

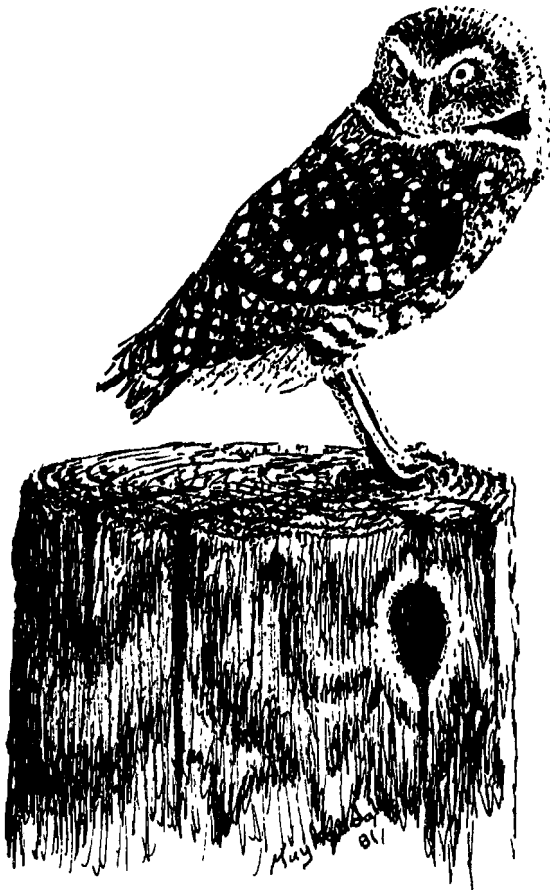
CHAPTER 3

AFFECTED ENVIRONMENT

Introduction

The affected environment describes the “environmental issues” identified by the BLM interdisciplinary planning team. An environmental issue is a value that would be significantly impacted by implementing the Proposed RMP. A detailed analysis of how the environmental issues were chosen is found in Chapter 1 of the draft RMP/EIS.

The environmental issues identified for this Proposed RMP are the same as those identified in the draft RMP/EIS document for the other alternatives, therefore, the affected environment section will not be reprinted here. Refer to Chapter 3 of the draft RMP/EIS for a description of the affected environment.



Errata And Other Changes To Chapter 3 Of The Draft RMP/EIS

1. Table 3-13, page 108: Little Colorado River spinedace is now a federally listed threatened species; Gilbert's skink is a state-listed, not a category 2 candidate species.
2. Map 3-4A, page 116: the Tortolita Mountains should be identified as important desert tortoise habitat; the legend for desert bighorn sheep and desert tortoise should be preceded by “known important.”
3. New Information: Special Status Plants
 - A. Sword milkvetch (*Astragalus xiphoides*) - Two new public land localities and additional populations within the Petrified Forest National Park are documented.
 - B. Paperspined cactus (*Pediocactus papyracanthus*) - Recent inventories of public land within suitable habitat indicate the species is more abundant than previously thought; up to 900 plants per square mile.

CHAPTER 4

ENVIRONMENTAL CONSEQUENCES

Introduction

Chapter 4 discusses the environmental consequences of implementing the Proposed RMP described in Chapter 2 of this RMP/FEIS. The analysis will be commensurate with the degree of expected impact. Those resource values not impacted to a significant degree are identified in Chapter 1 of the draft RPM/EIS and are not discussed further in this chapter.

General Assumptions

In order to analyze the impacts of the Proposed RMP 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 Proposed Plan.
2. Impacts are direct unless otherwise noted.
3. Impacts will be monitored and management adjusted as necessary, based on new data derived from monitoring.
4. Short-term impacts occur within five years and long-term impacts from five to 20 years after implementation of the plan.
5. All impacts are long-term unless otherwise noted.
6. Environmental assessments will be conducted prior to implementing any activity plans.
7. It is assumed that all disposal land is free of encumbrances and is available for disposal.
8. Land identified for disposal is assumed to go into private ownership unless otherwise noted.
9. Management of the RMP area's rangeland management program will be as described in the Final Eastern Arizona Grazing EIS (See Appendices 2 and 3 of the draft RMP/EIS).
10. Implementation of RMP decisions within wilderness study areas would only take place if those WSAs are not designated as wilderness.

Impacts Of The Proposed Resource Management Plan

EFFECTS ON LAND USES

Land Ownership

Under the Proposed RMP, total public land ownership in the RMP area would be reduced 12 percent from 911,343 acres of federal surface estate to **802,526 acres** of federal surface estate, assuming that all state land **within the identified RCAs is acquired by exchange**. However, the public land that is retained and the acquired land would form a more manageable pattern. Consolidation of land in the seven resource conservation areas (RCAs) would improve management efficiency and thus reduce management costs.

Under the Proposed RMP, the disposal of **391,803 acres** by exchange and **45,000 acres** by exchange or sale would eliminate a fragmented public land pattern that is difficult and inefficient to manage. Also, consolidation of federal surface and subsurface estates would eliminate problems in managing split estate land.

Land Available for Recreation and Other Public Purposes

The Proposed RMP identifies a total of **2,800 acres** as suitable for transfer to state and local government entities or agencies under the R&PP Act (Table 2-5). This land would be available for special public purposes at little or no cost. State and local governments would benefit from the low cost land available for parks, recreation sites and wildlife protection areas.

Right-of-Way Development

The Proposed RMP identifies five communication sites (Table 2-2) on 315 acres and limits communication site development within the RCAs to designated areas. Existing users on nondesignated facilities would be allowed to remain. Communication site users on land identified for disposal would be

allowed to stay until the land has been exchanged or sold and then could renegotiate terms with the new owners or remove their facilities when leases expire.

Designating communication sites would reduce the proliferation of these facilities and allow for their orderly development, eliminating user conflicts which often reduce operating efficiency.

Seven utility corridors are identified under the Proposed RMP, but only within the RCAs because the scattered land pattern outside the RCAs severely limits the usefulness of such designations. In addition, most public land outside the RCAs is identified for disposal; therefore, upon disposal, right-of-way applicants wishing to cross this land would need to deal with new landowners. This may increase the cost of siting major utility system rights-of-way outside the RCAs. Restricting utility system routings within the RCAs to those corridors may increase the cost of developing utility systems as the corridors may not always follow the most cost-effective route.

New utility systems would be allowed only within the designated utility corridors, thus eliminating a proliferation of rights-of-way across areas with sensitive resources. The designated corridors would also decrease the repeated analysis of alternative routes during the NEPA process.

Under the Proposed RMP, the Black Canyon corridor would be expanded to two miles in width, reducing or eliminating any further development across Perry Mesa and its important cultural resources. The Black Canyon corridor follows rougher topography than does the Perry Mesa route; thus, construction cost would be higher along the Black Canyon route. In addition, the potential for overcrowding and interference is higher along the Black Canyon corridor.

Under the Proposed RMP, land use authorizations would be precluded or restricted on 15,000 acres within six ACECs, resulting in reduced right-of-way flexibility and increased construction costs for utility rights-of-way. Power distribution rights-of-way in three ACECs (Waterman, White Canyon, Perry Mesa) would be precluded under this alternative.

All existing and new land use authorizations on land outside RCAs would continue to be authorized and allowed until the land is identified specifically for transfer. Upon transfer, terms and conditions would have to be renegotiated with the new owners, which could increase the costs of holding these land use authorizations.

Payments in Lieu of Taxes (PILT)

The Proposed RMP would result in a net loss of **447,074 acres** of public land eligible for PILT to four of the eight counties within the RMP area. Table 4-1 shows estimated losses in PILT by county under the Proposed RMP

Decreases in PILT may be partially offset by the **45,000 acres** that have been identified for private sale or exchange. If sold, these acres would be added to the tax rolls of the counties in which they are located.

Counties would not receive PILT on land acquired from the state. The PILT Act of 1976 specifically prohibits payments for tax exempt land (but not donated land) acquired from state or local governments.

Conclusion (Land Uses): Implementation would best meet the BLM's land tenure objectives although public land acres would be reduced 12 percent. Consolidating surface and subsurface ownership into seven RCAs would improve management efficiency and reduce costs. Transferring five parcels (3,781 acres) under the R&PPA would meet local governments' needs for low cost public land. Land use authorizations would be precluded on 14,691 acres in six ACECs. Placement of seven utility corridors and five communication sites would meet utilities' needs but increase future construction costs somewhat. There would be a net loss of about **\$225,000** in annual PILT to four counties.

A recently enacted state law requires the Arizona State Land Department to make a PILT type payment to counties that lose federal PILT payments due to BLM/state exchanges. These state payments would greatly reduce the federal PILT losses shown in Table 4-1.

TABLE 4-1
Estimated PILT Losses
Bureau of Land Management, Phoenix District, Arizona

<u>County</u>	<u>1986PILT Payment</u>	<u>Loss Under Proposed RMP</u>
Apache	\$255,518	\$99,298
Gila	705,669	0
Maricopa	924,000	0
Navajo	73,788	70,628
Pima	965,393	0
Pinal	401,987	55,191
Santa Cruz	314,888	118
Yavapai	630,299	0
TOTAL	\$4,271,542	\$225,235

Source: Bureau of Land Management, Arizona State Office.

EFFECTS ON LOCATABLE MINERAL DEVELOPMENT

Disposal of large amounts of federal subsurface estate would reduce the level of minerals exploration and development on this land because there would be no free access to minerals such as allowed under the Mining Law of 1872. Mining on federal land under this law is generally less expensive than is such mining on state and private land. Overall, a 50 percent reduction in notices and a 75 percent reduction in the number of mining plans of operations (MPOs) is expected under this alternative.

Minerals-related activity on the flanks of the Bradshaw Mountains is greater than anywhere else in the planning area. Much

of this area of interest lies within the bounds of the proposed Black Canyon RCA. Mineral development in this area would benefit because mineral developers would be required to deal with the laws and regulations of only one agency. A significant level of activity has been established outside the proposed RCA boundaries in an area between Prescott and Cordes Junction where proposed land disposals under the Proposed RMP would lead to an 85 percent decline in mineral exploration and development.

Under the Proposed RMP, mineral activity on land disposed of in the Goldfield and Superstition mountains area is expected to stop altogether. The new landowners would likely be more interested in residential and/or commercial development than marginal mineral development.

In the Miami-Globe area the impact of disposal would be less significant because residential development is currently less likely than in the Apache Junction area near the Goldfield and Superstition mountains. A 40 percent reduction in minerals activity on federal land is expected here. However, the development of any existing, but undelineated, porphyry copper bodies in this area is not expected. To the east, in the Mineral Butte area, mineral activity on disposal land would cease altogether.

Within the boundaries of the proposed White Canyon RCA, mineral activity would continue or even increase somewhat because the proposed acquisitions should open new land to mineral activity.

In the southern portion of the RMP area, a decline in mineral activity on all public land outside the proposed Baboquivari and Silver Bell RCAs is expected. However, this would be offset somewhat by an increased interest in acquired land within the RCAs. Of greatest significance would be a 85 to 95 percent decline in prospecting and exploration activity on federal land identified for disposal south of Tucson. It is here that the greatest potential exists for future development of yet unknown porphyry copper bodies. Overall this could be the most significant impact of all under the Proposed RMP.

Conclusion (Locatable Mineral Development): Expect a 50 percent reduction in mining notices (**from 25 to 12 per year**) and a 75 percent reduction of MPOs (**from 2 to about 1 per year**) filed in the RMP area.

EFFECTS ON WATERSHED CONDITION

Under the Proposed RMP, adopted management changes would affect watershed condition. Within RCA boundaries those allotments which have the greatest number of important resource values (Table 2-4) would receive priority for project work. Where those allotments are identified as Category IV watersheds, an activity plan would be prepared to identify and implement, among other things, watershed improvement projects. Subsequent improvement of the watershed would increase soil cover and infiltration, reduce erosion, sediment yield, peak flows and dust emissions, maintain soil productivity and, in some areas, enhance stream flow. Air and water quality would also be enhanced.

Such change in watershed conditions and function would have a significant positive impact. Watershed improvement work is proposed on six allotments (204,000 acres). This figure includes 111,000 of the RMP area's 246,000 acres in Category IV watersheds and includes 93,000 acres of acquired land.

The other major action under the Proposed RMP to benefit watershed conditions and related values would be the imposition of off-road vehicle restrictions. Although the trends in watershed conditions are assumed to be static, population trends indicate that recreation demands, including that of ORV use, will increase. Soils in some watersheds are particularly prone to accelerated erosion after ORV disturbance. ORV restrictions would prevent the further decline of these watersheds. Under the Proposed RMP, ORV restrictions or transfer of ownership would prevent further degradation of 182,000 acres of land currently held in public ownership, 85,000 of which have slightly to strongly saline soils.

Conclusion (Watershed Condition): Significant improvements would occur to **111,000 acres** on six Category IV allotments. ORV designations would allow existing acceptable conditions on Category II allotments to be maintained.

EFFECTS ON RANGELAND MANAGEMENT

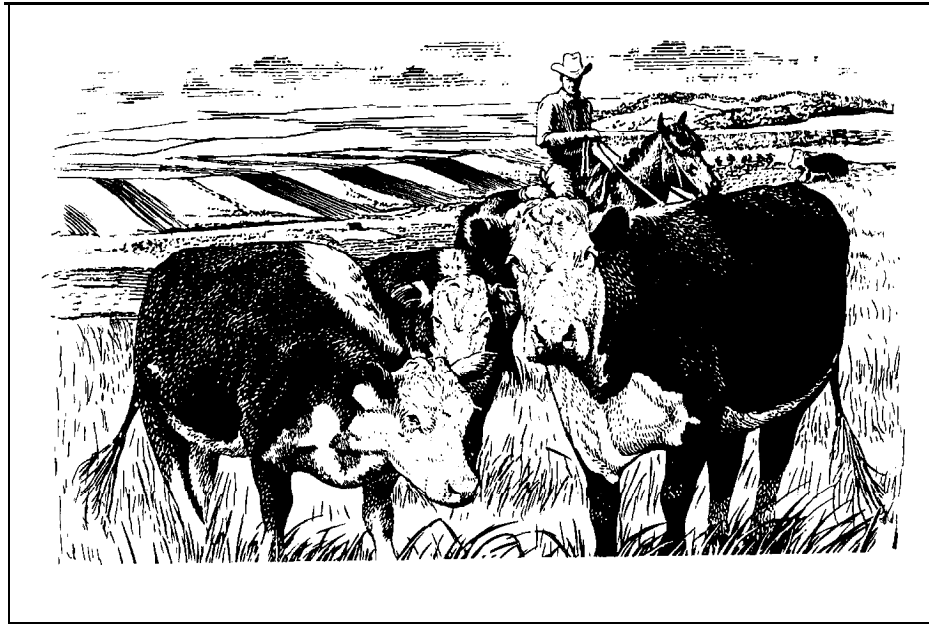
Under the Proposed RMP, ranch operations within the seven RCAs would benefit from the BLM's consolidation program. Ranch operators would have to deal with the grazing regulations of only one agency and the BLM would be able to develop rangeland improvements on these allotments as a cohesive unit, thereby increasing the effectiveness of such improvements.

Ranch values of those ranches within the RCAs would not be affected by the acquisition of state land by the BLM as lease values on BLM and Arizona State Land Department land are comparable.

The Proposed RMP would result in the disruption of some ranch operations which lie outside the identified RCAs. If public land within a ranch is disposed to private interests in areas of growth and development, livestock would likely be fenced out. Where such fencing renders improvements ineffective, development of improvements such as wells and pipelines would require large investments of time and money.

In areas identified for disposal where development does not occur, grazing is expected to continue because blocks of public land acquired by private owners would in most cases be available for lease to the rancher. However, grazing fees on such land may be substantially more than those charged by the federal government.

Under the Proposed RMP, ranches grazing public land identified for disposal may undergo a reduction in ranch values if federal grazing leases are cancelled. This would only occur on land transferred from federal to private ownership. On land transferred from federal to state ownership, the Arizona State Land Department generally has chosen to maintain grazing privileges.



The value of ranches lying outside the RCA boundaries would be reduced if federal grazing leases were cancelled and not replaced by state leases.

Without federal leases, the average values of small, medium and large ranches would be lowered, respectively, from \$57,000 to \$41,610, from \$208,000 to \$189,280 and from \$780,000 to \$756,600. Values of ranches within the RCAs would not change.

Conclusion (Rangeland Management): The value of ranches lying outside RCA boundaries would be reduced if federal grazing leases were cancelled and not replaced by state leases. Value reductions would average 27 percent for small ranches, nine percent for medium-sized ranches and three percent for large ranches. Consolidating public land on ranches in the RCAs would eliminate management complications caused by checkerboard ownership.

EFFECTS ON AREAS OF CULTURAL SIGNIFICANCE

Under the Proposed RMP, land acquisitions within five significant cultural areas would have a positive effect on at least 285 sites. These five areas include: Avra Valley, Santa Ana del Chiquiburitac, Reymert Townsite, Middle Gila and Perry Mesa. The BLM would be able to focus management efforts on the protection and enhancement of the information, public and conservation values provided by the sites.

Disposal of public land under the Proposed RMP would impact cultural values in five of the ten identified areas of cultural significance. These areas are Zuni-Hardscrabble, Snowflake-Mesa Redonda, Upper Little Colorado, Lower Texas Gulch and

Lower Agua Fria. Existing laws, regulations and memoranda protect, through mitigation, the information values that would be derived from cultural sites. However, public and conservation values of properties in the five disposal areas would be lost under this alternative.

ACEC and SMA designations would benefit high value cultural resources in Santa Ana del Chiquiburitac, Avra Valley, Middle Gila, Reymert and Perry Mesa. Long-term protection and enhancement of at least 285 sites in the above five areas would result.

Cultural resources within recommended utility corridors in Middle Gila and Avra Valley could be dealt with on a one-time basis. Avoidance and mitigation of properties would be performed before utility system development could take place. Therefore, the information value of all cultural sites within the path of utility system development would be derived.

Limiting ORV use to existing roads and trails would benefit archaeological sites only slightly. However, direct and indirect impacts to at least 388 properties would probably continue and road closures at Reymert and Santa Ana would benefit these sites.

Table 4-2 shows how cultural properties in each of the 10 significant cultural areas would fare under the Proposed RMP.

Conclusion (Areas of Cultural Significance): Land acquisitions and ACEC and SMA designations which specify management for Santa Ana del Chiquiburitac, Avra Valley, Reymert Townsite, Middle Gila and Perry Mesa would result in long-term positive effects on at least 285 sites. On land identified for disposal, 105 sites would suffer a 10 to 25 percent loss of cultural value.

TABLE 4-2
Loss of Cultural Values in
10 Significant Areas over 20 Years
Bureau of Land Management,
Phoenix District, Arizona

Cultural Area	Deterioration Type*	Proposed RMP	Under Current Management
Santa Ana Chiquiburitac	I	1%	2%
	II	0	2
	III	0	0
	IV	1	1
	TOTAL	5%	5%
Avra Valley	I	1%	3%
	II	0	2
	III	2	2
	IV	1	3
	TOTAL	5%	10%
Reymert Townsite	I	1%	6%
	II	0	4
	III	0	3
	IV	3	7
	TOTAL	5%	20%
Middle Gila Archaeological Zone	I	1%	8%
	II	2	4
	III	1	4
	IV	1	4
	TOTAL	5%	20%
Perry Mesa Archaeological District	I	1%	6%
	II	1	3
	III	0	4
	IV	2	2
	TOTAL	5%	15%
Lower Agua Fria Valley	I	10%	10%
	II	5	5%
	III	5	5%
	IV	5	5%
	TOTAL	25%	25%
Lower Texas Gulch	I	4%	4%
	II	2	2
	III	1	1
	IV	3	3
	TOTAL	10%	10%
Zuni-Hardscrabble Region	I	11%	7%
	II	4	3
	III	2	2
	IV	3	3
	TOTAL	20%	15%
Upper Little Colorado Region	I	11%	7%
	II	4	4
	III	3	2
	IV	2	2
	TOTAL	20%	15%
Snowflake-Mesa Redonda Region	I	13%	10%
	II	7	5
	III	2	2
	IV	3	3
	TOTAL	25%	20%

*Deterioration Type: I. Vandalism
 II. ORV
 III. Utility Corridor/Communication Site
 IV. Natural Processes

NOTE: Value estimates are based on the judgment of the RMP Team Archaeologist and are intended to illustrate relative impacts.
 Source: Phoenix District files.

EFFECTS ON VEGETATION

Under this alternative, coordinated resource management plans would be developed for nine grazing allotments to benefit many important resources. These plans would incorporate grazing management, watershed management, habitat management and riparian management into one activity plan. Implementation would result in improving the ecological condition on nine grazing allotments. Some sites would improve faster than others, however. The average condition of each area would be expected to improve approximately 25 percent **over the long term**.

Conclusion (Vegetation): Implementation would result in a 25 percent improvement of ecological site condition on nine allotments encompassing **243,000 acres** of public land.

EFFECTS ON RIPARIAN HABITAT

Under the Proposed RMP, **73.5** of the RMP area's 94 miles of public riparian habitat (see Appendix 7 of the draft RMP/EIS) would be retained in federal ownership and the BLM would pursue the acquisition of **53.9 miles** of state-owned riparian habitat within the RCAs. Overall, the amount of riparian habitat on public land in the RMP area would increase 36 percent. Riparian management would be emphasized on **60.4 miles** within eight special management areas (Table 4-3) to improve habitat condition.

Larry Canyon would be managed as an ACEC to maintain the pristine riparian deciduous forest community. Land use restrictions under the designation would ensure maintenance of the the canyon's pristine riparian community.

A total of 630 acres of riparian habitat, including portions of Zion and Picacho reservoirs, would be transferred to the AG&FD under the R&PPA to be managed as aquatic and wildlife communities.

Under the Proposed RMP, 20 miles of riparian habitat area would be disposed of through exchanges (see Appendix 7 of the draft RMP/EIS). The land probably would not be managed with the overall objective of maintaining and improving riparian habitat but would be subject to impacts from unregulated activities such as ORVs, mining, grazing, rights-of-way construction, land treatments and water removal.

Conclusion (Riparian Habitat): Acquiring **53.9 miles** of habitat would increase public riparian habitat in the RMP area by 36 percent. **Forty-seven percent** of all riparian habitat would be managed to improve current condition.

EFFECTS ON SPECIAL STATUS PLANTS

Peebles Navajo Cactus - *Pediocactus peeblesianus* var. *peeblesianus* - Federally listed - Endangered. Under the Proposed RMP, the BLM would retain about **950 acres** of known habitat for the Peebles Navajo cactus. In addition, the BLM

TABLE 4-3

**Riparian Areas Proposed for Special Management
Bureau of Land Management, Phoenix District, Arizona**

Habitat Name	Special Management Area	Miles
Agua Fria	Williams Mesa	5.0
Arrastre Creek	Bumble Bee	2.7
Bumble Bee Creek	Cordes Junction and Bumble Bee	7.7
Hassayampa River	Hassayampa River Riparian	10.7
Larry Creek	Larry Canyon ACEC	0.4
Castle Creek	Bumble Bee	0.9
Sycamore Creek	Sycamore Creek	0.8
Cottonwood Gulch	Williams Mesa	0.2
Antelope Creek	Bumble Bee	2.7
Gila River	Gila River Riparian	15.0
White Canyon	White Canyon ACEC	3.1
Walnut Canyon	White Canyon ACEC	1.2
Tule Creek	Williams Mesa	2.6
Boulder Creek	Williams Mesa	7.4

Source: Phoenix District files.

would acquire 1,280 acres of state land and identify up to **2,420 acres** of private land which either have known populations of the species or would be needed for the management and protection of existing populations (Table 4-4).

Table 4-4

**Special Status Plant Habitat Acreages
Bureau of Land Management, Phoenix District, Arizona**

Plant	Proposed RMP*	Under Current Management
Peebles Navajo cactus	4,650	950
Tumamoc globeberry	123,200	126,000
Nichol Turk's head cactus	3,100	1,960
Thornber fishhook cactus	34,000	30,000
Sword milkvetch	1,280	1,560
Paperspined cactus	0	40,000

*Acreages include BLM, state and private land within the acquisition area.
Source: Phoenix District files.

Overall land tenure adjustments under the Proposed RMP could result in **4,650 acres of suitable** habitat in public ownership, a **600 percent** increase over the existing situation.

Acquisition of the identified state and private land would place all known populations of the plant under the protection of the *Endangered Species Act* (ESA). The federal and acquired land would be designated as the **4,650-acre** Tanner Wash ACEC and managed to protect and promote recovery of the species.

Conclusion (Peebles Navajo Cactus): Land acquisition could result in a 600 percent increase of suitable habitat in public ownership. Extending federal protection to all known populations and acquiring suitable habitat would promote recovery of the species.

Tumamoc Globeberry - *Tumamoca macdougalii* - Federally listed - Endangered. Under the Proposed RMP, the BLM would retain about 5,740 acres of occupied habitat with 40 plants while disposing of 1,060 acres with eight plants. The BLM would dispose of approximately 33,000 acres of habitat with a high to moderate potential for occurrence of *Tumamoca* while retaining about **86,200 acres and acquiring up to 31,300 acres of such habitat within the proposed Silver Bell RCA. Overall, this would result in about 123,200 acres of occupied and potential habitat being in public ownership, approximately a two percent reduction over current habitat acres (Table 4-4).**

The retention and acquisition of land into RCAs would consolidate Tumamoc globeberry habitat on federal land and present better opportunities for managing and protecting the species. The BLM would also work with the LJSFWS to implement the Tumamoc Globeberry Recovery Plan.

The eight **Tumamoc globeberry** plants on 1,060 acres of occupied habitat slated for disposal probably would be destroyed by future development. These plants represent less than one percent of the protected population.

Even though land **exchanges** under the Proposed RMP would **reduce slightly** the total amount of federally protected suitable habitat for the Tumamoc globeberry, management of the species would improve because the BLM would be **able to protect the species** on consolidated blocks of habitat **more effectively**. It is likely that intensive management for the species on retained and acquired land would more than offset losses from **habitat disposal**.

Conclusion (Tumamoc Globeberry): Land tenure adjustments would result in about a two percent reduction in federally protected habitat but would consolidate public ownership of habitat with 40 of the 48 plants known on public land. Long-term protection within consolidated public land blocks is expected to outweigh short-term effects of **habitat disposal** and be beneficial to federal efforts to protect the species.

Nichol Turk's Head Cactus - *Echinocactus horizontalis* var. *nicholii* - Federally listed - Endangered. Under the Proposed RMP, the BLM would retain in federal ownership all 1,960 acres of the Turk's head cactus habitat which it currently administers in the RMP area. These acres plus 600 acres of state and 540 acres of private land identified for acquisition would be included in the 3, 100-acre Waterman Mountain ACEC with specific management goals identified. Overall, the Proposed RMP would result in a 58 percent increase in the amount of Nichol Turk's head cactus habitat in public **ownership** (Table 4-4).

Acquisitions under the Proposed RMP would bring all known populations outside the Tohono O'odham Reservation under federal protection. Some mineral development on existing claims would result in the loss of additional plants and habitat, but under the Proposed RMP, the long-term impacts of mining would be significantly reduced. Losses due to ORV activity would also be reduced.

Conclusion (Nichol Turk's Head Cactus): Land acquisitions would increase federally protected habitat by 58 percent. Protection measures under ACEC designation are expected to provide for recovery of the species.

Thornber Fishhook Cactus - *Mammillaria thornberi* - Federal Category 2 - Candidate. Under the Proposed RMP, the BLM would retain about 22,000 acres of suitable habitat on the west side of the Avra Valley, including known habitat for 50 plants, and acquire 12,000 acres of state land in suitable habitat. Overall, the Proposed RMP would result in a 13 percent increase in the amount of Thornber fishhook cactus habitat on public land.

The BLM would dispose of **300 acres** of habitat on the east side of the Avra Valley west of Tucson with **populations** of Thornber fishhook cactus. The **plants** of Thornber fishhook cactus on the BLM disposal tracts are likely to be destroyed by secondary impacts from development on adjacent private land. These plant losses would be balanced by the acquisition of other suitable habitat where opportunities for management of the species would be enhanced by blocking federal ownership, e.g., the Silver Bell Resource Conservation Area. **In addition, all public land parcels adjacent to the Tucson Mountains Unit of Saguaro National Monument would be retained under BLM administration. At least one of these parcels contains Thornber fishhook cactus.**

Conclusion (Thornber Fishhook Cactus): Consolidating federal ownership through land acquisitions would increase protected habitat by 13 percent under the Proposed RMP. Even with the loss of some known habitat through disposal, long-term benefits to the species under the Proposed RMP would be positive.

Sword Milkvetch - *Astragalus xiphoides* - Federal Category 1 - Candidate. Recent inventories have documented the occurrence of sword milkvetch on two BLM parcels not considered in the draft RMP/EIS. Additionally, the U.S. Park Service has reported some new localities for the plant within Petrified Forest National Park. Under the Proposed RMP, the BLM would retain two of the three known populations currently under its administration and would manage the parcels (1,280 acres) cooperatively with the U.S. Park Service. A tract of 280 isolated BLM acres near Holbrook with one small population is identified for disposal. All but three of the known sword milkvetch localities are currently under federal control. The three are on private land which is expected to be developed in the future.

Conclusion (Sword Milkvetch): Current information on the distribution and population size of sword milkvetch on federal lands indicates that implementing the Proposed RMP would contribute to conservation of the species by identifying all but one of the known localities administered by the BLM for retention. Protection of the species would be enhanced through cooperative management with the U.S. National Park Service.

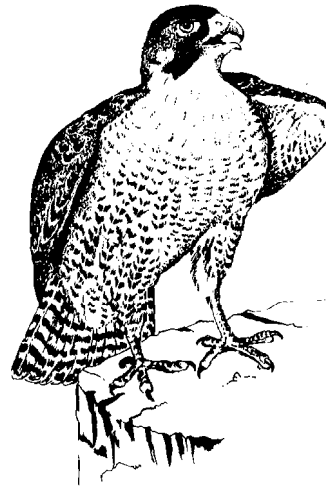
Paperspined Cactus - *Pediocactus papyracanthus* - Federal Category 2 - Candidate. Under the Proposed RMP, the BLM would dispose of all public land in Arizona with known or suitable habitat for the paperspined cactus.

Recent inventory of habitat in the RMP area indicates the species occurs in densities up to 900 plants per square mile over a range of 720 square miles. Land exchanges in the habitat area are not expected to result in a significant change from the current livestock grazing use. Although intensive grazing systems cause local declines in some populations, no widespread use of these systems is anticipated.

Conclusion (Paperspined Cactus): Implementing the Proposed RMP would not cause a significant decline of the species given the expected future land use and recent indications of the size and extent of the current populations.

EFFECTS ON WILDLIFE

Gila Topminnow - *Poeciliopsis occidentalis occidentalis* - Federally Endangered. Under the Proposed RMP, the Gila topminnow population in Tule Creek would be managed and monitored. It is assumed that the existing population would eventually be lost due to natural flooding within the Tule Creek drainage. Under the Proposed RMP, the fish would be restocked, however, thereby maintaining a successfully reproducing Gila topminnow population in the RMP area.



Gila topminnows would be introduced into five of six suitable sites to mitigate the 1981 loss of the natural population on public land in Cocio Wash. Eight of the recommended total of 20 introduction sites in Arizona are in the RMP area, but two are in disposal areas and one is in the Larry Canyon ACEC. The AG&FD and USFWS would not introduce fish onto public land that is expected to leave federal ownership. Management goals for Larry Canyon did not identify fish introductions. Acquiring land would benefit recovery efforts as the new land is likely to

contain additional sites suitable for reintroduction. However, the extent of this impact is unknown since the land has not yet been inventoried for reintroduction sites.

Conclusion (Gila Topminnow): Maintaining an existing population and reestablishing fish into five sites within their historic range would assist in the eventual recovery of the species.

Desert Pupfish - *Cyprinodon macularius* - Federally Endangered (also State-listed). Under the Proposed RMP, the Mesquite Spring population of pupfish would be managed and monitored. Pupfish would be introduced into three suitable sites in the RMP area, thereby increasing the total number of occupied sites in Arizona by 57 percent. The AG&FD and USFWS would not put fish into two sites on land proposed for disposal, preventing an additional 28 percent increase. However, acquisitions under the Proposed RMP are expected to offset this impact as it is likely that the acquired land will contain suitable reintroduction sites.

Conclusion (Desert Pupfish): The Mesquite Spring population would be managed and monitored and fish introduced into three suitable sites, thus increasing the occupied sites in Arizona by 57 percent. This, along with the acquisition of other suitable sites, will assist in delisting the species.

Little Colorado River Spinedace - *Lepidomeda vittata* - Federally Threatened. Under the Proposed RMP, 1.7 miles or 1.5 percent of the total Little Colorado River spinedace habitat would be removed from federal protection under the *Endangered Species Act*. Disposal of land would affect the fish only in Silver Creek and would not affect the species in the four other drainages which constitute its habitat. However, since all federal management would be eliminated from the Silver Creek drainage, the habitat **could eventually** be negatively impacted by **uncontested** upstream water removal projects. Dewatering of the Silver Creek drainage **would** eventually cause the loss of suitable spinedace habitat on the **disposal land**. The lack of federal management of spinedace habitat could contribute to the disappearance of the species from Silver Creek, one of the five major drainages inhabited by spinedace.

Conclusion (Little Colorado River Spinedace): About 1.5 percent of the total habitat (eight percent of the Silver Creek habitat) would be removed from federal protection under the *Endangered Species Act*. **A September 1988 opinion by the USFWS states that disposal of the Silver Creek habitat would not jeopardize the species.**

Desert Bighorn Sheep - *Ovis canadensis mexicana* - State-listed. Under the Proposed RMP, 39,200 of the 39,330 acres of public land in crucial desert bighorn sheep habitat would be retained and designated as a special management area to maintain the existing population of 50 to 60 desert bighorn. In addition, the BLM would pursue the acquisition of 11,400 acres of state land within the management area and manage them as

crucial habitat. Overall, the land tenure adjustment would result in a **22 percent** increase in the amount of public land habitat for bighorn sheep in the RMP area (See Table 4-5). Also, 90 percent of the total crucial habitat in the RMP area would come under federal ownership and be actively managed for desert bighorn sheep.

TABLE 4-5
Wildlife Habitat Acreages
Bureau of Land Management, Phoenix District, Arizona

Species	Proposed RMP*	Under Current Management
Bighorn Sheep	50,600	39,330
Desert Tortoise	554,750	557,300
Pronghorn		
Sycamore Mesa	63,100	9,100
Apache-Navajo	0	216,200
Mule Deer	353,250	268,800
Javelina	583,650	526,000

*Acreages include BLM and state land recommended for acquisition. Source: Arizona Game and Fish Department and Phoenix District files.

Vehicular use is expected to increase throughout the Silver Bell and West Silver Bell Mountains. ORV designations recommended under the Proposed RMP would prevent habitat damage to bighorn sheep areas and would prevent the animals from abandoning significant portions of the habitat. Closing 800 acres in the lambing area on Ragged Top to vehicular use would prevent impacts by ORVs and would reduce impacts from mining activities. Therefore, closure would greatly benefit bighorn populations by improving bighorn lambing conditions.

Under the Proposed RMP, there would be no new surface disturbance from major right-of-way development in crucial desert bighorn habitat because such development would be limited to existing corridors. Construction of such rights-of-way in the designated utility corridor along the western edge of crucial habitat would conflict with bighorn travel between crucial habitat and the Tohono O'odham Reservation, but mitigating measures would keep conflicts to a minimum and maintain the travel corridor.

Designating Confidence Peak as a communication site would negatively impact bighorn use of 400 acres of habitat in the vicinity of the peak. One existing facility is accessed by a jeep trail. Construction, maintenance and use of communication facilities would create additional intrusions into bighorn habitat.

Prohibiting surface occupancy on oil and gas leases within 30,200 acres of crucial desert bighorn habitat would benefit bighorn by preventing habitat destruction and disruption of habitat use patterns.

Conclusion (Desert Bighorn Sheep): The existing population of 50 to 60 is expected to remain stable. The BLM's objective to maintain a viable population in the Silver Bell-West Silver Bell Mountains and to increase habitat capability would be met.

Desert Tortoise - *Gopherus agassizi*. Under the Proposed RMP, 377,200 acres of the 557,300 public land acres currently within the range of desert tortoise would be retained. In addition, the BLM would pursue the acquisition of 177,540 additional acres within this range. Overall land tenure adjustments would result in BLM management of 554,740 acres within desert tortoise range, less than a one percent decrease in public land habitat (See Table 4-5).

The BLM would retain 58,740 of the 61,300 acres of tortoise habitat identified as important and acquire 22,032 additional acres. Overall, the Proposed RMP would result in a 30 percent increase in the amount of known important tortoise habitat on public land in the RMP area. This important habitat in the Picacho Mountains, Silver Bell Mountains and the Donnelly Wash-Grayback area would be managed to maintain habitat capability. Such management would seek to ensure the viability of existing populations.

Identifying 7,980 acres of state land in the Picacho Mountains for acquisition, designating a special management area in the Picacho Mountains and implementing activity plan actions would result in the maintenance of existing populations in these important habitats.

The designation of two communication sites on two of the highest peaks in the Picacho Mountains is not expected to impact desert tortoise populations because tortoise generally inhabit the lower elevations and no roads would be constructed to access the sites.

Vehicular use is expected to increase throughout the range of the desert tortoise. Limiting vehicles to existing roads and trails would prevent habitat damage and tortoise injuries. However, impacts associated with existing roads would continue.

Approximately 32,200 acres (six percent) of desert tortoise range on public land is included in four CRMAs. Management plans for these areas would include actions to prevent and mitigate tortoise habitat disturbances. However, in these CRMAs, tortoise populations would be expected to exhibit a downward trend in localized developed areas or areas of high visitor use because of surface disturbances, disruption of home ranges, collection and vandalism.

Conclusion (Desert Tortoise): The BLM's objective of maintaining the capabilities of important habitat to support desert tortoise populations would be met through land acquisitions and special management.

Pronghorn - *Antilocapra americana*. The RMP area has two areas that support populations of pronghorn antelope, one on Sycamore Mesa east of Cordes Junction and the other in Apache and Navajo counties. On Sycamore Mesa, antelope inhabit about 78,000 acres of which about 12 percent (9,100 acres) is currently public land.

Under the Proposed RMP, all 9,100 acres of Sycamore Mesa and Perry Mesa habitat would be retained. In addition, the BLM would pursue the acquisition of 54,000 acres of habitat on state land. Overall land tenure adjustments would result in the BLM

administering 63,100 acres of pronghorn habitat, a 590 percent increase over the existing situation (See Table 4-5). Public and acquired pronghorn habitat would be managed to protect and improve habitat conditions and to facilitate pronghorn movement throughout their habitat. Active management of pronghorn habitat would result in a slight increase in pronghorn numbers.

Under the Proposed RMP, public land comprising 24 percent of a pronghorn travel corridor between Sycamore Mesa and Chino Valley would be disposed of through exchanges. The majority of this land would be developed under private ownership, which would greatly restrict pronghorn movement through the corridor. The loss of the travel corridor would contribute to the geographic isolation of the mesa and valley populations and subsequent loss of genetic diversity.

In Apache and Navajo counties, public land amounts to about seven percent of the two counties' total pronghorn habitat. Under the Proposed RMP, all public land pronghorn habitat would be disposed of. Two percent of this disposal land is near land which is currently being subdivided and is likely to be developed in the near future. As subdivisions become numerous and human occupants settle in, the land would lose its value as pronghorn habitat.

Conclusion (Pronghorn): Through land acquisitions, public land habitat on Sycamore Mesa would increase by 590 percent and be actively managed. Numbers would increase slightly even though restricted movement through the travel corridor would be more restricted because of land disposal and subsequent new development in the area. Two percent of the total habitat in Apache and Navajo counties would eventually be abandoned as a result of subdivision development, but the remaining land (five percent of the total) would continue to provide habitat.

Mule Deer - *Odocoileus hemionus*. Under the Proposed RMP, 182,000 acres of public land which supports medium to high density mule deer populations would be retained. In addition, the BLM would pursue the acquisition of 171,250 acres of such habitat. Overall land tenure adjustments under the Proposed RMP would result in the BLM administering 353,250 acres of mule deer habitat in the RMP area, a 31 percent increase (See Table 4-5).

The majority of this public land is in the White Canyon RCA with the remainder in the Picacho Mountain and Black Canyon RCAs. The land is currently providing high value deer habitat and would be managed to ensure that it continues to provide important mule deer habitat.

Under the Proposed RMP, 93,000 acres of the public land in the RMP area that provides mule deer habitat would be disposed of through exchanges. More than half is in areas that are likely to be developed in the near future. The land would eventually support few or no deer.

Mule deer habitat would be managed under two updated HMPs (Black Canyon and Middle Gila) and one new HMP (Picacho Mountains). Management actions directed toward maintaining



and improving mule deer habitat would be undertaken and mule deer numbers should increase in these areas.

ORV designations limiting vehicles to existing roads and trails in the majority of the RMP area and closing specific areas would prevent the loss of deer habitat and harassment of mule deer. ORV designation would prevent localized decreases in mule deer numbers caused by heavy off-road vehicular use.

Conclusion (Mule Deer): Land acquisitions would increase public land habitat supporting medium to high density populations by 31 percent and total habitat capability would increase by three percent because of ORV designations and improvements planned under updated HMPs.

Javelina - *Dicotyles tajacu*. Under the Proposed RMP, 453,000 of the 526,000 acres of public land currently supporting medium to high density javelina populations would be retained. In addition, the BLM would attempt to acquire 130,650 acres of such habitat. Overall land tenure adjustments under the Proposed RMP would result in an 11 percent increase in public land javelina habitat in the RMP area.

Black Canyon, Lake Pleasant, White Canyon, Silver Bell and Picacho Mountains RCAs would be managed to ensure good condition javelina habitat. Acquired land would block up extensive areas in the four RCAs which would be managed to benefit javelina.

About one-third of the javelina habitat identified for disposal is in areas likely to be developed soon. Once the land begins to be developed, it would lose value as javelina habitat and would support lower densities. The javelina that do remain would eventually become nuisance animals on private land.

Javelina habitat would be managed under three updated HMPs (Black Canyon, Middle Gila and Silver Bell-Baboquivari) and one new HMP (Picacho Mountains). Public land would continue to support existing populations and javelina numbers would increase in areas where habitat improvements are instituted.

ORV designations limiting vehicles to existing roads and trails in the majority of the RMP area and closure of specific areas would prevent the loss of habitat and the harassment of javelina. ORV restrictions would contribute to the maintenance of important habitat.

Conclusion (Javelina): Public land supporting medium to high density populations would increase by 11 percent. Acquisition of state land in five RCAs would benefit by blocking up areas of important habitat and maintaining or improving habitat quality. The BLM's objective to increase habitat capability by four percent would be realized. ORV designations would prevent localized losses caused by heavy off-road vehicular use.

EFFECTS ON WILD, FREE-ROAMING BURROS

Under the Proposed RMP, 80,800 acres of historic burro habitat in the proposed Lake Pleasant Resource Conservation Area would be designated a special management area (SMA) for burros. The SMA would include current public land and land identified for acquisition. Including acquired land, the public land used by burros would increase by three percent. The designation of the burro herd SMA and subsequent implementation of a herd management area plan would provide for a base herd of 80 burros.

The proposed increase in burro densities to about one animal per 1,000 acres would increase breeding interaction and would halt the current population decline. ORV restrictions proposed under this alternative would benefit burros by reducing the opportunities for harassment of burros in remote, roadless areas.

Conclusion (Wild, Free-Roaming Burros): A three percent increase in public land for use by burros, the reduction in harassment incidents through ORV restrictions and an activity plan detailing other protection measures would allow for the maintenance of an 80-animal herd without negatively impacting vegetation.

EFFECTS ON RECREATION USE

Under the Proposed RMP, existing opportunities for unstructured and dispersed recreation activities would be maintained (Table 4-6). Additional efforts would be made to enhance these opportunities or contribute to the development of new activities or recreation facilities through R&PPA leases, CRMAs and BLM-managed recreation areas.

Five R&PP leases, totaling **2,830 acres** would be issued. Urban-based recreation opportunities would benefit from this action because the availability of low cost federal land would enable state and local governments to build and expand parks, recreation sites and wildlife protection areas. The areas would satisfy the needs of local governments to provide developed and intensively managed visitor facilities accessible to expanding metropolitan areas.

Five cooperative recreation management areas (CRMAs) **totalling 33,900 acres** would be managed cooperatively with local governments for intensive recreation purposes--**23,600 of these acres are outside the identified RCA boundaries**. These CRMAs would greatly enhance recreation opportunities in the RMP area by making large blocks of land near major metropolitan areas available for various open space recreation pursuits. Through a series of land exchanges, the BLM would work to consolidate public ownership within and would cooperatively manage with local governments the Lake Pleasant, Black Canyon Trail, San Tan Mountains, Tortolita Mountains and Sawtooth Mountains CRMAs.

The establishment of seven resource conservation areas (RCAs) would provide extensive areas of public land for dispersed, unstructured recreation activities. Limiting ORVs to existing

roads and trails would prevent surface disturbance in these RCAs and protect the visual and scenic qualities of each area.

Legal access routes would be acquired into the Sawtooth, Picacho, Coyote and Baboquivari mountains. Recreationists would **be assured of future access to these areas through private land parcels**.

The BLM would play a major role in the development of Maricopa County's Lake Pleasant Regional Park by entering into a management agreement with Maricopa County for managing the park, with development centered on public land. Through this agreement, the BLM can offer a wide variety of water-based recreation opportunities not presently available on Phoenix District public land. The BLM and Maricopa County will manage the public land within the expanded park boundaries. The Lake Pleasant master plan calls for a new lodge, two marinas, restaurants, campgrounds, roads, trails and a primitive area. A new paved highway across public land into the park from State Highway 74 was dedicated on August 26, 1987.

Visitor use of the park and surrounding BLM-managed public land **would rise considerably** as the lake fills and new facilities are developed.

Existing dispersed recreation opportunities on public land outside the regional park would be maintained or enhanced by establishment of the Lake Pleasant RCA.

Open space recreation opportunities would be greatly expanded by the establishment of the Hells Canyon Recreation Management Area and by blocking up public land in the RCA. Hiking, backpacking, plant and wildlife sightseeing and camping would increase. ORV and all-terrain vehicle use (confined to existing roads and trails) would also increase.

TABLE 4-6

Projected Long-Term Recreation Visits Per Year
Bureau of Land Management, Phoenix District, Arizona

Use Areas	Motorized					Totals
	Travel	Camping	Fishing	Hunting	Other	
Baboquivari/ Coyote Mtns.	100	800	0	200	1,300	2,400
Silver Bell/ Sawtooth Mtns.	17,100	6,000	0	14,000	28,000	65,100
Picacho Mtns./ Reservoir	200	250	0	300	500	1,250
Gila River Canyons	13,660	3,000	400	17,400	23,000	57,460
Black Canyon Area	9,275	3,000	0	1,000	11,800	25,075
Lake Pleasant Region	402,400	300,000	400,000	35,300	62,000	1,200,000
Scattered tracts	450	50	0	175	420	1,095
TOTALS	442,485	313,100	400,400	68,375	127,020	1,352,380

Source: Phoenix District files.
Recreation Management Information System Data.

Under **the Proposed RMP**, the Black Canyon RCA would provide improved unstructured and diverse recreation opportunities. Visitor use levels would increase in all recreation types because of population growth and the increased availability of public land, but the greatest increase (about 100 percent) is anticipated in hiking, backpacking, backcountry camping and equestrian use. The establishment, marking and signing of the 60-mile Black Canyon Hiking and Equestrian Trail (CRMA-BLM and Maricopa/Yavapai counties) would be the major contributor in the growth in nonmotorized activities.

The Gila River canyons would continue to provide unstructured and undeveloped dispersed recreation opportunities. The types and patterns of most recreation use, except nonmotorized, would remain similar to that of the present, with visitor use gains averaging 28 percent. Nonmotorized travel would experience the greatest visitor use gains (70 percent) because the Trans-Arizona Trail crosses the area and because of the popularity of White and Walnut canyons to hikers. Outstanding scenic, wildlife, riparian and cultural values would attract hikers and permit nature study and observation.

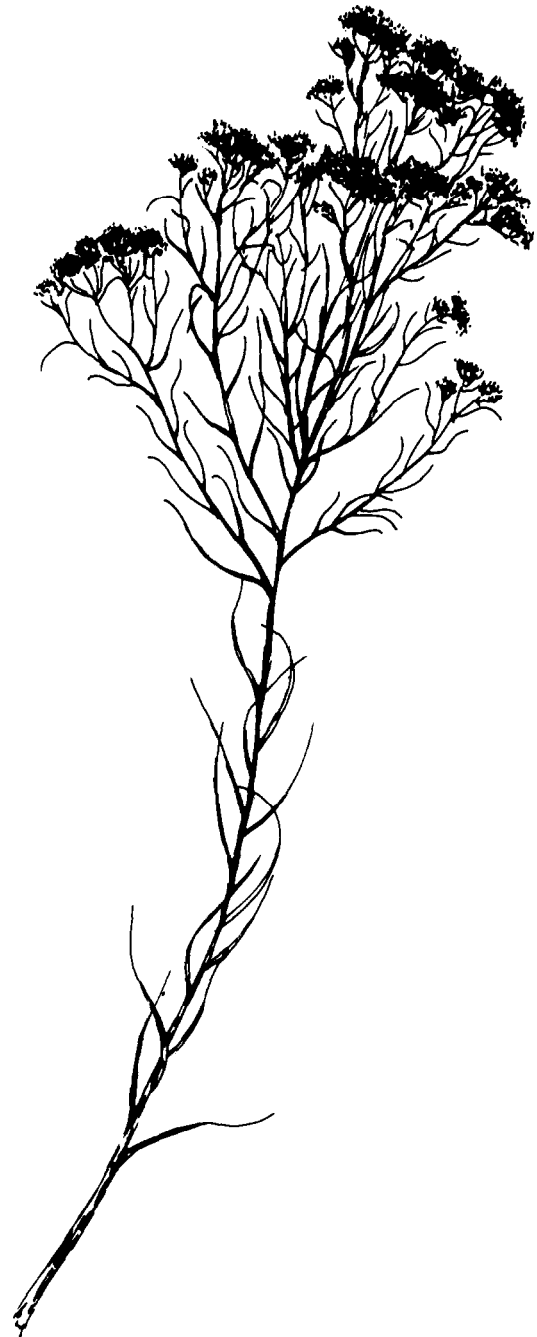
Cross-country ORV use would be limited to existing roads and trails in the area, but ORV use levels would still increase as there are numerous trails and roads available to pursue those activities,

The Picacho Mountains would continue to provide unstructured and dispersed recreation opportunities under **the Proposed RMP**. About 75 percent of existing ORV opportunities would be lost, however, with the disposal of the northern portion of the Picacho Range. The quality of backcountry or primitive recreation experiences would decline somewhat because of additional microwave communication site development on Newman Peak. Improved legal access would increase hunting, sightseeing, camping, hiking and wildlife observation opportunities. The area would remain an excellent setting to observe desert tortoise and deer populations.

The area comprising the Sawtooth Mountains and Silver Bell Mountain complex would provide both developed and undeveloped dispersed types of recreation opportunities. The quality of those opportunities would increase because of managed visitor use, including ORV designations and establishment of several special management areas. The Sawtooth Mountains would be developed as a CRMA, enhancing recreation opportunities in the area.

The types and patterns of recreation use would remain similar to present ones except in the Sawtooth Mountains. Additional residential development in the Altar Valley and nearby retirement communities would increase visitor use levels by an average of 37 percent, with the greatest gains in ORV and other motorized use. Hunting levels would remain static due to unchanged small game and deer populations.

In the Coyote and Baboquivari mountains, the types, patterns and level of visitor use, except motorized, would triple over the long term as legal access is provided to these public land areas. Outstanding rockclimbing, hiking, primitive camping, wildlife observation, sightseeing and backcountry experiences would be



maintained. Reliable access would increase hunting in the eastern canyons of the Coyote Mountains.

Scattered Tracts. The sale, exchange and disposal of many scattered tracts of BLM land under this alternative would cause a loss of 88 percent of existing recreation opportunities associated with this land.

Conclusion (Recreation): Consolidated public ownership of land in seven RCAs would provide expanded open space recreation opportunities near major metropolitan centers. Five CRMAs would allow development of intensively managed recreation areas and five R&PP leases would significantly improve local governments' ability to provide urban-oriented recreation facilities.

Mitigating Measures

No specific mitigation measures have been identified in this RMP/EIS that would reduce the impacts of implementing the Proposed RMP. Mitigation is deemed necessary when the BLM begins implementing actions identified in the approved RMP/EIS. At that time, an environmental assessment identifying the environmental impacts of each activity plan will be developed and specific mitigation measures will be incorporated into the assessment to lessen those impacts. Therefore, mitigation measures will be incorporated on a site-specific basis as this RMP is implemented.

Unavoidable Adverse Impacts

No mitigation measures have been identified to lessen the adverse impacts of implementing the Proposed RMP. When the BLM begins implementing the plan, site-specific mitigation will be developed to mitigate the impacts identified during the environmental assessment process. At this time, all adverse impacts identified in this RMP/EIS are considered unavoidable.

Short-Term Use Versus Long-Term Productivity

The basic objective of the RMP/EIS is to provide for efficient and environmentally sound long-term management of the public

land and resources in the Phoenix RMP area. To accomplish this objective, it is anticipated that the BLM will dispose of some land containing resource values that would be better protected under federal ownership. However, the benefits of achieving the long-term objectives of this plan outweigh the short-term loss of some resource values that would occur as the plan is implemented.

The land tenure adjustment program identified in the RMP/EIS has many such short-term tradeoffs. Scattered public land that provides limited recreation opportunities would be exchanged for large blocks that would provide extensive recreation opportunities near large population centers. Land identified for disposal may contain one or more resource values that would benefit from federal protection; however, through the disposal of these tracts, the BLM would acquire land and consolidate ownership in areas containing, in most instances, resource values in greater abundance than those present on the disposal parcels. **Therefore, over the short term land disposals may negatively impact some resources, but over the long term many would be greatly benefited.**

Irreversible And Irretrievable Commitments Of Resources

It is assumed that effects (impacts) to resources from implementing the Proposed RMP would be both irreversible and irretrievable over the long term (five to 20 years). A discussion of both direct (immediate) and indirect (future) effects of implementing the Proposed RMP is included in the environmental consequences narrative in Chapter 4 of this document. The consequences of implementing the other alternatives studied are summarized in Table S-1 of the draft RMP/EIS.

