**

|                     |    |                                    |              |
|---------------------|----|------------------------------------|--------------|
| T. 23 N., R. 13 W., | 23 | All                                | 640          |
| T. 23 N., R. 12 W., | 19 | E1/2NE1/4; E1/2SW1/4; SE1/4        | 320          |
|                     | 29 | All                                | 640          |
|                     | 33 | W1/2NE1/4; SE1/4NE1/4; W1/2; SE1/4 | 600          |
| <b>Total</b>        |    |                                    | <b>2,200</b> |



**Appendix 29 (continued)**  
**Alternative 3 Acquisitions for ACECs**

**Cottonwood Mountains ACEC**

**Surface and Minerals**

| Township            | Section | Subdivision | Acreage    |
|---------------------|---------|-------------|------------|
| T. 22 N., R. 13 W., | 1       | S1/2SW1/4   | 80         |
|                     | 2       | All         | 724        |
| <b>Total</b>        |         |             | <b>804</b> |

**Cherokee Point Antelope Habitat ACEC**

**Non-federal Surface and Minerals**

|                     |    |                        |              |
|---------------------|----|------------------------|--------------|
| T. 24 N., R. 12 W., | 15 | South of Santa Fe R/W  | 320          |
|                     | 17 | South of Santa Fe R/W  | 15           |
|                     | 21 | S1/2NW1/4; NE1/4 SE1/4 | 120          |
| T. 24 N., R. 11 W., | 7  | Lots 6, 7              | 92           |
|                     | 19 | Lot 9                  | 40           |
|                     | 21 | SW1/4                  | 160          |
|                     | 25 | NW1/4NW1/4             | 40           |
|                     | 29 | SE1/4SE1/4             | 40           |
| T. 23 N., R. 11 W., | 36 | E1/2                   | 320          |
|                     | 7  | NE1/4NE1/4             | 40           |
|                     | 9  | SE1/4SW1/4             | 40           |
|                     | 10 | E1/2                   | 320          |
|                     | 29 | SE1/4SE1/4             | 40           |
| <b>Total</b>        |    |                        | <b>1,587</b> |

**Non-federal Minerals**

|                     |                     |   |       |
|---------------------|---------------------|---|-------|
| T. 24 N., R. 12 W., | 13                  | All   | 640   |
|                     | 21                  | NE1/4; N1/2NW1/4; SW1/4; W1/2SE1/4;<br>SE1/4SE1/4 | 520   |
|                     | 23                  | All   | 640   |
|                     | 25                  | All   | 640   |
|                     | 27                  | All   | 640   |
|                     | 29                  | All   | 640   |
|                     | 33                  | All   | 640   |
|                     | T. 24 N., R. 11 W., | 35  | All   |
| 1                   |                     | S1/2  | 293   |
| 3                   |                     | S1/2  | 292   |
| 5                   |                     | S1/2  | 295   |
| 7                   |                     | E1/2; Lots 1 thru 5; 8 thru 24                    | 1,213 |
| 19                  |                     | E1/2; Lots 1 thru 8; 10 thru 24                   | 1,266 |
| 21                  |                     | N1/2; SE1/4                                       | 480   |
| 25                  |                     | NE1/4; S1/2NW1/4; NE1/4NW1/4; S1/2                | 600   |
| 29                  |                     | N1/2; SW1/4; N1/2SE1/4; SW1/4 SE1/4               | 600   |
| T. 23 N., R. 12 W., |                     | 1   | All   |
|                     | 13                  | E1/2E1/2  | 160   |
| T. 23 N., R. 11 W., | 2                   | All   | 634   |
|                     | 4                   | All   | 633   |
|                     | 7                   | All   | 1,309 |
|                     | 8                   | All   | 640   |
|                     | 10                  | N1/2; N1/2SW1/4; SW1/4SW1/4; SE1/4                | 600   |

**Appendix 29 (continued)**  
**Alternative 3 Acquisitions for ACECs**

**Cherokee Point Antelope Habitat ACEC (continued)**

**Non-federal Minerals**

| Township                        | Section | Subdivision                             | Acreage |
|---------------------------------|---------|---|---------|
| T. 23 N., R. 11 W., (continued) | 16      | All                                     | 640     |
|                                 | 19      | All                                     | 1,308   |
|                                 | 20      | All                                     | 640     |
|                                 | 22      | All                                     | 640     |
|                                 | 29      | N1/2; SW1/4; N1/2SE1/4; SW1/4SE1/4      | 600     |
|                                 | 31      | E1/2; Lots 1, 2, 11, 12, 13, 14, 23, 24 | 640     |
|                                 | 33      | All                                     | 640     |

**Total** **19,747**

**Hualapai Mountain Research Natural Area ACEC**

**Surface and Minerals**

|                     |   |  |     |
|---------------------|---|--|-----|
| T. 17 N., R. 15 W., | 3 | All  | 643 |
| T. 18 N., R. 15 W., | 7 | N1/2; W1/2SW1/4; NE1/4SW1/4; N1/2SE1/4; NE1/4SE1/4 | 543 |

**Total** **1,186**

**Non-federal Minerals**

|                     |    |       |     |
|---------------------|----|-------|-----|
| T. 20 N., R. 15 W., | 33 | NW1/4 | 40  |
| T. 19 N., R. 15 W., | 5  | All   | 644 |
|                     | 29 | W1/2  | 320 |

**Total** **1,004**

**Carrow-Stephens Ranches ACEC**

**Surface and Minerals**

|                       |    |   |     |
|-----------------------|----|---|-----|
| T. 17 N., R. 13 W.,   | 35 | SE1/4   | 160 |
| T. 16.5 N., R. 13 W., | 21 | Lots 1, 2; N1/2SE1/4; SE1/4SE1/4                                    | 235 |
|                       | 22 | Lot 4; W1/2SW1/4  | 138 |
|                       | 28 | E1/2NE1/4; W1/2NW1/4NE1/4; SE1/2 NW1/4NE1/4;<br>S1/2NE1/4NW1/4NE1/4 | 115 |

**Total** **648**

**McCracken Desert Tortoise Habitat ACEC**

**Surface and Minerals**

|                     |    |      |     |
|---------------------|----|------|-----|
| T. 14 N., R. 15 W., | 3  | All  | 638 |
|                     | 9  | All  | 640 |
|                     | 11 | All  | 640 |
|                     | 13 | All  | 640 |
|                     | 14 | S1/2 | 320 |
|                     | 15 | All  | 640 |
|                     | 17 | E1/2 | 320 |
|                     | 21 | E1/2 | 320 |
|                     | 23 | All  | 640 |
|                     | 25 | All  | 640 |

**Appendix 29 (continued)**  
**Alternative 3 Acquisitions for ACECs**

**McCracken Desert Tortoise Habitat ACEC**

| Township                       | Section | Subdivision                  | Acreege       |
|--------------------------------|---------|------------------------------|---------------|
| T. 14 N., R. 15 W.,(continued) | 27      | All                          | 640           |
|                                | 35      | All                          | 640           |
| T. 14 N., R. 14 W.,            | 19      | All                          | 632           |
|                                | 31      | All                          | 634           |
| T. 13 N., R. 15 W.,            | 3       | S1/2                         | 320           |
|                                | 9       | SE1/4                        | 160           |
|                                | 11      | All                          | 640           |
|                                | 13      | NE1/4NE1/4; W1/2             | 360           |
|                                | 15      | All                          | 640           |
|                                | 21      | NE1/4; N1/2SE1/4; SE1/4SE1/4 | 280           |
|                                | 23      | W1/2                         | 320           |
| T. 13 N., R. 14 W.,            | 5       | All                          | 640           |
| <b>Total</b>                   |         |                              | <b>11,344</b> |

**Non-federal Minerals**

|                     |    |                        |              |
|---------------------|----|------------------------|--------------|
| T. 13 N., R. 15 W., | 1  | All                    | 641          |
|                     | 3  | N1/2                   | 321          |
|                     | 21 | W1/2; SW1/4SE1/4       | 360          |
|                     | 23 | E1/2                   | 320          |
| T. 13 N., R. 14 W., | 7  | All                    | 636          |
|                     | 17 | All                    | 640          |
|                     | 19 | E1/2E1/2               | 160          |
| T. 13 N., R. 14 W., | 29 | NE1/4; W1/2; E1/2SE1/4 | 560          |
| <b>Total</b>        |    |                        | <b>3,638</b> |

**Poachie Desert Tortoise Habitat ACEC**

**Surface and Minerals**

|                     |   |  |              |
|---------------------|---|--|--------------|
| T. 13 N., R. 12 W., | 7 | All                                    | 638          |
| T. 13 N., R. 10 W., | 2 | SW1/4                                  | 160          |
|                     | 3 | SE1/4                                  | 160          |
|                     |   | Mining claims in sections 1, 2, 11, 12 | 189          |
| <b>Total</b>        |   |  | <b>1,147</b> |

**Non-federal Minerals**

|                     |   |     |            |
|---------------------|---|-----|------------|
| T. 13 N., R. 12 W., | 5 | All | 637        |
| <b>Total</b>        |   |     | <b>637</b> |

**Aubrey Peak Bighorn Sheep Habitat ACEC**

**Non-federal Minerals**

|                     |    |  |           |
|---------------------|----|--|-----------|
| T. 12 N., R. 14 W., | 17 | SE1/4NE1/4NW1/4; W1/2NE1/4NW1/4; NW1/4 NW1/4 | 70        |
| <b>Total</b>        |    |  | <b>70</b> |

**Appendix 29 (continued)**  
**Alternative 3 Acquisitions for ACECs**

**Burro Creek Riparian ACEC**

Surface and Minerals

| Township & Range    | Section | Subdivision  | Acreage |
|---------------------|---------|--|---------|
| T. 15 N., R. 10 W., | 26      | S1/2SW1/4 (Surface Only)                           | 80      |
|                     | 27      | NW1/4; NW1/4SW1/4; E1/2SW1/4; SE1/4 (Surface Only) | 440     |
|                     | 28      | NE1/4; E1/2NW1/4; (Surface Only) NW1/4SW1/4        | 280     |
|                     | 29      | SE1/4NE1/4; SE1/4SW1/4; SW1/4SE1/4; NE1/4SE1/4     | 160     |
|                     | 32      | All  | 640     |
| T. 14 N., R. 10 W., | 5       | NE1/4NE1/4; W1/2NE1/4; W1/2                        | 441     |
|                     | 7       | E1/2; NW1/4; NW1/4SW1/4; E1/2SW1/4                 | 596     |
|                     | 8       | W1/2   | 320     |
|                     | 17      | W1/2   | 320     |
|                     | 18      | E1/2; S1/2NW1/4; SW1/4                             | 560     |
| T. 14 N., R. 12 W.  | 11      | N1/2; N1/2SW1/4E1/4SW1/4; SE1/4 (Surface Only)     | 600     |
|                     | 13      | All  | 640     |
|                     | 23      | All  | 640     |
|                     | 24      | All (N1/2SW1/4 surface only)                       | 640     |
|                     | 25      | All (Surface Only)                                 | 640     |

**Total 6,993**

**Big Sandy ACEC**

Surface and Minerals

|                     |                     |  |     |
|---------------------|---------------------|--|-----|
| T. 14 N., R. 13 W., | 23                  | all  | 640 |
|                     | 24                  | W1/2SW1/4; SE1/4                             | 240 |
|                     | 25                  | All  | 640 |
|                     | 26                  | NW1/4NE1/4; N1/2NW1/4; SW1/4SW1/4; E1/2SW1/4 | 240 |
|                     | 27                  | All  | 640 |
|                     | 33                  | All  | 640 |
|                     | 34                  | E1/2   | 320 |
|                     | 35                  | E1/2; NW1/4; NW1/4SW1/4                      | 520 |
|                     | T. 13 N., R. 13 W., | 1  | All |
| 3                   |                     | All  | 640 |
| 9                   |                     | All  | 640 |
| 11                  |                     | N1/2   | 320 |
| 17                  |                     | All  | 640 |
| 21                  |                     | All  | 640 |
| 27                  |                     | All  | 640 |

**Total 8,040**

**Santa Maria ACEC**

Surface and Minerals

|                     |    |                       |     |
|---------------------|----|-----------------------|-----|
| T. 12 N., R. 9 W.,  | 29 | Mining claims in E1/2 | 46  |
| T. 11 N., R. 11 W., | 15 | S1/2S1/12             | 160 |
|                     | 16 | S1/2NW1/4; S1/2       | 240 |
|                     | 17 | N1/2                  | 320 |
| T. 11 N., R. 10 W., | 2  | All                   | 641 |

**Total 1,407**

**Appendix 29 (continued)**  
**Alternative 3 Acquisitions for ACECs**

**Bill Williams ACEC**

**Surface and Minerals**

| Township            | Section | Subdivision                             | Acreage      |
|---------------------|---------|---|--------------|
| T. 10 N., R. 15 W., | 1       | All                                     | 627          |
|                     | 2       | All                                     | 640          |
|                     | 10      | All                                     | 640          |
|                     | 11      | All                                     | 640          |
|                     | 12      | All                                     | 627          |
| T. 10 N., R. 14 W., | 4       | SW1/4NW1/4; W1/2SW1/4                   | 120          |
|                     | 5       | S1/2NE1/4; SE1/4NW1/4; SW1/4; N1/2SE1/4 | 360          |
|                     | 6       | S1/2                                    | 316          |
|                     | 9       | W1/2NW1/4                               | 80           |
|                     | 14      | S1/2                                    | 320          |
|                     | 15      | S1/2                                    | 320          |
| T. 10 N., R. 13 W., | 17 & 18 | Mining Claims in E1/2                   | 182          |
| <b>Total</b>        |         |   | <b>4,872</b> |

**White-margined Beard-tongue Reserve ACEC**

**Surface and Minerals**

|                       |    |                                      |     |
|-----------------------|----|--------------------------------------|-----|
| T. 18 N., R. 17 W.,   | 35 | All                                  | 640 |
| T. 18 N., R. 16 W.,   | 31 | W1/2NE1/4; NW1/4NW1/4 (Surface Only) | 119 |
| T. 17 N., R. 17 W.,   | 1  | All                                  | 638 |
|                       | 11 | All                                  | 640 |
|                       | 13 | All                                  | 640 |
|                       | 15 | All                                  | 640 |
|                       | 23 | All                                  | 640 |
|                       | 25 | All                                  | 640 |
| T. 17 N., R. 16 W.,   | 8  | All (Surface Only)                   | 640 |
|                       | 9  | N1/2                                 | 320 |
|                       | 17 | All                                  | 640 |
| T. 17 N., R. 16 W.,   | 19 | All                                  | 638 |
|                       | 21 | All                                  | 640 |
|                       | 27 | All                                  | 640 |
|                       | 29 | All                                  | 640 |
|                       | 31 | All                                  | 640 |
|                       | 33 | All                                  | 640 |
| T. 16.5 N., R. 17 W., | 23 | All                                  | 516 |
|                       | 25 | All                                  | 640 |
| T. 16.5 N., R. 16 W., | 19 | All                                  | 507 |
|                       | 2  | All                                  | 518 |
|                       | 29 | All                                  | 640 |
|                       | 31 | All                                  | 627 |
|                       | 32 | SW1/4; SW1/4SE1/4                    | 200 |
|                       | 33 | All                                  | 640 |
| T. 16 N., R. 16 W.,   | 3  | All                                  | 637 |
|                       | 4  | All                                  | 638 |
|                       | 5  | All                                  | 638 |
|                       | 6  | All                                  | 636 |

**Appendix 29 (continued)**  
**Alternative 3 Acquisitions for ACECs**

**White-margined Beard-tongue Reserve ACEC**

**Surface and Minerals**

| Township                              | Section | Subdivision | Acreage       |
|---------------------------------------|---------|-------------|---------------|
| T. 16 N., R. 16 W.,(continued)        | 9       | All         | 640           |
|                                       | 10      | All         | 640           |
| <b>Total</b>                          |         |             | <b>18,152</b> |
| <b>Non-federal Minerals</b>           |         |             |               |
| T. 17 N., R. 17 W.,                   | 2       | All         | 636           |
|                                       | 16      | All         | 640           |
|                                       | 36      | All         | 640           |
| T. 17 N., R. 16 W.,                   | 7       | All         | 637           |
|                                       | 9       | S1/2        | 320           |
|                                       | 32      | All         | 640           |
| <b>Total</b>                          |         |             | <b>3,513</b>  |
| <b>Total for Surface and Minerals</b> |         |             | <b>65,860</b> |
| <b>Total for Non-federal Minerals</b> |         |             | <b>61,093</b> |

**Appendix 30**  
**Mineral Potential Classification System**

**Level of Potential**

- O. The geologic environment, the inferred geologic processes; and the lack of mineral occurrences do not indicate potential for accumulation of mineral resources.
- L. The geologic environment and the inferred geologic processes indicate low potential for accumulation and preservation of mineral resources.
- M. The geologic environment and the inferred geologic processes, and the reported occurrences of valid geochemical/geophysical anomaly indicate moderate potential for accumulation and preservation of mineral resources.
- H. The geologic environment, the inferred geologic processes, and the reported occurrences or valid geochemical/geophysical anomaly, and the known mines or deposits indicate high potential for accumulation of mineral resources. The "known mines and deposits" do not have to be within the area that is being classified, but have to be within the same type of geologic environment.

**Level of Certainty**

- B. The available data provide indirect evidence to support or refute the possible existence of mineral resources.
- C. The available data provide direct evidence but are quantitatively minimal to support or refute the possible existence of mineral resources.
- D. The available data provide abundant direct and indirect evidence to support or refute the possible existence of mineral resources.

For the determination of No Potential use O/D. This class shall be seldom used, and when used it should be for a specific commodity only. For example, if the available data show that the surface and subsurface type of rock in the respective area is batholithic (igneous intrusive), one can conclude, with reasonable certainty, that the area does not have potential for coal. \*As used in this classification, "potential" refers to potential for the presence (occurrence) of a concentration of one or more energy and /or mineral resource. It does not refer to or imply potential for development and /or extraction of the mineral resource(s). It does not imply that the potential concentration is or may be economic.

Appendix 31  
Production Totals by Mineral Districts

| Mineral District        | County | Copper (lbs)        | Lead (lbs) | Zinc (lbs)         | Molybdenum (lbs) | Gold (oz) | Silver (oz) | Manganese (lbs) | Tungsten (st) | Uranium (lbs) | Other (specify)   |
|-------------------------|--------|---------------------|------------|--------------------|------------------|-----------|-------------|-----------------|---------------|---------------|---|
| Aquarius Mins           | Mohave |                     |            |                    |                  | *         | 0.6         | 95,108.0        |               | 3.33          | 0.032 st (Mn)   |
| Artillery               | Mohave |                     |            |                    |                  |           |             |                 |               |               |   |
|                         | LaPaz- |                     |            |                    |                  |           |             |                 |               |               |   |
| Artillery Peak          | Mohave |                     |            |                    |                  |           |             |                 |               |               | .243. + (MN)<br>0.820 +(MN);<br>0.029.+ (U)<br>0.049 + (MN) |
| Black Burro             | Mohave | 331.0               |            |                    |                  |           |             |                 |               |               |   |
| Bonegas                 | Mohave |                     |            |                    | 15.0             |           |             |                 |               | 0.006         |   |
| Boriana                 | Mohave | 408.0               |            |                    |                  | 0.1       | 12.5        |                 | 121.3         |               |   |
| Buck Mountains          | Mohave | 0.3                 | 20.0       |                    |                  | 3.6       | 6.0         |                 |               |               |   |
| Cedar Valley            | Mohave |                     | 0.6        |                    |                  | 0.7       | 6.0         |                 |               |               |   |
| Chemehuevis             | Mohave | 0.5                 | 27.0       |                    |                  | 1.0       | 3.0         |                 | 0.15          |               |   |
| Cleopatra               | Mohave | 480.0               | 0.5        |                    |                  | 2.0       | 12.0        |                 |               |               |   |
| Cotton Wood             | Mohave | 457.                | 0.5        |                    |                  | 3.0       | 6.0         |                 | 0.032         |               |   |
| Cyclopic                | Mohave | 0.6                 | 10.0       |                    |                  | 6.11      | 4.0         |                 |               |               |   |
| Diamond Joe             | Mohave | 60.0                | 40.0       | 0.3                |                  | 0.1       | 30.0        |                 |               |               |   |
| El Dorado Pass          | Mohave | 2.0                 | 7.0        |                    |                  | 7.5       | 6.0         |                 |               |               |   |
| Emerald Isle            | Mohave | 22.167 <sup>1</sup> |            |                    |                  | *         | 0.4         |                 | 0.132         |               |   |
| Fluorescent             | Mohave |                     |            |                    |                  |           |             |                 |               |               |   |
| Garnet                  |        |                     |            |                    |                  |           |             |                 |               |               |   |
| Mountain                | Mohave |                     |            |                    |                  |           |             |                 |               |               | 0.010 st(W)   |
| Gold Basin <sup>2</sup> | Mohave | 0.4                 | 34.0       |                    |                  | 9.4       | 2.9         |                 |               |               |   |
| Gold Hill               | Mohave |                     |            |                    |                  | .040      | +           |                 |               |               |   |
| Greenwood               | Mohave | 0.4                 | 1.0        |                    |                  | 1.0       | 0.6         |                 |               |               |   |
| Hackberry               | Mohave | 11.0                | 150.0      | 22.0               |                  | 0.4       | 81.0        |                 |               |               |   |
| Hackberry               | Mohave |                     |            |                    |                  | 5.0       | 560.0       |                 |               |               |   |
| Hualapai                | Mohave | 7,247.0             | 897.0      | 11.40 <sup>1</sup> |                  | 0.7       | 99.0        |                 |               |               |   |
| Kaaba                   | Mohave | 0.2                 | 41.0       |                    |                  | 0.7       | 0.55        |                 |               |               |   |
| Lead Pill               | Mohave | 28.0                | 405.0      |                    |                  | 0.5       | 2.0         |                 |               |               |   |
| Lost                    | Mohave |                     |            |                    |                  | *         | +           |                 | 0.005         |               |   |
| Lost Basin              | Mohave | 5.0                 |            |                    |                  |           |             |                 |               |               |   |
| Madril Peak             | Mohave | 0.6                 |            |                    |                  | *         |             |                 |               |               |   |
| Maynard                 | Mohave | 12.0                | 87.0       |                    |                  | 0.4       | 100.0       |                 |               | 0.270         | 0.088   |
| McConnico               | Mohave | 0.2                 |            |                    |                  | 3.6       | 1.8         |                 |               |               |   |
| McCracken               | Mohave | 10.0                | 3,031.0    | 43.0               | 0.1              | 0.1       | 699.0       |                 |               |               |   |

Appendix 31 Table 1 (continued)

| Mineral District  | County   | Copper (lbs)        | Lead (lbs)         | Zinc (lbs) | Molybdenum (lbs)   | Gold (oz) | Silver (oz)        | Manganese (lbs) | Tungsten (st) | Uranium (lbs) | Other (specify)             |
|-------------------|----------|---------------------|--------------------|------------|--------------------|-----------|--------------------|-----------------|---------------|---------------|-----------------------------|
| <b>McCracken</b>  |          |                     |                    |            |                    |           |                    |                 |               |               |                             |
| (before 1911)     | Mohave   |                     |                    |            |                    |           | 700.0              |                 |               |               |                             |
| Mesa              | Mohave   |                     |                    |            |                    |           |                    | 40.0-80.0       |               |               | 0.3 + (MN)                  |
| Minnesota         | Mohave   | 14.0                | 0.4                |            |                    | 0.4       | 6.0                |                 |               |               |                             |
| Music Mountain    | Mohave   | 3.0                 | 38.0               |            |                    | 4.5       | 12.0               |                 |               |               |                             |
| Oatman            | Mohave   | 60.                 |                    |            |                    | 1,966.    | 1,147.             |                 | 0.036         |               |                             |
| Ophir             | Mohave   |                     |                    |            |                    |           |                    |                 |               |               |                             |
| Owens             | Mohave   | 3.0                 | 63.0               |            |                    | 0.1       | 10.0               |                 |               |               |                             |
| Pilgrim           | Mohave   |                     |                    |            |                    | 48.0      | 72.0               |                 |               |               |                             |
| Pine Peak         | Mohave   | 9.0                 | 178.0              | 231.0      |                    | 0.9       | 13.0               |                 |               |               |                             |
| Rawhide           | Mohave   | 11.0                | 260.0              |            |                    | *         | 8.0                |                 |               |               |                             |
| Silverado         | Mohave   | 3.0                 | 39.0               |            |                    |           | 5.0                |                 |               |               |                             |
| Topock            | Mohave   | 3.0                 |                    |            |                    | 0.1       | 0.1                |                 |               |               |                             |
| Triple H          | Mohave   |                     |                    |            |                    |           |                    |                 | reserves      |               |                             |
| Union             |          |                     |                    |            |                    |           |                    |                 |               |               |                             |
| Pass/Katherine    | Mohave   |                     |                    |            |                    | 128.0     | 313.0              |                 |               |               |                             |
| Virginia          | Mohave   | 1.0                 | 3.0                |            |                    | 17.8      | 17.7               |                 |               |               |                             |
| Wapapai           | Mohave   | 666.14 <sup>1</sup> | 80.10 <sup>1</sup> | 126.491    | 53.18 <sup>1</sup> | 151.0     | 11.54 <sup>1</sup> |                 |               |               |                             |
| <b>Walapai</b>    |          |                     |                    |            |                    |           |                    |                 |               |               |                             |
| historical        | Mohave   |                     | 10.52              |            |                    | 41.0      |                    |                 |               |               |                             |
| Wheeler Wash      | Mohave   |                     |                    |            |                    |           |                    |                 | 5.6           |               |                             |
| White Hills       | Mohave   | 3.0                 | 12.0               |            |                    | 0.4       | 78.0               |                 |               |               |                             |
| Willow Beach      | Mohave   |                     |                    |            |                    | +         | +                  |                 |               |               |                             |
| Yellow Jacket     | Mohave   | 4.0                 | 0.2                | 95.0       |                    | *         | 1.0                |                 |               |               |                             |
| Unknown / Unnamed |          |                     |                    |            |                    |           |                    |                 |               |               |                             |
| Districts         | Mohave   | 218.0               | 326.0              | 42.0       |                    | 1.6       | 42.0               |                 |               |               | 289.2 + (U)<br>213.4 (V205) |
| Cameron           | Coconino |                     |                    |            |                    |           |                    |                 | 1,216.0       |               |                             |
| Francis           | Coconino | 730.0               | 0.5                |            |                    | 0.1       | 4.0                |                 |               |               | 1.1 + (MN)<br>0.312 t (MN)  |
| Heber             | Coconino |                     |                    |            |                    |           |                    | 996.0           |               |               |                             |
| Johnson & Hayden  | Coconino |                     |                    |            |                    |           |                    | 171.0           |               |               |                             |
| Long Valley       | Coconino |                     |                    |            |                    |           |                    | 4,214.0         |               |               | 4.7 + (MN)                  |
| Valle             | Coconino | 25.0                |                    |            |                    |           | *                  |                 |               |               |                             |



Appendix 31 Table 1 (continued)

| Mineral District            | County   | Copper (lbs)        | Lead (lbs)        | Zinc (lbs)          | Molybdenum (lbs) | Gold (oz) | Silver (oz) | Manganese (lbs) | Tungsten (st) | Uranium (lbs) | Other (specify)  |
|-----------------------------|----------|---------------------|-------------------|---------------------|------------------|-----------|-------------|-----------------|---------------|---------------|--|
| Unknown / Unnamed Districts | Coconino | 20.0                |                   |                     |                  | +         | 0.07 *      |                 | 8.7           |               |  |
| Camp Wood                   | Yavapai  |                     |                   |                     |                  |           |             |                 |               |               |  |
| Copper Ridge                | Yavapai  |                     |                   |                     |                  | 5.0       | 4.7         |                 |               |               |  |
| Crosby                      | Yavapai  | 21.0                | 8.5               |                     |                  |           |             |                 |               |               | 0.021 + (MN)<br>0.013 lbs (V <sub>2</sub> O <sub>5</sub> )<br>10.8 st (U)<br>10.1lb (V <sub>2</sub> O <sub>5</sub> ) |
| Eureka (Bagdad)             | Yavapai  | 1.306 <sup>1</sup>  | 7.87 <sup>1</sup> | 3.62 <sup>1</sup>   | 16.54.           | 67.0      | 4,691.      |                 | reserves      | 0.116         |  |
| Date Creek                  | Yavapai  |                     |                   |                     |                  |           |             |                 |               |               |  |
| Old Dick                    | Yavapai  | 106.40 <sup>1</sup> | 3.04 <sup>1</sup> | 306.60 <sup>1</sup> |                  | 3.5       | 652.0       |                 |               | 33.0          | (iron production)  |
| Seligman Iron               | Yavapai  |                     |                   |                     |                  |           |             |                 |               |               |  |
| Tungstonia                  | Yavapai  |                     |                   |                     |                  |           |             |                 | 7.5           |               |  |
| Zannaropolis                | Yavapai  |                     |                   |                     |                  |           |             |                 | 0.110         |               | 0.010t(W)  |
| Alamo                       | La Paz   | 38.0                | 16.0              |                     |                  | 0.1       | 0.3         |                 |               |               |  |

Source Keithnard others, 1983; USGS MRDS files; Welty and others, 1985.

\*\*All figures in thousands

\* = under 100, + = 10 or under

**Bold face entres are estimates based on data in Elsing and Heineman (1936)**

**Bagdad and Mineral Park have been an ongoing production since 1979. Production for 1980 thru present is not reflected in these totals.**

<sup>1</sup>Figures are in millions.

<sup>2</sup>Also includes Goat camp, O.K., Excelaior, Golden Rule.



# GLOSSARY

The following abbreviations are used in this RMP. Those abbreviations that represent terms as defined in the glossary.

|        |   |
|--------|---|
| ACEC   | Area of critical environment concern    |
| ADHS   | Arizona Department of Health Services   |
| AGFD   | Arizona Game and Fish Department        |
| AIRFA  | American Indian Religious Freedom Act   |
| APD    | Application for permit to drill         |
| AMP    | Allotment management plan               |
| ARPA   | Archaeological Resources Protection Act |
| AUM    | Animal unit month                       |
| BLM    | Bureau of Land Management               |
| C&MU   | Classifications and Multiple Use Act    |
| CEQ    | Council on Environmental Quality        |
| CRMP   | Coordinated resource management plan    |
| EA     | Environmental assessment                |
| EIS    | Environmental impact statement          |
| EPA    | Environmental Protection Agency         |
| ERMA   | Extensive recreation management area    |
| ESA    | Endangered Species Act                  |
| FLPMA  | Federal Land Policy and Management Act  |
| FWS    | Fish and Wildlife Service               |
| HAZMAT | Hazardous materials                     |
| HMAP   | Herd Management Area Plan               |
| HMP    | Habitat management plan                 |
| IM     | Instruction memo                        |
| IMP    | Interim management policy               |
| LWCF   | Land and Water Conservation Fund        |
| MFP    | Management framework plan               |
| MSA    | Management situation analysis           |
| NCA    | National Conservation Area              |
| NEPA   | National Environmental Policy Act       |
| NOI    | notice of Intent                        |
| NSO    | No Surface Occupancy                    |
| NRHP   | National Register of Historic Places    |
| NHPA   | National Historic Preservation Act      |
| NWPS   | National Wilderness Preservation System |
| OHV    | Off-highway vehicle                     |
| PILT   | Payment in Lieu of Taxes                |
| R&PP   | Recreation and Public Purposes Act      |
| RCA    | Resource conservation area              |
| RMA    | Recreation management area              |
| RMP    | Resource management plan                |
| ROD    | Record of decision                      |
| RV     | Recreation vehicle                      |
| SHPO   | State Historic Preservation Officer     |
| SMA    | Special management area                 |
| SRMA   | Special recreation management area      |
| T & E  | Threatened and endangered               |
| USDI   | U.S. Department of the Interior         |
| USF&WS | U.S. Fish and wildlife Service          |
| VRM    | Visual resource management              |
| WSRA   | Wild and Scenic River Act               |

**ACCELERATED EROSION:** Erosion much more rapid than normal, natural, or geologic erosion, resulting from the destruction of vegetation cover, other human activities, and sometimes natural catastrophes such as fire.

**ACRE-FOOT:** The volume of material or water that will cover an area of 1 acre to a depth of 1 foot (43,560 cubic feet or 325,851 gallons).

**ACTIVITY PLAN:** A detailed, specific plan for management of a single resource program or plan element undertaken as necessary to implement the more general resource management plan (RMP) decisions.

**ADVERSE EFFECT (Cultural Resources):** Alteration of the characteristics which contribute to the use(s) determined appropriate for a cultural resource or which qualify a cultural property for the National Register to such a degree that the appropriate use(s) are diminished or precluded or the cultural property is disqualified from National Register eligibility. Criteria in the regulations of the Advisory Council (36 CFR Part 800) guide the determination of adverse effects.

**AIR POLLUTION:** Accumulation of aerial wastes beyond the concentrations that the atmosphere can absorb and which may, in turn, damage the environment.

**AIR QUALITY CLASSES:** Classes established by the Environmental Protection Agency (EPA) that define the amount of air pollution considered significant within an area.

I. Almost any change in air quality would be considered significant;

II. Deterioration normally accompanying moderate, well-controlled growth would be considered insignificant;

III. Deterioration up to the national standards would be considered insignificant.

**AIRSHED:** A region within which air movement tends to be confined by topographic barriers, meteorology, and local circulations.

**ALKALI SOIL:** Soil having so high a degree of alkalinity (pH 8.5 or higher), or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

**ALLOTMENT:** An area of land assigned to one or more livestock operators for grazing livestock. Allotments generally consist of public land but may also include state-owned and private land. An allotment may include one or more separate pastures. Livestock numbers and seasons of use are specified for each allotment.

## GLOSSARY

- ALLOTMENT MANAGEMENT PLAN (AMP):** A livestock grazing management plan for a specific allotment based on multiple-use resource management objectives. The AMP considers livestock grazing in relation to other uses of the range and in relation to renewable resources - watershed, vegetation and wildlife. An AMP establishes the seasons-of-use, the number of livestock to be permitted on the range and the rangeland developments needed.
- ALTERNATIVES:** Different ways of addressing the planning issues and management activities considered in the planning process. These serve to provide the decision maker and the public a clear basis for choices among options.
- ALLUVIAL:** Relating to or formed by water carrying and depositing rocks, soil, and other materials.
- AMBIENT AIR QUALITY:** Prevailing condition of the atmosphere at a given time; the outside air. Concentration levels in the outside air for a specified pollutant and a specified averaging time period within a given area.
- ANIMAL UNIT (AU):** One mature (1,000-pound) cow or its equivalent based upon an average daily forage consumption of 26 pounds dry matter.
- ANIMAL UNIT MONTH (AUM):** The amount of forage necessary for the sustenance of one cow or five sheep for 1 month.
- APPARENT TREND:** Immediate or short-term tendency, used mainly to record vegetative response to management actions.
- AQUATIC HABITAT:** Habitat that is inundated by water with a frequency sufficient to support a prevalent form of aquatic life.
- AQUIFER:** An underground body of rock or similar material capable of storing water and transmitting it to wells or springs.
- ARCHAEOLOGICAL DISTRICT:** An area that provides a concentration of cultural properties in a discrete, definable location.
- ARCHAIC:** Archaeological period of about 8,000 to 300 BC.
- AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC):** An area within the public lands where special management attention is required to protect important historic, cultural, or scenic values, fish and wildlife or natural systems or processes, or to protect life and safety from natural hazards.
- ARIZONA SITE STEWARD PROGRAM:** A volunteer program administered through the Arizona Archaeology Advisory Commission and the State Historic Preservation Officer (SHPO), to safeguard and monitor the condition of selected archaeological sites and areas in Arizona in cooperation with state and federal agencies.
- AVAILABLE FORAGE:** The portion of the forage production that is accessible for use by a specified kind or class of grazing animal.
- AVERAGE LICENSED USE:** The average number of AUMs authorized during the past 5 years. This figure depends on forage production and economics in any one year.
- BACK COUNTRY BYWAYS:** Back country roads and vehicle trails that BLM has designated and promotes for their high scenic and public interest values. As part of the National Scenic Byway System, back country byways vary from single-track bike trails to narrow, low speed, paved roads.
- BAJADA:** a broad, gently inclined slope at the foot of a mountain, formed by the coalescing of alluvial fans.
- BASE FLOW:** The amount of streamflow that is maintained by groundwater inflow to the stream and is therefore relatively constant, even during dry periods.
- BASELINE:** Conditions, including trends, existing in the human environment before a proposed action is begun; a benchmark state from which all environmental consequences are forecast and all changes expected to occur under existing management is the no-action alternative.
- BASE METAL:** Any of the more common and chemically active metals, such as copper and lead.
- BASE PROPERTY:** Lands in a ranching enterprise that are owned or under long-term control of the operator.
- BENTONITE:** A clay formed by the decomposition of volcanic ash, having the ability to absorb large amounts of water and to expand to several times its normal volume and used in adhesives, cements, and ceramic fillers.
- BLOCK (verb)/BLOCKED-UP (adjective):** v. to consolidate like things, such as ownership of land, e.g., the BLM acquires privately owned acreage in the middle of a large area of public land.
- BROWSE:** As a verb, to consume or feed on (a plant); as a noun, the tender shoots, twigs, and leaves of trees and shrubs often used as food by cattle, deer, elk, and other animals.
- BRUSH:** Vegetation consisting primarily of bushes and shrubs, usually undesirable for livestock or timber management. It may sometimes be of value for browse or for watershed protection.
- BUTTE:** An isolated hill with steep sides and a flat top.
- CARRYING CAPACITY (RECREATION):** The maximum number of people at one time that an area or facility can accommodate without impairing the natural, cultural, or developed resource.
- CHAINING:** A method of vegetation treatment in which large, woody species such as pinyon and juniper are removed with a heavy chain dragged between two bulldozers.
- CHANGE AGENT:** The apparent cause of an environmental consequence, an antecedent related empirically to an environmental consequence.
- CLASSIFICATION:** the process of determining whether public lands are more valuable or suitable for transfer or use under the land laws than for federal retention and management.
- CLIMAX VEGETATION:** The final vegetation community that emerges after a series of successive vegetational stages. The

- climax community perpetuates itself indefinitely unless disturbed by outside forces. This differs from the potential natural community (PNC) in that it does not include naturalized non-native species.
- COAL SLURRY:** A mixture of water and powdered coal in roughly equal proportions by weight.
- COMMON VARIETY:** Mineral deposits which do not possess a distinct special economic value over and above the normal use of the general run of such deposits.
- COMMUNITY:** A group of plants and animals living together in a common area and having close interactions.
- CONTRAST (VISUAL):** The effect of a striking difference in the form, line, color, or texture of an area being viewed.
- CONTRAST RATING:** A method of determining the extent of visual impact of an existing or proposed activity that will modify any landscape feature.
- CONVEYANCE:** The transfer of real property from one owner to another by means of a formal document and other formalities.
- COORDINATED RESOURCE MANAGEMENT PLAN (CRMP):** A plan for management of one or more allotments that involves all the affected resources, e.g., range, wildlife and watershed.
- CRITICAL SOILS:** Soils that (1) contain very highly saline soils and /or (2) are very highly susceptible to water erosion.
- CRITICAL WATERSHED:** An area of soils that (1) have a high potential for salt yield; (2) are subject to severe water and wind erosion when disturbed; (3) have high runoff potential during storm events; (4) are subject to frequent flooding; or (5) have a potential for loss of vegetation productivity under high rates of wind or water erosion.
- CRITICAL WILDLIFE HABITAT:** The area of land, water and airspace required for the normal needs and survival of a species.
- CRUCIAL WILDLIFE HABITAT:** Sensitive use areas that are necessary to the existence, perpetuation, or introduction of one or more species during critical periods of their life cycles.
- CULTURAL CLEARANCE:** A statement, based upon an inventory, that a given tract of land contains no cultural resource values or that, if cultural resources are present, compliance actions will be undertaken and other adverse impacts on them sufficiently mitigated.
- CULTURAL PROPERTY:** Any definite location of past human activity, habitation or use identified through a field inventory (see below), historical documentation or oral evidence. This term may include (1) archaeological or historic sites, structures and places and (2) sites or places of traditional cultural or religious importance to a specific group, whether or not represented by physical remains. Cultural properties are managed by the system of inventory evaluation and protection and use.
- CULTURAL RESOURCE INVENTORY:** A descriptive listing and documentation of cultural resources, including photographs and maps; included are the processes of locating, identifying, and recording sites, structures, buildings, objects, and districts through library and archival research, information from persons knowledgeable about cultural resources, and varying levels of intensity of on-the-ground field surveys. There are three classes of cultural resource inventories:
- I (Existing data inventory): An inventory study of a defined area designed to provide (1) a narrative overview derived
  - II (Sampling field inventory): A sample-oriented field inventory designed to locate and record, from surface and exposed profile indications, all cultural resource sites within a portion of a defined area in a manner that will allow an objective estimate of the nature and distribution of cultural resources in the entire defined area.
  - III (Intensive field inventory): An intensive field inventory designed to locate and record, from surface and exposed profile indications, all cultural resource sites within a specified area.
- CULTURAL RESOURCES:** Those fragile and nonrenewable remains of human activities, occupations, and endeavors as reflected in sites, buildings, structures, or objects, including works of art, architecture, and engineering. Cultural resources are commonly discussed as prehistoric and historic values, but each period represents a part of the full continuum of cultural values from the earliest to the most recent.
- CULTURAL SITE:** A physical location of past human activities or events. Cultural resource sites are extremely variable in size and range from the location of a single cultural resource object to a cluster of cultural resource structures have sociocultural or scientific values and meet criterion of being more than 50 years old.
- CUSTODIAL MANAGEMENT:** A limited form of resource management employed on lands with low resource production potential that are producing near potential and where opportunities for positive economic return on public investment do not exist.
- DESIGNATED RIGHT-OF-WAY CORRIDOR:** A parcel of land, either linear or areal, that has been identified by law, by Secretarial Order, through the land use planning process or by other management decision, as a preferred location for existing and future right-of-way grants and suitable to accommodate more than one type of right-of-way or one or more rights-of-way which are similar, identical, or compatible.
- DESIRED PLANT COMMUNITY (DPC):** A plant community that produces the kind, amount, and proportions of vegetation needed to meet or exceed the resource management plan/activity plan objective established for the site. The DPC must be within the site's capability to produce the desired vegetation through natural succession, management intervention, or both.
- DIRECTIONAL DRILLING:** Drilling at an angle from the vertical to reach subsurface areas not directly under the wellbore. Such drilling is used to reach a subsurface area beneath a NSO (non surface occupancy) lease.
- DRAINAGE BASIN:** An area bounded by a water parting and drained by a particular river and its tributaries (watershed).

## GLOSSARY

**DRILLING FLUID (Mud):** A mixture of liquids and solids circulated through the wellbore of oil and gas wells during rotary drilling to force cuttings out of the wellbore to the surface, to cool and lubricate the bit and drill stem, to protect against blowouts by holding back subsurface pressures, and to deposit a mud cake on the wall of the borehole to prevent the loss of fluids to the formation.

**EASEMENT:** an interest in land owned by another that entitles the holder of the easement to a specific limited use of that land.

**ECOLOGICAL STATUS:** The present state of vegetation of an ecological site in relation to the natural potential plant community for that site. It is an expression of the relative degree to which the kinds, proportions, and amounts of plants in a plant community resemble that of the PNC plant community. Ecological status was formerly known as range condition.

**ECOLOGICAL SITE:** A distinctive kind of rangeland that differs from other kinds of rangeland in its ability to produce a characteristic natural plant community. An ecological site is the product of all the environmental factors responsible for its development. It is capable of supporting a native plant community typified by an association of species that differs from that of other ecological sites in the kind of proportion of species or in total production. Ecological site is synonymous with range site.

**ECONOMIC IMPACT:** The change, positive or negative, in economic conditions (including distribution and stability of employment and income in affected local and regional economies) that directly or indirectly result from an activity, project or program.

**ECOSYSTEM:** A complex self-sustaining natural system which includes living and nonliving components of the environment and the circulation of matter and energy between organisms and their environment.

**ENDANGERED SPECIES ACT OF 1973 (as amended):** Federal law to ensure that no federal action will jeopardize federally listed or proposed threatened or endangered species of plants or animals.

**ENVIRONMENTAL ASSESSMENT (EA):** The procedure for analyzing the impacts of some proposed action on a given environment and the documentation of the analysis. An EA is similar to an environmental impact statement (EIS) but is generally smaller in scope. An EA may be preliminary to an EIS.

**ENVIRONMENTAL CONSEQUENCE:** A temporal or spatial change in the human environment caused by an act of man. The change should be (1) perceptible, (2) measurable, and (3) relatable through a change agent to a proposed action or alternative. A consequence is something that follows an antecedent (as a cause or agent). Consequences are synonymous with impacts and effects. In the CEQ regulations, consequences are caused by a proposed action (40 CFR 1508.7; 1508.14).

**EPHEMERAL STREAM:** A stream that flows only briefly after a storm or during snowmelt.

**EROSION:** the wearing away of the soil and surface by running water, wind, ice or other geological agents.

**EVALUATION (Cultural Resources):** The analysis of cultural resource inventory records, the application of professional judgment

to identify characteristics that contribute to possible uses for recorded cultural resources, and the recommendation of appropriate uses(s) for each resource or group of resources. National Register eligibility criteria, 36 CFR Part 60, are interpreted through or with reference to bureau evaluation criteria.

**EXCAVATION (ARCHAEOLOGICAL):** The scientifically controlled recovery of subsurface materials and information from a cultural site. Recovery techniques are relevant to research problems and are designed to produce maximum knowledge about the site's use, its relation to other sites and the natural environment, and its significance in the maintenance of the cultural system.

**EXISTING RIGHT-OF-WAY CORRIDOR:** A parcel of land, with fixed limits or boundaries, that is being used as the location for one or more rights-of-way.

**EXTENSIVE RECREATION MANAGEMENT AREAS (ERMAs):** Areas where recreation is unstructured and dispersed and where minimal recreation-related investments are required. ERMAs, which constitute the majority of the Arizona Strip public land, provide recreation visitors the freedom of choice with minimal regulatory constraint.

**FAIR MARKET VALUE:** The amount in cash, or in terms reasonably equivalent to cash, for which in all probability a leaseable mineral deposit would be sold or leased by a knowledgeable owner willing but not obligated to sell or lease to a knowledgeable purchaser who desires but is not obligated to buy or lease.

**FEDERAL LAND POLICY AND MANAGEMENT ACT OF 1976 (FLPMA):** Public Law 940579, which gives the BLM legal authority to establish public land policy, to establish guidelines for administering such policy and to provide for the management, protection, development and enhancement of the public land.

**FEDERAL LAND:** Land owned by the United States, without reference to how the land was acquired or which federal agency administers the land, including mineral or coal estates underlying private surface.

**FIRE MANAGEMENT:** The integration of fire protection, prescribed burning, and fire ecology knowledge into multiple use planning, decision making, and land management activities. Fire management is a program, not of letting fires burn, but rather of placing fire in perspective with overall land management objectives to fulfill the needs of society.

**FLOOD PEAK:** The highest value of the stage or discharge attained by a flood; thus, peak stage or peak discharge.

**FLOODPLAIN:** The nearly level alluvial plain that borders a stream or river and is subject to inundation during high water periods; the relatively flat area or lowland adjoining a body of standing or flowing water which has been or might be covered by floodwaters.

**FORAGE:** Vegetation of all forms available for animal consumption.

**FORB:** a herbaceous (nonwoody) plant that is not a grass, sedge, or rush.

- FREE USE PERMIT:** A permit that allows the removal of timber and other resources from the public lands free of charge.
- FREQUENCY:** A quantitative expression of the presence or absence of individuals of a species in a population. It is defined as the percentage of occurrence of a species in a series of samples of uniform size.
- GOAL:** The desired state or condition that a resource management policy or program is designed to achieve. A goal is usually not quantifiable and may not have a specific date by which it is to be completed. Goals are the bases from which objectives are developed.
- GRAZING PREFERENCE:** The total number of AUMs of livestock grazing on public lands apportioned and attached to base property owned or controlled by a permittee or lessee. Active preference and suspended preference combined make up total grazing preference.
- GRAZING PRIVILEGES:** Permission to graze livestock on the public lands granted by BLM to permittees and lessee's as a privilege. Grazing privileges are attached to base property.
- GRAZING SYSTEM:** Sequence of livestock grazing, by area, designed to accomplish management objectives.
- GROUND WATER:** Water filling the unblocked pores of underlying material below the water table.
- HABITAT:** A specific set of physical conditions that surround the single species, a group of species, or a large community. In wildlife management, the major components of habitat are considered to be food, water, cover, and living space.
- HABITAT MANAGEMENT PLAN:** A written and officially approved plan for specific geographic area which identifies wildlife habitat and related objectives, establishes the sequence of actions for achieving objectives and outlines procedures for evaluating accomplishments.
- HAZARDOUS WASTE OR MATERIAL (HAZMAT):** Any substance that poses a threat to the health or safety of persons or the environment. These include any material that is toxic, ignitable, corrosive or radioactive.
- HEAVY MINERALS:** Metals having a specific gravity (weight in comparison to the weight of an equal volume of water) of 5.0 or more and generally toxic in relatively low concentrations to plant and animal life. Including lead, mercury, cadmium, and arsenic, such metals can persist in animal tissue and increase in concentrations as they pass up the food chain.
- HERBACEOUS:** Pertaining to plants having little or no woody tissue.
- HERD MANAGEMENT AREA PLAN (HMAP):** A plan for the management of a geographic area used by wild horses or burros. A HMAP outlines details of a burro or horse capture plan, adoption program and long-term management of populations.
- HOLISTIC RESOURCE MANAGEMENT (HRM):** An approach to resource management that recognizes the need to consider the entire ecosystem as well as human, biological, and financial resources.
- HUMAN ENVIRONMENT:** The natural and physical environment and the relationship of people with that environment. (See complete definition in the CEQ regulations, 40 CFR 1508.15.).
- INDICATOR:** An element of the human environment affected, or potentially affected, by a change agent. An indicator can be a structural component, a functional process, or an index. A Key indicator integrates several system elements in such a way as to indicate the general health of that system.
- INTERDISCIPLINARY APPROACH:** Cooperative, interactive consultation and analysis among individuals representing two or more disciplines. Such an approach should "insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision making, which may have an impact on man's environment" [NEPA 102(2)(A)].
- INTERIM MANAGEMENT POLICY (IMP):** BLM's guidelines for managing lands under wilderness review so as not to impair their suitability for preservation as wilderness. The IMP will apply to these lands until Congress determines whether they are to be wilderness.
- INTRUSION (VISUAL):** A land, vegetation, or structural feature that is generally considered out of context with the characteristic landscape.
- ISOLATED TRACT:** A parcel of public lands surrounded by nonfederal lands.
- ISSUE:** See planning issue.
- KEY AREA:** A relatively small portion of a rangeland selected because of its location, use, or grazing value as an area on which to monitor the effects of grazing use. It is assumed that key areas, if properly selected, will reflect the effects of current grazing management over all or part of a pasture, allotment, or other grazing unit.
- KEY SPECIES:** A plant that is relatively or potentially abundant, that can endure moderately close grazing, and that serves as an indicator of changes in a vegetational complex. The key species is an important vegetation component, which, if overused, will significantly harm watershed conditions, grazing capacity, or other resources. More than one key species may be selected on an allotment. One species may be important for watershed protection, and a different species may be important for livestock or wildlife forage or other values.
- LAND AND WATER CONSERVATION FUND (LWCF):** a federally maintained fund used for acquiring and developing federal outdoor recreation resources and for assisting states in planning, acquiring, and developing land and water areas and facilities for outdoor recreation.
- LAND DISPOSAL:** A transaction that leads to the transfer of title of public lands from the federal government.
- LAND TREATMENT:** Alteration of vegetation of an area by mechanical, biological, or chemical means, or by burning. Land treatments are implemented to reduce erosion or improve vegetation for livestock or wildlife.

## GLOSSARY

- LEACH MINING:** The technique of mineral extraction where a variety of chemical solutions are used to extract minerals which are soluble within those liquids. This technique may be used to extract minerals from abandoned tailings, crushed ores and in-place ores.
- LEASABLE MINERALS:** Minerals such as coal, oil shale, oil and gas, phosphate, potash, sodium, geothermal resources and all other minerals that may be acquired under the Mineral Leasing Act of 1920, as amended.
- LEGAL DESCRIPTION:** The description of a particular parcel of land according to the official plat of its cadastral survey, including Township, Range and Section numbers.
- LODE MINING:** Extraction of minerals from deposits which are still in place within the confines of the surrounding country rock.
- MANAGEMENT FRAMEWORK PLAN (MFP):** A planning decision document prepared before the effective date of the regulations implementing the land use planning provisions of FLPMA.
- MANAGEMENT SITUATION ANALYSIS (MSA):** A step in the BLM planning process that identifies existing management, physical resources and opportunities to meet the needs, concerns and issues identified through resource management planning. The MSA results in a reference document, which is kept in the resource area office. The MSA document is open for public inspection but is not distributed to the public.
- MAXIMIZED BREEDING EFFICIENCY:** Having maximum numbers of animals in a population participating in the reproductive effort while allowing for the recruitment of young animals for replacement.
- METALLIC MINERALS:** Those minerals whose native form is metallic or whose principal products after refinement are metallic.
- MINERAL ENTRY:** The location of mining claims by an individual to protect his right to a valuable mineral.
- MINERAL ESTATE:** Mineral or subsurface ownership.
- MINERALIZATION:** The processes taking place in the earth's crust resulting in the formation of valuable minerals or ore bodies; the occurrence of potentially valuable minerals.
- MINERAL WITHDRAWAL:** Closure of land to mining laws, including sales, leasing, and location, subject to valid existing rights.
- MINING PLAN OF OPERATIONS (MPO):** A plan for mining exploration and development that an operator must submit to BLM for approval when more than 5 acres a year will be disturbed or when an operator plans to work in an area of critical environmental concern, wilderness study area, or wilderness. An MPO must document in detail all actions the operator plans to take from exploration through reclamation and present all information needed for preparing a National Environmental Policy Act document.
- MITIGATING MEASURES:** Methods used (often included as stipulations or special conditions attached to a lease) to reduce the significance of or eliminate an anticipated environmental impact.
- MITIGATION:** The lessening of a potential adverse effect by applying appropriate protection measures, the recovery of cultural resource data or other measures.
- MONITORING:** The orderly collection and analysis of data to evaluate progress in meeting resource management objectives. Monitoring may also include: (1) the collection of data to evaluate progress in complying with laws, regulations, policies, executive orders, and management decisions, and (2) the collection of data and observation of progress toward plan objectives, the accuracy of impact analysis, and the effectiveness of mitigation measures are also of particular interest in terms of RMP monitoring activities.
- MOTORIZED TRAVEL:** Travel in any motorized vehicle for recreation purposes; includes driving or riding in off-highway areas (OHV travel).
- MOUNTAIN ISLANDS:** Isolated mountain ranges where islands of habitat are surrounded by a sea of desert or grassland. Mountain islands are typically separated from similar communities on other mountains by thousands of feet of elevation and radically different climatic conditions. Most mountain island plants and animals, especially the smaller ones, are descended from ancestors isolated since the last ice age, thousands of years ago.
- MOVEMENT CORRIDORS:** Lands needed for maintaining or reconnecting natural habitat islands to facilitate traditional movement, migration, genetic interchange, and population expansion of native wildlife species.
- MULTIPLE-USE MANAGEMENT:** Management of public lands and their resources so that they are used in the combination best meeting the present and future needs of the American people. Relative resource values are considered, not necessarily the combination of uses that will give the greatest potential economic return or the greatest unit output.
- NATIONAL HISTORIC PRESERVATION ACT (NHPA):** The primary federal law providing for the protection and preservation of our cultural resources. Making it a national policy to preserve our cultural heritage, NHPA established the National Register of Historic Places, the Advisory Council on Historic Preservation and State Historic Preservation Officers.
- NATIONAL REGISTER OF HISTORIC PLACES (NRHP):** A list of districts, sites, buildings, structures and objects significant in American history, architecture, archaeology and culture maintained by the Secretary of the Interior. Expanded as authorized by Section 2(b) of the Historic Sites Act of 1935 (16 U.S.C. 462) and Section 101(a)(1)(A) of the National Historic Preservation Act.
- NATIONAL WILD AND SCENIC RIVERS SYSTEM:** Established by the Wild and Scenic Rivers Act of 1968 to protect rivers and their immediate environments that have outstanding scenic, recreational, geologic, fish and wildlife, historic, cultural, and other similar values and are preserved in free flowing conditions, this system provides for the designation of three types of rivers: (1) *recreation*—rivers or sections of rivers



readily accessible by road or railroad that may have some development along their shorelines and may have undergone some impoundment or diversion in the past; (2) *scenic*—rivers or sections of rivers free of impoundments, with shorelines or watersheds still largely undeveloped but accessible in places by roads; and (3) *wild*—rivers or sections of rivers free of impoundments and generally inaccessible except by trails, with essentially primitive watersheds or shorelines and unpolluted waters.

**NATIONAL WILDERNESS PRESERVATION SYSTEM:** A system composed of federally owned areas designated by Congress as wilderness areas. These areas shall be administered for the use and enjoyment of the American people; management actions will preserve wilderness values for future use and enjoyment.

**NATURAL AREA:** Land managed for (1) retention of its typical or unusual plant or animal types, associations or other biotic phenomena or (2) its outstanding scenic, geologic, soil or aquatic features or processes.

**NATURAL HAZARD:** A natural characteristic of land or water resources or areas that: (1) constitutes conditions significantly dangerous, or potentially significantly dangerous, to human life, or property, or that (2) would be significantly dangerous to life or the safety of property if development or other activity were permitted. Such a hazard may be either existing or considered likely to occur in the future.

**NONUSE:** Current authorized grazing use (AUMs) that is not used during a given time period. Nonuse is applied for and authorized on an annual basis.

**NOTICE OF INTENT (NOD):** A notice submitted to BLM by a geophysical exploration company outlining a proposed oil and gas exploration program.

#### OFF-HIGHWAY VEHICLE DESIGNATIONS:

**Open:** Designated areas and trails where OHVs may be operated (subject to operating regulations and vehicle standards set forth in BLM Manuals 8341 and 8343).

**Limited:** Designated areas and trails where the use of OHVs is subject to restrictions, such as limiting the number of types of vehicles allowed, dates and times of use (seasonal restrictions); limiting use to existing roads and trails or limiting use to designated roads and trails. Combinations of restrictions are possible, such as limiting use to certain types of vehicles during certain times of the year.

**Closed:** Designated areas, roads and trails where the use of OHVs is permanently or temporarily prohibited. Emergency use of vehicles is allowed.

**PALATABILITY:** The relish with which a particular species or plant part is consumed by an animal.

**PARTICULATE MATTER:** Any material, except water, in a chemically uncombined form that is or has been airborne and exists as a liquid or solid at standard temperature and pressure. Minute particles of coal dust, fly ash, and oxides temporarily suspended in the atmosphere.

**PASTURE:** As used in this document, a subdivision of a grazing allotment.

**PATENT:** A government deed that conveys legal title for land to an individual or another government entity.

**PAYMENT IN LIEU OF TAXES (PILT):** Payments to local or state governments based on ownership of federal land and not directly dependent on production of outputs or receipt sharing.

**PERMEABILITY (SOIL):** The ease with which gases or liquids penetrate or pass through soil.

**PICTOGRAPH:** Prehistoric rock art, either drawn or painted onto a stone surface or pecked into such a surface.

**PLACER MINING:** That form of mining in which the surficial detritus (surface soil) is washed for gold or other valuable minerals (Dictionary of Geologic Terms, Anchor Press, 1979).

**PLANNING CRITERIA:** The standards of rules and other factors developed by the manager and inter-disciplinary team for their use in forming judgments about decision making, analysis, and data collection during planning.

**PLANT VIGOR:** The relative well-being and health of a plant as reflected by its ability to manufacture sufficient food for growth and maintenance.

**POT HUNTING:** Illegal collection of artifacts, either from the land surface or by digging into an archaeological site.

**PREFERRED:** That plan alternative, in the environmental assessment or impact statement, which management has initially selected as offering the most acceptable resolution or the planning issues and management concerns.

**PRIMITIVE RECREATION:** Nonmotorized and undeveloped types of outdoor recreation activities.

**PRIORITY WILDLIFE SPECIES:** Federally listed threatened and endangered species and high profile candidate species; and state-listed species which serve as environmental barometers for habitat quality as well as other species; and big game species of particularly high economic, ecological and recreational value.

**PROPER USE:** (1) A degree of utilization of current year's growth which, if continued, would achieve the management objectives and maintain or improve the long-term productivity of the site; or (2) the percentage a plant is utilized when the rangeland as a whole is properly utilized. Proper use varies with time and systems of grazing. Proper use is synonymous with proper utilization.

**PUBLIC PARTICIPATION:** Part of the BLM's planning system that provides the opportunity for citizens as individuals or groups to express local, regional and national perspectives and concerns in the rulemaking, decisionmaking, inventory and planning processes for public land. This includes public meetings, hearings or advisory boards or panels that may review resource management proposals and offer suggestions or criticisms for the various alternatives considered.

## GLOSSARY

**PUBLIC RANGELANDS IMPROVEMENT ACT OF 1978 (PRIA):** A federal law that sought to improve rangeland conditions on the public lands. Among its provisions, PRIA (1) requires the continuing inventory and monitoring of rangeland conditions, (2) specified that allotment management plans be developed "in careful and considered consultation, cooperation, and coordination with lessees, permittees, and landowners involved" and (3) set a new grazing fee formula based on a combination of fair market value, beef prices, and production costs.

**RANGE CONDITION:** The current productivity of rangeland relative to what the rangeland is naturally capable of producing.

**RANGE IMPROVEMENT:** An authorized activity or program on or relating to rangelands which is designed to improve production of forage; change vegetation composition; control patterns of use; provide water; stabilize soil and water conditions; and provide habitat for livestock, wild horses and burros, and wildlife. The term includes, but is not limited to, structures, treatment projects, and use of mechanical means to accomplish the desired results.

**RANGELAND RANGE:** A kind of land that supports vegetation useful for grazing or browsing, on which routine management of that vegetation is through manipulation of grazing rather than cultural practices. (Rangelands include natural grasslands, marshes, riparian zones, and wet meadows. Rangeland includes lands revegetated naturally or artificially to provide a plant cover which is managed like native vegetation.

**RANGE SITE:** See ecological site

**RANGE TREND:** The direction of change in range trend.

**RECORD OF DECISION (ROD):** A required document that concisely reports the decision reached on an action examined through the National Environmental Policy Act process in an environmental impact statement.

**RECREATION MANAGEMENT AREA (RMA):** An area requiring explicit recreation management to achieve the bureau's recreation objectives and to provide specific recreation opportunities. Special management areas are identified in the RMP, which also defines the management objectives for the area. The BLM's recreation investments are concentrated in these areas.

**RECREATION OPPORTUNITY SPECTRUM (ROS):** A conceptual framework for inventory, planning, and management of recreation resources.

**RECREATIONAL OPPORTUNITY:** Those outdoor recreational activities which offer satisfaction in a particular physical, social and management setting in the EIS area. These activities are primarily hunting, fishing, wildlife viewing, photography, boating and camping.

**REHABILITATION:** Restoration of damaged or lost environment as nearly as possible to its original state.

**RESEARCH NATURAL AREA (RNA):** A physical or biological unit in which current natural conditions are maintained insofar as possible. In an RNA, activities such as livestock grazing and vegetation manipulation are prohibited unless they

replace natural process and contribute to an area's protection and preservation, and recreation activities such as camping and gathering plants are discouraged.

**RESOURCE AREA:** The smallest administrative subdivision of a BLM district.

**RESOURCE MANAGEMENT PLAN (RMP):** A written land use plan that outlines BLM's decisions and strategies for management of the resources in a particular area. The RMP replaces the MFP in BLM's planning system.

**REST-ROTATION GRAZING SYSTEM:** A grazing plan providing for systematic and sequential grazing by livestock and resting from livestock use on a range area to provide for production of livestock while maintaining or improving the vegetation and soil fertility.

**RIGHT-OF-WAY:** The legal right for use, occupancy, or access across land or water areas for a specified purpose or purposes. Also, the lands covered by such a right.

**RIGHT-OF-WAY CORRIDOR:** The designation of an existing group of rights-of-way capable of accommodating one or more compatible rights-of-way of like kind. such a corridor contains only public land.

**RIPARIAN HABITAT (AREAS):** Areas of land directly influenced by permanent water and having visible characteristics, e.g., vegetation, reflective of the presence of permanent water, i.e., surface and /or subsurface.

**SALINE SOIL:** Soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium.

**SALINITY:** A measure of total dissolved solids (TDS) including all inorganic material in solution, whether ionized or not.

**SCENIC CORRIDOR:** The area encompassing the foreground-middleground zone along roadways.

**SCENIC QUALITY:** The visual aesthetics of an area, based on the key factors: landforms, vegetation, color, water, influence of adjacent scenery, scarcity, and amount of cultural modification. It indicates the visual quality of an area relative to other scenery in the region. BLM ratings are A = exceptional/extraordinary; B = moderate; and C = low/common.

**SCOPING PROCESS:** An early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action. Scoping may involve public meetings, field interviews with representatives of agencies and interest groups, discussions with resource specialists and managers, written comments in response to news releases, direct mailings and articles about the proposed action and scoping meetings.

**SEASON OF USE:** The time of livestock grazing on a range area.

**SEDIMENT:** Soil or mineral material transported by water and deposited in streams or other bodies of water.

**SEGREGATION:** Any action such as a withdrawal or allowed application (exchange) that suspends the operation of the general

- public land laws; to separate, set apart, or remove lands from the jurisdiction of part of all of the public land minerals laws.
- SENSITIVE SOILS:** Soils that are erodible, have a relatively high content of clay and silt, and are slightly to moderately saline.
- SENSITIVE SPECIES (PLANTS AND ANIMALS):** Species occurring on public lands and requiring special management attention to protect it and to prevent irreparable damage to the important resources or other natural systems or processes on which it depends. The sensitive list is made up of species listed in category 3C in the Federal Register, Vol. 50 No. 188, September 27, 1985, page 39526.
- SHRUB:** A plant that has a persistent woody stem, a relatively low growth habitat, and generally produces several basal shoots instead of a single trunk.
- SPECIAL RECREATION MANAGEMENT AREAS (SMRAs):** Areas requiring explicit recreation management to achieve BLM's recreation objectives and to provide specific recreation opportunities. SMRAs are listed in RMPs, which also define SMRA management objectives. BLM's recreation investments are concentrated in SMRAs.
- SPECIAL STATUS SPECIES:** Wildlife and plant species either federally listed or proposed for listing as endangered or threatened, state-listed or BLM-determined priority species.
- SPLIT ESTATE:** The surface estate and the mineral estate of a parcel of land belong to different owners.
- STABILIZATION (CULTURAL):** Protective techniques usually applied to structures and ruins to keep them in their existing condition, prevent further deterioration, and provide structural safety without significant rebuilding.
- STATE INDEMNITY SELECTION:** Land owed to the state to replace land that the state would have received as a term of statehood but did not because the land was already appropriated under the public land laws or was within adjacent states.
- STIPULATION:** A requirement, usually dealing with protection of the environment, that is made a part of a lease, grant, or other authorizing document.
- STRATEGIC MINERALS:** Minerals essential to the national defense, for the supply of which the United States is wholly or in part depends upon sources outside its continental limits and for which strict measures are needed to control conservation and distribution.
- SUBSURFACE MINERALS:** Minerals found below the earth's surface, including oil and gas.
- SUSTAINED YIELD** Achieving and maintaining a permanently high level of annual or regular-period production of renewable land resources without impairing the productivity of the land and its environmental values.
- THREATENED SPECIES:** Any plant or animal species that is likely to become an endangered species throughout all or a significant portion of its range, as defined by the U.S. Fish and Wildlife Service under the authority of the Endangered Species Act of 1973.
- TOPOGRAPHY:** The relief and contour of the land, especially when taken collectively, as over a region or large area.
- TREND:** The direction of change in range condition (ecological status or resource value ratings) observed over time.
- TRESPASS:** The use of public land without proper authority, resulting either from a willful or negligent act.
- UTILIZATION:** The proportion or degree of current year's forage production that is consumed or destroyed by animals (including insects). May refer to either a single plant species, a group of species, or the vegetation as a whole. Utilization is synonymous with use.
- VEGETATION COVER:** The proportion of ground surface under live aerial plants or the combined aerial parts of plants and mulch.
- VEGETATION TYPE:** A plant community with distinguishable characteristics.
- VISITOR DAY:** Twelve visitor hours which may be aggregated continuously, intermittently, or simultaneously by one or more persons.
- VISUAL ELEMENTS:** The elements that determine how the character of a landscape is perceived. Form: the shapes of objects such as landforms or patterns in the landscape. Line: perceivable linear changes in contrast resulting from abrupt differences in form, color, and texture. Color: the reflected light of different wave lengths that enables the eye to differentiate otherwise identical objects. Texture: the visual result of variation in the surface of an object.
- VISUAL RESOURCE MANAGEMENT (VRM) CLASSES:** Classification containing specific objectives for maintaining or enhancing visual resources, including the amount of acceptable change to the existing landscape to meet established visual goals.
- Class I - (Preservation)** Provides for natural, ecological changes only. This class includes wilderness areas, some natural areas, some wild and scenic rivers and other similar sites where landscape modification should be restricted.
- Class II - (Retention of the landscape character)** Includes areas where changes in any of the basic elements (form, line, color or texture), caused by management activities, should not be evident in the characteristic landscape.
- Class III - (Partial retention of the landscape character)** Includes areas where changes in the basic elements caused by management activities may be evident in the characteristic landscape. The changes, however, should remain subordinate to the existing landscape character.
- Class IV - (Modification of the landscape character)** Includes areas where changes may subordinate the original composition and character. They should, however, reflect what could be a natural occurrence in the characteristic landscape.
- WATERSHED:** All land and water within the confines of a drainage divide.

## GLOSSARY

**WETLANDS:** Lands including swamps, marshes, bogs, and similar areas such as wet meadows, river overflows, mud flats, and natural ponds.

**WILD AND SCENIC RIVERS ACT:** Federal law that instituted a National Wild and Scenic Rivers System to preserve in free-flowing condition selected rivers that have outstanding scenic, recreational, geologic, fish and wildlife, historic, and cultural values.

**WILDERNESS AREA:** An area officially designated as wilderness by Congress. Wilderness areas will be managed to preserve wilderness characteristics and shall be devoted to the public purposes of conservation and recreational, scenic, scientific, educational and historical uses.

**WILDERNESS MANAGEMENT POLICY:** The BLM policy that governs administration of public lands designated as wilderness areas by Congress. It is based on the Wilderness Act of 1964 and FLPMA of 1976. FLPMA requires a wilderness area to be a roadless area or island that has been inventoried and found to have wilderness characteristics as described in Section 603 of FLPMA and in Section 1(c) of the Wilderness Act.

**WILDLIFE:** All species of mammals, birds, fish, amphibians, and reptiles found in a wild state.

**WILDLIFE HABITAT:** All elements of a wild animal's environment necessary for completion of its life cycle, including food, cover, water, and living space.

**WITHDRAWAL:** An action that restricts the disposal of public land and holds it for specific public purposes; also, public land that has been dedicated to public purposes.

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# North Half Planning Area

# KINGMAN PLANNING AREA

(North Half)







UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

**KINGMAN PLANNING AREA  
LAND STATUS MAP**

April 1990  
STATUS CURRENT AS OF DECEMBER 1989

Planning area boundary

**LAND STATUS LEGEND**

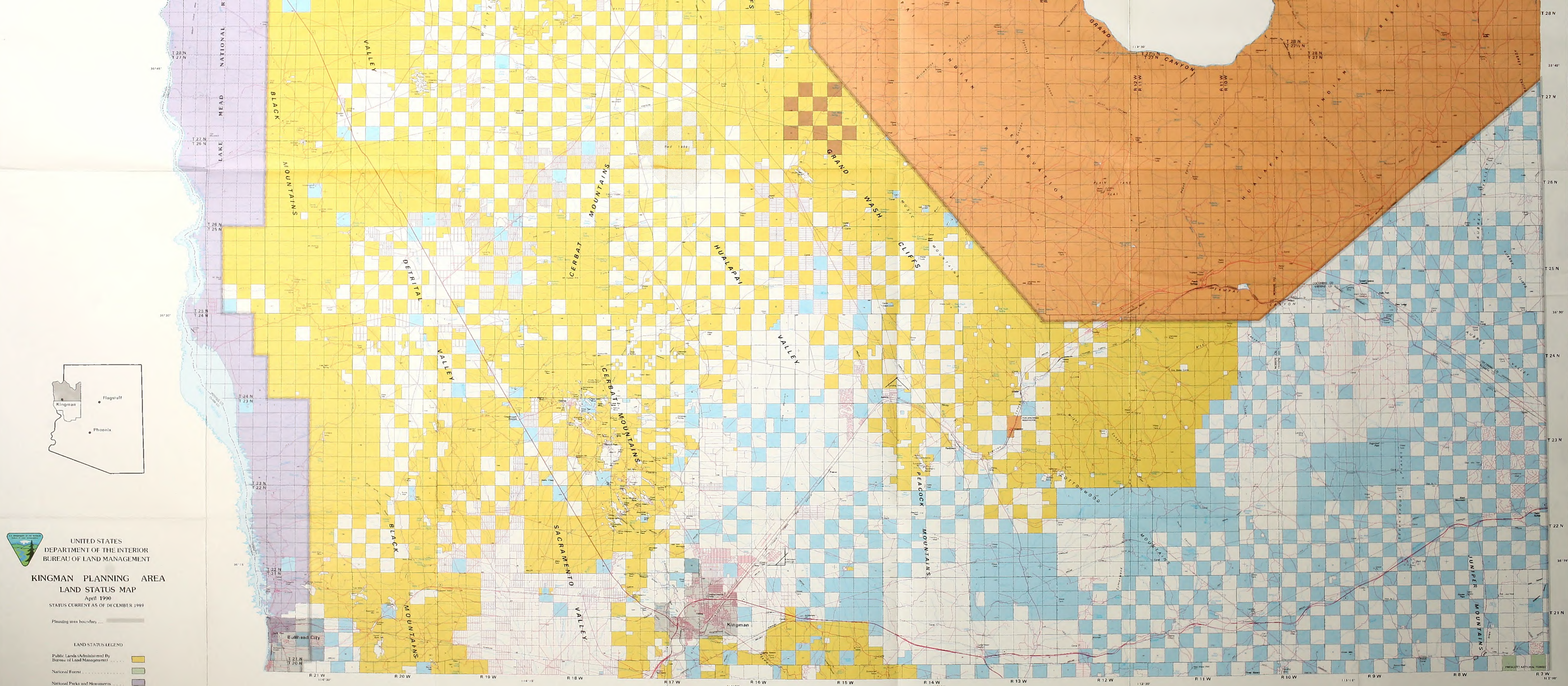
- Public Lands (Administered By Bureau of Land Management)
- National Forest
- National Parks and Monuments
- Indian Lands or Reservations
- Indian Trust Lands
- Patented Lands
- State Lands
- Wildlife Refuges  NONE
- State, County, City, Wildlife, Park & Forest, Outdoor Recreation Areas  NONE
- Buildings across shown for cities (over 10,000 population)

**ROAD CLASSIFICATION**

- Primary highway, hard surface
- Secondary highway, hard surface
- Light duty road, hard or improved surface
- Street or other road
- Trail
- Int. or State Route
- U.S. Route
- State Route

**NOTE TO MAP USERS**

The surface management exercise is established as a general planning tool. Some of the lands may have been shown as patented lands due to lack of information available to BLM with respect to the status of acquisition. The official land records in the respective offices of the Bureau of Land Management or other responsible Federal agencies should be checked for up-to-date status on any specific tract of land. Inquiries in this BLM area should be directed to the respective Bureau of Land Management offices from which the data were obtained.



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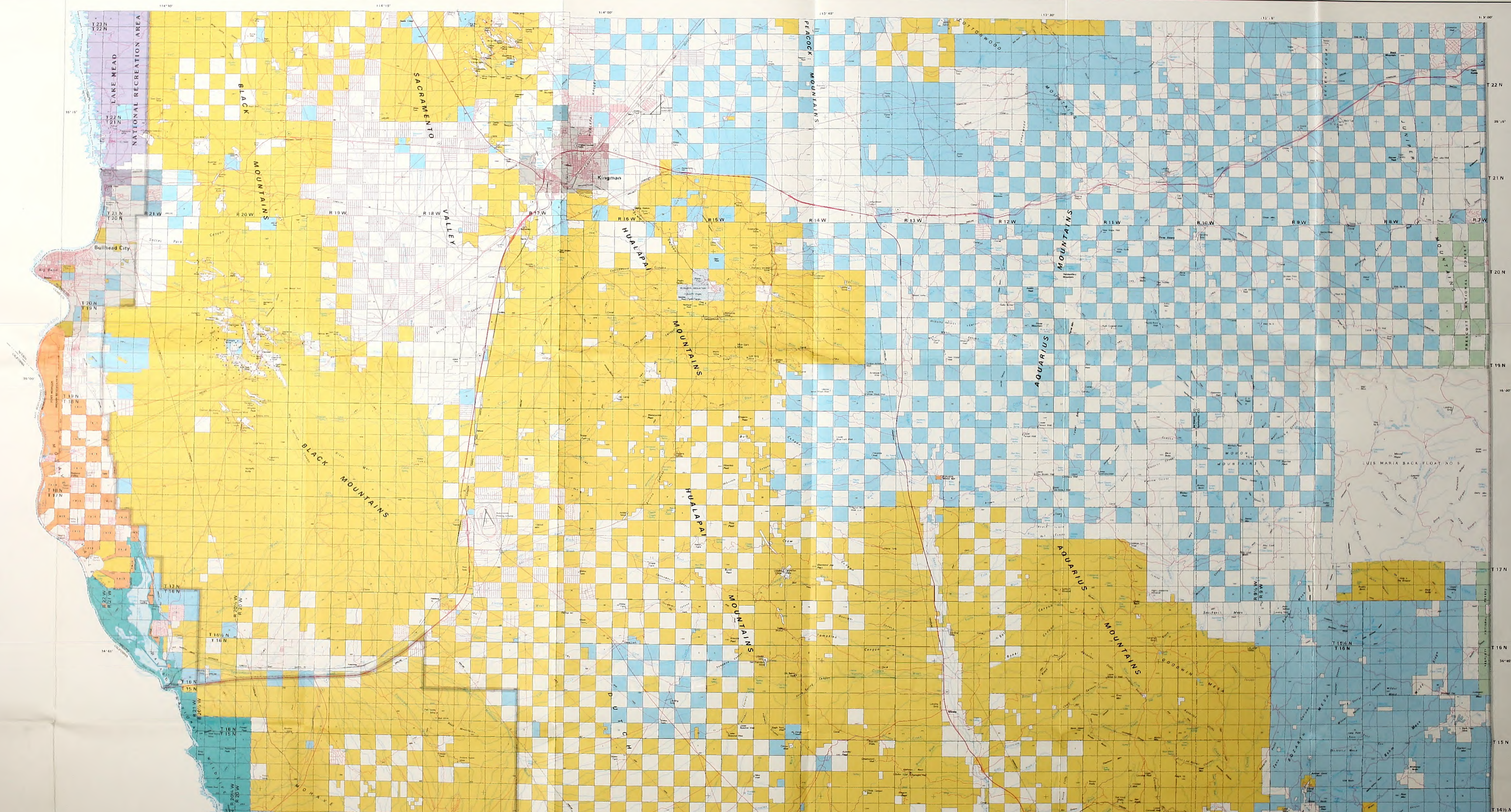
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| 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 |

Township Diagram

FOR SALE BY BLM PHOENIX DISTRICT OFFICE  
PHOENIX, AZ 85027  
BLM KINGMAN RESOURCE AREA OFFICE  
KINGMAN, AZ 86401



# South Half Planning Area





UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

**KINGMAN PLANNING AREA  
LAND STATUS MAP**

April 1990  
STATUS CURRENT AS OF DECEMBER 1989

Planning area boundary ———

LAND STATUS LEGEND

- Public Lands (Administered By Bureau of Land Management)
- National Forest
- National Parks and Monuments
- Indian Lands or Reservations
- Indian Trust Lands
- Patented Lands
- State Lands
- Wildlife Refuges
- State, County, City, Wildlife, Park and Outdoor Recreation Areas
- Built up areas shown for cities (over 10,000 population)

ROAD CLASSIFICATION

- Primary highway, hard surface
- Secondary highway, hard surface
- Light-duty road, hard or improved surface
- Street or other road
- Trail
- Interstate Route
- U.S. Route
- State Route

NOTE TO MAP USERS

The surface management category is published as a general planning and management tool. Some of the roads may have been shown as paved roads due to lack of information available to BLM with respect to the nature of the surface. Such has been shown as paved roads due to lack of information available to BLM with respect to the nature of the surface. The official land records in the respective offices of the Bureau of Land Management or other responsible Federal agencies should be checked for up-to-date status in any specific tract of land. Maps prepared in the BLM maps should be reported to the respective Bureau of Land Management offices from which the maps were obtained.

# KINGMAN PLANNING AREA

## (South Half)

SCALE 1:168 960



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| 31 | 32 | 33 | 34 | 35 | 36 |

Township Diagram

FOR SALE BY BLM PHOENIX DISTRICT OFFICE  
PHOENIX, AZ 85027  
BLM KINGMAN RESOURCE AREA OFFICE  
KINGMAN, AZ 86401

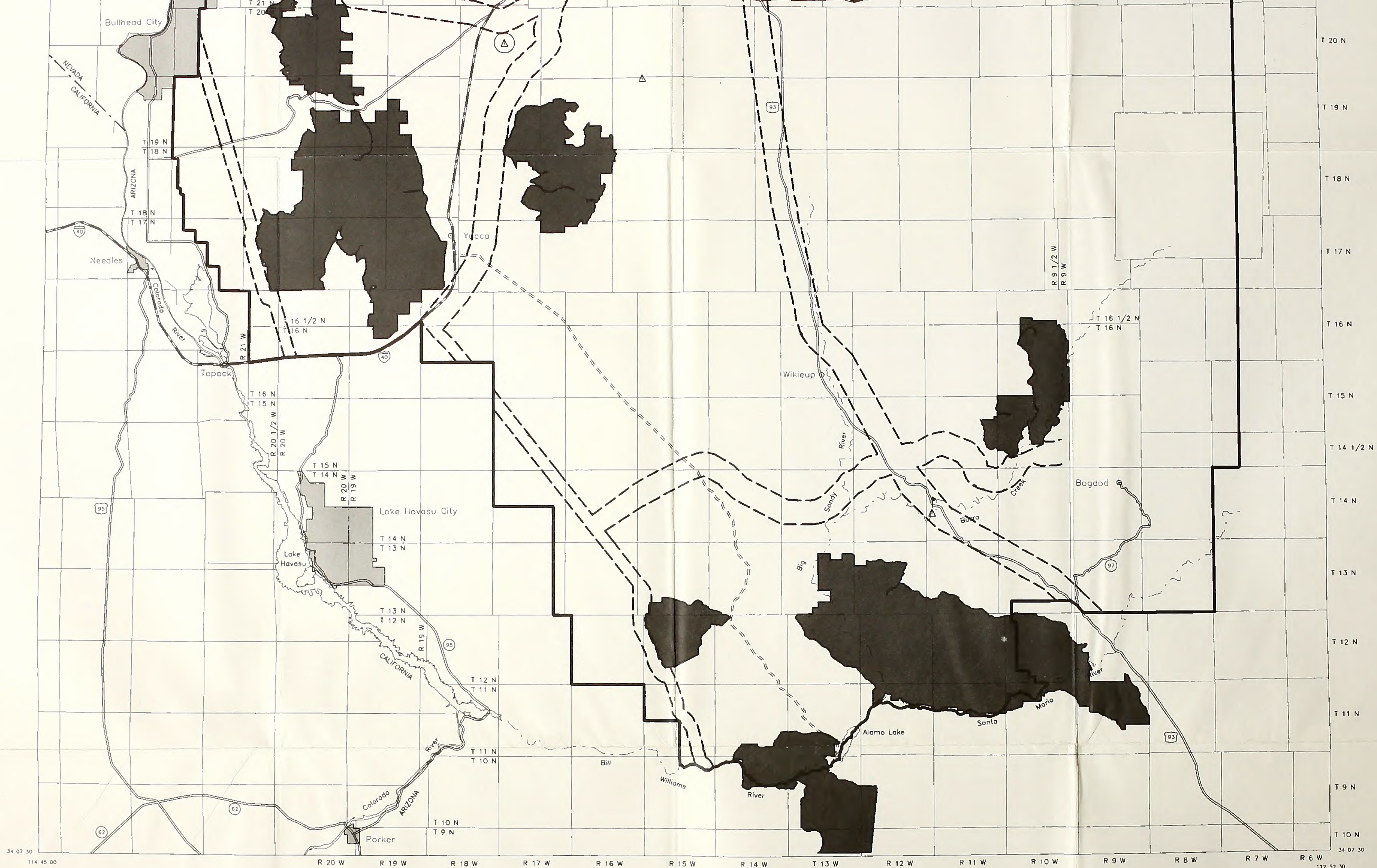


**Alternative 1, Special  
Management Areas and  
Alternative 1, Land Use  
Restrictions**

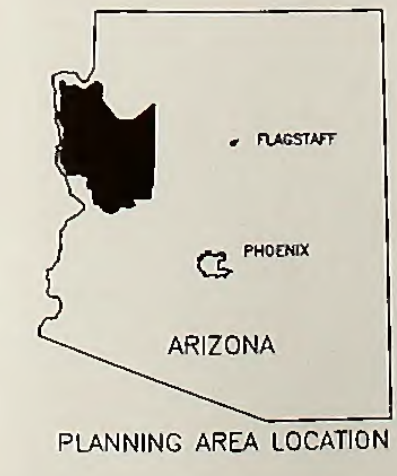
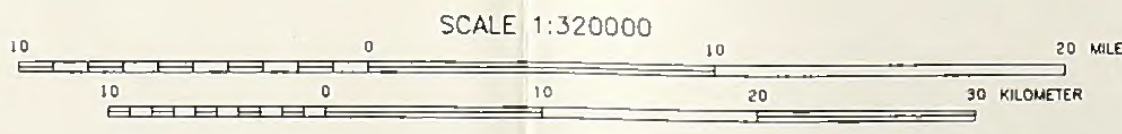
# KINGMAN PLANNING AREA SPECIAL MANAGEMENT AREAS – ALTERNATIVE 1







MAP PREPARED, EDITED, AND PUBLISHED BY THE BUREAU OF LAND MANAGEMENT  
 THIS MAP COMPUTER GENERATED USING THE BLM MOSS FAMILY OF SOFTWARE  
 BASE MAP DATA INPUT FROM USGS 1:24000 AND 1:100000 SCALE TOPOGRAPHIC MAPS  
 RESOURCE MAP DATA COMPILED BY THE BLM USING USGS TOPOGRAPHIC MAPS FOR CONTROL  
 PROJECTION: UNIVERSAL TRANSVERSE MERCATOR, ZONE 12



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SECTIONED TOWNSHIP

**RESOURCE LEGEND**

- Proposed Wilderness Area
- Utility Corridor Boundary
- Campground
- Proposed Overlook
- Proposed Campground

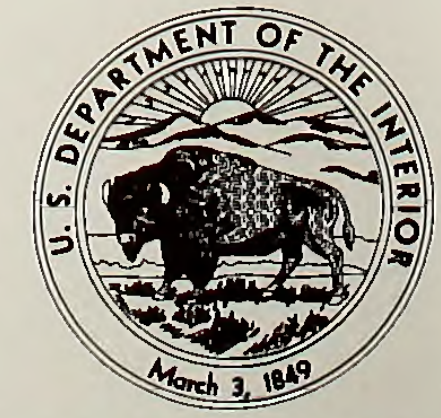
**BASE MAP LEGEND**

Planning Area Boundary

Road Classification:

- Interstate 40
- Paved Roads
- Unpaved Roads
- Interstate
- Federal
- State Route
- Streams
- Township Lines
- Towns
- Cities

**SPECIAL MANAGEMENT AREAS - ALT 1**



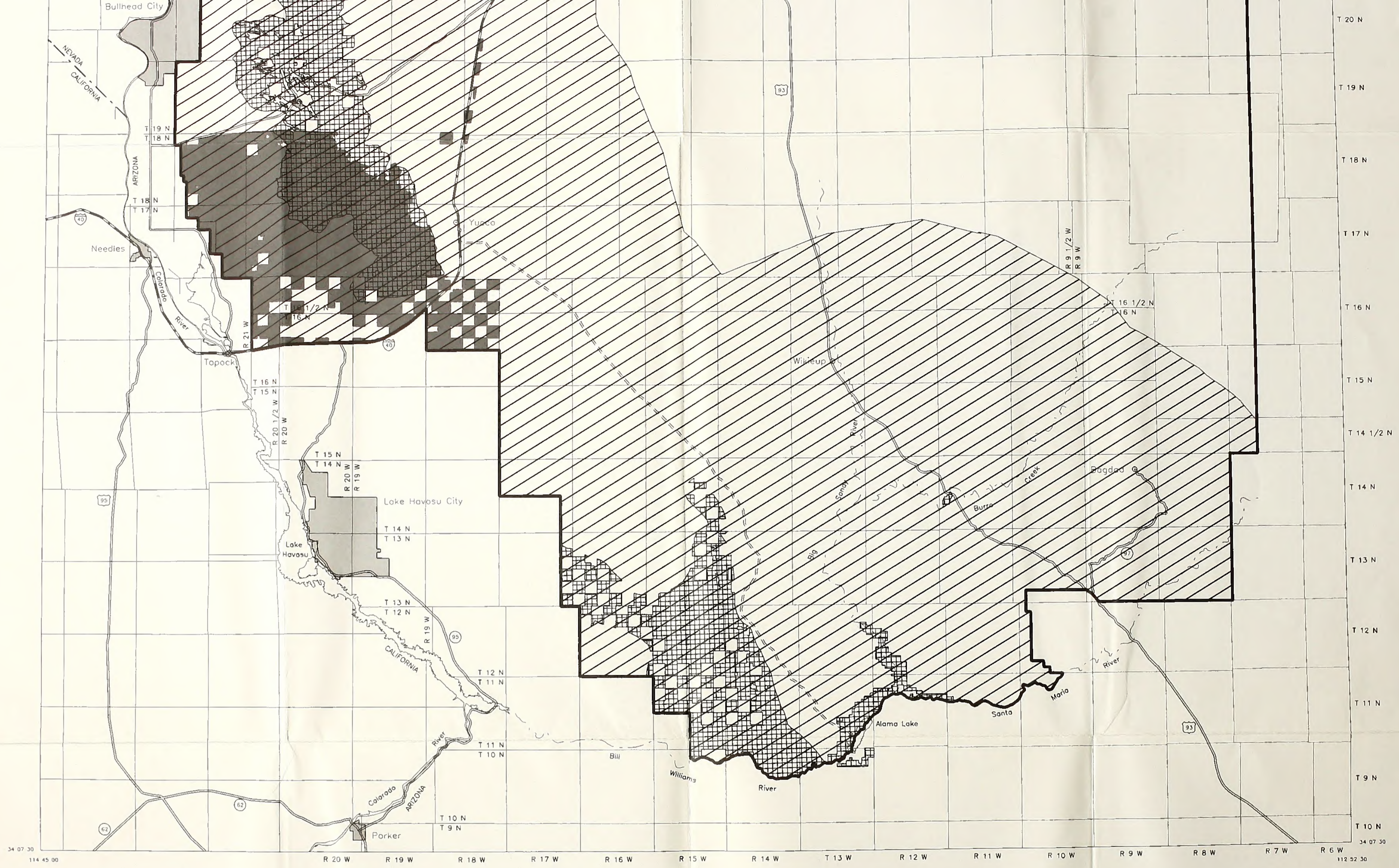
UNITED STATES  
 DEPARTMENT OF THE INTERIOR  
 BUREAU OF LAND MANAGEMENT  
 ARIZONA STATE OFFICE  
 PHOENIX DISTRICT  
 KINGMAN RESOURCE AREA



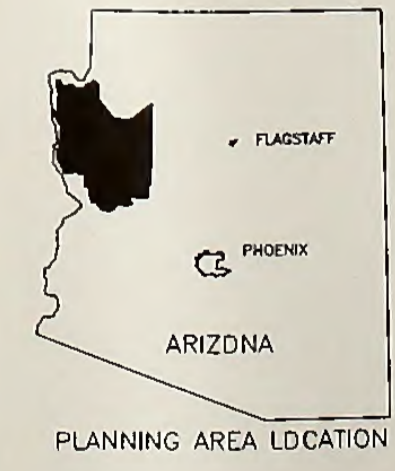
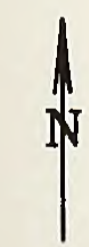
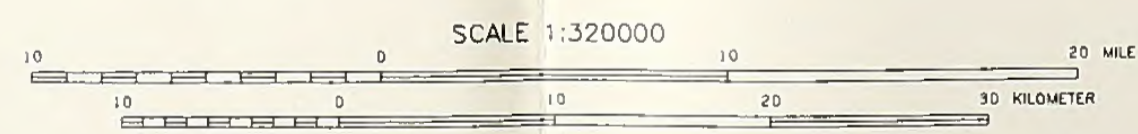
**KINGMAN PLANNING AREA**  
 OCTOBER 1990

# KINGMAN PLANNING AREA LAND USE RESTRICTIONS – ALTERNATIVE 1





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PROJECTION: UNIVERSAL TRANSVERSE MERCATOR,  
ZONE 12



|    |    |    |    |    |    |
|----|----|----|----|----|----|
| 6  | 5  | 4  | 3  | 2  | 1  |
| 7  | 8  | 9  | 10 | 11 | 12 |
| 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 |
| 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 |

SECTIONED TOWNSHIP

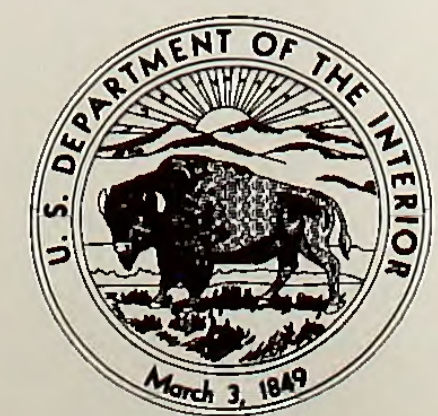
**RESOURCE LEGEND**

- Domestic Sheep & Goat Licenses Prohibited
- Restrictions to Mineral Development
- Closed to Grazing

**BASE MAP LEGEND**

- Planning Area Boundary
- Road Classification:**
  - Interstate 4D
  - Paved Roads
  - Unpaved Roads
- Interstate
- Federal
- State Route
- Streams
- Township Lines
- Towns
- Cities

**LAND USE RESTRICTIONS - ALT 1**



UNITED STATES  
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BUREAU OF LAND MANAGEMENT  
ARIZONA STATE OFFICE  
PHOENIX DISTRICT  
KINGMAN RESOURCE AREA

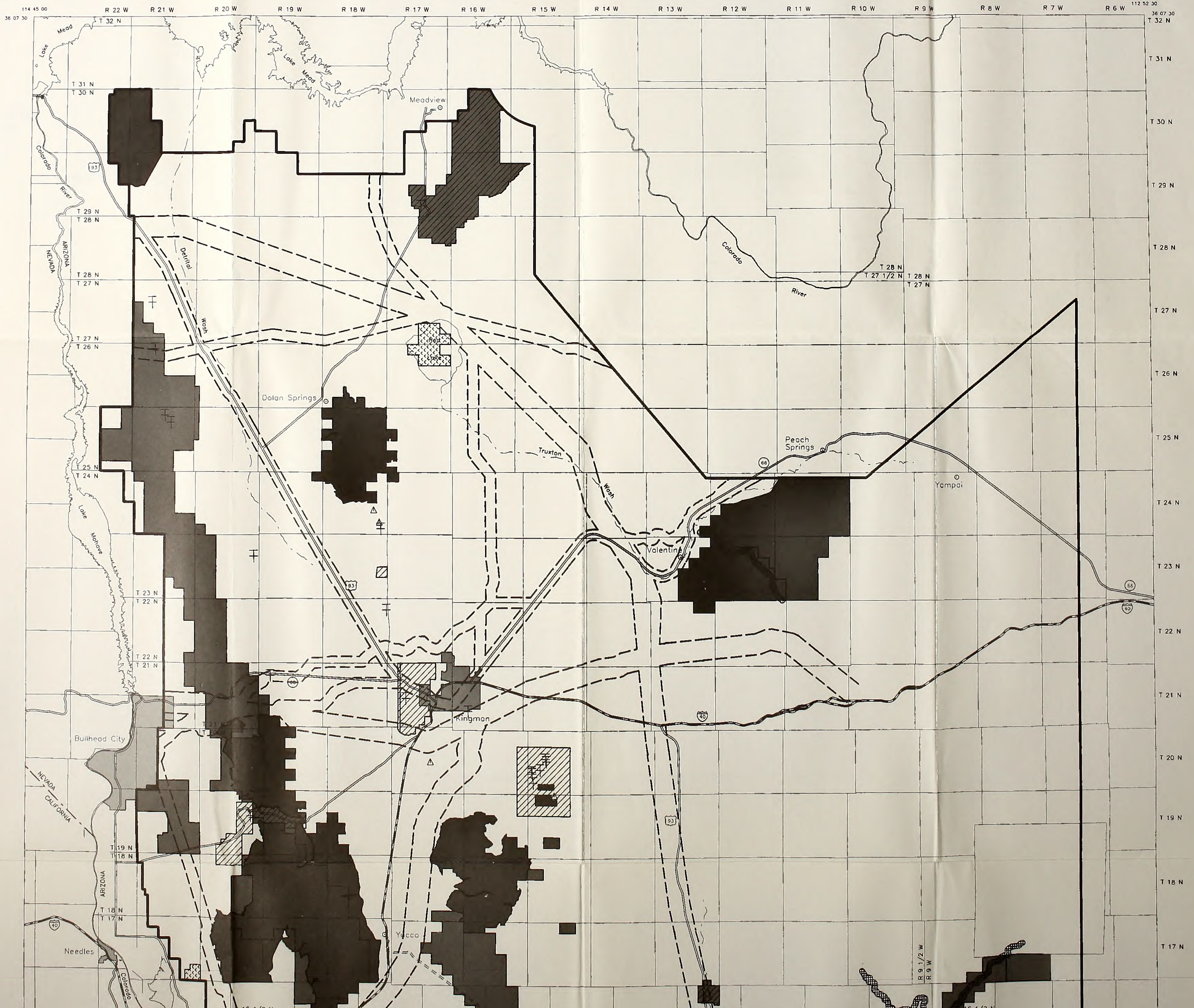


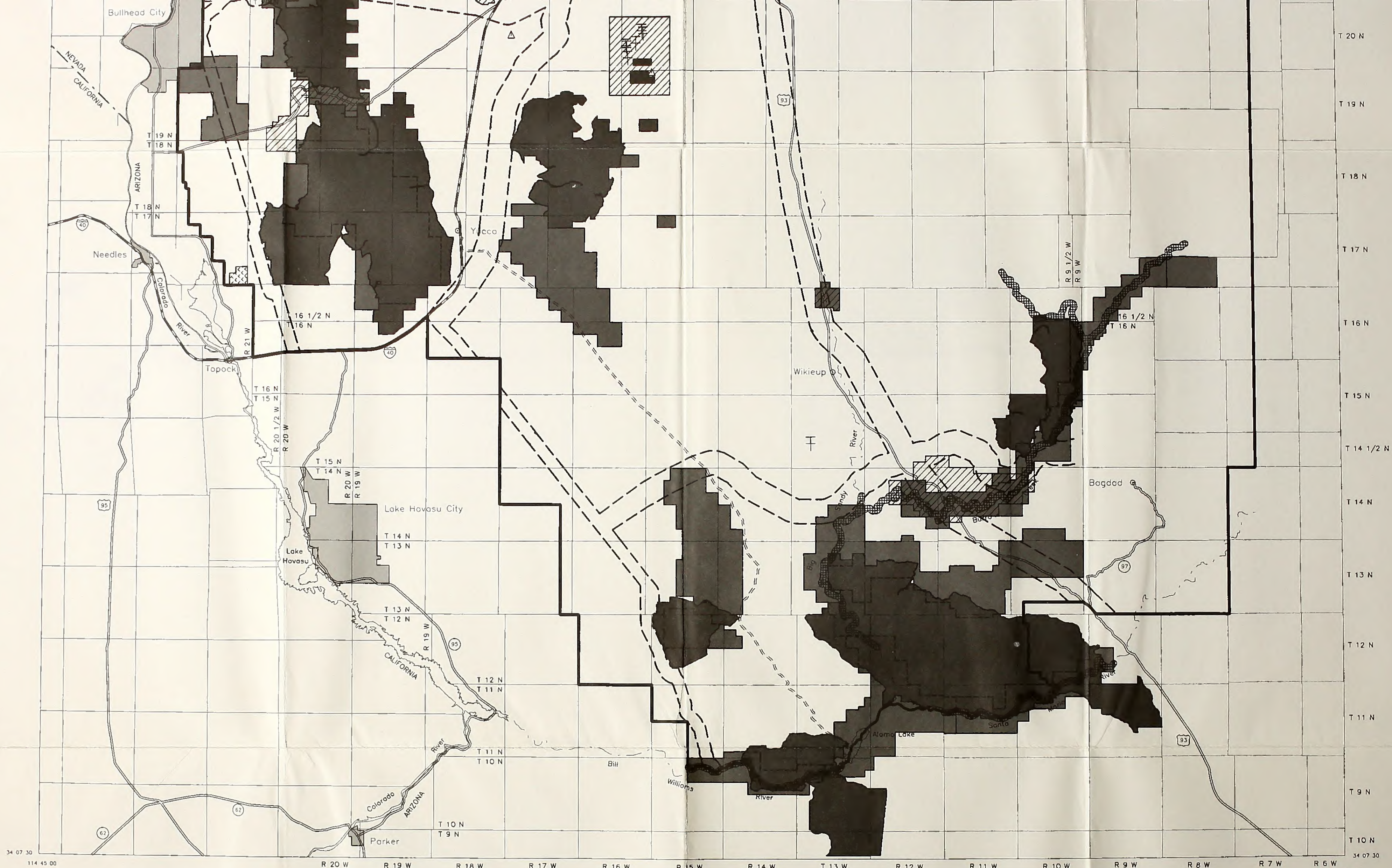
**KINGMAN PLANNING AREA**  
OCTOBER 1990



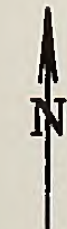
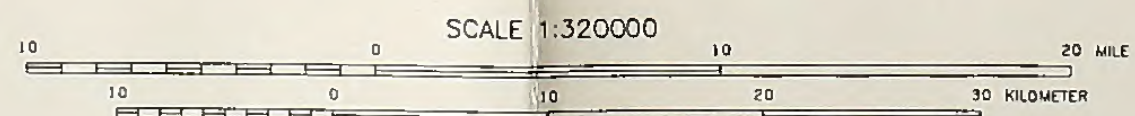
**Alternative 2, Special  
Management Areas and  
Alternative 2 Land Use  
Restrictions**

# KINGMAN PLANNING AREA SPECIAL MANAGEMENT AREAS – ALTERNATIVE 2





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PROJECTION: UNIVERSAL TRANSVERSE MERCATOR,  
ZONE 12



|    |    |    |    |    |    |
|----|----|----|----|----|----|
| 6  | 5  | 4  | 3  | 2  | 1  |
| 7  | 8  | 9  | 10 | 11 | 12 |
| 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 |
| 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 |

SECTIONED TOWNSHIP

| RESOURCE LEGEND                            | BASE MAP LEGEND        |
|--|------------------------|
| Proposed Wilderness Area                   | Planning Area Boundary |
| Special Recreation Management Area         | Road Classification    |
| Eligible Wild & Scenic River Area          | Interstate 40          |
| Open Off-Highway Vehicle Area              | Paved Roads            |
| Area of Critical Environmental Concern     | Unpaved Roads          |
| ACEC Boundary if Wilderness not Designated | Interstate             |
| Utility Corridor Boundary                  | Federal                |
| Campground                                 | State Route            |
| Overlook                                   | Streams                |
| Proposed Campground                        | Township Lines         |
| Communication Site                         | Towns                  |
|  | Cities                 |

### SPECIAL MANAGEMENT AREAS - ALT 2



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ARIZONA STATE OFFICE  
PHOENIX DISTRICT  
KINGMAN RESOURCE AREA

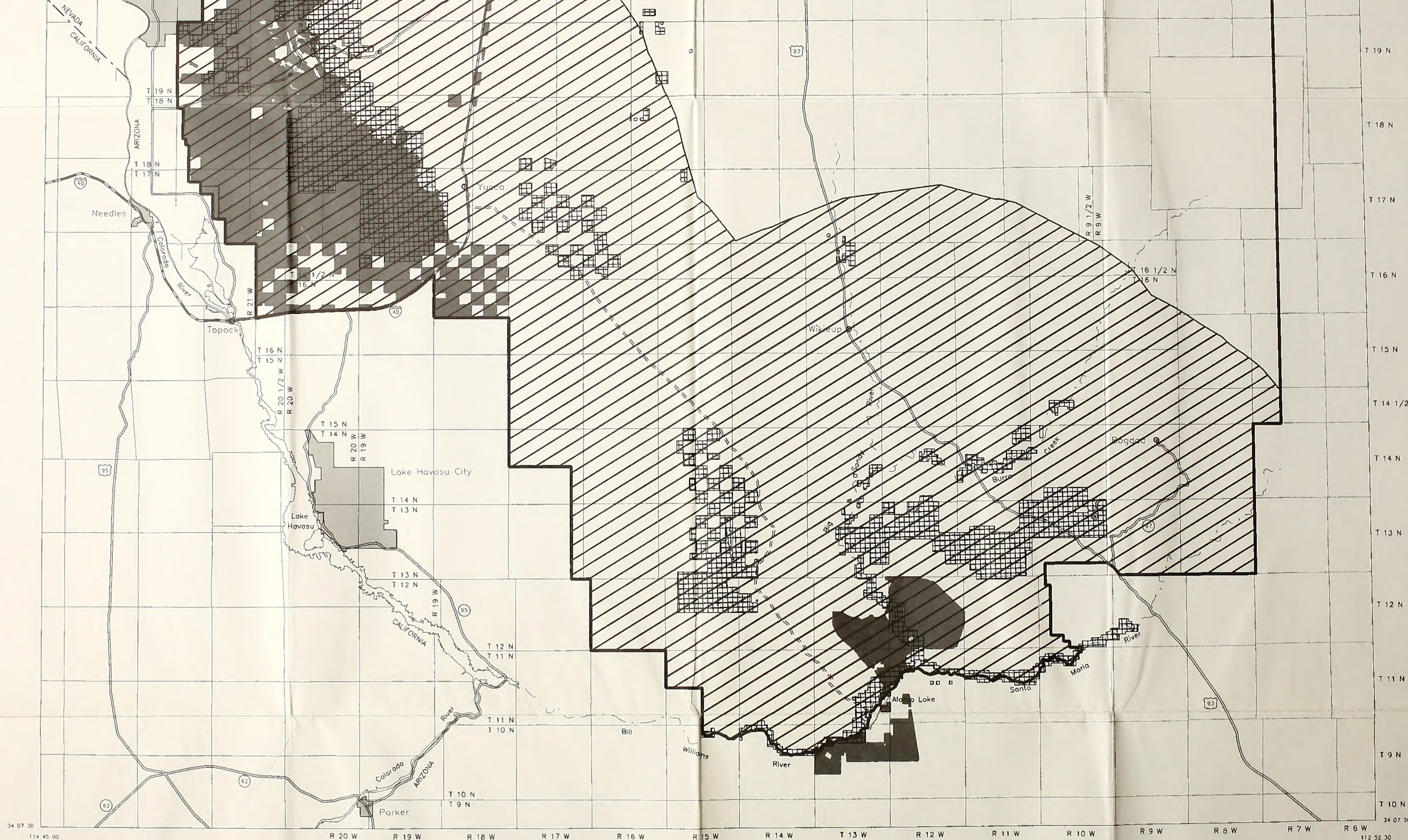


KINGMAN PLANNING AREA  
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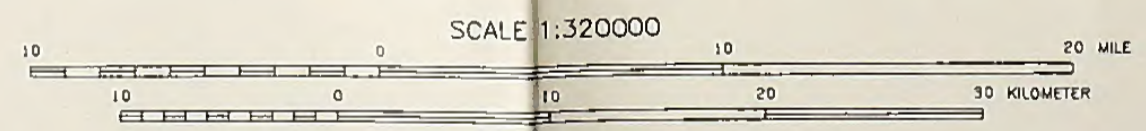
# KINGMAN PLANNING AREA LAND USE RESTRICTIONS – ALTERNATIVE 2







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PROJECTION: UNIVERSAL TRANSVERSE MERCATOR,  
ZONE 12



|    |    |    |    |    |    |
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SECTIONED TOWNSHIP

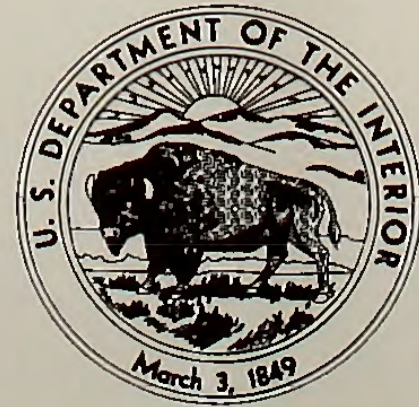
**RESOURCE LEGEND**

- Domestic Sheep & Goat Licenses Prohibited
- Restrictions to Mineral Development
- Closed to Grazing

**BASE MAP LEGEND**

- Planning Area Boundary
- Road Classification
- Interstate 40
- Paved Roads
- Unpaved Roads
- Interstate
- Federal
- State Route
- Streams
- Township Lines
- Towns
- Cities

## LAND USE RESTRICTIONS - ALT 2



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BUREAU OF LAND MANAGEMENT  
ARIZONA STATE OFFICE  
PHOENIX DISTRICT  
KINGMAN RESOURCE AREA



**KINGMAN PLANNING AREA**  
OCTOBER 1990



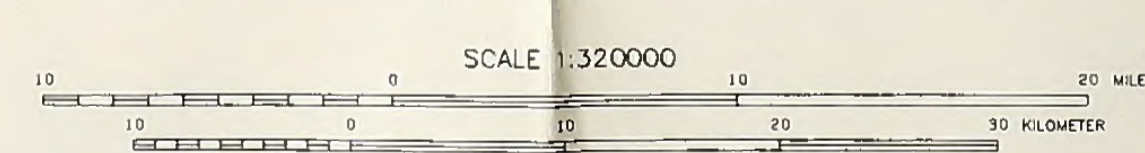
**Alternative 3, Special  
Management Areas and  
Alternative 3 Land Use  
Restrictions**

# KINGMAN PLANNING AREA SPECIAL MANAGEMENT AREAS – ALTERNATIVE 3





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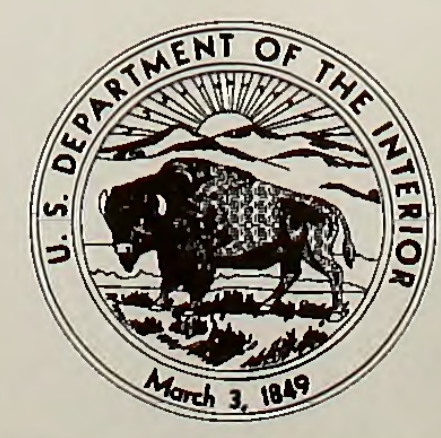


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| 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 |
| 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 |

SECTIONED TOWNSHIP

| RESOURCE LEGEND |  | BASE MAP LEGEND |                        |
|-----------------|--|-----------------|------------------------|
|                 | Proposed Wilderness Area                   |                 | Planning Area Boundary |
|                 | Special Recreation Management Area         |                 | Road Classification    |
|                 | Eligible Wild & Scenic River Area          |                 | Interstate 40          |
|                 | Open Off-Highway Vehicle Area              |                 | Paved Roads            |
|                 | Area of Critical Environmental Concern     |                 | Unpaved Roads          |
|                 | ACEC Boundary if Wilderness not Designated |                 | Interstate             |
|                 | Utility Corridor Boundary                  |                 | Federal                |
|                 | Campground                                 |                 | State Route            |
|                 | Overlook                                   |                 | Streams                |
|                 | Proposed Campground                        |                 | Township Lines         |
|                 | Communication Site                         |                 | Towns                  |
|                 |  |                 | Cities                 |

### SPECIAL MANAGEMENT AREAS - ALT 3

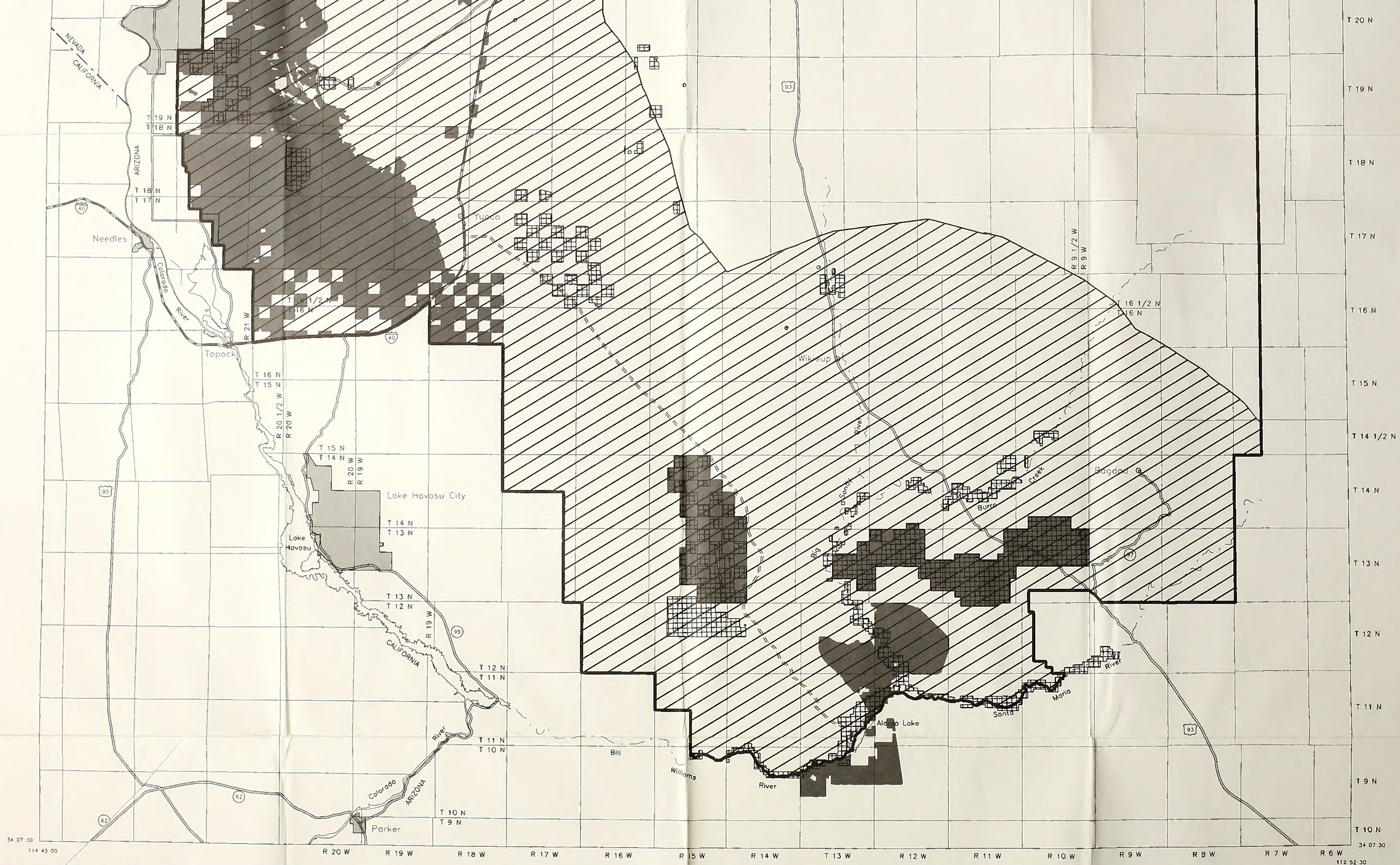


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ARIZONA STATE OFFICE  
PHOENIX DISTRICT  
KINGMAN RESOURCE AREA  
  
KINGMAN PLANNING AREA  
OCTOBER 1990

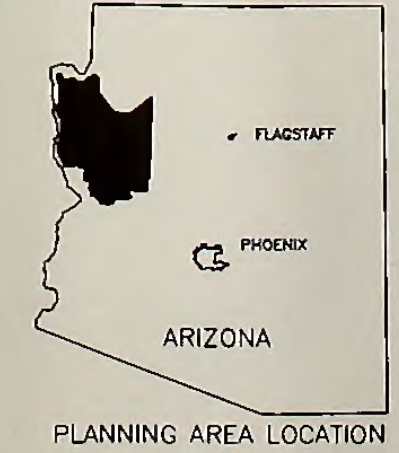
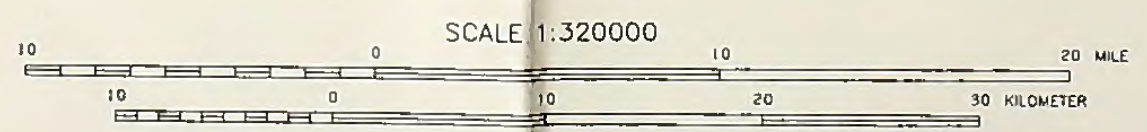


# KINGMAN PLANNING AREA LAND USE RESTRICTIONS – ALTERNATIVE 3





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 PROJECTION: UNIVERSAL TRANSVERSE MERCATOR, ZONE 12

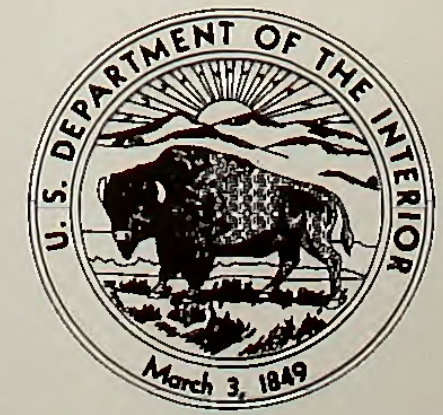


| RESOURCE LEGEND |   | BASE MAP LEGEND |                        |
|-----------------|---|-----------------|------------------------|
|                 | Domestic Sheep & Goat Licenses Prohibited |                 | Planning Area Boundary |
|                 | Restrictions to Mineral Development       |                 | Road Classification:   |
|                 | Closed to Grazing                         |                 | Interstate 40          |
|                 |   |                 | Paved Roads            |
|                 |   |                 | Unpaved Roads          |
|                 |   |                 | Interstate             |
|                 |   |                 | Federal                |
|                 |   |                 | State Route            |
|                 |   |                 | Streams                |
|                 |   |                 | Township Lines         |
|                 |   |                 | Towns                  |
|                 |   |                 | Cities                 |

|    |    |    |    |    |    |
|----|----|----|----|----|----|
| 6  | 3  | 4  | 3  | 2  | 1  |
| 7  | 8  | 9  | 10 | 11 | 12 |
| 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 |
| 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 |

SECTIONED TOWNSHIP

### LAND USE RESTRICTIONS - ALT 3



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 ARIZONA STATE OFFICE  
 PHOENIX DISTRICT  
 KINGMAN RESOURCE AREA

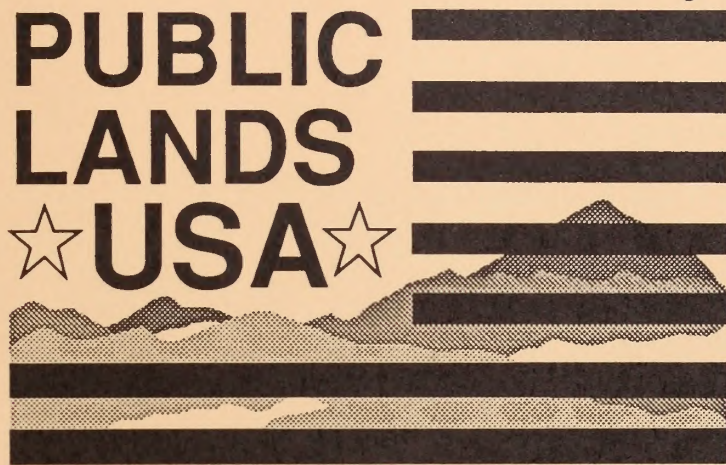


KINGMAN PLANNING AREA  
 OCTOBER 1990





Bureau of Land Management



USE ☆ SHARE ☆ APPRECIATE

Form 1542-2  
(January 1987)

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BUREAU OF LAND MANAGEMENT  
Kingman Resource Area  
2475 Beverly Ave.  
Kingman, Arizona 86401

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PENALTY FOR PRIVATE USE, \$300



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