



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. In these areas, management prescriptions would reduce impacts to an insignificant level. Impacts are summarized in Table 18.

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 Chapter IV. 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. The 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 five 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. The 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) environmental impact statements.

IMPACT ANALYSIS BY ALTERNATIVES

ALTERNATIVE 1 - CURRENT MANAGEMENT

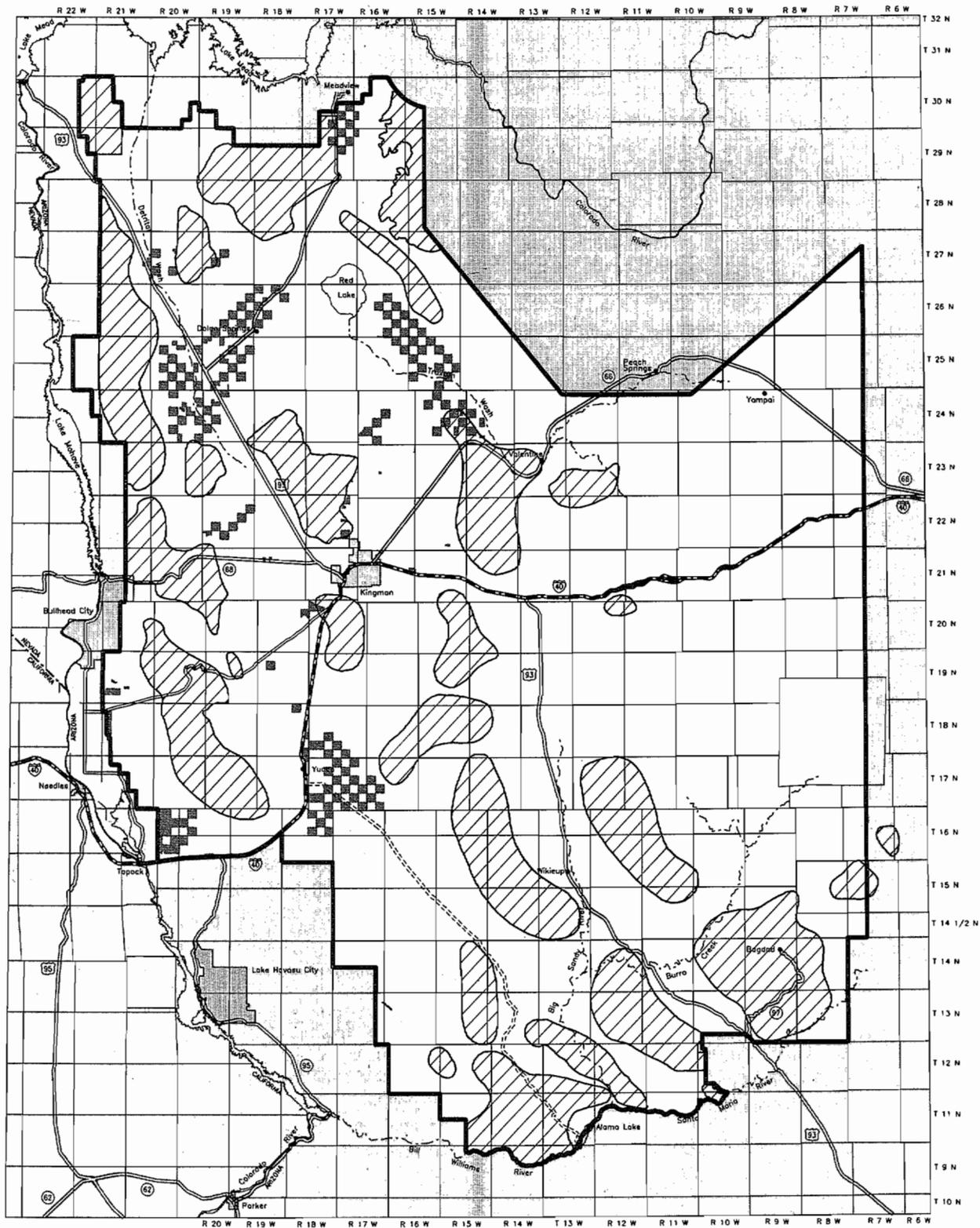
IMPACTS TO MINERAL DEVELOPMENT

From Lands Actions

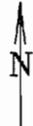
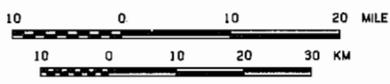
Ownership Adjustments

The transfer of roughly 102,547 acres of public land identified as disposal blocks (see Appendix 3) in the Black, Cerbat and Hualapai/Aquarius mountains management framework plans would negatively impact the exploration and development of minerals on these lands. Most of these lands have a low potential for occurrence of locatable minerals, and a low or unknown potential for oil and gas development. There is a high potential for the occurrence of leasable sodium and evaporite deposits in the northern portions of Hualapai and Detrital valleys. Some of the lands identified for disposal are on the fringes of known occurrences of these deposits, and their exchange would result in a loss of revenue to the government which would have to be considered in any valuation of the lands for exchange purposes (see Map 35).

HIGH POTENTIAL LOCATABLE MINERALS AND DISPOSALS - ALTERNATIVE 1



- LANDS PROPOSED FOR DISPOSAL - ALT 1
- AREA OF HIGH MINERAL POTENTIAL



Map 35

The acquisition of private and state lands would have a positive impact on the development of mineral resources beneath these lands, **except in wilderness areas.** Outside wilderness, significant portions of these lands are 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 Kingman Resource Area.

The blocking of landownership patterns has simplified the approval process for mineral exploration and development activities by reducing the number of parties with whom mining operators must work.

From Special Status Species and other Wildlife Resources

Based on the existing Oil and Gas Leasing in Bighorn Sheep Habitat Environmental Assessment, roughly 327,000 acres of public minerals are currently in the no surface occupancy leasing category. This was for protection of bighorn sheep habitat in the Black Mountains, Mount Wilson and Aubrey Peak areas. The no surface occupancy has an impact on the exploration and development of oil and gas resources. The size of the no surface occupancy area makes it prohibitive to directional drill from many areas of the outer boundaries. 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 no surface occupancy 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 within 15 days. The operator must be notified of the conflicts with threatened or endangered species within the 15 days and of the consequences of violating the provisions of the Endangered Species Act. The BLM should provide assistance in developing mitigation measures to avoid conflicts with threatened or endangered species. Development of the mitigation measures may cause the operator to delay the operations beyond the 15-day timeframe.

When proceeding under a plan of operations, if a potential conflict exists with a threatened and endangered species or its habitat, the plan cannot be approved until the BLM complies with Section 7 of the Endangered Species Act. An operator who wishes to develop mitigation measures to eliminate the conflict must do so in conjunction with the BLM and the U.S. Fish and Wildlife Service. If the conflict cannot be resolved, the plan must be rejected. The mitigation measures developed may be so restrictive as to be economically unfeasible for the operator to make a profit and rejection of the plan would totally preclude any development of the mining property.

From Wild and Scenic Rivers

Interim protective measures for eligible river segments would constrain surface-disturbing activities associated with mineral

development. Less than 18 percent of the eligible river segments intersect moderate to high potential locatable mineral deposits.

Conclusions

With the exception of land disposals planned in existing management framework plans, 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 no surface occupancy leasing status. Interim protective measures for eligible rivers would constrain mineral development along these river segments.

IMPACTS TO LANDS ACTIONS

From Mineral Development

Increased oil and gas development would increase the lands program's workload to authorize associated facilities such as roads, pipelines, etc., and could hinder accomplishment of the already heavy workload. Lands identified for disposal through exchange or recreation and public purposes generally have low locatable mineral and oil and gas potential. Disposal of public lands will not occur until mineral conflicts are resolved. Some lands actions may have to be reconsidered and rerouted due to mineral development. Hazardous materials present as a result of mineral development can severely impact disposal and acquisition actions.

From Lands Actions

Ownership Adjustments

The disposal areas identified are all checkerboard lands that are uneconomical to manage, have low resource values and are near communities and developing areas. These lands, more desirable for development, allow for acquisition of high resource value lands that are more inaccessible. Disposal would also eliminate some situations of inadvertent trespass occurring on these lands in association with development. Lands to be acquired will be managed for multiple use unless they are within special areas, i.e., wilderness. The additional private land would provide an increase to the county tax base, based not on acreage, but on improvements that may be made. A predicted two to four exchanges per year will be processed by the resource area.

From Lands Withdrawals and Classification

Review and termination of withdrawals and classifications no longer needed would open public land for multiple uses.

From Recreation and Public Purposes

The lands for recreation and public purpose uses have been identified for disposal. If these lands are disposed of through exchange, recreation and public purpose actions in remaining

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retention areas would result in impacts to high value resources and may scatter development in many different areas. An average of two recreation and public purpose leases and one patent are issued per year; however, there is increasing demand for these actions.

From Rights-of-Way, Leases and Permits

These actions are issued on a case-by-case basis in designated corridors, where practical, after National Environmental Policy Act compliance and subject to stipulations protecting resources.

From Communication Site Rights-of-Way

Only two sites were designated in the management framework plans, restricting communication development in the Black Mountains. The Cerbat Management Framework Plan allows no sites in retention areas without a site plan. The Hualapai/Aquarius Management Framework Plan allows sites wherever they are not restricted by wilderness. Mountaintop sites would be issued subject to stipulations to protect resources.

Nonmountaintop sites for single use would continue to be issued on a case-by-case basis after National Environmental Policy Act compliance with required stipulations. Mountaintops are of most concern visually and commonly have higher wildlife values. Not having restricted areas for development would allow use of more mountaintops. The Oatman site has considerable development space outside the existing developed area, but this site is visually sensitive and contains valuable bighorn sheep habitat. New rights-of-way may be considered on a case-by-case basis after a determination is made as to site boundaries, identifying the area of allowable development without a significant impact to resources.

From Watershed (Soils, Vegetation, Water, Air)

Surface disturbance from lands actions can impact soil erosion, vegetation destruction, air quality, floodplains and other water issues and require stipulations for mitigation. In order to protect the BLM's right to water, well sites on public lands will require a tap trough and perhaps storage to provide water for wildlife, livestock, etc. This will increase costs to the proponent.

From Vegetative Products Management

Salvage is preferred to destruction from lands actions.

From Rangeland Management

Most lands actions, i.e., rights-of-way, permits, etc., are compatible with grazing. Actions involving water commonly allow for occasional use to aid rangeland management. Disposal actions can cause reduction in animal unit months and require lease adjustment. Grazing can continue for two years after disposal unless a waiver is obtained.

From Cultural Resources

Impacts on lands actions involving known cultural properties

can be mitigated through avoidance or data recovery. Impact on cultural properties discovered during construction will be mitigated when found. Mitigation can increase project costs. Disposal of cultural resources is not done unless they can be afforded the same or better protection. Important cultural areas have been identified for acquisition.

From Recreation Management

Lands actions occasionally impact visual resources and may require painting or other measures as mitigation. This can slightly increase project costs. Important recreation areas have been identified for acquisition.

From Wild and Scenic Rivers

Lands actions would be discouraged within the 1/4-mile corridors identified. Actions necessary would be required to comply with stipulations necessary to protect eligibility, and potential classification. Important areas have been identified for acquisition.

From Wildlife Habitat Management

Lands actions in important wildlife habitats may be restricted during certain times of the year. Actions involving water commonly allow for occasional use to aid in wildlife management. In categories I and II desert tortoise habitat, actions would be discouraged. Actions necessary would require compensation of lost habitat.

Other stipulations may be imposed such as preconstruction surveys, monitoring, fencing, etc. These requirements would substantially increase the cost of proposed projects. Important habitat has been identified for acquisition.

From Special Status Species

Lands actions in areas where special status, i.e., endangered, candidate, etc., species require mandatory field trips by wildlife specialists. Applications may be rejected or modified to avoid or stipulations may be employed to protect special status species. This can increase project costs. Important habitat has been identified for acquisition.

From Riparian Area Management

Lands actions in riparian areas would be discouraged. Actions necessary would require stipulations to reduce impacts. This can increase costs of a project. Important areas have been identified for acquisition.

From Wild and Free-Roaming Horse and Burro Management

Lands actions are generally compatible with horses and burros except where surface disturbance would eliminate substantial amounts of feed which may require revegetation. Actions involving water commonly allow for occasional use to aid in herd management. Required stipulations may increase project costs. Important areas have been identified for acquisition.

From Support Services

Access identified for acquisition may eliminate the need for some right-of-way actions and would be of service to the public. Lands identified for acquisition may be exchanged for lands identified for disposal, thereby eliminating some checkerboard land and blocking up public land high in resource values.

Conclusions

Many lands actions involve surface-disturbing activities, the impacts of which may be reduced if actions are authorized in previously disturbed areas or mitigated through stipulations that protect resources. Disposal actions are beneficial to reduce the amount of lands that are uneconomical to manage; acquisitions increase the amount of lands high in resource values and promote multiple use.

IMPACTS TO SOCIOECONOMIC FACTORS

Implementation of the Current Management Alternative would not cause significant impacts to any of the Kingman Resource Area socioeconomic data reviewed in this document. Population trends would not be affected. The direct economic benefits Mohave and Yavapai counties currently receive from BLM employment and operations would remain constant.

From Lands

Ownership Adjustments

A decision to dispose of 102,547 acres of public land through exchange could increase the amount of private lands in the resource area. The exchange of more developable public lands to state or private could increase the county tax base and provide jobs.

From Resource Actions

There would be no significant impacts to socioeconomic factors in the resource area from minerals, special status species, wildlife habitat, recreation or rangeland management.

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 decrease 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, Recreation and Public Purposes, Rights-of-Way, Leases and Permits

Surface-disturbing activities associated with land use authorizations would adversely affect soil, water and air resources through increased erosion and by restricting watershed improvement or treatment options. These activities generally do not occur on withdrawn lands.

From Vegetative Products Management

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 when travel occurs on fragile soils during wet periods. Seeding of clear-cut areas in the commercial firewood-cutting areas would result in increased vegetative cover.

From Rangeland Management

Twenty-three allotments are in satisfactory condition, but are 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. Allotment management plan development and implementation on these allotments would assure maintenance of existing satisfactory watershed conditions. The Gray Wash allotment is in unsatisfactory condition, but has a low responsiveness to treatment.

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. Allotment management plan development and implementation on these allotments would ensure maintenance of existing satisfactory conditions and would improve the identified local watershed problems through improvement of vegetative cover. The Crozier Canyon and Fort Mac Ewen allotments are in unsatisfactory condition but would improve under a new allotment management plan, thus reducing runoff and soil loss.



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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 and IV (see Chapter II and Appendix 19).

Construction of watershed improvement projects would continue to be constrained by the guidelines of the Visual Resource Management system.

From Wild and Scenic Rivers

Interim protective measures for eligible river segments would improve soil stability and water quality.

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 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 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

If ungulate populations, including wild equides, are unchecked, the vegetative cover will decrease with overuse and watershed conditions will be locked into a downward trend. When



the wild horse population is brought into ecological balance within their habitat, trend will stabilize and then begin to improve. Wild horses in ecological balance will allow watershed conditions to improve. At a low stocking rate and dispersed use, wild burro grazing would result in improved or maintained watershed condition.

Conclusions

Surface-disturbing activities such as mineral exploration and development, vegetative harvest, recreational use, realty actions and cattle and wild horse grazing would all cause increased runoff and erosion problems, reduced vegetative cover, reduced soil productivity and dust production affecting air quality. Development of allotment management plans, habitat improvement projects such as exclosures and spring developments, seeding of firewood clearcuts, burro grazing at current management levels and interim protective measures on eligible rivers 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 MANAGEMENT

From Mineral Development

Surface disturbance of mineral exploration and development would continue to provide for the salvage of desert plants for landscaping.

From Lands Actions

Ownership Adjustments

The BLM generally acquires land with higher resource values than those exchanged, so the public would gain from an increase in vegetative resources.

Withdrawals, Recreation and Public Purposes, Rights-of-Way, Leases and Permits

The permitting of rights-of-way and leases would increase the number 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

The 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

Harvesting 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 harvesting 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, an insignificant number of 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.

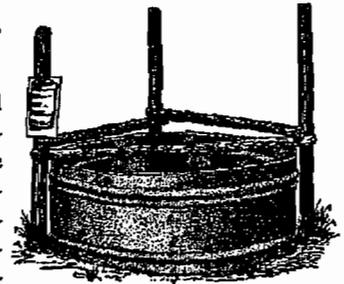
From Land Actions

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 conflicts 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 Rangeland Management

Implementation of scientific principles of livestock grazing and associated rangeland improvement projects would result in improved forage conditions, which could be reflected in higher calf crops, higher calf weight gains and reduced death loss. These benefits would be offset to a certain degree by increased costs of operation to permittees.

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 Management

Off-highway travel would increase soil compaction and erosion, reducing forage productivity. This impact would intensify when off-highway vehicles 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.

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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 Visual Resource Management guidelines.

From Wild and Scenic Rivers

Livestock grazing would occur under objectives compatible with interim protection of eligible river segments. Rangeland conditions would improve.

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
Big Ranch A and B
Dolan Springs
Mt. Tipton
Cane Springs
Cedar Canyon
Canyon Ranch
Stockton Hill
Mineral Park
Cerbat
Quail Springs
Turkey Track
Fort Mac Ewen A and B
Portland Springs
Thumb Butte
Gediandia
Mud Springs
Curtain
Cook Canyon
Pine Springs
Castle Rock
Feldspar
Hualapai Peak
Lazy YU A
Black Mountain
Boriana B
Walnut Creek
Arrastra Mountain
West Peacock
Chino Springs
Crozler Canyon
Sandy
Diamond Bar Unit B

Yellow Pine
Hibernia Peak
Boriana A
Happy Jack Wash
Diamond Joe
Big Sandy
La Cienega
Chicken Springs
Bateman Springs
Los Molinos
Wikieup
Hot Springs
Francis Creek
Burro Creek
Bagdad
Yolo Ranch
Byner Cattle
Kellis Lease
Gibson
Black Mesa A and B
Gray Wash
Groom Peak
Greenwood Peak Community
Greenwood Community
Artillery Range
D.O.R.
Burro Creek Ranch
Alamo Crossing
Alamo
Little Cane
Palmerita
Primrose
Santa Marla Community

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.

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 dramatic improvement of riparian vegetation, which consequently would cause increased forage and water and improved water quality.

From Wild and Free-Roaming Horse and Burro Management

Where demand for forage by livestock and wild equids exceeds supply, livestock would take a proportionate reduction with other ungulates, resulting in some economic loss for affected permittees. As forage conditions improve, livestock performance would also improve, off-setting initial losses.

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 short-term loss of forage but long-term benefits would be greater. These uses would also cause disruption to grazing livestock and cause management problems. Land exchanges would cause changes in grazing preference and ownership of range improvements, and would increase management efficiency where public lands are consolidated.

Implementation of grazing management principles would improve forage and livestock gains and increase costs of operation for permittees. Grazing management and construction of range improvements would be constrained by the presence of sensitive resources. Allotment management plans and interim protective measures on eligible rivers would result in improved rangeland resources.

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 mitigation 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.

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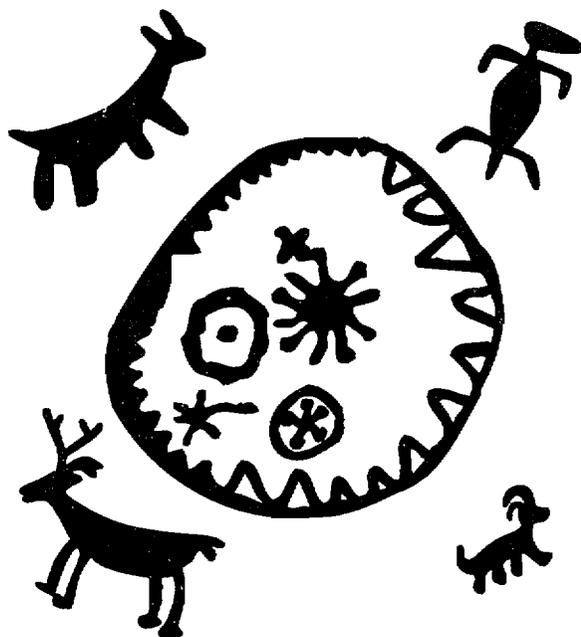
From Recreation Management

Cross-country vehicle use would harm cultural resources. Vehicles would directly damage artifacts, historic trails and most site types. Increased erosion from off-highway vehicle 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 Management

Although the 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, off-highway driving 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 Resource Management Plan (see Table 41).

**Table 41
IMPACTS TO PRIORITY CULTURAL RESOURCE AREAS BY ALTERNATIVE**

Cultural Area	Deterioration Type	Alternative		
		1	1	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	High	Mod
	II	High	High	Mod
	III	Mod	Mod	Low
	IV	Mod	Mod	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

Impacts represented are estimates and do not reflect a higher negative impact that may affect cultural resources in certain areas, categories or in areas outside the areas of critical environmental concern.

Deterioration Type I = Vandalism, II = Off-highway vehicles, III = BLM (permits and projects), IV = Natural Processes.

IMPACTS TO RECREATION MANAGEMENT

From Mineral Development

No significant loss of recreation opportunities or reduction of visitor days would occur as a result of mineral development under *Alternative 1*. Some small-scale and localized disruption of traditional recreation use may occur as a result of development activities, but the recreation use can be easily accommodated in undeveloped public land throughout the planning area.

Mineral development would affect visual quality through the disturbance of the landscape's natural character. However, only a minor portion of the area identified as having high mineral potential is located in sensitive visual resource management classes outside of designated wilderness. Therefore, the potential

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for impacts to visual resources from mineral development activities is slight.

From Lands Actions

Recreation resources would not be significantly affected by lands actions. Disposal areas identified in *Alternative 1* generally do not contain significant recreation resources, and those few activities that occur there would be absorbed with no consequence on surrounding public land.

Right-of-way corridors and expansion of communication facilities at existing sites would have only a slight impact on visual resources. Right-of-way corridors do not cross areas of high visual sensitivity and communication sites already have towers and buildings to the extent that additional facilities would not increase the impacts to visual resources.

From Watershed Management

Watershed management activities would have no effect on recreation resources.

From Vegetative Products Management

A minor amount of recreational visitor days can be attributed to the personal use firewood-cutting areas. By maintaining these areas as open for personal use firewood cutting, this recreational activity would be maintained. No significant change is anticipated.

From Rangeland Management

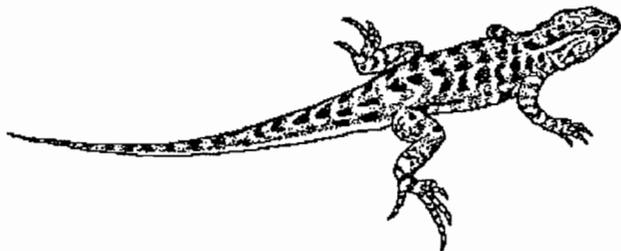
Livestock grazing management actions under *Alternative 1* would not significantly affect recreation resources. Some degradation of visual resources could occur in localized areas of concentrated or prolonged grazing, especially in riparian areas important for their recreation values.

From Cultural Resource Management

Development of the Carrow-Stephens historic ranches as an interpretive and recreation site would significantly enhance opportunities for the public to enjoy important historic resources. Identifying cultural properties for public use would also enhance the opportunities for the public.

From Recreation Management

Maintaining the resource area's four existing developed recreation sites and implementing the Burro Creek Overlook Interpretive Site Project Plan would provide the public with basic



facilities, but would fall far short of satisfying the increasing demand for outdoor recreation opportunities. Implementing two back country byways would help satisfy this demand, but again does not totally satisfy projected demand.

The lack of off-highway vehicle designations would maximize recreational off-highway vehicle opportunities, but would adversely impact opportunities for nonmotorized recreation activities.

From Wild and Scenic Rivers

Protective management prescriptions for eligible river segments would enhance opportunities for primitive recreation and would maintain existing scenic values by constraining mineral development and location and construction of right-of-way facilities, improving watershed and riparian values, rangeland and wildlife habitat.

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.

From Wild and Free-Roaming Horse and Burro Management

Improved condition of wild equine habitat would improve the health and vigor of the wild equine populations. The demand for viewing wild equines would increase as the healthy populations become more well known. Oatman's wild burro population would continue to draw visitors into the area for viewing opportunities of burros in the wild. As knowledge of wild equines increases through public relations, public education and word of mouth about personal experiences, the demand for viewing opportunities will increase.

Conclusions

Under *Alternative 1*, recreation opportunities would be maintained at existing levels. No significant impacts would occur, but increased demand for outdoor recreation opportunities would not be satisfied.

IMPACTS TO WILD AND SCENIC RIVERS

From Minerals Development

Impacts from large mining operations would be mitigated through cooperation between the BLM and the operators during the processing of mining plans required on disturbance exceeding five acres. Small operations of less than five acres do not require mining plans of operation. These operations may result in minor impacts to the stream corridor in terms of introducing man-made intrusions into an otherwise natural landscape. However, it is unlikely that a stream's free-flowing nature or outstandingly remarkable values would be significantly affected by these small operations.

From Lands Actions

Planning location of rights-of-way along the least environmentally sensitive or scenic routes would reduce impacts to outstandingly remarkable values.

From Watershed Management

Watershed management actions within a half-mile corridor along potential wild and scenic rivers would have to comply with the Protective Management Prescriptions outlined in Chapter II. These prescriptions preserve streams' free-flowing nature and outstandingly remarkable values. As a result, no significant impact is anticipated from watershed management activities.

From Vegetative Products Management

Impacts from firewood cutting would not affect potential wild and scenic rivers since the BLM would not designate cutting areas within river segments found to be eligible for inclusion into the National Wild and Scenic Rivers System.

From Rangeland Management

The range management provisions of the current management alternative would improve soil stability, watershed conditions and riparian vegetation along eligible streams and thus benefit scenic values. Protective Management Prescriptions outlined in Chapter II detail how an eligible stream's free-flowing nature and outstandingly remarkable values would be protected. Live-stock management practices would have to comply with these prescriptions. No range improvement projects would be allowed that would affect a stream's free-flowing nature or outstandingly remarkable values. No significant impacts are anticipated.

From Recreation Management

Scenic values on eligible stream segments would be protected by requiring new recreation facilities in the river corridor to be compatible with outstandingly remarkable values.

From Wildlife Habitat Management

Scenic values on eligible stream segments would benefit from current management practices on wildlife habitat.

From Riparian Area Management

The current priority for implementation of management practices on riparian areas (see Table 4) places the six eligible streams in the top seven priorities. Improvement in riparian soils and vegetation would enhance the protection of the outstandingly remarkable values on the eligible streams.

From Wild and Free-Roaming Horse and Burro Management

Management of burros on the Big Sandy Herd Management Area at levels described in the herd management area plan

would have no noticeable impact on riparian vegetation and soils and, subsequently, no impact on eligible streams' outstandingly remarkable values. The free-flowing nature and outstandingly remarkable values of six streams found to be eligible for inclusion into the National Wild and Scenic Rivers System will be adequately protected under *Alternative 1*. No significant impacts are expected.

IMPACTS TO WILDLIFE HABITAT

From Minerals Development

During the past 10 years, 864 acres of public land have been disturbed by mining activities. Approximately half of these 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 (or less than 0.1 percent of the resource area) would be disturbed by mining activities.

Long-term disturbance from mining activities under 43 CFR 3809.1-A (b)(3) would occur to wildlife, especially desert bighorn sheep. Although the disturbed acreage is relatively small, the impacts of the mining operations and access may be significant to bighorn sheep, pronghorn, mule deer and wildlife in general.

The cumulative loss of critical habitat and movement corridors and disturbance to breeding animals in critical times of the year may be significant. Roads bring people into closer contact with wildlife; impacts from these roads include malicious or accidental harassment, collection and direct killing of wildlife species. Interruptions of natural movements and therefore reduced productivity and possible elimination of local populations may also be a direct result of increased mineral development.

For casual use where a notice or plan of operation is not required, minor surface disturbance would occur. If the notice requires new or upgraded roads, the same impacts as described above for locatable minerals apply.

Policies concerning the protection of special status species would be applied to notices of intent to conduct geophysical operations, applications for permit to drill and sundry notices that amend applications. Through these, 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 would protect known resources from surface disturbance.

Impacts from salable mineral activities are generally low; however, if new or upgraded roads are required, the same impacts as described above for locatable minerals apply.

In conclusion, mining-caused road construction or road upgrading may have significant long-term impacts to wildlife habitat. Mines in desert bighorn lambing grounds also have significant long-term impacts.

Impacts from casual use, leasable mineral activities and salable mineral activities are generally low as long as new or upgraded roads are not needed.

CHAPTER IV

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 the 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 results 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. Long-term impacts are moderate as cumulative impacts on certain peaks precludes use of those areas by wildlife.

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 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 Management

Of the total acres of pinyon-juniper woodland habitat available for harvest, 50 percent has been cut since about 1980. Many more acres (80 percent of pinyon/juniper habitat) are unavailable to cutting because of access problems and resource protection needs. It is anticipated that without cutting on a sustained yield basis, woodlands available for harvest will be gone by the year 2010. Impacts to wildlife habitat from woodcutting, not conducted on a sustained yield basis, are significant. Loss of woodlands means a loss of habitat for forest-dwelling species,

especially non-game birds. Neotropical migratory birds and resident forest birds are dependent upon these woodland areas for all or part of their life cycle. A decrease in woodlands means a decrease in the abundance of these species.

The continuation of harvest of Mohave yucca without knowledge of the sustained yield level of harvest will significantly impact wildlife and wildlife habitat. The Mohave yucca typically occurs as a co-dominant with creosotebush and provides the only large structure within the habitat area. Mohave yucca provides important habitat for raptors, non-game birds, reptiles and small mammals and cover for game species. Without this structural component within these habitat areas, biodiversity will be significantly reduced. It is anticipated that animals such as the desert night lizard, cavity-nesting birds and nesting raptors will be less abundant in these areas or cease to occupy these areas.

Short-term seasonal disturbance to wildlife habitat would occur through soil disturbance and human presence (cross-country vehicle traffic, tree skidding and chain saw noise). This is more significant on personal woodcutting areas, because the presence of people is spread over a longer time with people occupying an area in larger numbers.

Long-term enhancement of wildlife habitat through vegetative products management is of moderate importance considering the type of habitat involved. This enhancement would occur in areas identified as suitable for vegetative manipulation to improve habitat condition (decreased competition between overstory and understory plants for water, sunlight, and soil nutrients; seeding of grasses, forbs and browse; edge-effect, e.g., forage and escape cover diversity).

Long-term protection would be given to wildlife habitat identified as unsuitable for manipulation. This long-term protection is significant considering the amount of acreage and habitat for neotropical migratory birds and several special-status species that is involved. These species include the endangered American peregrine falcon and Hualapai Mexican vole.

Allowing the public to salvage plants that would otherwise be destroyed builds rapport and understanding between the public and the BLM and allows plants to continue living.

From Rangeland Management

Implementation of grazing management practices through allotment management plans would improve and/or maintain important wildlife habitat.

Prohibiting domestic sheep and goat grazing within 20 miles of bighorn sheep habitat has significantly lessened the bighorn sheep susceptibility to disease.

From Recreation Management

The Hualapai Mountain hiking trail would concentrate humans in previously undisturbed wildlife habitat, including historic habitat for the endangered Hualapai Mexican vole. Using this trail would result in loss of vegetation and increased soil erosion.

From Wild and Scenic Rivers

Riparian zones form the most productive habitat in the resource area. Many wildlife species, including neotropical birds, are dependent upon riparian areas for all or part of their lifecycle.

Interim protective measures for eligible river segments would improve and protect riparian habitat for wildlife, thus helping to maintain biodiversity within the resource area. This is a significant benefit to wildlife habitat management.

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. This is a significant benefit to wildlife habitat management.

From Wild and Free-Roaming Horse and Burro Management

Implementation of the herd management area plans included in the Current Management Alternative would result in a dispersed population at a light stocking rate. This, and the implementation of the wild horse management provisions of the Current Management Alternative, would achieve a thriving natural ecological balance in wild horse, burro and wildlife populations which the BLM considers to be a significant benefit.

From Support Services Management

Under the land acquisition program, consolidation of important wildlife habitats would enhance management capabilities and effectiveness.

Conclusions

Mining activities significantly affect wildlife, especially desert bighorn sheep and desert tortoise. This impact is primarily a result of cumulative impacts of mining disturbance (especially roads) that fragment habitat.

The existing vegetative products program significantly affects wildlife habitat, particularly personal woodcutting and yucca harvest, neither of which is 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 into allotment management plans. Their implementation would lead to improved wildlife habitat.

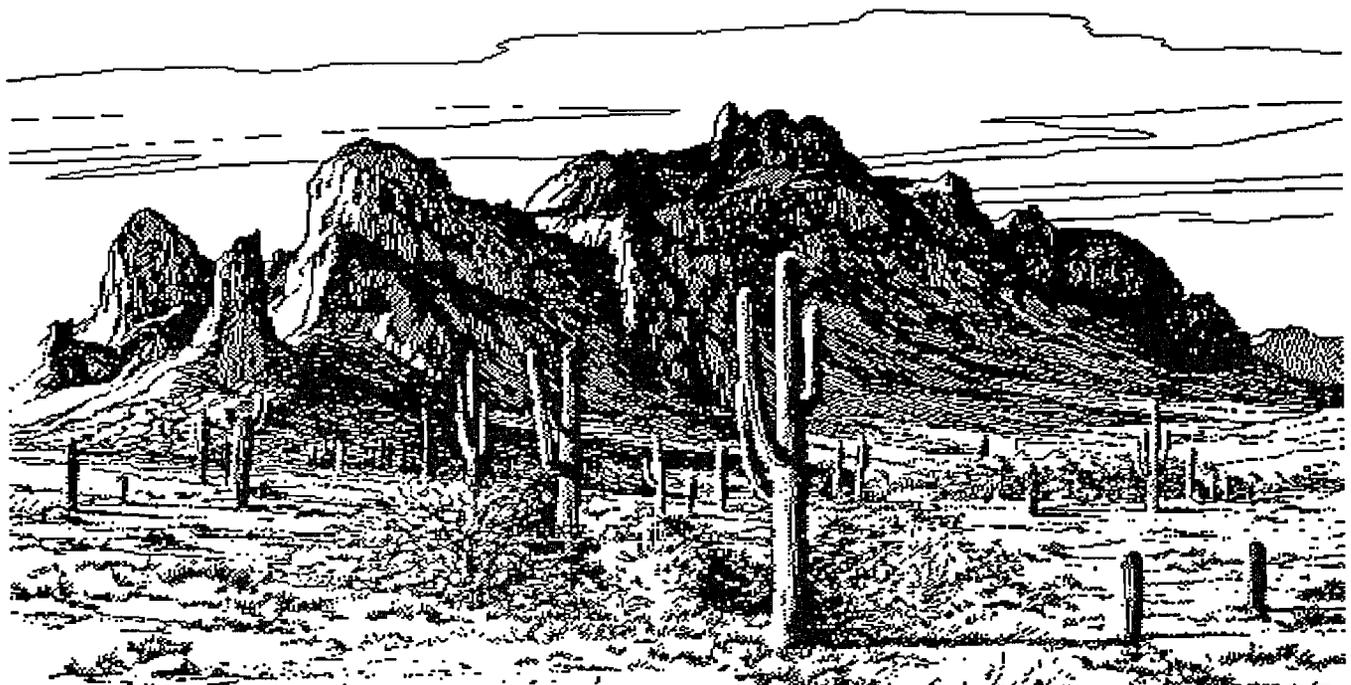
Hiking trails would increase the presence of humans in traditionally low use areas, disturbing wildlife and lessening the quality of habitat.

Intensive recreation use would not be routed away from sensitive species habitat and off-highway vehicle use would not be controlled.

Interim protective measures for eligible rivers help maintain biodiversity and significantly improve wildlife habitat.

Existing riparian management would allow significant improvement in riparian habitat and benefit wildlife habitat and biodiversity in the long-term.

Burros would be managed at maintenance levels and would be 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.



CHAPTER IV

IMPACTS TO SPECIAL STATUS SPECIES

From Mineral Development

During the past 10 years, 864 acres of public land have been disturbed by mining activities. Approximately half of these 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.

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 or animal to be listed as threatened or endangered.

Development of mining claims within the habitat of the Arizona cliffrose could exterminate the population.

For casual use where a notice or plan of operation is not required, minor surface disturbance would occur. If the notice requires new or upgraded roads, the same impacts as described above for locatable minerals under Impacts to Wildlife Habitat apply.

Policies concerning the protection of special status species would be applied to notices of intent to conduct geophysical operations, applications for permit to drill and sundry notices that amend applications. Through these, no long-term impacts would result from leasable mineral activities. In the short term, brief but intense human activity would harm special status species.

Oil and gas exploration and development would have minor impacts on BLM-sensitive and federal candidate plant species. Impacts from salable mineral activities are generally low; however, if new or upgraded roads are required, the same impacts as described above for locatable minerals under Impacts to Wildlife Habitat apply.

In conclusion, mining-caused road construction or road upgrading may have significant long-term impacts to wildlife habitat. Impacts from casual use, leasable mineral activities and salable mineral activities are generally low as long as new or upgraded roads are not needed.

Locatable mineral development would have minor impacts on most federal candidate and BLM-sensitive plant species. Long-term cumulative impacts could occur on small areas. These impacts could be mitigated.

From Lands Actions

Ownership Adjustment

BLM's acquisition of lands with special status species habitats would promote the recovery of listed and candidate species.

Disposal of public lands would eliminate BLM control of approximately 8,300 acres of the northwest portion of the habitat of the white-margined penstemon (a threatened and endangered candidate) and one small population of the Arizona prickly poppy (a threatened and endangered candidate).

Withdrawals, Recreation and Public Purposes, 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 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 Management

Permitting of firewood cutting on the east side of the planning area could impact the freckled milk-vetch (a threatened and endangered candidate). Because this species is reported to occur at the same elevation as juniper trees, off-highway vehicle 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

Implementation of grazing management practices through allotment management plans would improve habitat for special status animals such as desert tortoise, raptors and threatened and endangered plants.

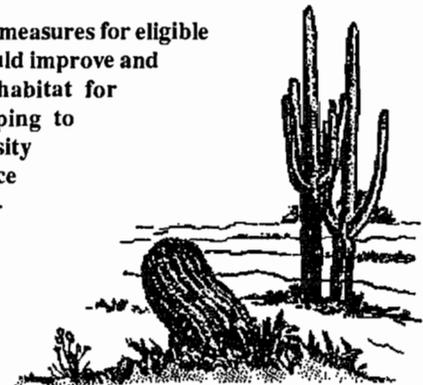
From Recreation Management

Off-highway vehicle use would continue to cause impacts to federal candidate and BLM-sensitive plant species over the long term. Impacts to the Cerbat beard-tongue (a federal candidate) and the white-margined penstemon, particularly from off-highway vehicle use in wash habitat, would degrade habitat and reduce numbers of plants.

From Wild and Scenic Rivers

Riparian zones are the most productive habitat areas within the resource area. Many wildlife species, including neotropical birds, are dependent upon riparian areas for all or part of their lifecycle.

Interim protective measures for eligible river segments would improve and protect riparian habitat for wildlife, thus helping to maintain biodiversity within the resource area. This is a significant benefit to wildlife habitat management.



From Wildlife Habitat Management

Implementation of the Desert Tortoise Rangewide Plan would help improve habitat conditions. The Southwestern Bald Eagle Management Committee has been successful in promoting and preserving southern bald eagles and their habitats. This population has expanded significantly. Peregrine falcons would continue their ongoing recovery. Monitoring and inventory participation with the Arizona Game and Fish Department and the U.S. Fish and Wildlife Service will be critical for the continued recovery of this species.

Implementation of the Hualapai Mexican Vole Recovery Plan will improve the habitat and management of this species. Initiating the intensive annual inventory of black-hawks would provide a good indicator of the overall health of riparian ecosystems, especially Burro Creek. Starting the monitoring of the roundtail chubs would provide information for managers and biologists on the status of this species and its management needs.

From Riparian Area 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. This is a significant benefit to wildlife habitat management.

From Wild and Free-Roaming Horse and Burro Management

Wild horses and burros managed within an ecological balance should have no impact on special status species.

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 mining may significantly affect special status species, especially desert tortoise. This impact is primarily a result of cumulative impacts of mining disturbances (especially roads) that fragment habitats.

Surface-disturbing activities such as recreational uses, grazing by livestock, wild horses and burros would have minimal impact on special status species and/or their habitat and would be minimized through National Environmental Policy Act review.

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

The BLM exchange program consolidates landownership 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 off-highway vehicle 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 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.

From Rangeland Management

Development or revision of 56 allotment management plans would maintain or improve riparian vegetation along 704 miles of streams and washes in the planning area. Allotment management plans would provide prescriptions for periodic rest and grazing timed to meet the physiological needs of key riparian plants. As small riparian areas are fenced, vegetation in these areas would greatly improve.

From Recreation Management

Restricting cross-country vehicle traffic would benefit riparian areas. Some use in washes may cause deterioration of riparian vegetation.

From Wild and Scenic Rivers

Interim protective measures for eligible river segments would improve riparian values.

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 benefiting 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.

CHAPTER IV

From Wild and Free-Roaming Horse and Burro Management

Wild horses and burros within an ecological balance would have no impact on riparian areas.

Conclusions

Mineral development would have short-term impacts on riparian areas. Rights-of-way would be restricted in sensitive riparian areas. Riparian habitat would improve in areas where allotment management plans are implemented. Restricting cross-country vehicle traffic would benefit riparian areas. Interim protective measures for eligible rivers would improve riparian resources.

Wildlife habitat management goals and objectives are compatible with riparian area management. Allowing wild horse populations to fluctuate would result in a downward trend in condition of riparian areas within wild horse range by destroying vegetation, trampling streambanks and reducing water quality and quantity.

IMPACTS TO WILD AND FREE-ROAMING HORSE AND BURRO MANAGEMENT

From Mineral Development

Impacts to wild horse and burro habitat from mining activities would be minimal. Human disturbance associated with mining would cause wild horses to be displaced from around mines and access roads.

From Lands Actions

Exchanges would help to block up important wild horse and burro habitat. Rights-of-way for pipelines and powerlines would cause short-term loss of forage and disturbance of animals during construction. Increased access associated with rights-of-way would impact wild animals' need for solitude.

From Watershed Management

Wild horse and burro habitat would improve as a result of proposed watershed management actions.

From Vegetative Products Management

Wild horse and burros would not be impacted by harvest of desert plants or woodcutting.

From Rangeland Management

Implementation of sound rangeland management practices would improve habitat for wild horses and burros. Associated water development would be used by wild horse and burros. Fences could impede free roaming unless impacts were mitigated.

From Wildlife Habitat Management

Management of wildlife habitat would improve forage conditions for wild horses and burros, helping to achieve a thriving

ecological balance. Some competition for water would exist, especially during periods of prolonged drought.

From Recreation Management

Wild horses and burros would benefit from management of public recreation with the goal of being in harmony with the environment and other uses. Campgrounds tend to concentrate people away from horse and burro use areas. Prohibiting cross-country vehicle traffic by limiting off-highway vehicle use to existing roads, trails and navigable washes would reduce conflicts between humans and wild horses and burros.

From Special Status Species Management

Protection of special status species habitat could place some restrictions on movement and grazing of wild horses and burros. If problems occur, special status species habitat may need to be fenced from grazing.

From Riparian Area Management

The need to protect and enhance riparian habitat could require restrictions to be placed on the free-roaming of wild horses and burros. If riparian areas deteriorate or efforts to improve riparian condition are impeded by concentrated grazing of wild horses and burros along streams, canyon bottoms and around springs, their ability to be free-roaming may need to be curtailed in these critical areas. Riparian areas would then be fenced and water piped outside for use by wild horses and burros.

From Wild and Free-Roaming Horse and Burro Management

Management of wild burros at a light stocking rate and animals dispersed over the entire area would result in improved habitat conditions and help burros maintain good body condition during periods of drought and over the summer. Implementation of a herd management area plan would lead to improved conditions of the wild horse habitat in the Cerbat Mountains. Improvement in condition of animals and their habitat would accelerate as horse numbers can be brought closer to an equilibrium with forage availability, as evidenced by results of utilization and trend data.

Conclusions

Impacts on wild horses and burros from mineral development would not be significant. Land exchanges would block up important habitat. Rights-of-way would not significantly impact animals. Wild horse and burro habitat would benefit from watershed, rangeland, and wildlife habitat management practices.

The goal of dispersed recreation use and prohibiting cross-country vehicle traffic would reduce conflicts between people and wild horse and burros. Special status species and riparian area management could place some restrictions on where wild horses and burros can graze. Implementation of herd management area plans would result in improved habitat for wild horses and burros.

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 181,553 acres of public land would prevent exploration and development of minerals on these lands. 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. Some of the lands identified for disposal encroach on known leasable sodium deposits in the northern portions of Detrital and Hualapai valleys. Disposal of these lands would have to consider the value of the deposits contained therein, as well as the impact on any existing sodium leases which may exist at the time (see Map 36).

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 Wild and Scenic Rivers

Same as under *Alternative 1*.



From Special Management Areas

The designation of 12 areas of critical environmental concern would leave nearly 99 percent of the federal locatable minerals open to mineral entry. Of the approximately 23,800 acres closed to mineral entry, less than 19 percent contain high potential minerals. Nearly 99 percent of leasable minerals are open to mineral leasing with standard lease stipulations. Less than one percent of the federal minerals are open to mineral leasing with a no surface occupancy stipulation. These areas are in one-half-mile wide strips along stream channels which could allow slant drilling to occur. Only 1,114 acres are closed to mineral leasing. Nearly 99 percent of the federal mineral materials are open to mineral material disposals. Only a small percentage of the closed area contains significant deposits of sand or gravel and other valuable sources are closer to the major population centers in the resource area.

The Joshua Tree Forest Area of Critical Environmental Concern has a moderate potential for gold, the Clay Hills Area of Critical Environmental Concern 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 areas of critical environmental concern not proposed to be withdrawn from mineral entry would require submitting a plan of operations for any activities exceeding casual use. All or portions of the Joshua Tree Forest Area of Critical Environmental Concern have a high potential for the occurrence of salable minerals near areas of substantial population growth. Sales of mineral materials within the areas of critical environmental concern would be allowed only where no reasonable alternative exists.

From Special Status Species and other Wildlife Resources

Imposing special stipulations, no surface occupancy, and withdrawals would cause delays in exploration and developing making leasable mineral resources less available. Same as under *Alternative 1*.

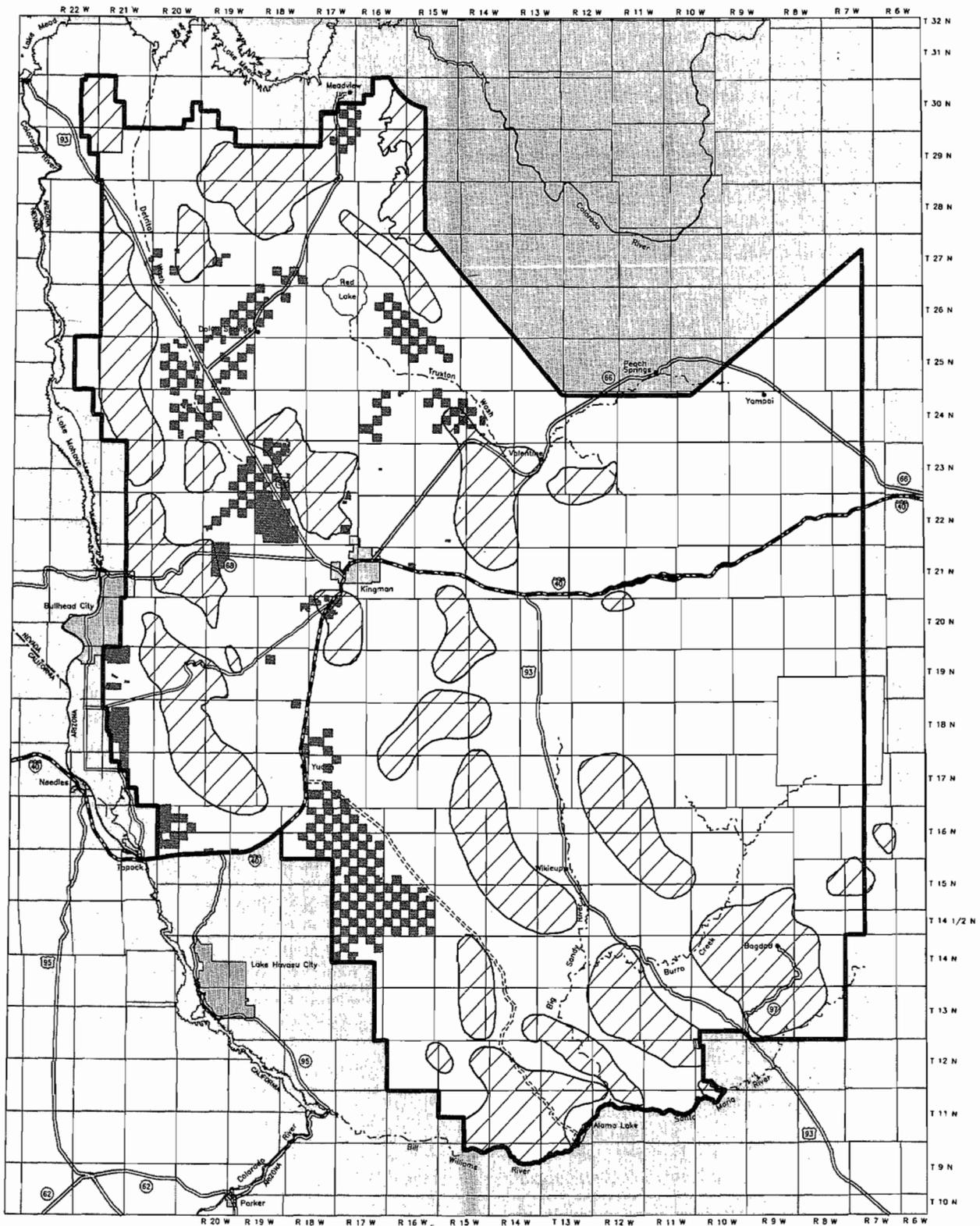
From Hazardous Materials Management

Mining operators may expect increased operating costs to adequately mitigate impacts from using hazardous materials. Operations will be monitored, at a minimum, according to the schedule contained in the BLM's Inspections Enforcement Policy. Those operations which are causing unnecessary or undue degradation will be served a notice of noncompliance as described in 43 CFR 3809.3-1.

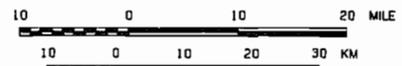
Conclusions

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.

HIGH POTENTIAL LOCATABLE MINERALS AND DISPOSALS - ALTERNATIVE 2



- LANDS PROPOSED FOR DISPOSAL - ALT 2
- AREA OF HIGH MINERAL POTENTIAL



Map 36

Designated areas of critical environmental concern would encumber locatable mineral resource exploration and development through delays for plan approvals. Portions or all of six areas of critical environmental concern would be withdrawn from mineral entry, all or portions of six areas of critical environmental concern are no surface occupancy and six areas of critical environmental concern are closed or partially closed to mineral material disposals.

IMPACTS TO LANDS ACTIONS

Impacts would be the same as those described under *Alternative 1* except as noted below.

From Landownership Adjustments - Exchange

An additional 79,000-plus acres are identified for disposal. The majority of the land is checkerboarded and uneconomical to manage except north and west of Golden Valley and near Mohave Valley.

These lands were identified for disposal due to their considered high potential for development and the need for this type of trade base. The availability of these lands for disposal will make exchanges with the BLM more desirable and provide incentive to proponents, state and private, to offer lands identified for acquisition which are high in resource values.

From Withdrawals and Classifications

Recommendation to revoke certain withdrawals would make the land available for lands actions including disposal if uneconomical to manage. Other lands actions would be permitted after National Environmental Policy Act compliance subject to stipulations to protect resources.

From Recreation and Public Purposes

Reserving identified lands for recreation and public purpose uses would assure these types of actions are provided for. It will keep these actions in a specific area rather than scattering them, thereby minimizing impacts. In some cases, the lands identified for recreation and public purposes are identified for disposal by exchange.

From Linear Rights-of-Way

The designation of three additional corridors in areas already disturbed and which have the potential for development provides additional areas where rights-of-way may be directed to minimize impacts.

From Communication Site Rights-of-Way

Designation of 11 communication sites will restrict development to, for the most part, previously disturbed areas, thereby minimizing impacts.

From Wildlife Movement Corridors

Lands actions may require special stipulations such as overpasses, underpasses, fencing, culvert modification, etc., that could increase the cost of a project.

From Special Management Areas

Certain lands actions, i.e., communication sites, may be prohibited by prescription in certain areas. Actions allowed would be subject to National Environmental Policy Act compliance stipulations to protect resources. This may increase project costs. There will be an increased workload to implement withdrawals, acquisitions, etc., that may be limited by the existing realty staff.

From Hazardous Material Management

Lands actions may require stipulations regarding release of hazardous substances and responsibility for cleanup. This may increase project costs. Some landownership adjustments may not occur due to the presence of hazardous materials.

Conclusions

Reserving public lands for recreation and public purposes allows qualified entities at reduced rates to provide services they may not otherwise be able to afford. Designation of utility corridors and communication sites restricts development to certain areas and minimizes impacts. Disposing of lands that are checkerboarded and uneconomical to manage provides a base to acquire lands with higher resource values and services a public benefit.

IMPACTS TO SOCIOECONOMIC FACTORS

Implementation of the Preferred Alternative would not cause significant impacts to any of the Kingman Resource Area socioeconomic data reviewed in this document. Population trends would not be affected. The direct economic benefits Mohave and Yavapai counties currently receive from BLM employment and operations would remain constant.

From Lands

A decision to dispose of 181,553 acres of public land through exchange could increase the amount of private lands in the resource area, thereby increasing the county tax base.

From Resource Actions

There would be no significant impacts to socioeconomic factors in the resource area from minerals, special status species, wildlife habitat, recreation or rangeland management.

CHAPTER IV

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, mining plans of operation for all mineral exploration and development activities and mandatory bonding would protect and maintain water quality and quantity, air quality and soil productivity. Surface disturbance and hazardous material introductions would also be reduced.

From Lands Actions

Ownership Adjustments

Same as under *Alternative 1*.

Withdrawals, Recreation and Public Purposes, Rights-of-Way, Leases and Permits

Same as under *Alternative 1*.

From Vegetative Products Management

An inventory and management plan would give greater consideration to resource protection and minimize damage to soil and vegetation.

From Rangeland Management

Impacts would be the same as *Alternative 1* except that implementing allotment management plans and grazing systems in special management areas would be given higher priority.

From Cultural Resource Management

Same as under *Alternative 1*.

From Recreation Management

Same as under *Alternative 1*. In addition, the limiting of off-highway vehicle use would lower the rate of soil and vegetation loss, salt yield and fugitive dust.

From Wild and Scenic Rivers

Same as under *Alternative 1*.

From Wildlife Habitat Management

Same as under *Alternative 1*.

From Special Status Species Management

Same as under *Alternative 1* (see also Special Management Areas in *Alternative 1*).

From Riparian Area Management

Same as under *Alternative 1* (see also Special Management Areas in *Alternative 1*).

From Wild and Free-Roaming Horse and Burro Management

Same as under *Alternative 1* for burro management. Wild horse numbers within an ecological balance would be a significant beneficial impact.

From Special Management Areas

Special management areas which limit surface-disturbing activities (off-highway vehicle, mining road and facility construction) would protect and maintain water quality and quantity.

From Visual Resource Management

Same as under *Alternative 1*.

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.

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 off-highway vehicle uses would reduce runoff and soil losses, 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 MANAGEMENT

From Mineral Development Management

Same as under *Alternative 1*.

From Landownership Adjustments

Same as under *Alternative 1*.

From Land Withdrawals, Recreation and Public Purposes, 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 Vegetative Products Management

Proposed actions would improve management of the harvest of vegetative products.

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. Off-highway vehicle use designations would limit vegetation harvesting where travel off designated roads, trails and washes would not be allowed.

From Wildlife Habitat Management

Impacts would be the same as under *Alternative 1* except on special management areas identified for high priority wildlife habitat where vegetative product harvesting might be limited or prohibited if it would conflict with wildlife resources.

From Special Status Species Management

Impacts would be the same as under *Alternative 1*. In addition, area of critical environmental concern 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 areas of critical environmental concern identified for high priority riparian values, vegetative products could not be harvested.

From Special Management Areas

Designations would remove areas of critical environmental concern from the harvest of vegetative products, other than salvage. 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 those under *Alternative 1* except special management areas identified would reduce the areas where harvests may occur. Limitations on off-highway vehicle 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 would be similar to those under *Alternative 1*, but less disturbance would occur because of areas withdrawn from mineral entry and closed to mineral material disposals.

From Landownership 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, except east and southeast of Bullhead City where no grazing occurs. The Mud Springs and Curtain allotments and portions of the Pine Springs allotment could be transferred to state ownership and removed from public grazing. The state would continue to lease the land for grazing until the lands are exchanged. There is no guarantee the Curtain Holistic Resource Management system, which has resulted in substantial improvement in rangeland habitat, would continue under state or private ownership. This area would be unavailable to the BLM as a public demonstration area of the benefits of holistic resource management.

From Watershed Management

Same as under *Alternative 1*.

From Vegetative Products Management

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 Rangeland Management

Same as under *Alternative 1* except goals and objectives of areas of critical environmental concern would shift emphasis for development of allotment management plans from other areas to areas of critical environmental concern because of increased funding which could result from these plans. This would result in improved rangeland condition in riparian areas, around

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cultural resources, wildlife habitat and special status species habitat.

From Cultural Resource Management

Cultural resource management would have similar impacts to those described under *Alternative 1*. Designation of an area of critical environmental concern/special recreation management area at the Carrow-Stephens Ranches would exclude 542 acres from grazing on the Big Sandy Grazing Allotment, requiring a reduction of active grazing preference in this allotment.

From Recreation Management

Same as under *Alternative 1*.

From Wild and Scenic Rivers

Same as under *Alternative 1*.

From Wildlife Habitat Management

Impacts would be similar to those described under *Alternative 1*. The degree of impact would be greatly increased in areas designated as areas of critical environmental concern because of unique or high values. Where categories I and II desert tortoise habitat are 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 categories I and II tortoise habitat would give priority to affected allotments for allotment management plan development.

From Special Status Species Management

Impacts would be similar to those described under *Alternative 1* except:

- Designating the white-margined penstemon habitat as an area of critical environmental concern would constrain construction of range improvements and limit livestock grazing within this area, affecting portions of the Happy Jack Wash, La Cienega and Boriana A grazing allotments.
- Designating a special management area within the Black Mountain Area of Critical Environmental Concern 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 areas of critical environmental concern 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/Area of Critical Environmental Concern 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 areas of critical environmental concern would protect riparian habitat by constraining construction of range improvements and limiting livestock grazing, affecting portions of the following allotments.

Crozier
Valentine
7L (McElhane)
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 under *Alternative 1* except designating three riparian areas of critical environmental concern (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 12 areas of critical environmental concerns are discussed under the originating resource: cultural resources, recreation, wildlife and special status species.

From Wild and Free-Roaming 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, and horses are above the minimum viable level, numbers of all grazing ungulates would be reduced on an equitable basis. If the wild horse population is below a minimum viable level, livestock and wildlife would be reduced accordingly in order to maintain a viable population of wild horses within an ecological balance in their habitat. This would have a slight negative impact on the livestock industry.

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 impose limitations on grazing use on affected allotments. Similar constraints and limitations would occur where categories I and II desert tortoise habitat occurs. Grazing allotments in the Cerbat Wild Horse Herd Management Area would be subject to grazing use adjustments where over-obligation of available forage exists.

IMPACTS TO CULTURAL RESOURCES

From Mineral Development

Portions of the Wright and Cottonwood creeks, Carrow-Stephens and Burro Creek areas of critical environmental concern 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 benefit of adding certain cultural properties to the BLM's priority list for acquisition. These sites include the Neal petroglyphs, the Barth Bighorn Cave access and the X-Bar-One petroglyphs.

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 cultural resources and isolated artifacts.

New resources and data would be recorded and adverse impacts would be mitigation on any significant areas. Although mitigation measures would be beneficial, public use and conservation values would be lost.

From Recreation Management

Prehistoric and historic trails and other sensitive cultural resources would be protected by closing or limiting off-highway vehicle use in areas of critical environmental concern. One open off-highway vehicle area 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, Wright and Cottonwood creeks riparian and cultural, Carrow-Stephens and Burro Creek riparian and cultural areas of critical environmental concerns designed to help the 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 areas of critical environmental concern 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, off-highway vehicle activity and natural processes. Negative impacts would be lower in areas designated as areas of critical environmental concern 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 area of critical environmental concern designations would minimize adverse impacts to visual resources.

A 40-acre mineral withdrawal around each recreation site would reduce the potential for surface disturbance, soil erosion and habitat disturbance from mining.

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.

Rights-of-way development would impact the natural character of the landscape, but utilizing proper visual resource management techniques for pole placement and materials, corridor rehabilitation, etc., would minimize adverse effects. No significant impact is anticipated.

From Watershed Management

Enhancement of soil and vegetative conditions through watershed management activities would benefit visual resources by restoring or maintaining natural-appearing landscapes. Opportunities for hunting and wildlife viewing would increase as habitat for wildlife is improved.

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From Vegetative Products Management

Impacts would be similar to those described under *Alternative 1*.

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 under *Alternative 1*, plus designating six 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 facilities such as campgrounds, picnic areas, interpretive pullout sites, trails and expansion of existing recreation sites would satisfy increased demand for recreation opportunities. In addition, the proposed trails and back country byways would provide a wide variety of primitive recreation experiences that are in public demand.

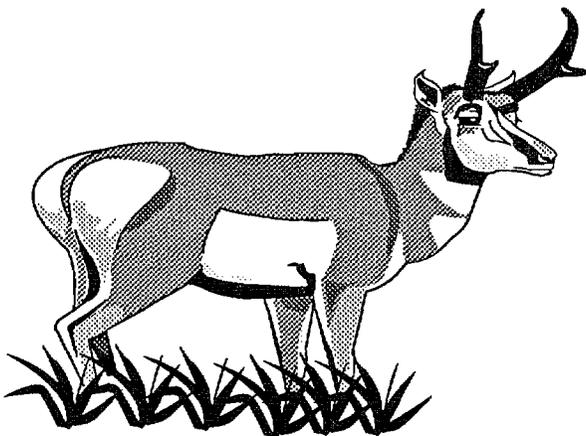
Visual Resource Management classes would protect scenic quality and reduce negative impacts on visual resources.

From Off-Highway Vehicle Designation

Limited off-highway vehicle use on more than 1,100,000 acres (see Table 9) 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 off-highway vehicle use on an established network of roads, trails and washes over much of the resource area. Unrestricted off-highway vehicle use on 1,311 acres would allow cross-country activities by all-terrain vehicles to occur.

From Wild and Scenic Rivers

Same as under *Alternative 1*.



From Wildlife Habitat Management

Impacts would be similar to those described under *Alternative 1* except improved wildlife habitat resulting from area of critical environmental concern designation, grazing management and removal of grazing would result in increased wildlife populations and benefit hunting, photography and opportunities to view wild animals.

From Wild and Free-Roaming Horse and Burro Management

The establishment of a wild burro interpretive site in the Black Mountains Herd Management Area would greatly enhance the public's opportunities for viewing wild burros in their natural habitat and provide for a growing interest in observing these animals, along with other 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 wildlands.

From Special Management Areas

Designation of 12 areas of critical environmental concern would constrain or eliminate surface-disturbing activities associated with mineral exploration and development on important riparian areas, threatened and endangered species habitat and cultural sites. Grazing would also be managed according to area of critical environmental concern 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 proposed 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 wildfires would protect developed recreation sites and retain scenic values.

Conclusions

Development of new facilities, designation of two additional back country byways, trail development and providing interpretive displays would significantly enhance outdoor recreation opportunities. Designation of areas of critical environmental concern, establishment of off-highway vehicle designations and management of visual resources would provide quality natural settings for visitors. These combine to create significant beneficial impacts to recreation resources.

IMPACTS TO WILD AND SCENIC RIVERS

From Mineral Development

Same as under *Alternative 1*.

From Lands Actions

Same as under *Alternative 1*.

From Watershed Management

Same as under *Alternative 1*.

From Vegetative Products Management

Same as under *Alternative 1*.

From Rangeland Management

Same as under *Alternative 1*.

From Recreation Management

Same as under *Alternative 1*.

From Wildlife Habitat Management

Same as under *Alternative 1*.

From Special Status Species Management

Same as under *Alternative 1*.

From Riparian Area Management

Same as under *Alternative 1*.

From Wild and Free-Roaming Horse and Burro Management

Same as under *Alternative 1*.

Conclusion

The free-flowing nature and outstandingly remarkable values of six streams found to be eligible for inclusion into the National Wild and Scenic Rivers System will be adequately protected under *Alternative 1*. No significant impacts are expected.

IMPACTS TO WILDLIFE HABITAT

From Mineral Development

Impacts to wildlife would be similar to those under *Alternative 1* except the withdrawal of 23,800 acres from mineral entry, requirements for mining plans of operations, mandatory bonding, no surface occupancy stipulations on 23,186 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. Habitat fragmentation would be less under this alternative. Some short-term disturbances may still occur to bighorn sheep especially during lambing, but impacts would be the same as under *Alternative 1*.

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 under *Alternative 1* except a long-term grazing research study area on the Curtain Allotment, which has benefited wildlife, would be removed from federal ownership. Desirable vegetation has been reestablished and overall range condition is improving dramatically. These benefits may not necessarily be continued under state or private ownership.

Identifying and conveying lands within disposal areas for recreation and public purposes would put less pressure on surrounding wildlands, which are proposed for retention to protect natural resource values. Under this alternative, wildlife habitat would receive additional protection by restricting habitat fragmentation, rights-of-way and communication sites within areas of critical environmental concern.

From Watershed Management

Same as under *Alternative 1*.

From Vegetative Products Management

This alternative will have minimal impacts to wildlife habitat as the woodland and Mohave yucca harvest will occur on a sustained yield basis. Harvest on a sustained yield basis is an insignificant impact to wildlife. Neotropical and resident forest birds are among those animals expected to remain in abundance in the woodlands within the planning area.

Careful planning of woodland harvests will minimize impacts to wildlife and in some instances improve habitat for wildlife. Animals within the yucca habitats such as the desert night lizard, cavity-nesting species and nesting raptors are expected to continue to occupy habitats harvested on a sustained yield basis. Biodiversity will be maintained under this alternative.

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Impacts from long-term enhancement of wildlife habitat in areas identified as suitable for vegetative manipulation to improve habitat condition are the same as under *Alternative 1*.

Long-term enhancement of wildlife habitat through vegetative products management is of moderate importance considering the type of habitat involved. This enhancement would occur in areas identified as suitable for vegetative manipulation to improve habitat condition (decreased competition between overstory and understory plants for water, sunlight and soil nutrients; seeding of grasses, forbs and browse; edge-effect, e.g., forage and escape cover diversity).

Long-term protection given to wildlife habitat identified as unsuitable for manipulation is significant, considering the amount of acreage and habitat involved for neotropical migratory birds and several special-status species including the endangered American peregrine falcon and Hualapai Mexican vole.

From Rangeland Management

Impacts would be the same as under *Alternative 1* except the review and revision of allotment management plans affecting areas of critical environmental concern 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 dependent 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 species habitat.

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 a significant measure of protection to wildlife habitat in this area. This park will protect wildlife habitat from urbanization and

subsequent habitat fragmentation. A wildlife movement corridor proposed in this area would give the public a place near Kingman to experience nature.

Limiting off-highway vehicles in areas of critical environmental concern and throughout the Kingman Resource Area would protect sensitive wildlife habitat from surface disturbance. Cross-country travel would not be allowed. This would reduce human disturbance, habitat destruction, incidental taking, vandalism and harassment of wildlife. Limiting off-highway vehicle use in the planning area to existing trails and washes would allow reasonable access to hunters and other recreationists.

From Wild and Scenic Rivers

Same as under *Alternative 1*.

From Special Status Species Management

The protection of special status species through area of critical environmental concern designation, fencing, mineral withdrawal and land retention and acquisition will also protect wildlife associated with these areas.

From Wildlife Management

A significant problem facing wildlife populations today and in the future is their ability to move freely from one habitat area to another. This may be in response to environmental change, species population changes or seasonal population movements.

An inability to move freely through natural habitats will eventually isolate and fragment wildlife populations, resulting in eventual localized extinctions or reduced viability of wildlife populations. The establishment of wildlife movement corridors under this alternative is an essential element of wildlife management for now and in the future.

Maintenance of populations through movement is a significant benefit and will help ensure viability of wildlife populations and maintain and enhance biodiversity both in the Kingman Resource Area and on a global basis.

Allocation of forage and stratification of habitats under this alternative is the basis for equitable distribution of resources among all ungulates in the resource area. This is a significant improvement over current management. Imposing seasonal restrictions on activities that disturb lambing and rearing of newborn desert bighorn sheep will significantly reduce disturbances to this species and subsequently help to maintain their productivity.

A no surface occupancy stipulation for mineral leasing activities in riparian zones will give significant protection to these rare and valuable wildlife habitats.

Management focus on pronghorn antelope habitat at Cherokee Point and Goodwin Mesa will help assure maintenance and enhancement of these populations, thus helping to ensure that biological diversity of the resource area is protected.

Focusing attention on potential conflicts between elk and the endangered Hualapai Mexican vole will further our understanding on the interactions of these two species. Quality information gathered on this subject will help the effort to make informed decisions and to further recovery efforts of this endangered species.

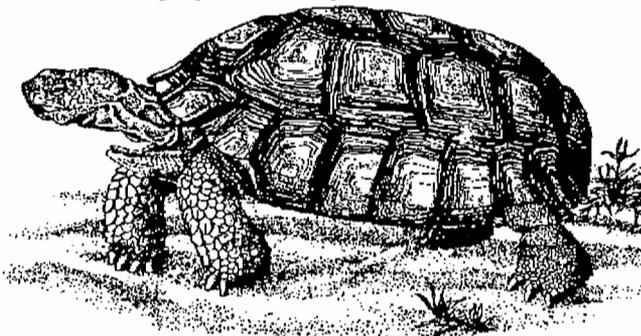
From Riparian Management

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

Under this alternative, significant protection of riparian resources and special status species habitat is realized. Placing emphasis on enhancement and protection of unique habitat areas and highly productive areas such as riparian zones will further advance wildlife management toward the goal of maintaining and promoting biological diversity in the Kingman Resource Area.

The establishment of the Black Mountains Ecosystem Management Area of Critical Environmental Concern brings to the forefront the management of one of the outstanding desert bighorn sheep herds on public land. This bighorn population is thriving because of the quality of habitat available to this species and because the integrity of the habitat is relatively intact. As urbanization continues to squeeze to the base and into the Black Mountains, this sheep population will experience ever greater pressure from the effects of an expanding human population. Effects such as habitat fragmentation, harassment and intense utilization of these habitats for recreational activities can cause a decline in productivity for this sensitive species. By focusing management attention we will be able to protect crucial use areas, stratify habitat and prevent undue disturbance to this species and its habitat. Such an intensity of management is needed to perpetuate this species in the Black Mountains.



The establishment of the Aubrey Peak Bighorn Habitat Area of Critical Environmental Concern helps assure the continued existence of bighorn sheep in southern Mohave County. Because the Aubrey Peak area contains the only known lambing grounds for the area, this area of critical environmental concern becomes pivotal to the survival of this species in this area.

The establishment of the Wright and Cottonwood creeks riparian and cultural areas of critical environmental concern, the Burro Creek Riparian and Cultural Area of Critical Environmental Concern and the Three Rivers Riparian Area of Critical Environmental Concern focuses significant management attention on one of the most rare, threatened, diverse and productive habitats in the Southwest. The protection afforded by the management prescriptions will assure continued productivity of these areas. The investment in riparian habitats for wildlife will be repaid manifold in the maintenance of biodiversity, water yields, recreational activities and watershed health.

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 and Free-Roaming Horse and Burro Management

Allocation of forage and stratification of habitats under this alternative is the basis for equitable distribution of resources among all ungulates in the resource area. This is a significant improvement over current management.

In the Cerbat mountain island, competition for available forage among grazing animals would be reduced.

From Support Services Management

Acquiring access across certain state and private roads would improve the BLM's ability to build and maintain wildlife habitat improvement projects and 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.

CHAPTER IV

Conclusions

Mineral withdrawals requiring mining plans of operation and mandatory bonding of mining operations, livestock grazing to meet allotment management plan and area of critical environmental concern objectives, the land exchange program, restrictions on location of communication sites, restricting rights-of-way to corridors or keeping rights-of-way out of some areas of critical environmental concern and management prescriptions would greatly improve and block-up wildlife habitat. Establishing wildlife movement corridors would ensure genetic diversity of species.

Long-term enhancement and protection of wildlife habitat would result from vegetative products management. Frequent recreation use would increase people/wildlife interactions, but developed recreation sites would serve to mitigate impacts. Wildlife species would be protected by restricting cross-country vehicle travel. Management of the wild horse herd in the Cerbats would reduce impacts to wildlife 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 mining plans of operation 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 Area of Critical Environmental Concern would further ensure a viable population of Arizona cliffrose.

Withdrawal of areas of critical environmental concern from mineral entry would protect special species habitat. The requirement for mining plans of operations in areas of critical environmental concern 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 Arizona cliffrose, bald eagle and black-hawk special status species.

From Lands Actions

Impacts would be the same as under *Alternative 1* except habitat for the bald eagle, peregrine falcon, Hualapai Mexican vole, desert tortoise, black-hawk and roundtail chub would benefit from a more aggressive land exchange program, which would consolidate special status species habitat in public ownership and allow the BLM to more effectively meet the specific needs of these species. Important desert tortoise habitat would be removed from public ownership in the area just southeast of Bullhead

City; residents would increase their recreational use of the area and disturb the tortoise in this Category II habitat.

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 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. As this area becomes developed, residents would increase their use of the bajadas east of the disposal area and disturb the tortoise in this Category III area.

Enlarging the land disposal area near the town of Chloride would impact BLM control of three square miles of potential habitat for the freckled milk-vetch. Under this alternative, special status species habitat would receive additional protection by restricting rights-of-way and communication sites within areas of critical environmental concern.

From Watershed Management

Impacts would be similar to those described for under *Alternative 1*.

From Vegetative Products Management

Impacts would be similar to those described under **Impacts to Wildlife Habitat, Alternative 2**.

From Rangeland Management

Same as under *Alternative 1*.

From Recreation Management

Impacts would be the same as under *Alternative 1* except that restricting off-highway vehicle use to designated roads and trails inside the Cerbat beard-tongue and white-margined penstemon areas of critical environmental concern would protect and stabilize fragile wash and floodplain habitat for these two species. Likewise, area of critical environmental concern restrictions on off-highway vehicles would reduce the incidental destruction of Arizona cliffrose by off-highway vehicles. Restricting cross-country vehicle travel would benefit special status species by reducing human disturbance, habitat destruction, incidental taking, vandalism and harassment of species.

An additional developed campground at Burro Creek may increase recreation use within the Clay Hills Area of Critical Environmental Concern. 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 Wild and Scenic Rivers

Same as under *Alternative 1*.

From Wildlife Habitat Management

Same as under *Alternative 1* except habitat for the bald eagle, peregrine falcon, Hualapai Mexican vole, desert tortoise, black-hawk and roundtail chub would receive additional management attention in the management prescriptions outlined in the areas of critical environmental concern.

From Riparian Area Management

Impacts would be similar to those described for under *Alternative 1* except additional provisions in areas of critical environmental concern would improve habitat quality and quantity for several special status species, especially bald eagle, peregrine falcon, roundtail chub and Hualapai Mexican vole. Water would become more available, supporting a greater area of streamside vegetation, food and cover for these and other wildlife species.

From Special Management Areas

Special management attention will be provided with the establishment of areas of critical environmental concern for certain special status species. The American peregrine falcon will receive greater habitat protection within the Joshua Tree Forest-Grand Wash Cliffs Area of Critical Environmental Concern. The Cerbat beard-tongue will receive significant protection through specific management prescriptions found in the Black Mountains Area of Critical Environmental Concern. Hualapai Mexican vole habitat will be intensely managed in an effort to recover this endangered mammal. The Hualapai Mountain Research Natural Area/Area of Critical Environmental Concern contains management prescriptions designed to help achieve this goal. The establishment of the White-margined Penstemon Reserve Area of Critical Environmental Concern protects crucial habitat for this rare plant species. This is significant in the light that other than one very small population known from California, this is the largest and most extensive population known. This protection may very well keep this species off the federal threatened and endangered plant species list.

Significant management attention will be focused on the desert tortoise with establishment of the McCracken Desert Tortoise Habitat Area of Critical Environmental Concern and the Poachie Desert Tortoise Habitat Area of Critical Environmental Concern. Management prescriptions are designed to eliminate or reduce impacts to these animals and to keep the habitats in such a condition as to maintain viable populations of desert tortoise.

Fourteen rare species including the bald eagle, Mexican black-hawk, zone-tailed hawk and round-tailed chub will receive habitat protection and intensive management focus with establishment of the Burro Creek Riparian and Cultural Area of Critical Environmental Concern, the Three Rivers Riparian Area of Critical Environmental Concern and the Wright and Cottonwood Creeks Riparian and Cultural Area of Critical Environmental Concern. Such attention will further the recovery of listed species and help to keep other species populations healthy, preventing the need to list them as federally threatened

or endangered. These actions will further the goal of maintaining or enhancing biodiversity within the resource area.

The Clay Hills Research Natural Area, Area of Critical Environmental Concern significantly increases protection of the endangered Arizona cliffrose and its habitat. This will further recovery efforts for this species.

Designating areas of critical environmental concern establishes the management priority and direction to implement land exchange proposals, off-highway vehicle restrictions and mineral withdrawals. Through these actions, the BLM could implement recovery plans, which could stabilize endangered species and help their recovery.

From Wild and Free-Roaming Horse and Burro Management

Impacts would be similar to those described under *Alternative 1*.

From Support Services Management

Acquisition of lands listed in Appendix 20 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 off-highway vehicle regulations, reducing the amount of habitat damage caused by off-highway vehicles.

Conclusions

Impacts would be similar to those under *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 area of critical environmental concern proposals, closure of areas to mineral material disposals, off-highway vehicle limitations, restrictions on major 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 Area of Critical Environmental Concern when the additional 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 withdrawal of approximately 23,800 acres from mineral entry in areas of critical environmental concern and the requirements for mining plans of operations, 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.

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From Lands Actions

Same as under *Alternative 1* except identifying lands within disposal areas for Recreation and Public Purposes Act leases or grants 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 Management

Same as under *Alternative 1* except riparian habitats would receive higher priority for long-term protection.

From Rangeland Management

Same as under *Alternative 1*; additionally, the review and revision of allotment management plans within areas of critical environmental concern would result in improved management of 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-dependent 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.

The proposal for a regional park adjacent to 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 off-highway vehicles in areas of critical environmental concern and throughout the Kingman Resource Area would protect sensitive riparian areas from surface disturbance. Less surface disturbance would mean less disturbance to wildlife.

From Wild and Scenic Rivers

Same as under *Alternative 1*.

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 area of critical environmental concern plans would assist the BLM in protecting and improving the Kingman Resource Area's most significant riparian ecosystems.

From Wild and Free-Roaming Horse and Burro Management

Cerbat Herd Management Area

Management of wild horses on the Cerbat Herd Management Area at a population level within the constraints of the habitat should reduce impacts to riparian areas and lead to overall improvement in vegetation and soils.

Big Sandy Herd Management Area

Same as under *Alternative 1*.

Black Mountains 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

Greatly improved riparian conditions would result from withdrawal from mineral entry requiring mining plans of operations and mandatory bonding of mining operations. Grazing to meet allotment management plan and area of critical environmental concern objectives would also improve riparian conditions. Managing wild horses and burros, restricting rights-of-way to corridors and area of critical environmental concern management prescriptions would further improved riparian conditions. Recreation activities would impact riparian-wetland areas.

IMPACTS TO SPECIAL MANAGEMENT AREAS

Impacts are outlined in each of the affected resource activities.

IMPACTS TO WILD AND FREE-ROAMING HORSE AND BURRO MANAGEMENT

From Mineral Development

Same as under *Alternative 1*.

From Lands Actions

Same as under *Alternative 1* except benefits would be increased as the acreage of public lands increases. Acquisition of lands to expand the Cerbat Herd Management Area would help develop a viable horse herd.

From Watershed Management

Same as under *Alternative 1* except additional emphasis would be placed on plans which would funnel increased funding into watershed management programs of benefit to forage for wild burros in the Black Mountains. This would accelerate the rate of habitat management.

From Rangeland Management

Same as under *Alternative 1* except habitat conditions would improve more rapidly as a direct result of more intensive management.

From Wildlife Habitat Management

Same as under *Alternative 1*.

From Recreation Management

Same as under *Alternative 1* except the additional emphasis on dispersed recreation would further reduce conflicts between wild horses and burros and humans. Additional campgrounds and picnic areas would further concentrate people away from herd management areas.

From Special Status Species Management

Same as under *Alternative 1*.

From Riparian Area Management

Same as under *Alternative 1*.

From Special Management Areas

Management prescriptions in the Black Mountains Ecosystem Management Area of Critical Environmental Concern would have a significant beneficial impact on wild burro management. The area will be stratified; vegetation will be allocated for each species.

Establishing interpretive sites to promote wild burros as a part of the environment will, through public education, may gain public support and understanding of the wild burro as a natural resource. The long-term protection of crucial wild burro habitat from human encroachment will also be a positive impact.

The Burro Creek and Three Rivers areas of critical environmental concern could have a slight negative impact on wild burro populations by restricting use in riparian areas and impeding free-roaming movement around and within riparian areas with the development of exclusionary fences.

From Wild and Free-Roaming Horse and Burro Management

Allocation of forage and stratification of habitats under this alternative is the basis for equitable distribution of resources among all ungulates in the resource area. This is a significant improvement over current management. The Marble Canyon use area may be closed to wild horses if private water sources cannot be acquired.

Conclusions

Coordinated resource management and interdisciplinary monitoring may identify and reduce conflicts among ungulates in herd management areas. Benefits from land exchanges would increase as the acreage of public lands increases.

ALTERNATIVE 3

IMPACTS TO MINERAL DEVELOPMENT

From Lands Actions

Ownership Adjustments

The transfer of 175,271 acres of public lands 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 acquisition 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 Recreation Management

Same as under *Alternative 2* except additional recreation facilities would add a small acreage to withdrawals from mineral entry.

From Wild and Scenic Rivers

Same as under *Alternative 1*.

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From Special Status Species and other Wildlife Resources

Impacts to mineral resources development would be the same as under *Alternative 2*.

From Special Management Areas

Designation of 20 areas of critical environmental concern would:

- Leave 1,545,381 acres of federal minerals open to entry, close 31,326 acres of 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 (see appendices 27 and 28).
- Leave 1,551,001 acres of federal minerals open to leasing with standard lease terms, 16,893 acres open to leasing with no surface occupancy and 10,016 acres closed to leasing.
- Close 148,993 acres of federal minerals to mineral materials disposal.

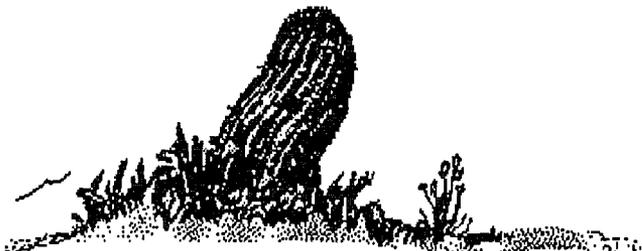
The Joshua Tree Forest Area of Critical Environmental Concern has a moderate potential for gold, the Clay Hills Area of Critical Environmental Concern has a high potential for bentonite, and the remaining areas proposed for withdrawal have a low or unknown mineral potential. Withdrawals would preclude any future exploration except on valid existing claims. Designating areas of critical environmental concern 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 Area of Critical Environmental Concern has a high potential for the occurrence of salable minerals in or near an area of increasing population growth.

Sales of mineral materials within the areas of critical environmental concern would be allowed only where no reasonable alternative exists. Other sources are available nearby.

Conclusions

Most high value mineral potential lands are open to mineral entry, mineral lease and mineral material disposals. Mining plans of operations and mandatory bonding in areas of critical environmental concern would constrain developers but would also lead to orderly development.



IMPACTS TO LANDS ACTIONS

From Lands Actions

Ownership Adjustments

Impacts would be the same as *Alternative 2* except additions and deletions of several areas would reduce the disposal areas by 6,282 acres for a total of 175,271 acres.

From Withdrawals

Unnecessary acreage may be withdrawn from lands actions.

Conclusions

Impacts are similar to *Alternative 2* except 6,282 fewer acres of land would be made available for exchange and 3,488.62 acres would be added to the Alamo Dam withdrawal.

IMPACTS TO SOCIOECONOMIC FACTORS

Implementation of *Alternative 3* would not cause significant impacts on any of the Kingman Resource Area socioeconomic data reviewed in this document. Population trends would not be affected. The direct economic benefits Mohave and Yavapai counties currently receive from BLM employment and operations would remain constant.

From Lands

A decision to dispose of a total of 175,271 acres of public land through exchange could increase the amount of private lands in the resource area. This disposal would have no significant impact on the county tax base.

From Resource Actions

There would be no significant impacts to socioeconomic factors in the resource area from minerals, special status species, wild-life habitat, recreation or rangeland management

From Vegetative Products Management

Elimination of firewood cutting and yucca harvest throughout the Kingman Resource Area would force the general public to go outside the resource area or to seek sources from willing private landowners to obtain firewood. Commercial woodcutters and yucca harvesters would also be forced to find other sources of supply. Marginal operators may be forced out of business.

IMPACTS TO WATERSHED (Soil, Water and Air) MANAGEMENT

From Mineral Development

Same as under *Alternative 2*.

From Lands Actions

Same as under *Alternative 2*.

From Rangeland Management

Same as under *Alternative 2*.

From Special Status Species Management

Same as under *Alternative 2*.

From Wild and Scenic Rivers

Same as under *Alternative 1*.

From Vegetative Products Management

The elimination of firewood cutting and yucca harvest would eliminate any impacts to soil and vegetation.

From Cultural Resource Management

Same as under *Alternative 1*.

From Recreation Management

Same as under *Alternative 2*.

From Wildlife Habitat Management

Same as under *Alternative 1*.

From Riparian Area Management

Same as under *Alternative 2*.

From Hazardous Materials Management

Same as under *Alternative 2*.

From Wild and Free-Roaming Horse and Burro Management

Same as under *Alternative 2*.

From Special Management Areas

Same as under *Alternative 2* except smaller areas of critical environmental concern would result in less protection for watersheds.

IMPACTS TO VEGETATIVE PRODUCTS MANAGEMENT**From Mineral Development Management**

Same as under *Alternative 2*.

From Landownership Adjustments

Impacts would be similar to those under *Alternative 2*, but to a greater degree because of additional acreage slated for disposal, except for woodcutting and yucca harvesting, which would be eliminated.

From Watershed Management

Same as under *Alternative 2* except for woodcutting and yucca harvesting, which would be eliminated.

From Vegetative Products Management

There would be no harvest of firewood and yucca.

From Cultural Resources Management

Same as under *Alternative 2* except for woodcutting and yucca harvesting, which would be eliminated.

From Recreation Management

Impacts would be similar to those under *Alternative 2*, but to a greater degree because of three special recreation management areas and numerous campground/interpretive sites planned for development.

From Wild and Scenic Rivers

Same as under *Alternative 1*.

From Wildlife Habitat Management

Same as under *Alternative 2* except for woodcutting and yucca harvesting, which would be eliminated.

From Special Status Species Management

Same as under *Alternative 2* except for woodcutting and yucca harvesting, which would be eliminated.

From Riparian Area Management

Same as under *Alternative 2* except for woodcutting and yucca harvesting, which would be eliminated.

From Special Management Areas

Impacts would be the same as under *Alternative 2* except a reduction of the total acreage in the Black Mountains Ecosystem Management Area of Critical Environmental Concern would result in fewer restrictions on harvesting of vegetative products.

Breaking up the Wright and Cottonwood Creeks Riparian and Cultural Area of Critical Environmental Concern and reducing the total acreage on the Joshua Tree Forest, Black Mountains and

CHAPTER IV

Burro Creek areas of critical environmental concern would result in fewer restrictions on the harvesting of vegetative product, except for woodcutting and yucca harvesting, which would be eliminated.

From Support Services Management

Same as under *Alternative 2*.

Conclusions

Impacts are similar to *Alternative 2* except woodcutting and yucca harvest would not be affected, because these activities would be eliminated. The addition of further intensive recreational facilities would create more areas where incompatibility with vegetative harvest will exist. Acreage reductions on four areas of critical environmental concern would result in fewer restrictions on harvests.

IMPACTS TO RANGELAND MANAGEMENT

From Mineral Development Management

Same as under *Alternative 2*.

From Landownership Adjustments

Impacts would be similar to those under *Alternative 2* except 587 acres in the Castle Rock Allotment could be lost through disposal.

From Watershed Management

Same as under *Alternative 2*.

From Vegetative Products Management

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 areas of critical environmental concern to livestock grazing would eliminate livestock use of the Chicken Springs, Greenwood Community, Bateman Springs, Burro Creek Ranch, Artillery Range and Arrastra Mountain grazing allotments.

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 special recreation management areas could further increase livestock-public interactions and related problems.

From Wild and Scenic Rivers

Same as under *Alternative 1*.

From Wildlife Habitat Management

Impacts would be similar to those under *Alternative 2* except that reducing the size of the Black Mountains Ecosystem Management Area of Critical Environmental Concern would reduce the degree of impacts to rangeland management described for *Alternative 2*.

From Special Status Species Management

Impacts would be similar to those under *Alternative 2* except that closing the Poachie and McCracken Desert tortoise habitat areas of critical environmental concern to livestock grazing would improve habitat for special status plants.

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 areas of critical environmental concern 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-Grand Wash Cliffs Area of Critical Environmental Concern 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 Mountains Ecosystem Management Area of Critical Environmental Concern is discussed under Impacts to Rangeland Management from Wildlife Habitat Management.

A reduction in acreage for the Wright and Cottonwood creeks riparian and cultural areas of critical environmental concern is described under Riparian Area Management above.

A reduction in acreage for the Burro Creek Riparian and Cultural Area of Critical Environmental Concern is discussed under Riparian Area Management above.

From Wild and Free-Roaming Horse and Burro Management

Same as under *Alternative 2* except the size of the wild horse use area would be reduced, excluding use of habitat supporting approximately 25 horses in Marble Canyon.

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 one additional grazing allotment. The elimination of yucca and firewood harvesting would lessen impacts to vegetative productivity. Closing the Poachie and McCracken desert tortoise areas of critical environmental concern to livestock grazing would affect grazing operations on six 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.

IMPACTS TO CULTURAL RESOURCES

From Minerals

The Western Bajada Tortoise and Cultural Areas of Critical Environmental Concern would be withdrawn from mineral entry, subject to valid existing rights, resulting in greater protection for cultural resources.

From Lands Actions

Same as *Alternative 2*.

From Vegetative Products Management

Cultural resources would benefit from the elimination of both commercial and private firewood cutting by eliminating the adverse impacts of these activities.

From Special Management Areas

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 areas of critical environmental concern. Most of the known major cultural resources would receive more protection and management under the proposed areas of critical environmental concern except for the reduced Joshua Tree Forest Area of Critical Environmental Concern, 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

Reducing the size of the area of critical environmental concern proposed for *Alternative 2* would probably be less beneficial, especially for the reduced Joshua Tree Forest Area of Critical Environmental Concern.

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 those under *Alternative 2*.

From Vegetative Products Management

Same as under *Alternative 2* except eliminating private and commercial firewood cutting yucca harvesting would slightly enhance esthetics for recreational users, but remove private use woodcutting as a source of local family recreation. No significant impact.

From Rangeland Management

Same as under *Alternative 2* except discontinuing livestock grazing on certain allotments within the McCracken and Poachie desert tortoise areas of critical environmental concern would improve the availability of primitive recreation opportunities in these allotments.

From Cultural Resources Management

Same as under *Alternative 2*.

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 Wild and Scenic Rivers

Same as under *Alternative 1*.

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From Wildlife Habitat Management

Same as under *Alternative 2*.

From Special Management Areas

Same as under *Alternative 2* except the smaller areas of critical environmental concern may reduce protection to the environment and thus affect scenic values.

From Support Services Management

Same as *Alternative 2*.

Conclusions

Same as under *Alternative 2* but additional recreation facilities would be offered to the public. Less protection of natural values in areas of critical environmental concern would slightly reduce the quality of recreational settings.

IMPACTS TO WILD AND SCENIC RIVERS

From Mineral Development

Same as under *Alternative 1*.

From Lands Actions

Same as under *Alternative 1*.

From Watershed Management

Same as under *Alternative 1*.

From Vegetative Products Management

Same as under *Alternative 1*.

From Rangeland Management

Same as under *Alternative 1*.

From Recreation Management

Same as under *Alternative 1*.

From Wildlife Habitat Management

Same as under *Alternative 1*.

From Special Status Species Management

Same as under *Alternative 1*.

From Riparian Area Management

Same as under *Alternative 1*.

From Wild and Free-Roaming Horse and Burro Management

Same as under *Alternative 1*.

IMPACTS TO WILDLIFE HABITAT

From Mineral Management

Same as under *Alternative 1*.

From Lands Actions

Same as under *Alternative 1*.

From Vegetative Products Management

Prohibiting woodcutting and Mohave yucca harvest would benefit wildlife by eliminating any potential damage to wildlife habitat from erosion, human disturbance or any other unforeseen impacts.

From Recreation Management

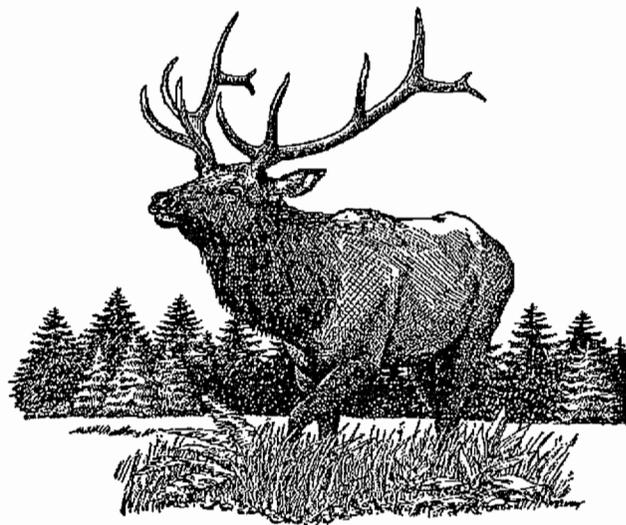
Same as under *Alternative 1* except additional campgrounds would increase both the harmful and beneficial impacts to wildlife.

From Wild and Scenic Rivers

Same as under *Alternative 1*.

From Special Status Species Management

Same as under *Alternative 1*.



From Special Management Areas

The smaller Joshua Tree Forest Area of Critical Environmental Concern would protect less wildlife habitat from surface disturbance than the larger area of critical environmental concern proposed for *Alternative 1*.

The modified Black Mountains Ecosystem Management Area of Critical Environmental Concern 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 area of critical environmental concern would adequately protect these areas from alteration. Less habitat would be protected under *Alternative 3* than *Alternative 1*.

From Wild and Free-Roaming Horse and Burro Management

Same as under *Alternative 1* except phasing out wild horses in Marble Canyon would eliminate potential competition between wild horses and native wildlife.

Conclusions

Elimination of woodcutting and yucca harvest would maintain wildlife habitat in a stable condition. Reducing wild horses in the Cerbats would eliminate potential competition between wild horses and native wildlife.

The size of special management areas would be reduced, resulting in less protection of wildlife habitat. Important adjacent habitats eliminated from area of critical environmental concern proposals under *Alternative 1* would not have additional protection.

IMPACTS TO SPECIAL STATUS SPECIES

From Mineral Development Management

Same as under *Alternative 1*.

From Landownership Adjustments

Same as under *Alternative 1*.

From Watershed Management

Same as under *Alternative 1*.

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 1*.

From Cultural Resource Management

Same as under *Alternative 1*.

From Recreation Management

Impacts are similar to those under *Alternative 1* except the increase in recreation sites would increase interactions between sensitive wildlife species and humans around developed campgrounds. If the concentration of people at campgrounds reduced movement of people over the rest of the resource area, total interactions could be reduced.

From Wild and Scenic Rivers

Same as under *Alternative 1*.

From Wildlife Management

Same as under *Alternative 1*.

From Riparian Area Management

Same as under *Alternative 1*.

From Special Management Areas

A reduction in the size of the Black Mountains Area of Critical Environmental Concern to include only areas of high value habitat and lambing grounds would reduce by roughly four and one-half sections the acreage protecting Cerbat beard-tongue habitat.

A reduction in acreage for the Burro Creek Riparian and Cultural Area of Critical Environmental Concern would reduce the area protected from surface disturbance by minerals, lands and recreation activities and increase the potential for damage to special status species habitat.

From Wild and Free-Roaming Horse and Burro Management

Same as under *Alternative 2*.

From Support Services Management

Same as under *Alternative 1*.

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Conclusions

Impacts would be similar to *Alternative 1* except that elimination of firewood cutting would eliminate the impacts to freckled milkvetch habitat. Reduction of acreage in two areas of critical environmental concern 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 1*.

From Recreation Management

The development of campgrounds and interpretive sites in riparian habitats would increase pressure on riparian vegetation, soils and streambanks and impact water quality around the sites. However, developed sites would tend to concentrate recreation activities in smaller areas and reduce use over larger expanses of riparian zones.

From Wild and Scenic Rivers

Same as under *Alternative 1*.

From Special Management Areas

The Wright and Cottonwood creeks areas of critical environmental concern 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 Area of Critical Environmental Concern 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.

From Wild and Free-Roaming Horse and Burro Management

Same as under *Alternative 2*.

Conclusions

Impacts would be similar to *Alternative 1* except the smaller riparian areas of critical environmental concern would afford less protection for riparian areas.

IMPACTS TO WILD AND FREE-ROAMING HORSE AND BURRO MANAGEMENT

From Mineral Management

Same as under *Alternative 1*.

From Lands Actions

Same as under *Alternative 1*.

From Watershed Management

Same as under *Alternative 1*.

From Rangeland Management

Same as under *Alternative 1*.

From Wildlife Habitat Management

Same as under *Alternative 2*.

From Recreation Management

Same as under *Alternative 1* except additional campgrounds would further concentrate people using the public lands away from herd management areas.

From Special Status Species Management

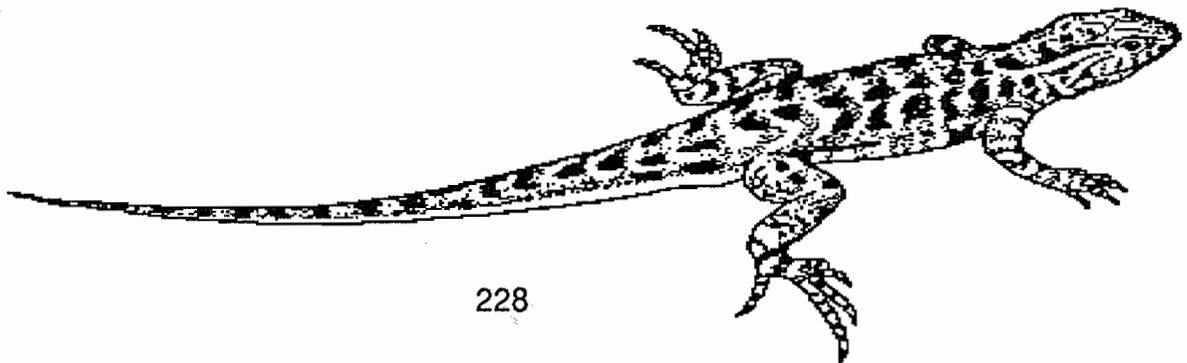
Same as under *Alternative 1*.

From Riparian Area Management

Same as under *Alternative 1*.

From Special Management Areas

Same as under *Alternative 1* except the likelihood for restrictions to be placed on animals would be reduced with the reduced size of several areas of critical environmental concern.



From Wild and Free-Roaming Horse and Burro Management

Same as under *Alternative 2* except wild horses would be restricted from the Marble Canyon use area.

Conclusions

Same as under *Alternative 1 and Alternative 2* except keeping wild horse numbers to the figure identified in the Cerbat-Black Mountains Grazing Environmental Impact Statement would eliminate the herd.

Socioeconomic Component

The disposal of 175,271 acres of public lands 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 overcrowding of existing sites.

Cumulative Impacts

Cumulative impacts include those which result from the incremental changes from all planned 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 time.

Reasonably Foreseeable Cumulative Impacts (1992 to 2012)

Since 1974, the administration of public lands in the Kingman Resource Area has been governed by three management framework plans and two grazing management plans. Each of these was completed in compliance with the Council on Environmental Quality Regulations.

Thus, BLM public land management has fully conformed to the spirit and intent of the National Environmental Policy Act. The public has participated in identification of issues and alternatives and review of draft plans. The environmental consequences of general, as well as site-specific, proposals and reasonable alternatives to those proposals have been considered early in the planning process. Direct and indirect impacts have been analyzed. Monitoring has been used to check mitigation and plans have been revised as appropriate and necessary.

In accordance with the National Environmental Policy Act and the Council on Environmental Quality regulations, BLM plans were developed and monitored in cooperation with the activities and plans of all other appropriate federal, state and local agencies. Each of the plans, with its impact analysis and monitoring program, has been submitted to the Arizona Governor for a state consistency review.

In light of this, no significant cumulative adverse impacts are anticipated from adding the preferred alternative to the existing plans of other agencies. Similarly, because of the continuation of intergovernmental consultation and coordination in compliance with the Council on Environmental Quality Regulations (40 CFR 1501.1) and BLM Planning Regulations (43 CFR 1610.1 and 1610.1), no significant cumulative adverse effects on or from this or other plans are anticipated in the foreseeable future.

Irreversible and Irretrievable Commitments of Resources

Implementation of the proposed alternative would require certain irreversible and irretrievable commitments of resources. For example, disposals would make some lands unavailable for public use; any disturbance to cultural or paleontological resources would be irreversible; any loss of those resources would be irretrievable; ores extracted in mineral operations would be irretrievable.

Potential adverse environmental effects of any actions that would result in an irreversible and irretrievable commitment of resources will be carefully assessed. The Kingman Resource Area, in compliance with the National Environmental Policy Act and Council on Environmental Quality Regulations, would prepare a site-specific environmental review before actions specified in the proposed Resource Management Plan are implemented. These will identify "means to mitigate adverse environmental impacts" of the proposed action per 40 CFR 1502.16(h). The environmental reviews provide site-specific assessments of the impacts of implementing these actions.

Short-Term Use versus Long-Term Productivity

The approved Kingman Resource Management Plan/Environmental Impact Statement will guide the Kingman Resource Area in managing 1.4 million acres of public land surface and 1.0 million acres of federal minerals for the next 20 years.

The Resource Management Plan team examined the adverse and beneficial impacts to the environment of implementing the proposed plan on a short-term and long-term basis.

Short-term impacts would occur within five years and long-term impacts would occur from 5 to 20 years after the plan is implemented.

No significant adverse impacts were identified. The net effect is that implementation of the proposed plan would be beneficial for the environment.