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GLOSSARY

Agreement to Initiate a Land Exchange (ATI).

A legal document that outlines the agreement between the BLM and the proponent (for this project, the proponent is Asarco) regarding the initiation of a proposed land exchange.

Activity Plan. A more detailed plan of actions to implement planning decisions over a specified time period; e.g., allotment management plans; recreation area management plans; habitat management plans; or cultural resource project plans.

Adit. A nearly horizontal passage in an underground mine, driven from the surface, by which a mine may be entered, ventilated, and/or dewatered.

Allotment. A land area where one or more operators graze their livestock. The allotment generally consists of public land but may include parcels of private and state-owned lands. The number of livestock and season of use are stipulated for each allotment by the landowner.

Alluvial. Made of soil and sand left by rivers or floods.

Animal Unit Month (AUM). The amount of forage needed to sustain one cow or its equivalent for one month.

Annual (Ephemeral) Plant. A plant that completes its life cycle and dies in one year or less. (Range Term Glossary Committee 1974.)

Appraisal. Act of placing an estimated value on an asset or assets.

Aquifer. A body of rock that is sufficiently permeable to conduct groundwater and to yield economically significant quantities of water to wells and springs.

Artifact. Any object showing human workmanship or modification especially from a prehistoric or historic culture.

Class III Survey. An archaeological survey covering 100% of an area. Transects walked are no more than twenty meters apart.

Code of Federal Regulations (CFR). The compilation of federal regulations adopted by federal agencies through a rule-making process.

Critical Habitat. Defined in Section 3(5)(A) of the Endangered Species Act as: "(I) the specific areas within the geographic area occupied by a species...on which are found those physical or biological features (I) essential to the conservation of the species, and (II) that may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species at the time it is listed ... upon a determination by the Secretary that such areas are essential for the conservation of the species."

Cultural Resources. Those fragile and nonrenewable remains of human activity, occupation or endeavor, reflected in district, sites, structures, building, objects, artifacts, ruins, works of art, architecture and natural features that were of importance in past human events. These resources consist of: 1) physical remains, 2) areas where significant human events occurred, even though evidence of the event no longer remains, and 3) the environment immediately surrounding the actual resource.

Cumulative Impact. The impact on the environment which results from incremental impact of the action when added to other past, present, and reasonably foreseeable future actions; cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Development Rock. Also called overburden; rock of low economic value that is removed during mining operations. It is typically stockpiled and used to construct roads, yards, building pads, dams, and embankments.

Direct Impact. Effects that are caused by the action and that occur at the same time and place.

Dispersed Recreation. Recreation activities that do not require developed sites or facilities, e.g. hiking, birdwatching.

Disposal. Transferring of land out of federal ownership by various methods such as exchange, sale, Recreation and Public Purposes Act, and/or state indemnity selection.

District. A BLM-administrative area comprised of one or more resource areas.

Effects. "Effects" include a) Direct effects, which are caused by the action and occur at the same time and place. b) Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems. Effects and impacts as used in these regulations are synonymous. Effects includes ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial.

Endangered or Threatened Species. Any species in danger of extinction throughout all or a significant portion of its range. This definition excludes species of insects that the Secretary of the Interior determines to be pests and whose protection under the Endangered Species Act would present an overwhelming and overriding human risk. A threatened species is any species likely to become endangered within the foreseeable future throughout all of a significant part of its range.

Environmental Impact Statement. A detailed statement required by the National Environmental Policy Act (NEPA) when an agency proposes a major federal action significantly affecting the quality of the human environment. There is usually a Draft EIS followed by a Final EIS.

Eoliansoil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

Equal Monetary Value. The dollar value of the selected and offered lands must be within 25 percent of each other.

Full Estate. Includes the mineral and surface estate of a parcels of land.

ID Team. Interdisciplinary Team. A group of agency resource specialists with various backgrounds who are responsible for preparation and review of the NEPA document for a proposed action.

Impact. A modification in the status of the environment brought about by the action.

Indirect Impact. Effects caused by the action and are later in time or are farther removed in distance but are still reasonably foreseeable; indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate and related effects on air and water and other natural systems, including ecosystems.

LTMA. Long-Term Management Area. A designation used by the Safford District for geographic areas within the district as identified in the amended RMP in which the BLM seeks to retain or acquire lands in order to maintain its long-term management presence.

Leaching. Extracting a soluble metallic compound from an ore by selectively dissolving it in a suitable solvent, such as sulfuric acid.

Leasable Minerals. Those minerals or materials designated as leasable under the Minerals Leasing Act of 1920. They include coal, phosphate, asphalt, sulphur, potassium, sodium, oil, and gas. Geothermal resources are also leasable under the Geothermal Steam Act of 1970. Development of these minerals on public lands requires that a royalty be paid to the U.S. government.

Loam. A fertile soil that is made up of organic matter mixed with clay, sand, and silt. Loams differ in their ratios of clay, sand, and silt, which influences which types of plants they can support.

Locatable Minerals. Any mineral that can have a mining claim filed on it under the Mining Law of 1872 as amended, e.g. copper, gold, silver.

Mineral Entry. Authority to enter public lands for the purposes of exploring for and developing minerals in an orderly, organized manner.

Mineralized Area. An area that has exposures or sub-surface deposits of potentially valuable minerals.

Mining District. A section of country, usually designated by name, that has described or understood boundaries where minerals are found and mined under rules and regulations prescribed by the miners, consistent with the Mining Law of 1872.

Mining Notice of Intent (NOI). Similar to a Mining Plan of Operations but involves no more than five acres of surface disturbance.

Mining Plan of Operations (MPO). As required by 43 CFR 3809; Operators submit plans of operation to the BLM that outline the name and address of the operator; location of the proposed area of operation; and information sufficient to describe the type of operation proposed, the type and standards of roads, the means of transportation to be used, the period when the proposal will take place, and measures to be taken to meet the requirements for environmental protection.

Mitigate, Mitigation. Mitigation includes (a) avoiding the impact altogether by not taking a certain action or parts of an action, (b) minimizing impacts by limiting the degree or magnitude of the action and its implementation, (c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment, (d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action, (e) compensating for the impact by replacing or providing substitute resources or environments.

National Environmental Policy Act (NEPA). Legislative act passed in 1969 as the national charter for analysis of impacts of federal actions upon the quality of the human environment. NEPA establishes policy, sets goals, and provides means for carrying out the policy. Regulations from 40 CFR 1500-1508 implement the act.

National Register of Historic Places (NRHP). A list, kept by the Secretary of the Interior, of districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, and culture.

Notice of Decision. A formal notification of an agency decision published in the Federal Register; e.g., the agency decision in the realty process regarding the disposal or acquisition of lands. Notice of Exchange Proposal. Notification of a realty action, a proposed land exchange, that is published in the federal register per the requirements of FLEFA and FLPMA.

Notice of Intent. First formal step in the EIS process, consisting of a notice published in the Federal Register that an Environmental Impact Statement will be prepared and considered for a proposed action.

Offered Lands. The privately-owned lands that are being offered in exchange for public lands in a land exchange; cf. "selected lands."

Ore. A mineral deposit of high enough quality to be mined at a profit.

Patent. A document conveying title to land from the U.S. government to private ownership.

Patented Claims. Federal mineral claims that have become private lands secured from the U.S. government by a private entity through compliance with the Mining Law of 1872.

Ph. A measure of the acidity or alkalinity of a solution.

Priority Species. Animal and plant species and habitats having special significance for management. These include endangered, threatened, and special status species; species of high economic or recreational value; and aquatic, wetland, and riparian habitats. Also included are populations of animals or plants recognized as significant for one or more factors such as density, diversity, size, public interest, remnant character, or age.

Record of Decision. A public document that reflects the agency's final decision on a proposed project, rationale behind that decision, and commitments to monitoring and mitigation.

Resource Area. The smallest administrative subdivision of a BLM district.

Resource Conservation Area. A management designation that provides management consideration to areas with special resource values.

Resource Management Plan. A planning document developed by the BLM that provides guidelines and direction for making land tenure decisions for short-term and long-term management of public lands and resources within a district.

Right-of-way (ROW). A legal right to use, occupy or access land or water areas for specified purposes.

Riparian. Plant communities occurring in association with any spring, lake, river, stream, creek, wash, arroyo, or other body of water or channel having banks and bed through which waters flow at least periodically. These habitats are generally characterized or distinguished by a difference in plant species composition or an increase in the size and/or density of vegetation as compared to upland areas.

Saleable Minerals. Common variety minerals used mostly for construction projects (e.g. sand and gravel). These are disposed of by the government either through sales or special permits to local governments.

Saline. Containing salt or salts

Scope. Scope consists of the range of actions, alternatives, and impacts to be considered in the Environmental Impact Statement.

Scoping. The process of involving potentially interested and/or affected parties in identifying the issues of concern that will be addressed in the EIS.

Section. A 1-square mile area (640 acres) forming one of the 36 subdivisions of a township.

Section 7. The section of the Endangered Species Act of 1973 as amended outlining procedures for interagency cooperation to conserve Federally listed species and designated critical habitats. Section 7 consultation refers to the various section 7 processes, including both consultation and conference if proposed species are involved [50 CFR §402].

Selected Lands. The publicly-owned lands that have been selected by the project proponent for acquisition in a land exchange; cf. "offered lands".

Sensitive species. Those species designated by a BLM State Director, in cooperation with a state agency responsible for managing the species, as sensitive. Sensitive species are those species (1) under status review by the Fish and Wildlife Service/National Marine Fisheries Service; (2) whose numbers are declining so rapidly that federal listing may become necessary; (3) with typically small and widely dispersed populations, or; (4) inhabiting ecological refugia or other specialized or unique habitats.

Shaft. A vertical opening to an underground mine.

Solution Extraction/Electrowinning. A process to extract practically pure copper from sulfuric acid solution that has been percolated through stockpiles of copper-bearing rock. The process consists of four steps: leaching stockpiles with acid, extracting copper from leaching solution to produce "loaded organic," mixing electrolyte with loaded organic to produce "rich electrolyte," and passing electric current through rich electrolyte to winnow out the pure copper. This process replaces the need for a smelter for oxidized ores.

Special status species. A grouping of wildlife species that includes proposed species, threatened and endangered species, candidate species, state listed species, and sensitive species.

Split Estate. Includes only the surface estate of a parcel of land.

Stockpile. An accumulation of ore, stone, or other mined or quarried material, which provides a steady source of supply for the processing plant.

Tailings. The remains of milled ore that are regarded as too poor to be treated further.

Upland Vegetation. Vegetation outside riparian zones.

Valid Existing Rights. Legal interests attached to land or mineral estate that cannot be divested from the estate until that interest expires or is relinquished.

Visual Resource Management (VRM) Classes.

Classification containing specific objectives for maintaining or enhancing visual resources, including the kinds of structures and modifications acceptable to meet established visual goals.

Visual Resources. The visible physical features on the landscape (land, water, vegetation, and structures); scenery.

Water Table. The level in the saturated zone at which the pressure is equal to the atmospheric pressure.

Watershed. The geographic region from which water drains into a particular stream, river, or body of water. A watershed includes hills, lowlands, and the body of water into which the land drains. Watershed boundaries are defined by the ridges or divides separating them.

Wetlands. Areas that are inundated by surface or ground water with a frequency sufficient to support (and under normal circumstances do or would support) a prevalence of vegetation or aquatic life that required saturated or seasonally saturated soil conditions for growth and reproduction.

Wilderness. An area formally designated by Congress as part of the National Wilderness Preservation System. A wilderness, in contrast with those areas where people and their works dominate the landscape, is recognized as an area where the earth and its community of life are untrammeled, where people visit but do not remain. It is an area of undeveloped land retaining its primeval character and influence, without permanent improvements or human habitation, that is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by forces of nature, with the imprint of human's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least 5,000 acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired conditions; and (4) may also contain ecologic, geologic, or other features of scientific, education, scenic, or historic value.

Xeroriparian. Riparian habitats associated with an ephemeral water supply. These communities typically contain plant species also found in upland habitats, however, these plants are typically larger and/or occur at higher densities than in adjacent uplands.

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APPENDIX A

LEGAL DESCRIPTION OF SELECTED AND OFFERED LANDS

LEGAL DESCRIPTION OF SELECTED AND OFFERED LANDS

Mineral Estate Only. Surface estate owned by the State of Arizona.
BOUGHT FROM THE STATE IN 11-2001
- AS PER BOUGHT THE WHOLE 1/4 AC FRONT
PARCEL CB-5 Township 3 South, Range 12 East G&S.R.B.&M.

<u>Section 24</u>	<u>Acres</u>	<u>Total Acres</u>
SE $\frac{1}{4}$	<u>160.00</u>	
		160.00

PARCEL RM-7 Township 2 South, Range 13 East G&S.R.B.&M.

<u>Section 35</u>	<u>Acres</u>	<u>Total Acres</u>
W $\frac{1}{2}$ NW $\frac{1}{4}$	<u>80.00</u>	
		80.00

PARCEL RM-8 Township 3 South, Range 13 East G&S.R.B.&M.

<u>Section 9</u>	<u>Acres</u>	<u>Total Acres</u>
lot 1	34.89	
lot 2	17.46	
E $\frac{1}{2}$ NE $\frac{1}{4}$	80.00	
SW $\frac{1}{4}$ NE $\frac{1}{4}$	40.00	
W $\frac{1}{2}$ SE $\frac{1}{4}$	<u>80.00</u>	
		252.35

<u>Section 10</u>	<u>Acres</u>	<u>Total Acres</u>
lot 1	51.10	
lot 2	37.97	
lot 4	21.06	
N $\frac{1}{2}$ NW $\frac{1}{4}$	80.00	
SW $\frac{1}{4}$ NW $\frac{1}{4}$	<u>40.00</u>	
		230.13

PARCEL RM-9	Township 3 South, Range 13 East G&S.R.B.&M.			
	<u>Section 11</u>		<u>Acres</u>	<u>Total Acres</u>
	lot 3		<u>29.97</u>	
				29.97
PARCEL RM-11	Township 3 South, Range 14 East G&S.R.B.&M.			
	<u>Section 6</u>		<u>Acres</u>	<u>Total Acres</u>
	lot 4		35.29	
	lot 5		35.25	
	lot 12		<u>17.60</u>	
				88.14
	Township 2 South, Range 14 East G&S.R.B.&M.			
	<u>Section 31</u>		<u>Acres</u>	<u>Total Acres</u>
	lot 3		35.42	
	lot 4		<u>35.34</u>	
				70.76
PARCEL RM-14	Township 3 South, Range 13 East G&S.R.B.&M			
	<u>Section 12</u>		<u>Acres</u>	<u>Total Acres</u>
	lot 1		21.11	
	lot 2		26.63	
	lot 5		39.31	
	lot 6		39.93	
	lot 7	excluding patent Nos. 02-62-0014, 02-64-0243 and 02-69-0016,	5.26	
	SE ¼	excluding patent No. 02-64-0243	<u>96.51</u>	
				228.75

Ray Land Exchange/Plan Amendment EIS

Township 3 South, Range 14 East G&S.R.B.&M.

<u>Section 7</u>	<u>Acres</u>	<u>Total Acres</u>
lot 2	22.73	
lot 3	35.19	
lot 4	35.21	
lot 8	28.28	
		121.41

PARCEL RM-15

Township 3 South, Range 14 East G&S.R.B.&M.

<u>Section 17</u>	<u>Acres</u>	<u>Total Acres</u>
lot 4	39.51	
SW $\frac{1}{4}$ SW $\frac{1}{4}$	<u>40.00</u>	
		79.51

<u>Section 18</u>	<u>Acres</u>	<u>Total Acres</u>
lot 5	32.66	
lot 6	31.90	
lot 7	39.99	
lot 8	19.92	
lot 9	42.10	
SE $\frac{1}{4}$ SE $\frac{1}{4}$	<u>40.00</u>	
		206.57

Mineral estate only. The surface estate owned by Asarco Inc.

PARCEL CB-4

Township 3 South, Range 13 East G&S.R.B.&M

<u>Section 30</u>	<u>Acres</u>	<u>Total Acres</u>
lot 1	28.32	
lot 2	25.36	
lot 3	29.32	
lot 4	37.41	

<u>Section 30, continued</u>	<u>Acres</u>	<u>Total Acres</u>
lot 5	37.49	
lot 6	37.56	
E½NE¼	80.00	
SW¼NE¼	40.00	
SE¼NW¼	40.00	
E½SW¼	80.00	
SE¼	<u>160.00</u>	
		595.46

Mineral estate only. The surface estate owned by Asarco Santa Cruz Inc., (ASCI) owned by ASARCO Incorporated (ASARCO) and Freeport-McMoRan Inc., doing business as the Santa Cruz Joint Venture (SCJV).

PARCEL CG-1 Township 6 South, Range 4 East G&S.R.B.&M

<u>Section 12</u>	<u>Acres</u>	<u>Total Acres</u>
lot 1	38.62	
lot 2	38.25	
W½NE¼	<u>80.00</u>	
		156.87

PARCEL CG-2 Township 6 South, Range 4 East G&S.R.B.&M

<u>Section 23</u>	<u>Acres</u>	<u>Total Acres</u>
NW¼	<u>160.00</u>	
		160.00

PARCEL CG-3 Township 6 South, Range 4 East G&S.R.B.&M

<u>Section 24</u>	<u>Acres</u>	<u>Total Acres</u>
W½	<u>320.00</u>	
		320.00

TOTAL ACREAGE FOR MINERAL ESTATE **2,779.92**

Surface and Mineral Estate

PARCEL CB-1 Township 3 South, Range 12 East, G&SRB&M

<u>Section 25</u>	<u>Acres</u>	<u>Total Acres</u>
SW $\frac{1}{4}$	160.00	
E $\frac{1}{2}$	<u>320.00</u>	
		480.00

<u>Section 26</u>	<u>Acres</u>	<u>Total Acres</u>
ALL	<u>640.00</u>	
		640.00

PARCEL CB-2 Township 3 South, Range 13 East, G&SRB&M

<u>Section 8</u>	<u>Acres</u>	<u>Total Acres</u>
S $\frac{1}{2}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$	20.00	
SE $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$	10.00	
E $\frac{1}{2}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$	5.00	
SE $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$	2.50	
S $\frac{1}{2}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$	5.00	
SW $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$	<u>2.50</u>	
		45.00

<u>Section 17</u>	<u>Acres</u>	<u>Total Acres</u>
E $\frac{1}{2}$	320.00	
SW $\frac{1}{4}$	160.00	
SE $\frac{1}{4}$ NW $\frac{1}{4}$	40.00	
S $\frac{1}{2}$ S $\frac{1}{2}$ SW $\frac{1}{2}$ NW $\frac{1}{4}$	10.00	
N $\frac{1}{2}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$	5.00	
E $\frac{1}{2}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$	20.00	
SW $\frac{1}{4}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$	10.00	

<u>Section 17, continued</u>	<u>Acres</u>	<u>Total Acres</u>
N $\frac{1}{2}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$	<u>5.00</u>	
		570.00

PARCEL CB-3 Township 3 South, Range 13 East, G.&S.R.B.&M

<u>Section 19</u>	<u>Acres</u>	<u>Total Acres</u>
lot 1	47.87	
lot 2	37.37	
lot 3	37.35	
lot 4	32.15	
lot 5	39.64	
lot 6	49.12	
lot 7	48.03	
lot 8	26.34	
lot 9	0.03	
lot 10	24.07	
NE $\frac{1}{4}$ NW $\frac{1}{4}$	40.00	
NE $\frac{1}{4}$ NE $\frac{1}{4}$	40.00	
E $\frac{1}{2}$ SE $\frac{1}{4}$	<u>80.00</u>	
		501.97

<u>Section 20</u>	<u>Acres</u>	<u>Total Acres</u>
W $\frac{1}{2}$ NW $\frac{1}{4}$	80.00	
W $\frac{1}{2}$ E $\frac{1}{2}$ NW $\frac{1}{4}$	40.00	
NW $\frac{1}{4}$ SW $\frac{1}{4}$	40.00	
W $\frac{1}{2}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$	20.00	
W $\frac{1}{2}$ W $\frac{1}{2}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$	<u>10.00</u>	
		190.00

Ray Land Exchange/Plan Amendment EIS

PARCEL CH-1	Township 4 South, Range 15 East, G&SRB&M		
	<u>Section 22 & 27</u>	<u>Acres</u>	<u>Total Acres</u>
	Tract 37	<u>262.72</u>	
			262.72
PARCEL CH-2	Township 4 South, Range 15 East, G&SRB&M		
	<u>Section 27</u>	<u>Acres</u>	<u>Total Acres</u>
	Tract 39	<u>7.55</u>	
			7.55
PARCEL CH-3	Township 4 South, Range 15 East, G&SRB&M		
	<u>Section 27</u>	<u>Acres</u>	<u>Total Acres</u>
	Tract 38	<u>1.91</u>	
			1.91
PARCEL CH-4	Township 5 South, Range 15 East, G&SRB&M		
	<u>Section 11</u>	<u>Acres</u>	<u>Total Acres</u>
	N½NE¼	<u>80.00</u>	
			80.00
PARCEL CH-5	Township 5 South, Range 15 East, G&SRB&M		
	<u>Section 28</u>	<u>Acres</u>	<u>Total Acres</u>
	S½	320.00	
	NW¼	<u>160.00</u>	
			480.00

PARCEL RM-1 Township 2 South, Range 13 East, G & S.R.B. & M.

<u>Section 34</u>	<u>Acres</u>	<u>Total Acres</u>
W½NE¼	80.00	
NW¼	160.00	
N½SW¼	80.00	
SW¼SW¼	40.00	
lot 2	32.96	
lot 3	28.09	
lot 4	1.62	
lot 8	<u>0.36</u>	
		423.03

PARCEL RM-2 Township 2 South, Range 13 East, G&SRB&M

<u>Section 34</u>	<u>Acres</u>	<u>Total Acres</u>
Lot 9	<u>5.23</u>	
		5.23

PARCEL RM-3 Township 3 South, Range 13 East, G&SRB&M

<u>Section 2</u>	<u>Acres</u>	<u>Total Acres</u>
lot 12	5.15	
		5.15

PARCEL RM-4 Township 3 South, Range 13 East, G&SRB&M

<u>Section 2</u>	<u>Acres</u>	<u>Total Acres</u>
lot 13	<u>2.06</u>	
		2.06

PARCEL RM-5 Township 3 South, Range 13 East, G&SRB&M

<u>Section 10</u>	<u>Acres</u>	<u>Total Acres</u>
lot 5	<u>0.02</u>	
		0.02

Ray Land Exchange/Plan Amendment EIS

PARCEL RM-6 Township 3 South, Range 13 East, G&SRB&M

<u>Section 11</u>	<u>Acres</u>	<u>Total Acres</u>
lot 11	0.08	
lot 12	0.49	
lot 13	0.39	
lot 14	<u>0.02</u>	
		0.98

PARCEL RM-10 Township 3 South, Range 13 East, G&SRB&M

<u>Section 13</u>	<u>Acres</u>	<u>Total Acres</u>
lot 4	24.62	
lot 8	38.81	
lot 8	21.58	
lot 10	6.04	
lot 11	11.62	
lot 12	8.50	
lot 13	35.69	
lot 14	20.57	
SE¼NE¼	<u>40.00</u>	
		207.43

Township 3 South, Range 14 East, G&SRB&M

<u>Section 18</u>	<u>Acres</u>	<u>Total Acres</u>
lot 1	35.20	
lot 2	35.10	
lot 10	33.38	
lot 11	34.84	
E½SW¼	80.00	
W½SE¼	<u>80.00</u>	
		378.52

<u>Section 19</u>	<u>Acres</u>	<u>Total Acres</u>
lot 1	34.86	
E½NW¼	80.00	
NE¼	<u>160.00</u>	
		274.86

PARCEL RM-12 Township 3 South, Range 13 East, G&SRB&M

<u>Section 1</u>	<u>Acres</u>	<u>Total Acres</u>
lot 3	39.73	
lot 4	39.61	
S½NW¼	<u>80.00</u>	
		159.34

PARCEL RM-13 Township 3 South, Range 13 East, G&SRB&M

<u>Section 1</u>	<u>Acres</u>	<u>Total Acres</u>
lot 5	34.59	
lot 6	37.87	
lot 7	6.50	
NW¼SE¼	<u>40.00</u>	
		118.90

PARCEL RM-14 Township 3 South, Range 14 East, G&SRB&M

<u>Section 7</u>	<u>Acres</u>	<u>Total Acres</u>
lot 11	<u>0.21</u>	
		0.21

PARCEL RM-16 Township 3 South, Range 14 East, G&SRB&M

<u>Section 20</u>	<u>Acres</u>	<u>Total Acres</u>
NW¼NW¼	<u>40.00</u>	
		40.00

PARCEL RM-17 Township 3 South, Range 13 East, G.&S.R.B.&M

<u>Section 22</u>	<u>Acres</u>	<u>Total Acres</u>
S½	<u>320.00</u>	320.00

<u>Section 23</u>	<u>Acres</u>	<u>Total Acres</u>
W½SW¼	<u>80.00</u>	80.00

<u>Section 26</u>	<u>Acres</u>	<u>Total Acres</u>
W½W½	<u>160.00</u>	160.00

<u>Section 27</u>	<u>Acres</u>	<u>Total Acres</u>
E½NW¼	80.00	
E½	<u>320.00</u>	400.00

<u>Section 34</u>	<u>Acres</u>	<u>Total Acres</u>
E½NE¼	80.00	
NW¼NE¼	<u>40.00</u>	120.00

<u>Section 35</u>	<u>Acres</u>	<u>Total Acres</u>
W½NW¼	80.00	
SW¼	<u>160.00</u>	<u>240.00</u>

PARCEL RM-18

Township 3 South, Range 14 East, G&SRB&M

<u>Section 33</u>	<u>Acres</u>	<u>Total Acres</u>
NW $\frac{1}{4}$	160.00	
S $\frac{1}{2}$	<u>320.00</u>	
		480.00

<u>Section 34</u>	<u>Acres</u>	<u>Total Acres</u>
S $\frac{1}{2}$ SW $\frac{1}{4}$	<u>80.00</u>	
		80.00

Township 4 South., Range 14 East, G&SRB&M

<u>Section 3</u>	<u>Acres</u>	<u>Total Acres</u>
lot 3	30.74	
lot 4	30.51	
S $\frac{1}{2}$ NW $\frac{1}{4}$	80.00	
SW $\frac{1}{4}$	<u>160.00</u>	
		301.25

<u>Section 4</u>	<u>Acres</u>	<u>Total Acres</u>
lot 1	35.04	
lot 2	35.13	
lot 3	35.23	
lot 4	26.94	
lot 5	30.73	
lot 6	30.95	
lot 7	31.17	
S $\frac{1}{2}$ NE $\frac{1}{4}$	80.00	
SE $\frac{1}{4}$ NW $\frac{1}{4}$	40.00	
E $\frac{1}{2}$ SW $\frac{1}{4}$	80.00	
SE $\frac{1}{4}$	<u>160.00</u>	
		585.19

Ray Land Exchange/Plan Amendment EIS

<u>Section 5</u>	<u>Acres</u>	<u>Total Acres</u>
lot 1	36.12	
lot 2	41.52	
lot 3	38.51	
lot 4	39.94	
<u>Section 5, continued</u>	<u>Acres</u>	<u>Total Acres</u>
lot 5	38.52	
lot 6	38.52	
lot 7	43.44	
lot 8	40.00	
lot 9	39.67	
lot 10	40.12	
lot 11	39.13	
lot 12	<u>39.67</u>	
		475.16

<u>Section 8</u>	<u>Acres</u>	<u>Total Acres</u>
E½NE1/3	<u>80.00</u>	
		80.00
TOTAL ACREAGE		8,196.48

TOTAL SELECTED ACREAGE

MINERAL ESTATE ONLY	2,779.92
SURFACE & SUBSURFACE	8,196.48
TOTAL	10,976.40

LEGAL DESCRIPTION OF OFFERED (PRIVATE) LANDS**KNISELY RANCH**

Township 25 North, Range 18 West, G&SRB&M

<u>Section 4</u>	<u>Acres</u>	<u>Total Acres</u>
SW $\frac{1}{4}$ NW $\frac{1}{4}$	<u>40.00</u>	40.00
<u>Section 17</u> (surface estate only)	<u>Acres</u>	<u>Total Acres</u>
E $\frac{1}{2}$ NE $\frac{1}{4}$	<u>80.00</u>	80.00
<u>Section 20</u>	<u>Acres</u>	<u>Total Acres</u>
SE $\frac{1}{4}$ SE $\frac{1}{4}$	<u>40.00</u>	40.00

GILA RIVER PARCEL AT COCHRAN

Township 4 South, Range 12 East, G&SRB&M

<u>Section 6</u>	<u>Acres</u>	<u>Total Acres</u>
S $\frac{1}{2}$ SE $\frac{1}{4}$		
N $\frac{1}{2}$ SE $\frac{1}{4}$ (surface estate only)	<u>160.00</u>	160.00
<u>Section 7</u>	<u>Acres</u>	<u>Total Acres</u>
NE $\frac{1}{4}$	<u>160.00</u>	160.00

SACRAMENTO VALLEY PARCEL

Township 19 North, Range 19 West, G&SRB&M

<u>Section 23</u> (surface estate only)	<u>Acres</u>	<u>Total Acres</u>
W $\frac{1}{2}$ SE $\frac{1}{4}$	80.00	
NE $\frac{1}{4}$ SE $\frac{1}{4}$	<u>40.00</u>	
		120.00

MCCRACKEN MOUNTAIN PARCELS

Township 14 North, Range 14 West, G&SRB&M

<u>Section 19</u>	<u>Acres</u>	<u>Total Acres</u>
lot 1	37.93	
lot 2	38.05	
lot 3	38.15	
lot 4	38.27	
E $\frac{1}{2}$ W $\frac{1}{2}$	160.00	
E $\frac{1}{2}$	<u>320.00</u>	
		632.40

<u>Section 31</u>	<u>Acres</u>	<u>Total Acres</u>
lot 1	38.27	
lot 2	38.43	
lot 3	38.57	
lot 4	38.73	
E $\frac{1}{2}$ W $\frac{1}{2}$	160.00	
E $\frac{1}{2}$	<u>320.00</u>	
		634.00

Township 14 North, Range 15 West, G&SRB&M

<u>Section 3</u>	<u>Acres</u>	<u>Total Acres</u>
lot 1	39.35	
lot 2	39.40	
lot 3	39.46	
lot 4	39.51	
S½N½	160.00	
S½	<u>320.00</u>	
		637.72

<u>Section 9</u>	<u>Acres</u>	<u>Total Acres</u>
ALL	<u>640.00</u>	
		640.00

<u>Section 11</u>	<u>Acres</u>	<u>Total Acres</u>
ALL	<u>640.00</u>	
		640.00

<u>Section 15</u>	<u>Acres</u>	<u>Total Acres</u>
ALL	<u>640.00</u>	
		640.00

<u>Section 23</u>	<u>Acres</u>	<u>Total Acres</u>
ALL	<u>640.00</u>	
		640.00

<u>Section 25</u>	<u>Acres</u>	<u>Total Acres</u>
ALL	<u>640.00</u>	
		640.00

Ray Land Exchange/Plan Amendment EIS

<u>Section 27</u>	<u>Acres</u>	<u>Total Acres</u>
ALL	<u>640.00</u>	640.00

<u>Section 35</u>	<u>Acres</u>	<u>Total Acres</u>
ALL	<u>640.00</u>	640.00

TOMLIN PARCELS

Township 15 North, Range 13 West, G&SRB&M

<u>Section 19</u>	<u>Acres</u>	<u>Total Acres</u>
lot 3	36.85	
lot 4	36.95	
E½SW¼	<u>80.00</u>	
		153.80

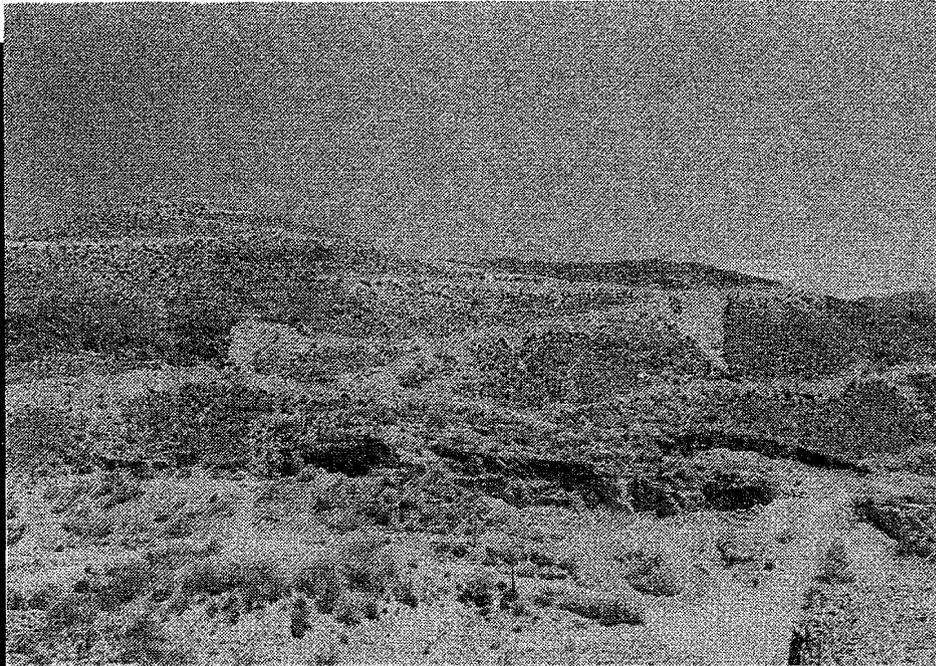
<u>Section 35</u>	<u>Acres</u>	<u>Total Acres</u>
SW¼SW¼	40.00	
N½SE¼	80.00	
SE¼SE¼	<u>40.00</u>	
		160.00

TOTAL OFFERED LANDS **7,297.92**

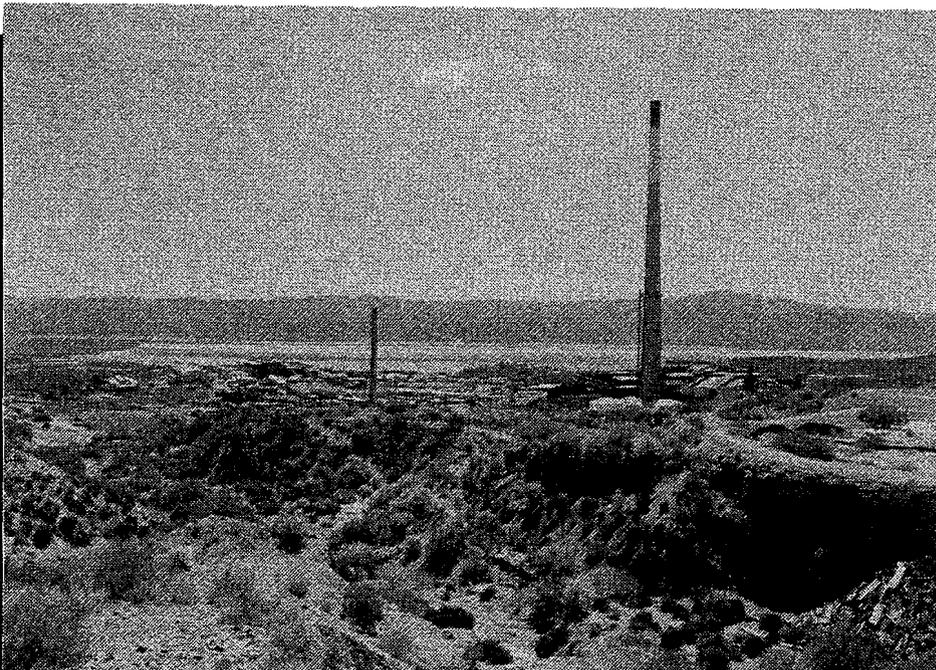
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APPENDIX B

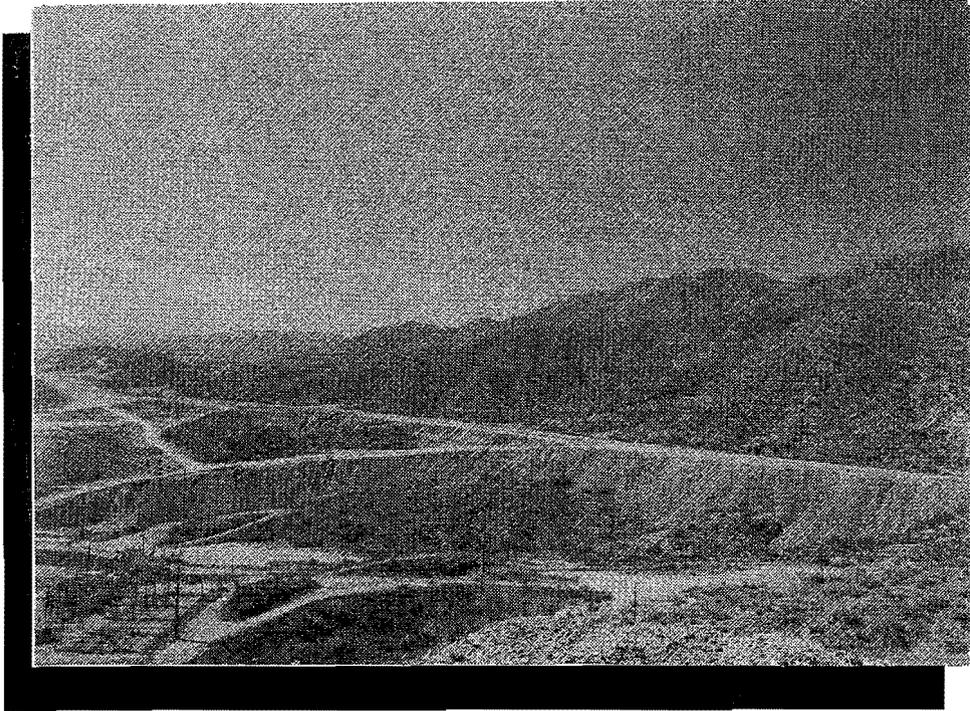
PHOTOGRAPHS FOR SELECTED AND OFFERED LANDS



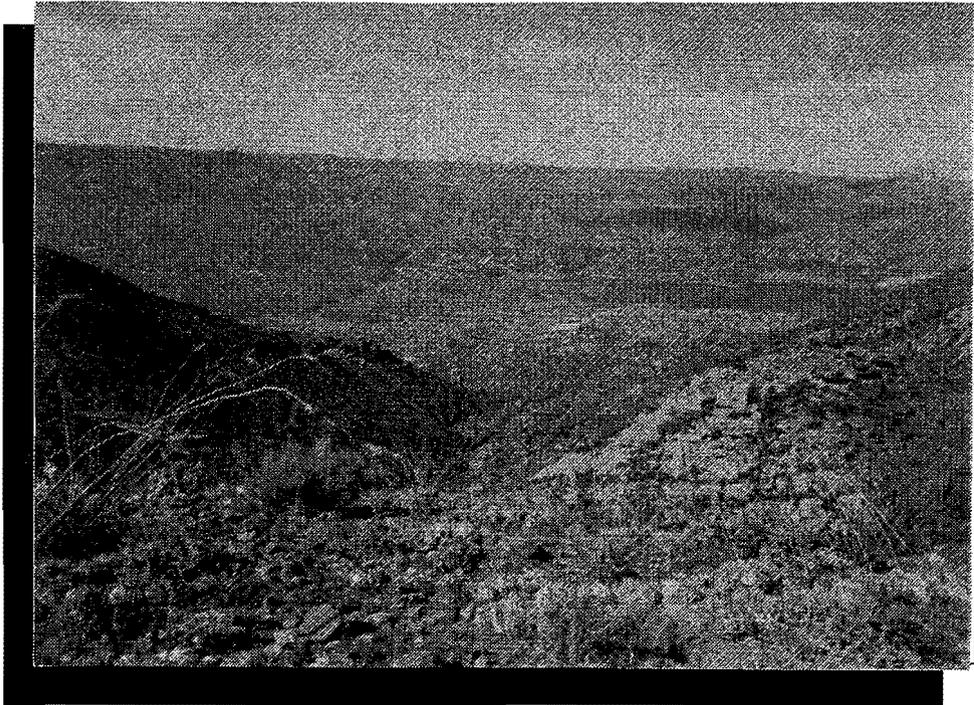
VIEW LOOKING TOWARD COPPER BUTTE



VIEW LOOKING SOUTHEAST TOWARD CHILITO/HAYDEN AREA



VIEW LOOKING SOUTHWEST OVERLOOKING HIGHWAY 177 AND PARCEL RM-17



VIEW LOOKING SOUTHWEST TOWARD GILA RIVER ON PARCEL RM-18



VIEW OF RAY MINE FROM PARCEL RM-13



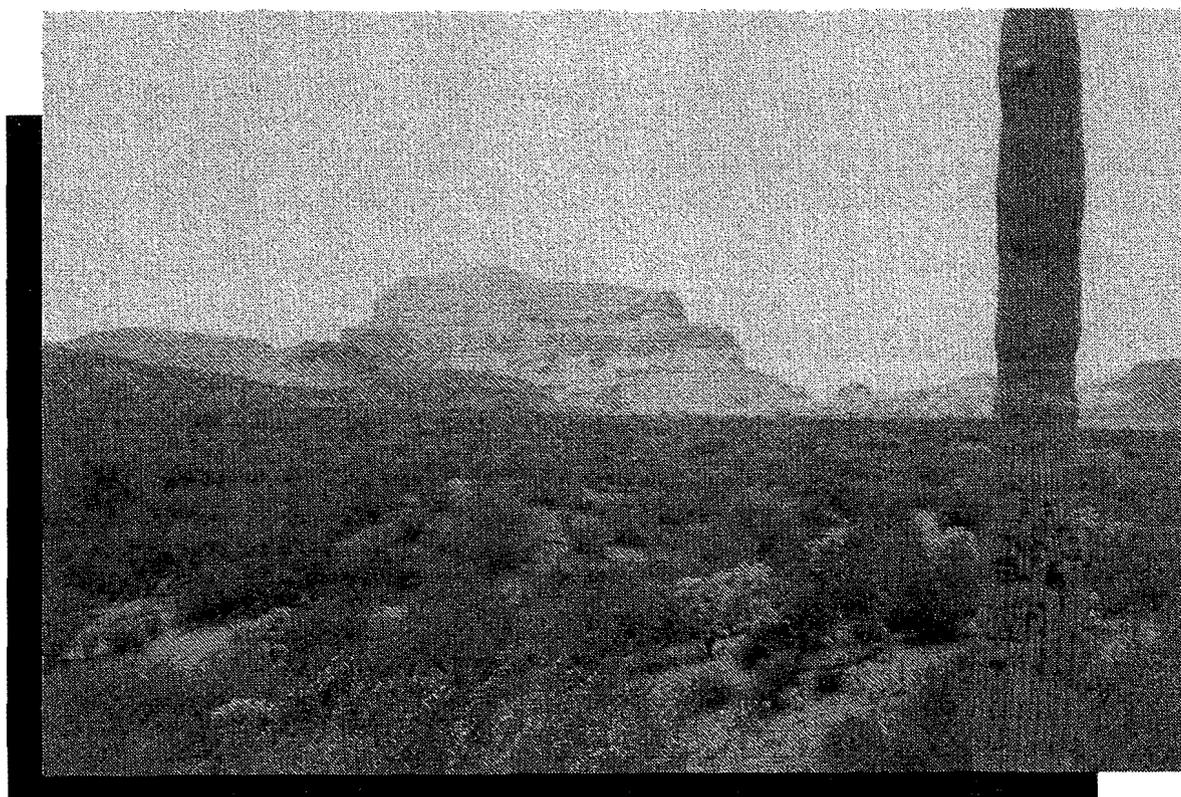
VIEW TOWARD WEST ON PARCEL RM-15



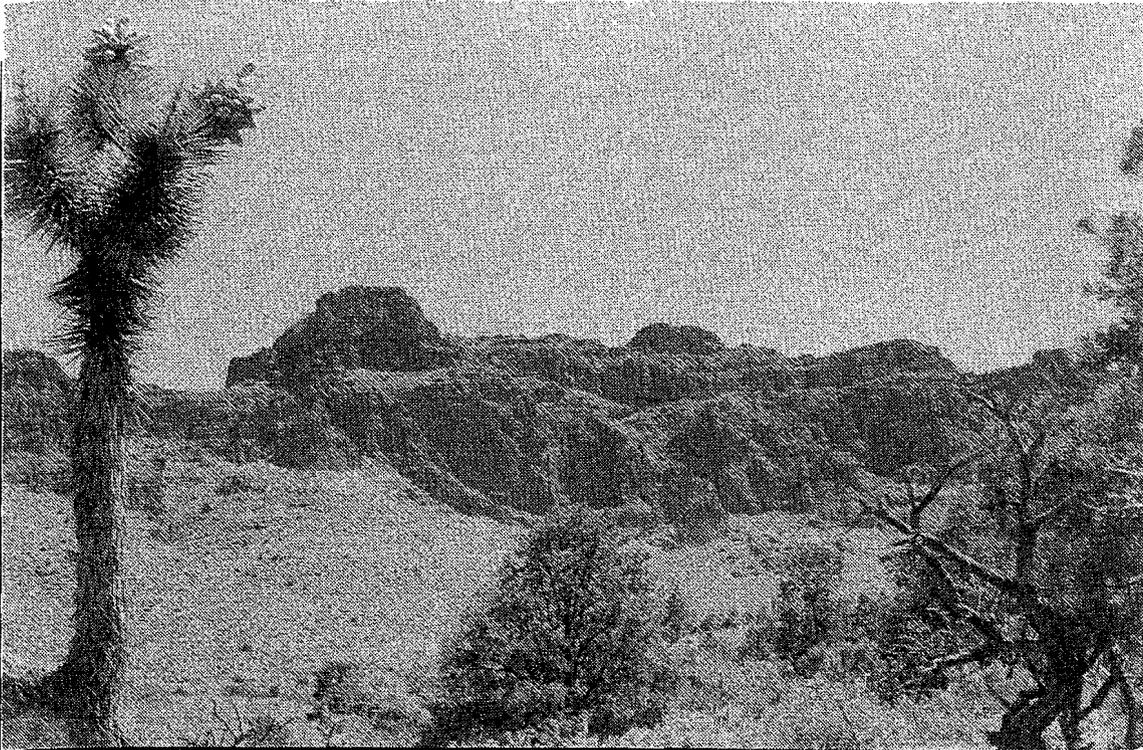
VIEW LOOKING TOWARD RAY MINE



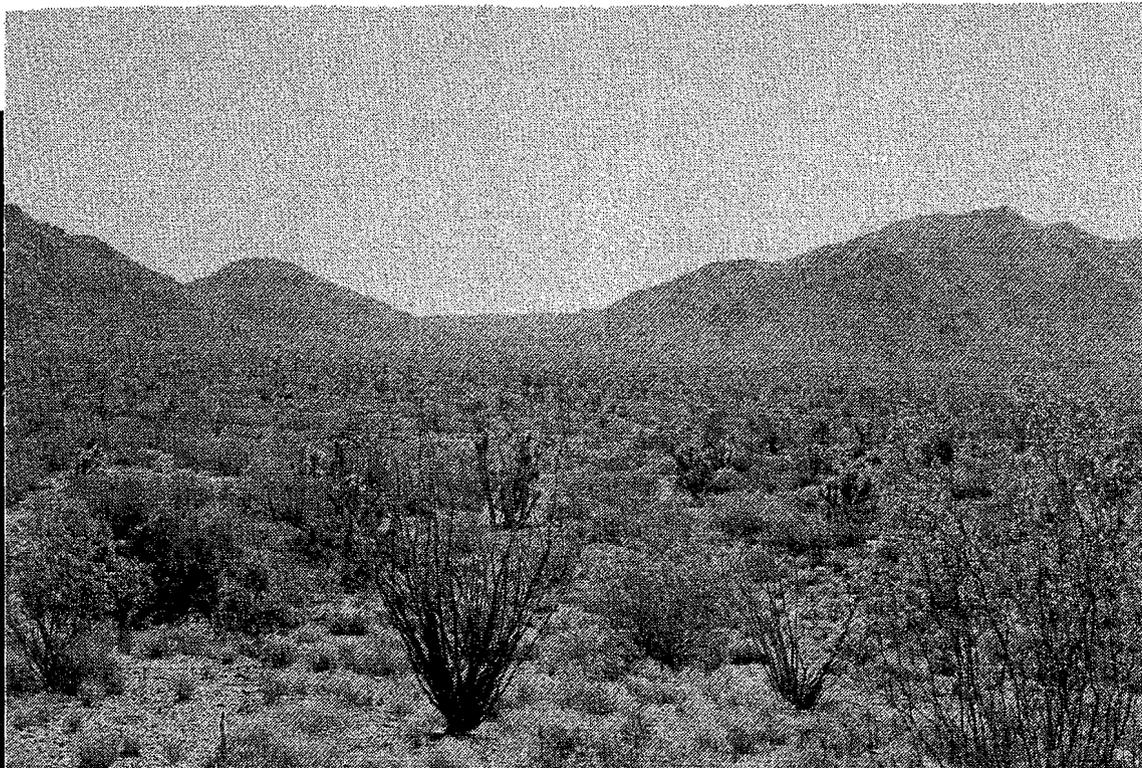
VIEW LOOKING TOWARD RAY MINE



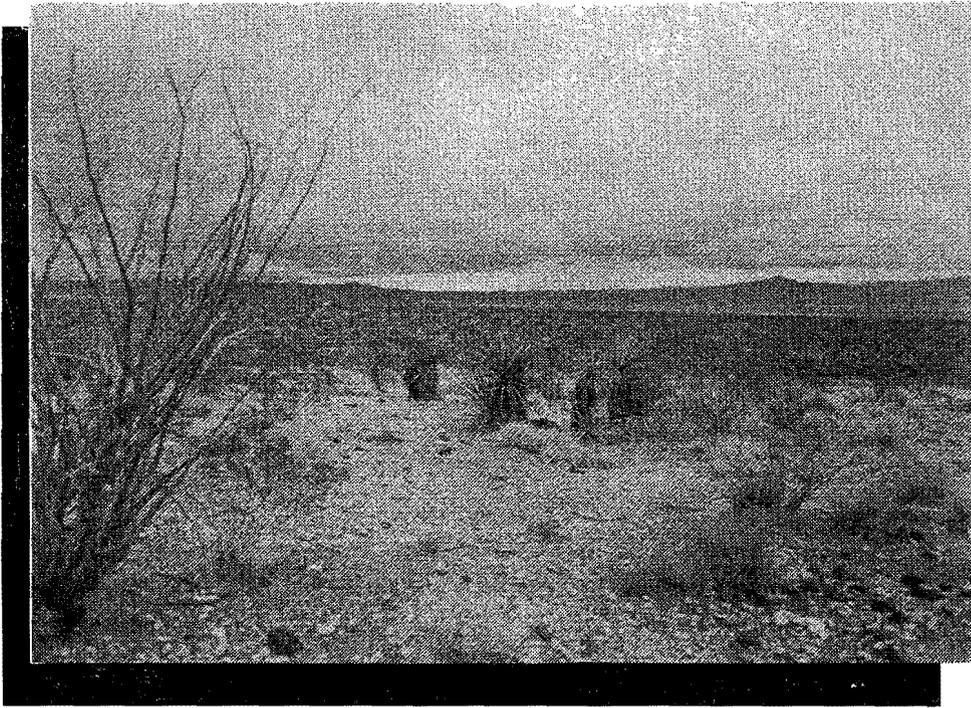
VIEW LOOKING OVER GILA RIVER PARCEL AT COCHRAN



VIEW OVERLOOKING KNISELY #3 TOWARD THE CERBAT MOUNTAINS



VIEW OVERLOOKING THE MCCRACKEN MOUNTAINS PARCELS



VIEW LOOKING OVER THE SACRAMENTO VALLEY PARCEL



VIEW OF BIG SANDY RIVER AND ADJACENT WETLANDS ON TOMLIN #4

APPENDIX C
DEIS MAILING LIST

RAY LAND EXCHANGE/PLAN AMENDMENT MAILING LIST

First	Last	Title	Organization Name
ELECTED OFFICIAL - FEDERAL			
J.D.	HAYWORTH		REPRESENTATIVE
JON	KYL		SENATOR
JOHN	MCCAIN		SENATOR
BOB	STUMP		REPRESENTATIVE
ELECTED OFFICIAL - LOCAL			
CAROL	ANDERSON		MOHAVE BOARD OF SPRVSRs
LES	BYRAM		CITY OF KINGMAN
WANDA	DALTON		CITY OF KEARNY
JIMMIE B.	KERR		PINAL CO. BOARD OF SPRVSRs
CRUZ	SALAS		GILA CO.
JIM	ZABORSKY		MOHAVE CO. BOARD OF SPRVSRs
ELECTED OFFICIAL - STATE			
KEN	BENNETT		REPRESENTATIVE
LINDA	BINDER		REPRESENTATIVE
BARBARA	BLEWSTER		REPRESENTATIVE
DEBRA	BRIMHALL		REPRESENTATIVE
JACK	BROWN		SENATOR
JIM	CARRUTHERS		REPRESENTATIVE
HARRY	CLARK		REPRESENTATIVE
FRANKLIN	FLAKE		REPRESENTATIVE
HERB	GUENTHER		SENATOR
JOE	HART		REPRESENTATIVE
JANE	HULL		GOVERNOR
BOB	MCLENDON		REPRESENTATIVE
REBECCA	RIOS		REPRESENTATIVE

RAY LAND EXCHANGE/PLAN AMENDMENT MAILING LIST

First	Last	Title	Organization Name
PETER	RIOS		SENATOR
JOHN	VERKAMP		REPRESENTATIVE
JOHN	WETTAW		SENATOR
ELECTED OFFICIAL- LOCAL			
RONALD	CHRISTENSEN		GILA CO. BOARD OF SUPERVISORS
BUSTER	JOHNSON		MOHAVE CO. BOARD OF SUPERVISORS
LIONEL	RUIZ		PINAL CO. BOARD OF SUPERVISORS
SANDIE	SMITH		PINAL CO. BOARD OF SUPERVISORS
ELECTED OFFICIAL- LOCAL			
EDWARD	GUERRERO		GILA COUNTY BO. SUPERVISORS
GOVERNMENT - FEDERAL			
			PRESCOTT NAT'L FOREST
			DIV OF ENV. CONTAMINANTS
			U.S. FISH & WILDLIFE SERVICE (USFWS)
			MINERALS MANG. SERVICE
			U.S. DEPT. OF ENERGY
			DIRECTORATE OF ENV. QLTY
			U.S. ENV. PROTECTION AGENCY (EPA)
			U.S. BUREAU OF LAND MGMT (BLM)
			U.S. DEPT OF ARMY, CORPS OF ENG (COE)
			LAKE MEAD NAT'L RECREATION AREA
			TONTO NAT'L FOREST
			AIR FORCE PENTAGON
			NAT'L PARK SERVICE
			FEDERAL HIGHWAY ADMINISTRATION
			U.S. FOREST SERVICE (USFS)
			U.S. NATIONAL PARK SERVICE (NPS)
			MESA R.D. TONTO NAT'L FOREST

RAY LAND EXCHANGE/PLAN AMENDMENT MAILING LIST

First	Last	Title	Organization Name
			U.S. BUREAU OF INDIAN AFFAIRS (BIA)
			U.S. GEOLOGICAL SURVEY (USGS)
			U.S. DEPT. AGRICULTURE (USDA)
			KAIBAB NAT'L FOREST
			U.S. AIR FORCE 56 CES/CEVN
			U.S. BUREAU OF RECLAMATION (BOR)
GOVERNMENT - LOCAL			
			MARICOPA CO. SOLID WASTE MGMT
			MARICOPA CO.
			LA PAZ CO.
			YUCCA FIRE DEPT.
			PIMA NATURAL RES CONSERVATION DIST.
			GLOBE LIBRARY
			CITY OF PRESCOTT
			CITY OF BULLHEAD CITY
			PRESCOTT VALLEY CHAMBER OF COMMERCE
			PARKS RECREATION & LIBRARY DEPT.
			PINAL CO. DEVL P BRD & VISITOR CENTER
			CITY OF PEORIA
			CENTRAL AZ ASSOC OF GOV.
			MOHAVE CO.
			LAKE MOHAVE FIRE DIST.
			MARICOPA CO. PARKS & REC.
			EASTERN AZ COUNTIES ORG
			PIMA CO. WASTEWATER MANG.
			BLACK CANYON CITY LIBRARY
			MOHAVE CO. ECONOMIC DEV.
			LA PAZ CO DEPT OF COMMUNITY DEV

RAY LAND EXCHANGE/PLAN AMENDMENT MAILING LIST

First	Last	Title	Organization Name
			TOWN OF KEARNY
			CITY OF FLAGSTAFF
			CITY OF PHOENIX
			PINAL CO AIR QUALITY CONTROL
			BLACK CANYON FIRE DEPT.
			WESTERN LAND EXCHANGE PROJECT
			NAVAJO CO.
			MOHAVE CO. OFFICE/ UofA
			PINAL CO. DEPT OF CIVIL WORKS
			PIMA CO. PARKS & RECREATION
			MOHAVE CO. DISTRICT LIBRARY
			TUCSON LIBRARY
			MARICOPA CO. RECREATION SERVICES DEPT.
			PIMA CO. SHERIFF'S MOUNTED POSSE
			MARICOPA CO. DEPT. OF TRANSPN.
			LEAGUE OF AZ CITIES & TOWNS
			MOHAVE CO. LAND USE COMMITTEE
			SOUTHEASTERN AZ GOV. ORG.
			CHARLES ROYALL LIBRARY
			YAVAPAI CO. PLANNING & BLDG. DEPT.
			PINAL CO.
			SOIL & WATER CONSERVATION
			AZ STATE PARKS
			UofA, COLLEGE OF LAW
			ASU, CENTER FOR ENV. STUDIES
			ASU AZ MINERAL ASSN.
			ASU

GOVERNMENT - STATE

RAY LAND EXCHANGE/PLAN AMENDMENT MAILING LIST

First	Last	Title	Organization Name
			NORTHWESTERN UNIVERSITY
			UofA ADMINISTRATION 412
			UC DAVIS
			ASU - DEPT. OF ANTHROPOLOGY
			AZ STATE PARKS BOARD
			AZ DEPT OF MINES & MINERAL RESOURCES
			ASU-AZ MINERAL ASSN.
			AZ GAME & FISH DEPT (AGFD)
			OFFICE OF ATTORNEY GENERAL
			AZ COMMISSION OF INDIAN AFFAIRS
			AZ DEPT OF WATER RESOURCES
			UNIVERSITY OF AZ (U of A)
			AZ GAME & FISH DEPT. WM-HB
			GR& CANYON UNIVERSITY
			AZ STATE CLEARINGHOUSE
			AZ GEOLOGICAL SURVEY
			AZ ASSN. OF COUNTIES
			AZ STATE LAND DEPT (ASLD)
			AZ STATE MINE INSPECTOR'S OFFICE
			ASU, OFFICE OF CULTURAL RESOURCE MGMT
			AZ DEPT OF ENV. QUALITY
			ASU CHAPTER OF THE WILDLIFE SOCIETY
			NATURAL RESOURCES
			CENTRAL AZ PROJECT
			ASU, DEPT. OF ZOOLOGY
			OLYMPIC STATE PARK
			NAU, SCHOOL OF FORESTRY
			NAU, CLINE LIBRARY

RAY LAND EXCHANGE/PLAN AMENDMENT MAILING LIST

First	Last	Title	Organization Name
			UofA SCHOOL OF RENEWABLE NAT. RES.
GOVERNMENT - TRIBAL			
			FT MCDOWELL MOHAVE-APACHE INDIAN COMM.
			BODAWAY/GAP CHARTER-WESTERN NAVAJO AGE
			OFFICE OF HOPI LANDS, THE HOPI TRIBE
			PASCUA YAQUI TRIBE
			KAIBAB-PAIUTE COUNCIL
			AK-CHIN INDIAN COMMUNITY ENV
			SALT RIVER PIMA-MCPA INDIAN COMM.
GOVERNMENT - STATE			
RUSSELL	HAUGHEY		AZ GAME & FISH DEPT
CAROL	HEATHINGTON		STATE HISTORIC PRESERVATION OFFICE
JONI	SAAD		AZ CLEARING HOUSE
MEDIA			
			BUMPY ROAD NEWS
			AZ DAILY SUN
			TUCSON CITIZEN
			LAKE POWELL CHRONICLE
			FREELANCE WRITER
			PHOENIX GAZETTE
			AZ DAILY STAR
			GREEN VALLEY NEWS & SUN
			MESA TRIBUNE
			COPPER BASIN NEWS
			ANRN
			DAILY DISPATCH
			ASSOCIATED PRESS

NON-GOVERNMENT ORGANIZATION

RAY LAND EXCHANGE/PLAN AMENDMENT MAILING LIST

First	Last	Title	Organization Name
			ARI-VADA 4 WHEELERS
			HASSAYAMPA RIVER PRESERVE
			FOREST GAURDIANS
			ORACLE TRAILS COALITION
			AZ ASSOC OF 4 -WHEEL DR CLUBS
			MESA 4 WHEELERS
			AZ STATE RIFLE
			COCONINO SPORTSMEN
			GREATER AZ BICYCLING ASSN.
			NORTH AMERICAN BEAR SOCIETY
			HORSESHOE RANCH PARTNERSHIP
			DESERT CABALLEROS
			ASA4WDC
			AZ DESERT BIGHORN SHEEP SOCIETY
			RESOURCE ADVISORY COUNCIL
			MINERALS EXPLORATION COALITION
			HAUCHUCA HIKING CLUB
			WESTERN LAND GROUP
			COLORADO RIVER
			PLUMBERS LOCAL 469
			INTERNAT'L SONORAN DESERT ALLIANCE
			AZ TRAIL ASSOC
			TUCSON ROUGH RIDERS
			FRIENDS OF ANIMALS
			WALAPAI 4 WHEELERS
			AZ CATTLE GROWERS ASSN.
			CO LINE RIDERS
			THE FUND FOR ANIMALS

RAY LAND EXCHANGE/PLAN AMENDMENT MAILING LIST

First	Last	Title	Organization Name
			SOUTHWEST CENTER FOR BIOLOGICAL DIVERSITY
			HUACHUCA HIKING CLUB
			GARRETT 4 WDC/AWA4WDC
			MOHAVE SPORTSMAN CLUB
			AUDUBON SOCIETY
			CO. SPRVRS ASSN.
			BOYCE THOMPSON ARBORETUM
			AZ WILDLIFE FEDERATION
			FRIEND OF AZ RIVERS
			CASA GR&E 4 WHEEL DRIVE CLUB
			DEFENDERS OF WILDLIFE
			YUMA VALLEY ROD & GUN CLUB
			AZ MINING ASSN.
			GLENDALE HIKING CLUB
			SIERRA CLUB
			AZ STATE ASSN. OF 4-WHEEL DRIVE USERS
			ROADRUNNER 4-WHEELERS
			BULLHEAD 4 WHEELERS
			PARKER 4-WHEELERS
			VERDE VALLEY 4 -WHEEL DRIVE CLUB
			CHAMBERS GROUP
			AZ WILDERNESS COALITION
			MOUNTAIN STATES LEGAL FOUNDATION
			ZENECA SPECIALTIES
			HUMANE SOCIETY OF THE US
			LIONS INTERNAT'L (AZ)
			CREEPY CRAWLERS 4 WHEELER DR
			LANDS FOUNDATION

RAY LAND EXCHANGE/PLAN AMENDMENT MAILING LIST

First	Last	Title	Organization Name
			SUPERSTITION AREA LAND TRUST
			PEOPLE FOR THE WEST
			INT'L SOC. OF PROTECTION OF MUSTANGS & BUR
			THE AZ TRAIL
			STATE LAND INTERFACE & UNITED DIR
			COUNCIL FOR SUSTAINABLE LIVING
			WILDERNESS LAND TRUST
			HAVASU 4-WHEELERS
			WILDERNESS SOCIETY
			AZ RURAL WATER ASSN.
			IMPRINTING FOUNDATION
			AZ SMALL MINE OPERATORS ASSN.
			SAHUARO 4 X 4'S
			HUALAPAI 4 WHEELERS
			COCHISE CO ROUGH RIDERS
			AZ ANTELOPE FOUNDATION
			SOUTHERN AZ GUIDES & OUTFITTERS ASSOC.
			AZ WOOL PRODUCERS ASSN.
			THE WILDLIFE SOCIETY - AZ CHAPTER
			NATURE CONSERVANCY
			PEBBLE PICKIN POSSE
			AZ ROUGH RIDERS
			MOHAVE CO. TRAILS ASSN., INC.
			MOHAVE PROSPECTORS ASSN.
			SO. AZ WILDLIFE CALLERS
			COPPERSTATE 4 WHEEL DR. CLUB
			YARNELL SENIOR CITIZENS CENTER
			SOUTHERN AZ HIKING CLUB

RAY LAND EXCHANGE/PLAN AMENDMENT MAILING LIST

First	Last	Title	Organization Name
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AMIGOS

MOTOROLA DUST DEVILS 4 WHEEL DR.

PRIVATE

APACHE CO DEV. & COMM SVCS.

ECOLOGY & ENVIRONMENT, INC.

SMITH WALSH ALLOTMENT

ESCUDILLA OUTFITTERS, LLC.

WESTERN RESOURCE DEV.

FLYING DIAMOND RANCH

EL PASO NATURAL GAS CO.

DAMES & MOORE, INC.

AMERICAN WILDLANDS

MANG. CONSULTANT- MINERAL RESOURCES

CENTURY CABLE

FLETCHER ASSOCIATES

ASC HYDROLOGICAL & ENVIRON SERVICES

POUDRE ENV. CONSULTANTS, INC.

RAYCO ENTERPRISES

CEDAR CREEK ASSOCIATES

ANGELS RANCH

MOTIVATED INVESTMENTS REALTY

GREYSTONE

ZENECA SPECIALTIES

SANTE FE PACIFIC GOLD CORP.

SOUTH BRANCH RESOURCES

CYPRUS AMAX MINERALS CO.

HCR-02

BIO/WEST, INC

RAY LAND EXCHANGE/PLAN AMENDMENT MAILING LIST

First	Last	Title	Organization Name
			GALLAGHER & KENNEDY
			ENV. MANG. ASSOCIATES
			AQUATIC & WETLANDS CONSULTANTS
			TRANSWESTERN PIPELINE CO (ROW DEPT.)
			U.S. WEST COMMUNICATIONS
			CHEMEHUEVI
			LEVY TRUCKING
			AT & T
			WALNUT CREEK RANCH
			HORNER MOUNTAIN RANCH
			ASARCO
			HOLME, ROBERTS & OWEN
			PHOENIX AIRWAY FACILITIES SECTOR
			APS
			BERT SLATER AUTO PARTS
			MURPHY & POSNER
			HAROLD LINDNER ASSOC., INC.
			MONEY MOUNTAIN MINING
			J BAR J RANCH
			HEADWATERS WEST LTD.
			WF CATTLE CO.
			BLACK MOUNTAIN OUTFITTERS
			GROSS FAMILY PARTNERSHIP
			AZ TOXICS INFORMATION
			MCTA
			PARSENS, BEHLY & LATIMAR
			CONSTRUCTECH CONSULTING GROUP
			BELL, SELTZER, PARK, & GIBSON

RAY LAND EXCHANGE/PLAN AMENDMENT MAILING LIST

First	Last	Title	Organization Name
			KELLIS RANCH
			CENTURY 21 HEINEMAN REALTY
			WESTERN AREA POWER ADMIN.
			SUNBURST PROPERTIES
			PREFERRED AQUISITIONS
			ARCHAEOLOGICAL CONSULTING SERVICES
			SIMPSON, THACHER & BARTLETT
			FLORENCE REMINDER
			UNITED METRO MATERIALS
			TERRAVEST, INC.
			A DIAMOND ALLOTMENT
			HOMESTAKE MINING CO.
			KERR MCGEE CORP.
			H & J SHUMWAY FARMS
			56 CES/CERR
			OLD PUEBLO ARCHAEOLOGY CENTER
			GIVENS PURSLEY & HUNTLEY
			R.E.I.
			WEST VALLEY VIEW
			WALD, INC.
			SUN STATE ROCK & MATERIALS, CORP.
			STANFIELD-RURAL LTD PARTNERSHIP
			RED CREEK RANCH PARTNERSHIP
			PARKER DAIRY FARMS
			JOHNSON CATTLE CO.
			WEAVER MINING DISTRICT ASSN.
			MARICOPA MINES
			GSA RESOURCES, INC

RAY LAND EXCHANGE/PLAN AMENDMENT MAILING LIST

First	Last	Title	Organization Name
			MOHAVE ELECTRIC COOPERATIVE
			BLUE SKY EXPEDITIONS INC.
			ENV. IMPACT SERVICES
			BRIMHALL RANCH
			DUGAS RANCH
			COMBINED METALS
			ARMSTRONG MINING
			BELL HENRY GROUP
			TUCSON ELECTRIC POWER CO.
			TULSA ROCK & MINERAL SOC. INC./TULSA, OK
			TODD 2Y RANCH
			HODGES REALTY & BUILDING
			MINERALS MANAGMENT SERVICE
			SUNWALKER DEV.
			CENTER FOR LAW IN THE INTEREST
			THE ONE LAW GOLD MINING CORP.
			SALT RIVER PROJECT
			NEW MEXICO & AZ LAND CO
			AGRA EARTH & ENV., INC.
			FARM CREDIT SERVICES SOUTHWEST
			BATTLE MOUNTAIN EXPLORATION CO.
			D.K. MARTIN & ASSOCIATES
			CASA GRANDE COTTON FINANCE CO
			C & L INVESTMENTS
			E & N MINING & CONSTRUCTION, INC.
			ERICKSON LAND & CATTLE CO.
			APKER, HAGGARD & KURTZ, P.C.
			MINERAL MGMT ASSOC.

RAY LAND EXCHANGE/PLAN AMENDMENT MAILING LIST

First	Last	Title	Organization Name
			WE HALL CO.
			WHICKER & ASSOCIATES
			SOUTHWESTERN MINERALS EXPLORATION ASSN.
			ANDERSON CLAYTON CORP.
			AZ ELECTRIC POWER COOPERATIVE, INC
			DESERT NURSERY
			OSDA
			SEC, INC
			MARCOE MINERALS CO
			BAR S RANCH
			LAND SERVICES
			MGT. CONSULTANT-MINERAL RESOURCES
			HIGH JINX RANCH
			NORANDA EXPLORATION, INC.
			BATEMAN ENGINEERING, INC.
			D4J CATTLE CO LLC
			THREE RIVERS AGRICULTURE INVESTMENTS
			DYNAMIC CORP.
			FARM CREDIT SERVICES
			RAFTER SIX ALLOTMENT
			AZ SERVICE
			PHELPS DODGE CORP.
			BENEDICT FEEDING CO.
			DE LILLO & SUTTON ENTERPRISES
			ENVIROTECH SOLUTION, INC.

PRIVATE- CITIZEN

JOHN AKERS

GARY ALBIN

RAY LAND EXCHANGE/PLAN AMENDMENT MAILING LIST

First	Last	Title	Organization Name
GARY	ALLEN		
GARRY	ANDERSON		
CAROL	ANDERSON		
BERNARD	ANDERSON		
DAVID J	ANDERSON		
GUILLERMO	ARDON		
KATHY	ARNOLD		
TONY	ASTORGA		
DANIEL P.	AUX		
SANDY	BAHR		
MICHAEL	BAKER		
SUE	BAUGHMAN		
JOAN	BECK		
MARK	BELLES		
STU	BENGSON		
BETTY E.	BINGMAN		
WILLIAM S	BIRDSONG		
JANINE	BLAELOCH		
MARJORIE	BLAINE		
LEONARD E	BLAKESLEY		
NANCY	BLUMLEIR		
PATRICK H.	BOLES		
JOHN	BOWSHER		
BRIAN	BOYLAN		
ROSE E.	BRADFORD		
MARK	BREN		
STEVE	BROPHY		
GEORGE	BROWN		

RAY LAND EXCHANGE/PLAN AMENDMENT MAILING LIST

First	Last	Title	Organization Name
ALLISON	BROWNING		
GINA L.	BULLOCH		
JAMES P.	BURKE		
GLYNN	BURKHARDT		
GEORGE	BURNS		
WILLIAM	BURRELL		
RONDA	BURRELL		
LEONARD W	BYERLY		
LES	BYRAM		
RAY	CALDERA		
MARGARET	CALDERA		
ANNIE & RAMON	CAMPACHO		
TILFORD	CANTRELL		
ROBERT	CANTRELL		
REYNALDO	CANTU		
VICTORIA	CARELLA		
DWIGHT L	CAREY		
JACK	CARLSON		
N.T.	CARTER		
JUNE	CASTELHANO		
CYNTHIA M	CHANDELY		
ALAN & BARBARA	CHATFIELD		
JOE	CHOTT		
JUCK	CHRISTIANA		
CHRISTOPHER	CHRISTIE		
ANDY	CLARK		
MARK	CLEVELAND		
BENJAMIN	CLINGAN		

RAY LAND EXCHANGE/PLAN AMENDMENT MAILING LIST

First	Last	Title	Organization Name
ANNE	COE		
MASON	COGGIN		
GLEN E	COLLINS		
JEAN CARDWELL	COLLIS		
THOMAS F	COPE		
RUSSELL M.	CORN		
GENE	CORYELL		
DONALD E.	COX		
JOSEPH & PHYLLIS	COX		
RODNEY L	CRICK		
CHRISTINE & ED	CRUESS		
SALAS	CRUZ		
CHERIE	CRUZ		
MARY	DAHL		
GEORGE E	DANIELS		
JERRY W.	DANNI		
VIRGINIA	DAVILLA		
STEVEN D.	DAVIS		
RUSSELL	DAVIS		
STEVEN	DAY		
DAVID A	DE KOK		
TERRY C	DEARBORN		
TOMMY	DEEN		
LINDA	DEEN		
JERSY	DEPONTY		
PETER A	DOW		
GARRY	DUFFY		
JAMES W	DUGAN		

RAY LAND EXCHANGE/PLAN AMENDMENT MAILING LIST

First	Last	Title	Organization Name
GEORGE	EARLY		
GARY A.	EIDE		
T.E.E.	ERSKINE		
RAUL	ESTRADA		
ROBERT C	EULER		
MICHAEL	FAICCA		
DANIEL M.	FELIX		
LARRY D.	FELLOWS		
GEORGE	FERGUSON		
LANDI	FERNLEY		
GENE	FISHER		
DENNIS	FORMAN		
NOEL	FRANK		
GLENN	FREDRICK		
JOHN	FREEMAN		
PAUL	FRIESEMA		
STUART	FULLER		
MIKE	FUSON		
DONALD P	GABRIELSON		
AL JINKS	GAINER		
KIP	GAMBEE		
NEIL A.	GAMBEL		
CHRIS	GARCIA		
MARY	GARCIA		
JOSEPH L	GENDRON		
REX	GENNICKS		
HANK	GONZALES		
BILL	GOODALE		

RAY LAND EXCHANGE/PLAN AMENDMENT MAILING LIST

First	Last	Title	Organization Name
ALEX	GORT		
STEVE	GRAHAM		
TAMMIE	GREGORY		
GAIL	GRIFFIN		
DAVID	GRISEZ		
JOHN & PAULA	GRISWOLD		
ANDY	GROSETA		
JERRY L.	HAGGARD		
RICHARD C	HALL		
ROBERT	HANLEY		
WILLIAM	HATFIELD		
PHILIP	HECKER		
BARBARA	HESLIN		
TERRY K	HESLIN		
THOMAS	HEYN		
DON R	HICKS		
ROSS L	HOBOBY		
SYDNEY	HOFFHAY		
TIM	HOGAN		
DAVID	HOGAN		
KENNETH	HUNT		
WESLEY	HUNTER		
EDWARD J.	HUSKINSON		
BILL C	IFTIGER		
RICHARD A	ISAACSON		
JACK B	JACKS		
JANET L	JACOBSEN		
SCOTT	JARVIS		

RAY LAND EXCHANGE/PLAN AMENDMENT MAILING LIST

First	Last	Title	Organization Name
SENON	JOURIGUE		
BILL	JEWETT		
THOMAS	JOHN		
JAN	JOHNSON		
MARK S.	JOHNSON		
FRANKLIN R	JONES		
THOMAS R.	JONES		
BILL	JORDAN		
BRUCE	KABANA		
RICK	KANEEN		
WENDI	KAWA		
JAMES	KAWA		
ELLIOTT	KELLE		
GARY E.	KELLER		
JOHN	KENNEDY		
JIMMIE B.	KERR		
JOHN	KEVIN		
HENRY	KREIS		
RETA	LAFFORD		
NICHOLAS	LAFONZ		
DANIEL P	LAUX		
TOM H.	LAZZELLE		
BERNARD	LEMME		
LAINIE	LEVICK		
GAIL	LICHTENHAN		
PETE	LOMELI		
CONRAD	LOPEZ		
GARY	LUBERS		

RAY LAND EXCHANGE/PLAN AMENDMENT MAILING LIST

First	Last	Title	Organization Name
LINDA M.	LUIK		
CHARLES	MAES		
MIKE & MARY	MAJESKI		
BETH	MANN		
BRETT	MARSH		
JIM	MARTIN		
DOUGLAS K	MARTIN		
PAUL	MARTIN		
MIKE	MARTINER		
MOLLY	MAYER		
LARRY	MCBILES		
TRICIA	MCCRAW		
JOHN & SANDIE	MCCULLEN		
WALTER	MCCULLOCH		
STEVE	MCGHEE		
LARRY	MCKRACKEN		
ROBERT R.	MCNICHOLS		
MATHEW W.	MCWENIE		
P.K. RANA	MEDHI		
OLLIE	MILLER		
EDWIN W	MINCH		
DAVID	MINKE		
LARRY	MISSAL		
LEO	MOBLEY		
RICK	MOHR		
JANE ELLEN	MOODY		
MARTIN	MOORE		
ZAHE S	MORGAN		

RAY LAND EXCHANGE/PLAN AMENDMENT MAILING LIST

First	Last	Title	Organization Name
MICHAEL	MOSS		
JAMES	MURPHY		
ROBERT R	NICHOLS		
FRANK & JOAN	NOEL		
JAMES & SHEILA	NORINE		
DON	NORTON		
JAMES E	NOTESTINE		
KAY	NOWATZKI		
JAMES H	NYENHUIS		
MARLENE	O'HARA		
BILL	OPPENHEIMER		WINTERS GROUP
RICK	OVERSTREET		
FRANK	PACHACO		
ERIC	PARKER		
STEVE	PARKER		
DONALD J.	PINKAVA		
JAMES	PLASTER		
DONALD J.	POCK		
DANIE	PRANDSEN		
RAY	PRENDERGAST		
EDITH	PRICE		
DEAN	PRICHARD		
TRUMAN C	PUCHBAUER		
RICHARD	PUSCH		
PHYLLIS	RALLEY		
MELODEE	RAMEY		
RICHARD S	RHOADES		
MICHAEL J	RICE		

RAY LAND EXCHANGE/PLAN AMENDMENT MAILING LIST

First	Last	Title	Organization Name
BILL	RICHARDSON		
DAVID E.	RICHERT		
ROLLIN W.	ROBERTS		
JOHN G	ROSCOE		
CHARLES	ROSE		
PATRICK A.	RUINN		
FERNANDO	RUIZ		
EARL	RUNTE		
STEVE A	SAWAY		
TOM	SCARTACCINI		
LOIS	SCHERBER		
RANDY	SCHROEDER		
PAUL	SCHRUPP		
JOAN	SCOTT		
BRIAN	SEGER		
JAMES D	SELL		
RONALD	SERVANT		
LYNN	SHEPPARD		
CHUCK	SHIPLEY		
RAYMOND	SHOUGH		
DUANE L	SHROUPE		
PHIL	SIEGEL		
MICHAEL S.	SIEGEL		
ALBERT	SLATER		
PAUL	SMITH		
SAM	SPILLER		
LEONARD	STAFF		
LAWRENCE O.	STALLCUP		

RAY LAND EXCHANGE/PLAN AMENDMENT MAILING LIST

First	Last	Title	Organization Name
DON	STEUTER		
WILLIAM P.	STRITTMATTER		
SARAH A	STRUNK		
JAMES H.	SULLIVAN		
KAREN	SUSSMAN		
JODY	SWINGLE		
RHEAL D	TETRENAUTT		
RAY	THOMPSON		
RUTH M	THOMPSON		
ROBERT	THOMPSON		
JAMES	TOON		
KENNETH	TOWNSEND		
PATRICK	TRUSTY		
THOMAS	TWEDT		
JIM R.	VAALER		
THOMAS	VACHUDA		
CHARLES P	VAN EPPS		
GREGORY	VERNON		
DAVID L	WALKER		
BRUCE	WALKER		
WILLIAM	WELLS		
FRANCES W.	WERNER		
JOHN E.	WHICKER		
JOSEPH	WILHELM		
TIMMY	WILLIAMS		
RICHARD	WILLIAMSON		
CATHY	WILSON		
JACK	WILSON		

RAY LAND EXCHANGE/PLAN AMENDMENT MAILING LIST

First	Last	Title	Organization Name
ROBERT A.	WITZEMAN		
TERRY	WORMAN		
THOMAS E.	WRIGHT		
JIM	ZABORSKY		
GABRIEL P.	ZINSLI		

APPENDIX D

**NATIONAL REGISTER OF HISTORIC PLACES (NRHP)
ELIGIBILITY STATUS**

Table D.1. NRHP Site Eligibility Status for Ray Land Exchange/Plan Amendment EIS

Site Number	NRHP Eligibility Status	Site Type	Surface Ownership	Temporal Affiliation
AZ U:16: (ASM) All sites except 254-258 are in the Copper Butte/Buckeye Area				
246	Data Recovery Completed*	Pictographs; Rockshelter	Private	Prehistoric
247	Data Recovery Completed	Pictographs; Rockshelter	Private	Prehistoric
275	Data Recovery Completed	Possible Habitation	State	Prehistoric
279	Data Recovery Completed	Limited Activity	State	Prehistoric
280	Data Recovery Completed	Limited Activity	State	Prehistoric
281	Data Recovery Completed	Rockshelter	State	Prehistoric
282	Data Recovery Completed	Rockshelter	State	Prehistoric
283	Data Recovery Completed	Rockshelter	State	Prehistoric
274	Not Eligible	Grinding Slick	BLM	Prehistoric
268	Not Eligible	Habitation? Camp?	BLM	Prehistoric
273	Not Eligible	Petroglyph	private	Prehistoric
264	Not Eligible	Limited Activity	BLM	Prehistoric
271	Not Eligible	Limited Activity	BLM	Prehistoric
36(BLM)	Not Eligible	Limited Activity	BLM	Prehistoric
239	Not Eligible	Petroglyph	Private	Prehistoric
236	Eligible	Habitation?	Private	Prehistoric
241	Eligible	Limited Activity	Private	Protohistoric?
256	Eligible	Rockshelter Cave	BLM	Prehistoric
257	Eligible	Rockshelter Cave	BLM	Prehistoric
254	Eligible	Rockshelter	BLM	Prehistoric
258	Eligible	Rockshelter	BLM	Prehistoric
255	Eligible	Rockshelter	BLM	Prehistoric
265	Eligible	Habitation?	BLM	Prehistoric
253	Eligible	Habitation/ Ag?	BLM	Prehistoric
260	Eligible	Habitation?	BLM	Prehistoric
233	Eligible	Limited Activity?	BLM	Prehistoric
259	Eligible	Limited Activity	BLM	Prehistoric
263	Eligible	Limited Activity	BLM	Prehistoric
262	Eligible	Habitation?	BLM	Prehistoric
261	Eligible	Habitation?	BLM	Prehistoric
269	Eligible	Limited Activity	BLM	Prehistoric
270	Eligible	Habitation?	BLM	Prehistoric
285	Eligible	Rockshelter	Private	Prehistoric
286	Not Eligible	Tent Pad?	Private	Historic
287	Eligible	Rockshelter	Private	Pre & Historic
240	Eligible	Limited Activity	Private	Prehistoric
242	Eligible	Mining Camp	Private	Pre & Historic
272	Not Eligible	Mine	BLM; private	Historic
5(ASU)/294	Eligible	Limited Activity	BLM	Pre & Historic
238	Eligible	Habitation/ Ag?	Private	Prehistoric

Table D.1, continued. NRHP Site Eligibility Status for Ray Land Exchange/Plan Amendment EIS

Site Number	NRHP Eligibility Status	Site Type	Surface Ownership	Temporal Affiliation
AZ V:13: (ASM) All sites are in the Ray Complex				
105	Not Eligible	Road	BLM	Historic
188	Not Eligible	Trail	State	Historic
106	Not Eligible	Limited Activity	BLM	Historic
108	Not Eligible	Limited Activity	BLM	Historic
110	Not Eligible	Temporary Habitation?	BLM	Historic
193	Not Eligible	Trail	BLM	Historic
182	Eligible	Habitation	State	Pre & Historic
107	Eligible	Limited Activity	BLM	Prehistoric
109	Eligible	Limited Activity	BLM	Prehistoric
115	Eligible	Temporary Habitation?	BLM	Prehistoric
195	Eligible	Mining Complex	BLM	Historic
102	Not Eligible	Camp	BLM	Historic
103	Eligible	Habitation	BLM	Historic
104	Not Eligible	Limited Activity	BLM	Prehistoric
111	Eligible	Limited Activity	BLM	Prehistoric
112	Not Eligible	Limited Activity	BLM	Prehistoric
113	Not Eligible	Limited Activity	BLM	Prehistoric
114	Not Eligible	Limited Activity	BLM	Prehistoric
116	Eligible	Limited Activity	BLM	Prehistoric
117	Not Eligible	Limited Activity	BLM	Prehistoric
118	Not Eligible	Limited Activity	BLM	Prehistoric
119	Eligible	Camp	BLM	Pre & Historic
120	Eligible	Limited Activity	BLM	Prehistoric
121	Not Eligible	Habitation	BLM	Historic
122	Not Eligible	Limited Activity	BLM	Prehistoric
123	Not Eligible	Limited Activity	BLM	Prehistoric
124	Eligible	Limited Activity	BLM	Prehistoric
125	Eligible	Trail	BLM	Pre & Historic
126	Not Eligible	Limited Activity	BLM	Prehistoric
183**	Eligible	Temporary Habitation?		Historic
184	Not Eligible	Limited Activity	State	Pre & Historic
185	Eligible	Limited Activity	State	Pre & Historic
186	Eligible	Limited Activity	State	Pre & Historic
187	Eligible	Mining Camp	BLM	Historic
189	Eligible	Limited Activity/Road	BLM	Pre & Historic
190	Eligible	Limited Activity	BLM	Prehistoric
191	Not Eligible	Limited Activity	BLM	Pre & Historic
192	Not Eligible	Mining Camp	BLM	Historic
194	Not Eligible	Limited Activity	BLM	Prehistoric

* No longer eligible for information potential

**Site outside project boundary

APPENDIX E

**RELATED LAWS, RULES, REGULATIONS,
AND EXECUTIVE ORDERS**

RELATED LAWS, RULES, REGULATIONS, AND EXECUTIVE ORDERS

CEQ Regulations (40 CFR 1500.2 and 1502.25) require that related environmental laws, rules, regulations, and executive orders be integrated into an environmental impact statement. Although the CEQ regulations do not specifically indicate that the discussions of related laws are required in an EIS, the BLM has opted to include them in this document in an effort to fully disclose any and all potential impacts associated with the Proposed Action.

Aquifer Protection Program. In Arizona, groundwater quality is regulated by ADEQ under the Aquifer Protection Program (APP). For all new facilities that discharge or have the potential to discharge to an aquifer, discharge limitations are prescribed by APP permits on a site-by-site basis, based on Arizona Revised Statutes §49-243 (A), (B), (C), and (D). APP permits determine best available demonstrated control technology (BADCT) to achieve the greatest degree of discharge reduction. In addition, pursuant to Arizona Administrative Code R18-11-406, APP permits require that all groundwater discharges meet Aquifer Water Quality Standards at the boundary of the permit holder's land.

American Indian Religious Freedom Act (AIRFA). AIRFA establishes the protection of Indian tribes' inherent right to the free exercise of traditional religions. This right includes access to spiritual places, one kind of traditional cultural property. The courts have generally determined that while AIRFA does not require agencies to defer to the wishes of tribes regarding spiritual places and other aspects of religious practice, it does require that tribes be consulted, and that their concerns be given serious consideration. AIRFA thus requires agencies to consider the effects of their actions on Native American spiritual places and on access to such places by religious practitioners. It also requires consideration of effects on other aspects of religious practice—for example, the use of plants, animals, and other natural resources, and the practice of ceremonial activities.

Archaeological Resources Protection Act (ARPA). ARPA requires notification of the appropriate Indian tribe before approving a cultural resource use permit for the excavation (testing and data recovery) of archaeological resources (more than 100 years old), if the responsible Federal land manager determines that a location having cultural or religious importance to the tribe may be harmed or destroyed.

Clean Air Act, Title V. Under the Clean Air Act amendments of 1990 and A.R.S. 49-401 et seq., ADEQ and Pinal County Air Quality Control Division (PCAQCD) are responsible for the Title V permit program, which covers virtually all significant sources of air emissions, regardless of land ownership within Pinal County, Arizona. The permit program sets standards for pollution control and monitoring requirements, source emission limits, and impacts to local and regional air quality.

Clean Water Act Permitting Programs. The U.S. Army Corps of Engineers (COE), the Environmental Protection Agency (EPA) and the Arizona Department of Environmental Quality (ADEQ) administers the compliance programs associated with Sections 401, 402, and 404 of the Clean Water Act (CWA). These provisions are designed to control impacts to surface waters.

- ▶ Section 401 requires project proponents to receive water quality certification from the appropriate state agency before they are granted any federal permits under CWA. In the State of Arizona, the responsible agency is the ADEQ.
- ▶ Section 402 prohibits discharge of pollutants into waters of the United States⁵⁶ without a permit issued through the National Pollutant Discharge Elimination System (NPDES). In developing NPDES permits for copper mines, EPA distinguishes between three types of discharges which must be regulated: process wastewaters such as heap leach pile runoff or seepage and pregnant leach solutions; mine drainage and stormwater. The discharge of process wastewaters is prohibited under the NPDES program. Mine drainage, which is defined as any water drained, pumped or siphoned from a mine, must

⁵⁶ Waters of the U.S. are defined at 33 CFR 323.2(a).

meet technology-based effluent limitations for specific pollutants which include suspended solids, copper, zinc, lead, mercury, cadmium, and pH. The effluent limitations apply on a nationwide basis and were developed for specific industries, such as the mining industry. Mine drainage includes among other things, pit drainage and runoff from areas used for storage of ore or tailings, as well as the active mining area in general. The only active mining area discharges exempted from the definition of mine drainage are runoff from certain kinds of access roads, runoff from tailings dams or dikes not constructed of waste rock or tailings, and runoff from certain ancillary structures or reclaimed areas. These discharges are subject to EPA's industrial stormwater regulations. These require monitoring of the runoff for certain pollutants and development, and implementation of a Storm Water Pollution Prevention Plan (SWPPP) containing Best Management Practices (BMPs) to achieve the highest practicable reduction in pollutant loading.

- ▶ Section 404 permits are required for all dredging activities and discharge of dredged or fill material to waters of the U.S. This program requires the project proponent to 1) obtain a permit from the COE for impacts to waters of the U.S, including wetlands, regardless of land ownership, and 2) avoid, minimize, and/or mitigate all such impacts.

Endangered Species Act. The Endangered Species Act (ESA) provides protection for animal and plant species in danger of extinction (endangered) and those that may become so in the foreseeable future (threatened). Section 7 of the ESA requires Federal agencies to ensure that all Federally associated activities in the United States do not have adverse impacts on the continued existence of threatened or endangered species or on designated areas that are important in conserving those species. Action agencies must consult with the U.S. Fish and Wildlife Service to determine the potential impacts that a project may have on protected species. This EIS (supported by BE studies) has disclosed all impacts related to biological resources in the project vicinity.

Farmland Protection Policy Act. Under the Farmland Protection Policy Act (PL 97-98; 7 U.S.C. 4201 et seq.), impacts to prime or unique farmlands must be assessed in implementing NEPA. If prime or unique farmland is identified in an area that may be affected by a proposed action, alternative actions must be considered and appropriate mitigation measures must be developed. The Natural Resources Conservation Service (NRCS), which is responsible for administering the Farmland Protection Policy Act, has not identified any prime or unique farmland in the project area.

Federal Land Exchange Facilitation Act of 1988 (FLEFA). This act facilitates and expedites land exchanges pursuant to the Federal Land Policy and Management Act of 1976 and other laws applicable to exchanges involving lands managed by the Departments of the Interior and Agriculture by: 1) providing more uniform rules and regulations pertaining to land appraisals which reflect nationally recognized appraisal standards; and 2) establishing procedures and guidelines for the resolution of appraisal disputes. FLEFA also provides sufficient resources to the Secretaries of the Interior and Agriculture to ensure that land exchange activities can proceed consistent with public interest. FLEFA requires a study and report concerning improvements in the handling of certain information related to Federal and other lands.

Federal Land Policy and Management Act (FLPMA). FLEFA includes thirteen points of policy declared by Congress which develop the concept of multiple land use. The first is that public lands be retained in Federal ownership unless it is determined that disposal of a particular parcel will serve the national interest. Following this is a call to inventory public lands and project their present and future use through land use planning. This is to be coordinated between Federal and state efforts. The Act provides for review of lands without designated uses to be considered. The lands designated as public must be managed in a manner that will protect various ecological and educational values. Further, the act addresses areas of critical environmental concern by requiring regulations and plans for such areas to be promptly developed.

Mining and Mineral Policy Act of 1970. This act declares that it is the continuing policy of the federal government to foster and encourage private enterprise in the development of a stable domestic minerals industry and the orderly and economic development of domestic mineral resources. This policy was reaffirmed by the National Materials and Minerals Policy, Research, and Development Act of 1980, which additionally required the Secretary of the Interior to improve the quality of minerals data in federal land use decision-making.

Mining Law of 1872, as amended. The Mining Law of 1872 is an act to promote the development of the mineral resources of the United States. Under this law individuals are permitted to enter open Federal public lands to explore for valuable mineral deposits such as gold, silver, copper, etc. Individuals can stake a claim on the land which is found to have any of these valuable minerals. These claims are to be physically located and the value of the mineral deposit has to be assessed. A title or patent to both surface and subsurface areas containing a valuable mineral deposit can be obtained for a set fee.

The Mining Law of 1872 has remained virtually unchanged since its approval date. However, there have been two acts that have significantly affected the 1872 law. These "amendments" are the Mineral Leasing Act of 1920, and the Materials Act of 1947 (3). These two amendments were enacted primarily to remove fuel minerals from the 1872 Mining Law's jurisdiction, and to apply some limited environmental provisions, but with no requirements to restore mined lands after mineral production has ceased (3).

Claimants can patent (buy) 20 acre plots (per claimant) of land for \$5 per acre if it is a lode (vein) claim, and \$2.50 per acre if the claim is a placer claim. Mill sites cannot be any larger than 5 acres and have to be purchased as well. Once the claim is patented, the actual ownership of the land changes from the Federal government to the buyer(s).

National Environmental Policy Act (NEPA). NEPA was one of the first laws ever written that establishes the broad national framework for protecting our environment. NEPA's basic policy is to assure that all branches of government give proper consideration to the environment prior to undertaking any major federal action that significantly affects the environment.

NEPA requirements are invoked when airports, buildings, military complexes, highways, parkland purchases, and other federal activities are proposed. Environmental Assessments (EA's) and Environmental Impact Statements (EIS's), which are assessments of the likelihood of impacts from alternative courses of action, are required from all Federal agencies and are the most visible NEPA requirements.

National Historic Preservation Act (NHPA). The NHPA establishes as Federal policy the protection of historic sites and values in cooperation with other nations, states, and local governments. The Act designates the SHPO as the individual responsible for administering programs in the states and creates the President's Advisory Council on Historic Preservation (ACHP). Federal agencies are required to consider the effects of their undertakings on historic resources and to give the ACHP a reasonable opportunity to comment on those undertakings. This EIS has disclosed all impacts related to historic resources in the project vicinity, including the protection of archaeological sites under the Proposed Action, Buckeye or Copper Butte Alternatives.

Native American Graves Protection and Repatriation Act (NAGPRA). NAGPRA contains two main provisions. The first requires federal agencies and museums receiving federal funds to inventory collections of human remains and associated funerary objects, and develop written summaries for unassociated funerary objects, sacred objects, and objects of cultural patrimony that are in the collections they own or control. The second provision involves the protection of Native American graves and associated cultural items. Avoidance of archaeological sites containing graves is encouraged, as are intensive surveys to identify such sites. Archaeological investigations for planning or research purposes on federal and tribal lands, or other land modifying activities on federal lands that inadvertently discover such items, require the federal agency or tribe to consult with affiliated Native Americans.

Resource Conservation and Recovery Act (RCRA). RCRA gave EPA the authority to control hazardous waste from the "cradle-to-grave". This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous waste.

The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances, focuses only on active and future facilities and does not address abandoned or historical sites

Safe Drinking Water Act (SDWA). The SDWA was established to protect the quality of drinking water in the U.S. This law focuses on all waters actually or potentially designated for drinking use, whether from above ground or underground sources.

The Act authorizes EPA to establish safe standards of purity and required all owners or operators of public water systems to comply with primary (health-related) standards. State governments, which assume this power from EPA, also encourage attainment of secondary standards (nuisance-related).

Superfund Amendment and Re-Authorization Act of 1986 (SARA), as amended. SARA reauthorized CERCLA to continue cleanup activities around the country. Several site-specific amendments, definitions clarifications, and technical requirements were added to the legislation, including additional enforcement authorities.

Surface Mining Control and Reclamation Act (SMCRA) 30 USC 1201 et seq. Whether mining activities occur on public or private lands, Asarco must receive a number of federal and state authorizations to implement foreseeable mining uses. These authorizations are summarized in Table E-1. Furthermore, many of these permits (such as the Title V air quality permit and the Aquifer Protection Program permit) and the proposed Arizona state reclamation rules provide for public notification and review prior to issuance of the permits. They also require review and reauthorization for any proposed major modifications of the mine activities for which a permit has been issued. The following discussion clarifies the specific regulatory responsibilities of the BLM and other federal and state agencies in regard to mining and mine-related activities on public versus private lands.

With regard to reclamation requirements for mining on public versus private lands, there is no significant difference between state and federal mined land reclamation policies. The recently passed Arizona Mined Land Reclamation Rules on July 20, 1996, applies to the mining activities proposed by Asarco for the selected lands. Should the exchange be denied, federal reclamation policy that would apply has been established in several pieces of legislation, including the Mining and Minerals Policy Act, FLPMA, and 43 CFR Section 3809. The state policy tends to be more site-specific, for example, applying different reclamation standards to exploration activities than to mineral recovery activities, whereas the federal policy makes no such distinction. Table E-1 below briefly summarizes some of the similarities and differences between the requirements of state and federal reclamation policies.

It is important to note that under either federal or state jurisdiction, all mining operations must be conducted in compliance with the substantive laws that protect environmental quality, such as the Clean Water Act, Clean Air Act, Resource Conservation and Recovery Act, and the Aquifer Protection Program under Arizona Revised Statutes Title 49 and Arizona Administrative Code Title 18. These laws require a proponent to reclaim in some manner disturbances to the land and natural resources resulting from their activities. Thus, even prior to passage of the state's implementing regulations for reclamation, some form of reclamation, such as stabilization of slopes, was required for mining activities on private lands in Arizona.

Wild and Scenic Rivers Act (WSRA). This act selects certain rivers of the nation possessing remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values; preserves them in a free-flowing condition; and protects their local environments.

This act establishes three classes of river areas:

1. Wild river areas characterized as:
 - Being free from impoundments
 - Generally inaccessible except by trail
 - With essentially primitive watersheds or shorelines
 - Unpolluted waters
2. Scenic river areas characterized as:
 - Being free from impoundments
 - Accessible in places by road
 - Having shorelines or watersheds still largely undeveloped

Table E-1. Comparison of Federal and Arizona State Mine Land Reclamation Standards		
	Federal Reclamation Standards	State Reclamation Standards
Applies to:	Federal lands	Private lands in Arizona
Compliance Officer:	Authorized Officer (AO) at BLM	Arizona State Mine Inspector
Acreege criterion:	Requires reclamation plan for disturbances over five acres	Requires reclamation plan for disturbances over five acres
Acreege exemptions:	Requires reclamation for disturbances under five acres, under FLPMA Section 302(b)	Does not apply to disturbances under five acres
Grandfather clause date:	Applies to mining operations constructed on or after January 1, 1981	Applies to mining operations constructed on or after January 1, 1986
Post-closure reclamation objective:	Requires reclamation plan to be suitable for conditions consistent with BLM land use plans and RMPs	Requires reclamation plan to meet post-mining land use objectives approved by State Mine Inspector
Applicable start-date for reclamation:	Requires reclamation to occur concurrently with mining activity when possible, or else to begin within one year from closure	Requires reclamation to occur concurrently with mining activity when possible, or else to begin within two years of cessation of mining activity
Bonding/ Insurance:	Requires a bond or cash in a Federal depository account to cover reclamation costs	Requires a financial assurance mechanism for reclamation costs (e.g., surety bond)
Reclamation standards:	Includes reclamation standards for waste management, subsurface stabilization, site stability, water management, soil management, erosion prevention, revegetation, visual resources, site protection, and site-specific standards	Includes reclamation standards for waste management, subsurface stabilization, site stability, soil management, erosion prevention, revegetation, site protection, and site-specific standards. Water management standards are covered under the state Aquifer Protection Program.
Compliance review:	Allows the AO to inspect operations periodically to determine compliance	Allows the State Mine Inspector to inspect operations periodically to determine compliance
Public review/ notification:	Provides for public disclosure of the plan through the NEPA analysis of the MPO	Requires public notification prior to approval or major modification of an approved plan

3. Recreational river areas are characterized as:

- Being readily accessible by road or railroad
- May have some development along their shoreline
- May have undergone some impoundment or diversion in the past.

Selected rivers and streams have been placed into the National Rivers Inventory by acts of Congress. Other rivers and streams have been proposed to be included into the system. Rivers and streams included or proposed for inclusion into the system must be considered during project planning and project impacts identified in and EA or EIS. If there are no impacts to wild and scenic rivers, this fact should be noted in the Wild and Scenic Rivers Act summary. There is no legal requirement to consider state-listed Wild and Scenic Rivers and streams or unique areas during project planning or in an EA or EIS. However, it is recommended that any impacts to state-listed, or proposed-for-listing, rivers and streams and unique areas be considered and addressed at levels comparable to consideration given to rivers and streams protected by the Wild and Scenic Rivers Act.

Wilderness Act (WA). Mindful of the increasing population's impact on the amount of remaining wilderness lands, the Wilderness Act was created to secure an enduring resource of wilderness America. The Act establishes a National Wilderness Preservation System. The system is meant to reserve wilderness areas for the use and enjoyment of the American people in such a manner as will leave them unimpaired for future use and enjoyment of wilderness,....the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness.

Executive Order 11593--Protection and Enhancement of the Cultural Environment. Executive Order 11593 mandates that all Executive Branch agencies, bureaus, and offices preserve and protect their cultural resources; and insure that agency activities contribute to the preservation and protection of non-federally owned cultural resources.

Executive Order 11988 -- Floodplain Management. Executive Order 11988 requires a construction agency to "avoid to the extent possible the long- and short-term impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative" within the 100-year floodplain. Under this directive, Federal agencies are required to reduce the risk of flood loss; minimize the impact of floods on human safety, health, and welfare; and restore and preserve the natural and beneficial values served by floodplains in carrying out agency responsibility.

Executive Order 11990 -- Wetlands. Executive Order 11990 requires a construction agency to "avoid to the extent possible the long-term and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative. . . ."

Executive agencies, in carrying out their land management responsibilities, are to take action that will minimize the destruction, loss, or degradation of wetlands and take action to preserve and enhance the natural and beneficial values of wetlands. Each agency shall avoid undertaking or assisting in wetland construction projects unless the head of the agency determines that there is no practicable alternative to such construction and that the proposed action includes measures to minimize harm.

Executive Order 12898 -- Environmental Justice. Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," was signed on February 11, 1994 and amended on January 30, 1995. In general, Federal agencies shall make achieving environmental justice part of their missions by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations in the United States and its territories and possessions.

In accordance with the Executive Order and Reclamation policy (PEP No. EGM-95-3), all NEPA documents shall consider the effects of Federal actions on minority and low-income populations, as well as the equity of the distribution of benefits and risks of those actions. A minority population consists of individuals who are African American, Hispanic, Asian American, Pacific Islander, American Indian, or Alaskan Native. Low income populations may be identified by utilizing the Department of Health and Human Services poverty guidelines or other similar indices. In addition to considering these populations, female heads of households, disabled/mobility-impaired, and elderly (60 or more years of age) populations also are considered. These populations collectively are referred to as protected populations.

To comply with environmental justice policy, NEPA documents should identify and evaluate any anticipated effects, direct or indirect, from the proposed project, action, or decision. If any significant impacts to low-income and/or minority populations are identified, the environmental document should clearly evaluate and state the environmental consequences of the proposed project, action, or decision on the low-income and/or minority populations. If a project, action, or decision is expected to have either an insignificant impact or no impact on low-income and/or minority populations, the document should specifically state that the proposed project or action was considered and is expected to have either insignificant impact or no impact, direct or indirect, with reasons given under an appropriate section.

Executive Order 13007--Indian Sacred Sites. Executive Order 13007 requires agencies to accommodate access to sacred sites on Federal land by Indian tribes, and to try to avoid damaging the physical integrity of such sites, in consultation with the groups involved.

Secretary of the Interior Order 3175 -- Indian Trust Assets. U.S. Department of the Interior policy (Secretary of the Interior Order 3175) requires that actions under NEPA consider potential effects on Indian Trust Resources, or Indian Trust Assets (ITAs). ~~Under Reclamation's Indian Trust Asset Policy of 1993, ITA identification should involve consultation with potentially affected tribes, Indian organizations or individuals, BIA, Office of American Indian Trust, Solicitor's Office, Reclamation's Native American Affairs Office, or Regional Native American Affairs Coordinator. Reclamation's policy requires direct consultation with the potentially affected tribes to identify and analyze potential impacts. It also requires that this consultation be described in the NEPA compliance document along with a statement of potential impacts on ITAs. Furthermore, Reclamation's policy requires Reclamation to carry out its activities in a manner which protects ITAs and avoids adverse impacts when possible.~~

ITAs are "legal interests" in "assets" held in "trust" by the United States for Indian tribes or individual Indians. Assets are anything owned that has monetary value. The assets need not be owned outright, but could be some other type of property interest, such as a lease or a right of use. Assets can be real property, physical assets, or intangible property rights. Common examples of ITAs may include lands, minerals, hunting and fishing rights, water rights, other natural resources, money, or claims. The United States, with the Secretary of the Interior as the trustee, holds many assets in trust for Indian tribes or Indian individuals.

"Legal interest" means there is a primary interest for which a legal remedy, such as compensation or injunction, may be obtained if there is improper interference. ITAs do not include things in which a tribe or individual has no legal interest, such as off-reservation sacred lands in which a tribe has no legal property interest. ~~It should be noted, however, that other Federal laws pertaining to religious or cultural laws should be addressed if impacts to such lands were to occur from other Reclamation actions.~~

APPENDIX F

**DESERT TORTOISE HABITAT MANAGEMENT ON THE
PUBLIC LANDS: A RANGEWIDE PLAN**

DESERT TORTOISE HABITAT MANAGEMENT ON THE PUBLIC LANDS: A RANGEWIDE PLAN

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DIRECTOR'S PREFACE

Because the desert tortoise occurs largely on lands administered by the U.S. Bureau of Land Management, Bureau managers and staff specialists have a unique opportunity to manage habitat so as to ensure that viable populations of this species exist in perpetuity. Building on past and ongoing accomplishments that benefit desert tortoises and their habitats, we intend to focus on this opportunity in a new and important Bureau initiative outlined in the following Desert Tortoise Rangewide Plan.

A year ago, through endorsement of the 1987 Desert Tortoise Habitat Team report, I issued a directive to BIM staff in Arizona, California, Nevada, and Utah to develop strategies to begin implementation of the recommendations in that report. The result of their effort is this Rangewide Plan which provides Goals, Objectives, and Management Actions to be used by Bureau managers to improve the status of the desert tortoise. The Plan also formalizes several coordination mechanisms to ensure effective planning and decisionmaking whenever and wherever the desert tortoise is involved.

In the BIM we are obligated to operate within the provisions of the Federal Land Policy and Management Act which mandates a multiple-use/sustained yield approach to managing and using renewable and nonrenewable public land resources. In this process there is ample opportunity to implement the Management Actions presented in the Rangewide Plan which collectively provide a measure of our resolve to improve the status of the desert tortoise and its habitat. Here are a few examples:

- Complete and maintain an inventory of tortoise populations and habitats;
- Develop a system to track desert tortoise habitat quantity and quality through time to allow analysis of cumulative impacts;
- Participate fully on a management oversight group and all technical committees and coordination groups actively considering tortoise issues;
- Implement research and studies to resolve tortoise management issues;
- Manage tortoise habitats using an ecosystem management approach with emphasis on maintaining or restoring natural biological diversity; and
- Where practicable, allow no net loss in quantity or quality of important desert tortoise habitats.

In translating these action statements into on-the-ground accomplishments, we in the Bureau solicit the help of all individuals, groups, and agencies. For the new initiative to work effectively, cooperative thought, work, and funding will be vital. Simply put, the initiative is the Bureau's but the responsibility is shared by all who wish to conserve the tortoise and all who wish to develop land and use resources within the range of the desert tortoise!


Director

November 14, 1988
Date

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EXECUTIVE SUMMARY

The purpose of this Rangewide Plan is to implement the recommendations contained in the BLM report entitled "Management of Desert Tortoise Habitat." The BLM Director approved that Habitat Team report and its overall tortoise management Goal on October 15, 1987. This Goal is: "...to manage habitat so as to ensure that viable desert tortoise populations exist on public lands. This will be accomplished through cooperative resource management aimed at protecting the species and its habitat."

Most tortoise habitat exists on the public lands. It is the Bureau's responsibility to manage this resource pursuant to the Federal Land Policy and Management Act, the Bureau's multiple-use/sustained-yield mandate. Established policies and procedures for wildlife inventory, planning, environmental assessment, monitoring, interagency coordination and cooperation, and research and studies allow appropriate consideration of desert tortoises and their habitats in the Bureau's land-use planning and decision-making processes. This Rangewide Plan also provides Objectives and Management Actions derived from these policies and procedures to be used by the Bureau to improve the status of the tortoise and its habitat.

Recent studies on the genetics and morphometrics of desert tortoises describe three main populations in the United States: Sonoran Desert, Western Mojave Desert, and Eastern Mojave Desert populations (Map 1). Each of these populations have different shell shapes, occur in different habitat types, have differing behavioral patterns, and are affected by particular surface disturbing activities to varying degrees. Management for viable populations of each of these genetic/morphometric types is necessary.

One management strategy for providing future protection and management of desert tortoise habitat will be to categorize tortoise Habitat Areas according to four criteria: (1) importance of the habitat to maintaining viable populations, (2) resolvability of conflicts, (3) tortoise density, and (4) population status (stable, increasing, decreasing). Differing levels of management, consistent with Category Goals, will be applied to Habitat Areas in each Category (Table 1). The Bureau is committed to maintaining viable tortoise populations in Category I and II habitats through implementation of specific Management Actions. The placing of an area of habitat in Category III means that these areas are of lower value in sustaining viable populations of tortoises on the public lands, and thus can be subjected to lower management intensity specifically for tortoises than habitats in the other Categories.

Management Actions are grouped under fourteen Management Objectives. These Management Objectives and accompanying Management Actions represent "where the Bureau intends to go" during the coming decade to meet the Bureau's overall Goal for preserving and managing tortoises and their habitats.

Objective 1. Develop increased awareness of tortoise resources on the public lands.

Objective 2. Complete and maintain on a continuing basis an inventory and monitoring program for tortoise populations and habitats to assist in making management decisions on the public lands.

- Objective 3. Develop and maintain a monitoring program specifically for land-use activities that adversely affect tortoise habitats. This program will be used in the analysis of and response to the cumulative impacts of land-use decisions on tortoise habitats.
- Objective 4. Comply fully with the Endangered Species Act of 1973, as amended, as it relates to tortoise population and habitat management on the public lands.
- Objective 5. Develop and maintain effective coordination and cooperation with outside agencies and Bureau constituents concerning tortoise population and habitat management.
- Objective 6. Conduct research and studies sufficient to develop and document the knowledge and techniques needed to ensure the viability of tortoise populations and habitats in perpetuity.
- Objective 7. Manage the public lands, on a continuing basis, to protect the scientific, ecological, and environmental quality of tortoise habitats consistent with the Category Goals and other Objectives of this Rangewide Plan. This implies management for the existence of an adequate number of healthy and vigorous tortoise populations of sufficient size and resilience to withstand the most severe environmental impacts, and with appropriate sex and age ratios and recruitment rates to maintain viable populations in perpetuity.
- Objective 8. When the need is identified through the Bureau planning system, acquire and/or consolidate, under Bureau administration, management units with high tortoise habitat values, and mitigate the effects of issuing rights-of-way across public lands.
- Objective 9. Ensure that off-highway vehicle use in desert tortoise habitats is consistent with the Category Goals, Objectives, and Management Actions of this Rangewide Plan.
- Objective 10. Ensure that livestock use is consistent with the Category Goals, Objectives, and Management Actions of this Rangewide Plan. This may include limiting, precluding, or deferring livestock use as documented in site-specific plans.
- Objective 11. Provide for herd management for wild horses and burros which is consistent with the Category Goals, Objectives, and Management Actions of this Rangewide Plan. This may include limiting or precluding wild horse and/or burro use, as appropriate.
- Objective 12. Provide for management of wildlife other than desert tortoises on the public lands consistent with the Category Goals, Objectives, and Management Actions of this Rangewide Plan.

Objective 13. Cooperate with state wildlife agencies and APHIS to effect appropriate types and levels of predator control to meet the Category Goals and Objectives of this Rangewide Plan. This will be considered only where predation is interfering with maintaining viable tortoise populations.

Objective 14. Manage the Bureau's energy and minerals program in a manner consistent with the Category Goals and Objectives of this Rangewide Plan.

INTRODUCTION AND PURPOSE

The desert tortoise (Xerobates agassizii) is one of the most politically sensitive animals with which Federal agencies must be concerned, because tortoises are particularly susceptible to surface-disturbing activities. Normal tortoise populations are characterized by a long period to reproductive maturity, low reproductive output, and low survival of young. These characteristics, which portend an inability to adapt to rapid environmental changes, have led to widespread Bureau of Land Management (BLM) and public recognition of the need to manage tortoise populations and habitats effectively.

Bureau authorities exist through which protection and conservation of tortoises and their habitats can be implemented, particularly if cooperation and assistance is provided by state, county, and other Federal agencies, as well as private landowners, where mixed ownership is a major problem. Many of these authorities have been applied by the Bureau to address tortoise habitat management issues with varying degrees of intensity and success. Other authorities and many important management opportunities remain to be implemented,

The popular appeal of tortoises and their susceptibility to urban encroachment, agricultural development, off-highway vehicle use, livestock grazing, and mining continue to place extreme demands on some wild populations. The results have been that many tortoise populations have declined; local extirpations have occurred; and other populations are no longer viable. Declining habitat quantity and quality are major causes of these conditions, and aggressive conservation and management programs are needed to counter the negative forces acting against tortoises and their habitats.

Recognizing these declines, the U.S. Fish and Wildlife Service (FWS) officially listed tortoises on the Beaver Dam slope of Utah as threatened and classified the desert tortoise elsewhere as a candidate for Federal listing. Bureau policy requires that habitats of Federal candidate species be managed and/or conserved to ensure that BLM actions do not contribute to the need to list the species. In 1985 the FWS determined that the desert tortoise warranted final Federal listing as a species, but the listing proposal was set aside because of other higher priorities in the FWS.

The purpose of this Rangewide Plan is to implement the recommendations contained in the BLM report entitled "Management of Desert Tortoise Habitat." That 1987 report was prepared by a Tortoise Habitat Team consisting of representatives of several BLM State, District, and Area Offices and the Nevada Department of Wildlife. The BLM Director approved the Habitat Team report and its overall tortoise management Goal on October 15, 1987. This Goal is: "...to manage habitat so as to ensure that viable desert tortoise populations exist on public lands. This will be accomplished through cooperative resource management aimed at protecting the species and its habitat."

Further, this Rangewide Plan was prepared to provide Objectives and Management Actions to be used by the Bureau to improve the status of the tortoise on the public lands, including efficient planning and research, cost effective on-the-ground implementation of plans and research recommendations, and appropriate awareness of the species in the land-use planning and decision-making processes relating to other public land resources. It is also the intent of the BLM to coordinate and cooperate with interested publics and constituents, state wildlife agencies, and other Federal agencies in implementing on-the-ground tortoise habitat Management Actions.

There are also a few things this Rangewide Plan is not intended to do. It does not address site-specific, population-specific, or individual on-the-ground management actions. These are being or will be developed in individual site-specific activity plans, such as Habitat Management Plans for wildlife, Allotment Management Plans for livestock, Area of Critical Environmental Concern Management Plans for special areas, etc. Development of proposals for budget and work effort required to implement this Rangewide Plan are on-going through the normal annual work planning process and will be developed further following completion of state-level desert tortoise habitat management implementation strategies/plans. National Environmental Policy Act compliance will occur when individual actions are proposed.

BACKGROUND

Inherent in the Bureau's authorities is a mandate to which the Bureau strives in its wildlife programs. The Federal Land Policy and Management Act of 1976 (FLPMA) formalizes the principles of multiple use and sustained yield as a Bureau mission. Wildlife is identified as one of the principal or major uses of the public lands. The management and preservation of wildlife as a principal multiple use results in a goal of maintenance of habitat diversity. In fact, the habitat diversity present on the public lands administered by the BLM exceeds that of any other landowner in the Nation--governmental or private. High diversity and low human disturbance within habitats generally yields healthy wildlife populations. Such populations offer more management options for maintenance or improvement of their well-being than do threatened or endangered species for which stringent management strategies necessary for recovery diminish available options. Thus, the identification and maintenance of management options for conservation of nonlisted species is of benefit not only to the Bureau, but also to wildlife in general, desert tortoises included.

Authority.

The past decade has seen great changes in the attitudes of the American public towards the lands the BLM administers under its multiple-use and sustained-yield mandate, FLPMA. These changes have resulted in improved management of the natural resources on the public lands, including the wildlife resources. The vast expanses of prairie, deserts, mountains, and forests, as well as special habitats (floodplains, islands, cliffs, and rock outcrops) provide shelter and food for both huntable and nongame wildlife, furnish reproductive sites and nourishment for hundreds of species of wildlife, and fascinate those people who enjoy open space and natural settings.

Indeed, most tortoise habitat exists on the public lands, and therein lies the essence of the Bureau's responsibility to this resource as set forth in FLPMA:

The Congress declares that it is the policy of the United States that...management be on the basis of multiple use and sustained yield unless otherwise specified by law; the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmosphere, water resource, and archaeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use....

The Secretary shall prepare and maintain on a continuing basis an inventory of all public lands and their resource and other values....

In the development and revision of land use plans, the Secretary shall --

give priority to the designation and protection of areas of critical environmental concern;

consider the relative scarcity of the values involved...; and

coordinate the land use inventory, planning, and management activities of or for such lands with the land use planning and management programs of other Federal departments and agencies and of States and local governments within which the lands are located....

The principal wildlife management responsibility of the BLM is for habitat. State wildlife agencies and the FWS have responsibility for species management, though the two responsibilities cannot--and need not!--be separated completely, particularly in light of the Bureau's responsibility for recovery of species under the Endangered Species Act of 1973 and recent U.S. Supreme Court decisions regarding the authority of the Federal Government over wildlife on Federal lands.

BLM Procedures and Policies Relating to Wildlife Habitat.

The following is a discussion of how the Bureau manages wildlife in general, tortoise habitat included. The Bureau has not made full use of these processes to manage and protect tortoises and their habitats in the past, but the current high intensity desert tortoise initiative is a positive prospect for the future.

A. Inventory. It is Bureau policy that wildlife inventories be conducted to provide information needed for the management of BLM-administered lands. Inventories are done in response to Bureau planning efforts or as part of the environmental work (NEPA compliance) associated with specific projects. Through these means, and through monitoring and research, the Bureau has amassed large quantities of information on wildlife populations and habitats--and it will continue to do so.

B. Planning. The optimal long-term process for BLM consideration of tortoise populations and habitats is the Bureau Planning System. Bureau plans are prepared in direct compliance with FLPMA and are based in part on the continuing inventory mandated by that law. Land-use plans are developed to clearly identify means of protecting wildlife habitat and other resources. Appropriate considerations are made during development and analysis of alternatives. These analyses lead to formal Resource Management Plan recommendations. Older Management Framework Plans are currently being replaced by new generation Resource Management Plans.

Bureau planning policy includes application of the principle of multiple use/sustained yield; use of a systematic interdisciplinary approach to achieve integrated consideration of physical, biological, economic, social, and environmental aspects of public land management; giving priority to identification, designation, protection, and management of Areas of Critical Environmental Concern (ACECs); considering the relative scarcity of the values involved; weighing the long-term benefits and detriments against short-term benefits and detriments; and extensive coordination with other Federal departments and agencies, state and local governments, academia and special interest groups, and Indian tribes.

Site-specific activity plans, such as Habitat Management Plans for wild life, Allotment Management Plans for grazing practices, and Recreation Management Plans for recreation programs, are prepared to implement Resource Management Plans (land-use plans) in particular areas. It is important to note that in many cases wildlife needs can be considered and met as components of nonwildlife activity plans. Examples would include livestock management practices which can reduce competition for forage or decrease the occurrence of trampling of tortoises in certain areas; off-highway vehicle restrictions which might decrease the access to important tortoise habitats; and the design and siting of campgrounds away from vulnerable tortoise populations.

This Rangeland Plan will become part of the routine procedures for the multiple-use management of public lands by the BLM. As such it will be part of the guidance used to develop alternatives addressed in land-use plans and will be carried through the planning process and become a part of the selected alternatives.

C. Environmental Assessment. The Bureau Planning System requires continual updating to remain current and to gain greater specificity. Updating is accomplished at least in part through implementation of the Bureau policy to ensure that Bureau planning and National Environmental Policy Act (NEPA) compliance efforts are integrated. These processes provide a clear and logical progression from planning through accomplishment, thereby avoiding duplication of effort to the extent possible. It is through the development of NEPA documents and implementation of decisions resulting from them that the project-by-project efforts to manage and protect wildlife and wildlife habitats on the public lands are accomplished.

In the absence of complete planning system data and documents, the Bureau often has an immediate need for better information with which to make project-specific recommendations. Additional inventory is often needed to develop wildlife habitat stipulations included in environmental compliance documents (environmental assessments, impact statements, impact reports, etc.) required by the National Environmental Policy Act (NEPA), similar state laws, and the associated regulations (e.g., 40 CFR Parts 1500-1508). Gathering data for environmental documents does not, however, yield all necessary information, such as trend data.

D. Monitoring. It is Bureau policy to implement monitoring activities that reflect a long-term commitment to the management of renewable resources and that will assist in the evaluation of the cumulative impacts of implementing land-use plans and records of decision. BLM monitoring for the benefit of wildlife occurs in five forms: (1) monitoring to determine population trends; (2) monitoring to determine habitat trends; (3) monitoring of actions called for in Habitat Management Plans and other activity plans; (4) monitoring compliance with stipulations contained in Bureau decision documents; and (5) monitoring to determine if mitigation measures are effective.

Interagency Coordination and Cooperation.

Coordination and cooperation are very important attributes of the Bureau's program to manage and conserve wildlife and wildlife habitats. Such coordination and cooperation will be accomplished primarily through compliance with the Federal Land Policy and Management Act (see above); the Endangered Species Act of 1973, as amended; the Sikes Act; national level interagency cooperative agreements; BLM/state intergovernmental memoranda of understanding; Coordinated Resource Management Planning; various other Federal environmental and wildlife laws; where enacted, similar State legislation; etc. Several specifically focused management and technical committees will also be vital to coordination of and cooperation on tortoise issues.

A. Tortoise Management Committee Structure. As recommended in the 1987 Habitat Team report, a structure for desert tortoise committees has been established. The Desert Tortoise Management Oversight Group was established to include management level representatives from U.S. Fish and Wildlife Service Regions 1, 2, and 6; BLM offices from each of the four involved states; the four involved state wildlife agencies; and the BLM Washington Office. This Group is charged with providing a strong leadership role for implementation of this plan, as well as ensuring that data analysis procedures are standardized, considering funding and research priorities, ensuring that various reports are prepared, and reviewing existing and new laws and plans relating to tortoises.

A second group of autonomous state-level Desert Tortoise Technical Committees exists (or will be established) including representatives from agencies, organizations, and groups with special knowledge of tortoises and their habitats. One of the purposes of these Technical Committees should be to advise and put issues before BLM managers and/or the Management Oversight Group for their consideration. These Committees may also be asked to develop strategy documents for the consideration of BLM State Directors in each of the four states. Such documents should be designed to ensure that the overall Bureau desert tortoise management Goal is reached through the implementation of the Objectives of this Rangewide Plan.

Finally, as necessary, special work groups, coordination committees, advisory groups, or task forces will be established to deal with specific tortoise issues. These groups may be established by involved agencies, the Management Oversight Group, or the Technical Committees, as appropriate.

B. Implementation of the Sikes Act. Most of the Bureau's Habitat Management Plans are developed under the umbrella of the Sikes Act, Title 2--Conservation Programs on Certain Public Land. Strong BLM/state wildlife agency cooperation is mandatory for all Sikes Act Habitat Management Plans:

The Secretary of the Interior...shall, in cooperation with the State agencies..., plan, develop, maintain, and coordinate programs for the conservation and rehabilitation of wildlife, fish, and game....

Each State may enter into a cooperative agreement with...the Secretary of the Interior with respect to those conservation and rehabilitation programs to be implemented under this title within the State on public land which is under his jurisdiction....

Each cooperative agreement entered into under this subsection shall...provide for fish and wildlife habitat improvements or modifications, or both; provide for range rehabilitation where necessary for support of wildlife; provide adequate protection for fish and wildlife officially classified as threatened or endangered pursuant to section 4 of the Endangered Species Act of 1973...or considered to be threatened, rare or endangered by the state agency; (and) require the control of off-highway vehicle traffic....

These statements from the Sikes Act have been incorporated as Bureau policy. All Habitat Management Plans are to be prepared under the Sikes Act authority unless the state wildlife agency chooses not to participate.

Research, Development, and Studies.

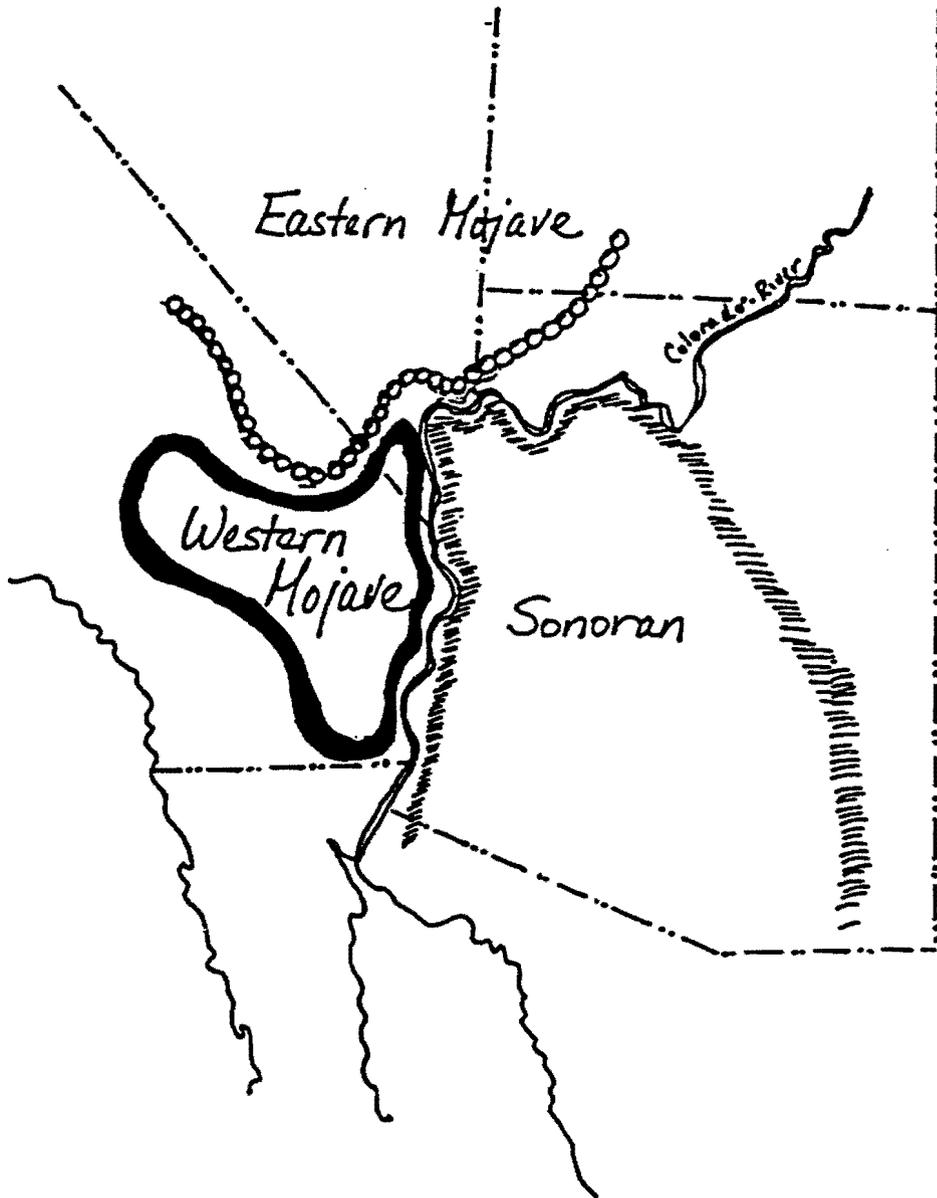
The Bureau has been a leader in tortoise population and habitat management research, study, and information transfer for over a decade. The BLM has conducted dozens of tortoise research projects, studies, and inventories spanning everything from the intensive research necessary to establish basic life history parameters for the species to very specialized studies of desert tortoise foraging habits and movement patterns. Much more needs to be done, however.

A. Research and Development. BLM research and development policy states that such projects shall be user-oriented (applied) and necessary to provide program (management) direction. Research needs of the Bureau are identified in Statements of Need prepared by field office staffs, primarily Resource Area and District Offices and the Denver Service Center. These statements are reviewed at higher levels, and authorizations to develop Project Prospectuses (proposals) are given, as appropriate. Approved research and development projects are conducted and evaluated, data are analyzed, and reports are written and distributed.

B. Studies. While not generally considered R&D by the Bureau, studies account for much of the Bureau's initial information gathering effort for the benefit of tortoises and their habitats. Studies are distinguished from research projects as being short-termed, small in scope, site specific, and directly applicable to immediate management needs.

Current Tortoise Population and Habitat Status

Recent studies on the genetics and morphometrics of desert tortoises provide important information for management of the species. Data from mtDNA research indicate that at least two major genetic assemblages exist in the United States, separated by the Grand Canyon-Colorado River system (Map 1). These two groups, separated for 3 to 5 million years, are substantially different from each other. Additional, minor genetic differences can be found in populations occurring north and west of the Grand Canyon-Colorado River. New data on shell shapes closely parallel



MAP 1. The three Desert Tortoise genetic/morphometric assemblages discussed in this Rangewide Plan.

findings of the genetic studies. Three distinct shell shapes have been identified: a California type, a Beaver Dam Slope type, and a Sonoran Desert type. The following descriptions of tortoise populations and habitats incorporate the new information.

A. Sonoran Desert Populations. Sonoran Desert tortoises are very different genetically and morphologically from those to the north and west of the Colorado River. The Sonoran tortoise is generally larger, flatter, and more pear-shaped than its relatives. Populations are very limited in size, distribution, and in selection of habitats. They are found on some steep, rocky slopes of mountain ranges, primarily in Arizona Uplands vegetation dominated by palo verde and saguaro cactus. Populations are island-like and are separated from each other by valleys. The Black and Cerbat mountains of northwest Arizona are more like mountains in the Mojave Desert (creosote/bursage), with tortoises in less steep areas.

Because of the limited nature of the populations and habitat, Sonoran Desert tortoises are particularly vulnerable to human activities. Populations and habitat have been lost to expansion of urban areas and to encroachment of uses such as recreation, roads, and energy related rights-of-way. Grazing, mining, and fire also adversely affect some areas.

B. Western Mojave Desert Populations. The West Mojave Desert as defined here includes parts of the West Mojave, East Mojave, and Colorado Deserts in California and extreme southern Nevada (Map 1). Western Mojave Desert populations have high domed shells, are box-like in shape, and have plastrons of normal length.

The vast majority of all extant tortoise populations are in this unit. Within the typical geographic boundaries of the West Mojave, tortoises occur in creosote bush, alkali sink, and tree yucca habitats in valleys, on fans, and in low rolling hills at elevations ranging from 2,000 to 3,700 feet. In the Fenner and Piute valleys of eastern California and southern Nevada, creosote bush and tree yucca habitats at elevations of 2,200 to 3,500 feet are also preferred.

Tortoises living in the Colorado Desert utilize habitats of (a) creosote bush scrub with ocotillo and cactus, (b) creosote bush scrub and tree yuccas, and (c) microphyll woodland washes or wash stringers at elevations ranging from about 500 to 2,700 feet.

Status and habitat condition vary substantially from one area to another. Populations and habitat in the west Mojave area are characterized by severe and rapid rates of decline. Study plot data from eight sites indicate that populations have declined at rates of 10 percent or more per year for the last six to eight years. Vandalism, collections, raven predation, and disease are a few of the many causes for population declines. Habitat is deteriorating and being lost from urban, energy, and mineral development, vehicle-oriented recreation, grazing, and other uses.

The population in Fenner Valley was relatively stable a few years ago but is now under pressure from raven predation and continuing livestock grazing, recreational use, and yucca harvest on private lands. In Piute Valley in Nevada, the population is in a severe state of decline. Issues there include cattle grazing, urban encroachment, recreational use, and mineral development.

In the Colorado Desert, tortoise populations were believed to be the most stable and of the highest densities in the geographic range until 1987. Since that time, study plot data from the Ward and Chemehuevi valleys indicate declines in recruitment of juveniles caused by raven predation. The Chuckwalla Valley populations are experiencing increased pressures from vandalism, and in the Chuckwalla Bench Area of Critical Environmental Concern prime populations have declined 60 percent since 1982, probably due to disease.

Problems with habitat deterioration in the Colorado Desert vary considerably from the Ward and Chemehuevi valleys to the Chuckwalla Valley and Bench. Losses are relatively minor in the Ward and Chemehuevi valleys compared with the West Mojave area, but pressure is increasing for development of more power line corridors, agricultural development, and urban development. Habitat is under greater threat of encroachment in the Chuckwalla area from agricultural and associated urban development, mining, and increased recreational use. The Chuckwalla area is particularly vulnerable because it is relatively small and the tortoise habitat within it is fragmented.

C. Eastern Mojave Desert Populations. For management purposes, the East Mojave tortoise populations are best treated by genetic rather than by the typical geographical subdivisions. The western-most boundary of the East Mojave genetic unit occurs in the vicinity of the East Mojave Scenic Area in eastern California (Shadow Valley, Ivanpah Valley, and Kelso regions). From the California border, East Mojave populations extend northeast and north into Nevada to the Las Vegas Valley and Coyote Spring Valley, and eastward to the Beaver Dam Slope and Paradise Valley of southwestern Utah and extreme northwestern Arizona.

Shell shapes of tortoises in this unit vary from a high-domed, box-like form in the Ivanpah Valley to a substantially flatter form on the Beaver Dam Slope. Beaver Dam Slope tortoises also have a very short plastron compared with other tortoises in the geographic range and are a very distinct type.

East Mojave tortoise populations typically occur in creosote bush-burro bush or creosote bush-tree yucca vegetation types. The forage base consists of native winter and summer annuals, perennial grasses, cacti, a few half-shrubs, and some exotic introduced species.

In general, East Mojave tortoise populations and habitats are experiencing downward trends from urban development, long-term livestock grazing, mining, large-scale water development, off-highway vehicle use, collecting, and many other human-related uses. Populations have been fragmented and are in the process of becoming increasingly isolated by urban development, highway construction, and development within power line corridors.

CATEGORIZATION OF TORTOISE HABITAT AREAS

Desert Tortoise Habitat Areas will be delineated by BLM District Managers (with appropriate public review) to meet the three Category Goals described in Table 1. Such categorization of habitats will assist the BLM in attaining the overall tortoise habitat management Goal established by the Director (see Introduction). That Goal is translated into more specific Goals for each of the three habitat Categories. These Category Goals will, in turn, be reached by implementing the Objectives and related Management Actions in the next section of this Rangewide Plan.

The purpose of the categorization of habitats is to provide for future protection and management of these areas and their associated desert tortoise populations. Differing levels of management, consistent with Category Goals, will be applied to Habitat Areas in each Category. The Bureau is committed to maintaining viable tortoise populations in Category I and II habitats through implementation of the Management Actions in the next section. The placing of an area of habitat in Category III means that these areas are of lower value in sustaining viable populations of tortoises on the public lands, and thus can be subjected to lower management intensity specifically for tortoises than habitats in the other Categories.

The criteria in Table 1 provide guidelines for categorization by decision makers. They are not intended to be used as a cookbook formula. For example, some modification of the conflict resolvability criterion may be required in checkerboard or braided land ownership patterns. All conflicts may not be resolvable, but the significance of the other three criteria may clearly place the Habitat Area into Category I.

The criteria used to categorize tortoise habitats include the following: (1) importance of the habitat to maintaining viable populations, (2) resolvability of conflicts, (3) tortoise density, and (4) population status (stable, increasing, decreasing). Information concerning all of these criteria may not be available or relevant for all categorizations.

Note that tortoise density and population trends will often be more useful in evaluating management progress within Categories than for actual categorization of Habitat Areas. Usually, the overriding criteria for categorization will be viable population considerations and conflict resolvability. The concept of resolvability includes mitigation; thus, conflicts will be judged resolvable whenever the actions required to resolve the conflicts are within the Bureau's discretion.

Where schedules permit, areas will be categorized through resource management planning. Where schedules do not permit, categorizations will be completed using existing data and will be reconsidered whenever a Resource Management Plan is prepared or revised. The results will be documented as a part of the approved plan.

Table 1. Goals and criteria for three Categories of desert tortoise Habitat Areas. The criteria are ranked by importance to the categorization process, with Criterion 1 being the most important.

Items	Category I Habitat Areas	Category II Habitat Areas	Category III Habitat Areas
Category Goals	Maintain stable, viable populations and protect existing tortoise habitat values; increase populations, where possible.	Maintain stable, viable populations and halt further declines in tortoise habitat values.	Limit tortoise habitat and population declines to the extent possible by mitigating impacts.
Criterion 1 2	Habitat Area ^{considered} essential to maintenance of large, viable populations.	Habitat Area may be essential to maintenance of viable populations.	Habitat Area not ^{considered} essential to maintenance of viable populations.
Criterion 2	Conflicts resolvable.	Most conflicts resolvable.	Most conflicts not resolvable.
Criterion 3 1.	Medium to high density or low density contiguous with medium or high density.;	Medium to high density or low density contiguous with medium or high density.	Low to medium density not contiguous with medium or high density.
Criterion 4	Increasing, stable, or decreasing population.	Stable or decreasing population.	Stable or decreasing population.

TORTOISE MANAGEMENT OBJECTIVES AND ACTIONS

Thus far this Rangeland Plan has dealt with (1) the overall Goal for tortoise habitat management on BLM-administered lands; (2) the Bureau's general strategy for implementing its tortoise program; (3) the Bureau's authorities, procedures, and policies relating to tortoise population and habitat management; and categorization of tortoise Habitat Areas. This information, along with what is in the 1987 Habitat Team report (see above), represents "where the Bureau is" with tortoise management on the public lands. The following list of Management Objectives and Actions represents "where the Bureau intends to go" during the coming decade to meet the Bureau's overall Goal for preserving and managing tortoises and their habitats.

The overall Goal is "...to manage habitat so as to ensure that viable desert tortoise populations exist on public lands. This will be accomplished through cooperative resource management aimed at protecting the species and its habitat."

Management Actions are grouped under fourteen Management Objectives. These Objectives are not listed in priority order because many things may well proceed concurrently, and the relative importance of each Objective may be different between states or between areas.

- Objective 1. Increased Awareness;
- Objective 2. Inventory and Monitoring;
- Objective 3. Cumulative Impacts;
- Objective 4. Endangered Populations;
- Objective 5. Coordination and Cooperation;
- Objective 6. Research and Studies;
- Objective 7. Management of Tortoise Habitat;
- Objective 8. Lands and Realty Actions;
- Objective 9. Off-highway Vehicles;
- Objective 10. Livestock Use;
- Objective 11. Wild Horses and Burros;
- Objective 12. Wildlife Habitat Management;
- Objective 13. Predator Control; and
- Objective 14. Energy and Mineral Development.

This Rangeland Plan represents an element of BLM's Planning System. Final categorizations will be accomplished through the resource management planning process. Specific project proposals and other proposed uses will be subject to environmental analysis as necessary to comply with NEPA and to reach informed decisions. Because environmental analysis within the planning process will bring about full consideration of the effects of actions resulting from this Rangeland Plan, an environmental assessment of this plan is not considered to be necessary.

Each Management Action relates directly to the Objective above it and should not be used inconsistent with the intent of that Objective. Most Management Actions also relate to Category Goals listed in Table 1. Ultimately, each Management Action and Objective relates directly to the overall Goal for tortoise management stated above. Keeping these relationships in mind will allow use of the following statements in their full, correct contexts.

The definition of the term "mitigation" as used in this document is found in the Council for Environmental Quality (CEQ) guidelines (40 CFR 1508.20):

- (a) avoiding the impact altogether by not taking a certain action on parts of an action;
- (b) minimizing impacts by limiting the degree or magnitude of the action and its implementation;
- (c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
- (d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and
- (e) compensating for the impact by replacing or providing substitute resources or environments.

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Objective 1. Develop increased awareness of tortoise resources on the public lands.

Management Action 1A. Develop an overall public education program concerning tortoise populations and habitats.

- (1) Develop a desert tortoise public affairs plan in each state by the end of FY 1989 that includes time frames and funding strategies for things such as items 2-4 immediately following.
- (2) Prepare educational packets for distribution at agency offices and by rangers, wardens, deputy sheriffs, etc.
- (3) Prepare and distribute radio and television announcements, videos, slide programs, brochures, posters, decals, stickers, etc.
- (4) Change and update existing visitor use maps and brochures to include information to protect and conserve tortoises (see Management Action 1B for examples). Exclude density information and categorizations.

Management Action 1B. Increase public awareness of important tortoise issues wherever the public might congregate in the field. Signs, brochures, and other information media should deal with issues such as proper treatment of tortoises found on roads, the dangers of releasing diseased captive tortoises into the wild, the senselessness and impacts of vandalism and shooting, and the legalities of collecting tortoises for pets.

Management Action 1C. Share tortoise management expertise and data by holding workshops, developing short-term assignments for key personnel, conducting training, and providing formal information storage and transfer.

Management Action 1D. Develop an awareness in other Bureau disciplines of tortoises and their habitats, and capitalize on this increased awareness through a strong day-to-day advocacy for tortoise habitat protection and management, particularly in the BLM planning, environmental assessment, and budget processes.

Management Action 1E. Develop an interagency, intergovernmental, and public awareness of Bureau tortoise habitat Management Actions and related accomplishments through an active information and education program, a timely technical information transfer process, and other means.

Management Action 1F. Distribute this Rangewide Plan for desert tortoise management to other tortoise habitat managers/owners within 90 days of signing, and encourage their adoption of similar Goals, Objectives, and Management Actions for the lands they administer.

Objective 2. Complete and maintain on a continuing basis an inventory and monitoring program for tortoise populations and habitats to assist in making management decisions on the public lands.

Management Action 2A. Complete and maintain an inventory of tortoise populations and habitats occurring on public lands. Assign Habitat Areas to Categories according to criteria set forth elsewhere in this Rangewide Plan as soon as adequate information is available (i.e., many Habitat Areas can be categorized soon after this Rangewide Plan is approved). The target dates for completion of inventory and categorization are as follows:

California	March 1989;
Utah	March 1989;
Nevada	September 1989; and
Arizona	September 1992.

Management Action 2B. Monitor study plots to ensure acquisition of adequate information to reach the Category Goal for each Habitat Area according to prescribed schedules developed in each state during FY 1989. This should be done in each study plot at least every four or five years based on the needs and characteristics of the area being monitored.

Management Action 2C. Ensure that tortoise population and habitat monitoring and inventory are coordinated as needed among all entities gathering such information in order to avoid duplication of effort and undue disturbance to the tortoises involved.

Management Action 2D. Use tortoise population and habitat monitoring techniques and terminology (where appropriate) that will give standard data elements for input into the Bureau's land-use planning and environmental assessment processes.

(1) Develop a draft tortoise inventory and monitoring handbook by the end of FY 1988. No matter what technique is used, data must be of sufficient quality to permit state-to-state, population-to-population, and year-to-year comparisons.

(2) Conduct a workshop in November 1988 to finalize the draft inventory and monitoring handbook for Washington Office and State Director approvals. The relationship between inventory, monitoring, and categorization of Habitat Areas should also be clarified at this workshop.

Management Action 2E. Provide training to appropriate BLM personnel on a continuing basis on available inventory and monitoring techniques for tortoise populations and habitats.

Management Action 2F. Ensure that all types of monitoring are conducted. These types include monitoring of tortoise populations, tortoise habitats, and pertinent management decisions in land-use plans, as well as compliance with relevant stipulations in records of decision and monitoring to determine the effectiveness of mitigations.

Objective 3. Develop and maintain a monitoring program specifically for land-use activities that adversely affect tortoise habitats. This program will be used in the analysis of and response to the cumulative impacts of land-use decisions on tortoise habitats.

Management Action 3A. Develop a system by the end of FY 1989 to track desert tortoise habitat quality and quantity through time, and report biennially (1990, 1992, 1994, etc.) on the cumulative impacts of land-use actions on desert tortoise Habitat Areas.

Management Action 3B. Determine by the end of FY 1989 the feasibility of using Geographic Information System technology as part of the Bureau's Land Information System to document the progress of land use as it affects tortoise habitat quantity and quality. This analysis should consider the costs of documenting the land uses existing as of January 1, 1990, and the possibility of reconstructing the conditions existing in 1980 and 1985.

Objective 4. Comply fully with the Endangered Species Act of 1973, as amended, as it relates to tortoise population and habitat management on the public lands.

Management Action 4A. Comply with section 2 of the Endangered Species Act which concerns management of populations and habitats of unlisted species (populations) in a manner to ensure that species do not become threatened or endangered through man's actions.

Management Action 4B. Take a leadership role in the management of officially listed populations of desert tortoises by developing and carrying out programs for their recovery.

Management Action 4C. Assign officially determined (pursuant to section 4 of the Endangered Species Act) desert tortoise Critical Habitats to Category I. Categorization of the non-Critical Habitat of listed populations will depend on application of the criteria set forth in Table 1 of this Rangewide Plan.

Objective 5. Develop and maintain effective coordination and cooperation with outside agencies and Bureau constituents concerning tortoise population and habitat management.

Management Action 5A. Document in administrative reports and published papers the results of all tortoise management research/studies/monitoring and individual tortoise Management Actions to facilitate information transfer and to minimize duplication of research efforts. This should be done through annual progress reports and final reports within one year of completion of the projects.

Management Action 5B. Coordinate and provide BLM assistance (logistical, financial, volunteer manpower, etc., as appropriate) to those conducting non-Bureau studies and research involving tortoises and their habitats on the public lands. Assisted projects must contribute to reaching the Bureau's tortoise management Goals, Objectives, and/or Management Actions.

Management Action 5C. Pursuant to Title 2 of the Sikes Act, coordinate the Bureau's tortoise population and habitat inventory, planning, management, and monitoring activities with similar activities and programs of other Federal departments and agencies and/or appropriate state and local governments.

Management Action 5D. Coordinate tortoise management efforts with county and other local planning and zoning restrictions as appropriate and to the extent allowed by Federal laws and regulations.

Management Action 5E. Participate fully on special oversight groups, technical committees, and coordination groups that deal with tortoise population and habitat issues and management opportunities.

(1) Provide for the functioning of a Desert Tortoise Management Oversight Group consisting of management-level representatives from FWS Regions 1, 2, and 6; BLM offices from each of the four involved states; the four involved state wildlife agencies; and the BLM's Washington Office. The responsibilities of this group are listed in the 1987 Habitat Team report.

(2) Assist in establishing (if necessary) and help provide for the functioning of four autonomous state-level Desert Tortoise Technical Committees. Representation should include people with special knowledge of tortoises and their habitats. One of the purposes of these Technical Committees should be to advise and put issues before BLM managers and/or the Management Oversight Group for their consideration. All such Committees should be formalized by March of 1989.

(3) Establish coordination groups to deal with specific desert tortoise issues and the overall program, with emphasis on coordination with user groups. BLM District Advisory Councils can be used to serve this purpose, if appropriate.

Objective 6. Conduct research and studies sufficient to develop and document the knowledge and techniques needed to ensure the viability of tortoise populations and habitats in perpetuity.

Management Action 6A. Conduct a workshop during FY 1989 to clarify the concept of "viable population" as it relates to the desert tortoise in each of the genetically isolated populations.

Management Action 6B. Implement research and studies to answer the questions raised in Appendix 2 of the 1987 Habitat Team Report. For example, data gaps include the effects of grazing on tortoise populations and habitats, tortoise nutritional needs, acceptable levels of off-highway vehicle activity in tortoise habitat, the effects of habitat fragmentation and disturbance in general, the estimation of viable population levels, the effects of predation (ravens, coyotes, etc.) on tortoise populations, the effects of tortoise collection and subsequent release on wild populations, the long-term effects of wildfires on tortoise populations, the genetics of tortoise populations, and survivorship of relocated tortoises.

Management Action 6C. Develop a tortoise research and studies plan by the end of FY 1989. This should be done within the framework of the Management Oversight Group.

Objective 7. Manage the public lands, on a continuing basis, to protect the scientific, ecological, and environmental quality of tortoise habitats consistent with the Category Goals and other Objectives of this Rangewide Plan. This implies management for the existence of an adequate number of healthy and vigorous tortoise populations of sufficient size and resilience to withstand the most severe environmental impacts, and with appropriate sex and age ratios and recruitment rates to maintain viable populations in perpetuity.

Management Action 7A. Develop a strategy document in each involved BLM state to ensure that the overall Bureau Goal for tortoise habitat management is reached through implementation of the Objectives in this Rangewide Plan. These documents shall be completed during FY 1989.

Management Action 7B. Manage tortoise habitats using an ecosystem management approach with emphasis on maintaining or restoring natural biological diversity. Document in a biennial report (1990, 1992, 1994, etc.) how this Management Action has been implemented.

Management Action 7C. Ensure adequate consideration of tortoise populations and habitats in the Bureau's land-use planning and decision-making processes, and mitigate for impacts to the extent mandated by law or appropriate under existing policy.

(1) Incorporate the Category Goals, Objectives, and Management Actions of this Rangewide Plan in new Resource Management Plans as they are developed.

(2) Where appropriate, update completed land-use plans through the amendment process to include the Category Goals, Objectives, and Management Actions of this Rangewide Plan.

Management Action 7D. Manage all desert tortoise Habitat Areas consistent with the appropriate Category Goals. This should be accomplished through the development and implementation of formal land-use plans that result in on-the-ground management actions.

Management Action 7E. Where practicable, allow no net loss in quantity or quality (vegetation composition and structure, levels of human disturbance) of Category I and II Habitat Areas. Where no reasonable alternatives to proposed actions affecting such tortoise habitats exist, losses may occur only if mitigation is not practicable. Document this through a biennial analysis of cumulative impacts (see Objective 3).

Management Action 7F. In placing tortoise Habitat Areas into Categories, consider historically used, high potential tortoise habitats, the protection of which will assist in meeting the Objectives and Category Goals of this Rangewide Plan. Categorize such areas appropriately, and protect them, where warranted.

Management Action 7G. Identify specific and quantifiable tortoise management objectives within each categorized Habitat Area.

(1) Begin habitat planning efforts with a knowledge of existing conditions of vegetation and tortoise populations throughout the land area.

(2) Evaluate the potential of the land area to respond to management. Explore the range of habitat conditions for which it may be possible to manage. Relate these potential conditions to the habitat requirements of the tortoise.

(3) Set the tortoise management objectives for the land area. Specify the features of habitat composition and structure desired to meet the habitat requirements of the tortoise.

(4) Communicate the desired tortoise population and habitat conditions in specific and quantitative terms. Reach a decision on the specific management prescription to be used in the area.

(5) Implement the management prescription in the field.

Management Action 7H. Provide appropriate input into fire management plans to minimize the effects of wildfires on tortoise habitats.

Objective 8. When the need is identified through the Bureau planning system, acquire and/or consolidate, under Bureau administration, management units with high tortoise habitat values, and mitigate the effects of issuing rights-of-way across public lands.

Retention and Acquisition of Lands

Management Action 8A. Use the Bureau's land exchange authorities as opportunities arise to consolidate tortoise habitats on the public lands, with emphasis on Category I and II tortoise Habitat Areas.

Management Action 8B. Purchase Category I and II tortoise Habitat Areas consistent with the scope and intent of Bureau planning documents.

Management Action 8C. Encourage private donations of land, funds, and services to facilitate acquisition of land with high tortoise habitat values.

Management Action 8D. Retain Category I and II tortoise Habitat Areas unless (a) it clearly is in the National public interest to dispose of them and (b) losses can be mitigated.

Rights-of-Way

Management Action 8E. Manage the issuance of rights-of-way in a manner that will minimize their effects on tortoise populations and habitats.

(1) Grant new rights-of-way through Category I and II tortoise Habitat Areas only if no reasonable alternative exists. Mitigation for habitat losses is required.

(2) Mitigate along rights-of-way to minimize direct losses of tortoises, fragmentation or reduction of habitat, and the effects of construction.

Objective 9. Ensure that off-highway vehicle use in desert tortoise habitats is consistent with the Category Goals, Objectives, and Management Actions of this Rangewide Plan.

Management Action 9A. Where necessary to achieve Category Goals, close Category I and II tortoise Habitat Areas to off-highway vehicle use. Use outside of closed areas can be allowed provided it is not inconsistent with the Category Goals and Objectives of this Rangewide Plan.

Management Action 9B. Where information is inadequate, evaluate the impacts of both existing and new off-highway vehicle uses to determine if such uses are consistent with the Goals and Objectives of this Rangewide Plan.

Management Action 9C. Minimize off-highway vehicle use in Category I and II tortoise Habitat Areas whenever information for decision making is adequate. This may include restriction of organized and casual off-highway vehicle use to designated roads and trails, restriction of such use to existing roads and trails, placing limits and conditions on the authorization of commercial and competitive events, etc.

Objective 10. Ensure that livestock use is consistent with the Category Goals, Objectives, and Management Actions of this Rangewide Plan. This may include limiting, precluding, or deferring livestock use as documented in site-specific plans.

Management Action 10A. In every grazing allotment which includes tortoise habitat, manage livestock to allow adequate and suitable native forage, space, and cover to be available to tortoises throughout the year.

Management Action 10B. Where site potential permits, manage livestock grazing to increase native perennial grasses, forbs, and shrubs that are required by tortoises.

Management Action 10C. Allow utilization of tortoise forage and cover plants by livestock only to levels which allow for long-term plant vigor and adequate standing vegetation for late summer-fall tortoise use.

Management Action 10D. Allow only those new range improvements for livestock in Category I and II Habitat Areas which will not create conflicts with tortoise populations. Mitigation for such conflicts is permissible to make the net effect of the improvements positive or neutral to desert tortoise populations. Conflicting existing improvements should be eliminated as opportunities arise.

Objective 11. Provide for herd management for wild horses and burros which is consistent with the Category Goals, Objectives, and Management Actions of this Rangewide Plan. This may include limiting or precluding wild horse and/or burro use, as appropriate.

Management Action 11A. Continue to maintain appropriate management levels of wild horses and burros consistent with existing land-use plans and/or activity plans.

Management Action 11B. Ensure that appropriate monitoring of wild horse and burro herds occurs, and use such monitoring data to help develop management prescriptions for desert tortoise habitats.

Management Action 11C. Where site potential permits, manage grazing by wild horses and burros to increase native perennial grasses, forbs, and shrubs required by tortoises as food and cover.

Management Action 11D. Allow only those new range improvements for wild horses and burros in Category I and II Habitat Areas which will not create conflicts with tortoise populations. Mitigation for such conflicts is permissible to make the net effect of the improvements positive or neutral to desert tortoise populations. Conflicting existing improvements should be eliminated as opportunities arise.

Objective 12. Provide for management of wildlife other than desert tortoises on the public lands consistent with the Category Goals, Objectives, and Management Actions of this Rangewide Plan.

Management Action 12A. Manage wildlife habitat to allow adequate and suitable native forage, space, and cover to be available for desert tortoises throughout the year.

Management Action 12B. Allow the introduction or reintroduction of wildlife species into Category I and II Habitat Areas only if such actions will not create conflicts with tortoise populations.

Management Action 12C. Allow only those new range improvements for wildlife that will not create conflicts with tortoise populations. Mitigation for such conflicts is permissible to make the net effect of the improvements positive or neutral to desert tortoise populations. Conflicting existing improvements should be eliminated as opportunities arise.

Objective 13. Cooperate with state wildlife agencies and APHIS to effect appropriate types and levels of predator control to meet the Category Goals and Objectives of this Rangewide Plan. This will be considered only where predation is interfering with maintaining viable tortoise populations.

Management Action 13A. Where predation problems are suspected, inventory predator populations and study their food habits and behaviors to determine which categorized tortoise Habitat Areas require predator control to meet the Category Goals and Objectives of this Rangewide Plan.

Management Action 13B. Evaluate Bureau actions to determine whether or not they encourage the proliferation or range expansion of predator populations. Seek alternatives which minimize the increase and/or spread of predator populations.

Objective 14. Manage the Bureau's energy and minerals program in a manner consistent with the Category Goals and Objectives of this Rangewide Plan.

Management Action 14A. Consider withdrawal from mineral entry for Category I tortoise Habitat Areas.

Management Action 14B. Mitigate the impacts to desert tortoise Habitat Areas from locatable mineral exploration and development to the extent possible through judicious implementation of the Bureau's 3802 and 3809 surface management regulations.

Management Action 14C. Use the Bureau's discretionary authorities relating to leasable and salable minerals to meet the Category Goals and Objectives of this Rangewide Plan.

Management Action 14D. Mitigate the impacts of energy and mineral development in tortoise habitat to the extent possible under existing laws and regulations.

APPENDIX G

PAST, FUTURE AND PRESENT PROJECTS

Arizona Wilderness Inholding Acquisition Project. In cooperation with the non-profit group, Wilderness Land Trust, BLM seeks to acquire, through purchase, lands that are inholdings within Arizona wilderness. Within the portion of Mohave County administered by the Kingman Field Office, 3,400 acres of private land are being considered for acquisition into public ownership, mostly in the Mount Tipton and Wabayuma Peak wildernesses. The Final EA which analyzes this acquisition was signed in May, 1995.

BHP Copper Pinto Valley Operations. The Pinto Valley Mining Company acquired patented claims in 1907 at a site located approximately 5 miles west of the town of Miami. Copper and Molybdenum are produced at the Pinto Valley Mine with an estimated reserve of 624 million tons (USDA 1997). Pinto Valley Mine is expanding its mine rock disposal areas, tailings dams and miscellaneous facilities over approximately 1,200 additional acres. Currently, BHP has submitted a Plan of Operations for pit expansion, which environmental assessments are currently being conducted. Based on an application submitted to ADEQ, BHP Copper plans to close the mine in 2007.

Carlota Copper Project. The Final EIS and ROD for the Carlota Copper Project was published in July, 1997, to approve the Carlota open-pit copper mining and processing facility located approximately six miles west of Miami, Arizona in the Tonto National Forest. Of the approximately 3,050 acres of unpatented and patented lands in the project area, the Proposed Action would disturb approximately 1,428 acres using conventional mining techniques (USDA 1997).

Cerbat Mountains Land Exchange. On April 23, 1998, a decision was made by the Kingman Field Office Manager to exchange approximately 5,144 acres of selected/public lands in the Hualapai Valley north of Kingman, Arizona for 5,661 acres of offered/private lands located mostly in the Cerbat Mountains and northern Hualapai Valley.

Cyprus Miami Mine Expansion. The Cyprus Miami Mine began operations in 1912 northwest of the town of Miami, near Globe, Arizona. The production rate at the open-pit mine is approximately 127.3 million pounds of copper per year, with 213 million tons of ore reserves (USDA 1997). Cyprus Miami Mining Corporation has recently upgraded its smelter facility and plans to expand leaching facilities at the Cyprus Miami Mine on its patented mining claims and public lands administered by the BLM and the Tonto National Forest Service. A Plan of Operations was submitted to the Forest Service and the BLM in 1994, and an EIS is currently being prepared. Approval of the proposed expansion would result in continued operations for the next 17 years beginning in 1997.

Cyprus State-Wide Land Exchange. Cyprus is currently in negotiations with the BLM to obtain ownership of several parcels throughout Arizona that are already being mined through an MPO. Lands included in this exchange are in Sierrita, Bagdad and Miami with a total acreage of approximately 9,657 acres. The offered lands for this land exchange have not be finalized; however, the Sierrita exchange is scheduled for 1998-2000 and the Bagdad/Miami exchange is scheduled for 1999-2001.

Empire-Cienega Resource Management EIS/Plan Amendment. BLM is currently preparing a plan amendment/EIS to the Phoenix RMP which would prescribe management direction for approximately 45,000 acres of public land in the Empire-Cienega RCA. The BLM is using a collaborative public process to obtain input for this planning effort. Major issues include recreation, livestock grazing, wildlife management, mining and ACECs.

Hualapai Mountains Exchange. The Draft EIS for this land exchange/plan amendment was published in April 1998 and involves approximately 70,000 acres of offered/private lands for approximately 70,000 selected/public lands in Mohave County. BLM exchanged lands in the Dutch Flat and Antares areas for portions of the Dutch Flat area and the Hualapai and McCracken Mountains (BLM 1998b).

Kingman Resource Area Management Plan (RMP). The Kingman Resource Area Proposed Resource Management Plan and Final EIS was published in September, 1993, by the BLM Kingman Resource Area. The EIS analyzes the impacts expected from implementing the Proposed Kingman RMP and guides the BLM in the management of the Kingman Resource Area, covering parts of Mohave, Yavapai and Coconino counties. Portions of this RMP can be found in Appendix H.

Mineral Creek Consent Decree/404 Permit Expansion. This project involves the isolation of Mineral Creek from Ray Mine's Operations to ensure that water quality standards are met in Mineral Creek under the scheme established by the Clean Water Act (CWA) and pursuant to provisions stated in the Consent Decree entered into between Asarco Incorporated, the United States and the State of Arizona. Asarco intends to satisfy the requirements of the CWA and comply with the Consent Decree in stages throughout the next six years.

Morenci Land Exchange. This land exchange involves approximately 3,758 acres of selected lands for approximately 1,040 acres of offered lands in Graham County, Arizona. The Final EIS was published in October 1996, the Record of Decision was signed and it is currently under protest.

Phoenix Resource Management Plan (RMP). The Phoenix Resource Management Plan and Final EIS was published in December, 1988, by the BLM Phoenix District. The EIS analyzes the impacts expected from implementing the Proposed Phoenix RMP and guides the BLM in the management of the Phoenix Resource Area, covering all parts of eight Arizona counties. Portions of this RMP can be found in Appendix H.

Safford District Resource Management Plan (RMP). The Safford District RMP and Final EIS was published in August, 1991, by the BLM Safford District. The EIS describes and analyzes alternatives for management of approximately 1,400,000 acres of public land in southeastern Arizona and addresses certain public issues such as access, areas of critical environmental concern and other special management types, off-highway vehicles, and riparian areas. The RMP determines management objectives and identifies actions that will be taken to implement the objectives.

Safford Dos Pobres/San Juan MPO. Phelps Dodge submitted an MPO in 1996 to BLM for the Dos Pobres and San Juan ore bodies located in Safford, Arizona. The BLM's preferred alternatives to the MPO includes a land exchange alternative that involves approximately 17,000 acres of selected lands in Graham and Greenlee counties for approximately 3,858 acres of offered lands in La Paz, Greenlee and Graham counties. The Draft EIS is scheduled for publication in summer of 1998.

Saguaro National Park Land Exchange. The Saguaro National Park Exchange involved the exchange of approximately 4,322 acres of BLM-administered selected lands within Maricopa and Pima Counties and approximately 711 acres of offered lands within the congressionally designated Saguaro National Park in Pima County. The Finding of No Significant Impact (FONSI) and Final EA were completed in June, 1997.

Silver Bell-Cienega. This land exchange occurred in 1992 and involved approximately 4,953 acres of federal lands in Pima and Pinal Counties for approximately 1600 acres of private lands within Pinal and Pima Counties.

Superior Underground Mine. The Superior Mine was the original mine of Magma Copper Company that operated from 1912 to 1982 when it closed because of low copper prices. It reopened in 1990 under new ownership and has a production rate of 1,000 tons of ore per day. In 1996, the mine closed when proven ore reserves were exhausted, however exploration for additional underground ore reserves is continuing.

Tusayan Land Exchange. The Draft EIS for the Tusayan Growth Project in the Kaibab National Forest was published in June, 1997, and consists of a Proposed Action and a variety of alternatives for providing improvements to transportation, housing, community facilities, and visitor services outside of Grand Canyon National Park boundaries on private or National Forest System lands in the Grand Canyon/Tusayan area. A supplement to the draft EIS with additional alternatives is expected to be published summer 1998.

White Canyon RCA Coordinated Management Plan. BLM Tucson Field Office (TFO) is considering preparation of an interdisciplinary activity plan (IAP) for the White Canyon Area including the White Canyon Wilderness. If the IAP is not feasible, a separate Wilderness Plan will be prepared.

Winkelman Community Expansion. The BLM TFO is considering a proposal by the community of Winkelman for sale of approximately 80 acres of public land for community expansion. The proposal would necessitate an amendment to the Safford District RMP.

APPENDIX H

**SELECTED TEXT FROM THE PHOENIX AND KINGMAN
RESOURCE MANAGEMENT PLANS (RMP)**

PROPOSED
PHOENIX
RESOURCE MANAGEMENT PLAN AND FINAL
ENVIRONMENTAL IMPACT STATEMENT

DECEMBER 1988

U.S. Department of the Interior
Bureau of Land Management
Phoenix District • Arizona

TABLE 2-4
Areas Proposed for Special Management
Bureau of Land Management, Phoenix District, Arizona

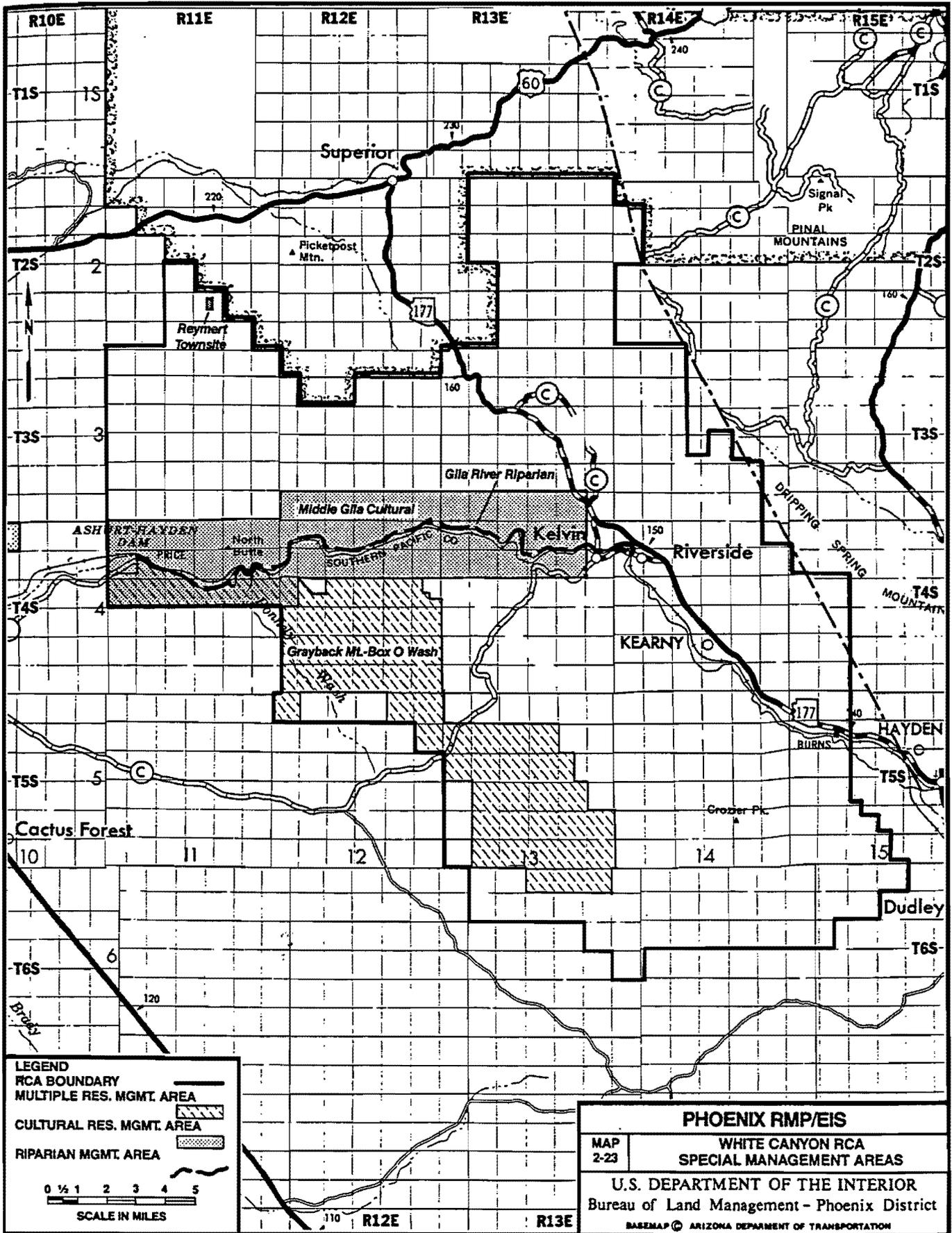
Special Management Area (SMA)	Federal, State, and Private Acres	Current Designation	Management Goals	Planned Actions
Coyote Mountains Recreation Management Area	F 5,080 S 320 P 320 5,720	acres BLM WSA; recommended for wilderness designation in 1987 Final Phoenix Wilderness EIS	Manage to enhance recreation values; increase public ownership of state and private holdings	Obtain legal access; develop an activity plan; prohibit land use authorizations; limit vehicular travel to designated roads and trails; prohibit surface occupancy for oil/gas development; acquire land.
Agua Blanco Ranch Multiple Resource Management Area	F 14,419 S&P 2,280 16,699	None	Improve watershed condition to satisfactory; increase soil cover; reduce sediment yield; improve ecological site condition to good; promote recovery of an endangered plant	Develop an activity plan; limit motorized vehicles to existing roads and trails; acquire land.
Cocoraque Butte-Waterman Mtns Multiple Resource Management Area	F 34,749 S&P 13,227 47,976	None	Improve watershed condition to satisfactory; increase soil cover; reduce sediment yield; improve ecological site condition to good; promote recovery of endangered plant	Develop an activity plan; limit motorized vehicles to existing roads and trails; acquire land.
Silver Bell Desert Bighorn Sheep Management Area	F 39,170 S 11,450 P 6,180 56,800	4,460 acres includes Ragged Top WSA, recommended not suitable for wilderness in the Arizona-Mohave Wilderness FEIS	Improve habitat condition for desert bighorn sheep	Develop an activity plan; prohibit surface occupancy for oil/gas development on 800 acres of Ragged Top; limit motorized vehicles to existing roads and trails except close 800 acres on Ragged Top; acquire land.
Avra Valley Cultural Resource Management Area	F 2,720	Contains Cocoraque Butte National Register Historic District	Manage 14 properties for information potential and 1 for conservation values	Develop an activity plan; limit motorized vehicles to existing roads and trails.
Santa Ana del Chiquiburitac	F 20	National Register Historic Places	Manage for public education/interpretative values	Develop an activity plan; close to motorized vehicles. Prohibit surface occupancy for oil/gas development.
Picacho Mountains Desert Tortoise Management Area	F 6,400 S 7,980 14,380	6,400 acres a WSA recommended not suitable for wilderness in Phoenix Wilderness FEIS	Maintain existing desert tortoise populations; obtain population data for high and low elevation	Develop a management plan; acquire land; prohibit surface occupancy of oil/gas leases; close 6,400 ac. to motorized vehicles; limit travel on 7,980 ac. to designated roads.
Grayback Mountain-Box O Wash Multiple Resource Management Area	F 24,045 S&P 16,581 40,626	None	Improve watershed condition to satisfactory; increase soil cover; reduce sediment yield and salinity discharge; improve ecological site condition to good; enhance stream flow and water quality	Develop an activity plan; acquire land; limit motorized vehicles to existing roads and trails.
Reymert Townsite Cultural Resource Management Area	F 20	None	Manage for public education/interpretative values	Develop an activity plan; close to motorized vehicles.
Middle Gila Cultural Resource Management Area	F 21,940 S 7,240 P 1,520 30,700	Under withdrawal for federal water projects	Manage for information, public and conservation values	Develop an activity plan; limit motorized vehicles to existing roads and trails; acquire land.

(continued on next page)

TABLE 2-4 (continued)
Areas Proposed for Special Management
Bureau of Land Management, Phoenix District, Arizona

Special Management Area (SMA)	Federal, State, and Private Acres	Current Designation	Management Goals	Planned Actions
Gila River Riparian Management Area	F 15 miles	Under withdrawal for federal water projects	Improve condition of riparian vegetation and aquatic habitat for native fish; enhance water quality; limit salinity discharges	Develop an activity plan; limit motorized vehicles to existing roads and trails; prohibit surface occupancy for oil/gas development in riparian zone.
Black Canyon Granite Sales Management Area	F 160	None	Manage as a granite extraction area	Develop an activity plan.
Cordes Junction Multiple Resource Management Area	F 8,763 S&P 5,846 14,609	None	Improve watershed condition to satisfactory; improve condition of riparian vegetation; improve native fish habitat; enhance water quality and stream flow; increase soil cover; reduce sediment yield; improve ecological site condition to good	Develop an activity plan; prohibit surface occupancy of oil/gas leases in riparian zones; prohibit land use authorizations in riparian areas; limit motorized vehicles to existing roads and trails; acquire land.
Sycamore Creek Multiple Resource Management Area	F 2,423 S&P 1,396 3,819	None	Improve condition of riparian vegetation; improve native fish habitat; enhance stream flow and water quality; increase soil cover and reduce sediment yield; improve pronghorn habitat and facilitate their movement	Develop an activity plan; prohibit surface occupancy for oil/gas development in riparian zones; prohibit land use authorizations in riparian areas; limit motorized vehicles to existing roads and trails; acquire land.
Bumble Bee Multiple Resource Management Area	F 12,832 S&P 39,433 52,265	None	Improve watershed condition to satisfactory; improve condition of riparian vegetation; improve native fish habitat; enhance water quality and stream flow; increase soil cover; reduce sediment yield; improve ecological site condition to good; reintroduce native fish, if feasible	Develop an activity plan; prohibit surface occupancy for oil/gas development in riparian areas; prohibit land use authorizations in riparian areas; limit motorized vehicles to designated roads and trails; acquire land.
Villiams Mesa Multiple Resource Management Area	F 27,384 S&P 23,346 59,735	None	Improve watershed condition to satisfactory; improve riparian vegetation condition; improve native fish habitat and reintroduce native fish, if feasible; enhance stream flow and water quality; increase soil cover; reduce sediment yield; improve ecological site condition to good	Develop an activity plan; prohibit surface occupancy for oil/gas development in riparian areas; prohibit land use authorizations in riparian areas; close 3.5 miles of Tule Creek to motorized vehicles, elsewhere limited to existing roads and trails; acquire land.
Hassayampa River Riparian Management Area	F 12 miles S 4 miles 16 miles	Part of Hassayampa River WSA; recommended not suitable for wilderness designation in 1987 Final Phoenix Wilderness EIS	Improve condition of riparian habitat; improve condition of native fish habitat and reintroduce native fish, if feasible; enhance water quality	Develop an activity plan; limit motorized vehicles to existing roads and trails; prohibit surface occupancy for oil/gas leases in riparian areas; prohibit land use authorizations in riparian areas; acquire land.
DeWells Canyon Recreation Management Area	F 9,379 S 640 P 720 10,739	9,379 acres WSA; recommended not suitable for wilderness designation in Phoenix Wilderness FEIS	Manage to maintain primitive recreation values	Develop an activity plan; limit motorized vehicles to designated roads and trails; acquire land.
Mike Pleasant Herd Management Area	F 57,412 S 13,795 P 9,593 80,800	None	Maintain habitat for burros; maintain an 80-animal herd	Develop a herd management plan; acquire land.

Source: Phoenix District files.



KINGMAN RESOURCE AREA

**PROPOSED RESOURCE MANAGEMENT PLAN AND
FINAL ENVIRONMENTAL IMPACT STATEMENT**

September 1993

**U.S. Department of the Interior
Bureau of Land Management
Kingman Resource Area**

Maintenance Plans:

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

National Back Country Byways:

- Historic Route 66
- Hualapai Mountains (proposed)

WILDERNESS MANAGEMENT

The Arizona Desert Wilderness Act (Public Law 101-628) was signed into law on November 28, 1990, creating nine wilderness areas covering 392,844 acres of public surface estate in the Kingman Resource Area, including 386,532 acres of federal mineral estate (see Map 2). Table 1 shows the acres of federal minerals withdrawn from mineral entry and mineral leasing and closed to mineral material disposals.

Table 1
Acres of Federal Mineral Estate in Wilderness Areas
Withdrawn From Mineral Entry and Mineral Leasing
and Closed to Mineral Material Disposals

Wilderness Area	Acres
Mount Wilson	24,233
Mount Nutt	27,115
Warm Springs	112,153
Mount Tipton	30,208
Wabayuma Peak	38,716
Aubrey Peak	15,306
Upper Burro Creek	24,401
Arrastra Mountains	98,697
Rawhide Mountains	15,703
Total Withdrawn	386,532

The wilderness areas will be managed according to the provisions of law, BLM wilderness management regulations found at 43 CFR 8560 and subsequent wilderness management plans. A wilderness management plan will be prepared for each wilderness area. Implementing these plans will begin immediately and will be ongoing throughout the life of this Resource Management Plan regardless of the alternative selected. Wilderness study areas not designated by the 1990 Act were released from further consideration for wilderness. Any future activity in these areas will be managed in accordance with specific provisions of the Resource Management Plan and record of decision signed by the BLM Arizona State Director.

WILDLIFE HABITAT MANAGEMENT

Wildlife

Legislation, including the Federal Land Policy and Management Act, the Endangered Species Act, the Public Rangelands Improvement Act and the Sikes Act, directs the BLM to manage habitat to meet wildlife needs, along with increasing demands for basic energy supplies, building materials, food products and recreational opportunities. The BLM's responsibility is to recognize opportunities to

maintain, improve and expand wildlife habitat for both consumptive and nonconsumptive uses and identify critical wildlife resources deserving special attention. The BLM is also directed to assist state agencies in completing fish and wildlife resource plans.

Recently developed documents also provide program guidance to the BLM's wildlife habitat management program. These documents include Fish and Wildlife 2000, Desert Tortoise Management on the Public Lands: A Rangeland Plan, the Rangeland Plan for Managing Habitat of Desert Bighorn Sheep on Public Lands, Waterfowl Habitat Management on Public Lands: A Strategy for the Future and the Raptor Habitat Management Plan.

All land use actions occurring on public lands in the resource area are reviewed and given site-specific analysis during the environmental review process. Impacts to special status and sensitive wildlife species, riparian habitat and wildlife habitat improvement projects are assessed and measures are developed to lessen impacts. The environmental review process also assesses compatibility with cooperatively developed wildlife habitat management plans. All rangeland and watershed improvements will continue to be designed to achieve range, water quality and wildlife objectives.

Animal Damage Control

A new Animal Damage Control Program Environmental Impact Statement is currently being developed by the Animal Plant Health Inspection Service, U.S. Department of Agriculture. The BLM is a formal cooperator in this process. Following completion of the final environmental impact statement, the BLM will prepare a district-wide animal damage control plan commensurate with the Record of Decision and tiered to the final environmental impact statement.

Habitat Management

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

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

Desert bighorn sheep and their habitat are important resources on the public lands of Arizona. These resources will be managed in accordance with the management and protection measures identified in resource planning documents developed to implement BLM and district policies on desert bighorn sheep.

Detailed estimates of big game forage allocations are presented in the Cerbat/Black Mountains and Hualapai-Aquarius grazing environmental impact statements on file in the Kingman Resource Area office. These allocations will be carried forward except when modified in special management areas where habitat monitoring indicates the need for modification. Monitoring of big game habitat, i.e., utilization of key forage species, will continue to be conducted as part of an integrated resource monitoring program specifically designed by an interdisciplinary team. Information obtained from monitoring studies will be analyzed and necessary changes in management prescriptions initiated to protect the habitat.

In some areas, habitat overlap and conflicts exist among wildlife, wild equids and livestock. Where analysis of monitoring data indicates a need for change in number of grazing animals in areas of multiple use, allocations will be determined for each species on a case-by-case basis. In areas of multiple species uses, where the habitat is a crucial element for continued survival of a particular species, the allocation (forage, water and/or space) will first provide for that population's needs. The remainder of the allocation will then be divided as prescribed under each alternative.

All decisions proposed for activity management plans will be developed through consultation, cooperation and coordination with affected interests and agencies and will conform to BLM policy.

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

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

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

Wildlife escape devices will be installed on all new and existing water tanks or troughs built for livestock on waters having public water rights and located on public lands.

To the extent possible, new roads will not be built in crucial wildlife habitat. However, existing roads may be improved to accommodate mineral development or other uses. Impacts will be carefully analyzed through the environmental analysis process. Existing roads may be permanently or seasonally closed to vehicles where problems exist or are expected.

Existing Plans, Decisions and Objectives

Since completion of the management framework plans, several habitat management plans have been completed and are being implemented. These include Black Mountains, Hualapai, Aquarius,

Cerbat-Music and Bill Williams-Crossman Peak (prepared jointly with the Havasu Resource Area).

Habitat management plans are periodically evaluated to determine if their objectives are being met and updated or revised to meet changing situations or needs. When this Resource Management Plan becomes final, habitat management plans will be revised or amended according to need for Black Mountains, Hualapai, Aquarius, Cerbat-Music and Bill Williams-Crossman Peak.

SPECIAL STATUS SPECIES MANAGEMENT

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

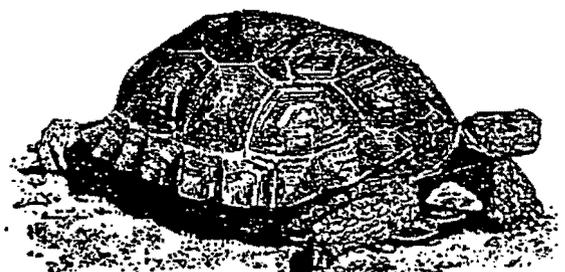
The Endangered Species Act of 1973, as amended, is the authority to conserve threatened and endangered species on public lands. Section 4(f) of the Endangered Species Act directs the Secretary of the Interior to develop and implement recovery plans for the conservation and survival of endangered species.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

Any federally authorized, funded or implemented actions that may affect listed or proposed species are reviewed in cooperation with the U.S. Fish and Wildlife Service.

BLM policy for special status candidate species is contained in BLM Manual Section 6840. The BLM must carry out management consistent with multiple use for conservation of candidate species and their habitats and must ensure that actions authorized, funded or carried out do not contribute to the need to list any of these species as threatened or endangered. These actions are also conducted on split-estate lands if the surface management agency does not have adequate data. It is also policy to systematically monitor category 1 and 2 candidate species to determine if a species should be listed.

Potential impacts to species are analyzed in an environmental review by the BLM for each project. Protection measures may be stipulated in the decision record in the environmental assessment or in the U.S. Fish and Wildlife Service's biological opinion.

Protection and management of endangered species will continue, as will inventory for federal- and state-candidate species. Monitoring programs will be implemented on known populations of listed and candidate species. Where monitoring finds threats to these populations, actions will be taken to protect the species and their habitats.



Plant Species

A draft recovery plan has been prepared for Arizona cliffrose (*Purshia subintegra*). When the recovery plan is finalized, the BLM will incorporate the provisions into a habitat management plan or an area of critical environmental concern plan, which will be implemented.

Animal Species

Habitat for state-listed species is managed in cooperation with the Arizona Game and Fish Department under provisions of the Sikes Act (1974), as amended. As additional wildlife information is gathered, existing habitat management plans would be updated or revised.

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

To improve raptor habitat, new powerlines will be built to "electrocution proof" specifications and existing powerlines will be modified as problem lines are identified.

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

The categories of desert tortoise habitat designated by the BLM establish goals for the management of desert tortoise and their habitats, based on several criteria. Briefly summarized, management of Category I and Category II areas emphasizes maintenance of viable desert tortoise populations in areas where all Category I or most Category II conflicts are resolvable. Category III habitats are generally characterized by lower densities of desert tortoises in areas where habitat has been fragmented or otherwise degraded, or where landownership patterns are such that effective management is difficult (see Map 34).

RIPARIAN AREA MANAGEMENT

Legal authority for BLM management of riparian-wetland areas is based on numerous laws and executive orders, including the Taylor Grazing Act of 1934, the Endangered Species Act of 1973, the

Federal Land Policy and Management Act of 1976, the Emergency Wetland Resources Act of 1986, the Water Quality Act of 1987, Executive Order 11988 (Floodplain Management) and Executive Order 11990 (Protection of Wetlands). On January 22, 1987, the BLM issued its riparian area management policy which defined the term riparian area, set management objectives and outlined specific policy direction. This policy is the basis for BLM Manual 1737 (Riparian-Wetland Area Management), the Bureau-wide Riparian-Wetland Initiative for the 1990s and the Arizona Riparian-Wetland Area Management Strategy. Riparian management plans will be consistent, to the extent practicable, with state of Arizona riparian habitat protection policy, "Protection of Riparian Areas" dated February 14, 1991 (Executive Order 91-6).

The overall objective is to achieve proper functioning condition for riparian areas.

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

These strategies will be implemented by an interdisciplinary team. Since numerous highly valued resources depend on riparian-wetlands, it is important that specialists such as hydrologists, wildlife biologists, soil scientists, range conservationists and recreation planners work cooperatively to develop management strategies to allow areas to be used and yet meet the identified objective. All actions will occur only after compliance with the National Environmental Policy Act.

Existing Plans and Decisions

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

HAZARDOUS MATERIALS MANAGEMENT

The three laws most commonly associated with hazardous materials include the Resource Conservation and Recovery Act, or Public Law 94-580; the Comprehensive Environmental Response, Compensation and Liability Act, or Public Law 96-510, otherwise known as the Superfund Act; and the Superfund Amendment Reauthorization Act,

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

In southern Mohave County, the Casteneda, McCracken, Aubrey, Lawhide, Artillery and Poachie mountains are currently well linked by movement corridors. Due to the remote nature of these areas, development is low, enabling wildlife to move freely among these mountain ranges. These links would remain in public ownership. Across resource area boundaries, the Bill Williams, Mohave and Buckskin mountains are also well linked with the above mountain ranges, and these links would remain in public ownership.

Future rights-of-way, especially road development, would not fragment these mountain ranges because they are critical to the ongoing survival of wildlife in this region.

These corridors would be managed to maintain, develop or reestablish natural movement of wildlife species while minimizing the death of these animals.

Construction of overpasses or underpasses, culvert modification and fencing designed to allow wildlife movement would be requested of the Arizona Department of Transportation. A total of 46,252 acres would need to be acquired for management and retention of the corridors (see Appendix 20).

Additional corridors may be identified in the future on a case-by-case basis to meet resource management objectives.

General Wildlife Habitat

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

Big Game

In addition to activities proposed under *Alternative 1*, crucial big game habitat would be designated within the Black Mountains Ecosystem Management and Aubrey Peak Bighorn Sheep habitat areas of critical environmental concern.

Desert bighorn sheep have very specific habitat requirements that can only be met in the presence of certain physical and biological conditions. In addition to the typical requirements for food, water and cover, desert bighorn require sparsely vegetated areas with steep, rocky slopes. The relative size of these habitats must be large to accommodate movements and permit the exchange of genetic material throughout the populations. Habitat partitioning and segregation have been a serious threat to bighorn sheep populations throughout the range of the species. Furthermore, bighorn sheep have shown extreme sensitivity to human disturbance, communicable diseases and interspecific and intraspecific competition for food, water and space.

The Black Mountains are widely recognized as critical to the welfare and continued existence of desert bighorn sheep. They represent the largest contiguous block of desert bighorn sheep habitat in Arizona. This area provides all of the habitat requirements of desert bighorn sheep in an optimal arrangement. Topographic relief provides the essential escape habitat for bighorns through much of the mountain range. Perennial springs provide abundant water over much of the range. Numerous manmade water developments have improved the quality of these habitats by making them available to bighorn year-round. The predominately public ownership of the Black Mountains has protected them from significant habitat disturbance.

While desert bighorn sheep are currently thriving throughout much of their range, their existence was tenuous in the relatively recent past. Because of the bighorn sheep's specific habitat requirements and their inherent sensitivity to environmental disturbance, resource managers must exercise caution in managing conflicting or threatening uses in sheep habitat.

The Black Mountains have been identified as one of the outstanding desert bighorn sheep habitats in Arizona (see area A on Map 9). The forage allocations established for deer, bighorn sheep, wild burros and livestock in the 1978 Cerbat/Black Mountains Grazing Environmental Impact Statement identified complex habitat use conflicts among these ungulates. To resolve these conflicts, available forage would be allocated for each species using the ratios shown in Table 10. A total of 9,500 animal unit months would be allocated for all ungulates in the Black Mountains Ecosystem Management Area of Critical Environmental Concern, Wilson Ridge, and important wild burro habitat to the

west (see area A on Map 9). This would not include areas primarily grazed by cattle, such as the lower elevation areas between the Black Mountains and State Highway 93 (see area B on Map 9); Area B accounts for the 2,500 animal unit months difference between the forage allocations identified in Alternatives 1 and 2). This alternative allows for a realistic forage allocation based on actual use patterns. The forage allocation assures sufficient vegetation remains for protection of non-game animals, wilderness values and watersheds.

Table 10
* PERCENT FORAGE ALLOCATION RATIOS

Desert Bighorn Sheep	Mule Deer	Wild Burros	Cattle
30%	10%	30%	30%

* Forage is allocated to animal units at the ratio of cattle 1:1; bighorn sheep 5:1, deer 4:1 and wild burros 2:1.

The forage allocations shown in Table 10 would be the basis for initial adjustments of ungulate numbers. These allocations will be applied generally over the entire Black Mountains area, but may be differentially applied in a stratified habitat area management concept. Habitat stratification is the delineation of specific habitats preferred by separate ungulate species that are selected for their unique combination of topography, forage, water and cover. These initial allocations may be modified with continuing utilization and habitat trend studies. Management priority would be given to desert bighorn sheep in lambing grounds and high-value bighorn habitat within the Black Mountains Wild Burro Herd Management Area. Desert bighorn sheep habitat has been divided into four stratified habitat areas by the Arizona Game and Fish Department (see Map 33). Stratified habitat areas are classified as Lambing Grounds, High Value, Medium Value and Low Value areas. The classification relates to the quality of topography, forage, water and cover requirements of desert bighorn sheep. In priority areas, burros will not be excluded from historic areas without development of an alternative water strategy. Overlap may occur in joint use areas.

Where population overlaps and significant competition for habitat exists among ungulates, data would be compiled and analyzed through studies (research, monitoring, inventories, etc.) to identify the crucial elements of each species' habitat. This would include food, water, cover and space. As these elements are identified, forage allocation ratios would be refined and adjusted. Through consultation and coordination with the Arizona Game and Fish Department, wildlife population adjustments would be made based on analysis of integrated habitat monitoring data and resource objectives.



Aubrey Peak provides crucial habitat for desert bighorn sheep in the southern portion of the resource area (see area D on Map 9). The most limiting factors for bighorn sheep in this portion of the area are lambing ground habitat and water. Aubrey Peak is the only habitat in the southern portion which provides a combination of these crucial factors and supports a resident herd of bighorn sheep. As a result, Aubrey Peak is the biological key to desert bighorn sheep herds within a complex of mountain ranges in the Lower Bill Williams watershed. Forage allocations for bighorn sheep, mule deer and livestock were proposed in the 1981 Hualapai-Aquarius Grazing Environmental Impact Statement. Use overlap was not identified as a conflict as forage was not allocated for livestock on slopes greater than 50 percent, based upon the BLM's livestock grazing suitability criteria. In addition, competition for forage among mule deer and bighorn sheep is minimal due to low population levels of deer and differences in forage preference. Prevalent conflicts occurring in the Aubrey Peak area are human activities associated with mining, off-highway vehicle travel and development of communication sites.

No domestic or feral sheep or goats will be allowed within nine miles surrounding desert bighorn habitat unless a cooperative agreement has been reached to the contrary. Domestic sheep and goats will be trucked rather than trailed when trailing would bring sheep and goats closer than nine miles to occupied desert bighorn ranges.

Activities (excluding work on mining claims) which could harm lambing or rearing of newborn bighorn sheep in the Black Mountains, Aubrey Peak or other future or existing lambing areas would be excluded from December 1 to May 31.

Mineral leasing would be allowed on identified lambing grounds with special stipulations (see Map 33) and management prescriptions in the Black Mountains Ecosystem Management and Aubrey Peak areas of critical environmental concern. Elsewhere, mineral leasing would be allowed in riparian areas with a no surface occupancy stipulation (see Map 11).

Guidelines used to develop mineral leasing stipulations include soil moisture conditions, soil characteristics and time of year or season.

A total of 22,962 acres would have a seasonal no surface occupancy stipulation.

Pronghorn antelope habitat on public lands would be managed according to existing habitat management plans to support 400 animal unit months on Goodwin Mesa and 300 animal units around Cherokee Point. Habitat would be improved to provide crucial spring forbs necessary for fawn survival and other habitat components important for increasing the size of the antelope population.

As new information is obtained on the distribution and habits of elk and their associated impacts in the Hualapai Mountains, existing habitat management plans would be revised and updated cooperatively with the U.S. Fish and Wildlife Service and the Arizona Game and Fish Department. Potential conflicts exist between elk and the endangered Hualapai Mexican vole in the Hualapai Mountains. Detailed information concerning

CHAPTER II

Desert tortoise: The Sonoran population of the desert tortoise is a candidate for federal listing as an endangered species. Desert tortoise habitat is found on boulder-strewn hills and in steep, rocky terrain. The habitat is usually dominated by ocotillo, saguaro and paloverde vegetation. In keeping with the BLM's Desert Tortoise Rangeland Plan (1988), areas of crucial tortoise habitat were identified and assigned priorities. The McCracken and Poachle mountains were identified as the most significant tortoise habitat in the resource area, outside of wilderness areas. Forage in desert tortoise habitat is also being utilized by livestock, wild burros, bighorn sheep, javelina and deer. Potential conflicts for desert tortoise exist due to grazing pressure from ungulates.

Additional conflicts may result from human surface-disturbing activities. The management prescriptions within the McCracken and Poachle areas of critical environmental concern are designed to reduce or resolve these conflicts with desert tortoise.

RIPARIAN AREA MANAGEMENT

Objective

Same as under *Alternative 1*.

Plan Actions

Same as under *Alternative 1* except the most significant riparian areas (Burro, Francis, Wright and Cottonwood creeks, the Big Sandy, Santa Maria and Bill Williams rivers and Alamo Lake) would be designated as areas of critical environmental concern and plans would be developed for these areas (see Table 5).

Management prescriptions necessary to protect and improve these riparian areas are described in the Special Management Areas section below and in Table 11. Mineral closures for areas of critical environmental concern are found in appendices 10 and 11.

Riparian zones are the most productive and sensitive habitats within the Sonoran and Mohave deserts and are used by wildlife more than any other habitat type. They support species found nowhere else except in riparian zones.

Strips of riparian woodland, such as cottonwood-willow communities, provide nesting habitat, aquatic habitat, movement corridors and havens of refuge and food sources for species not common to the southwest, but which must cross the desert during their migrations.

In addition, properly functioning riparian areas enhance watershed values such as water storage, long-term flow, reduction of peak flows, flooding, erosion and regeneration and maintenance of riparian communities.

Smaller riparian areas such as springs, seeps, canyon bottoms and other water-influenced areas would be managed to improve riparian conditions. Riparian improvement techniques could

include, but are not limited to, construction of enclosure fences around riparian zones and piping of water outside to grazing animals, rotation of livestock grazing and development of alternate water sources.

HAZARDOUS MATERIALS MANAGEMENT

Objective

The objective is to reduce hazards to the public and natural resources on public lands from toxic materials.

Plan Actions

Plot location of land uses which use or generate toxic materials in groundwater basins. All authorized uses on public lands would be monitored through mining plans of operation, mining notices, environmental assessments, right-of-way stipulations, etc., to ensure that the use of hazardous materials is in compliance with existing laws and regulations.

Through an interdisciplinary team effort, known or possible conditions which might contaminate aquifers or riparian systems would be outlined. All mines using hazardous materials would be required to institute measures to meet the requirements of all pertinent environmental laws as addressed in 43 CFR 3809.2-2. State and federal laws would be enforced.

WILD AND FREE-ROAMING HORSE AND BURRO MANAGEMENT

In addition to the management proposed in *Alternative 1*, the Black Mountains Ecosystem Management Area of Critical Environmental Concern would be designated in the Black Mountains Herd Management Area.

The Wild Free-Roaming Horse and Burro Act of 1971 (Public Law 92-195, as amended) established policy regarding management of wild free-roaming horses and burros on the public lands. Congress found wild horses and burros to be "living symbols of the historic and pioneer spirit of the West." These animals were identified as "an integral part of the natural system" in those areas where populations existed at the passage of the Act.

Three wild horse and burro herd management areas were identified in the Kingman Resource Area, based on population inventories following passage of the Act. These areas are the Big Sandy, the Cerbat and the Black Mountains herd management areas. Approximately 25 percent of the nation's wild burro population is found on BLM-administered lands in these three areas. Animals may not be relocated to areas where populations did not exist in 1971 (Public Law 92-195, Sec. 9). The herds are managed to assure their free-roaming character, health and self-sustaining ability in a thriving ecological balance.

Wild horse and burro management on public lands requires maintenance of a herd inventory, habitat monitoring and the removal and placement of excess animals to the public for adoption.

Detailed estimates of wild horse and burro forage allocations are presented in the Cerbat/Black Mountains and Hualapal-Aquarius grazing environmental impact statements. Both are on file at the BLM office in Kingman. These allocations will be carried forward except where modified when habitat monitoring indicates the need for changes.

The Black Mountains have been identified as one of the BLM's outstanding wild burro herd areas in the West (see area A and B on Map 9). The forage allocation established for deer, bighorn sheep, wild burros and livestock in the 1978 Cerbat/Black Mountains Grazing Environmental Impact Statement identified complex habitat use conflicts among these ungulates. To resolve these conflicts, available forage would be allocated for each species using the ratios in Table 10. This alternative allows for a realistic forage allocation based on actual use patterns. The forage allocation assures sufficient vegetation remains for protection of non-game animals, wilderness values and watersheds.

Forage allocation percentages will serve as a starting point for habitat monitoring. Where ungulate populations overlap, data would be compiled and analyzed through studies (research, monitoring, inventories, etc.) to identify the crucial elements of each species' habitat. This would include food, water, cover and space. As these elements are identified, forage allocation ratios would be refined. Monitoring will determine which ungulate species are using an area and determine the percentage of forage used by each species. Ungulate population adjustments would be made based on analysis of integrated habitat monitoring data and resource objectives and in consultation and coordination with other state and federal government agencies and interested publics. Removal of excess burros will be authorized based on forage utilization and integrated habitat studies in conjunction with forage allocation.

The Black Mountains Herd Management Area provides a unique opportunity for interpretation of the wild horse and burro program and for the public to



observe wild burros on public lands. Initially, roadside signs interpreting wild burro management and providing information on the species and its role in the West would be placed at viewing areas along the Historic Route 66 Back Country Byway. Other routes in the herd management area would be considered on a case-by-case basis. In addition, the BLM would consider the designation of a wild burro range after further review and study on a state-wide basis. Any designation proposal would be developed in consultation and coordination with other state and federal agencies and interested publics.

The Big Sandy Herd Management Area would be managed to support a genetically viable population of burros defined as a minimum of 50 effective breeding animals (see Map 9a). Integrated habitat monitoring would be developed to determine forage allocations necessary to support a thriving natural ecological balance among all ungulates using the Area. Population adjustments would be based on analysis of integrated monitoring data and resource objectives, and in consultation with other government agencies and interested publics. Riparian habitat objectives would be developed in new resource activity plans and revisions of existing plans.

The boundary of the Cerbat Herd Management Area would be identified using the initial 1974 inventory of wild horse and burro use areas recorded in the Cerbat Mountain Unit Resource Analysis (see Map 9a). This delineation would determine a manageable wild horse unit through identification of the resources needed to sustain a free-roaming population of wild horses. Additional resources such as water, escape cover and other crucial habitat components would also be analyzed. The BLM would seek to acquire suitable resource components existing in private ownership through exchange or purchase with willing sellers or through cooperative agreements with private landowners (see habitat acquisition areas on Map 9a). Approximately 39,000 acres is identified for acquisition and addition to the Cerbat Herd Management Area (see map 9a).

In some situations, wild horses are benefiting from privately owned water sources. The BLM recognizes that livestock permittees are under no obligation to continue to provide water to wild horses. If private waters are no longer available, the BLM will develop waters to keep the horses in their present range on public lands and support a viable wild horse population. In 1992, two BLM waters were developed to support the Cerbat horse herd.

In addition to determining and incorporating a manageable wild horse use area, the BLM would determine the population structure necessary for a viable herd. Integrated habitat monitoring would allow the BLM to determine forage allocations necessary to support a thriving natural ecological balance among all ungulates using the Cerbat Herd Management Area. Studies would also be initiated to identify the ecological niche currently being occupied by the Cerbat wild horses and to determine wild horse

TABLE 11 (continued)
 ALTERNATIVE 2 SUMMARY OF MANAGEMENT PRESCRIPTIONS FOR AREAS OF CRITICAL ENVIRONMENTAL CONCERN

Site Name and Designation	Values	Lands	Minerals	Range and Watershed Management	Cultural	Recreation and OHVs	Wildlife and T&E	Riparian	Vegetative Products
White-Margined Penstemon Reserve ACEC (17,489 acres)*	Crucial habitat for the white-margined penstemon and desert tortoise	Acquire private and state lands and minerals; confine new major rights-of-way to existing corridors	Require mining plans of operation and mandatory bonding for other than casual use; allow mineral leasing subject to stipulations	Manage livestock grazing to achieve white-margined penstemon desired plant community description objectives		Limit off-highway vehicle use to designated roads and trails; do not allow developed recreation facilities	Monitor white-margined penstemon and desert tortoise populations; support research on population dynamics; develop a coordinated resource management plan and include objectives for white-margined penstemon and desert tortoise		Prohibit removal of native plants except for salvage operations
Carrow-Stephens Ranches ACEC (542 acres)*	Excellent historic sites and paleontological resources	Confine rights-of-way to the area west of Highway 93; acquire non-federal surface and sub-surface; implement withdrawal decisions	Withdraw 524 acres from mineral entry, allow mineral leasing with no surface occupancy and do not allow mineral material disposals; require mining plans of operation and mandatory bonding, including casual use	Fence the area and remove it from consideration for public livestock grazing	Prepare a site project plan; plan inventories and interpretation of existing resources	Limit off-highway vehicle use to designated roads and trails; develop plans for recreation facilities and visitor use in a special recreation management area plan		File for water rights on springs and for instream flow	Prohibit removal of native plants
McCracken Desert Tortoise Habitat ACEC (21,740 acres)*	Excellent habitat for desert tortoise; scenic values; important backcountry recreation opportunities	Acquire private and state land and minerals; confine new major rights-of-way to existing corridors; do not allow communication sites	Require mining plans of operation and mandatory bonding for other than casual use; allow mineral leasing subject to stipulations	Manage ungulate grazing to achieve desert tortoise desired plant community description objectives		Limit off-highway vehicle use to existing roads, trails and washes; do not allow developed recreation facilities; plan for dispersed backcountry recreation	Conduct inventories and monitor habitat condition; assess impacts of ungulate grazing and make necessary adjustments in ungulate numbers and grazing season		Prohibit removal of native plants except for salvage operations

* Public land surface acres

(continued)

16

11-12

SPECIAL MANAGEMENT AREAS

Objectives

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

Plan Actions

Twelve areas of critical environmental concern are proposed, totaling 315,712 acres. The citizens of Meadview have stated that they want stronger protection for the Joshua Tree Forest-Grand Wash Cliffs than can be afforded by an area of critical environmental concern. They have requested that the BLM pursue national conservation area status to improve protection for this area. The National Park Service has also expressed strong support for this action (see Map 21). Another area of critical environmental concern (Carrow-Stephens) is also proposed as a special recreation management area, covering 542 acres. Areas of critical environmental concern would be managed under principles of multiple use. Existing and proposed uses would be evaluated for compatibility with area of critical environmental concern goals and objectives. Management strategies would be developed in activity plans to conform with management prescriptions outlined in each area. Existing uses not compatible with area of critical environmental concern values would be eliminated, mitigated or modified to lessen adverse impacts. It is the intent of the BLM to facilitate public access (ranchers, hunters, etc.) while protecting natural resource values. All actions will occur only after compliance with the National Environmental Policy Act.

Lands proposed for area of critical environmental concern now covered by wilderness have been dropped from consideration for area of critical environmental concern status. However, in these areas, management prescriptions to protect sensitive resources in wilderness will be included in wilderness management plans.

One area of critical environmental concern proposed in the draft Resource Management Plan (1990) has been dropped from further consideration in this alternative. The proposed Western Bajada Area of Critical Environmental Concern was identified to protect desert tortoise habitat and sensitive cultural resources. Further site-specific inventory indicated high levels of surface disturbance due to the proximity of Bullhead City. Future management would be hindered by continued use of the area and urban expansion. It would be almost impossible to protect the resources identified for special attention.

The lands adjacent to Bullhead City have now been identified for disposal to facilitate city expansion. Mitigation will be provided for the loss of desert tortoise habitat or cultural resources in any exchange (see map 13). These disposal lands would be used to acquire additional high-value desert tortoise habitat or significant cultural resources.

The Clay Hills Research Natural Area of Critical Environmental Concern southern boundary has been modified. Those parts of sections 21, 22, 26 and 27, T. 16.5 N., R. 17W. (south of Alamo Road) area excluded from the original area. The parts of sections 25 and 36, T. 16.5 N., R. 17 W. (south of Alamo Road) and the north half of section 1, T. 16 N., R. 17 W., are included in the area of critical environmental concern boundary.

The relevance and importance criteria which qualify each area to be an area of critical environmental concern are outlined in the following pages. Also shown are the goals, objectives and management prescriptions required to protect and improve the sensitive resources of each area of critical environmental concern. Table 11, which follows the detailed information for each area of critical environmental concern, summarizes the management prescriptions for each area of critical environmental concern, showing how the prescriptions would benefit or constrain important resources. Acquisitions for areas of critical environmental concern are found in Appendix 22.

Approximately 23,800 acres of federal minerals would be proposed for withdrawal from mineral entry (see Table 12) to protect sensitive resources in areas of critical environmental concern (see appendices 10 and 11). Sensitive plant and animal species, riparian areas and cultural resources are impacted by surface-disturbing activities which alter crucial habitat and destroy irreplaceable scientific information. The continuation of these activities has the potential to destroy the irreplaceable resources identified for protection in the areas of critical environmental concern.

Areas withdrawn from mineral entry are subject to valid existing rights. Area of critical environmental concern designations would require bonding and mining plans of operation for all activities (other than casual use) conducted under the 1872 Mining Law.

A total of 35,864 acres of non-federal minerals are within the withdrawn areas. They are not subject to withdrawal restrictions, but are proposed for acquisition. If these are acquired they would be withdrawn from mineral entry (see appendices 10 and 11).

For restrictions on mineral leasing and mineral material disposals (see tables 11 and 12).

Within special management areas, the total amount of federally controlled surface estate exceeds the total amount of federal mineral estate. Therefore, the total acreage of mineral withdrawals may be less than the total federally controlled surface acreage.



CHAPTER II

environmental concern. Develop desired plant community descriptions and include these in a coordinated resource management plan.

11. Evaluate all other land use authorizations for compatibility with goals and objectives of the area of critical environmental concern, including reclamation withdrawals.
12. Continue to monitor white-margined penstemon and desert tortoise populations.
13. Support research proposals designed to obtain information about population dynamics for white-margined penstemon and desert tortoise.
14. Develop a coordinated resource management plan.

CARROW-STEPHENS RANCHES AREA OF CRITICAL ENVIRONMENTAL CONCERN

RELEVANCE

This area contains rare historic cultural resources including an 1880s two-story adobe ranch house, numerous outbuildings, a system of canals and ditches and irrigated fields, a pioneer cemetery and a 1930s Depression-era cannery. Pliocene fossil deposits and prehistoric Indian sites are also found in or near the area.

IMPORTANCE

Irreplaceable historic resources, exemplary of late nineteenth century farming and ranching life in northwestern Arizona, have tremendous potential for recreational and educational development. The area contains physical evidence of 5-1/2 million years of life, revealed through unique fossils, prehistoric Indian sites and two pioneer homesteads.

GOALS

To protect, preserve and develop the historical, prehistorical and paleontological resources of the area.

OBJECTIVES

1. Minimize surface disturbance.
2. Resolve conflicts caused by incompatible activities on private and state lands which affect management of resources on neighboring public lands.
3. Provide a unique living history experience for the public.
4. Provide recreational and educational opportunities.
5. Obtain a sufficient water supply to develop and maintain the project.

MANAGEMENT PRESCRIPTIONS

1. Propose designation of 542 acres of public lands as an area of critical environmental concern.
2. Limit off-highway vehicle use to existing roads and trails.
3. Withdraw 542 acres from mineral entry, subject to valid existing rights, and do not allow mineral material disposals.
4. Require mining plans of operation and mandatory bonding for all mineral exploration and development activities, including casual use.
5. Allow mineral leasing with no surface occupancy.
6. Acquire 133 acres of private lands (surface and subsurface, see Appendix 22).
7. Fence the area of critical environmental concern and remove it from consideration of public livestock grazing.
8. Within the existing corridor, confine new rights-of-way to the area west of Highway 93.
9. Apply for a permit with the state and drill a well for irrigating pastures and orchards as part of a proposed living history exhibit.
10. Do not allow removal of native plants.
11. Evaluate all other land use authorizations for compatibility with goals and objectives of the area of critical environmental concern.
12. Promote cultural and paleontological resource inventories, research projects by qualified institutions and individuals and evaluate site information.
13. Develop an area of critical environmental concern plan to include a cultural resource project plan and a special recreation area management plan, specifically addressing educational brochures, interpretive materials for strategic locations, living history activities and recreation facilities.

McCRACKEN DESERT TORTOISE HABITAT AREA OF CRITICAL ENVIRONMENTAL CONCERN

RELEVANCE

This area has been identified as Category I habitat for the desert tortoise, as defined in the BLM's Rangewide Tortoise Habitat Management Plan. The Sonoran desert tortoise is a candidate for federal listing as an endangered species. Under the rangewide plan, category I areas have been identified as habitat essential for the continued existence of a viable population of desert tortoise. Aggressive, positive management of other desert tortoise habitat is needed.

The McCracken Mountains are typical, small, desert mountains with rugged boulder-strewn slopes rising above the surrounding bajadas. There are few roads into the area. The unique vegetation, jumbled granitic boulder piles which dominate the area, and limited vehicle access offer visitors both scenic views and back country recreation opportunities.

IMPORTANCE

The desert tortoise has existed for tens of thousands of years and now is being significantly impacted by pressures of an expanding human population, development in tortoise habitat and other competing uses. There are few places where a desert tortoise population is considered to be in a healthy, thriving, stable condition. The future of this species could depend on how well the BLM manages the remaining desert tortoise habitat.

In addition, the McCracken Mountains support an unusual plant community that is transitional between Mohave and Sonoran desert scrub. The species assemblage found in this area is known only from Arizona. Several characteristic species here are among the most distinctive dominants of the two desert regions, giving the area a very unusual vegetative aspect.

Concern for the rapid decline of the Mohave tortoise population has gained international attention, being closely monitored by such conservation groups as the Desert Tortoise Council, the Natural Resources Defense Council, the Environmental Defense Fund and the Defenders of Wildlife. Similar concern has been expressed regarding the Sonoran population. In response, the BLM developed the Desert Tortoise Rangewide Plan (1988). Management goals, objectives and prescriptions would conform to the rangewide plan.

GOAL

To promote long-term viability of a desert tortoise population.

OBJECTIVES

1. Achieve and maintain diverse plant communities and stable soils.
2. Minimize surface disturbance.
3. Resolve conflicts caused by incompatible activities on private and state lands which affect management of resources on neighboring public lands.
4. Minimize adverse interactions between people and tortoises.
5. Obtain adequate data on tortoise population dynamics to guide management decisions.

MANAGEMENT PRESCRIPTIONS

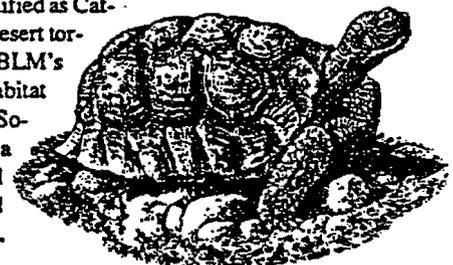
1. Propose designation of 21,740 acres of public land as an area of critical environmental concern.
2. Limit off-highway vehicle use to existing roads and trails.

3. Require mining plans of operation and mandatory bonding for all mineral exploration and development activities, other than casual use.
4. Allow mineral leasing, subject to appropriate stipulations designed to protect resource values.
5. Authorize mineral material disposal only when no reasonable management alternative can be identified and the disposal would not conflict with objectives for the area.
6. Acquire 11,024 acres of private, 320 acres of state lands (surface and subsurface) and 3,638 acres of nonfederal subsurface estate (see Appendix 22).
7. Do not allow developed recreation facilities; plan for dispersed recreation.
8. Confine new major rights-of-way to existing corridors.
9. Do not allow communication sites.
10. Develop and implement livestock management plans incorporating desired plant community descriptions to achieve goals and objectives of the area of critical environmental concern on the Chicken Springs 0021, Bateman Springs 0006 and Artillery Range 0003 allotments.
11. Manage ungulate grazing to ensure adequate and suitable perennial and ephemeral forage and cover for tortoises throughout the year, especially during the spring and late summer-fall. Adjust ungulate grazing through analysis of monitoring data which would consider forage allocation, use limits and season of use.
12. Conduct tortoise inventories, monitor habitat conditions and assess impacts of ungulate grazing.
13. Do not allow removal of native plants except for salvage operations.
14. Evaluate all other land use authorizations for compatibility with goals and objectives of the area of critical environmental concern.

POACHIE DESERT TORTOISE HABITAT AREA OF CRITICAL ENVIRONMENTAL CONCERN

RELEVANCE

This area has been identified as Category I habitat for the desert tortoise, as defined in the BLM's Rangewide Tortoise Habitat Management Plan. The Sonoran desert tortoise is a candidate for federal listing as a threatened or endangered species.



ALTERNATIVE 2 SUMMARY OF MANAGEMENT PRESCRIPTIONS FOR AREAS OF CRITICAL ENVIRONMENTAL CONCERN

Site Name and Designation	Values	Lands	Minerals	Range and Watershed Management	Cultural	Recreation and OHVs	Wildlife and T&E	Riparian	Vegetative Products
White-Margined Penstemon Reserve ACEC (17,489 acres)*	Crucial habitat for the white-margined penstemon and desert tortoise	Acquire private and state lands and minerals; confine new major rights-of-way to existing corridors	Require mining plans of operation and mandatory bonding for other than casual use; allow mineral leasing subject to stipulations	Manage livestock grazing to achieve white-margined penstemon desired plant community description objectives		Limit off-highway vehicle use to designated roads and trails; do not allow developed recreation facilities	Monitor white-margined penstemon and desert tortoise populations; support research on population dynamics; develop a coordinated resource management plan and include objectives for white-margined penstemon and desert tortoise		Prohibit removal of native plants except for salvage operations
Carrow-Stephens Ranches ACEC (542 acres)*	Excellent historic sites and paleontological resources	Confine rights-of-way to the area west of Highway 93; acquire non-federal surface and sub-surface; implement withdrawal decisions	Withdraw 524 acres from mineral entry, allow mineral leasing with no surface occupancy and do not allow mineral material disposals; require mining plans of operation and mandatory bonding, including casual use	Fence the area and remove it from consideration for public livestock grazing	Prepare a site project plan; plan inventories and interpretation of existing resources	Limit off-highway vehicle use to designated roads and trails; develop plans for recreation facilities and visitor use in a special recreation management area plan		File for water rights on springs and for instream flow	Prohibit removal of native plants
McCracken Desert Tortoise Habitat ACEC (21,740 acres)*	Excellent habitat for desert tortoise; scenic values; important backcountry recreation opportunities	Acquire private and state land and minerals; confine new major rights-of-way to existing corridors; do not allow communication sites	Require mining plans of operation and mandatory bonding for other than casual use; allow mineral leasing subject to stipulations	Manage ungulate grazing to achieve desert tortoise desired plant community description objectives		Limit off-highway vehicle use to existing roads, trails and washes; do not allow developed recreation facilities; plan for dispersed backcountry recreation	Conduct inventories and monitor habitat condition; assess impacts of ungulate grazing and make necessary adjustments in ungulate numbers and grazing season		Prohibit removal of native plants except for salvage operations

* Public land surface acres

(continued)

Table 12
Alternative 2 Mineral Closures

Name	Closed to Mineral Material Disposals	Withdrawn from Mineral Entry	Mineral Leasing No Surface Occupancy	Withdrawn from Mineral Leasing
Joshua Tree Forest - Grand Wash Cliffs	0	0	0	0
Black Mountains	0	0	0	0
Wright-Cottonwood Creeks Riparian and Cultural	4,570	4,570	4,570	0
Hualapai Mountain	2,186	2,186	2,186	0
White-Margined Penstemon	0	0	0	0
Carrow-Stephens Ranches	542	542	542	0
McCracken Desert Tortoise Habitat	0	0	0	0
Poachie Desert Tortoise Habitat	0	0	0	0
Aubrey Peak Bighorn Sheep Habitat	0	0	0	0
Burro Creek Riparian and Cultural	5,160	5,160	5,160	0
Clay Hills Research Natural Area	1,114	1,114	0	1,114
Three Rivers Riparian	10,228	10,228	10,228	0
Campgrounds	500	500	500	0
Total Public Land Acres*	24,300	24,300	23,186	1,114

* The acreages were obtained from the Geographic Information System. Margin of error is \pm one percent.

APPENDIX I

**DECISION RECORD FOR THE WHITE CANYON
PLAN AMENDMENT AND ENVIRONMENTAL ASSESSMENT**



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Tucson Field Office
12661 East Broadway
Tucson, AZ 85748-7208
(520) 722-4289

In reply refer to:
1600(060)

April 16, 1998

Dear Interested Party:

Enclosed is a copy of the **Decision Record** for the White Canyon Plan Amendment and Environmental Assessment (EA) for the Phoenix and Safford District Resource Management Plans (RMP).

Thank you for providing comments during the preparation of the EA-level plan amendment. This decision approves a portion of the proposed plan amendment (February 1996), specifically for the designation and management of the White Canyon Area of Critical Environmental Concern (ACEC). The document does not adopt any decisions relating to proposed changes in land tenure designations from retention to disposal by exchange. This action amends the Phoenix RMP but not the Safford District RMP.

Thanks you for your participation and interest in this process. If you have any questions, call the Project Manager, Shela McFarlin at (602) 417-9568.

Sincerely,

Jesse Juen
Field Manager

Enclosure:
Decision Record

DECISION RECORD
for the White Canyon Plan Amendment

EA Name/Number: PROPOSED WHITE CANYON PLAN AMENDMENT AND ENVIRONMENTAL ASSESSMENT for the Phoenix and Safford District Resource Management Plans, AZ-024-95-039

BLM Office: Tucson Field Office

This Decision Record amends the Phoenix RMP but has no effect on the Safford District RMP.

Decision: It is my decision to approve the following parts of the Proposed White Canyon Plan Amendment and the management prescriptions defined therein.

The White Canyon Area of Critical Environmental Concern (ACEC) designation will be modified as follows:

- 300 non-wilderness federal acres identified in the Phoenix RMP will be retained as the White Canyon ACEC (as mapped on page 9 of the EA; mainly within T3S, R12E, Section 23, NE 1/4, approximately 140 acres and Section 25, NW 1/4, approximately 160 acres);
- 1,620 wilderness acres formerly designated as part of the ACEC in the Phoenix RMP will continue to be managed as wilderness under all appropriate guidelines but will cease to be designated as part of the White Canyon ACEC;
- BLM will seek to acquire 480 acres in Section 24 (in T3S, R12E but excluding the SE 1/4) to be managed as part of the White Canyon ACEC. Acquisition will be from the State of Arizona or subsequent land owners through appropriate mechanisms such as donation, friendly condemnation or exchange.
- New management prescriptions will replace the Phoenix RMP management actions ascribed to the White Canyon ACEC. A coordinated resource management plan will be completed. Motorized travel will be limited to designated roads and trails. Surface occupancy for oil and gas leasing will be prohibited. The plan will evaluate whether any ACEC areas not already under mining claims should be withdrawn.

That portion of the proposed plan amendment intended to change land tenure designations of the identified parcels (the "subject lands") from retention to disposal by exchange have been set aside, and will be reconsidered within the Asarco Ray Land Exchange/Plan Amendment EIS under preparation.

Protest Resolution:

Three protest letters were received from the Sierra Club, Southwest Center for Biodiversity and the

Huachuca Hiking Club. The issues identified in the protests pertain principally to the land tenure decisions in the proposed plan amendment. The BLM responses to the three protest letters in May 1997 indicated that the protest issues had become moot. That is, ASARCO Incorporated, during the protest resolution period, requested that BLM consider an expanded exchange with significant increases in the selected lands acres and appropriate changes in the offered lands package. BLM agreed to process the expanded exchange proposal and to combine a new plan amendment covering the original and expanded exchange selected lands (excluding 637 acres in Casa Grande) into the proposed exchange EIS.

Alternatives Considered:

Four plan amendment alternatives were analyzed: the Preferred Alternative, the Asarco Proposed Action Alternative, the Non-Wilderness ACEC and Public Access Alternative, and the No-Action Alternative.

The Preferred Alternative (the Proposed Plan Amendment) retains 300 non-wilderness federal acres currently managed as the White Canyon ACEC for special management of riparian, scenic and cultural values. If 480 acres in Section 24 are obtained by BLM in the future, these acres (all but the SE 1/4 of Section 24) are considered to be ACEC and will be managed under ACEC prescriptions. Since 1,620 acres of the original ACEC are now wilderness and managed under the Desert Wilderness Act of 1990, this alternative drops the wilderness acres from the ACEC.

The Asarco Proposed Action would have permitted all selected lands to be disposed of through exchange---once evaluated through a NEPA process. This would have included 160 acres of the White Canyon ACEC. The White Canyon ACEC would have no longer existed as an area for special management attention.

The Non-Wilderness ACEC and Public Access Alternative would have reduced the amount of public lands available for exchange by 1,280 surface acres and would have retained the White Canyon ACEC on 300 acres. This alternative was designed in response to public concerns about the White Canyon ACEC and about trail access through T3S, R12E, Sections 25 and 26.

The No Action Alternative stated the existing management situation that is presented within the Phoenix and Safford District RMPs. Its adoption would have meant no changes to the current RMPs and the land exchange could not have been further evaluated by BLM. The White Canyon ACEC would have remained designated with 300 non-wilderness and 1,620 wilderness acres. Mining, recreation and other multiple-use management actions that were provided for in the RMPs would not have changed.

Rationale for Decision:

The decision responds to public issues identified through a scoping period and through public review of the draft plan amendment, and is based on the finding of no significant impacts (FONSI) and supporting environmental assessment. An environmental impact statement is not required for the plan

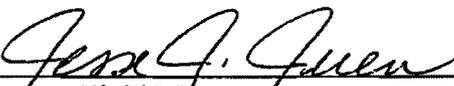
amendment decisions which consider the White Canyon ACEC. As indicated above, the land tenure decisions pertaining to disposal by exchange are being set aside and will be combined into the exchange EIS.

The Federal Land Policy and Management Act (FLPMA) requires the identification and management of areas of critical environmental concern (ACECs) as part of the land use planning by the agency (Sections 102, 103, 201 and 202). The White Canyon ACEC values were identified as part of the Phoenix RMP for important scenic, cultural and riparian values. Retaining the 300 non-wilderness acres of the ACEC will afford special management attention for these values especially in the likelihood of mining exploration or development and increased recreational use of the area. Mining activities will require a plan of operation through the 43 CFR 3809 regulations affording an opportunity to evaluate such actions on these values. The BLM will seek to acquire an additional 480 acres of state land (current ownership) to expand protection and management of the ACEC values, especially the riparian habitat. No change in management practices results from deleting 1,620 acres of wilderness ACEC acres from the White Canyon ACEC since these are already managed under the more stringent wilderness guidelines.

Implementation:

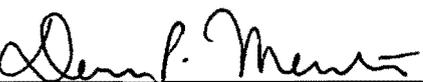
A coordinated resource management plan will be completed which includes the White Canyon ACEC and will include these management prescriptions for the ACEC: motorized travel will be limited to designated roads and trails; surface occupancy for oil and gas leasing will be prohibited; and, the plan will evaluate whether any ACEC areas not already under mining claims should be withdrawn.

Recommended by:


Tucson Field Manager

4/6/98
Date

Approved by:


Arizona State Director

4/6/98
Date

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

(AZ-917/AZ-060; AZA 28350)

Notice of Availability of the Decision Record for the White Canyon Plan Amendment/
Environmental Assessment for the Phoenix Resource Management Plan, Pinal County,
Arizona.

AGENCY: Bureau of Land Management, Interior.

ACTION: Notice of Availability.

SUMMARY: The State Director has approved that portion of the proposed plan amendment for the designation and management of the White Canyon Area of Critical Environmental Concern (ACEC). In compliance with the Federal Land Policy and Management Act of 1976, as amended, and Section 102(2)(c) of the National Environmental Policy Act of 1969, the plan amendment revises designation and management decisions made through the Phoenix Resource Management Plan (RMP). The proposed modification to land tenure designations have been set aside and will be integrated with an environmental impact statement under preparation for the proposed Ray Land Exchange.

FOR FURTHER INFORMATION, CONTACT: Shela McFarlin, Project Manager, Bureau of Land Management, Arizona State Office, 222 North Central Avenue, Phoenix, AZ 85004, or telephone (602) 417-9568.

SUPPLEMENTAL: The Decision Record will amend the Phoenix RMP to modify the White-Canyon ACEC designation as follows: 1) 300 non-wilderness federal acres will be retained as the White Canyon ACEC (within T3S, R12E, Section 23, NE 1/4 and Section 25, NW 1/4); 2) 1,620 wilderness acres formerly designated as ACEC will continue to be managed as wilderness under all appropriate guidelines, but will cease to be designated as ACEC; and, 3) BLM will seek to acquire 480 acres in Section 24 (T3S, R12E) to be managed upon

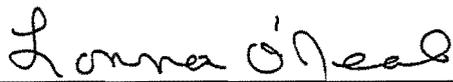
acquisition as ACEC. Acquisition will be from the state of Arizona or subsequent land owners through appropriate mechanisms such as donation, friendly condemnation or exchange. New ACEC management prescriptions will replace the Phoenix RMP management actions and a coordinated resource management plan will be completed. Motorized travel will be limited to designated roads and trails. Surface occupancy for oil and gas leasing will be prohibited. The plan will evaluate whether any ACEC areas not already under mining claims should be withdrawn.

Public reading copies may be reviewed at the following BLM locations:

Arizona State Office, 222 North Central Avenue, Phoenix, Arizona 85004

Tucson Field Office, 12661 East Broadway, Tucson, Arizona 85748-7208

Phoenix Field Office, 2015 West Deer Valley Road, Phoenix, Arizona 85027

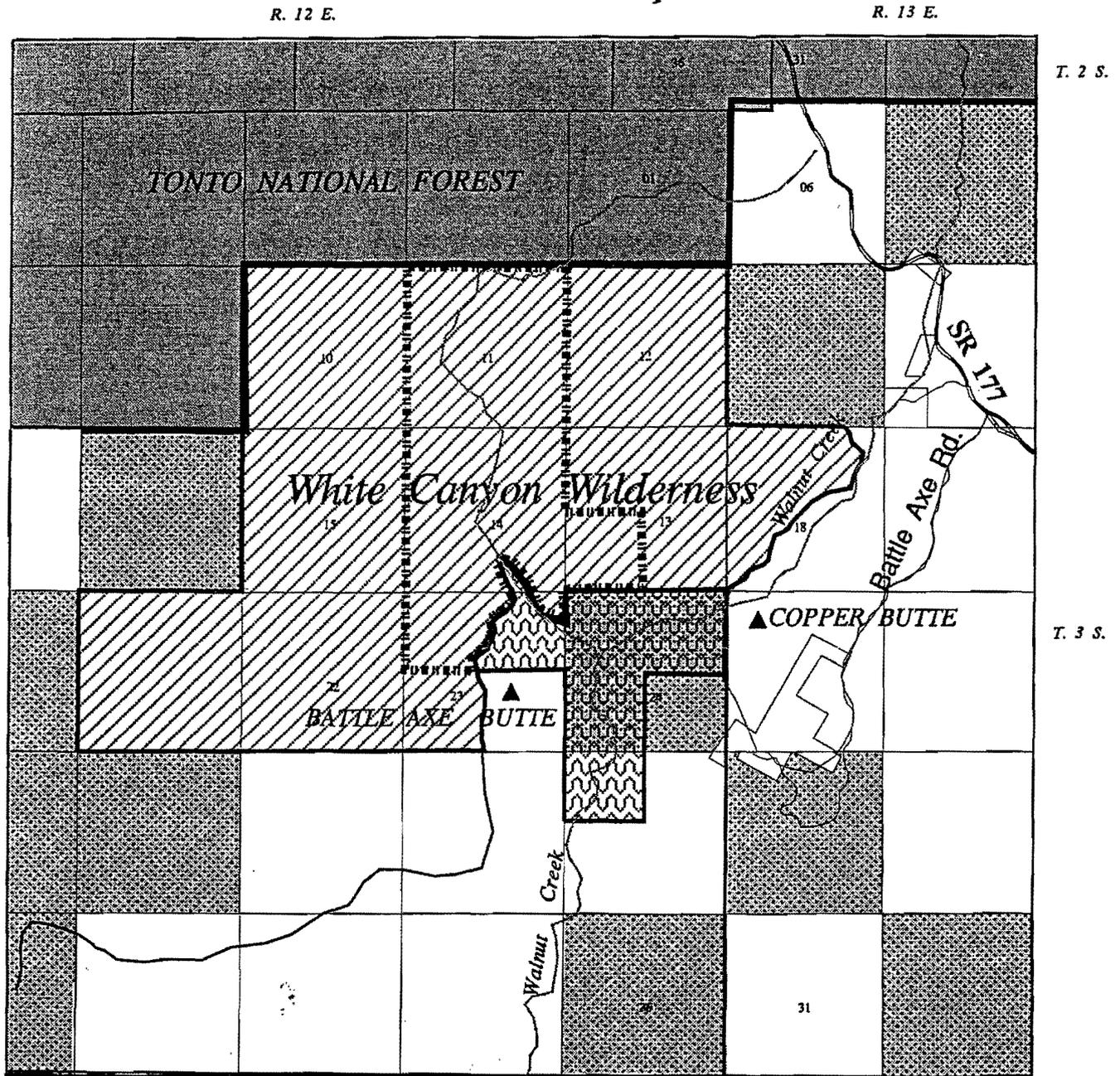


Lonna O'Neal
Acting State Director

4/17/98

Date

WHITE CANYON AREA OF ENVIRONMENTAL CONCERN



LEGEND

-  Area of Critical Environmental Concern Designation Removed
-  Area of Critical Environmental Concern
-  White Canyon Resource Conservation Area
-  White Canyon Wilderness
-  BLM Lands
-  Private Lands
-  State Lands
-  Forest Service Lands



ACRONYMS & ABBREVIATIONS

ACEC	Area of Critical Environmental Concern	LTMA	Long-Term Management Area
ADEQ	Arizona Department of Environmental Quality	MGCRMA	Middle Gila Cultural Resource Management Area
ADOT	Arizona Department of Transportation	MPO	Mining Plan of Operations
ADWR	Arizona Department of Water Resources	MSHA	Mine Safety and Health Administration
AGFD	Arizona Game and Fish Department	NAGPRA	Native American Graves Protection and Repatriation Act
AIRFA	American Indian Religious Freedom Act	NEPA	National Environmental Policy Act
AMA	Active Management Areas	NCA	National Conservation Area, including RNCAs
AMLRA	Arizona Mined Land Reclamation Act	NHPA	National Historic Properties Act
APP	Aquifer Protection Permit/Program	NOA	Notice of Availability
ARS	Arizona Revised Statutes	NOD	Notice of Decision
ASCI	Asarco Santa Cruz Inc.	NOEP	Notice of Exchange Proposal
ASLD	Arizona State Land Department	NOI	Notice of Intent
ATI	Agreement to Initiate	NPDES	National Pollutant Discharge Elimination System
AUM	Animal Unit Month	NPS	National Park Service
AWQS	Arizona Water Quality Standards	NRHP	National Register of Historic Places
BADCT	Best Available Demonstrated Control Technology	OSHA	Occupational Safety and Health Administration
BE	Biological Evaluation	PILT	Payments in Lieu of Taxes
BIA	Bureau of Indian Affairs	PM₁₀	Particulate Matter of 10 microns or less in aerodynamic diameter
BLM	Bureau of Land Management	POS	Production Operation and Support Foreseeable Use
BMP	Best Management Practices	RCRA	Resource Conservation and Recovery Act
CB	Copper Butte	RCA	Resource Conservation Area
CEQ	Council on Environmental Quality	RM	Ray Mine
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980	RMP	Resource Management Plan
CH	Chilito Hayden	RNCA	Riparian National Conservation Area, a subset of NCA
CFR	Code of Federal Regulations	ROD	Record of Decision
CFS	Cubic Feet per Second	ROM	Run-of-Mine
CG	Casa Grande	ROW	Right-of-Way
CO	Carbon Monoxide	SCJV	Santa Cruz Joint Venture
COE	Corps of Engineers	SO₂	Sulfur Dioxide
CWA	Clean Water Act	SPCC	Spill Prevention Control and Countermeasure Plan
DEIS	Draft Environmental Impact Statement	SX/EW	Solution Extraction/Electrowinning
DOI	Department of Interior	SWPPP	Storm Water Pollution Prevention Plan
EA	Environmental Assessment	TCP	Traditional Cultural Property
EIS	Environmental Impact Statement	TDS	Total Dissolved Solids
EPA	Environmental Protection Agency	TFO	Tucson Field Office
ESA	Endangered Species Act	TRANS	Transition Foreseeable Use Category
EXIST	Existing Mining Foreseeable Use Category	T & E	Threatened and Endangered
FEIS	Final Environmental Impact Statement	USC	United States Code
FLEFA	Federal Land Exchange Facilitation Act	USDA	U.S. Department of Agriculture
FLPMA	Federal Land Policy and Management Act	USFS	U.S. Forest Service
FONSI	Finding of No Significant Impact	USFWS	U.S. Fish and Wildlife Service
FR	Federal Register	USGS	U.S. Geological Survey
GRRMA	Gila River Riparian Management Area	W&SR	Wild and Scenic Rivers Act
INTER	Intermittent Foreseeable Use Category	WSCA	Wildlife Species of Concern in Arizona
KM	Kilometers	VRM	Visual Resource Management
KV	kiloVolt		
LRP	Long-Range Prospect Foreseeable Use Category		