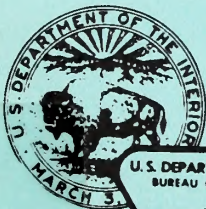




DRAFT

Extra

ENVIRONMENTAL ASSESSMENT WILDERNESS STUDY AREAS IN THE LAS CRUCES DISTRICT



U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LAS CRUCES DISTRICT OFFICE

MARCH 1983





United States Department of the Interior

IN REPLY REFER TO

BUREAU OF LAND MANAGEMENT
DISTRICT OFFICE
P. O. Box 1420
Las Cruces, New Mexico 88004

BLM Library
D-553A, Building 50
Denver Federal Center
P. O. Box 25047
Denver, CO 80225-0047

To All Interested Agencies, Officials, Public Groups, and Individuals:

Enclosed is a copy of the Draft Environmental Assessment (EA) for nine of the Bureau of Land Management's (BLM) Wilderness Study Areas (WSAs) in the Las Cruces District. The District has 14 WSAs located in Dona Ana, Luna, Grant, Hidalgo and Otero Counties, New Mexico. This Draft EA is being released for public comment simultaneously with other EAs prepared for WSAs in the BLM New Mexico District Offices of Albuquerque, Socorro, and Roswell.


This Draft EA has been prepared as part of a statewide BLM wilderness study process. This document provides the first opportunity for public comment on the wilderness suitability recommendations of the Area Managers. These recommendations are subject to refinement or change by the District Manager in the Final EA, the BLM New Mexico State Director in the statewide Draft Environmental Impact Statement (DEIS), and the Secretary of the Interior in the Final EIS/Wilderness Study Report. During this portion of the wilderness study process, the Area Managers are asking for comments on their recommendations and alternatives. They are particularly interested in specific information about individual WSAs.

The Las Cruces District is divided into two Resource Areas, the Las Cruces/Lordsburg Resource Area (LCLRA) and the White Sands Resource Area (WSRA). Please submit your comments by May 31, 1983 to the appropriate Area Manager.

William J. Harkenrider, Jr.
Area Manager
Las Cruces/Lordsburg Resource Area
P. O. Box 1420
Las Cruces, NM 88004
Phone: (505) 523-5571

Larry Nunez
Area Manager
White Sands Resource Area
P. O. Box 1420
Las Cruces, NM 88004
Phone: (505) 523-5571

During this review you are encouraged to contact the Area Managers for additional information. Based upon the public comments, the recommendations made by the Area Managers will be re-evaluated and are subject to my concurrence in the Final EA.


Daniel C. B. Rathbun
District Manager
Las Cruces District



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CHAPTER 1

PURPOSE AND NEED

NEED FOR THE PROPOSAL

The Federal Land Policy and Management Act (FLPMA) of 1976 mandated the Bureau of Land Management (BLM) to examine the wilderness potential of certain areas of public land. The wilderness review provision of FLPMA, Section 603, directs the BLM to conduct an inventory to identify all roadless areas of 5,000 acres or more that have wilderness characteristics. These areas are called Wilderness Study Areas (WSAs). Once WSAs have been identified, they are studied through BLM's planning system to determine whether each is suitable for preservation as wilderness or is more suitable for other uses. The findings of these studies lead to recommendations, through the Secretary of the Interior and the President, to Congress. Only Congress has the authority to designate public land as wilderness.

THE BLM NEW MEXICO WILDERNESS STUDY PLANNING PROCESS

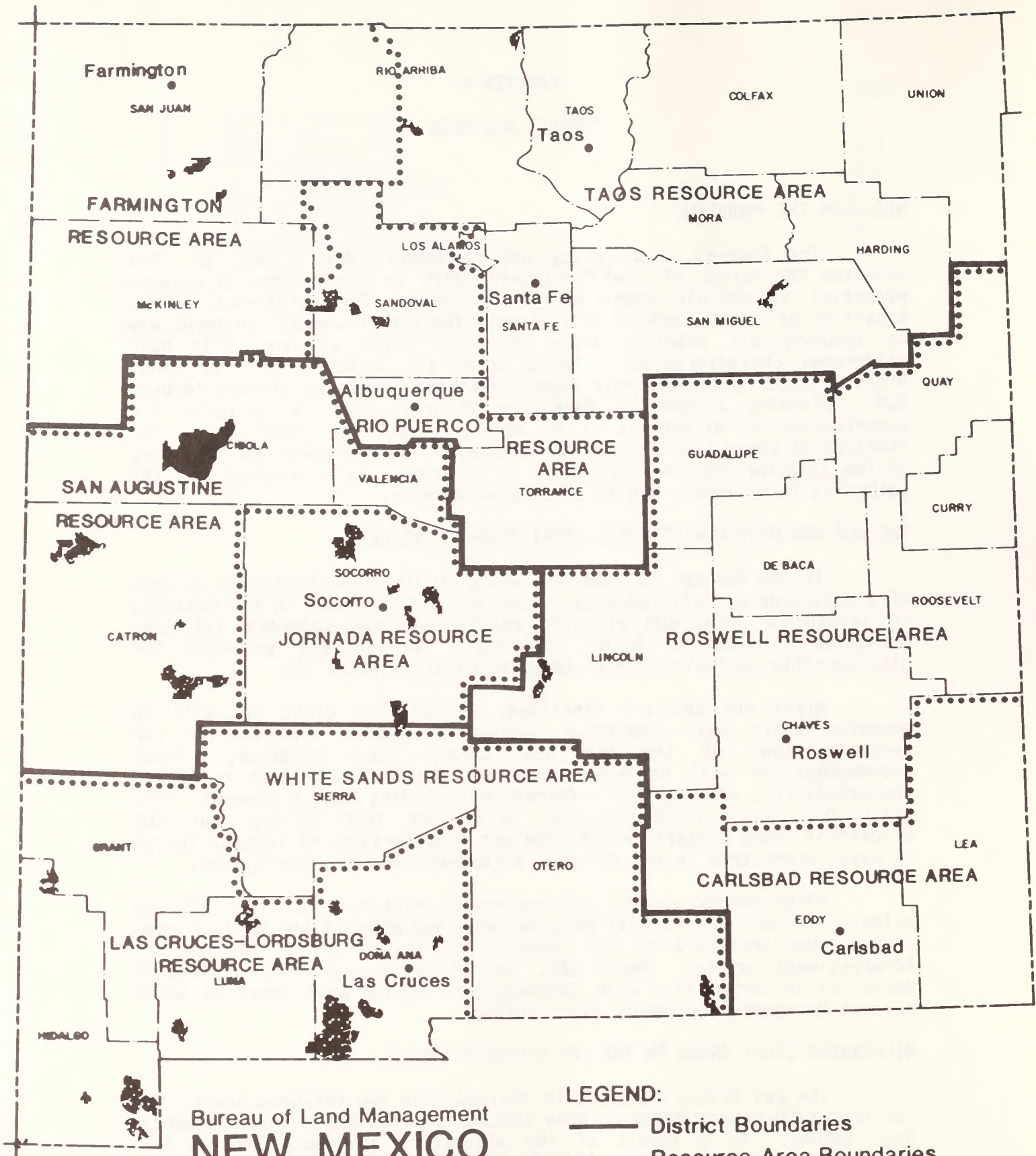
In New Mexico, 33 WSAs are being studied simultaneously as part of a statewide planning process. (See Map 1-1 for WSAs in New Mexico.) In accordance with BLM planning regulations the Category III plan amendment process is being followed. The process provides for site-specific analysis through preparation of district EAs.

After the EAs are finalized, a statewide draft EIS will be prepared which will summarize cumulative impacts and include the recommendations of the BLM New Mexico State Director. These recommendations will be based upon the District and Area Managers' recommendations and any new information including public comment. The State Director's recommendations will take into account the BLM Wilderness Study Criteria which requires consideration of representation of basic ecosystems in the National Wilderness Preservation System.

After public comment and subsequent revisions, a Final EIS and Wilderness Study Report will be prepared. Recommendations will be made through the Secretary of the Interior to the President followed by Congressional action. These EAs, the statewide EIS, and subsequent decisions in conjunction with Congressional action will serve to amend current Management Framework Plans (MFPs).

WILDERNESS STUDY AREAS IN THE LAS CRUCES DISTRICT

The Las Cruces District is divided into two Resource Areas, the Las Cruces/Lordsburg Resource Area (LCLRA) and the White Sands Resource Area (WSRA). As a result of the wilderness inventory process and subsequent policy decisions, 14 WSAs have been identified in these two Resource Areas. Maps 1-1 and 1-2 show the general locations of the two Resource Areas and the 14 WSAs.




Bureau of Land Management
**NEW MEXICO
 WILDERNESS
 STUDY AREAS 1982**

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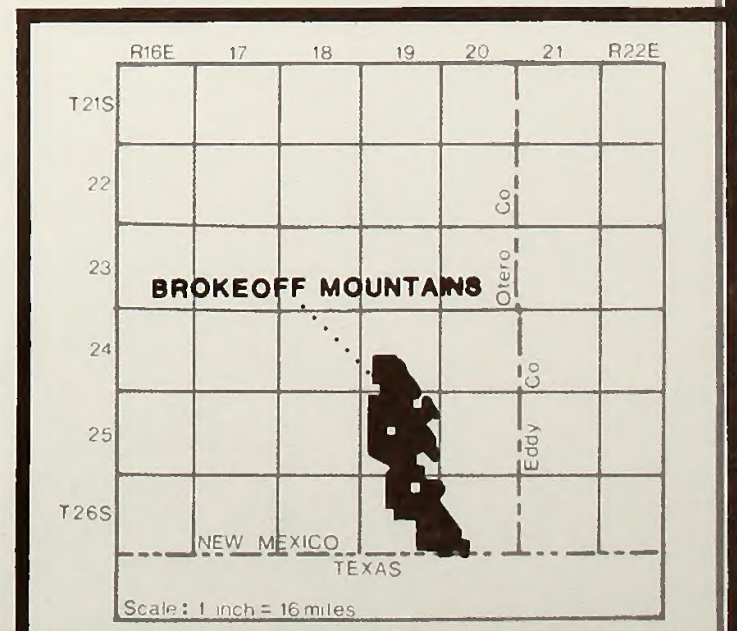
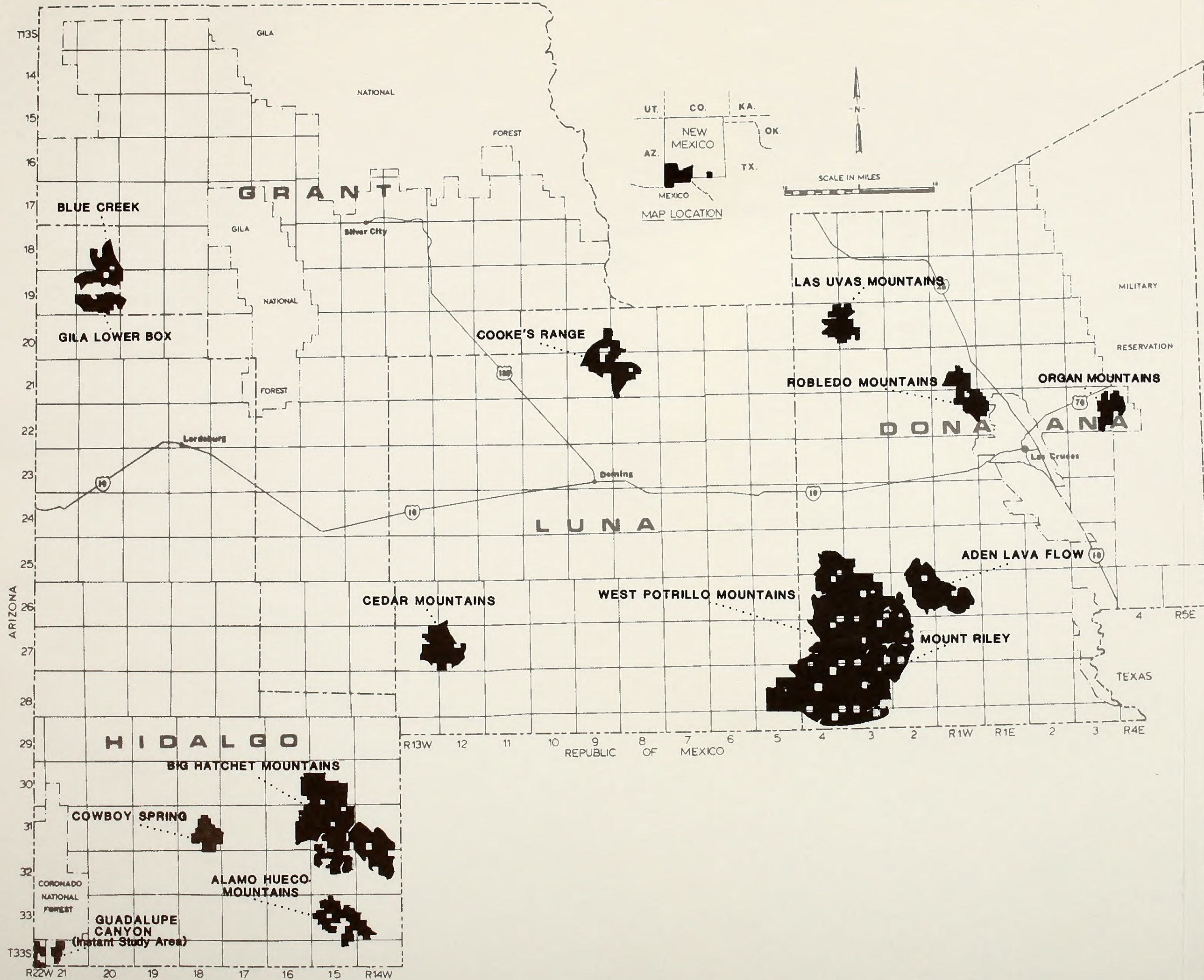
- District Boundaries
- Resource Area Boundaries
- BLM Wilderness Study Areas

**WILDERNESS STUDY AREAS
IN THE
LAS CRUCES DISTRICT**

LEGEND

-  Wilderness Study Area (WSA)
- BLUE CREEK** WSA NAME

SOURCE: BLM Las Cruces District Files, 1982



Twelve WSAs and the Guadalupe Canyon Instant Study Area (ISA) were identified in the LCLRA. The Guadalupe Canyon ISA is adjacent to the U. S. Forest Service Roadless Area Review and Evaluation II (USFS RARE II) Further Planning Area, Bunk Robinson Peak. At present, study efforts are being conducted jointly by the Coronado National Forest and the BLM Las Cruces District. Recommendations regarding the suitability or nonsuitability of Guadalupe Canyon are displayed in the Draft Environmental Impact Statement (DEIS) prepared as part of the Coronado National Forest Land Use Plan. The DEIS was released for public review on November 15, 1982.

On December 30, 1982, the Secretary of the Interior published a notice in the Federal Register amending previous wilderness policies in accordance with three Interior Board of Land Appeals decisions. As a result of the amended policy, the following three categories of WSAs were released from wilderness review.

1. Areas of less than 5,000 acres.
2. Areas dependent on other Federal agency wilderness proposals.
3. Areas with "split estate" where the government controls the surface but not the subsurface mineral estate.

In the LCLRA, this policy decision resulted in changes in the boundaries of six WSAs. In two of the WSAs, the Organ Mountains and Robledo Mountains, the exclusion of split estate lands resulted in insignificant boundary changes. In the other four WSAs (Aden Lava Flow, Alamo Hueco Mountains, Big Hatchet Mountains, and West Potrillo Mountains), the exclusion of split estate lands resulted in significant boundary changes. These changes will be addressed in a restudy of the wilderness potential of the four affected WSAs and included in a separate supplemental Draft EA at a later date.

Two WSAs, the Culp Canyon and Brokeoff Mountains, were identified in the WSRA. Wilderness study of Culp Canyon has been deferred, because it is located in the northern part of the Army-controlled McGregor Range. Currently, legislation is being proposed to withdraw the range for military uses. Future wilderness study of Culp Canyon is dependent on the restrictions and boundaries of the final withdrawal. The Secretary of the Interior's policy decision of December 30, 1982 resulted in an insignificant boundary change in the Brokeoff Mountains WSA.

Two other units in the WSRA, the Sacramento Escarpment and Guadalupe Escarpment were dropped from wilderness review. Both units were comprised of small parcels of public land less than 5,000 acres. These two BLM units were identified for wilderness review in conjunction with contiguous USFS RARE II areas scheduled for further wilderness study. The contiguous RARE II areas were released from further wilderness study in the New Mexico Wilderness Act of 1980 (Public Law 96-550). Since the Sacramento Escarpment and Guadalupe Escarpment units did not meet the criteria for a WSA without consideration of the contiguous USFS RARE II areas, the BLM released these two units from further wilderness review.

The WSAs in the Las Cruces District were studied to determine their suitability for wilderness designation. The results of that study are documented in Wilderness Analysis Reports (WARs) for each WSA. This Draft EA (DEA) is designed to tie together nine of the District's WARs and display alternatives and impacts on a district-wide basis. Appendices A through I contain the nine WARs summarized in this DEA. Summaries of these discussions are presented in Tables 2-2, 3-1, 3-2 and 4-1 of this EA. The 14 WSAs in the Las Cruces District are shown on Table 1-1.

TABLE 1-1

LANDS UNDER WILDERNESS REVIEW IN THE LAS CRUCES DISTRICT

Area Name	Area Number	Acreage ^{a/}
<u>Las Cruces/Lordsburg Resource Area</u>		
Aden Lava Flow ^{b/}	NM-030-053	23,857
Alamo Hueco Mountains ^{b/}	NM-030-038	10,746
Big Hatchet Mountains ^{b/}	NM-030-035	55,870
Blue Creek	NM-030-026	14,096
Cedar Mountains	NM-030-042	14,911
Cooke's Range	NM-030-031	19,608
Cowboy Spring	NM-030-007	6,699
Gila Lower Box	NM-030-023	8,555
Las Uvas Mountains	NM-030-065	11,067
Organ Mountains	NM-030-074	7,144
Robledo Mountains	NM-030-063	12,811
West Potrillo Mountains and Mount Riley ^{b/}	NM-030-052	155,105
<u>White Sands Resource Area</u>		
Brokeoff Mountains	NM-030-112	30,103
Culp Canyon ^{b/}	NM-030-152	10,937

Source: BLM Las Cruces District Office Files, 1982.

Notes: a/The acreages shown are approximate and reflect corrections made during the wilderness study, therefore these acreages differ from the acreages published in the New Mexico Wilderness Study Area Decisions (November 1980).

b/These areas are not included in this Draft Environmental Assessment.

CHAPTER 2

ALTERNATIVES INCLUDING THE PREFERRED ALTERNATIVE

ALTERNATIVES

For each WSA, an All Wilderness and No Action (No Wilderness) Alternative is evaluated. The No Action (No Wilderness) Alternative represents management in accordance with the current BLM land use plans which would be in effect without wilderness designation. The current land use plans for each of the WSAs in the Las Cruces District are shown in Table 2-1.

In the Organ Mountains WSA and Gila Lower Box WSA, a No Wilderness Alternative was also evaluated. The No Wilderness Alternative is the alternative to amend the existing land use plan. In the existing Southern Rio Grande (SRG) Management Framework Plan (MFP), the decision was made to designate an area in the Organ Mountains as an Area of Critical Environmental Concern for visual resources. The No Wilderness Alternative represents amending the SRG MFP and managing the entire Organ Mountains WSA under no special designation. This alternative was included so that the entire range of alternatives for management of the Organ Mountains could be displayed. The Las Cruces/Lordsburg Management Framework Plan Amendment/Environmental Impact Statement (LC/L MFP Amendment/EIS) Proposed Action recommends that a portion of the Gila Lower Box WSA be managed under a special designation. This management scenario is analyzed in the No Wilderness Alternative for the Gila Lower Box WSA and represents amending the existing Gila MFP.

For two WSAs in the Las Cruces District, an Amended Boundary Alternative was evaluated. This alternative represents recommending a portion of the WSA suitable for wilderness designation. The Amended Boundary Alternative was evaluated where (1) an opportunity exists to reduce conflicts between wilderness and other resource uses or (2) an opportunity exists to improve the long-term manageability of the area as wilderness. Manageability takes into consideration non-Federal inholdings or non-Federal lands adjacent to the WSA, valid existing rights, man-made features, and identifiable boundaries.

The alternatives considered for each WSA in the Las Cruces District are displayed in Table 2-2.

PREFERRED ALTERNATIVE

The Preferred Alternative for each WSA is indicated on Table 2-2. The Preferred Alternative represents the recommendations of the Las Cruces-Lordsburg and White Sands Resource Area Managers. Appendices A through I contain more detailed discussions of the recommendations for each WSA.

TABLE 2-1
LAS CRUCES DISTRICT LAND USE PLANS

WSA Name	WSA Number	Current Land Use Plan
Blue Creek	NM-030-026	Gila MFP (1977) LC/L MFP Amendment/EIS ^{a/}
Cedar Mountains	NM-030-042	Hermanas MFP (1971) LC/L MFP Amendment/EIS
Cooke's Range	NM-030-031	LC/L MFP Amendment/EIS
Cowboy Spring	NM-030-007	Gila MFP (1977) LC/L MFP Amendment/EIS
Gila Lower Box	NM-030-023	Gila MFP (1977) LC/L MFP Amendment/EIS
Las Uvas Mountains	NM-030-065	Southern Rio Grande MFP (1981) LC/L MFP Amendment/EIS
Organ Mountains	NM-030-074	Southern Rio Grande MFP (1981) LC/L MFP Amendment/EIS
Robledo Mountains	NM-030-063	Southern Rio Grande MFP (1981) LC/L MFP Amendment/EIS
Brokeoff Mountains	NM-030-112	Mesa MFP (1974)

Source: BLM Las Cruces District Office Files, 1982

Note: ^{a/}The Las Cruces/Lordsburg Management Framework Plan Amendment/ Environmental Impact Statement (LC/L MFP Amendment/EIS) is in preparation. The Proposed Action and Alternatives will be published in draft form from the Spring of 1983 and decisions will be available in the Fall of 1983. The LC/L MFP Amendment/EIS deals with energy minerals leasing in Hidalgo, Luna, Grant, and Dona Ana Counties and grazing management in Hidalgo, Luna, and Grant Counties.

TABLE 2-2
SUMMARY OF ALTERNATIVES^{a/}

WSA/Acres	Preferred Alternative	All Wilderness	Amended Boundary (Partial Wilderness)	No Action (No Wilderness - Manage Under Existing Plan)	No Wilderness (Amend Existing Plan)
Blue Creek NM-030-026 14,096 acres	Recommend 14,096 acres unsuitable for wilderness designation.	Recommend 14,096 acres suitable for wilderness designation.	N/A	Same as Preferred Alternative.	N/A
Cedar Mountains NM-030-042 14,911 acres	Recommend 14,911 acres unsuitable for wilderness designation.	Recommend 14,911 acres suitable for wilderness designation.	N/A	Same as Preferred Alternative.	N/A
Cooke's Range NM-030-031 19,608 acres	Recommend 19,608 acres unsuitable for wilderness designation.	Recommend 19,608 acres suitable for wilderness designation.	N/A	Same as Preferred Alternative.	N/A
Cowboy Spring NM-030-007 6,699 acres	Recommend 6,699 acres unsuitable for wilder- ness designation.	Recommend 6,699 acres suitable for wilder- ness designation.	N/A	Same as Preferred Alternative.	N/A
Gila Lower Box NM-030-023 8,555 acres	Recommend 5,835 acres suitable for wilderness designation. Manage the remaining 2,720 acres under no special desig- nation in accordance with the Gila MFP and LC/L MFP Amendment/EIS.	Recommend 8,555 acres suitable for wilderness designation.	Same as Preferred Alternative.	Manage the entire 8,555 acres as described in the Gila MFP.	Manage 2,470 acres of the WSA under a special designation as prescribed in the LC/L MFP Amendment/ EIS. Manage the remainder of the area as described in the Gila MFP.
Las Uvas Mountains NM-030-065 11,067 acres	Recommend 11,067 acres unsuitable for wilderness designation.	Recommend 11,067 acres suitable for wilderness designation.	N/A	Same as Preferred Alternative.	N/A
Organ Mountains NM-030-074 7,144 acres	Recommend 7,144 acres suitable for wilderness designation.	Recommend 7,144 acres suitable for wilderness designation.	N/A	Designate 6,690 acres of the WSA as the Organ Mountains Scenic ACEC as described in the SRG MFP. The remaining acres would be managed under no special desig- nation in accordance with the SRG MFP and the LC/L MFP Amendment/EIS.	Recommend 7,144 acres unsuitable for wilderness designa- tion. Manage the entire WSA under no special designation.
Robledo Mountains NM-030-063 12,811 acres	Recommend 12,811 acres unsuitable for wilderness designation.	Recommend 12,811 acres suitable for wilderness designation.	N/A	Same as Preferred Alternative.	N/A
Brokeoff Mountains NM-030-112 30,103 acres	Recommend 30,103 acres unsuitable for wilder- ness designation.	Recommend 30,103 acres suitable for wilder- ness designation.	Recommend 11,635 acres suitable for wilderness designation. Manage the remaining 18,468 acres under no special designation in accor- dance with the Mesa MFP.	Same as Preferred Alternative.	N/A

Source: BLM Las Cruces District Wilderness Analysis Reports, 1982.

Note: ^{a/}See appendices for more detailed discussions of alternatives for each WSA.

CHAPTER 3

AFFECTED ENVIRONMENT

OVERVIEW OF THE LAS CRUCES DISTRICT

The Las Cruces District is located in southwestern and south-central New Mexico. The Las Cruces/Lordsburg Resource Area (LCLRA) consists of 2,923,789 acres of public land in Hidalgo, Grant, Luna, and Dona Ana Counties. The White Sands Resource Area (WSRA) consists of 1,754,074 acres of public land in Otero and Sierra Counties (excluding withdrawn lands on McGregor Range).

MAJOR LAND USES

Public land in the Las Cruces District represents a resource base which is utilized in several ways: livestock grazing and wildlife use, mining of minerals, and various recreational uses. These resource activities also occur on lands held in all types of ownership and under all forms of administration.

Grazing is the predominant land use in all counties. However, mining is a significant economic activity particularly in Grant and Hidalgo Counties. Among the mineral commodities produced are gold, silver, copper, lead, and zinc; and building stone, sand, and gravel. There is no present production of petroleum, natural gas, uranium, or coal in the District.

Several areas in the Las Cruces District have high potential for geothermal energy. The greatest potential is associated with the Rio Grande rift. The potential for direct use applications in the Las Cruces area is high. Several local industries are planning to develop geothermal resources for space and domestic water heating. New Mexico State University in Las Cruces is currently utilizing geothermal energy for direct use applications. Two commercial greenhouses are being heated with hot water in the Animas Valley, southwest of Lordsburg.

Outdoor recreation in the District consists of a wide range of sports and leisure-time activities, of which several occur on public land. Outdoor recreation activities include sightseeing, picnicking, camping, backpacking, hiking, four-wheeling, trail-biking, birdwatching, rockclimbing, rockhounding, sport shooting, horseback riding, and hunting.

SOCIAL AND ECONOMIC CONDITIONS

Introduction

Major trade and service centers for Dona Ana, Grant, Luna, and Hidalgo Counties are Las Cruces, Silver City, Deming, and Lordsburg, respectively. Otero County is served by Alamogordo, New Mexico and El

Paso, Texas. Because these counties are scattered, they do not form a cohesive social or economic region.

Social Conditions

Population

The affected counties exhibited varying population characteristics from 1960-80. The average annual percent change in population for this period of time did not exceed 4 percent in any of the counties.

There are five Standard Metropolitan Statistical Areas (SMSAs) with populations of 90,000 or more within an 8-hour drive (400 miles) of the WSAs. These SMSAs have a combined 1980 population of over 2.8 million people.

The counties that have WSAs appear to be sparsely populated with the major concentrations of people in Dona Ana County with a 25.2 population density per square mile. Hidalgo County is the most sparsely populated county with a 1.8 population density per square mile. Luna, Grant, and Otero Counties had a 5.3, 6.6, and 6.7 population density per square mile, respectively.

Local Attitudes and Perceptions

Residents in the counties that are sparsely populated (Grant, Hidalgo, Luna, and Otero Counties) exhibit attitudes and values typical of rural, ranch-oriented societies in the western United States. The rural character of the area is what some residents value most about their lifestyle. Specifically, they appreciate the western way of life, which includes among its components the following: small-town living with its customs of friendliness, neighborliness, and mutual aid; a love of the great outdoors; and adherence to traditional, conservative values (Mountain West Research 1975).

Dona Ana County contains vast rural areas but increased population pressures, the influence of the larger city, and tourism add a new element to the traditional rural perspective. Generally, those residents of Dona Ana County, primarily in Las Cruces, have migrated from other communities for education and employment opportunities, bringing with them their different values. However, some residents in Dona Ana County tend to hold the same rural attitudes and values as those residents in the sparsely populated counties (Harbridge House, Inc. 1978).

Economic Conditions

Although the Las Cruces District is rich in culture and natural resources, the area is considered economically poor. Low per capita income combined with housing, medical care, legal, and other human services have been shown to be substandard. Agriculture, ranching, mining, and government have traditionally been the primary activities, with tourism becoming a recent addition.

Income

The total per capita personal income in 1980 for each of the five counties that contain WSAs was below the \$7,878 per capita income for the State of New Mexico. In ranking the 32 counties in the State of New Mexico by total per capita personal income in 1980, Dona Ana County ranked twenty-second (\$6,328), Grant ranked fifteenth (\$7,477), Hidalgo ranked eleventh (\$7,848), Luna ranked nineteenth (\$6,985), and Otero ranked twentieth (\$6,920).

Employment

In 1980, the total employment for the five counties that contain WSAs was 59,164. The total employment for Dona Ana County was 30,642; Grant, 8,766; Hidalgo, 4,571; Luna, 2,155; and Otero, 13,030.

In 1980, the unemployment rate for Dona Ana County was 8.0 percent; Grant 7.1 percent; Hidalgo 4.3 percent; Luna 10.8 percent; and Otero 7.1 percent. The unemployment rate for the State of New Mexico was 7.4 percent (Bureau of Business and Economic Research 1982). Dona Ana and Luna Counties exceeded the state unemployment rate in 1980.

In June 1982, the unemployment rate for Grant County was 39.9 percent. This is due primarily to the massive layoffs experienced in the mining industry. The total layoffs as of June 1982 exceeded 2,000 people in the mining industry (Bureau of Business and Economic Research 1982).

WILDERNESS STUDY AREAS

Tables 3-1 and 3-2 summarize the affected environment and the existing and potential uses of each WSA.

TABLE 3-1 (continued)

WSA	Acreage	Land Status	Topography	Geology	Water and Soils	Vegetation	Wildlife	Threatened or Endangered Species	Visual	Cultural	Wilderness Values
COWBOY SPRING											
(1) Entire WSA	6,699 acres	6,699 acres of public land	Primarily rugged canyons and rough hilly country-- Cowboy Rim is the dominant feature.	WSA lies within the Cowboy Rim Cauldron. Fault block of Tertiary volcanics consisting primarily of tuffs.	WSA lies within the Playas Basin. Surface water collects primarily in ephemeral tributaries of Walnut Creek. Ground water obtained primarily from valley fill and lower alluvial fans. Soils on the steep hillsides are generally shallow, stony; soils on alluvial fans are deeper and very gravelly.	6,285 acres juniper-mixed mountain shrub mountain, 410 acres grass mountain, 4 acres mixed mountain shrub gravelly sand.	Mountain lion, javelina, Coues' whitetail deer, golden eagles, Montezuma quail.	Potential desert bighorn sheep transplant site. Potential for gray wolf, coatimundi, and Mexican turkey. Potential habitat for one Bureau sensitive plant species.	Class IV	Three prehistoric sites.	High quality naturalness. Opportunities for solitude and primitive recreation dependent on the vast undeveloped areas of surrounding Animas Mountains.
(2) Portion Recommended Suitable	0 acres										
GILA LOWER BOX											
(1) Entire WSA	8,555 acres	8,555 acres of public land 120 acres private inholdings	Dominant feature is the Gila Lower Box Canyon with numerous side canyons and rolling hills to the south and west.	Extensive Tertiary volcanics with Quaternary stream terrace deposits.	WSA lies within the Gila River Basin and is part of the regional Lower Colorado River Basin. The Gila River is a perennial stream with headwaters in mountains to the north. The WSA also includes several small ephemeral tributaries to Gila River. Ground water is found principally in alluvium and terrace gravel. Soils include bottom fill, upland breaks, gravelly loam, and shallow hills.	2,138 acres grass hills, 3,167 acres creosote breaks, 2,583 acres mixed desert shrub loamy, 454 acres deciduous trees river bottomland, 80 acres creosote gravelly, 48 acres creosote sandy, 85 acres creosote malpais.	Extremely important wildlife area. Highly significant breeding area for raptors and other species of birds. Significant mammal, amphibian, and reptile habitat. Mule deer and javelina. Extremely diverse wildlife community.	Potential habitat for one Bureau sensitive plant species. Habitat for Federal-endangered peregrine falcon and bald eagle. Habitat for 8 state endangered species: gray hawk, black hawk, Gila woodpecker, Bell's vireo, Gila monster, narrow-headed garter snake, spikedeace, loachminnow. The zone-tailed hawk, a state special concern element nests in the WSA.	Class II	Mogollon style petroglyph panels. Rock shelters and rock structures in the WSA are significant because such remains are rare in this part of the southwest.	High quality naturalness. Outstanding opportunities for solitude in the Gila Lower Box Canyon and side canyons and in rolling hills to the south. Solitude in the western and southwestern part of WSA is impacted by outside sights and sounds. High quality and wide diversity of primitive recreation opportunities.
(2) Portion Recommended Suitable	5,835 acres	5,835 acres of public land 120 acres of private inholdings	Primarily the Gila Lower Box Canyon with numerous side canyons and the rolling hills to the south.	Extensive Tertiary volcanics with Quaternary stream terrace deposits.	WSA lies within the Gila River Basin and is part of the regional Lower Colorado River Basin. The Gila River is a perennial stream with headwaters in the mountains to the north. The WSA also includes several small ephemeral tributaries to Gila River. Ground water is found principally in alluvium and terrace gravel. Soils include bottom fill, upland breaks, gravelly loam, and shallow hills. Some loss of upland ephemeral drainage and gravelly loam soils.	2,073 acres grass hills, 1,755 acres creosote breaks, 1,402 acres mixed desert shrub loamy, 440 acres deciduous tree river bottomland, 80 acres creosote gravelly, 85 acres creosote malpais.	Extremely important wildlife area. Highly significant breeding area for raptors and other species of birds. Significant mammal, amphibian, and reptile habitat. Mule deer and javelina. Extremely diverse wildlife community.	Potential habitat for one Bureau sensitive plant species. Habitat for Federal-endangered peregrine falcon and bald eagle. Habitat for 8 state endangered species: gray hawk, black hawk, Gila woodpecker, Bell's vireo, Gila monster, narrow-headed garter snake, spikedeace, loachminnow. The zone-tailed hawk, a state special concern element nests in the WSA.	Class II	Mogollon style petroglyph panels. Rock shelters and rock structures in the WSA are significant because such remains are rare in this part of the southwest.	High quality naturalness and high quality opportunities for solitude and primitive recreation.
(3) Portion Recommended Unsuitable	2,720 acres	2,720 acres of public land	Rolling hills and drainages to the west and hills to the south.	Quaternary shallow lake and stream terrace deposits.	Primarily upland areas of ephemeral drainages, gravelly loam soils.	65 acres grass hills, 1,412 acres creosote breaks, 1,181 acres mixed desert shrub loamy, 14 acres deciduous trees river bottomland, 48 acres creosote sandy.	No significant wildlife values.	No significant threatened or endangered animal habitat. Potential for one Bureau sensitive plant species.	Class II	No known sites.	Apparently natural. Opportunities for solitude impacted by outside sights and sounds. Opportunities for primitive recreation not outstanding.

TABLE 3-1 (concluded)

WSA	Acres	Land Status	Topography	Geology	Water and Soils	Vegetation	Wildlife	Threatened or Endangered Species	Visual	Cultural	Wilderness Values
BROKEOFF MOUNTAINS											
(1) Entire WSA	30,103 acres	30,103 acres of public land 1,520 acres of state inholdings	A desert mountain range follows a north-south trend. The dominant feature is Cutoff Ridge, which rises 3,000 feet above the surrounding terrain.	Fault block of marine sedimentary rocks.	WSA is within the Salt Basin. Surface water drains the area in an ephemeral stream system. Ground water is found primarily in the Bone Spring limestone and valley fill.	26,865 acres grass limestone hill, 2,926 acres grass mixed desert shrub gravelly loam, 312 acres grass mixed desert shrub gypsum.	Numerous bird species, particularly raptors. Mule deer populations and occasional elk.	Potential habitat for one state listed rare plant species.	Class II 28,780 acres Class III 1,323 acres	One known site (result of lack of inventory rather than absence of sites).	High degree of apparent naturalness. Rugged terrain enhances opportunities for solitude and recreation.
(2) Portion Recommended Suitable	0 acres										

Source: BLM Las Cruces District Wilderness Analysis Reports, 1982.

Note: a/The appendices contain more detailed information on each WSA.

TABLE 3-2
EXISTING AND POTENTIAL USES^{a/}

WSA	Minerals	Watershed	Livestock Grazing	Vegetative Products	Recreation	Education/Research	Realty Actions	Wildlife
BLUE CREEK								
(1) Entire WSA	Low energy minerals potential. Low potential for manganese.	Proposed water control structures to reduce flood and sediment damages. WSA is within the Gila-San Francisco declared underground water basin.	WSA encompasses portions of 4 allotments. Proposed erosion control dams.	N/A	Very little use in WSA. Some deer hunting.	N/A	Temporary State Aid Withdrawal, San Carlos Indian Irrigation Project Withdrawal, Powersite Withdrawal, Sunset Oitch Company right-of-way for flood control structures.	Proposed fencing of one dirt tank so that vegetation for food and cover could be planted in the enclosure for wildlife.
(2) Portion Recommended Suitable	N/A							
CEDAR MOUNTAINS								
(1) Entire WSA	Low energy minerals potential. Low non-energy minerals potential.	Water use is primarily by livestock and wildlife. Located within the Mimbres Valley declared underground water basin.	The WSA encompasses portions of 5 allotments. A half-mile pipeline is proposed.	N/A	Hunting, sightseeing.	N/A	Temporary State Aid Withdrawal.	1 quail guzzler.
(2) Portion Recommended Suitable	N/A							
COOKE'S RANGE								
(1) Entire WSA	Low energy minerals potential. Moderate to high potential for an economic occurrence of strategic minerals such as lead, silver, copper, fluorspar.	N/A	The WSA encompasses portions of 4 allotments.	N/A	Current recreation use includes rockhounding, hunting, hiking, picnicking, camping, and sightseeing. Recreational ORV use occurs on the WSA boundary roads.	N/A	N/A	Potential desert bighorn sheep transplant site.
(2) Portion Recommended Suitable	N/A							Protective stipulation for nesting raptors.
COWBOY SPRING								
(1) Entire WSA	Low energy minerals potential. Low non-energy minerals potential.	N/A	The WSA encompasses portions of 2 allotments.	N/A	Use limited by lack of access. Currently, some deer hunting in WSA. Continental Divide National Scenic Trail could be routed through WSA.	Studies are being conducted on feral hogs, vertebrates, and the effects of fire.	Temporary State Aid Withdrawal.	Potential desert bighorn sheep transplant site.
(2) Portion Recommended Suitable	N/A							

TABLE 3-2 (continued)

WSA	Minerals	Watershed	Livestock Grazing	Vegetative Products	Recreation	Education/Research	Realty Actions	Wildlife
GILA LOWER BOX								
(1) Entire WSA	Low energy minerals potential. Low non-energy minerals potential.	Proposed water control structures to reduce flood and sediment damage. Proposed mechanical treatment area for creosote and tarbush. WSA is within the Gila-San Francisco declared underground water basin.	The WSA encompasses portions of 4 allotments. A dirt tank is proposed.	N/A	Wide diversity of primitive recreation opportunities. Proposed recreation management plan for Lower Gila River includes WSA. Portion of WSA recommended for special designation. Objectives include maintenance of recreation resources.	Portion of WSA recommended for special designation. Objectives include interpretation of cultural resources.	San Carlos Indian Irrigation Project Withdrawal, powersite reservations, temporary right-of-way for USGS gauging station.	Potential desert bighorn sheep transplant site. Proposed research on endangered species and javelina. Proposed HMP. Proposed creosote control. Portion of WSA recommended for special designation. The protection and improvement of riparian habitat for wildlife is the primary objective.
(2) Portion Recommended Suitable	Low energy minerals potential. Low non-energy minerals potential.	Proposed water control structures to reduce flood and sediment damage.	Encompasses portions of 3 allotments. A dirt tank is proposed.		Wide diversity of primitive recreation opportunities. Proposed recreation management plan for Lower Gila River includes WSA. Portion of WSA recommended for special designation. Objectives include maintenance of recreation resources.	Portion of WSA recommended for special designation. Objectives include interpretation of cultural resources.	San Carlos Indian Irrigation Project Withdrawal and powersite reservations.	Potential desert bighorn sheep transplant site. Proposed research on endangered species and javelina. Proposed HMP. Portion of WSA recommended for special designation. The protection and improvement of riparian habitat for wildlife is the primary objective.
(3) Portion Recommended Unsuitable	Low energy minerals potential. Low non-energy minerals potential.	Proposed mechanical treatment area for creosote and tarbush.	Includes portions of 4 allotments.		No existing or proposed recreation management actions.	No existing or proposed management actions relating to education or research.	Temporary right-of-way for USGS gauging station.	Proposed creosote control.
LAS UVAS MOUNTAINS								
(1) Entire WSA	Low energy minerals potential. Low non-energy minerals potential.	Water use is primarily by livestock and wildlife. Located within the Mimbres declared underground water basin.	The WSA encompasses portions of 4 allotments.	5,210 acres identified for vegetation collection.	Rockhounding, sightseeing, hunting, off-road vehicles.	N/A	Temporary State Aid Withdrawal.	No wildlife developments.
(2) Portion Recommended Suitable	N/A							
ORGAN MOUNTAINS								
(1) Entire WSA	Low energy minerals potential. High non-energy minerals potential for gold, silver, copper, lead, zinc, fluorspar.	Water use is primarily by livestock and wildlife. Located within the Lower Rio Grande declared underground water basin and Tularosa declared basin.	The WSA encompasses portions of 5 grazing allotments. A spring has been proposed for development.	N/A	WSA is within the Organ Mountains Recreation Lands (OMRLs), which are Class II designated recreation lands. Developed recreation site one-fourth mile from WSA. Baylor Pass National Recreation Trail bisects the WSA. Recreational use includes hunting, sightseeing, rock collecting, picnicking, camping, hiking, rock climbing, riding.	Potential for geological and dendrochronological studies.	Three powerlines border the WSA.	No existing wildlife developments. Possible desert bighorn sheep supplemental transplant site. Future deer Habitat Management Plan.
(2) Portion Recommended Suitable	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.
(3) Portion Recommended Unsuitable	N/A							

TABLE 3-2 (concluded)

WSA	Minerals	Watershed	Livestock Grazing	Vegetative Products	Recreation	Education/Research	Realty Actions	Wildlife
ROBLEDO MOUNTAINS								
(1) Entire WSA	Low to moderate energy minerals potential. Moderate to high non-energy minerals potential for dolomite, limestone, manganese.	Water use is primarily by livestock and wildlife. Located within the Lower Rio Grande declared underground water basin.	The WSA encompasses portions of 4 allotments. An interior fence is proposed.	N/A	Rockhounding, off-road vehicle use.	N/A	2 rights-of-way for communication sites on Lookout Peak. Small withdrawal for Rio Grande canalization. Application for flood control structures.	No wildlife developments.
(2) Portion Recommended Suitable	N/A							
BROKEOFF MOUNTAINS								
(1) Entire WSA	Prospectively valuable for oil and gas. Low potential for occurrence of strategic minerals.	Water use is primarily by livestock and wildlife.	The WSA encompasses all or portions of 7 allotments.	N/A	Very little use in WSA. Some deer hunting.	N/A	N/A	N/A
(2) Portion Recommended Suitable	N/A							

Source: BLM Las Cruces District Wilderness Analysis Reports, 1982.

Note: ^a/See appendices for more detailed information on each WSA.

CHAPTER 4

ENVIRONMENTAL CONSEQUENCES

SUMMARY OF IMPACTS

Table 4-1 includes a summary of the environmental consequences described in the Wilderness Analysis Reports (WARs). The table includes only the significant impacts. If any of these areas are designated as wilderness, wilderness management plans will be prepared. These plans will provide the opportunity to incorporate measures designed to mitigate adverse environmental impacts.

SOCIAL AND ECONOMIC IMPACTS

Wilderness designation would not have a significant impact on the population, income, and employment for the five Counties that contain WSAs.

Local Attitudes and Perceptions

Wilderness designation would not change the general attitudes or values of local residents, but could affect specific attitudes toward the BLM, the Federal Government, and how some ranchers view the future of their operation.

Wilderness designation could affect impacted ranchers' expectations of being able to remain in the ranching business. Some ranch operators think that as a result of changing administrations, drastic changes in livestock numbers or policy modifications that prevent rangeland developments could be forthcoming in areas designated wilderness. Ranchers are also concerned about the changes in ranch loan and sale values that would occur as a result of wilderness designation. If designation occurs, many ranchers feel their operation would be less viable than it was before designation.

Economic Conditions

Designation of an area as wilderness could affect the manageability of some livestock operations. For example, the livestock operator could incur minor inconveniences due to vehicular restrictions within the designated wilderness.

Most ranch operators may need some borrowing of operating capital. In practice, a BLM grazing permit has value for borrowing money and adding value to the base property at the time of sale. The market value of an animal unit month (AUM) as of September 21, 1982 was approximately \$100 (Federal Land Bank 1982). Normally, when a loan is made, the Federal Land Bank will loan approximately 65-70 percent of the market value per AUM. Those portions of the grazing allotments within the wilderness boundary would have a loan value of approximately 50-60 percent of the AUM market value (Federal Land Bank 1982). Operators who

may require additional operating capital for their operation would experience an unfavorable economic effect if a portion of their grazing allotment is within a designated wilderness area, since the loan value would be 10-15 percent less for those AUMs within the wilderness area than it is for AUMs outside the wilderness area.

Wilderness designation may enhance the preservation value of wilderness. The preservation value of wilderness includes option, existence, and bequest values of the general public. The option value is defined as the willingness to pay for the opportunity to have access to wilderness areas for recreation use in the future. The existence value is defined as the amount of money people are willing to pay for the knowledge that natural habitat for plants, fish, and wildlife are protected in wilderness areas. The bequest value is defined as the willingness to pay for the satisfaction derived from endowing future generations with wilderness resources (Walsh et al. 1981). Quantification of these values is beyond the scope of this document.

TABLE 4-1
SUMMARY OF ENVIRONMENTAL CONSEQUENCES^{a/}

Alternatives by WSA	Acreage	Minerals	Water, Soils, Vegetation	Wildlife	Visual	Cultural	Livestock Grazing	Recreation	Wilderness Values	Other
BLUE CREEK										
All Wilderness	14,096	Minimal impacts to energy minerals. Minimal impacts to non-energy minerals (manganese) in short-term.	Restrictions on surface disturbance and mechanized activities would provide long-term protection. Possible impacts on proposed watershed improvement projects and erosion control dams. Benefits of these projects would be forgone if projects are not authorized under Wilderness Management Policy.	Restrictions on surface disturbing and mechanized activities would protect habitat.	Existing resources would have long-term protection.	No impacts.	No impacts to current levels of authorized use. Impacts could result from restrictions on vehicular access.	No impacts.	Although wilderness values would have long-term Congressional protection, the BLM could not manage the area over the long-term to provide a quality wilderness experience.	
No Action/No Wilderness	14,096	No impacts on minerals exploration and development.	Watershed improvement projects could be implemented. The benefits of these improvements (reduced volume and peak rate of surface runoff) would be significant for the individual watersheds where constructed.	Minimal impacts to habitat.	In Class II areas, minor changes could occur in long-term. In Class III areas, moderate changes could occur in long-term. In Class IV areas, significant changes could occur in long-term.	No impacts.	No impacts.	No impacts.	No long-term Congressional protection. Management subject to administrative change in long-term. Implementation of proposed water control structures or erosion control structures or development of the Sunset Ditch Company's right-of-way could degrade wilderness values.	
CEDAR MOUNTAINS										
All Wilderness	14,911	Minimal impacts to energy and non-energy minerals.	Restrictions on surface disturbing and mechanized activities would provide long-term protection. Short-term impact as a result of pipeline construction.	Wildlife habitat would be protected.	Visual resources would be protected.	Decrease site vandalism.	No impact to current levels of authorized use. Impacts could result from restrictions on vehicular access.	No significant impact.	Wilderness values would be protected by long-term Congressional designation.	
No Action/No Wilderness	14,911	No impacts.	No significant impacts.	Wildlife habitat would not be protected.	Visual resources would be maintained in the short-term.	Possibility of increased site vandalism.	No impacts.	No significant impacts.	Wilderness values would not be protected.	
COOKE'S RANGE										
All Wilderness	19,608	Minimal impacts to energy minerals because of poor potential. Exploration for and development of possible strategic minerals deposits would be adversely impacted.	Restrictions on surface disturbing and mechanized activities would provide long-term protection. If valid existing mining claims are developed, removal of existing vegetation and topsoil could occur and sediment loads could increase.	Restrictions on surface disturbing and mechanized activities would protect habitat. If valid claims are developed, some habitat could be disturbed.	Existing resources would have long-term protection. If valid claims are developed, scenic quality could be degraded.	Limitations on vehicular access into area would decrease site vandalism.	No impacts to current levels of authorized use. Impacts could result from restrictions on vehicular access.	If valid claims are developed, existing nonmotorized recreation opportunities could be impacted.	Wilderness values would have long-term Congressional protection. Development of valid mining claims, vehicle use on cherry-stemmed roads, and possible development of adjacent non-Federal lands could impact ability of BLM to manage area as wilderness.	
No Action/No Wilderness	19,608	No impacts on mineral exploration or development.	There would be a loss of vegetation and topsoil if mineral development occurs.	If mineral development occurs, habitat would be destroyed and animals directly disturbed.	Minimal to major impacts could result if mineral development occurs.	Cultural resources could be impacted if mineral development occurs. Unrestricted access would increase site vandalism.	No impacts.	If mineral development occurs, nonmotorized recreation opportunities would be degraded and ORV use could increase.	No long-term Congressional protection. Management subject to administrative change in long-term. If mineral development occurs, it would irreversibly degrade wilderness values. Continued vehicular access would disrupt solitude.	

TABLE 4-1 (continued)

Alternatives by WSA	Acreage	Minerals	Water, Soils, Vegetation	Wildlife	Visual	Cultural	Livestock Grazing	Recreation	Wilderness Values	Other
COWBOY SPRING										
All Wilderness	6,699	Minimal impacts to energy minerals because of low potential. Minimal impacts to non-energy minerals because of low potential. No current activity.	Restrictions on surface disturbing and mechanized activities would provide long-term protection.	Restrictions on surface disturbing and mechanized activities would protect habitat.	Existing resources would have long-term protection.	No impacts.	No impacts.	Hunters would be denied access on 1 mile of vehicle trail.	Wilderness values would have long-term Congressional protection.	
No Action/No Wilderness	6,699	No impacts.	Minor impacts as a result of vehicle access on 1 mile of vehicle trail.	Habitat could be disturbed if area is developed.	Existing resources would be maintained in short-term. Significant changes could occur in long-term.	No impacts.	No impacts.	No impacts.	No long-term Congressional protection. Management subject to administrative change in long-term. Continued vehicular access on 1 mile of trail would slightly impair opportunities for solitude and primitive recreation.	
GILA LOWER BOX										
All Wilderness	8,555	Minimal impacts to energy and non-energy minerals.	Restrictions on surface disturbing and mechanized activities would provide long-term protection. The benefits of proposed watershed projects and mechanical vegetative treatments would be forgone. Long-term impact on vegetation and soils from installation of dirt tank.	Restrictions on surface disturbing and mechanized activities would protect habitat. Proposed creosote control project would be subject to approval by State Director.	Existing resources would have long-term protection.	Restrictions on surface disturbing and mechanized activities would provide long-term protection and reduce vandalism.	No impacts to current levels of authorized use. Impacts could result from restrictions on vehicular access.	No impacts.	Wilderness values would have long-term Congressional protection.	
Amended Boundary	5,835	Same as All Wilderness.	Same as All Wilderness.	Same as All Wilderness except creosote control project is excluded from area recommended suitable and not subject to State Director approval.	Same as All Wilderness.	Same as All Wilderness.	Same as All Wilderness.	No impacts.	Wilderness values within amended boundary would have long-term Congressional protection. 2,720 acres would not have Congressional protection.	
No Action No Wilderness	8,555	No impacts.	Impacts on vegetation and compaction of soils around new dirt tank. Watershed improvement projects would reduce flood and sediment damages. Creosote control would increase vegetative cover and stabilize soils.	Important riparian habitat would be protected by actions recommended in Gila MFP.	Existing visual resources would be substantially maintained in the long-term.	No impacts.	No impacts.	No impacts.	No long-term Congressional protection. Management subject to administrative change in long-term. Impacts on naturalness from the proposed vegetative treatments and proposed water control structures could be minimal to major.	
No Wilderness Amend the Plan Special Designation Area	2,469	No impacts.	Stabilized soils in the special designation area. Improve water quality, lower sediment yields, and stabilize channel. Impacts of rangeland developments same as All Wilderness.	Riparian habitat would be protected and improved by management objectives of the special designation area.	Same as No Action.	Same as All Wilderness for Special Designation Area.	River would be fenced. This would affect 1 allotment with some loss of AUMS. Inconveniences could occur due to the movement of livestock from one pasture to another.	No impacts.	No long-term Congressional protection. Wilderness values on approximately 2,469 acres could be administratively protected by a special designation.	

TABLE 4-1 (continued)

Alternatives by WSA	Acreage	Minerals	Water, Soils, Vegetation	Wildlife	Visual	Cultural	Livestock Grazing	Recreation	Wilderness Values	Other
LAS UVAS MOUNTAINS										
All Wilderness	11,067	Minimal impacts to energy and non-energy minerals.	Restrictions on surface disturbing and mechanized activities would provide long-term protection.	Habitat would be protected over the long-term.	Visual resources would be protected.	No impacts.	No impact to current levels of authorized grazing use. Impacts could result from restrictions on vehicular access.	No motorized access inside the area.	Wilderness values would be protected with long-term Congressional designation.	Vegetative collection and sales would not be authorized.
No Action/No Wilderness	11,067	No impacts.	Slight increase in soil loss and sediment load.	Habitat Management Plan could be implemented without Wilderness Management Policy constraints.	Visual resources could be degraded in the long-term.	No impacts.	No impacts.	No impacts.	No long-term Congressional protection. Wilderness values could be degraded in long-term.	No impacts to vegetative products.
ORGAN MOUNTAINS										
All Wilderness	7,144	Moderate impacts to locatable non-energy minerals.	Restrictions on surface disturbing and mechanized activities would provide long-term protection. Development of valid mining claims could cause soil and vegetation loss.	Wildlife habitat would be protected. Valid mining claim development or a large increase in recreational use could disturb wildlife.	Visual resources would be protected.	Historical significance of Baylor Pass would be protected.	No impacts to current levels of authorized grazing use. The proposed spring could be developed.	Baylor Pass Run would not be permitted. Development of mining claims could degrade nonmotorized recreation opportunities. Hunting opportunities could improve.	Wilderness values would be protected with long-term Congressional designation. Development of valid mining claims or use of cherry-stemmed roads could impact management of the area.	
No Action ACEC	6,690	Same as All Wilderness since the ACEC would be withdrawn from locatable mineral entry subject to valid existing rights.	Development of valid mining claims and development of the spring for livestock water would cause soil and vegetation loss.	Habitat could be impacted by mine development. The deer Habitat Management Plan could be implemented without WMP constraints.	Same protection as All Wilderness on the 6,690 acres designated as Organ Mountains Scenic Area ACEC.	Same as All Wilderness.	No impacts.	Development of claims could degrade primitive recreation opportunities.	No long-term Congressional protection. Administrative protection for 6,690 acres.	
No Wilderness Amend the Plan	7,144	No impacts.	Mining operations and the spring development could cause loss of soils and vegetation.	Same as No Action.	Visual resources could be significantly degraded.	No wilderness management restriction on cultural interpretation.	Proposed spring could be developed. No impacts to livestock grazing.	Same as No Action.	No protection for wilderness values.	
ROBLEOO MOUNTAINS										
All Wilderness	12,811	Minimal impacts to oil and gas. Possible impacts to geothermal. Significant impacts to non-energy minerals. \$12,811 annual rental of energy mineral leases would be lost.	Restrictions on surface disturbing and mechanized activities would provide long-term protection. Development of pre-FLPMA geothermal leases could cause soil and vegetation loss.	Habitat would be protected.	Visual resources would be protected.	No impacts.	No impacts to current levels of authorized grazing use; the proposed interior fence could be constructed.	Existing use patterns would change. Off-road vehicles (ORV) would not be allowed in the area.	Wilderness values would be protected with long-term Congressional designation. Management as wilderness would be impacted by geothermal development, cherry-stemmed roads, unauthorized ORV use.	
No Action/No Wilderness	12,811	No impacts.	Geothermal and non-energy mineral development could cause vegetation and soil loss. Sediment loads could increase.	Habitat would not be protected.	Visual resources could be degraded.	No impacts.	No impacts.	ORV use could increase.	No long-term Congressional protection. Wilderness values would be degraded in long-term.	

TABLE 4-1 (continued)

Alternatives by WSA	Acreage	Minerals	Water, Soils, Vegetation	Wildlife	Visual	Cultural	Livestock Grazing	Recreation	Wilderness Values	Other
BROKEOFF MOUNTAINS										
All Wilderness	30,103	Minimal impacts to 19,500 acres of pre-FLPMA leases. Development on 6,500 acres of post-FLPMA leases would be restricted. Minimal impacts to non-energy minerals because of low potential.	Restrictions on surface disturbing and mechanized activities would provide long-term protection.	Restrictions on surface disturbing and mechanized activities would protect habitat.	Existing resources would have long-term protection.	No impacts.	No impacts to current levels of authorized use. Impacts could result from restrictions on vehicular access.	Hunters would be denied motorized access on vehicle trails.	Wilderness values would have long-term Congressional protection.	
Amended Boundary	11,635	9,735 acres of pre-FLPMA leases and 1,900 acres of post-FLPMA leases. Impacts would be same as All Wilderness.	Same as All Wilderness.	Same as All Wilderness.	11,635 acres of Class II scenery would have long-term protection.	No impacts.	Includes all or part of four allotments. Impacts would be the same as All Wilderness.	Same as All Wilderness.	Same as All Wilderness.	
No Action/No Wilderness	30,103	No impacts to mineral exploration or development.	Minor impacts as a result of vehicular access on trails.	Habitat could be disturbed if area is developed.	In Class II areas, minor changes could occur in long-term. In Class III areas, moderate changes could occur in long-term.	No impacts.	No impacts.	No impacts.	No long-term Congressional protection. Management subject to administrative change in long-term. Continued vehicular access and oil and gas development would impair naturalness and opportunities for solitude and recreation.	

Source: BLM Las Cruces District Wilderness Analysis Reports, 1982.

Note: a/See appendices for more detailed information on each WSA.

CHAPTER 5

CONSULTATION AND COORDINATION

PURPOSE OF SCOPING

The Council on Environmental Quality (CEQ) Regulations implementing the procedural provisions of the National Environmental Policy Act (NEPA) provide for an early and open process to determine the scope of issues to be addressed and to identify the significant issues related to the proposed alternatives. This process is termed "scoping". In addition, scoping requires the lead agency to inform and involve affected Federal, state, and local agencies, Indian tribes, and other interested persons. The process is designed to identify and emphasize the significant issues and eliminate those that are either not significant or have been covered by earlier environmental review.

SCOPING ACTIVITIES

During the study phase of the wilderness review process, various Federal, state, and local agencies, interest groups, and individuals were contacted. These contacts were made to inform the public about the wilderness study process and to gather resource information and identify significant issues from the public to incorporate into the Wilderness Analysis Reports (WARs).

These contacts consisted of telephone coordination, correspondence, and meetings between the various BLM Las Cruces Managers and representatives of other Federal, state, or local agencies. BLM employees were available throughout the wilderness study process to give formal slide show presentations and speeches on the wilderness studies in the Las Cruces District. The consultation, coordination, and scoping activities undertaken by the Las Cruces/Lordsburg Resource Area and White Sands Resource Area are summarized in Table 5-1. Details of these activities are available for review at the Las Cruces District Office.

Other consultation and coordination activities undertaken by the Las Cruces District included field trips to specific WSAs with interested individuals and small groups, and informal meetings or field trips with affected permittees. The documentation of specific public contacts for each WSA is contained in the Wilderness Permanent Documentation Files in the Las Cruces District Office.

In addition, an extensive mailing list has been assembled throughout the wilderness inventory and study process to ensure that all Federal, state, and local agencies, interest groups, and individuals are kept informed of the progress of the wilderness review.

LIST OF PREPARERS

A list of persons involved in the preparation of the WARs and Environmental Assessment (EA) is provided in Table 5-2.

TABLE 5-1

SUMMARY OF CONSULTATION,
COORDINATION, AND SCOPING ACTIVITIES

Contacts	Date(s)	Location	Meeting	Telephone Call	Correspondence	Slide Show Presentation	Other
<u>New Mexico Congressional Delegation</u>							
U.S. Senator Pete Domenici U.S. Senator Harrison Schmitt U.S. Representative Joe Skeen	1/11/82	Las Cruces	X				
<u>New Mexico State Agencies</u>							
Department of Game and Fish	1/11/82 9/15/82	Las Cruces Las Cruces	X X				
State Land Office	2/12/82	Santa Fe	X				
State Historic Preservation Officer	2/5/82	Santa Fe			X		
Department of Agriculture	9/13/82 10/1/82	Las Cruces Las Cruces	X X				
State Heritage Program	4/1/82 5/19/82				X X		
Museum of New Mexico	2/2/82	Santa Fe			X		
<u>Federal Agencies</u>							
U.S. Department of the Army White Sands Missile Range	2/23/82	White Sands	X				
U.S. Department of Agriculture Forest Service	3/3/82	Carlsbad	X				
U.S. Department of the Interior							
National Park Service	1/27/82 3/3/82	Carlsbad	X		X		Field trip to Brokeoff Mountains.
Bureau of Land Management-Safford District	1/19/82		X				
Bureau of Indian Affairs	7/20/82			X			
Bureau of Reclamation	7/20/82			X			
Fish and Wildlife Service	5/7/82				X		
Minerals Management Service	7/20/82			X			
<u>Regional and Local Agencies</u>							
Dona Ana County Manager	7/19/82	Las Cruces	X				
Dona Ana County Planners	2/22/82 7/19/82	Las Cruces	X X				
Hidalgo County Commission	3/18/82	Lordsburg	X				
Southwest New Mexico Council of Governments	7/23/82	Silver City	X				
Grant County Manager	8/12/82	Lordsburg	X				
Hidalgo County Manager	8/13/82	Lordsburg	X				
Luna County Commissioners	7/23/82	Deming	X				
Otero County Commissioners	5/3/82	Alamogordo	X				
Sierra County Commissioners	4/20/82	Truth or Consequences	X				

TABLE 5-1 (concluded)

SUMMARY OF CONSULTATION,
COORDINATION, AND SCOPING ACTIVITIES

Contacts	Date(s)	Location	Meeting	Telephone Call	Correspondence	Slide Show Presentation	Other
<u>Livestock Related Organizations and Informal Groups</u>							
Las Cruces District Grazing Advisory Board	1/14/82 4/8/82 7/29/82	Las Cruces	X X X				
Range Improvement Task Force	3/9/82 9/7/82 4/28/82	Las Cruces	X X X				
New Mexico Farm and Livestock Bureau	4/15/82 9/13/82	Las Cruces	X X				
Luna County Ranchers	2/2/82	Deming	X				
Grant County Ranchers	2/4/82	Silver City	X				
Hidalgo County Ranchers	2/25/82	Lordsburg	X				
<u>Conservation Organizations (or Representatives)</u>							
Mimbres Watershed Association	2/19/82	Silver City				X	
New Mexico Natural History Institute	2/19/82	Silver City				X	
Grant County Audubon Society	2/19/82	Silver City				X	
Sierra Club- Southwestern New Mexico Regional Group	3/6/82 5/17/82	Las Cruces	X			X	
Sierra Club-El Paso Regional Group	10/28/81 5/17/82	El Paso Las Cruces	X			X	
New Mexico Wilderness Study Committee	2/19/82 5/17/82	Silver City Las Cruces	X			X	
<u>Other</u>							
American Institute of Aeronautics and Astronautics Inland Missile Range Section	10/22/81	White Sands				X	
International Right-of-Way Association Roadrunner Chapter 53	5/27/82	Las Cruces				X	
<u>Educational Institutions</u>							
New Mexico State University							
Range Staff	1/21/82	Las Cruces	X				District Manager spoke to NMSU class: "History of Land Patterns in New Mexico" 5/18/82. District Economist spoke to NMSU class: "Introduction to Business 5/5/82.
Economics Staff	3/9/82 3/30/82 9/28/82	Las Cruces Las Cruces Las Cruces	X X X				
Wildlife Staff	1/26/82	Las Cruces			X		
University of Texas at El Paso Biology Staff	1/26/82	El Paso			X		
University of New Mexico Biology Staff	1/21/82	Albuquerque			X		
University of Arizona Laboratory of Tree-Ring Research	2/4/82	Tucson			X		

Source: BLM Las Cruces District Office Files, 1982

TABLE 5-2

LIST OF PREPARERS
LAS CRUCES/LORDSBURG RESOURCE AREA

Name	WAR/EA Responsibility	Education	Experience
Mary Austin	Team Leader	B.S., Agricultural Economics New Mexico State University	BLM 4 yrs. - Planning Coordinator
Bruce G. Call	Soils, Air Quality	B.S., Agriculture (Range and Soil Science) New Mexico State University	BLM 4 yrs. - Range Technician Range Conservationist Soil Scientist USFS 7 mo. - Forestry Technician Soil Technician
Karen Concho	Typist (EA)	A.A.; Senior, Government New Mexico State University Real Estate Certificate, Real Estate Institute, Albuquerque, NM	BLM 3 yrs. - Mag Card Operator Native American Program 2 yrs. - Office Personnel
Donita C. Cotter	Lead Responsibility (EA/WARs), Wilderness Values, Recreation, Visual Resources, Vegetative Products	B.S., Environmental Science Texas Christian University	BLM 4 yrs. - Wilderness Specialist
Donna Y. Gonzales	Typist (EA)	Junior, Business Administration New Mexico State University	BLM 2 yrs. - Clerk-Typist
Rena A. Gutierrez	Writer-Editor	B.A., Journalism/Mass Communications New Mexico State University	BLM 4 yrs. - Public Information Aid Clerk-Typist Writer-Editor
Steven C. Hamp	Climate, Water, Realty Actions	B.S., Geology and Sociology Illinois State University M.S., Watershed Management University of Arizona	BLM 4 yrs. - Hydrologist USFS 2 yrs. - Forest Technician
Kimberly A. Harrison	Editorial Assistant (Typing)	2 semesters - Biology Texas Lutheran College 1 semester - Art University of Texas at El Paso	BLM 4 yrs. - Clerk-Typist Planning Clerk (Typing) Editorial Assistant (Typing) El Paso Community College 4 yrs. - Registration Cashier Night Cashier/PBX Operator Accounts Payable File Clerk Secretary II
Pete M. Laudeman	Cultural Resources, Education/Research	B.A., M.A., Anthropology University of Arizona	BLM 7 yrs. - Archaeologist
Gerald Sanchez	Economics	B.B.A., Economics New Mexico State University	BLM 3 yrs. - Cooperative Ed. Trainee (Div. of Administration) Support Services Supervisor Budget Analyst Regional Economist
Linda K. Seibert	Wildlife	B.S., Wildlife Science New Mexico State University B.A., Spanish (minor - Russian) San Jose State University	BLM 7 yrs. - Wildlife Biologist NMSU 4 yrs. - Library Assistant Santa Clara County 2 yrs. - Welfare Eligibility Worker
Joseph I. Torrez	Mineral Development, Geology	B.A., Geology New Mexico Highlands University	BLM 6 yrs. - Geologist NM State Highway Department 5 yrs. - Soils Testing/Surveying Sales 1 yr.
Gilbert Valencia	Cartographic Technician		BLM 5 yrs. - Cartographic Technician
Beatrice A. Wade	Vegetation, Livestock Grazing	B.S., Forestry (minor - Wildlife Mgt.) 10 quarters - Range Ecosystem Mgt. 2 yrs. - Masters Thesis Work University of Florida	BLM 5 yrs. - Range Conservationist University of Florida 5 yrs. - Range Biologist (Research)

TABLE 5-2 (concluded)

LIST OF PREPARERS
WHITE SANDS RESOURCE AREA

Name	WAR/EA Responsibility	Education	Experience
Konnie Andrews	Geology, Mineral Development	B.A., Geology Trinity University	BLM 3 yrs. - Geologist Core Laboratories Inc. - Geologist
Ben Fish	WAR Lead Responsibility, Recreation, Wilderness Values, Visual Resources	B.S., Recreation and Park Administration Eastern Kentucky University M.S., Recreational Resources Development Texas A&M	BLM 3 yrs. - Outdoor Recreation Planner Budget Analyst
Sandra J. Hayes	Wildlife	B.S., Wildlife Science New Mexico State University	BLM 4 yrs. - Wildlife Biologist Range Conservationist
Robert Lawrence	Livestock Grazing, Vegetation	2 yrs. - Western New Mexico University	BLM 15 yrs.- Range Technician
Joe Sanchez	Soils, Water Resources	B.S., Range Management	BLM 2 yrs. - Surface Reclamation Specialist SCS 5 mo. - Range Conservationist USFS 1 1/2 yrs.- Range Conservationist
Mike Taylor	Cultural Resources	B.A., Anthropology New Mexico State University	BLM 2 yrs. - Archaeologist

CONTRIBUTORS AND REVIEWERS

Las Cruces District

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 William J. Harkenrider, Jr., Area Manager, Las Cruces/Lordsburg Resource Area
 Larry Nunez, Area Manager, White Sands Resource Area
 Marvin James, Chief, Planning and Environmental Assistance
 Tom Birch, District Range Specialist
 Thomas C. Custer, District Geologist
 Kenneth E. Holmes, District Wildlife Specialist
 Jeff Jarvis, District Outdoor Recreation Planner (Lead Reviewer, EA/WARs)
 Ed Webb, Environmental Coordinator
 Tim Read, Supervisory Outdoor Recreation Planner
 William Tipton, Geologist
 Donnie Sparks, Former Associate District Manager
 William Leifeste, Former Chief, Division of Resource Management
 Fred Potter, Former Geologist

New Mexico State Office

Dan D. Wood, Wilderness Specialist
 Joe Sovcik, Environmental Coordinator
 Beverly Cochran, Sociologist

APPENDIX 2
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1. APPENDIX 2.1

2. APPENDIX 2.2

The first part of Appendix 2.1, the 'Introduction', is a general introduction to the 'Introduction' of the 'Introduction' of the 'Introduction'.

The second part of Appendix 2.1, the 'Introduction', is a general introduction to the 'Introduction' of the 'Introduction' of the 'Introduction'.

3. APPENDIX 2.3

The first part of Appendix 2.3, the 'Introduction', is a general introduction to the 'Introduction' of the 'Introduction' of the 'Introduction'.

The second part of Appendix 2.3, the 'Introduction', is a general introduction to the 'Introduction' of the 'Introduction' of the 'Introduction'.

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APPENDICES

APPENDIX A

BLUE CREEK WSA (NM-030-026)

I. GENERAL DESCRIPTION

A. Location

The Blue Creek Wilderness Study Area (WSA) is located 6 miles northwest of Redrock, New Mexico, north of the Gila River.

The U.S. Geologic Survey (USGS) topographic map covering the WSA is the Canador Peak, New Mexico, quadrangle at the 15-minute scale.

B. Climate and Topography

The Blue Creek WSA is characterized by a semiarid, continental climate, with mild winters and pleasant to hot summers.

Average annual precipitation in the area is slightly greater than 12 inches. A wide variation in annual totals is characteristic of southern desert climates. More than half of the moisture normally falls during July, August, and September from convective thunderstorms that are commonly intense and of short duration. The winter precipitation is mainly from gentle-intensity frontal type storms that may produce some light snow, which seldom accumulates on the ground.

During the summer months, daytime temperatures may exceed 100°F. The average monthly maximum temperature during July, the warmest month, is in the middle 90's. In January, the coldest month, average monthly minimum temperature is in the low 20's.

Winds generally predominate from the southeast in summer and from the northwest in winter, but local surface wind directions will vary greatly because of local topography. Spring is the windy season. Dry, gusty winds are predominantly from the west-southwest and may exceed 30 mph in the afternoons.

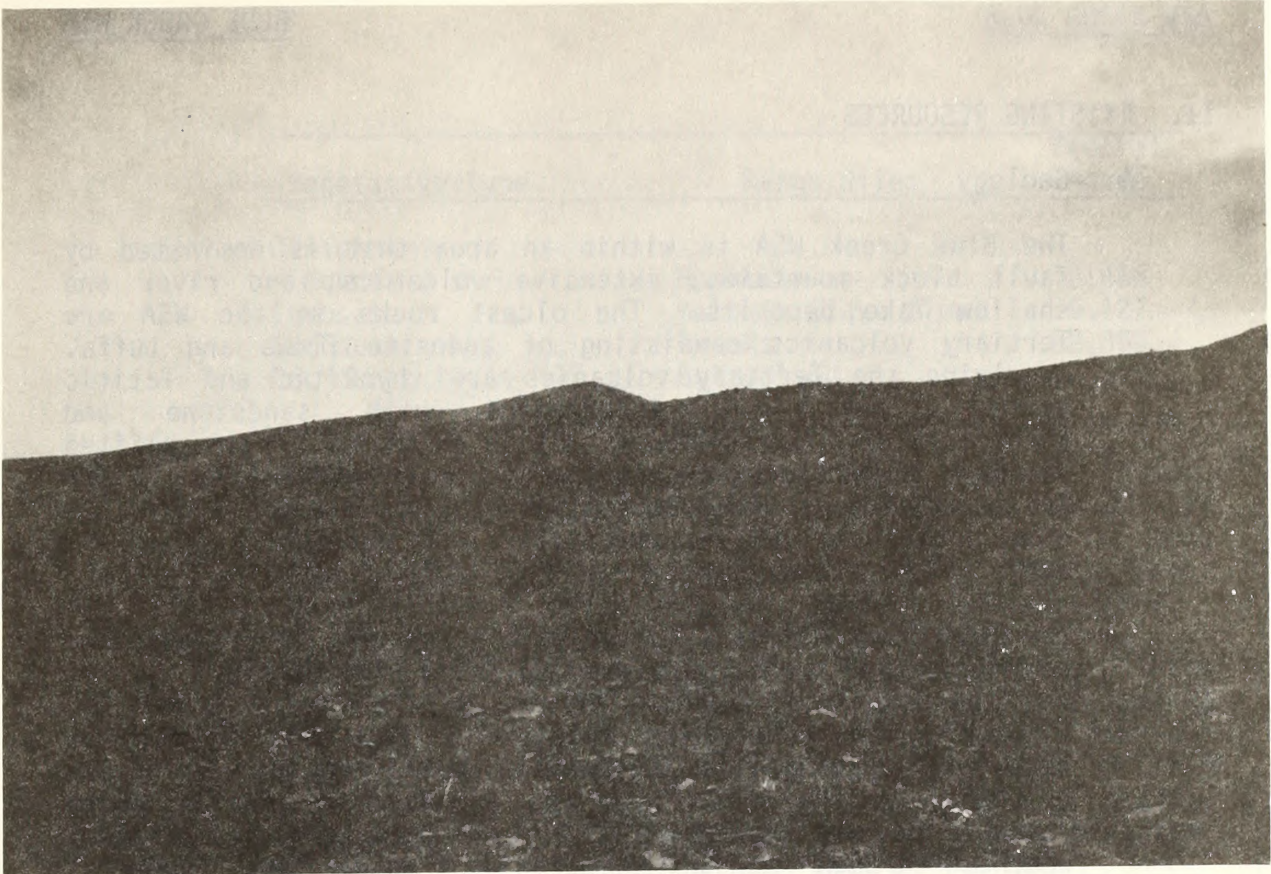
The Blue Creek WSA is dominated by Black Mountain, an elongated northwest trending topographical feature. The mountain is composed of black basalt. Slopes are gentle to moderate. Relief is in excess of 1,000 feet. Secondary features of the area include about 1½ miles of the Blue Creek arroyo, a drainage running south to the Gila River, and Seep Spring Draw on the northeast side of Black Mountain.

C. Land Status

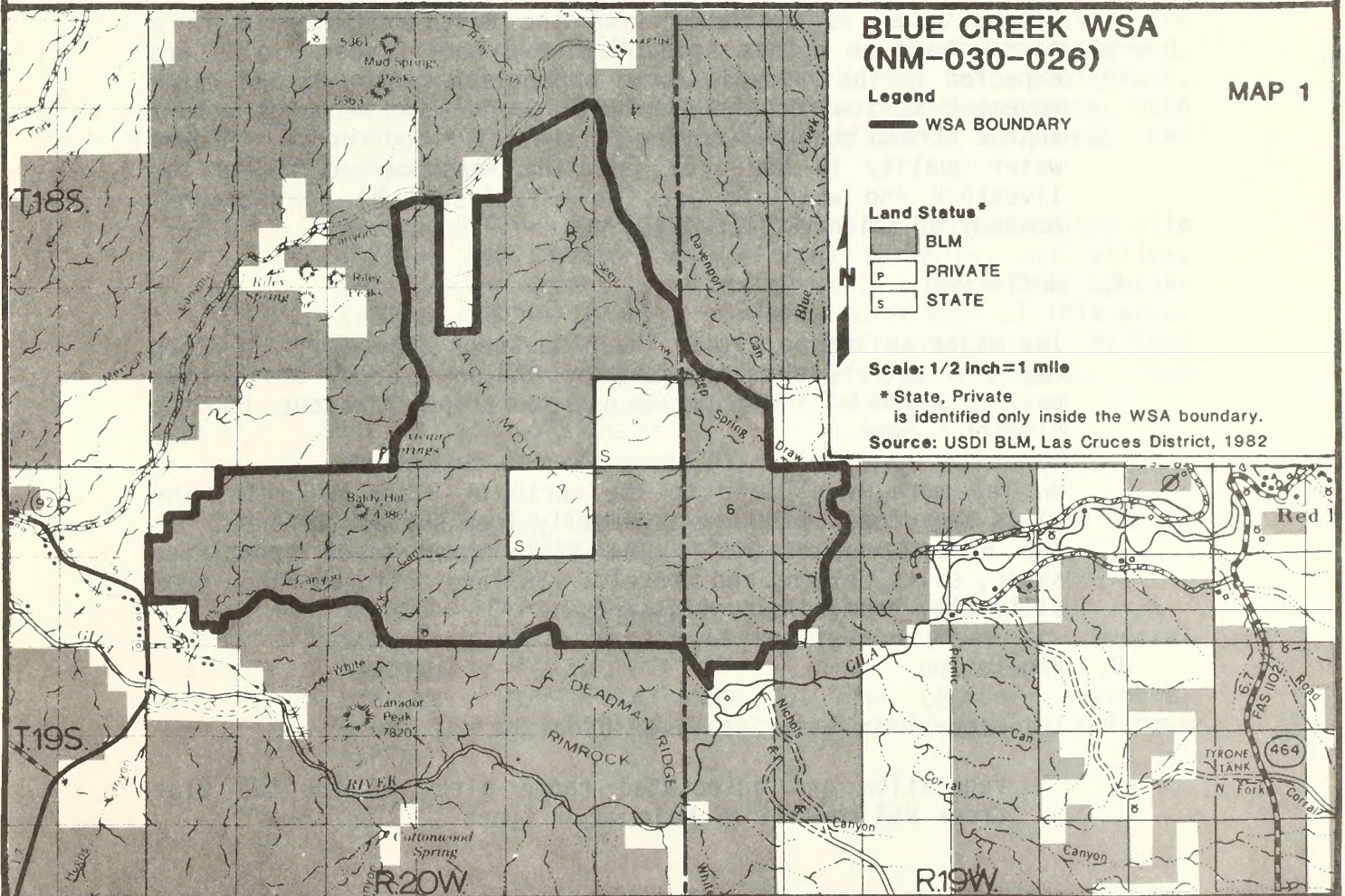
The Blue Creek WSA is comprised of 14,096 acres of public land and 1,280 acres of state land. There are no private inholdings. (See Map 1 for land status.)

D. Access

Legal access is provided from the north, south, and southwest portions of the WSA by State Highway 82 and County Roads A030 and A039. Additional physical access is provided by the road to Mexican Springs and the X Bar U windmill.



Black Mountain is the major topographic feature of the Blue Creek WSA.



II. EXISTING RESOURCES

A. Geology

The Blue Creek WSA is within an area that is dominated by fault block mountains, extensive volcanics, and river and shallow lake deposits. The oldest rocks in the WSA are Tertiary volcanics consisting of andesite flows and tuffs. Overlying the Tertiary volcanics are rhyolitic and latitic tuffs. These are interbedded with sandstone and conglomerates. Structurally, Black Mountain is an uplifted volcanic fault block, consisting of basaltic andesite. Lesser faults cut across the mountain in several places.

B. Water

The Blue Creek WSA is situated within the Gila River Basin and contributes to the larger Lower Colorado River Basin.

Surface water within the WSA drains into the Gila River through an ephemeral stream system. Blue Creek is a principle tributary to the Gila River and is perennial in the upper reaches; however, underground flow predominates in the lower reaches through the WSA. Surface flow in the ephemeral streams generally occurs as a result of summer thunderstorms.

Ground water is available from the Gila Conglomerate in a narrow band on either side of Blue Creek. Lower yields are expected in the volcanic rocks and bolson fill. Ground water movement is towards the Gila River, and most recharge occurs in the stream channels during periods of flood runoff. Ground water quality in the area is within recommended limits for livestock and wildlife use, as established by the National Academy of Sciences (BLM 1980).

C. Soils

The major soil type within the Blue Creek WSA occurs on Black Mountain and is characterized by shallow, stony soils over basalt bedrock. Some areas of outcropping occur on the steeper slopes.

On the more level land to the north of Black Mountain, the soils are deeper and have a gravelly loam surface texture. In the Blue Creek drainage, the soils consist of stratified sands, silts, clays, and gravels. Surface textures range from silty clay loam to gravelly sands.

D. Vegetation

1. General

Vegetation and associated range sites within the Blue Creek WSA consist of four major types:

Vegetative Type	Range Sites	Federal Acres
Juniper-mixed mountain shrub	Mountain	6,468
Creosote	Malpais (lava flow)	5,122
Creosote	Breaks	2,358
Deciduous trees	Bottomland	148

Juniper trees, acacia, Mormon tea, allthorn, sumac, graythorn, creosote, mesquite, and snakeweed shrubs are the dominant vegetation on the mountain slopes of this WSA. Grass species present are gramas, tobosa, bush muhly, dropseed, curly mesquite, foxtail, and threeawns.

Creosote prevails on the malpais (lava flow) area. There are scattered juniper trees with associated shrub species such as snakeweed, mesquite, and sumac. Numerous varieties of grass species make up a large part of this area. These include tobosa, bush muhly, gramas, threeawns, Arizona cottontop, foxtail, and cane bluestem. This area occurs in the southern part of the WSA.

Breaks, a highly erodable range site, occurs along the Gila River. These soils within the range site are stabilized by shrub species such as creosote, snakeweed, tarbush, mesquite, mimosa, yucca, Mormon tea, rabbitbrush, cacti, and numerous grass species including tobosa, bush muhly, threeawns, black grama, fluffgrass, dropseeds, and other gramas.

Deciduous trees in the deeper soils of the bottomland site include ash, cottonwood, Arizona sycamore, and willow. Some juniper trees are also present. These tree species are few and far between. Grasses cover most of this area. Species include bush muhly, green sprangletop, Arizona cottontop, sideoats grama, threeawns, and dropseeds. This pseudoriparian area is important to wildlife.

2. Threatened or Endangered Plant Species

The following species was identified and located in or near the WSA (NMSHP AND USFWS 1982).

Species: Cereus greggii - night blooming cereus

Status: Bureau sensitive species proposed for Federal listing.

Habitat: widespread; does not grow commonly anywhere; needs the microhabitat associated with creosote and bush muhly.

E. Wildlife

The Blue Creek WSA is largely mixed shrub mountain and creosote habitat sites. There are small areas of grass, mixed shrub rolling upland, and pseudoriparian sites. The latter is in the portion of Blue Creek that runs through the WSA.

Most of these sites do not support diverse wildlife communities. A pseudoriparian site has somewhat more diversity, but the Blue Creek WSA is not an exceptionally valuable wildlife area.

Big game occur in low numbers in the WSA. There are a few mule deer and also some javelina. The latter are close to their northernmost limit of distribution in this area.

F. Visual

Black Mountain is a rounded undulating mountain surrounded by rolling foothills. Vegetation forms broken and irregular patterns which generally follow drainages. The scenic quality rating is B.

Portions of the Blue Creek WSA are in three Visual Resource Management Classes (VRM) as follows: Class II-7,356 acres, Class III-809 acres, and Class IV-5,931 acres.

G. Cultural

There are no known cultural resources in the Blue Creek WSA; however, no archaeological surveys have been conducted. The chances of significant sites in most of the WSA appears poor. However, the southeastern portion of the area has a chance of containing significant sites because of its proximity to the Gila River and several fairly flat areas.

H. Air

Generally, the quality of air within the Blue Creek WSA is good. The air quality in the WSA does not exceed the state or Federal air quality standards and is classified as a Class II area. This classification allows a moderate amount of degradation of air quality.

Since no major industrial or population centers are located in the nearby vicinity, the only major degradation of air quality occurs during the spring months (March-May). West-prevailing winds, commonly gusting in excess of 30 mph, result in dust storms throughout the southern part of the state.

III. EXISTING AND POTENTIAL USES

A. Mineral Development

1. Energy Minerals

There are no known occurrences of energy minerals in the Blue Creek WSA and a potential occurrence is not likely. The Minerals Management Service has classified the lands in the Blue Creek WSA as having potential for oil and gas. However, the area is considered poor because of the lack of petroleum source and reservoir rocks (BLM Mineral Resource Inventory 1981).

2. Non-Energy Minerals

There are no known occurrences of non-energy locatable minerals in the Blue Creek WSA, however, approximately 3/4 mile south of the WSA, there are some manganese deposits and workings. The workings in the general area indicate a possible mineralized area. Manganese oxides are found coating some rhyolite outcrops. Manganese is on the National Defense Stockpile Inventory of Critical Minerals; however, potential within the WSA appears to be low.

B. Watershed

Within the Blue Creek WSA, water is used primarily by livestock and wildlife. Water developments that are within the WSA boundary include three dirt tanks, two pipeline systems, and one well facility (see Livestock Grazing below). The Blue Creek WSA is part of the Gila-San Francisco declared underground water basin and ground water use is administered by the New Mexico State Engineer.

Water draining the Blue Creek WSA, as both surface flow and underground flow, contributes to the Gila River system where downstream uses include irrigation, limited warm water fishery, livestock and wildlife watering, secondary contact recreation, and limited drinking water.

A watershed decision in the Gila Management Framework Plan (MFP) (1977) identifies areas where construction of water control structures to reduce flood and sediment damages are feasible. A portion of this area lies within the Blue Creek WSA.

C. Livestock Grazing

1. Allotments

Parts of four grazing allotments are present within the Blue Creek WSA. A small area in the middle of the WSA is

ungrazed by livestock due to the steep slopes. Licensed grazing use on public land includes cattle and a few horses.

ALLOTMENTS WITHIN THE WSA^{a/}

Allotment Name and Number	Total Acres	Total AUMs	Approximate Acres in WSA	Percent Allotment
R. Johns 1028	2,644	288	1,838	70%
R. Johns 1029	960	192	160	17%
R. Shay 1059	35,591	6,240	10,105	28%
Caprock 1078	30,028	4,884	1,993	7%
TOTAL			14,096	

2. Ranch Management

EXISTING RANGELAND DEVELOPMENTS WITHIN THE WSA^{a/}

Allotment Name and Number	Type of Development	Location
R. Johns 1028	dirt tank	T. 19 S., R. 20 W., Sec. 7
R. Johns 1029	pipeline	¼ mile
R. Shay 1059	windmill, trough, storage tank, and corrals	T. 19 S., R. 19 W., Sec. 8
	2 dirt tanks	T. 18 S., R. 20 W., Sec. 23
	trough	T. 19 S., R. 19 W., Sec. 6
	trough	T. 18 S., R. 20 W., Sec. 25
	corrals	T. 18 S., R. 19 W., Sec. 31
	pipeline	3 miles
	interior fence	5 miles

Boundary Fences:	Caprock (1078) and Johns (1028)	¼ mile
	Caprock (1078) and Shay (1059)	3¼ miles
	Shay (1059) and Johns (1029)	1 mile
	Shay (1059) and Johns (1028)	3½ miles

3. Potential Rangeland Developments

PROPOSED RANGELAND DEVELOPMENTS WITHIN THE WSA^{a/}

Allotment Name and Number	Type of Development	Location ^{b/}
R. Johns 1028	erosion control dam	T. 19 S., R. 20 W., Sec. 9
R. Shay 1059	2 erosion control dams	T. 18 S., R. 20 W., Sec. 14

Note: ^{a/}Information shown in tables reflects only Federal acres and animal unit months (AUMs), and rangeland developments on public land.

^{b/}Locations of proposed rangeland developments are tentative (LC/L MFP Amendment/EIS, in preparation).

D. Recreation

Very little recreational use occurs within the WSA. Some local residents hunt deer in the unit.

E. Realty Actions

A temporary State Aid Withdrawal is located within the Blue Creek WSA. The State of New Mexico has completed their land selection and the withdrawal will be reviewed to determine if it should be cancelled.

A portion of the Blue Creek WSA is withdrawn for use in connection with the San Carlos Indian Irrigation Project. In addition, a segment of the WSA is withdrawn by Executive Order for powersite reservations. These lands are currently being reviewed by the U.S. Geological Survey, Water Resources Division, to determine their importance for powersite locations. Those withdrawals found not feasible will be revoked.

Duncan Valley Electric Company has two rights-of-way (ROWs) for transmission lines. One is just outside the southwest boundary of the WSA and the other forms part of the northwest boundary.

The Sunset Ditch Company has a ROW within the WSA for use in connection with flood control structures. At the present time, the structures have not be constructed.

F. Wildlife

The Gila MFP (1977) recommends fencing part of a dirt tank in T. 18 S., R. 20 W., Section 23: SE $\frac{1}{4}$, so that vegetation for food and cover could be planted inside the fence for wildlife.

IV. WILDERNESS CRITERIA

A. Evaluation of Wilderness Values

1. Quality of Mandatory Wilderness Characteristics

a. Naturalness

Numerous rangeland developments are located within the Blue Creek WSA. These include 3 dirt tanks, 2 corrals, 3 drinking troughs, 3½ miles of pipeline, a windmill and storage tank, and 5 miles of interior fence. There are also approximately 4 miles of vehicle routes within the WSA. These imprints of man are concentrated on Black Mountain's northeast slopes and in Seep Springs Draw and Blue Creek and degrade the naturalness of these topographic features. Since the cumulative impacts of these developments are substantially unnoticeable when considering the entire Blue Creek WSA, this area marginally meets the required naturalness criterion.

b. Solitude

Opportunities exist for a visitor to feel isolated from the evidence of other people within the WSA. These opportunities are primarily the result of the area's large size and, to a lesser degree, the WSA's topographic diversity.

Opportunities for solitude are impacted in the southwest corner of the WSA by State Highway 82 and the roads and canals which form parts of the WSA boundary.

c. Primitive and Unconfined Recreation

Opportunities for primitive and unconfined recreation are considered outstanding due to the area's size and topography.

These opportunities are, however, negatively impacted by land status and the location of rangeland developments.

Land ownership patterns in the WSA disrupt the continuity of Black Mountain. The northern end of Black Mountain and part of the surrounding foothills (T. 18 S., R. 20 W., part of Sections 22 and 27) is in private ownership. Two state sections, T. 19 S., R. 20 W., Section 2, and T. 18 S., R. 19 W., Section 36, are located in the center of Black Mountain.

This combination of state and private lands reduces the opportunity to enjoy an unconfined recreational experience in the WSA. Users of the area are unable to hike around the base or along the ridge of Black Mountain without crossing both state and private lands.

The location of rangeland developments impact each of the WSA's major topographic features. Visitors hiking along the eastern slopes of Black Mountain can easily see the dirt tanks located in T. 18 S., R. 20 W., Sections 23 and 36. When the hiker is below or north of the peak in Section 34, two of the tanks come into view. Visual intrusions located close to the mountain reduce the feeling of being isolated or in an isolated area.

While hiking in the bottom or along the rims of the WSA's two major canyons (Blue Creek and Seep Springs Draw), visitors again see rangeland developments. Several drinking troughs and a pipeline are located in Seep Springs Draw. A windmill, storage tank, and corrals are located in the canyon of Blue Creek.

Recreational opportunities are further reduced by the lack of outstanding recreational resources within the unit. The opportunities for primitive recreation are no greater than in any undeveloped mountain in the region.

2. Special Features

The Blue Creek WSA provides habitat for the night blooming cereus, a Bureau sensitive plant species proposed for Federal listing (see Chapter II, Vegetation). This is an ecological feature of scientific value.

3. Multiple Resource Benefits

Congressional designation of this area as wilderness would provide a greater degree of long-term protection for the area's wilderness values than would administrative designations available to the BLM.

A more detailed discussion of multiple resource benefits of wilderness designation is located in Chapter VI, Impacts, under the All Wilderness Alternative.

4. Diversity

a. Ecosystems Present

The Bailey (1976) - Kuchler (1966) System classifies the area as being in the Chihuahuan Desert Province

with a potential natural vegetation of grama-tobosa shrubsteppe.

The general nature of the Bailey-Kuchler System fails to show the vegetative variety and diversity of the WSA. Further refinement of the system shows the following vegetation types in the WSA:

<u>Vegetation Type</u>	<u>Acres</u>
mountain mahogany-oak scrub	6,468
creosote	7,480
northern flood plain forest	148

b. Distance to Population Centers

The WSA is approximately 3 hours driving time from Las Cruces, New Mexico; 6 hours from Albuquerque, New Mexico; 4 hours from El Paso, Texas; 4 hours from Tucson, Arizona; and 6 hours from Phoenix, Arizona.

B. Manageability

Several factors affect the manageability of the Blue Creek WSA: land ownership, location of rangeland developments, existing rights-of-way, and withdrawals. The effects of these factors on manageability are assessed in terms of their relationship to the major topographic features of the WSA.

The primary topographic feature of the WSA is Black Mountain. The mountain dominates the WSA and provides the majority of opportunities for solitude and primitive recreation. Topographic features of secondary importance are Blue Creek and Seep Springs Draw.

Nonwilderness uses on the private land adjacent to the north boundary of the WSA or on the state land in the center of Black Mountain could degrade existing wilderness values.

As discussed earlier in Chapter IV, Primitive and Unconfined Recreation, land ownership patterns and the location of rangeland developments have a negative impact on the quality of the WSA's opportunities for primitive and unconfined recreation. Because of these factors, the area cannot be managed to provide a high quality recreational opportunity.

Opportunities for solitude are also somewhat impacted by the highway, roads, and canals along the southwest corner of the WSA. The remainder of the WSA may be managed to provide opportunities for solitude.

The Duncan Valley Electric Company transmission lines have a minimal impact on manageability. These transmission lines are generally visible for about ½ mile inside the WSA. The lines do serve as on-the-ground identification of the area's boundary and thus may improve the Bureau's ability to manage the area.

The potential uses of the powersite withdrawal and the Sunset Ditch Company ROW for flood control structures, both in the southwest corner of the WSA, are difficult to predict. Flood control structures could affect the naturalness of the southwest corner of the WSA.

Considering all of the above factors, the Bureau could not manage the Blue Creek WSA to provide a high quality wilderness experience.

V. PUBLIC INVOLVEMENT OVERVIEW

Public comments were received on the Blue Creek unit during both the BLM New Mexico Wilderness Initial Inventory Decisions (July 1979) and the BLM New Mexico Wilderness Study Area Decisions (March 1980). The majority of the initial inventory comments opposed wilderness review of the area. The rationale cited lack of basic wilderness characteristics, poor configuration for management, and resource conflicts with minerals and grazing.

The majority of comments on the March 1980 WSA Proposals supported wilderness review of the area, listing the presence of basic wilderness criteria as rationale.

VI. ALTERNATIVES AND IMPACTS

None of the alternatives would have significant impacts on cultural, air, realty actions, and recreation in the Blue Creek WSA. For this reason, these resources are not included in the following discussions.

A. All Wilderness

Under this alternative, the entire 14,096 acres of public land within the Blue Creek WSA would be recommended as suitable for wilderness designation. (See Map 1 for WSA boundary.)

If designated as wilderness, existing and potential uses (see Chapter III) would be regulated by the Wilderness Management Policy (WMP) (1981) as follows.

Generally, motorized access on vehicle trails within the WSA would not be allowed. However, permits for vehicular access to maintain existing rangeland developments in the WSA could be authorized.

The WSA would be managed as a VRM Class I.

The water control structures recommended in the Gila MFP (1977) for watershed improvement and the erosion control structures proposed in the Las Cruces/Lordsburg MFP Amendment/EIS could be allowed if approved by the BLM Director.

The Sunset Ditch Company could construct flood control structures and debris basins on its existing ROW in the southwest part of the WSA.

1. Impacts to Minerals

There has been no energy minerals production within the WSA. Because the potential appears to be low, impacts to the energy minerals industry would be minor in the short-term. The economic benefits forgone to the energy minerals industry also would be minimal in the short-term.

Exploration and leasing for energy minerals would not be allowed under the mineral leasing laws after wilderness designation. As a result, there would be no opportunity for further assessment of the energy minerals potential or for development and production. The energy minerals industry could be adversely affected in the short-term.

The Blue Creek WSA is theoretically favorable for the occurrence of manganese, a strategic mineral. Since there have been no discoveries and there is currently no activity, economic benefits forgone to the minerals industry would be minimal in the short-term.

After wilderness designation, prospecting, exploration, and locations of mining claims would not be allowed. The minerals industry could be affected in the long-term.

2. Impacts to Other Resources and Uses

a. Water, Soils, Vegetation

Restrictions on surface disturbing and mechanized activities would provide long-term protection for the existing water, soils, and vegetation including Cereus greggii, the Bureau sensitive plant species proposed for Federal listing (see Chapter II, Vegetation).

Watershed improvement projects would reduce flood and sediment damage by reducing the volume and peak rate of surface runoff from small ephemeral tributaries of Blue Creek and Gila River. These water control structures and the proposed erosion control structures would be significant for the individual watersheds where constructed, and also contribute to a reduction in flood and sediment damage downstream. If the BLM Director does not approve the projects as required by the WMP, these benefits would be lost.

Vegetation loss and soil disturbances resulting from the initial construction of water control structures would be outweighed in the long-term by an improvement in vegetative cover and soil stabilization.

b. Wildlife

Restrictions on surface disturbing and mechanized activities would provide protection for wildlife habitat.

c. Visual

Existing visual resources would be protected. Minor modifications in the basic elements of the landscape as a result of natural ecological changes and very limited management activity would be permitted.

d. Livestock Grazing

Permits for vehicular access could be authorized for maintenance of 1 windmill, 1 storage tank, 3 troughs, 2 corrals, 2 dirt tanks, and 3 miles of pipeline on the Shay allotment (1059) within the WSA. Checking of cattle on existing vehicle trails in the WSA would not be allowed. The permittees would be allowed to check cattle either on horseback or foot. This could result in less effective livestock management and an impact

on costs of the operation, depending on the use normally made of the trails by motor vehicles.

e. Wilderness Values

Wilderness designation would provide the wilderness values present in the area with long-term Congressional protection. However, several factors would impact the capability of the BLM to manage the Blue Creek WSA as wilderness in the long-term. Nonwilderness uses on the private land adjacent to the north boundary of the WSA or on the state land in the center of Black Mountain could degrade existing wilderness values. The impacts could be minimal to major depending on the location, type, and extent of development and access requirements. In addition, these non-Federal lands affect the capability of managing the area to provide high quality recreational opportunities. Wilderness recreationists are unable to hike along the ridge of Black Mountain or around the base of the mountain without crossing non-Federal lands.

The outside sights and sounds associated with the roads and canals along the southwest boundary of the WSA would periodically disrupt opportunities for solitude.

The future construction of flood control structures on the Sunset Ditch Company's ROW in the southwest part of the WSA would degrade natural values in this part of the area.

The BLM could not manage the Blue Creek WSA in the long-term to provide a quality wilderness experience.

B. No Action/No Wilderness

Under the No Action/No Wilderness Alternative, the Blue Creek WSA would be recommended nonsuitable for wilderness designation.

If the WSA is not designated wilderness, existing and potential uses (see Chapter III) would continue without regard to the Interim Management Policy and Guidelines for Lands Under Wilderness Review (1979) as follows.

Approximately 7,356 acres on the southwest slopes of Black Mountains and in the southwestern part of the WSA would be managed as a VRM Class II. Approximately 809 acres in the southeast part of the WSA along the Blue Creek drainage would be managed as a VRM Class III. Approximately 5,931 acres in the northeast part of the WSA would be managed as a VRM Class IV.

The water control structures recommended in the Gila MFP (1977) for watershed improvement or the erosion control structures proposed in the Las Cruces/Lordsburg MFP Amendment/EIS could be implemented.

The Sunset Ditch Company could construct flood control structures and debris basins on its existing ROW in the southwest part of the WSA.

1. Impacts to Wilderness Values

The wilderness values of the Blue Creek area would not be provided with long-term Congressional protection. Management of the area as specified in land use plans would be subject to administrative change in the long-term.

The construction of the proposed erosion control structures, the proposed water control structures to protect watershed, or the flood control structures on the Sunset Ditch Company's ROW would degrade the quality of the area's naturalness and opportunities for solitude and primitive recreation. The impacts could be minimal to major depending on the number, location, and type of developments installed and the access requirements.

2. Impacts to Other Resources and Uses

a. Water, Soils, Vegetation

Construction of the watershed improvement projects would reduce flood and sediment damage by reducing the volume and peak rate of surface runoff from small ephemeral tributaries of Blue Creek and Gila River. This would be significant for the individual watersheds where constructed and also contribute to a reduction in flood and sediment damage downstream.

Vegetation loss and soil disturbances resulting from the initial construction of water control structures would be outweighed in the long-term by an improvement in vegetative cover and soil stabilization.

b. Wildlife

Impacts to wildlife would be very minimal. A slight amount of additional surface disturbance might occur, and this would destroy some wildlife habitat.

c. Visual

In VRM Class II areas, minor to moderate changes in the basic elements of the landscape as a result of management actions would be permitted as long as the

changes do not attract attention. In VRM Class III areas, moderate changes in the landscape as a result of management actions would be allowed as long as the visual contrast is subordinate to the existing landscape. In VRM Class IV areas, significant change in the basic elements of the landscape as a result of management activities would be permitted.

Since existing and proposed BLM plans do not identify any activities which would significantly impair visual resources, the existing Class B scenic quality would be substantially maintained in the short-term. However, the VRM classes III and IV could allow degradation of the existing visual resources in the long-term.

d. Minerals

There would be no impact on minerals exploration and development. Mining activities would be regulated to prevent unnecessary and undue degradation of the land. No economic benefits would be lost under this alternative.

e. Livestock Grazing

All rangeland developments would be checked and maintained on a convenience basis using motorized equipment. The permittees would be allowed to use vehicle trails as at present to check cattle. There would be no impacts to livestock grazing.

VII. RECOMMENDED ACTION

A. Recommended Action Description

The recommended action for the Blue Creek WSA is the No Action/No Wilderness Alternative. The entire 14,096 acre WSA would be recommended nonsuitable for wilderness designation.

B. Rationale

The quality of the area's wilderness values and potential for wilderness management conflicts are the primary reasons for this recommendation.

Although the Blue Creek WSA meets the criteria for a WSA, not one of the criteria is of exceptional quality. The overall appearance of the WSA is natural but the naturalness of the major topographic features of the area (the northeast slopes of Black Mountain, Seep Springs Draw, and Blue Creek) is significantly degraded by rangeland developments. Opportunities for solitude in the southwest part of the WSA are impacted by the sights and sounds of traffic on State Highway 82. Primitive recreation opportunities are impacted by land status patterns and the locations of rangeland developments. Supplemental values are not significant.

The uncertain long-term management of the private land adjacent to the north boundary of the WSA and the state land in the center of Black Mountain represents the most significant potential wilderness conflict. Nonwilderness uses on these non-Federal lands could have substantial impacts on the wilderness values within the area. Another potential manageability conflict involves construction of flood control structures on the Sunset Ditch Company's ROW. Natural values in the southwest part of the WSA could be slightly degraded.

Without wilderness designation, the Blue Creek WSA's existing wilderness character would be substantially retained under the short-term management prescribed in existing and proposed BLM plans.

There would be no significant impacts to other resource values and uses within the WSA under the recommended action.

C. Consistency With Other Plans

The recommended action for the Blue Creek WSA does not conflict with any of the decisions in the Gila MFP (1977). At this time, there are no known inconsistencies between the recommended action and the policies of local, state, or Federal plans. Continuing coordination and consultation with other agencies will take place during the public comment period on the Draft Environmental Assessment for Wilderness Study Areas in the Las Cruces District.

APPENDIX B

CEDAR MOUNTAINS WSA (NM-030-042)

I. GENERAL DESCRIPTION

A. Location

The Cedar Mountains Wilderness Study Area (WSA) is located in southwestern Luna county. The WSA is approximately 20 miles southwest of Deming, New Mexico.

The U.S. Geologic Survey (USGS) topographic maps covering the WSA are the Hat Top Mountain, Flying W Mountain, and Gage, SE quadrangles. All of these are New Mexico quadrangles at the 7½-minute scale.

B. Climate and Topography

The Cedar Mountains WSA is characterized by an arid, continental climate, with mild winters and pleasant to hot summers.

Average annual precipitation in the area is slightly above 9 inches, with locally larger amounts at higher elevations. A wide variation in annual totals is characteristic of arid climates. More than half of the total annual precipitation occurs from July to September. Rainfall during these months usually is from convective thunderstorms that are commonly brief and intense.

During the summer months, daytime temperatures quite often exceed 100°F at elevations below 5,000 feet. Average monthly maximum temperature during July, the warmest month, is in the upper 90's. In January, the coldest month, average monthly minimum temperature is in the upper 20's. Slightly cooler temperatures can be expected throughout the year at higher elevations.

Winds generally predominate from the southeast in summer and from the northwest in winter. Wind speeds are usually moderate. Spring is the windy season. Dry, gusty winds are predominantly from the west-southwest and may exceed 30 mph in the afternoons.

The Cedar Mountains WSA contains a 4-mile segment of the Cedar Mountain Range. The Cedars are essentially a northwest-southeast trending ridge with scattered intermittent peaks. Drainages are steep and rocky at their origins along the mountain ridge. The lower elevations are characterized by more rolling, rounded hills and broader drainages.

Major topographic features within the WSA include the north half of Flying W Mountain, Old Baldy Peak, and Rock Hole Canyon. Flying W Mountain, at 6,217 feet, is the highest point in the Cedar Mountain Range.

C. Land Status

The WSA contains 14,911 acres of public land. There are no state or private lands within the WSA boundary. (See Map 1 for land status within the WSA boundary.)

D. Access

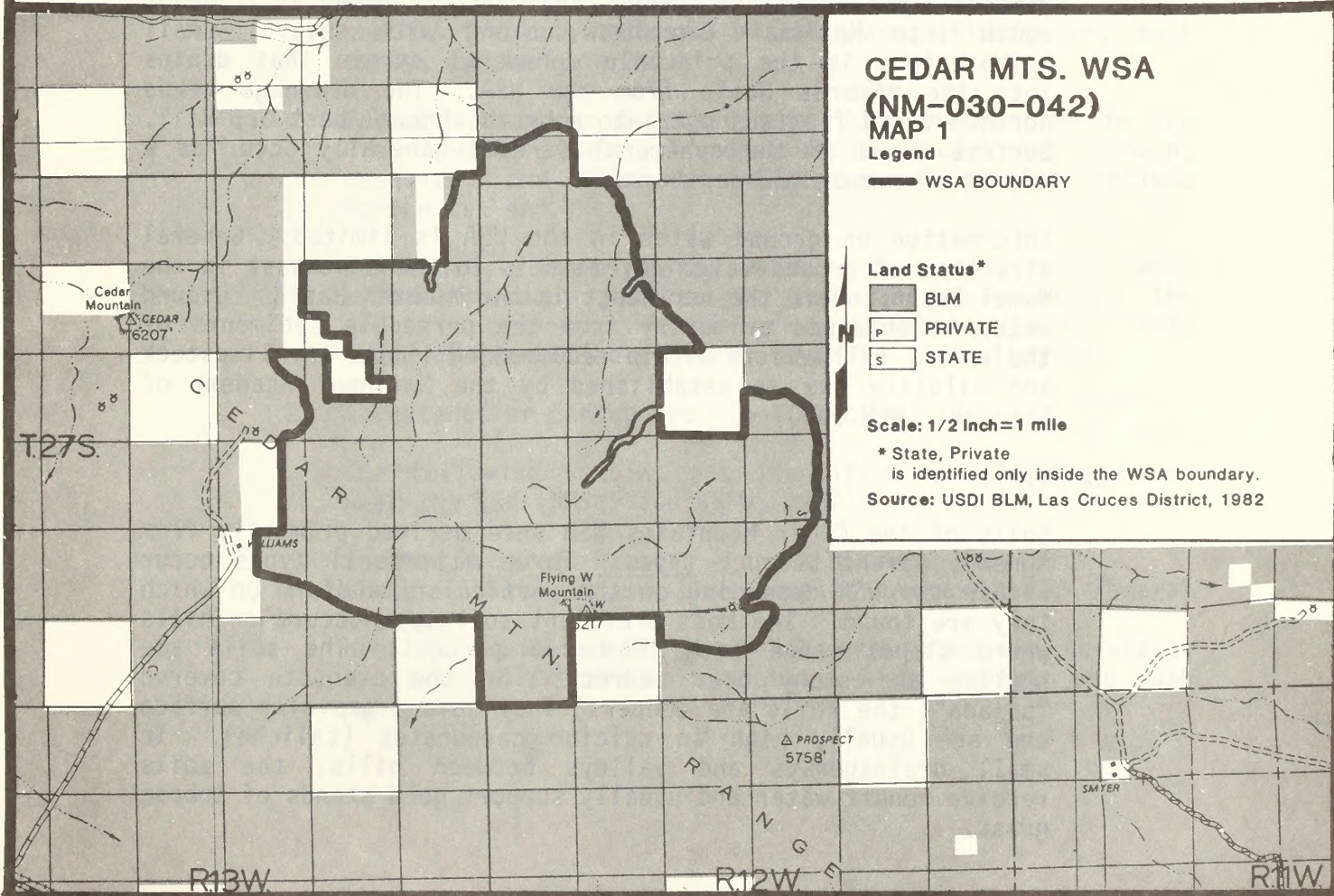
There is no legal access to the Cedar Mountains WSA. Physical access is available by way of ranch roads on the north, east, and west boundaries.

Access to the north and east boundaries is via Interstate Highway 10 to the Gage exit, about 19 miles west of Deming, then south on County Road C020 for approximately 5 miles to County Road C019. After approximately 9 miles southwest on C019, a ranch road branches off to the south. This road leads into a network of ranch roads that provide physical access to the north and east boundaries of the WSA.

Access to the west boundary of the WSA is via County Road C001 that runs northwest from State Highway 9. The county maintained road terminates on private land at the Flying W Ranch headquarters. The WSA boundary is $\frac{1}{4}$ -mile west of the headquarters across private land.



Cedar Mountains WSA.



II. EXISTING RESOURCES

A. Geology

The Cedar Mountains WSA is located within the Basin and Range Physiographic Province. This Province is characterized by fault block mountains separated by basins filled with alluvial and shallow lake sediments.

The Cedar Mountains are comprised of shallow Paleozoic marine sediments, with a Tertiary volcanic cap consisting predominantly of basalt. Folding and faulting occurred during late Cretaceous time.

B. Water

The Cedar Mountains WSA forms part of a divide for two surface water drainage basins; the Mimbres Basin to the northeast and the Wamel Basin to the southwest. Both are noncontributing, closed basins.

Principle ephemeral streams within the WSA that drain into the Wamel Basin are Rock Hole Canyon and Wamel Draw. Rock Hole Canyon becomes indistinct along the lower alluvial fan slopes and follows a shallow course southwestward. Wamel Draw retains a more distinct channel that becomes broad as it heads south into Mexico. Gap Draw, along with several small tributaries, is the principle ephemeral stream that drains into the Mimbres Basin from the WSA. The drainage heads northwest and flattens out into a broad channel past Gap Hill. Surface flows of the ephemeral streams generally occur as a result of summer thunderstorms.

Information on ground water in the WSA is limited. General direction of ground water movement is to the southwest in the Wamel Basin and to the northeast in the Mimbres Basin. Ground water is obtained primarily from the permeable sediments of the valley fill and is within recommended limits for livestock and wildlife use as established by the National Academy of Sciences (BLM 1980).

C. Soils

Soils of the Cedar Mountains WSA were derived primarily from igneous parent bedrock types. Three major soil types occur within the WSA depending on the particular landform on which they are found. The most prevalent soil type occurs on hills where slopes range from 10 to 75 percent. The soils are shallow and stony over bedrock. On the creosote covered "bajada", the soils are deeper. They have a gravelly surface and are usually high in calcium carbonates (caliche). In small drainageways and valleys between hills, the soils receive runoff water and usually support good stands of tobosa grass.

D. Vegetation

1. General

Vegetation and associated range sites within the Cedar Mountains WSA consist of four major types:

Vegetative Type	Range Site	Federal Acres
Mixed mountain shrub	Mountains	6,099
Creosote	Gravelly	7,599
Tobosa	Draws (swales)	1,206
Mixed mountain shrub	Gravelly sand	7

Mixed mountain shrub and tree species in the Cedar Mountains include juniper, hackberry, Apacheplume, snakeweed, fourwing saltbush, tarbush, mesquite, and Mormon tea. Associated grass species are tobosa, black grama, other gramas, and bush muhly.

Creosote gravelly areas surround the mountain region. Vegetation is predominantly shrubs with a few grass species. Other associated shrub species are snakeweed, mariola, tarbush, mesquite, allthorn, and yucca. Grass species include tobosa, black grama, fluffgrass, bush muhly, and burro grass.

Tobosa and burro grass are the dominant species in the draw (swale) sites. Invading shrub species are tarbush, mesquite, and allthorn. Other shrub species include Mormon tea and yucca.

Oak brush, sumac, juniper, agave, and cacti are the most prevalent woody species in the sandy arroyos of the mountain canyons. Tobosa grass is also present. This area was identified as special habitat for wildlife.

2. Threatened or Endangered Plant Species

The following species was identified and located in or near the WSA (NMSHP and USFWS 1982).

Species: Cereus greggii - night blooming cereus

Status: Bureau sensitive species proposed for Federal listing.

Habitat: widespread; does not grow commonly anywhere; needs the microhabitat associated with creosote and bush muhly.

E. Wildlife

Most of the Cedar Mountains WSA is a grass mountain habitat site with some creosote at the edges. In some areas, there are shrubs and juniper trees which make for more variation in the habitat. There are also some cliffs and rimrock, and some raptors probably nest in the WSA. It is not a unique area for wildlife since it is quite similar to other desert ranges.

The New Mexico Department of Game and Fish has delineated the Cedar Mountains as a deer herd unit area. They estimate that there are now less than half a deer per section and optimum numbers are half a deer per section. Some javelina also are found in the WSA.

F. Visual

The Cedar Mountains have a Class B (moderate) scenic quality rating. The landform of the Cedar Mountains consists of rolling, conical hills. Colors are dark shades of reddish brown and gray with a grainy-crumbly texture. Vegetation consists of light brown and yellow grasses spotted with dark green juniper and desert shrubs.

The WSA is within a Visual Resource Management Class II area.

G. Cultural

There is a large Animas phase pueblo in the Cedar Mountains WSA which has been partially destroyed through bulldozing; however, a similar site remains almost undisturbed. Because almost none of this WSA has been surveyed, it is difficult to evaluate the significance of the cultural resources in this unit. The known sites do have a high degree of significance because of their condition, the rarity of Animas phase sites, and the large amount of scientific information contained in them. These sites would probably be eligible for the National Register of Historic Places.

H. Air

Generally, the quality of air within the Cedar Mountains WSA is good. The air quality in the WSA does not exceed the state or Federal air quality standards and is classified as a Class II area. This classification allows a moderate amount of degradation of air quality.

Since no major industrial or population centers are located in the nearby vicinity, the only major degradation of air quality occurs during the spring months (March-May). West-prevailing winds, commonly gusting in excess of 30 mph, result in dust storms throughout the southern part of the state.

III. EXISTING AND POTENTIAL USES

A. Mineral Development

1. Energy Minerals

There are no known occurrences of energy minerals within the Cedar Mountains WSA. There are currently 11 oil and gas lease applications in the areas adjacent to the WSA.

Potential for hydrocarbon accumulations is more favorable in the adjacent valleys. Potential is associated with the productive Pedregosa basin in northern Mexico and the Overthrust Belt running through the bootheel in southwestern New Mexico. The Cedar Mountains WSA has low potential due to the lack of adequate petroleum source rocks and geologic indicators.

There are no geologic indicators that would suggest the possible occurrence of geothermal energy.

2. Non-Energy Minerals

Locatable minerals could occur in the WSA. Although there are no surface indicators, the geology is favorable for mineralization. Mineralized areas north and south of the WSA indicate the possible occurrence of a mineralized zone.

B. Watershed

Within the Cedar Mountains WSA, water is used primarily by livestock and wildlife. Water developments that are within the WSA boundary include one dirt tank on a small ephemeral stream and one water spreader system on Gap Draw (see Livestock Grazing). Additionally, several well facilities and dirt tanks are located just outside the WSA boundary that are for livestock watering.

A portion of the Cedar Mountains WSA is within the Mimbres Valley declared underground water basin and ground water use is administered by the New Mexico State Engineer.

C. Livestock Grazing

1. Allotments

Parts of five grazing allotments are present within the Cedar Mountains WSA. Some areas of the Cedar Mountain range are inaccessible to livestock due to the steep slopes and distance from water developments. Licensed grazing use on public land includes cattle and a few horses. Three allotments, Burdick Hills (2013), Mashed O

(2034), and Smyer (2046), are under implemented Allotment Management Plans (AMPs).

ALLOTMENTS WITHIN THE WSA^{a/}

Allotment Name and Number	Total Acres	Total AUMs	Approximate Acres in WSA	Percent Allotment
Z. Clopton 2006	45,115	7,788	214	.5%
Burdick Hills 2013	78,498	12,202	5,606	7%
Flying W Ranch 2017	20,917	3,612	4,134	20%
Mashed O 2034	70,340	12,228	4,187	6%
W. and M. Smyer 2046	13,511	2,364	770	6%
TOTAL			14,911	

2. Ranch Management

EXISTING RANGELAND DEVELOPMENTS WITHIN THE WSA^{a/}

Allotment Name and Number	Type of Development	Location
Flying W Ranch 2017	interior fence	3/4 mile
Mashed O 2034	water spreader	T. 27 S., R. 12 W., Sec. 22

Boundary Fences:

Clopton 2006 and Flying W Ranch 2017	1 miles
Mashed O 2034 and Burdick Hills 2013	3 miles
Mashed O 2034 and Flying W Ranch 2017	2 miles
Flying W Ranch 2017 and Burdick Hills 2013	2 miles
Mashed O 2034 and Smyer 2046	2 miles

Note: ^{a/}Information shown in tables reflects only Federal acres and animal unit months (AUMs), and rangeland developments on public land.

3. Potential Rangeland Developments

There is a $\frac{1}{2}$ mile of pipeline proposed on the Smyer allotment (2046) in T. 27 S., R. 12 W., Sections 28 and 33. The location of the proposed rangeland development is tentative.

D. Recreation

The predominant recreation use of the WSA is hunting for deer, dove, quail, and javelina. There is probably a certain amount of driving for pleasure and sightseeing around the WSA. Primitive recreation opportunities are discussed in Chapter IV, Primitive and Unconfined Recreation.

E. Realty Actions

A temporary State Aid Withdrawal is located within the Cedar Mountains WSA. The State of New Mexico has completed their land selection and the withdrawal will be reviewed to determine if it should be cancelled.

F. Wildlife

One quail guzzler is located in the Cedar Mountains WSA in T. 27 S., R. 12 W., Sec. 27: NE¼NW¼.

IV. WILDERNESS CRITERIA

A. Evaluation of Wilderness Values

1. Quality of Mandatory Wilderness Characteristics

a. Naturalness

The Cedar Mountains WSA generally appears natural. Imprints of man associated with the WSA include 7 vehicle trails, approximately 10 miles of fences, 2 cherry-stemmed windmills, and a cherry-stemmed road and pipeline.

Approximately 10 miles of the 7 vehicle trails are within the WSA boundary in the northwest, southwest, and east parts of the WSA. They generally follow drainages and are topographically screened. Both the vehicle trails and fences have insignificant impacts on naturalness.

Both of the windmills are cherry-stemmed less than $\frac{1}{2}$ mile into the WSA. Due to their locations just outside the boundaries of the WSA, they are substantially unnoticeable. In addition, the windmill just outside the northeast boundary is located on the north side of a hill and as a result, is topographically screened from most of the WSA.

A cherry-stemmed road and pipeline protrude about 1 mile into the east side of the WSA. This rangeland development impacts naturalness locally, but does not negatively impact the naturalness of the entire WSA.

b. Solitude

The Cedar Mountains WSA contains outstanding opportunities for solitude. The numerous small canyons provide topographic screening in the mountainous portion of the WSA. In the northern part of the WSA, great sweeping vistas of rolling, grass covered hills enhance the feeling of solitude and remoteness from others.

c. Primitive and Unconfined Recreation

Primitive recreation opportunities in the Cedar Mountains WSA include hunting, hiking, and backpacking. There are few rockclimbing opportunities and horseback riding is somewhat limited due to the grazing allotment fences within the WSA boundary. Opportunities for primitive recreation are not considered outstanding.

2. Special Features

The Cedar Mountains WSA contains special ecological and cultural features of scientific and educational value. The Cedar Mountains WSA provides habitat for the night blooming cereus, a Bureau sensitive plant species proposed for Federal listing (see Chapter II, Vegetation). The cultural features of this area consist of Animas phase sites that would probably be eligible for the National Register of Historic Places (see Chapter II, Cultural).

3. Multiple Resource Benefits

Congressional designation of this area as wilderness would provide a greater degree of long-term protection for the area's wilderness values than would administrative designations available to the BLM.

A more detailed discussion of multiple resource benefits of wilderness designation is located in Chapter VI, Impacts, under the All Wilderness Alternative.

4. Diversity

a. Ecosystems Present

The Bailey (1976) - Kuchler (1966) system classifies the Cedar Mountains WSA as being in the Chihuahuan Desert Province. The potential natural vegetation is grama-tobosa shrubsteppe.

The general nature of the Bailey-Kuchler System fails to show the vegetative variety and diversity of the WSA. Further refinement of the system shows the following vegetation types in the WSA:

<u>Vegetation Type</u>	<u>Acres</u>
mountain mahogany oak scrub	6,106
creosote	7,599
grama-tobosa shrubsteppe	1,206

b. Distance to Population Centers

The Cedar Mountains WSA is approximately 3 hours driving time from Las Cruces, New Mexico; 6 hours from Albuquerque, New Mexico; 4 hours from El Paso, Texas; 4 hours from Tucson, Arizona; and 6 hours from Phoenix, Arizona.

B. Manageability

Two factors complicate the ability of the Cedar Mountains to be managed as wilderness: land status and the cherry-stemmed road and pipeline southwest of Bob's Tank in T. 27 S., R. 12 W., Section 20. However, both of these factors are minor problems.

The state land adjacent to the northwest boundary is surrounded by the WSA on the north, east, and south. State land also borders the WSA on the southwest and southeast. Nonconforming or nonwilderness uses on the state land could degrade wilderness values in the the WSA.

Continued vehicle use on the cherry-stemmed road past Bob's Tank could create impacts on the naturalness and solitude in the east-central part of the WSA.

V. PUBLIC INVOLVEMENT OVERVIEW

Numerous public comments were received on the Cedar Mountains unit during the public comment periods on the BLM New Mexico Wilderness Review Initial Inventory Decisions (July 1979) and the BLM New Mexico Wilderness Study Area Proposals (March 1980). The recommendation for the Cedars in the March 1980 WSA Proposals was among the ten most commented-on recommendations in the state. Maps of rangeland developments, maps of proposed WSA boundaries, and photographs were submitted with some of the comments.

The BLM originally proposed to drop the Cedar Mountains unit in the March 1980 WSA Proposals. However, after the start of the public comment period, discrepancies were discovered in the intensive inventory information on the unit. Due to these discrepancies, a major re-evaluation of the unit's wilderness characteristics was necessary prior to making a final decision. Many of the commentors opposing WSA status for the Cedars were upset that the unit was being re-evaluated for wilderness characteristics. Other opposing comments cited rangeland developments, lack of outstanding opportunities for solitude or recreation, and conflicts with the ranching business and rockhounds.

Comments favoring WSA status for this area stated that a portion of the unit has basic wilderness values and cited the supplemental values of a biological ecotone along the Mexican border.

After consideration of public comments and a re-evaluation of intensive inventory data, the BLM designated an area in the central part of the original intensive inventory unit a WSA.

During the re-evaluation of this area, grazing permittees and other members of the public were both concerned about the accuracy of the inventory data. Field trips made in conjunction with the permittees and interested individuals are documented in the Permanent Documentation File in the Las Cruces District Office.

VI. ALTERNATIVES AND IMPACTS

None of the alternatives would have significant impacts on air, recreation, and realty actions in the Cedar Mountains WSA. For this reason, these resources were not included in the following discussions.

A. All Wilderness

Under this alternative, the entire 14,911 acres of public land within the Cedar Mountains WSA would be recommended as suitable for wilderness designation. (See Map 1 for WSA boundary.)

If designated as wilderness, existing and potential uses (see Chapter III) would be regulated by the Wilderness Management Policy (1981) as follows.

The WSA would be managed as a VRM Class I.

The proposed $\frac{1}{2}$ mile of pipeline could be constructed on the Smyer allotment (2046). Road construction and motorized access to the pipeline would not be authorized.

Generally, motorized access on vehicle trails within the WSA would not be allowed. However, permits for vehicular access to maintain existing rangeland developments in the WSA could be authorized.

1. Impacts to Minerals

There has been no energy minerals production within the WSA. Because the potential appears to be low, impacts to the energy minerals industry would be minor in the short-term. The loss of economic benefits to the energy minerals industry also would be minimal in the short-term. However, exploration and leasing for energy minerals would not be allowed after wilderness designation. As a result, there would be no opportunity for further assessment of the energy minerals potential or for production and development. The energy minerals industry could be adversely affected in the long-term.

There are no known occurrences of strategic or critical minerals within the WSA although the potential is fair for locatables. Since there have been no discoveries and there is currently no activity, the loss of economic benefits to locatable minerals operations would be minimal in the short-term.

After wilderness designation, prospecting, exploration, and location of mining claims would not be allowed. The minerals industry could be adversely affected in the long-term.

2. Impacts to Other Resources and Uses

a. Water, Soils, Vegetation

Restrictions on surface disturbing and mechanized activities would provide long-term protection for the existing water, soils, and vegetation including Cereus greggii, a Bureau sensitive plant species proposed for Federal listing (see Chapter II, Vegetation).

There would be a short-term impact on vegetation and soils cause by disturbance during construction of the proposed pipeline on the Smyer allotment (2046). Impacts to vegetation and soils would be insignificant once vegetation is reestablished along the pipeline. The trough would be constructed on state land outside the boundary of the WSA. This additional water could result in distribution of livestock which would result in better utilization of the vegetative resource on the Smyer allotment.

b. Wildlife

Restrictions on surface disturbing and mechanized activities would provide protection for wildlife habitat.

c. Visual

Existing visual resources would be protected. Minor modifications in the basic elements of the landscape as a result of natural ecological changes and very limited management activity would be permitted.

d. Cultural

Access within the area would be limited to foot and horseback travel. This would decrease site vandalism by individuals gaining access to the area with motorized vehicles. There is also the possibility of damage to sites through future rangeland developments.

e. Livestock Grazing

A permit for vehicular access along the existing vehicle trail for maintenance of the existing mile of boundary fence between the Burdick Hills and Mashed O allotments could be authorized.

The proposed $\frac{1}{2}$ mile of pipeline on the Smyer allotment (2046) could be constructed using motorized equipment. No access road would be constructed. Vehicular access for maintenance purposes would be on a permit basis.

Impacts to the livestock operator would be a minor inconvenience due to restricted vehicular access.

f. Wilderness Values

Wilderness designation would provide the wilderness values present in the area with long-term Congressional protection. The area would be managed to maintain its natural appearance and opportunities for solitude. The special features of the area would be maintained through wilderness management.

Two factors could slightly impact the ability of the Cedar Mountains WSA to be managed as wilderness. Nonwilderness uses on the state land adjacent to the boundaries of the WSA could degrade natural values and opportunities for solitude. Vehicle use on the cherry-stemmed road in the east-central part of the WSA could degrade naturalness and opportunities for solitude also.

B. No Action/No Wilderness

Under the No Action/No Wilderness Alternative, the Cedar Mountains WSA would be recommended nonsuitable for wilderness designation.

If the WSA is not designated wilderness, existing and potential uses (see Chapter III) would continue without regard to the Interim Management Policy and Guidelines for Lands Under Wilderness Review (1979) as follows.

The entire WSA would be managed as a VRM Class II.

The proposed $\frac{1}{2}$ mile of pipeline would be constructed on the Smyer allotment (2046). Road construction and vehicular access would be allowed.

1. Impacts to Wilderness Values

Under the No Action/No Wilderness Alternative, the wilderness values and special features of the Cedar Mountains WSA would not be provided with long-term Congressional protection. Since existing and proposed BLM plans do not identify any activities which would impair wilderness values, the entire Cedar Mountains WSA would probably retain its natural character in the short-term. However, management of the area as specified in land use plans would be subject to administrative change in the long-term.

2. Impacts to Other Resources and Uses

a. Water, Soils, Vegetation

Existing motorized access would not change. The pipeline would be constructed with an access road. Short-term impacts due to the construction of the proposed developments would be the same as those discussed under the All Wilderness Alternative. Vegetation and topsoil would be destroyed where the road is constructed.

Impacts to water resources under this alternative would not be significant.

b. Wildlife

If there is more surface disturbance, there would be a slight impact to wildlife because of habitat loss. Additional human intrusion would disturb some animals and poaching might increase.

c. Visual

Under a VRM Class II, changes in the basic elements of the landscape as a result of management actions would be permitted as long as the changes do not attract attention. Since existing and proposed BLM plans do not identify any activities which would impair visual resources, the existing Class B scenic quality would be substantially maintained in the short-term.

d. Cultural

There would be increased access to the area by vehicles with the possibility of increased vandalism. There is also the possibility of damage to sites through future rangeland developments.

e. Minerals

There would be no impacts to leasable or locatable minerals. Both would fall under existing regulations. Mineral exploration and development would be regulated under the Surface Management Regulations (43 CFR 3809) to prevent unnecessary and undue degradation of the land. No economic benefits would be lost under this alternative.

f. Livestock Grazing

The proposed pipeline would be constructed with an access road. The development could be checked and maintained on a convenience basis using motorized equipment. There would be no impacts to livestock grazing.

VII. RECOMMENDED ACTION

A. Recommended Action Description

The recommended action for the Cedar Mountains WSA is the No Action/No Wilderness Alternative. The entire 14,911 acre WSA would be recommended nonsuitable for wilderness designation.

B. Rationale

The quality of the Cedar Mountains WSA's wilderness characteristics is the primary reason for recommending the area nonsuitable for wilderness designation. The potential for wilderness management conflicts also contributed to the recommendation.

The Cedar Mountains area meets the criteria for a WSA in terms of size, apparent naturalness, and outstanding opportunities for solitude. The WSA does not provide outstanding opportunities for primitive and unconfined recreation.

Vehicle use on the cherry-stemmed road in the east-central part of the WSA is a manageability concern since such use could degrade natural values and opportunities for solitude. The uncertain long-term management of the state land adjacent to the boundaries of the WSA represents a potential wilderness management conflict of minor concern.

Without wilderness designation, the existing wilderness values in the Cedar Mountains WSA would be substantially retained under the short-term management prescribed in existing and proposed BLM plans.

There would be no significant impacts to other resource values and uses within the WSA under the recommended action.

C. Consistency With Other Plans

The recommended action for the Cedar Mountains WSA does not conflict with any of the decisions in the Hermanas MFP (1971).

At this time, there are no known inconsistencies between the recommended action and the policies of local, state, or Federal plans. Continuing coordination and consultation with other agencies will take place during the public comment period on the Draft Environmental Assessment for Wilderness Study Areas in the Las Cruces District.

APPENDIX C

COOKE'S RANGE WSA (NM-030-031)

I. GENERAL DESCRIPTION

A. Location

The Cooke's Range Wilderness Study Area (WSA) is located in Luna County, approximately 15 miles north of Deming.

The following U.S. Geologic Survey (USGS) topographic maps cover the WSA:

Dwyer, New Mexico	15 minute scale
Lake Valley, New Mexico	15 minute scale
Goat Ridge, New Mexico	7½ minute scale
Massacre Peak, New Mexico	7½ minute scale

B. Climate and Topography

The Cooke's Range WSA is characterized by an arid, continental climate. Annual precipitation totals average between 8 and 10 inches, with 12 to 14 inches at elevations greater than 6,000 feet. Over 50 percent of the total occurs from July through September in high intensity, short duration storms.

Temperatures reach a maximum in July with average afternoon temperatures reaching the mid-90's at lower elevations. Afternoon highs in the 80's are more common at higher elevations. Minimum temperatures during the winter months range from the mid-20's to near freezing.

Surface winds are predominantly from the southeast in summer and from the northwest in winter, but local surface wind directions will vary greatly because of local topography. Spring is the windy season. Dry, gusty winds are predominantly from the west-southwest and may exceed 30 mph in the afternoons.

The terrain of the Cooke's Range plays a very important role in the climate. Temperatures generally decrease with elevation. However, the aspect of a location, whether it is a north or south facing slope, also contributes in defining temperature, particularly in terms of its daily and annual range.

Cooke's Peak rises over 3,600 feet above the surrounding plains and dominates the landscape for miles around. Several ridges, rising between 1,000 and 3,000 feet above the surrounding terrain, run the length of the WSA. These ridges,

which form the backbone of the range, are dissected by dozens of drainages and secondary ridges. Several steep walled canyons and dropoffs are located in the WSA.

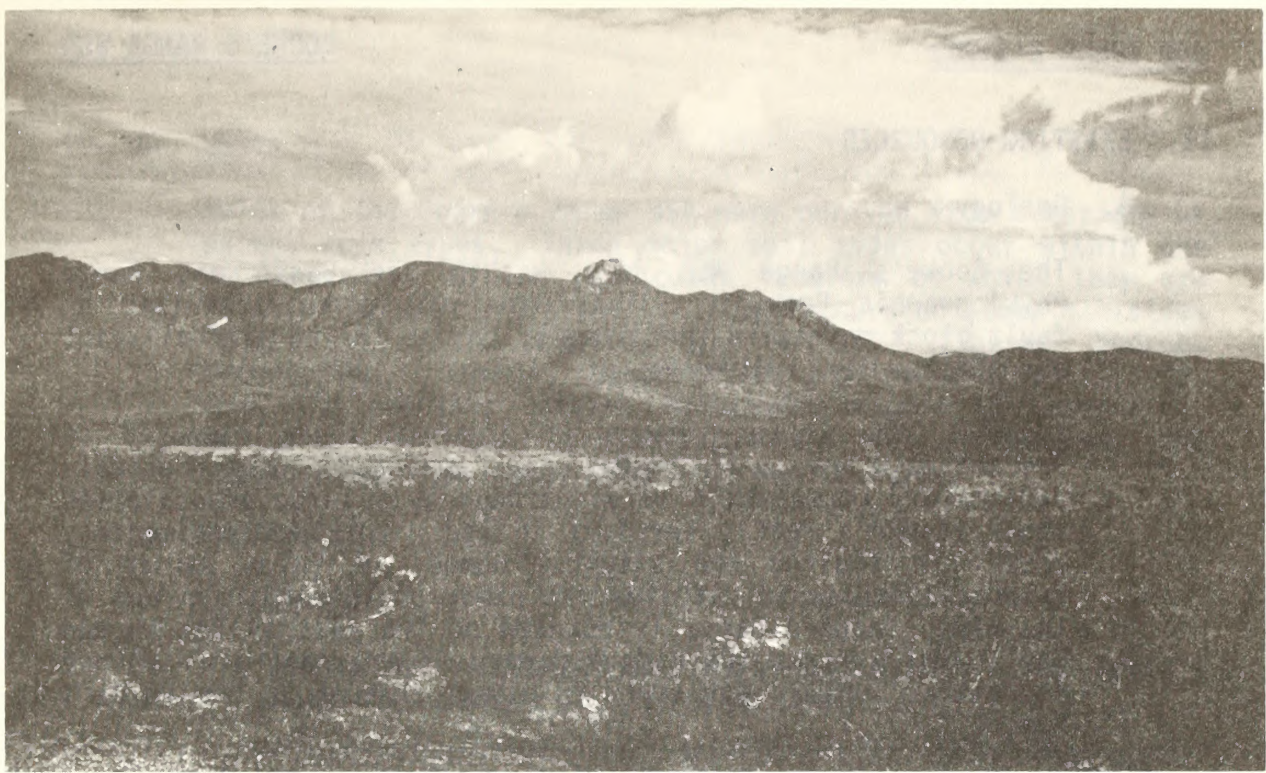
C. Land Status

The WSA contains 19,608 acres of public land and 640 acres of state inholdings. Four hundred eighty acres of private land and 1,440 acres of state land have been cherry-stemmed out of the WSA. The subsurface mineral estate of the cherry-stemmed 480 acres of private land is Federally owned. (See Map 1 for land status within the WSA boundary.)

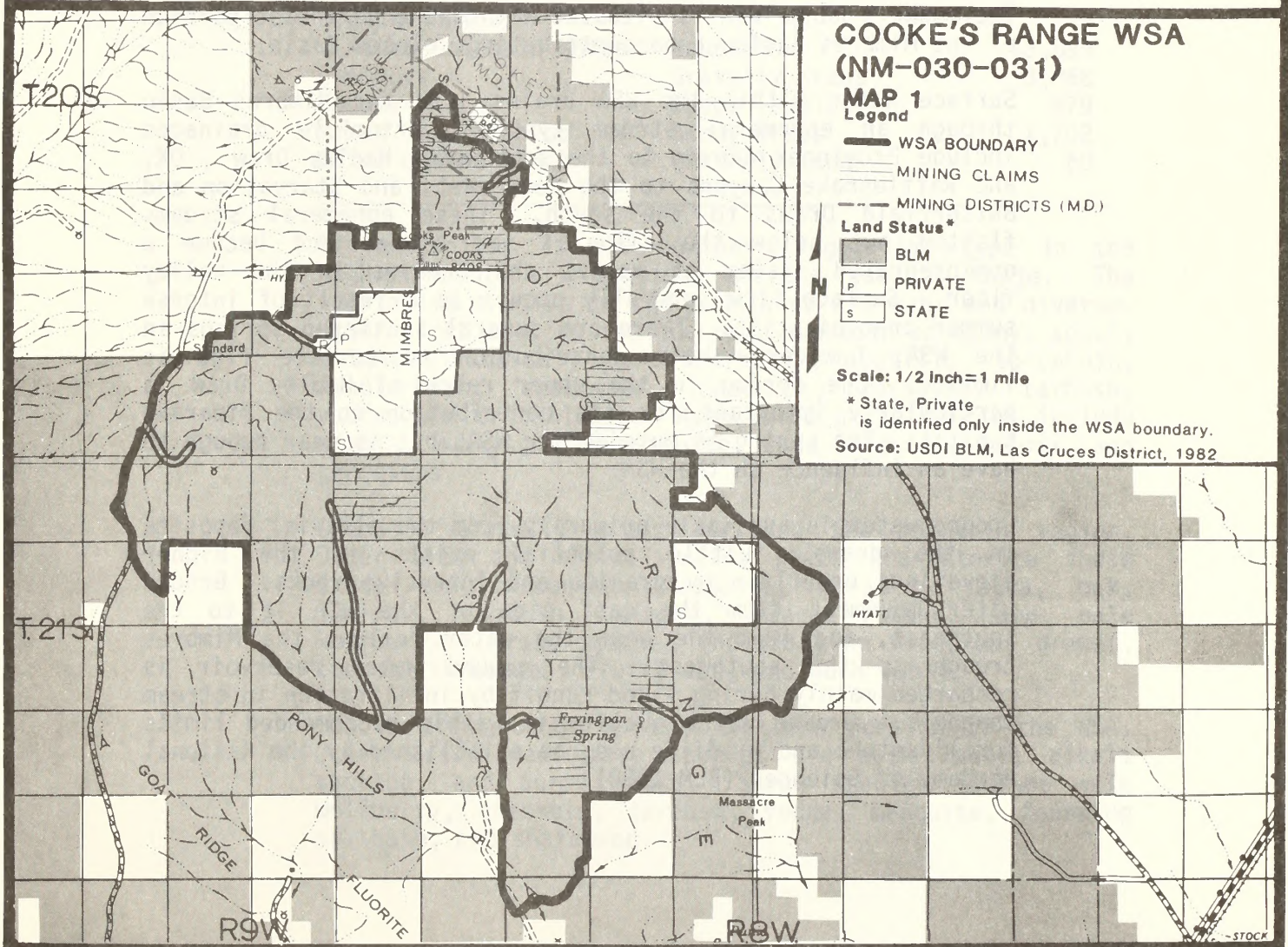
D. Access

Legal access to the Cooke's Range WSA is available on the east, west, and southwest boundaries. Legal access on the east side is by way of the Hadley Draw road (County Road A019), which leads north off State Highway 26 at Florida, approximately 12 miles northeast of Deming. The county maintained road terminates approximately 3 miles southeast of the ghost town of Cooke's. From there, a four-wheel drive road provides additional physical access as it continues on to Cooke's and on around the north boundary through Hurricane Pass.

County Road A008 runs due north from U.S. Highway 84 just north of Deming and forms approximately 4 miles of the western boundary of the WSA. County Road A016 branches off of A008 to the east-southeast and forms approximately 3 miles of the southwest boundary of the WSA.



Looking towards Cooke's Peak from the southern part of the WSA.



II. EXISTING RESOURCES

A. Geology

The Cooke's Range WSA lies within the Basin and Range Physiographic Province. This Province is characterized by fault block mountains separated by basins filled with alluvial and shallow lake sediments.

Locally, the Cooke's Range is a fault block composed of Precambrian granitic rocks and Paleozoic and Mesozoic sedimentary rocks which were intruded by a large granodiorite stock (Cooke's Peak), Tertiary in age. Intruded sedimentary rocks are faulted and slightly domed. A thick series of Paleozoic sediments overlies the stock on the southern end of the WSA. Cooke's Range is bounded on the east by the Sarten Fault, which forms the east boundary of the main area of ore deposition. Minor faulting is common throughout the Cooke's Range.

B. Water

The Cooke's Range WSA is situated within the northeast portion of the Mimbres Basin, a noncontributing, closed basin.

Surface water within the WSA drains into the Mimbres Basin through an ephemeral stream system. Principle drainages include Provinger Canyon to the southwest; Hadley Draw, OK, and Rattlesnake Canyons to the southeast; and Starvation and Butterfield Draws to the south. These ephemeral streams flatten out below the alluvial fan slopes and become a nonintegrated system of washes and arroyos in the valley floor. Surface flow generally occurs as a result of intense summer precipitation. There are several scattered springs in the WSA; however, their contribution to surface flow is limited. One spring in the upper reach of Hadley Draw is particularly important for its contribution to the riparian habitat. The spring is outside the WSA, but is near enough to have an influence on the WSA.

Ground water is available primarily from the alluvial deposits in the draws. Little potential exists in the higher elevations underlain by granite and intrusive rocks. Ground water movement from the east side of the WSA is to the southeast, and from the west the water follows the Mimbres trough to the southwest. The ground water reservoir is recharged mainly during flood runoff by infiltration in stream channels. Ground water quality is within recommended limits for livestock and wildlife use, as established by the National Academy of Sciences (BLM 1980).

C. Soils

Soils of the Cooke's Range WSA were derived from a variety of parent rock types. Three major soil types occur within the WSA dependent on the particular landform on which they are found. The most prevalent soil type occurs on steep hillsides where soils are shallow and stony. Exposed bedrock outcropping is common. Deeper, cobbly soils occur on alluvial fans and creosote covered footslopes around the mountains. Soils in the small drainageways and valleys between the mountains are typically deep and fine textured.

D. Vegetation

1. General

Vegetation and associated range sites within the Cooke's Range WSA consist of five major types:

Vegetative Type	Range Site	Federal Acres
Pinyon-juniper- mixed mountain shrub	Mountain	13,899
Creosote	Gravelly areas	3,068
Tobosa	Draws (swales)	879
Mixed desert shrub	Sandy areas	1,702
Mixed desert shrub	Gravelly sand	60

Pinyon-juniper is the dominant vegetative type in the higher mountain elevations of the Cooke's Range. The vegetative species in the mountains are many and diverse. Other shrub species include oak, mountain mahogany, sotol, Wright silktassel, pale wolfberry, ocotillo, spicebush, fendlerbush, snakeweed, creosote, mesquite, tarbush, yucca, and brickelbush. Associated grass species include grammas, muhlys, vine-mesquite, cane bluestem, tobosa, and threeawns.

Creosote gravelly areas surround the mountain region. Other tree and shrub species which characterize these areas are snakeweed, mesquite, mariola, yucca, oak, juniper, tarbush, mimosa, range ratany, and pale wolfberry. Grass species include cane bluestem, grammas, tobosa, threeawns, fluffgrass, and bush muhly.

Tobosa draws occur in the southern portion of the WSA. Other associated grass species are bush muhly, alkali sacaton, and burro grass. Shrub species include pale wolfberry, creosote, tarbush, yucca, mesquite, fourwing saltbush, and snakeweed.

Mixed desert shrubs are the dominant vegetative type on the sandy areas in this WSA. They occur on the southwest side of the mountain range. Shrub species include snakeweed, yucca, Mormon tea, mariola, cacti, mesquite, creosote, and tarbush. Of the few grass species present, grammas, fluffgrass, and bush muhly are the most prevalent.

The gravelly sand area is within a sandy arroyo. The sandy arroyo within the mountain canyon is a pseudoriparian area, which is identified as special habitat for wildlife. Shrub species include creosote, tarbush, mesquite, snakeweed, yucca, and cacti. Grass species include bush muhly, fluffgrass, and tobosa.

2. Threatened or Endangered Plant Species

The following species were identified and located in or near the WSA (NMSHP and USFWS 1982).

Species: Cereus greggii - night blooming cereus
 Status: Bureau sensitive species proposed for Federal listing.
 Habitat: widespread; does not grow commonly anywhere; needs the microhabitat associated with creosote and bush muhly.

Species: Cupressus arizonica - Arizona cypress
 Status: Selected by the New Mexico State Heritage program as a special concern element. This tree occurs outside the boundary of the WSA. This is the only known native population in New Mexico.
 Habitat: Scattered to dense stands straddling ridge and downsides. Mixed with pinyon and juniper.

E. Wildlife

The Cooke's Range WSA has a diversity of habitat sites. Most of the area is mountain sites--mixed shrub, grass, or pinyon-juniper grass with smaller sites that are classified as oak draw, creosote, and pseudoriparian. In addition, there is a small riparian area just outside the northeast boundary. It is close enough to have an effect on wildlife within the WSA. There are also springs in the WSA which provide water for wildlife.

Another valuable habitat feature is the cliffs at higher elevations. There is evidence of golden eagle nesting in these cliffs.

The variety of vegetation in the Cooke's Range WSA results in a diverse wildlife community. There is an abundant avifauna, with 70 species recorded in six days field work by the BLM Integrated Habitat Inventory Classification System (IHICS) team (1981). Besides the golden eagle, several other raptors

nest in or near the WSA: the red-tailed hawk, the Cooper's hawk, the great horned owl, and the prairie falcon (BLM 1981).

There are some mule deer in the range. Although the habitat is good, the herd is fairly small. There are approximately 2.5 animals per square mile. New Mexico Department of Game and Fish (NMDGF) estimates five deer per square mile to be the optimum number.

Some reptiles of scientific interest were collected during the BLM wildlife survey. An unusual lizard, the Gila whiptail was found. This species was previously known only from the Gila Basin (Behler 1979). A hybrid whiptail, New Mexican whiptail x little striped whiptail also was identified. The New Mexican whiptail, a parthenogenic species, can reproduce asexually, while the little striped whiptail reproduces sexually. These two species had not been known to hybridize, and the fact that one is parthenogenic makes this even more uncommon (Price 1982; Hakkila 1982). Hybrid lizard species often develop to take advantage of a disturbed habitat. Cole (1978) discusses a hybrid whiptail which developed in Arizona where the habitat had changed from a grassland to a desert type. This suggests that hybrids such as the one collected in the WSA may be an indicator of vegetative changes.

F. Visual

The northern part of the WSA is composed of a craggy mountain with some tilted banded rock exposed. The range of colors exposed in the mountains includes yellow gray to mottled grays and reds. Texture is coarse. South of this extremely rugged section, the WSA becomes less precipitous with more rolling and open hills cut by somewhat deep canyons. Vegetation is generally composed of patchy clumps of trees and shrubs which often follow rock stratifications or drainages.

The Cooke's Range WSA has a Class A (high) scenic rating and high scarcity rating. The range can be seen from Interstate 10, U.S. 180, Deming, City of Rocks State Park, and Deming's Centennial Park. The WSA is within a Visual Resource Management (VRM) Class II area.

G. Cultural

One of the most significant petroglyph sites in the Las Cruces District, west of the Rio Grande, is located near Frying Pan Spring in the Cooke's Range WSA. The Mogollon style designs include crosses, abstracts, masks, lizards, a plumed serpent, and birds. These petroglyphs provide information regarding prehistoric art styles and beliefs. The Frying Pan Spring area contains at least one lithic site. A four room Classic Mimbres site located in the western portion of the WSA could provide significant information regarding Mimbres sites in an environmental zone in which they usually do not occur.

The historical component of this WSA is probably the most significant of all the WSAs in the Las Cruces District. The Butterfield Trail forms the southeast boundary of the WSA. The Trail was one of the most significant migration and communications routes in the west, with use of the area starting in 1846. Beginning in 1863, military patrols from Fort Cummings (the most significant Indian Wars fort in New Mexico), $\frac{1}{2}$ mile east of the WSA, scoured the area in search of hostile Indians. In 1882, the mining town of Cooke's was established along what is now the northern boundary of the WSA. Between 1882 and 1914, about 1,500,000 pounds of lead and 6,000 ounces of silver were removed from the mines, making Cooke's one of the best lead producing areas in New Mexico. At least 100 individuals occupied the town. The total value of the production was about \$4,000,000 until 1927 (Anderson 1957).

H. Air

Generally, the quality of air within the Cooke's Range WSA is good. The air quality in the WSA does not exceed the state or Federal air quality standards and is classified as a Class II area. This classification allows a moderate amount of degradation of air quality.

Since no major industrial or population centers are located in the nearby vicinity, the only major degradation of air quality occurs during the spring months (March-May). West-prevailing winds, commonly gusting in excess of 30 mph, result in dust storms throughout the southern part of the state.

III. EXISTING AND POTENTIAL USES

A. Mineral Development

1. Energy Minerals

There are no known occurrences of energy minerals in the WSA. The Minerals Management Service has classified the Cooke's Range and surrounding areas as potentially valuable for oil, gas, and geothermal energy resource accumulations. However, a lack of oil and gas source rocks and the presence of igneous rocks do not indicate good potential for oil and gas in the WSA (BLM Mineral Resource Inventory 1981). There are no geothermal energy indicators known to occur within the WSA (BLM Mineral Resource Inventory 1981).

Portions of the Massacre Peak Petroglyphs Site and Fort Cummings Recreation Area are within the WSA. These areas were classified for recreation and historic purposes under the Classification and Multiple Use Act and are presently segregated from all forms of mineral entry.

Uranium occurs in a fluorite vein in limestone north of the WSA in T. 20 S., R. 9 W., Section 12. It also contains traces of fluorite and lead. The presence of uranium in fluorite veins indicates a potential for uranium mineralization in the WSA. Activities which may be initiated to further evaluate the uranium resources in the general area are unpredictable. Potential for an economical deposit is poor.

2. Non-Energy Minerals

Decorative stone occurs in the Sarten sandstone in the southern part of the WSA. Common varieties such as sand and gravel occur throughout the WSA. However, activities are currently unpredictable. There are sources for sandstone located in areas more readily accessible, such as the Faywood area. Common varieties occur in areas closer to Deming and have ample reserves.

One mine (Silver Cave) is located within the WSA boundary, in T. 20 S., R. 9 W., Section 35: NE $\frac{1}{4}$. The adit penetrated a 3-foot wide quartz vein in igneous rocks. It is said to have produced high grade silver, with minor amounts of copper and lead.

The Jose and Cooke's Peak Mining Districts, just north of the WSA, produced lead, zinc, copper, silver, and gold as late as 1947. Minor shipping occurred through 1952. One adit west of the Jose Mining District contains exposures of wulfenite crystals, although no production of molybdenum has been recorded. Fluorite veins are exposed

by prospect pits in Hurricane Pass and north along a ridge spine trending northwest from the Jose Mining District. The Old Hadley Mining District, $\frac{1}{2}$ -mile northeast of the WSA, produced lead, silver, copper, and gold from Tertiary pyroxene andesites. Barite is a prominent gangue mineral in this area. (See Map 1 for general locations of the mining districts.)

Large fluorspar deposits occur to the north (White Eagle Mine) and to the south (Fluorite Ridge) of the Cooke's Range WSA. The presence of these ore bodies, coupled with the exposed veins in the vicinity of Hurricane Pass, may be representative of a regional fluorite trend possibly extending through the WSA.

The existence of valuable minerals at depth in the WSA is theoretically favorable based on the model of the Cooke's Peak and Jose districts. In these districts, the mineralization occurs as replacement bodies controlled by faulting in the Fusselman limestone, just below the Percha shale. Within the boundaries of the WSA, the Percha shale and Fusselman limestone are overlain by the Lake Valley limestone; consequently, any mineralization which may occur along their contact would be at depth.

There are currently 17 mining claims recorded within the WSA. These claims are situated near the mineralized areas. Potential for an economical occurrence of strategic minerals (such as lead, silver, gold, copper, fluorspar, and zinc) is high. (See Map 1 for the general locations of mining claims.)

B. Watershed

Water use within the Cooke's Range WSA is primarily by livestock and wildlife. There is one well facility and three spring developments within the WSA (see Chapter III, Livestock Grazing). Additionally, several well facilities and dirt tanks are located just outside the WSA boundary that are for livestock watering.

The Cooke's Range is within the Mimbres Valley declared underground water basin and ground water use is administered by the New Mexico State Engineer.

C. Livestock Grazing

1. Allotments

Parts of four grazing allotments are present within the Cooke's Range WSA. Licensed grazing use on public land includes cattle and a few horses. Most of the Cooke's Peak area of the Cooke's Range is inaccessible to livestock due to the steep slopes.

ALLOTMENTS WITHIN THE WSA^{a/}

Allotment Name and Number	Total Acres	Total AUMs	Approximate Acres in WSA	Percent Allotment
Treasure Rockhound 2009	5,330	564	2,048	38%
R. May 2029	1,174	264	626	53%
Mimbres Mtn. Rush 2030	11,057	1,548	4,574	41%
T. L. Hyatt 3028	32,918	6,768	12,360	38%
TOTAL			19,608	

2. Ranch Management

EXISTING RANGELAND DEVELOPMENTS WITHIN THE WSA^{a/}

Allotment Name and Number	Type of Development	Location
R. May 2029	windmill	T. 20 S., R. 8 W., Sec. 31
Mimbres Mtn. Rush 2030	interior fence	3 3/4 miles
T. L. Hyatt 3028	spring	T. 21 S., R. 9 W., Sec. 10
	spring and trough	T. 21 S., R. 9 W., Sec. 11
	spring and trough	T. 21 S., R. 8 W., Sec. 20

Boundary Fences:

Mimbres Mtn. Rush 2030 and Treasure Rockhound 2009	1½ miles
Treasure Rockhound 2009 and Hyatt 3028	3 miles

Note: ^{a/}Information shown in tables reflects only Federal acres and animal unit months (AUMs), and rangeland developments on public land.

D. Recreation

This WSA is currently used for rockhounding, hunting, hiking, picnicking, camping, and sightseeing. Recreational off-road vehicle use occurs on the WSA boundary roads and on the six roads cherry-stemmed into the WSA.

Portions of the Massacre Peak Petroglyphs Site near Frying Pan Spring and Fort Cummings Recreation Area are within the WSA. These areas were classified for recreational and historical purposes under the Classification and Multiple Use Act and are presently segregated from all forms of mineral entry (see Chapter II, Cultural, and Chapter III, Energy Minerals).

E. Education/Research

Dr. Richard Spellenberg of New Mexico State University's Department of Biology has been working on a remnant population of Arizona Cypress on Cooke's Range which is a ½-mile north of the WSA.

F. Wildlife

Some possibility exists that the Cooke's Range WSA could be a future desert bighorn sheep transplant site, but there is no timeframe as yet. According to the New Mexico Department of Game and Fish (NMDGF), more intensive study is needed because of the human disturbance factor. The area is on the NMDGF study priority list (Sandoval 1982).

A protective stipulation for nesting raptors is proposed for portions of the Cooke's Range (LC/L MFP Amendment/EIS, in preparation).

IV. WILDERNESS CRITERIA

A. Evaluation of Wilderness Values

1. Quality of Mandatory Wilderness Characteristics

a. Naturalness

The Cooke's Range WSA generally appears natural. Imprints of man within and along the WSA boundary include access routes, rangeland developments, mining activity, and a telephone line.

Access routes include several vehicle trails in the southern half of the unit and six cherry-stemmed roads into the WSA from the west, south, east, and north boundaries. The vehicle trails are generally insignificant due to vegetative and topographic screening. The cherry-stemmed roads are also substantially unnoticeable. Some of the rangeland developments located at the end of these cherry-stemmed roads impact naturalness locally. These developments include windmills and a large detention dam in Starvation Draw.

Rangeland developments located within the WSA are substantially unnoticeable. These developments include a windmill, fence, and developed springs.

Mining activity in the northern portion of the WSA has had some impact on naturalness. Although there are mine shafts, small tailings piles, and an abandoned tramway, the impacts are mitigated by vegetative and topographic screening.

The single-wire telephone line which crosses through the southeast portion of the WSA in T. 20 S., R. 8 W., Sections 19 and 20, is constructed on 10 foot wooden poles without cross pieces. The telephone wire is attached to existing fences east and west of these sections. The telephone line provides service between the Hyatt ranch headquarters and Treasure Rockhound ranch headquarters. The telephone line does not have a right-of-way. Although the line can be seen in the immediate area, its impact on naturalness is reduced by topographic screening and use of native materials.

The major topographic features of the WSA are virtually pristine. Rugged canyons and steep ridges have restricted development to the periphery of the WSA with only minor developments being constructed within the range itself.

The WSA appears to have been affected primarily by the forces of nature and the imprint of man's work is substantially unnoticeable.

b. Solitude

The WSA's size, configuration, and topography are the most important factors in determining the area's opportunities for solitude.

The 19,608-acre WSA is approximately 7 miles long and from 1 to 6 miles wide. The large size of the WSA enhances opportunities for visitors to find a secluded place. The large block of undeveloped state and private lands which is cherry-stemmed into the northern portion of the WSA has little effect on the opportunities for solitude at the present time.

The WSA's rugged topography also creates numerous opportunities for solitude. The major portion of the WSA around the Cooke's Range provides outstanding opportunities for solitude. The combination of ridges and drainages creates a great deal of topographic relief and provides opportunities for seclusion in almost every drainage and on many of the ridges.

Opportunities for solitude in the creosote flats in the south and southwestern portion of the WSA are less than outstanding due to the lack of topographic screening.

c. Recreation

The Cooke's Range WSA offers a variety of primitive recreational opportunities. The area is large enough to support a three or four day pack trip. Opportunities also exist for rock climbing, horseback riding, and photography. Opportunities for deer hunting are good.

The state and private lands south of Cooke's Peak detract from the opportunities for primitive recreation. Hikers cannot climb the peak from the south nor can they hike directly through the WSA. However, visitors may still traverse the WSA by following the eastern and western boundaries, and the Peak is accessible along ridges from the north, east, and west.

The rugged mountain range, with the steep ridges and canyons and lack of significant developments, offers an excellent opportunity to use outdoor skills and to interact with a natural environment. Opportunities for primitive recreation are enhanced by the size of

the WSA and the diversity of vegetation and topography found in the WSA.

2. Special Features

The Cooke's Range WSA contains special ecological, cultural, and scenic features.

The ecological features include both vegetation and wildlife values of scientific and educational interest. The plant species in the WSA are numerous and diverse and in turn support a diverse wildlife community. Some reptiles of special scientific interest have been found in the WSA (see Chapter II, Wildlife). The WSA also provides habitat for Cereus greggii, a Bureau sensitive plant species proposed for Federal listing (see Chapter II, Vegetation).

The special cultural and historical features of the WSA are among the most significant in the Las Cruces District (see Chapter II, Cultural). The Cooke's Range also has outstanding scenic features with a Class A (high) scenic quality rating (see Chapter II, Visual).

3. Multiple Resource Benefits

Congressional designation of this area as wilderness would provide a greater degree of long-term protection for the area's wilderness values than would administrative designations available to the BLM.

A more detailed discussion of multiple resource benefits of wilderness designation is located in Chapter VI, Impacts, under the All Wilderness Alternative.

4. Diversity

a. Ecosystems Present

The Bailey (1976) - Kuchler (1966) system classifies the area as being in the Chihuahuan Desert Province with a potential natural vegetation of Trans-Pecos shrub savanna.

The general nature of the Bailey-Kuchler System fails to show the vegetative variety and diversity of the WSA. Further refinement of the system shows the following vegetation types in the WSA:

Vegetation Type	Acres
mountain mahogany oak scrub	13,899
creosote	3,068
grama-tobosa shrubsteppe	879
Trans-Pecos shrub savanna	1,762

b. Distance to Population Centers

The Cooke's Range WSA is approximately 3 hours driving time from El Paso, Texas; 2 hours from Las Cruces, New Mexico; 5 hours from Albuquerque, New Mexico; 5 hours from Tucson, Arizona; and 7 hours from Phoenix, Arizona.

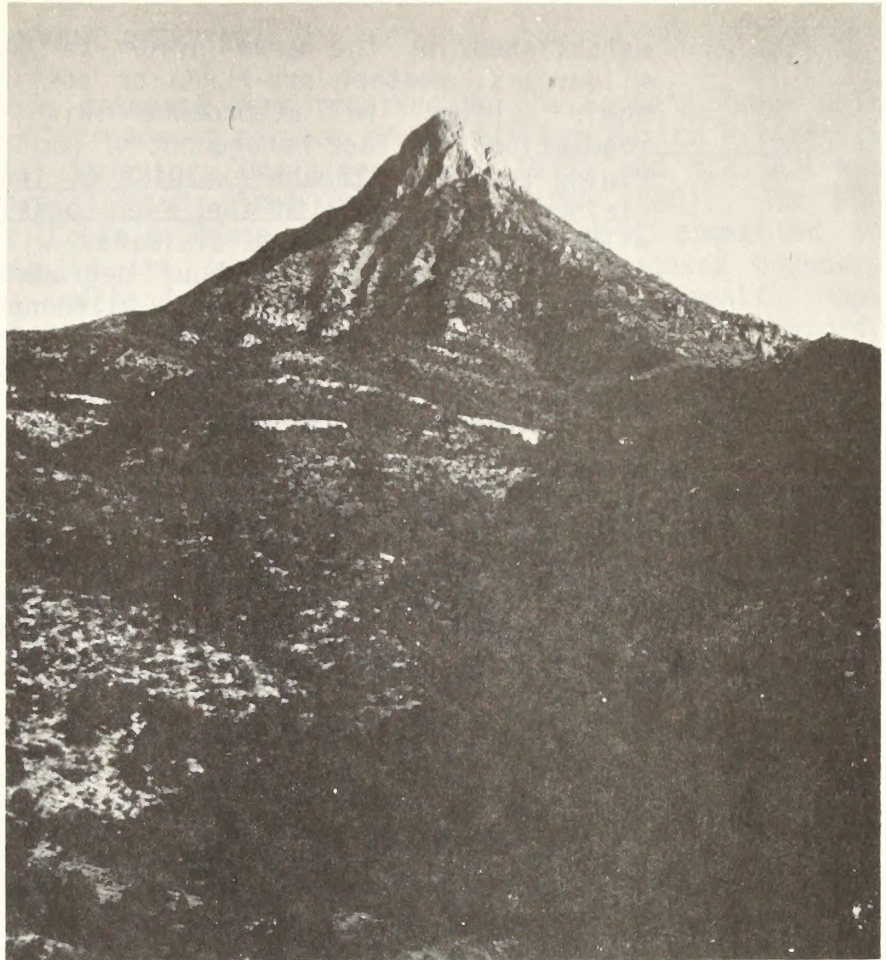
B. Manageability

Several factors affect the potential of the Cooke's Range WSA for being managed as wilderness: land status, boundary configuration, topography, size, the location of cherry-stemmed roads and rangeland developments, and pre-FLPMA and post FLPMA mining claims within the WSA.

Cooke's Peak is the major topographic, recreational, and scenic focal point of the Cooke's Range WSA. Portions of the northwest, southwest, south, and southeast slopes of Cooke's Peak are in private and state ownership and as a result, the boundary of the WSA is very convoluted. Nonwilderness or nonconforming uses (e.g, mining activity) on the nonpublic lands could negatively affect the BLM's ability to manage the WSA as wilderness. Providing access across BLM land or surface disturbing activities on these lands would negatively affect naturalness and opportunities for solitude in the heart of the WSA.

On the other hand, the rugged topography and large size of the WSA enhance manageability. The area is large enough and rough enough to accommodate visitors without compromising opportunities for solitude or recreation. Visitors would be channeled somewhat by the topography, but they would not be so restricted so as to gather on one of two portions of the WSA.

Numerous roads are cherry-stemmed into the WSA. Vehicle use of these roads in combination with local impacts of rangeland developments diminish the naturalness and solitude in the vicinity of the cherry-stemmed roads and thus affect the ability to manage the WSA to preserve wilderness values.



View of Cooke's Peak.

There are 11 pre-FLPMA and 6 post FLPMA mining claims within the WSA. The presence of these claims affects the manageability of the WSA in two ways:

1. During the time that an area is under wilderness review, the WSA is managed under the Interim Management Policy and Guidelines for Lands Under Wilderness Review (IMP) (1979). Under the IMP, mining claimants are recognized as having a valid existing right if a valid discovery had been made on the claim before the passage of FLPMA on October 21, 1976. If the claimant can show evidence of his discovery to the BLM, activities for the use and development of the claims will be exempt from the nonimpairment criteria of the IMP. Mining operations on such claims would be regulated only to prevent unnecessary or undue degradation of the WSA. Therefore, the possibility exists that the wilderness values of the Cooke's Range WSA could be degraded before the area is designated wilderness if the above criteria are met.
2. Once an area is designated wilderness, the provisions of the Wilderness Management Policy (WMP) (1981) apply. Under the WMP, holders of mining claims validly

established in the area prior to its designation as wilderness, whether pre-FLPMA or post-FLPMA, may develop their claims in accordance with the 43 CFR 3809 regulations "Surface Management of Public Lands Under U.S. Mining Laws." Although exercise of the rights of mining claimants must be with the least possible impact on the wilderness resource and claimants will be required to prevent unnecessary or undue degradation of the land, mining operations could impair wilderness values if there are no reasonable alternatives. In this case, there is a possibility that the wilderness values of the WSA could be degraded after the area is designated wilderness.

The mining districts, north and northeast of the WSA, produced strategic minerals in the past (see Map 1 for general locations of the mining districts). At present, these mines are subeconomic. Future production is possible and unpredictable. The presence of these known occurrences of strategic minerals and mining claims represents a major manageability concern in the long-term.

V. PUBLIC INVOLVEMENT OVERVIEW

Numerous public comments were received on the Cooke's Range unit during the public comment periods on the BLM New Mexico Wilderness Review Initial Inventory Decisions (July 1979) and the BLM New Mexico Wilderness Study Area Proposals (March 1980). The WSA proposal for Cooke's Range was the second most commented on recommendation in the state. A map showing proposed boundary modifications and land status was included in the comments. Maps and photos of rangeland developments and roads also were provided. Comments opposing WSA status slightly exceeded comments favoring WSA status. Numerous form letters and petitions were received favoring WSA status for the area.

Comments favoring wilderness study cited the range's naturalness and outstanding opportunities for solitude and primitive types of recreation. The scenic, cultural and historical, and wildlife supplemental values of the area also were discussed. Almost half of those comments opposing wilderness study cited mineral resource conflicts. Others discussed impacts resulting from rangeland management activities, nonpublic land inholdings, irregular boundary, and jet plane fly-overs.

VI. ALTERNATIVES AND IMPACTS

None of the alternatives would have significant impacts on air and education/research in the Cooke's Range WSA. For this reason, these resources were not included in the following discussions.

A. All Wilderness

Under this alternative, the entire 19,608 acres of public land within the Cooke's Range WSA would be recommended as suitable for wilderness designation.

If designated as wilderness, existing and potential uses (see Chapter III) would be regulated by the Wilderness Management Policy (1981) as follows.

Generally, motorized access on vehicle trails within the WSA would not be allowed. However, permits for vehicular access to maintain existing rangeland developments in the WSA could be authorized.

Desert bighorn sheep could be transplanted in the WSA.

The WSA would be managed as a VRM Class I.

Since strategic minerals are known to occur in and around the Cooke's Range WSA and there has been production in the past, it is assumed that existing valid mining claims could be fully developed in the long-term. Presently, there are existing claims in the north, east, and south-central parts of the WSA.

1. Impact to Minerals

To date, no production of energy minerals has been recorded. A possible uranium deposit exists north of the WSA, but there is only geologic inference for deposits of uranium within the WSA. The best oil and gas potential also lies outside of the WSA. Since the best potential for oil and gas and uranium lie outside the WSA, impacts to the energy minerals industry would be minor in the short-term. Economic benefits forgone to the energy minerals industry would also be minimal in the short-term.

Exploration and leasing for energy minerals under the mineral leasing laws would not be allowed after wilderness designation. As a result, there would be no opportunity for further assessment of the energy minerals potential or production and development. The energy minerals industry could be adversely affected in the long-term.

The northern boundary of the Cooke's Range WSA is bounded by existing mines and claims. These mines were good producers of strategic minerals in the 1940's and 1950's. Today, economics has halted production. Valid claims

located before wilderness designation could be developed to their full potential. Additional costs may be incurred for development of existing valid claims within the WSA due to compliance with the WMP. These costs could result from restrictions on the type and location of access. The economic impact would probably not be significant in the short-term.

No new exploration, prospecting, or location of mining claims would be allowed after wilderness designation. Mineral trends could not be followed outside of the existing valid claim boundaries. Full development of the mining district could not take place. Most of the minerals are on the list of strategic minerals. Economic impacts to the minerals industry on a national scale would be moderate in the long-term.

2. Impacts to Other Resources and Uses

a. Water, Soils, Vegetation

Restrictions on surface disturbing and mechanized activities would provide long-term protection for the existing water, soils, and vegetation including Cereus greggii, a Bureau sensitive plant species proposed for Federal listing (see Chapter II, Vegetation).

However, valid existing mining claims could be developed. Impacts would include the removal of existing vegetation and topsoil during excavation of mines and deposition of mine tailings and could be moderate to major depending on the locations and extent of the activities.

Additionally, a small increase in sediment load could result from development of existing mining claims and new access roads. Increased sediment would contribute to the shortened usefulness of the existing detention dams on Starvation Draw in the south-central part of the WSA.

b. Wildlife

Wilderness would impact wildlife and wildlife habitat. Surface disturbance would be limited and habitat would be preserved. Since there would be less activity in the area, direct disturbance to animals would be minimized. This is especially significant for raptors which nest in the Cooke's Range and for desert bighorn sheep, should the New Mexico Department of Game and Fish decide to transplant sheep in the range.

Existing valid mining claims could be developed and this would degrade wildlife habitat. Several of the

17 claims are in the higher elevations of the WSA, which is the most valuable habitat for raptor nesting.

c. Visual

Existing visual resources would be protected. Minor modifications in the basic elements of the landscape as a result of natural ecological changes and very limited management activity would be permitted.

If mining operations for locatable minerals are initiated on existing valid mining claims within the WSA, the Class A scenic quality in the north, east, and south-central parts of the WSA could be degraded. In addition, it is unlikely that the reclamation of the mined areas would be successful enough to meet the standards of a VRM Class I area.

d. Cultural

Access to the area would be limited to foot and horseback travel. This would decrease site vandalism by individuals presently gaining access to the area with vehicles.

e. Livestock Grazing

Permits for vehicular access could be authorized to maintain the developed spring on Hyatt (3028) and the windmill on May (2029). Presently, this windmill has no existing motorized access. Minor inconveniences to the livestock operator could occur in securing permits for use of motorized equipment and motor vehicles.

f. Recreation

The existing nonmotorized recreation opportunities could be impacted by the deterioration of natural values and the increased presence of man as a result of development of existing valid mining claims.

g. Wilderness Values

Wilderness designation would provide the wilderness values present in the area with long-term Congressional protection. However, several factors could impact the capability of the Cooke's Range WSA to be managed as wilderness. The outside sights and sounds of nonwilderness uses on the non-Federal lands northwest and southwest of Cooke's Peak could degrade natural values and opportunities for solitude within the WSA in the long-term.

The impacts of exploration and development of valid mining claims in the north, east, and south-central parts of the WSA on wilderness values could be minimal to major depending on the extent of activity and locations and types of access.

Vehicular use on the six cherry-stemmed roads in the WSA by recreationists, grazing permittees, and miners would disturb solitude in the vicinity of the roads.

The transplanting of desert bighorn sheep into the WSA would enhance the special wildlife features of the area.

B. No Action/No Wilderness

Under the No Action/No Wilderness Alternative, the Cooke's Range WSA would be recommended nonsuitable for wilderness designation.

If the WSA is not designated wilderness, existing and potential uses (see Chapter III) would continue without regard to the Interim Management Policy and Guidelines for Lands Under Wilderness Review (1979) as follows.

Desert bighorn sheep could be transplanted in the WSA.

The WSA would be managed as a VRM Class II.

It is assumed that over the long-term, the WSA would be fully explored and prospected and that additional mining claims would be located and developed.

1. Impacts to Wilderness Values

The wilderness values present in the Cooke's Range WSA would not be provided with long-term Congressional protection. Management of the area as proposed in land use plans would be subject to administrative change in the long-term.

The impacts of mining operations for locatable minerals within the area could be minimal to major depending on the extent and locations of the activities. The result of extensive mining development and the required vehicular access would be an irrevocable degradation of naturalness and opportunities for solitude and primitive recreation.

Unrestricted vehicular use on the existing trails and cherry-stemmed roads in the WSA by recreationists, grazing permittees, and miners would disrupt solitude in the vicinity of the trails and roads.

The transplant of desert bighorn sheep into the WSA would enhance the special wildlife features of the area.

2. Impacts to Other Resources and Uses

a. Water, Soils, Vegetation

There would be a loss of vegetation and topsoil as a result of future mining operations and related facilities. One threatened or endangered species located within the WSA inhabits rocky areas where much of the mining activity could occur (see Chapter II, Vegetation). Its habitat could be impacted through surface disturbing activities. Additionally, a small increase in sediment load could result from unrestricted motorized access and future mining operations and related facilities. Increased sediment would contribute to a shortened usefulness of the existing detention dams on Starvation Draw in the southern part of the WSA.

b. Wildlife

Mining activities for locatable minerals could destroy a certain amount of wildlife habitat. Reclamation might not be successful because of the low rainfall and the slowness of reestablishing shrub type. There also would be direct disturbance to animals in the mining regions because of the added activity. This would be particularly detrimental to nesting raptors and desert bighorn sheep, should they be transplanted into the area.

c. Visual

Changes in the basic elements of the landscape as a result of management actions would be permitted as long as the changes do not attract attention. The existing Class A scenic quality would probably be maintained in the short-term. However, if mining operations on valid claims are initiated, the existing visual resources could be degraded. The impact could be minimal to major depending on the type and extent of the mining operations and the access requirements.

d. Cultural

There may be damage to cultural resources through increased locatable minerals development in the future, as well as increased damage through surface disturbing activity. Unrestricted access would accelerate the rate of vandalism to sites currently being vandalized.

e. Minerals

There would be no impacts on minerals exploration and development. Such activities would be regulated under the Surface Management Regulations (43 CFR 3809) to prevent unnecessary and undue degradation to the land. There would be no economic benefit forgone under this alternative.

f. Livestock Grazing

All rangeland developments could be checked and maintained on a convenience basis using motorized equipment. There would be no impacts to livestock grazing.

g. Recreation

Mining operations for locatable minerals would require the upgrading of existing access or the construction of new access. Improved access could result in a change in the types and amount of recreation use now occurring. Off-road vehicle use could increase. The existing nonmotorized types of recreation could be impacted by the deterioration of natural values and the increased presence of man as a result of mining activities.

VII. RECOMMENDED ACTION

A. Recommended Action Description

The recommended action for the Cooke's Range WSA is the No Action/No Wilderness Alternative. The entire 19,608 acre WSA would be recommended nonsuitable for wilderness designation.

B. Rationale

Mineral resource conflicts and potential wilderness manageability conflicts were the primary reasons for recommending the Cooke's Range WSA nonsuitable for wilderness designation.

Strategic minerals are known to occur in and around the Cooke's Range WSA. There has been production in the mining districts to the north and east of the WSA in the past. If the area were designated wilderness, only existing valid claims could be developed. At some time after designation, prospecting and location of new claims would be prohibited. The full potential of the area for strategic minerals could not be assessed and exploited. The No Action/No Wilderness Alternative eliminates conflicts with minerals.

The uncertain long-term management of state and private lands on the northwest, southwest, south, and southeast slopes of Cooke's Peak represents a significant potential wilderness management conflict. There has been mining activity to the north and northwest of the WSA in the past and there is a potential for mining activity on the non-Federal lands surrounding Cooke's Peak in the future. Since Cooke's Peak is the major topographic, recreational, and scenic focal point of the WSA, nonwilderness uses such as mining on adjacent non-Federal lands could have substantial impacts on the wilderness values within the area.

Another significant potential wilderness management conflict concerns pre-FLPMA mining claims in the north, east, and south-central parts of the WSA. The development of valid claims could damage wilderness values whether or not the area is designated wilderness.

Motorized use on the six cherry-stemmed roads in the WSA is another potential wilderness management conflict since vehicles would periodically disrupt the solitude in the vicinity of the roads.

Under the No Action/No Wilderness Alternative, existing wilderness values, visual resources, vegetation, soils, watershed, wildlife habitat, and cultural resources could be degraded by mining activity in the long-term.

C. Consistency With Other Plans

At this time, there are no known inconsistencies between the recommended action and the policies of local, state, or Federal plans. Continuing coordination and consultation with other agencies will take place during the public comment period on the Draft Environmental Assessment for Wilderness Study Areas in the Las Cruces District.

APPENDIX D

COWBOY SPRING WSA (NM-030-007)

I. GENERAL DESCRIPTION

A. Location

The Cowboy Spring Wilderness Study Area (WSA) is located in Hidalgo County, New Mexico in the east half of the Animas Mountains. The WSA is approximately 50 miles due south of Lordsburg, New Mexico. The most recent U.S. Geological Survey (USGS) topographic map (1923 edition) for the area is the Walnut Wells, New Mexico 15-minute quadrangle.

B. Climate and Topography

The Cowboy Spring WSA is characterized by a semiarid, continental climate, with mild winters and pleasant to hot summers.

Average annual precipitation in the area is 10 to 12 inches. A wide variation in annual totals is characteristic of southern desert climates. Approximately half the annual precipitation occurs in July, August, and September as rain accompanying thunderstorms. The storms are generally brief but may be intense and result in flash floods in the arroyos. Snowfall generally averages about 5 inches a year.

During the summer months, daytime temperatures may reach 100°F. Average monthly maximum temperature during July, the warmest month, is in the middle 90's. In January, the coldest month, average monthly minimum temperature is in the low 20's.

Winds generally predominate from the southeast in summer and from the northwest in winter, but local surface wind directions will vary greatly because of local topography. Spring is the windy season. Dry, gusty winds are predominantly from the west-southwest and may exceed 30 mph in the afternoons.

The WSA is dominated by Cowboy Rim, a 6,000 foot elevation ridge running generally north-south and curving to the west at its northern end. An abrupt 500-800 foot bluff forms the eastern edge of the rim. The central and western portions of the WSA are dissected by deeply cut canyons with numerous branching side canyons.

C. Land Status

The WSA contains 6,699 acres of public land. There are no state or private inholdings. (See Map 1 for land status within the WSA boundary.)

D. Access

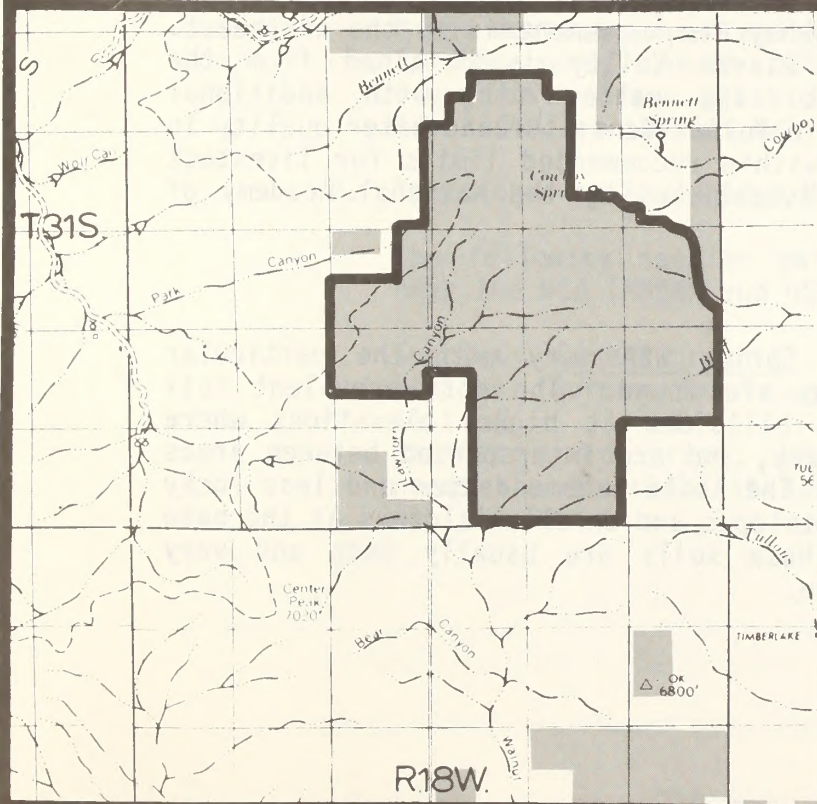
Two routes provide physical access to the Cowboy Spring WSA. Both routes cross private land. There is no legal access to the area. Permission from the private landowners is required to reach the WSA.

Access to the WSA from the west is by way of State Highway 338, 14 miles south of Animas, to County Road C020. The Double Adobe Creek road branches to the south-southeast off of C020 after about 2 miles and terminates at the Double Adobe Creek ranch house. From there, access to the WSA is via 10 miles of pasture roads on the Gray Ranch.

Access to the WSA on the east is by way of State Highway 81, 18 miles southwest of Hachita, to County Road C016. After about 9 miles west on C016 to Young's ranch headquarters, it is 4½ miles southwest via a ranch road to the WSA.



Cowboy Rim.



**(NM-030-007)
COWBOY SPRING WSA
MAP 1**

Legend

— WSA BOUNDARY

Land Status*

- BLM
- PRIVATE
- STATE

Scale: 1/2 inch = 1 mile

* State, Private is identified only inside the WSA boundary.

Source: USDI BLM, Las Cruces District, 1982

II. EXISTING RESOURCES

A. Geology

The Cowboy Spring WSA lies within the Cowboy Rim Cauldron which was formed as a result of explosive volcanic activity (Erb 1979).

The major rock type in the WSA consists of Gillespie Tuff, which is a dense, uniform, tannish pink cliff-former. A thin band of Cedar Hill andesite is exposed on the north side of Cowboy Rim. The Bluff Creek formation is exposed on the southeast portion of the WSA. The Timberlake Conglomerate is exposed on the eastern side of Cowboy Rim.

Structurally, Cowboy Rim is the upthrown block of a normal fault.

B. Water

The Cowboy Spring WSA forms a portion of the upper watershed on the western side of the Playas Basin. This drainage is one of several closed basins west of the Rio Grande.

Surface water within the WSA collects primarily in ephemeral tributaries of Walnut Creek. This main channel drains southeastward from the WSA and predominates as sheet flow near the valley floor. Surface flow generally occurs as a result of summer thunderstorms.

Information on ground water in the WSA is limited. General direction of ground water movement is to the southeast, but below the bluffs of Cowboy Rim, movement is to the northeast. Ground water in the Playas Valley is obtained from the permeable sediments of the valley fill with additional potential in the lower alluvial fans. Ground water quality in the Playas Valley is within recommended limits for livestock and wildlife use, as established by the National Academy of Sciences (BLM 1980).

C. Soils

Soils of the Cowboy Spring WSA vary with the particular landform on which they are found. The most prevalent soil type occurs on steep hillsides at higher elevations where soils are shallow, stony, and are interspersed between areas of rock outcroppings. The soils become deeper and less rocky along the mountain footslopes and on alluvial fans at the base of the mountains. These soils are usually deep and very gravelly on the surface.

D. Vegetation

1. General

Vegetation and associated range sites within the Cowboy Spring WSA consist of three major types:

Vegetative Type	Range Site	Federal Acres
Juniper-mixed mountain shrub	Mountain	6,285
Grass	Mountain	410
Mixed mountain shrub	Gravelly sand	4

Vegetation in the Animas Mountains alternates between grass and mountain shrub depending on slope and exposure. Shrub and tree species are many and varied. These are juniper, agave, sotol, Wright silktassel, sumac, ocotillo, mountain mahogany, oak, beargrass, snakeweed, turpentine bush, and creosote. Grass species are as diverse and include gramas, needle and thread, tobosa, vine-mesquite, foxtail, Hall's panic, threeawns, bush muhly, and lovegrasses.

Grass species (consisting of gramas, vine-mesquite, threeawns, and lovegrasses) are the dominant vegetative types on the west slopes of the mountains. Various shrubs and trees such as juniper, oak, beargrass, and turpentine bush occur in small amounts.

Mixed mountain shrub and tree species on the gravelly sand in the sandy canyon bottom include oak, juniper, and beargrass. Grama grass is also present. This area was identified as special habitat for wildlife.

2. Threatened or Endangered Plant Species

The following species was identified and located in or near the WSA (NMSHP and USFWS 1982).

Species: Cereus greggii - night blooming cereus
 Status: Bureau sensitive species proposed for Federal listing.
 Habitat: widespread; does not grow commonly anywhere; needs the microhabitat associated with creosote and bush muhly.

E. Wildlife

1. General

The largest part of the Cowboy Spring WSA is a mixed shrub habitat site. A smaller area of grass mountain is intersected by an oak draw. The proximity of these three sites creates an ecotone effect in which a diverse wildlife community is found.

The rugged rim, which forms the north and east boundaries of the WSA, adds to the value of the habitat as does the isolation of the area.

Golden eagles are fairly common and may nest on the rim cliffs. Mountain lions move through the area. There are healthy herds of javelina and Coues' whitetail deer. The latter is close to the east end of its range in the WSA. Montezuma quail, an uncommon species, have been observed in the WSA. Feral hogs also are found in the area (see Chapter III, Education/Research).

2. Threatened or Endangered Fauna Species

After desert bighorn sheep, a state-endangered species, were transplanted into the Peloncillos in 1981, two rams left the area and moved into the Animas Range. One has periodically used the rim country of the WSA.

The gray wolf, which is on the Federal endangered species list, historically used the Animas and San Luis Ranges as a travel route. As recently as two years ago, a track was found within the WSA which could only be verified as a large canine track. However, the Gray Ranch biologist who found the track feels it is not likely that any domestic dogs were in the area (Steve Dobrott 1981).

Two other state-endangered species, the coatimundi and the Mexican turkey, are possibly found in the WSA. Both have been reported from the Animas Range and could find their preferred habitats in the WSA.

F. Visual

The Cowboy Spring WSA is located within the East Animas Mountains scenic quality rating unit. The unit has a Class B (moderate) scenic quality rating. The landform consists of a complex of hills and low mountains with rocky outcrops. The line of the landform is generally sloping or undulating with occasional broken, angular lines at outcrops. Landform colors are muted tans and browns. Vegetation occurs in dark green clumps and concentrates along natural drainage courses.

The WSA is in a Visual Resource Management (VRM) Class IV.

G. Cultural

Three prehistoric sites are known from the Cowboy Spring WSA. They have not been fully evaluated but two of them appear to be significant from a research standpoint to explain the little known use of high altitude sites by Mogollon groups in the desert southwest. There are also a number of historic cabins near the WSA.

H. Air

Generally, the quality of the air within the Cowboy Spring WSA is good. The air quality in the WSA does not exceed the state or Federal air quality standards and is classified as a Class II area. This classification allows a moderate amount of degradation of air quality.

The Playas Smelter, located approximately 9 miles northeast of the WSA, might degrade the air quality of the WSA if atmospheric conditions are such that inversion layers or prevailing wind direction carries the smelter smoke to the WSA. This would occur primarily during the winter months.

The only major degradation of air quality occurs during the spring months (March-May), when west-prevailing winds, commonly gusting in excess of 30 mph, result in dust storms throughout the southern part of the state.

III. EXISTING AND POTENTIAL USES

A. Mineral Development

1. Energy Minerals

There are no known occurrences of energy minerals within the Cowboy Spring WSA and potential appears to be low.

The Las Cruces/Lordsburg Management Framework Plan Amendment/Environmental Impact Statement (in preparation) recommends a protective stipulation for wildlife values in the WSA (see Chapter III, Wildlife).

2. Non-Energy Minerals

Some major drainages contain sand and gravel and aggregate material suitable for general road construction and maintenance. However, more accessible sites are located outside of the WSA.

There are no known occurrences of locatable minerals in the Cowboy Spring WSA. Approximately 1 mile to the north is the Gillespie Mining District, containing the Gillespie Mine, the Athena fluorspar prospect, and the Red Hill Mine. These are fault-controlled vein deposits in Paleozoic limestone and Tertiary tuff (Red Hill Mine). The mineral deposits of the Gillespie Mining District appear to be geologically unrelated to rocks of the WSA. However, the possibility of a locatable mineral deposit cannot be ignored. Additional sampling would be required to assess the full mineral potential, which currently appears to be poor.

Currently, 16 recorded mining claims are located within the WSA. All are pre-Federal Land Policy and Management Act (FLPMA) claims.

B. Livestock Grazing

Parts of two grazing allotments are present within the Cowboy Spring WSA. Some of the Cowboy Spring WSA is unsuitable for grazing by livestock because of steep slopes. Licensed grazing use on public land includes cattle and a few horses.

ALLOTMENTS WITHIN THE WSA^{a/}

Allotment Name and Number	Total Acres	Total AUMs	Approximate Acres in WSA	Percent Allotment
Timberlake 1066	4,200	1,056	4,087	97%
H. Young 1073	11,624	2,760	2,612	22%
TOTAL			6,699	

Note: ^{a/}Information shown in table reflects only Federal acres and animal unit months (AUMs), and rangeland developments on public land.)

2. Ranch Management

Boundary Fence:

H. Young 1073 and Timberlake 1066 1½ miles

C. Recreation

Although access to Cowboy Spring is limited, some deer hunting takes place in the WSA. The WSA is surrounded by private land and general public hunting is discouraged by the surrounding landowners. The Victorio's Gray Ranch on the east side of the WSA leases hunting rights on its private land. Some of these hunters probably spill over into the public land within the WSA, especially in the area along the vehicle trail which provides access to the Park, an old homestead adjacent to the northwest boundary of the WSA.

The Continental Divide passes through the Cowboy Spring WSA. The Continental Divide National Scenic Trail could be routed through this WSA in the future.

D. Education/Research

Dr. V. W. Howard of New Mexico State University is studying feral hogs in the Animas Mountains. Joe Cook of the University of New Mexico has been studying vertebrates and the effects of fire in the Animas Mountains. This research involves a wide area including parts of the WSA.

E. Realty Actions

A temporary State Aid Withdrawal is located within the Cowboy Spring WSA. The State of New Mexico has completed their land selection and the withdrawal will be reviewed to determine if it should be cancelled.

F. Wildlife

There are no existing wildlife developments in the Cowboy Spring WSA. The WSA may be a transplant site for desert bighorn sheep, although there is a problem because the ewes in the Peloncillo mountain herd are pneumonia carriers. Sheep from a Cowboy Spring herd could move between the Peloncillos, about 25 miles to the northwest, and the Big Hatchets, about 15 miles east, carrying pneumonia to the Hatchet herd. According to Andy Sandoval of the New Mexico Department of Game and Fish (1982), if a pneumonia vaccine were developed, the Cowboy Spring Rim could be considered as a likely transplant site.

IV. WILDERNESS CRITERIA

A. Evaluation of Wilderness Values

1. Quality of Mandatory Wilderness Characteristics

a. Naturalness

The Cowboy Spring WSA is natural. The two fences within the area are constructed of wooden posts and are substantially unnoticeable.

A two-track vehicle trail enters the WSA from the southwest, providing the only access to the Park, an old homestead adjacent to the northwest boundary. Approximately 1 mile of the trail crosses the western part of the WSA.

With the exception of the imprints of man described above, the Cowboy Spring WSA is virtually pristine and appears to have been affected only by the forces of nature.

b. Solitude

The Cowboy Spring WSA provides outstanding opportunities for solitude. Most of the area is extremely rugged. The topographic relief and vegetative screening provide secluded niches where visitors might escape the sights and sounds of others in the WSA. The remoteness of the area from any habitation further enhances opportunities for solitude.

The Cowboy Spring WSA is surrounded on the north, south, and east by vast undeveloped areas of the rugged and, in places, densely vegetated Animas Mountains. Because of its small size, opportunities for solitude within the WSA are enhanced by, and to a large degree dependent on, these surrounding lands. The small size of the WSA diminishes the quality of solitude opportunities within the WSA.

c. Primitive and Unconfined Recreation

This WSA provides outstanding opportunities for primitive and unconfined recreation. The rugged topography, isolation, and lack of legal access preclude the use of vehicles in the area for motorized recreation. Opportunities exist for hiking, horseback riding, deer hunting, climbing, and photography. Backpacking opportunities are fair because of the numerous small canyons available for exploration from a base camp.

The vast undeveloped areas of the Animas Mountains that surround the WSA on the north, south, and east enhance the wilderness values within the WSA. These surrounding lands increase the recreational attraction of the Cowboy Spring WSA. Because of the small size of the WSA, the quality of recreation opportunities is less than it would be for a similar area of larger size.

2. Special Features

The Cowboy Spring WSA contains special ecological and cultural features of scientific and educational value.

The ecological features include both vegetation and wildlife values. The WSA provides habitat for the night blooming cereus, a Bureau sensitive plant species proposed for Federal listing (see Chapter II, Vegetation). The presence of several different wildlife habitat sites within the WSA accounts for the wide diversity of wildlife found in the area. The area also provides habitat for the coatimundi and Mexican turkey, which are both state-endangered species (see Chapter II, Wildlife). The scientific and educational value of the WSA is evidenced by the fact that researchers at New Mexico State University and the University of New Mexico are presently engaged in wildlife-related studies in the Animas Mountains (see Chapter III, Education/Research).

The cultural features of the WSA consist of three prehistoric sites that may be of scientific and educational value (see Chapter II, Cultural).

3. Multiple Resource Benefits

Congressional designation of this area as wilderness would provide a greater degree of long-term protection for the area's wilderness values than would administrative designations available to the BLM.

A more detailed discussion of multiple resource benefits of wilderness designation is located in Chapter VI, Impacts, under the All Wilderness Alternative.

4. Diversity

a. Ecosystems Present

The Bailey (1976) - Kuchler (1966) system classifies this area as being in the Mexican Highlands Shrubsteppe Province. The potential natural vegetation is oak-juniper woodland.

The general nature of the Bailey-Kuchler System fails to show specific vegetative types of the WSA. Further refinement of the system shows the following vegetation types in the WSA:

Vegetation Type	Acres
grama-tobosa shrubsteppe	410
mountain mahogany-oak scrub	6,289

b. Distance to Population Centers

The WSA is approximately 4 hours driving time from Las Cruces, New Mexico; 5 hours from El Paso, Texas; 7 hours from Albuquerque, New Mexico; 5 hours from Tucson, Arizona; and 7 hours from Phoenix, Arizona.

B. Manageability

Four factors affect the manageability of the Cowboy Spring WSA: the land ownership patterns surrounding the WSA, pre-FLPMA mining claims, the lack of legal access, and the potential for visitor concentrations into accessible areas.

The WSA is almost totally surrounded by state and private lands. Since the WSA is fairly small (6,699 acres), nonwilderness or nonconforming uses on nonpublic lands along the WSA boundary could negatively affect the wilderness values of the WSA. For example, the Gillespie Mining District lies to the north of the WSA, with the Gillespie Mine less than 2 miles from the northwest WSA boundary. Extension of the mining activity in this area would be noticeable from the top of Cowboy Rim. Developments on the non-Federal lands west or southwest of the WSA would be noticeable from the central part of the WSA.

Sixteen pre-FLPMA mining claims are located in the north and south parts of the WSA. The presence of these claims may affect the manageability of the WSA in two ways:

1. During the time that an area is under wilderness review, the WSA is managed under the Interim Management Policy and Guidelines for Lands Under Wilderness Review (IMP) (1979). Under the IMP, mining claimants are recognized as having a valid existing right if a valid discovery had been made on the claim before the passage of FLPMA on October 21, 1976. If the claimant can show evidence of his discovery to the BLM, activities for the use and development of the claims will be exempt from the nonimpairment criteria of the IMP. Mining operations on such claims would be regulated only to prevent unnecessary or undue degradation of the WSA.

Therefore, the possibility exists that the wilderness values of the Cowboy Spring WSA could be degraded before the area is designated wilderness if the above criteria are met.

2. Once an area is designated wilderness, the provisions of the Wilderness Management Policy (WMP) (1981) apply. Under the WMP, holders of mining claims validly established in the area prior to its designation as wilderness may develop their claims in accordance with the 43 CFR 3809 regulations "Surface Management of Public Lands Under U.S. Mining Laws." Although exercise of the rights of mining claimants must be with the least possible impact on the wilderness resource and claimants will be required to prevent unnecessary or undue degradation of the land, mining operations could impair wilderness values if there are no reasonable alternatives. In this case, there is a possibility that the wilderness values of the WSA could be degraded after the area is designated wilderness.

Since the Gillespie Mining District to the north appears to be geologically unrelated to the geology of the WSA and the potential in the WSA is low for the occurrences of strategic minerals, the presence of mining claims in the WSA does not present a major obstacle to the manageability of the Cowboy Spring area.

Another manageability concern is that of legal access to the WSA. At the present time, there is no legal access. Permission must be obtained from surrounding landowners to cross private land around the area. Therefore, the accessibility or availability of the WSA for wilderness purposes, such as primitive recreation, is not guaranteed. Easements or rights-of-way would have to be obtained to guarantee access to the area.

A fourth, minor manageability concern involves the possibility of visitors being concentrated in specific areas of the WSA and the possible negative effects on solitude. The easiest access into the WSA at present is from the southwest. Entering the WSA here allows the hiker to visit the central portions of the area without scaling the steepest side of the Cowboy Rim. Because the area is fairly small and many visitors would probably choose to enter the area from the southwest, there is a possibility that visitors would tend to concentrate in an area of about 4,000 acres south and west of Cowboy Rim. As the numbers of visitors increased, opportunities for solitude would diminish. Expensive management measures such as permits and patrols would be required to ensure the availability of outstanding opportunities for solitude.

V. PUBLIC INVOLVEMENT OVERVIEW

Public comments were received on the Cowboy Spring unit during both the BLM New Mexico Wilderness Review Initial Inventory Decisions (July 1979) and the BLM New Mexico Wilderness Study Area Decisions (March 1980). Maps, photographs, road affidavits, and geological information on the oil and gas potential of the area were included with the comments.

Comments opposing wilderness review of the area dealt with resource and management conflicts such as visitor versus rancher, oil and gas potential, and conflicts with the Clean Air Act and Playas Smelter, 9 miles north of the WSA.

Comments supporting wilderness review of the area indicated that the unit offered opportunities for solitude because of its remoteness and offered outstanding recreation opportunities because of its ruggedness. Several comments identified the supplemental values of scenery and ecosystem relationships in support of the area.

VI. ALTERNATIVES AND IMPACTS

A. All Wilderness

Under this alternative, the entire 6,699 acres of public land within the Cowboy Spring WSA would be recommended as suitable for wilderness designation. (See Map 1 for WSA boundary.)

If designated as wilderness, existing and potential uses (see Chapter III) would be regulated by the Wilderness Management Policy (1981) as follows. Motorized access on vehicle trails in the WSA would not be allowed. Desert bighorn sheep could be transplanted in the WSA. The WSA would be managed as a VRM Class I. Since locatable minerals potential is considered low in the Cowboy Spring WSA, full development of the pre-FLPMA mining claims in the WSA is not assumed.

The All Wilderness Alternative would not have significant impacts on cultural, air, education/research, and realty actions in the Cowboy Spring WSA. For this reason, these resources were not included in the following discussions.

1. Impacts to Minerals

There has been no production of oil and gas within the WSA. Because the potential appears to be low, impacts to the oil and gas industry would be minimal in the short-term. The economic benefits forgone to the oil and gas industry also would be minimal in the short-term.

Exploration for energy minerals under the mineral leasing laws would not be allowed after wilderness designation. As a result, there would be no opportunity for further assessment of the oil and gas potential in the long-term.

The potential for locatable minerals in the Cowboy Spring WSA is low. Although there are 16 recorded mining claims within the WSA, there is currently no mining activity. These claims, if valid, could be developed to their full potential under a wilderness designation. However, during development, the mining companies may incur additional costs of operation depending on type and location of access for use of motor vehicles, motorized equipment, and other forms of mechanical equipment. Since there is currently no activity and the potential is low, the economic impact would be minimal in the short-term.

After wilderness designation, additional exploration for locatable minerals outside of existing claims boundaries would not be allowed. The minerals industry could be adversely affected in the long-term.

2. Impacts to Other Resources and Uses

a. Water, Soils, Vegetation

Restrictions on surface disturbing and mechanized activities would provide long-term protection for the existing water, soils, and vegetation including Cereus greggii, a Bureau sensitive plant species proposed for Federal listing (see Chapter II, Vegetation).

The 1 mile of vehicle trail on the west side of the WSA would be closed and rehabilitated, causing a slight increase in vegetative ground cover. This could also slightly reduce soil erosion.

b. Wildlife

Restrictions on surface disturbing and mechanized activities would provide protection for wildlife habitat.

c. Visual

Existing visual resources would be protected. Minor modifications in the basic elements of the landscape as a result of natural ecological changes and very limited management activity would be permitted.

d. Livestock Grazing

There would be no impacts to livestock grazing. The 1½ miles of boundary fence has no existing vehicular access (see Chapter III, Livestock Grazing).

e. Recreation

There would be a negligible impact on the current recreation use in the area. Hunters would be denied motorized access on the approximately 1 mile of vehicle trail which provides access into the west side of the WSA.

f. Wilderness Values

Wilderness designation would provide the wilderness values present in the Cowboy Spring WSA with long-term Congressional protection. However, four factors could impact the ability of the BLM to manage the area as wilderness in the long-term. Since the WSA is fairly small, nonwilderness uses on the non-Federal lands that almost totally surround the area could degrade opportunities for solitude and primitive recreation and the special features of the WSA. Although the development of the pre-FLPMA mining claims in the

north and south parts of the WSA is unlikely, development could occur under a wilderness designation. The impacts to wilderness values could be minimal to major depending on the type and extent of the activity and the location and type of access. Access to the area is controlled by surrounding landowners. Wilderness recreationists could be denied access to the area. Due to the small size and topography of the area, wilderness visitors could naturally tend to concentrate in the areas south and west of Cowboy Rim. As visitor numbers increased, the quality of solitude opportunities would diminish. Expensive management measures such as permits and patrols would be required to ensure the availability of outstanding opportunities for solitude.

The magnitude of the impact on wilderness values caused by the above manageability factors would depend on whether one or all of the described circumstances come about.

The transplanting of desert bighorn sheep would enhance the special wildlife features of the Cowboy Spring area.

B. No Action/No Wilderness

Under the No Action/No Wilderness Alternative, the Cowboy Spring WSA would be recommended nonsuitable for wilderness designation.

If the WSA is not designated wilderness, existing and potential uses (see Chapter III) would continue without regard to the Interim Management Policy and Guidelines for Lands Under Wilderness Review (1979) as follows. Desert bighorn sheep could be transplanted into the WSA. The WSA would be managed as a VRM Class IV.

The No Action/No Wilderness Alternative would not have significant impacts on cultural, air, education/research, realty actions, or recreation in the Cowboy Spring WSA. For this reason, these resources were not included in the following discussions.

1. Impacts to Wilderness Values

The wilderness values and special features of the Cowboy Spring WSA would not be provided with long-term Congressional protection. Management of the area as specified in land use plans would be subject to administrative change in the long-term.

Since existing and proposed BLM plans do not identify any activities which would impair wilderness values, the

entire area would probably retain its natural character in the short-term.

Continuation of vehicle use on the vehicle trail into the western part of the WSA would slightly impact opportunities for solitude and primitive recreation in that part of the area.

The transplanting of desert bighorn sheep would enhance the special wildlife features of the area.

2. Impacts to Other Resources and Uses

a. Water, Soils, Vegetation

The 1 mile of vehicle trail on the west side would remain open to motorized access. Impacts to water, soils, vegetation, and Cereus greggii, a Bureau sensitive plant species proposed for Federal listing, would continue as in the past.

b. Wildlife

If the area is developed, wildlife habitat could be degraded and animals disturbed by human presence. Poaching of Coues' whitetail deer also could occur in this case. If desert bighorn sheep are transplanted to the area, such human disturbance would be a significant problem.

c. Visual

Significant changes in the basic elements of the landscape as a result of management actions would be permitted under a VRM Class IV. Since existing and proposed BLM plans do not identify any activities which would impair visual resources, the existing Class B scenic quality would be maintained in the short-term. However, this management class could, in the long-term, allow significant degradation of the existing visual resources.

d. Minerals

Impacts to energy minerals would be minimal because there is no oil and gas activity at present and potential is low. The economic benefits forgone to the oil and gas industry would also be minimal in the short-term. The WSA is being recommended as a desert bighorn sheep transplant site with a protective oil and gas leasing stipulation (LC/L MFP Amendment/EIS, in preparation).

Because of the protective stipulation, exploration could be denied and hydrocarbons could only be reached by directional drilling on no surface occupancy areas.

There would be no impacts on locatable minerals exploration and development. Such activities would be regulated under the Surface Management Regulations (43 CFR 3809) to prevent unnecessary and undue degradation to the land.

e. Livestock Grazing

The impacts to livestock grazing would be the same as those discussed under the All Wilderness Alternative.

VII. RECOMMENDED ACTION

A. Recommended Action Description

The recommended action for the Cowboy Spring WSA is the No Action/No Wilderness Alternative. The entire 6,699 acre WSA would be recommended nonsuitable for wilderness designation.

B. Rationale

The Cowboy Spring area meets the criteria for a WSA in terms of size and outstanding opportunities for solitude and primitive recreation. However, the WSA is comprised of only a small part of the eastern flank of the Animas Mountains. Outstanding opportunities for solitude and primitive recreation in the Cowboy Spring WSA are dependent on the surrounding Animas Mountains which consist of vast areas of undeveloped state and private lands. The quality of opportunities for solitude and primitive recreation within the WSA boundaries is diminished by the small size of the WSA.

Another reason for recommending the Cowboy Spring WSA nonsuitable for wilderness designation is the potential for wilderness management conflicts. The uncertain management of the surrounding private and state lands of the Animas Mountains represents the most significant potential wilderness management conflict even though extensive development is unlikely in the short-term and unpredictable in the long-term. Because of the small size of the WSA, nonwilderness uses on adjacent non-Federal lands could have substantial impacts on the wilderness values within the area.

Potential wilderness management conflicts of secondary importance include the lack of legal access to the WSA and pre-FLPMA mining claims in the north and south parts of the area. There is also the potential for concentration of wilderness visitors in the central and southwestern parts of the WSA which would diminish the quality of existing solitude opportunities.

Without wilderness designation, the Cowboy Spring WSA's wilderness character and special features would be retained under the short-term management prescribed in existing and proposed BLM plans.

There would be no significant impacts to other resource values and uses within the WSA under the No Action/No Wilderness Alternative.

C. Consistency With Other Plans

The recommended action for the Cowboy Spring WSA does not conflict with any of the decisions in the Gila MFP (1977).

At this time, there are no known inconsistencies between the recommended action and the policies of local, state, or Federal plans. Continuing coordination and consultation with other agencies will take place during the public comment period on the Draft Environmental Assessment for Wilderness Study Areas in the Las Cruces District.

APPENDIX E

GILA LOWER BOX WSA (NM-030-023)

I. GENERAL DESCRIPTION

A. Location

The Gila Lower Box Wilderness Study Area (WSA) is located 23 miles northwest of Lordsburg, New Mexico and 4 miles southeast of Virden, New Mexico.

The U.S. Geologic Survey (USGS) topographic map covering the WSA is the Canador Peak, New Mexico, quadrangle at the 15-minute scale.

B. Climate and Topography

The Gila Lower Box WSA is characterized by a semiarid, continental climate, with mild winters and pleasant to hot summers.

Average annual precipitation in the area is slightly greater than 12 inches. A wide variation in annual totals is characteristic of southern desert climates. More than half of the precipitation normally falls during July, August, and September from convective thunderstorms that are commonly intense and of short duration. The winter precipitation is mainly from gentle-intensity frontal type storms that may produce some light snow, but seldom accumulates on the ground.

During the summer months, daytime temperatures may exceed 100°F. The average monthly maximum temperature during July, the warmest month, is in the middle 90's. In January, the coldest month, the average monthly minimum temperature is in the low 20's.

Winds generally predominate from the southeast in summer and from the northwest in winter, but local surface wind directions will vary greatly because of local topography. Spring is the windy season. Dry, gusty winds are predominantly from the west-southwest and may exceed 30 mph in the afternoons.

The WSA contains a portion of the Gila River and the Lower Box Canyon. This portion of the river displays many characteristics of a youthful stream. The most prominent characteristics are the steep canyon walls, numerous short canyons extending themselves by head cutting and developing valley systems, a general lack of flood plain development, and canyon sides which rise abruptly from near the river's edge.

Structural benches occur along the river in places. Erosional columns, or hoodoos, can be seen in various places along the river. The southern portion of the WSA contains gently rolling hills and the drainages into the Gila.

C. Land Status

The WSA contains 8,555 acres of public land and 120 acres of private inholdings. The following lands are private inholdings within the WSA:

- 40 acres - T. 19 S., R. 20 W., Section 21: SE $\frac{1}{4}$ SE $\frac{1}{4}$
- 80 acres - T. 19 S., R. 20 W., Section 28: W $\frac{1}{2}$ NE $\frac{1}{4}$

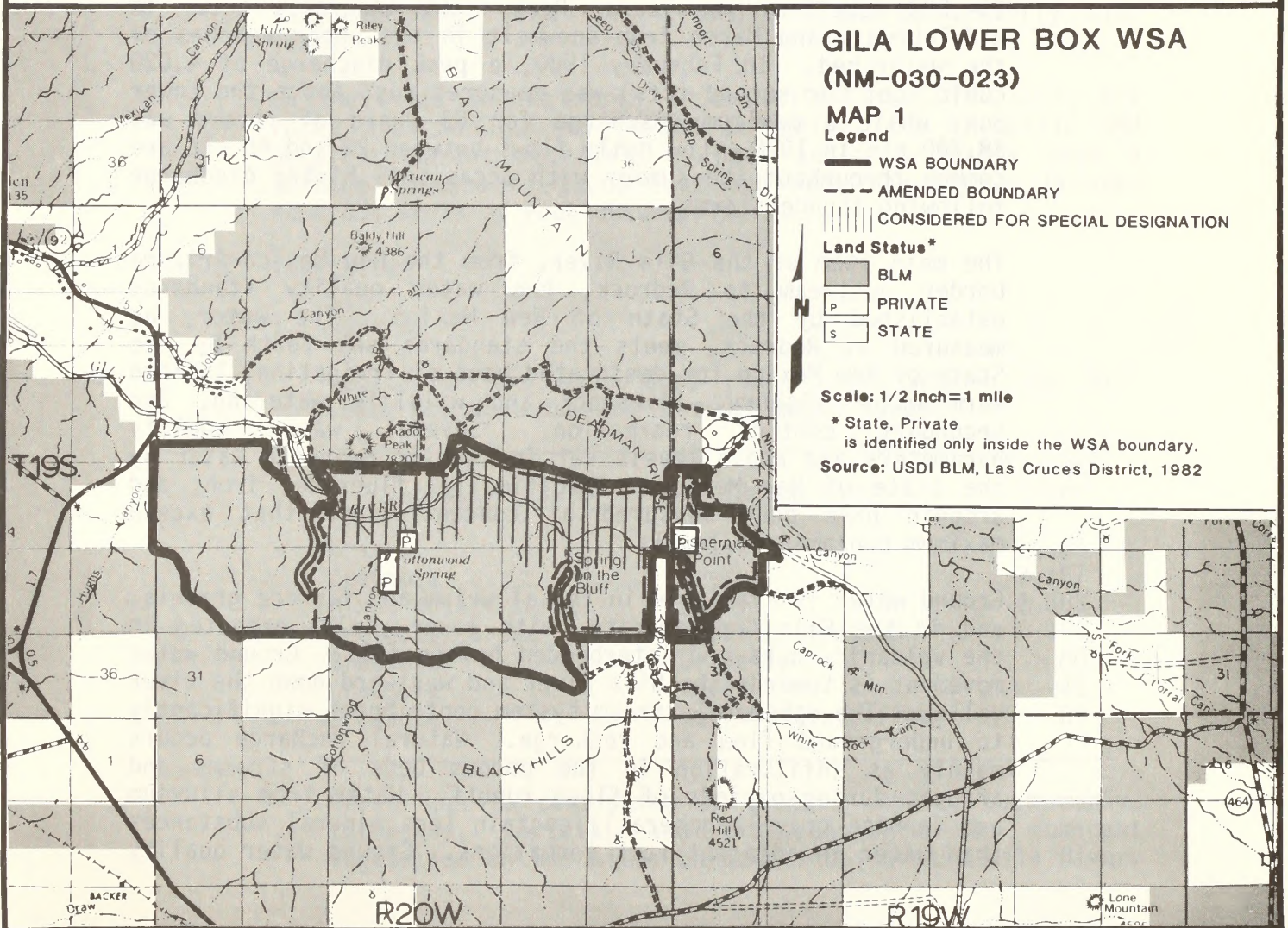
(See Map 1 for land status within the WSA boundary.)

D. Access

Legal access to the WSA is available from the south by county roads to Fisherman's Point and Spring on the Bluff (see Map 1 for general locations of these areas). Further physical access is available from ranch and mining roads to the north which are close to the WSA's northern boundary.



Aerial view of the Gila Lower Box WSA.



II. EXISTING RESOURCES

A. Geology

The Gila Lower Box is within an area dominated by fault block mountains, extensive volcanics, and river and shallow lake deposits. The oldest rocks in the WSA are Tertiary volcanics consisting of andesite flows and tuffs. Overlying the Tertiary volcanics are rhyolitic and latitic tuffs. These are interbedded with sandstone and conglomerates. The cliffs of the Gila Lower Box are formed by tuffs and andesites.

B. Water

The Gila Lower Box WSA is situated within the Gila River Basin which contributes to the larger Lower Colorado River Basin. The Gila River is a perennial stream with headwaters in the Gila National Forest to the north. Through the Gila Lower Box WSA, the river meanders generally westward with portions of the channel being narrow with steep side walls. Principle tributaries into the Gila River within the WSA are ephemeral and include White Rock, Box, and Cottonwood Canyons. Average discharge of the Gila River through the Lower Box is around 134,000 acre-feet per year. Peak flows generally occur in mid-February and March from snowmelt in the upper reaches of the watershed. In February 1980, a peak discharge of 4,020 cubic feet per second (cfs) was measured just above the Lower Box, while a maximum discharge for 53 years of record was 58,700 cfs in 1978. Low daily flows between 20 and 40 cfs are common throughout the summer with occasional higher discharge following thunderstorms.

The main stem of the Gila River, from the New Mexico-Arizona border upstream to Redrock, has water quality standards established by the State of New Mexico. The water, as measured at Redrock, meets the standards set forth by the State of New Mexico for designated uses of irrigation, limited warm water fishery, livestock and wildlife watering, and secondary contact recreation. Several water quality parameters are above levels set for public drinking water by the State of New Mexico. Specifically, fluoride, iron, and arsenic have been measured at concentrations that exceed maximum contaminant levels.

Ground water is available in the alluvium and terrace gravels, and in the Gila Conglomerate, with lower yields expected in the volcanic rocks and interbedded bolson fill. Ground water movement is towards the Gila River and westward down the river valley. The ephemeral stream system contributes significantly to underground flow and recharge. Natural recharge occurs mainly as infiltration in the porous beds of streams and arroyos during periods of flood runoff. Water from alluvium and terrace gravels generally contain less mineral substances than water in adjacent rock formations. Ground water quality

in the area is within recommended limits for livestock and wildlife use, as established by the National Academy of Sciences (BLM 1980).

C. Soils

Four different landforms, each with a different soil type, are found in the Gila Lower Box WSA.

In the bottom of the Gila Valley, the soils were deposited by the river and consist of stratified sands, silts, clays, and gravels. Surface textures range from silty clay loam to very gravelly sandy loam.

On the steep upland breaks into the Gila River, the soils formed in stratified old valley fill and commonly have a surface texture of very gravelly sandy loam. These soils have a high erosion hazard and contribute sediment to the river during periods of intense rain, which are common in the summer months.

In the southern portion of the WSA, on upland areas, the soils are deep and formed from igneous parent materials. Surface textures range from very gravelly loams to gravelly clay loams.

On the hills to the north of the Gila River, the soils are rocky and shallow and formed primarily from rhyolitic and basaltic parent materials. These soils typically have a surface texture of stony loam and are interspersed between numerous areas of rock outcropping.

D. Vegetation

1. General

Vegetation and associated range sites within the Gila Lower Box WSA consists of seven major types:

Vegetative Type	Range Site	Federal Acres
Grass	Hills	2,138
Creosote	Breaks	3,167
Mixed desert shrub	Loamy	2,583
Deciduous trees	River bottomland	454
Creosote	Gravelly	80
Creosote	Sandy	48
Creosote	Malpais (lava flow)	85

Grass species consisting of grammas, tobosa, bush muhly, threeawns, foxtail, and dropseeds are the dominant vegetation on the hills on both sides of the Gila River.

A few scattered juniper trees are present along with the shrub species creosote, mesquite, and snakeweed.

Breaks, a highly erodable range site, occurs mainly along the south edge of the Gila River. Creosote is the dominant vegetation on the breaks. Other associated shrub species are snakeweed, mesquite, rabbitbrush, Mormon tea, yucca, mimosa, cacti, and a few scattered juniper trees. Grass species include bush muhly, black grama, tobosa, burro grass, fluffgrass, other gramas, and dropseeds.

Mixed desert shrubs are the dominant vegetation on the deeper loamy soils on the south side of the Gila River. Shrub vegetation is comprised of snakeweed, mesquite, cacti, yucca, mimosa, and creosote. Associated grass species are tobosa, threeawns, bush muhly, dropseeds, and black grama.

In contrast to the surrounding desert, the Gila River is the unique and dominant feature of this WSA because of important riparian vegetation. Vegetation, varied and diverse, is comprised of the deciduous cottonwoods, Arizona sycamores, Arizona walnuts, and willow trees. Grass species include bahia grass, Johnson grass, and Bermuda grass. Many different forbs and grasslikes occur in the bottomland. The river bottomland, though very productive, is in a very depleted state due to eroding soils and lack of vegetative cover.

Creosote is the dominant vegetation on gravelly, sandy, and malpais (lava rock) areas. Other associated shrub species are snakeweed, mesquite, yucca, and cacti. Grass species include tobosa, bush muhly, threeawns, gramas, cane bluestem, Arizona cottontop, and foxtail. Most of the grass species occur in the lava flow on the north side of the river.

2. Threatened or Endangered Plant Species

The following species was identified and located in or near the WSA (NMSHP and USFWS 1982).

Species: Cereus greggii - night blooming cereus

Status: Bureau sensitive species proposed for Federal listing.

Habitat: widespread; does not grow commonly anywhere; needs the microhabitat associated with creosote and bush muhly.

E. Wildlife

1. General

The Gila Lower Box WSA is extremely important for wildlife because it encompasses 587 acres of riparian habitat which supports the most diverse wildlife community of any habitat site. The upland portions of the unit are creosote or snakeweed. Although these two sites do not support a rich fauna by themselves, the combination of the different sites is valuable. Those animals which normally use the upland areas have a source of water with the river close by. Some wildlife associated with the river would use the upland areas for feeding. Raptors, in particular, nest and roost along the river, but hunt in the creosote and snakeweed sites where mammalian and reptilian prey densities are high (USDI, BLM 1979, 1981).

The Gila River is extremely valuable for wildlife because it extends through the Chihuahuan Desert into the Sonoran Desert in Arizona (and into Mexico via the Colorado River). To the north, it reaches the Mogollon Plateau. This makes the river a natural pathway for a great number of species. As a result, almost half the vertebrate species which occur in New Mexico can be found along the lower Gila River. Most of these species also are found in the WSA.

The Gila River Valley, including the WSA, is particularly well-known for its abundance and diversity of bird life. The breeding riparian avifauna of the Gila Valley is the richest of any in the lower Colorado drainage (Johnson, et al 1974) and probably of any in the southwest. In addition, breeding densities of riparian birds appear to be comparable to those of the Verde Valley of Arizona, which is among the highest for any area in temperate North America. The Gila Valley also represents a highly significant breeding area for raptors (Johnson, et al op. cit.) and for peripheral species (Hubbard 1971).

In the lower Gila Valley, between Arizona and the Gila National Forest, 265 species of birds have been recorded. Of these, 144 were recorded in the summer. As many as 116 may breed there (Hubbard 1977). Most of these species can be found in the WSA. Of some interest is the fact that many birds reach a geographic limit at this section of the Gila River. Hubbard lists eight birds which are at their northern limits, five at their southern, and a number of others which are Sonoran or Mexican species.

Similar geographic distributions are exhibited with other wildlife. Sixty-seven mammal species can be found in or near the lower Gila Valley in New Mexico. About one-fourth of these are near their distributional limits;

half of these are at their northern and half at their southern extensions. Twelve amphibians and 54 reptiles are found in or near this part of the river valley. About one-third of the amphibians and one-half the reptiles are at their distributional limits, and most of these are at their northern extensions. Again, most of these species can be found in the WSA (Hubbard 1977).

Some big game use the area. Mule deer numbers are low, but they are found in the WSA. Javelina populations are healthy. This species, too, is near its northern limits in the Gila River Valley.

2. Threatened or Endangered Fauna Species

The WSA has significant threatened or endangered species habitat. The peregrine falcon and the bald eagle, both Federal-endangered species, use the area but are not known to breed there.

Eight state-endangered species are found in this part of the river valley. The gray hawk is associated with riparian habitats. It is quite rare in New Mexico. Black hawks are also tied closely to riparian habitat. Two species which nest in the WSA are the Gila woodpecker and Bell's vireo. Gila monsters and narrow-headed garter snakes, two reptile species, have been seen in the WSA. There are two fish species, the spikedace and the loachminnow, which live in the shallower waters that are found in many parts of the WSA. These two species are also candidates for Federal listing.

The zone-tailed hawk has been identified as a special concern element by the New Mexico State Heritage Program because it reaches the northern limits of its distribution peripherally in New Mexico. This hawk nests in the WSA.

F. Visual

The Gila Lower Box is composed of massive blocky outcrops which break into the steep walled canyon. The canyon is over 600 feet deep in places. In the eastern half of the canyon, the predominant colors are pinks and reds. The western half is composed of a much darker black/brown rock. Water in the river is usually slow moving and flat. Water color varies with the season, but is generally brown. Vegetation in the canyon is dense near the river. This vegetation includes all ages of trees, bushes, and numerous grass and cactus plants. Flowers can provide a striking visual contrast during the spring. The Gila Lower Box Canyon has a class A (high) scenic quality rating.

The land south of the canyon consists of rounded rolling hills with arroyos and canyons cutting toward the river. Vegetation

is predominantly short bushes and isolated patches of grass and cacti. This part of the WSA has a Class B (moderate) scenic quality rating.

The WSA is in a Visual Resource Management (VRM) Class II.

G. Cultural Resources

The Gila Lower Box WSA contains several large petroglyph panels in the Mogollon style. While not as large as other petroglyph sites, they do contain significant information regarding the art styles and beliefs of the individuals who made them. A number of small rock shelters and rock structures are present throughout the WSA. The rock structures are significant in that such remains are very rare in this portion of the southwest.

Site density should be high in the north part of the WSA along the south facing slopes of the Rimrock. There is a high probability that any major cave or rock shelter has a site.

H. Air

Generally, the quality of air within the Gila Lower Box WSA is good. The air quality in the WSA does not exceed the state or Federal air quality standards and is classified as a Class II area. This classification allows a moderate amount of degradation of air quality.

Since no major industrial or population centers are located in the nearby vicinity, the only major degradation of air quality occurs during the spring months (March-May). West-prevailing winds, commonly gusting in excess of 30 mph, result in dust storms throughout the southern part of the state.

III. EXISTING AND POTENTIAL USES

A. Mineral Development

1. Energy Minerals

There are no known occurrences of energy minerals within the Gila Lower Box WSA. The Gila Lower Box has been classified by the Minerals Management Service as being prospectively valuable for oil and gas. However, potential is actually low due to the lack of petroleum source rocks and other geologic indicators (BLM Mineral Resource Inventory 1981). Industry interest is also very low for this area.

Currently, the area is open to leasing with a protective stipulation imposed for a portion of the WSA to protect wildlife, watershed, and recreation values (Gila MFP 1977).

The Las Cruces/Lordsburg MFP Amendment/EIS (in preparation) recommends that the area continue to be open to leasing with a No Surface Occupancy (NSO) stipulation on the area identified for special designation.

2. Non-Energy Minerals

Several 10 foot deep prospect pits have been dug on three mining claims in T. 19 S., R. 20 W., Sections 23 and 26. Mineral specimens of banded calcite, locally known as onyx, and some geodes occur in basaltic andesites. Although deposits of banded calcite and travertine are known to grade into manganese deposits, no evidence of manganese mineralization was seen. Manganese deposits are present at the following mines outside the WSA: the Black Bob Mine, approximately $\frac{1}{2}$ -mile north; Consolation Mine, $\frac{1}{4}$ -mile east; and the Caprock Mountain Mines, $1\frac{1}{2}$ miles southeast. The deposits may indicate a mineral trend which could extend into the WSA. At the present time, the potential for occurrences of manganese appears to be low. Manganese is on the National Defense Stockpile Inventory of Strategic and Critical Minerals. There are currently 3 pre-FLPMA mining claims recorded within the WSA.

B. Watershed

Within the Gila Lower Box WSA, water is used primarily by livestock and wildlife, limited warm water fishery, and secondary contact recreation. There are currently no water developments within the WSA; however, one development is proposed for livestock use (see Chapter III, Livestock Grazing).

The Gila Lower Box is within the Gila-San Francisco declared underground water basin and ground water use is administered by the New Mexico State Engineer.

Water draining the Gila Lower Box WSA, as both surface flow and underground flow, contributes to the Gila River system. This water is important for sustaining riparian vegetation along the river and additional downstream uses including irrigation and limited drinking water.

A watershed decision in the Gila MFP (1977) identifies areas where water control structures to reduce flood and sediment damages are feasible. A portion of this area lies within the Gila Lower Box WSA. Another watershed decision in the Gila MFP recommends mechanical treatment for creosote and tarbush in selected areas. The central and southeast parts of the WSA are within the selected area for mechanical treatment.

Planning documents recommend a part of the Gila Lower Box WSA for special designation (LC/L MFP Amendment/EIS, in preparation). One of the special management objectives, as it relates to watershed, is to maintain and improve channel stability of the Gila River. Another objective is to manage the public land to maintain and improve water quality to meet State standards for fecal coliform, dissolved oxygen, pH, and temperature.

C. Livestock Grazing

1. Allotments

Parts of four grazing allotments are present within the Gila Lower Box WSA. Licensed grazing use on the public land includes cattle and a few horses. The Lazy B Cattle Company allotment (5058) is administered out of the BLM Safford District in Arizona.

ALLOTMENTS WITHIN THE WSA^{a/}

Allotment Name and Number	Total Acres	Total AUMs	Approximate Acres in WSA	Percent Allotment
J. R. and C. Donaldson 1016	2,400	288	1,989	83%
R. Johns 1076	1,650	288	423	26%
Caprock 1078	30,028	4,884	5,234	17%
Lazy B Cattle Co.5058	109,070	24,905	909	1%
TOTAL			8,555	

Note: ^{a/}Information shown in tables reflects only Federal acres and animal unit months (AUMs), and rangeland developments on public land.

2. Ranch Management

Boundary Fences:

Caprock 1078 and Lazy B Cattle Co. 5058	1½ miles
Donaldson 1016 and Lazy B Cattle Co. 5058	1½ miles
Donaldson 1016 and Johns 1076	2½ miles

3. Potential Rangeland Developments

There is one dirt tank proposed on the Donaldson allotment (1016) in T. 19 S., R. 20 W., Section 28. This water development could only be constructed under the stipulations of the Water Rights Policy (BLM Instruction Memorandum No. NM-82-55, August 31, 1982). The location of this rangeland development is tentative.

D. Recreation

This area provides a variety of primitive recreation opportunities based on the Gila River and the canyon. A discussion of these opportunities is located in Chapter IV, Primitive and Unconfined Recreation.

The Gila MFP (1977) directs that a recreation management plan be developed for the Lower Gila River. The area to be covered by the recreation management plan includes the Gila Lower Box WSA. The plan will include consideration for access, land acquisition, facilities, interpretive devices, cultural values protection and interpretation, and trails in the Lower Gila Valley. Planned recreation management actions for the Gila Lower Box portion of the Lower Gila Valley would take into consideration endangered species and riparian habitat. The recreation management plan would then be included in the Lower Gila River Multiple Use Management Plan.

Planning documents recommend a part of the Gila Lower Box WSA for special designation (LC/L MFP Amendment/EIS, in preparation). The special management objectives, as they relate to recreation, include the maintenance of recreation resources by preserving scenic values and preserving primitive recreation opportunities.

E. Education/Research

Planning documents recommend a part of the Gila Lower Box WSA for special designation (LC/L MFP Amendment/EIS, in preparation). One of the special management objectives would be to protect and interpret the petroglyph panels and rock shelters present in the area.

F. Realty Actions

A portion of the Gila Lower Box WSA is withdrawn for use in connection with the San Carlos Indian Irrigation Project. In

addition, a segment of the WSA is withdrawn by Presidential Executive Order for powersite reservations. These lands are currently being reviewed by the U.S. Geological Survey, Water Resources Division, to determine their importance for powersite locations. Those withdrawals found not feasible for power sites will be revoked.

The U.S. Geological Survey, Water Resources Division, has recently been given a temporary right-of-way for a new gauging station on the Gila River just inside the northeast boundary of the WSA. The right-of-way and gauging station conform with the Interim Management Policy and Guidelines for Lands Under Wilderness Review (1979). The base data collected at the gauging station consists of measurement of stream discharge and is part of a network of surface water gauging stations on the Gila River Basin. The data is important for many hydrologic investigations, including flood flow frequency analysis.

G. Wildlife

There are no existing wildlife developments in the Gila Lower Box WSA, but several potential uses exist. The New Mexico Department of Game and Fish wants to look at the area intensively to determine the full potential for desert bighorn sheep. If it is suitable habitat, bighorn sheep could be transplanted in the future (Sandoval 1982).

The Gila MFP (1977) proposed a number of actions for wildlife. BLM would sponsor research for endangered species and javelina in the Gila River Valley. A Habitat Management Plan would be written with emphasis on riparian vegetation and the wildlife dependent on it. An Allotment Management Plan would be written for allotment 1016 with objectives for wildlife habitat improvement. No surface occupancy would be allowed for mineral and oil and gas exploration and development in the Gila Lower Box to protect habitat for threatened or endangered species. Creosote control is recommended for an area that includes a small portion of the WSA.

The Las Cruces/Lordsburg MFP Amendment/EIS (in preparation) recommends a part of the Gila Lower Box WSA for special designation. Special management requirements of this proposal which pertain to wildlife are: fencing off the river so that grazing could be managed; salt and minerals would be placed to avoid concentrations and improve distribution of livestock; if tree species do not respond to the grazing systems with better reproduction rates, young trees would be planted in selected locations; a habitat management plan would be written; no surface occupancy for oil and gas would be allowed and the area would be withdrawn from locatable mineral entry; and an off-road vehicle closure would be made.

IV. WILDERNESS CRITERIA

A. Evaluation of Wilderness Values

1. Quality of Mandatory Wilderness Characteristics

a. Naturalness

Overall, the Gila Lower Box WSA is virtually undisturbed by man. However, two impacts of man are located within the WSA. A vehicle trail provides access to the private land inholding in T. 19 S., R. 20 W., Section 21. A mining claim in T. 19 S., R. 20 W., Section 26, has two prospect pits of approximately 10 feet in depth. Other impacts of man in the area include a few fences which do not detract from the WSA's natural appearance.

The canyon of the Gila River appears natural. From the canyon, one can see views of Black Mountain, the Rimrock, and Canador Peak. All of these views are undisturbed by evidence of man's work.

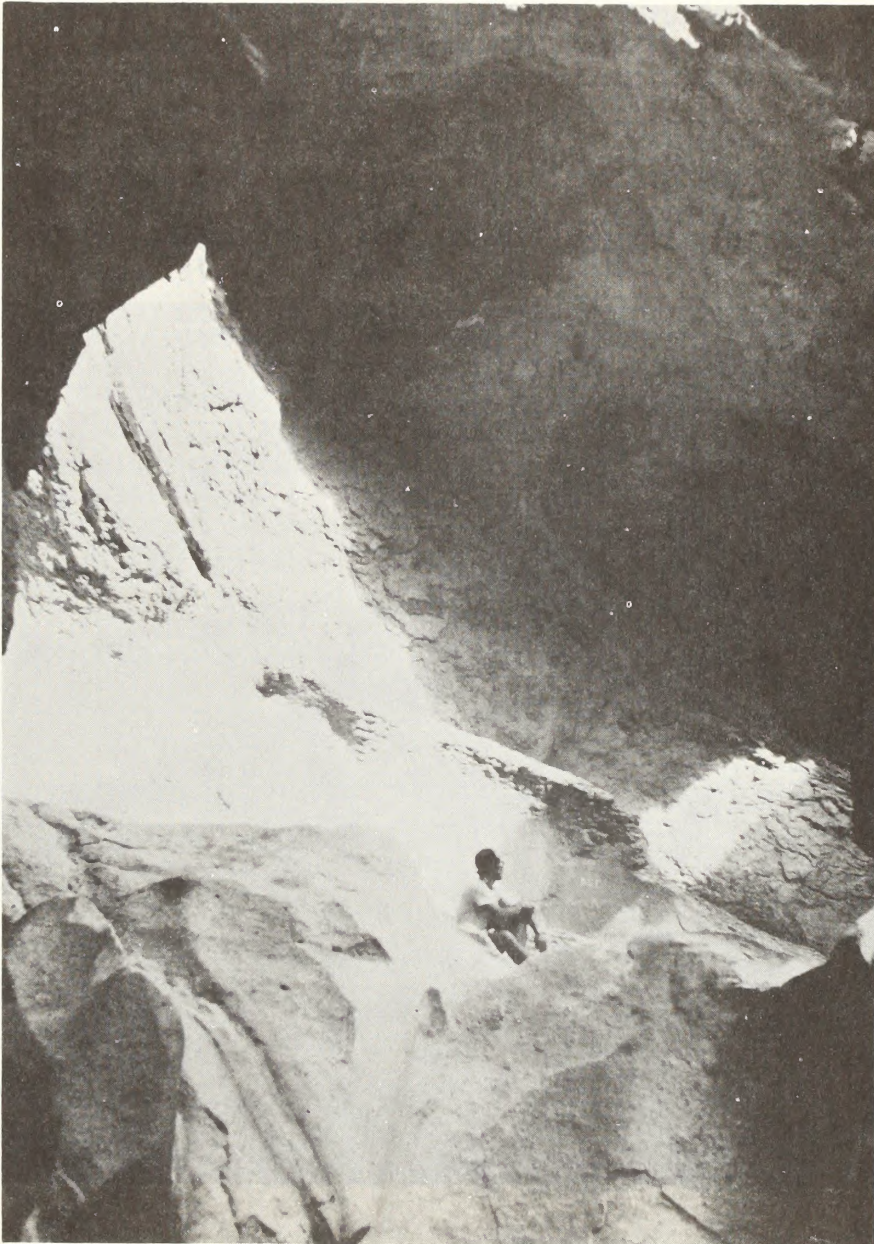
Both ends of the Gila Lower Box canyon are impacted by developments outside the WSA boundary. The U.S. Geological Survey's (USGS) old gauging station is approximately 400 feet from the northeast boundary of the WSA. A concrete dam which diverts water into nearby irrigation ditches is just outside the west boundary of the WSA. The USGS's new gauging station, when installed, will be painted to blend in with the surrounding landscape and will not impair the naturalness of the river canyon.

b. Solitude

The Gila Lower Box WSA offers outstanding opportunities for solitude. The WSA is composed of two distinct types of topography; the Gila Lower Box and its side canyons, and rolling upland hills to the south. These different types of topography have different potentials for solitude.

The Gila Lower Box and its side canyons offer numerous secluded spots. While in the canyons, visitors are surrounded by the works of nature. The feeling of solitude away from others or the work of man comes quickly in this environment. The entire canyon provides these outstanding opportunities. The impacts caused by the USGS's old gauging station or the ditches and canals outside the WSA disappear from view after rounding the river's first bend.

The rolling upland hills to the south of the canyon offer a different type of solitude. A visitor here has a longer view with fairly open and distant horizons. While traveling across the rolling hills, a visitor may occasionally encounter evidence of man's work, such as fences. These encounters would be brief. Since the hills have no topographic features which funnel visitors into a small area, groups would generally fan out into different areas. Interaction with other groups would be unlikely.



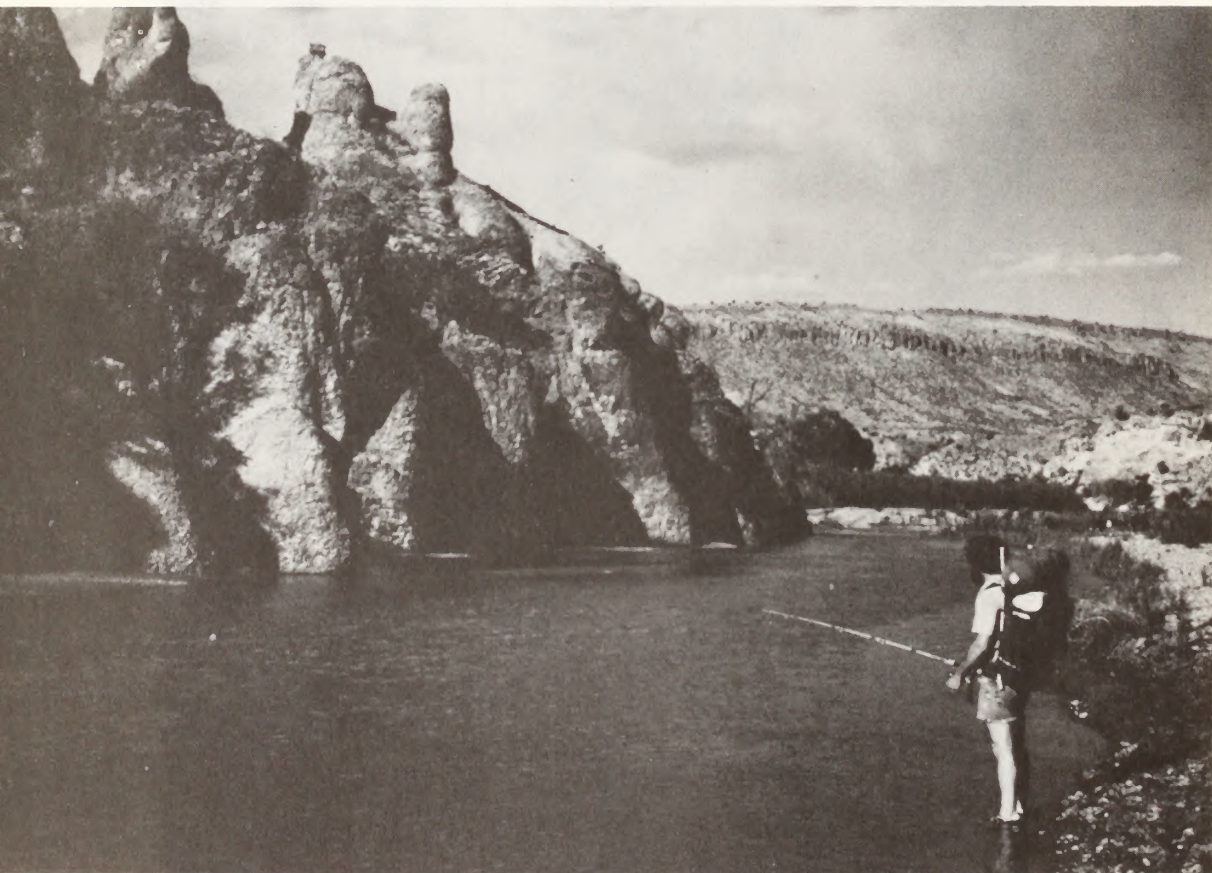
Side canyons of the Gila Lower Box offer numerous opportunities for solitude.

The potential for solitude in that portion of the WSA which is west of the cherry-stemmed road in T. 19 S.,

R. 20 W., Sections 20 and 29 is impacted somewhat by the sights and sounds of Highway 82 and the farming along the Gila River. Noise from the highway may enter the western edges of this portion of the WSA.

c. Primitive and Unconfined Recreation

The Gila Lower Box WSA offers outstanding opportunities for primitive and unconfined recreation. The combination of scenery, vegetation, wildlife, and cultural values within the canyon provides a unique recreational opportunity in the region. Any primitive activity is enhanced by this variety of resources. Specific recreational opportunities include hiking, camping, picnicking, nature study, sightseeing, photography, bird hunting, trapping, bird watching, swimming, and during the spring runoff, floating the river with rafts, canoes, or kayaks.



Fishing on the Gila River.

The location and topography of the WSA improves opportunities for recreation. Vehicular access at the ends of the canyon and at Spring on the Bluff and Fisherman's Point allows the user to choose the

desired hiking distance (see Map 1 for general locations of these areas). Users may park at any number of access points and hike into the canyon. Trips can vary from short day hikes to overnight trips of different lengths. The combination of several access points and numerous side canyons allows variety and diversity in each visit to the area.

The Gila Lower Box offers a unique variety and quality of recreational opportunities within a publicly accessible area. These opportunities are truly outstanding because of both the quality and the diversity of opportunities within a pristine environment.

2. Special Features

The Gila Lower Box WSA contains special ecological, cultural, and scenic features.

The ecological features include both vegetation and wildlife values of scientific and educational interest. The riparian vegetation associated with the Gila Lower Box is varied and diverse and supports an equally diverse wildlife community. Almost half of the vertebrate species which occur in New Mexico can be found along the lower Gila River. Most of these species are found in the WSA and many are near their geographic distributional limits. The WSA also provides significant habitat for threatened or endangered animal species and habitat for Cereus greggii a Bureau sensitive plant species proposed for Federal listing. (See Chapter II, Vegetation and Wildlife.)

The special geological features of the WSA are of educational value. The Lower Box portion of the Gila River displays many of the characteristics of a youthful stream (see Chapter I, Climate and Topography).

The special cultural features in the WSA include several large petroglyph panels and a number of rock shelters and rock structures (see Chapter II, Cultural). The Gila Lower Box WSA also has outstanding scenic features. The Lower Box Canyon has a Class A (high) scenic quality rating (see Chapter II, Visual).



Erosional columns, called Hoodoos, add geologic interest to the WSA's scenery.

3. Multiple Resource Benefits

Congressional designation of this area as wilderness would provide a greater degree of long-term protection for the area's wilderness values than would administrative designations available to the BLM.

A more detailed discussion of multiple resource benefits of wilderness designation is located in Chapter VI, Impacts, under the All Wilderness Alternative.

4. Diversity

a. Ecosystems Present

The Bailey (1976) - Kuchler (1966) system classifies the area as being in the Chihuahuan Desert Province with a potential natural vegetation of grama-tobosa shrubsteppe.

The general nature of the Bailey-Kuchler System fails to show the vegetative variety and diversity of the

WSA. Further refinement of the system shows the following vegetation types in the WSA:

Vegetation Type	Acres
grama-tobosa shrubsteppe	2,138
creosote	3,380
Trans-Pecos shrub savanna	2,583
northern flood plain forest	454

b. Distance to Population Centers

The WSA is approximately 3 hours driving time from Las Cruces, New Mexico; 6 hours from Albuquerque, New Mexico; 4 hours from El Paso, Texas; 4 hours from Tucson, Arizona; and 6 hours from Phoenix, Arizona.

B. Manageability

The Gila Lower Box WSA can be managed to preserve its wilderness character. Wilderness values in the WSA are concentrated in the Lower Box and side canyons. Almost all of these values revolve around the Gila River and the associated riparian vegetation. Special features and values in the WSA include wildlife, cultural sites, and opportunities for solitude and recreation. All of these values and special features can be managed on a sustained yield basis over the long-term.

The private 40 acres in T. 19 S., R 20 W., Section 21 are used as a salting ground by the owner. A primitive vehicle trail provides access to the private inholding. This access route and the current use of the parcel does not significantly affect the wilderness values of the WSA. The vehicle route is located so that it crosses several steep arroyos near the south boundary of the WSA. These arroyos occasionally flood and wash out the route so that vehicle passage is difficult or impossible. Maintenance of these crossings may be necessary if vehicular access is to be maintained. Development of this primitive route into a high standard road could impact wilderness values. Additional vehicular access into the center of the WSA could reduce visitor management options, increase noise, and slightly reduce the local area's apparent naturalness.

Users on, and the current access to, the private inholding in T. 19 S., R. 20 W., Section 28 do not impact wilderness values or management of the WSA. A segment of the river passes through the nonpublic land in T. 19 S., R. 19 W., Section 19, and T. 19 S., R. 20 W., Section 25. Visitors to the area could cross these sections while hiking in the WSA.

The nonpublic lands which contain sections of the Gila River and one of the more interesting south-cutting side canyons, Box Canyon, may affect management of the area. Box Canyon is over 1-mile long and contains numerous cultural, wildlife, and recreational values. Visitors in this portion of the Gila Lower Box could explore the side canyon which is not in public ownership.

Numerous withdrawals exist within the WSA. Those which may affect manageability are the withdrawals for future powersites. Future uses of all the withdrawals and their impact on wilderness management are difficult to predict.

Adjacent lands improve opportunities to manage the WSA. The most significant adjacent lands are managed by the Bureau. Current levels of management are compatible with wilderness management.

In most cases, land ownership and existing land uses would not impact the area's management. Future uses of three parcels of private land may, however, alter this. Current access is adequate to provide public access to the WSA. The impacts of future dam sites are unknown at this time.

The acquisition of private and state lands within and adjacent to the WSA boundary would eliminate manageability problems associated with the impacts of nonwilderness uses occurring on these lands, construction or upgrading of access, and inadvertent trespass of wilderness users onto the non-Federal lands. In addition, these lands contain wildlife and cultural values. Acquisition would enhance the special features of the WSA as well as opportunities for solitude and primitive recreation.

There are 3 pre-FLPMA mining claims within the Gila Lower Box WSA. The presence of these claims affects the manageability of the WSA in two ways:

1. During the time that an area is under wilderness review, the WSA is managed under the Interim Management Policy and Guidelines for Lands Under Wilderness Review (IMP) (1979). Under the IMP, mining claimants are recognized as having a valid existing right if a valid discovery had been made on the claim before the passage of FLPMA on October 21, 1976. If the claimant can show evidence of his discovery to the BLM, activities for the use and development of the claims will be exempt from the nonimpairment criteria of the IMP. Mining operations on such claims would be regulated only to prevent unnecessary or undue degradation of the WSA. Therefore, the possibility exists that the wilderness values of the Gila Lower Box WSA could be degraded before the area is designated wilderness if the above criteria are met.

2. Once an area is designated wilderness, the provisions of the Wilderness Management Policy (WMP) (1981) apply. Under the WMP, holders of mining claims validly established in the area prior to its designation as wilderness may develop their claims in accordance with the 43 CFR 3809 regulations "Surface Management of Public Lands Under U.S. Mining Laws." Although exercise of the rights of mining claimants must be with the least possible impact on the wilderness resource and claimants will be required to prevent unnecessary or undue degradation of the land, mining operations may impair wilderness values if there are no reasonable alternatives. In this case, there is a possibility that the wilderness values of the WSA could be degraded after the area is designated wilderness.

The likelihood of extensive development on these claims is remote. The onyx being mined is primarily of interest to rockhounds and is not very profitable.

The southern boundary of the WSA is located along a vehicle trail. The trail is revegetating and cannot be located in places where the natural rehabilitation is nearing completion. This makes it difficult to locate the WSA boundary on the ground and also complicates legal description of the WSA boundary.

V. PUBLIC INVOLVEMENT OVERVIEW

Numerous public comments were received on the Gila Lower Box unit during the BLM New Mexico Wilderness Review Initial Inventory Decisions (July 1979) and the BLM New Mexico Wilderness Study Area Decisions (March 1980).

This WSA was one of the ten most discussed units during the comment period on the WSA Proposals. The majority of personal letters supported WSA status for the area. Most of the letters favoring WSA status for the area stated that the area offers outstanding opportunities for solitude and primitive types of recreation and cited the supplemental value of the petroglyphs, threatened or endangered species, and especially the unique values of a large natural riparian area in a desert setting.

Letters opposed to the WSA status of the area primarily cited resource conflicts such as mining, powerlines, recreational use, and ranching activities. Some of these comments contained maps, photographs of developments in and around the WSA, and a list of mining claims.

Changes from the BLM's original proposed WSA boundary resulted from public comments on private inholdings and topographic boundaries. As a result of these comments, errors in the location and extent of private inholdings were corrected and the northern boundary of the WSA was moved south to the edge of the Rimrock. All of these comments were retained and reviewed during the wilderness study.

VI. ALTERNATIVES AND IMPACTS

A. All Wilderness

Under this alternative, the entire 8,555 acres of public land within the Gila Lower Box WSA would be recommended as suitable for wilderness designation. (See Map 1 for location of WSA boundary.)

If designated as wilderness, existing and potential uses (see Chapter III) would be regulated by the Wilderness Management Policy (1981) as follows.

Generally, motorized access on vehicle trails within the WSA would not be allowed. However, permits for vehicular access to maintain existing rangeland developments in the WSA could be authorized.

A Multiple Use Management Plan could be prepared for the Lower Gila River Valley (Gila MFP 1977). The plan would include a wildlife habitat management plan, recreation activity plan, and watershed management plan. Planned management actions for the Gila Lower Box portion of the Lower Gila Valley would emphasize endangered species and riparian habitat. A portion of the Gila Lower Box could be designated an Outstanding Natural Area.

The mechanical vegetation treatments and water control structures recommended in the Gila MFP for watershed protection in the central and southeast parts of the WSA would not be allowed.

Wildlife management actions proposed in the Gila MFP such as creosote eradication in the south-central part of the WSA would be subject to State Director approval. Desert bighorn sheep could be transplanted in the WSA.

The entire WSA would be managed as a VRM Class I.

The proposed dirt tank on the Donaldson allotment (1016) could be constructed. There would be no access road.

Since locatable minerals potential is considered to be of little importance in the Gila Lower Box WSA, full development of the pre-FLPMA mining claims in the WSA is not assumed.

The U.S. Geological Survey's (USGS) temporary right-of-way (ROW) for the new gauging station inside the east boundary of the WSA would be revoked and the old gauging station would be removed.

The All Wilderness Alternative would not have significant impacts on recreation, air, and education/research in the Gila

Lower Box WSA. For this reason, these resources were not included in the following discussions.

1. Impacts to Minerals

There has been no production of energy minerals within the WSA. Since potential is low, energy minerals would not be impacted under the All Wilderness Alternative. However, full potential cannot be assessed because exploration under the mineral leasing laws would not be allowed after designation. The economic benefit forgone for energy minerals would be minimal because there is no current production and the potential is regarded as low.

Production of locatable minerals has been limited to banded calcite, locally known as onyx. Exploration or new prospecting outside of the existing claim boundaries would not be allowed after designation. After designation, mining could continue under the Wilderness Management Policy (WMP) if these claims were declared valid after a mineral examination. If this were the case, the claims would be regulated under the Surface Management Regulations (43 CFR 3809) to prevent unnecessary and undue degradation.

Potential for full development of these claims and other locatables is low, therefore, under this alternative, the impact to locatable minerals is negligible. Because of poor potential, the economic impact would be minimal.

2. Impacts to Other Resources and Uses

a. Water, Soils, Vegetation

Restrictions on surface disturbing and mechanized activities would provide long-term protection for the existing water, soils, and vegetation including Cereus greggii, a Bureau sensitive plant species proposed for Federal listing (see Chapter II, Vegetation).

The watershed projects recommended in the Gila MFP would reduce flood and sediment damage from small ephemeral tributaries of the Gila River by reducing the volume and peak rate of surface runoff. Watershed improvement projects would be significant for the individual drainages where constructed, and also contribute to a reduction in flood and sediment damage downstream. Creosote control to improve wildlife habitat would reduce surface runoff, increase vegetative composition, and stabilize soil in the long-term. These benefits would be lost under this alternative.

Under this alternative, the installation of the proposed dirt tank on the Donaldson allotment (1016) would affect vegetation production and compact soils on an area approximately 40 acres in size due to increased livestock use. Native vegetation probably would not reestablish itself in this area. Another source of water, such as a dirt tank, could redistribute existing animal grazing use for better utilization of the vegetative resource on this allotment. Vegetation and topsoil would be removed if access is constructed.

b. Wildlife

Limiting vehicular access would have a strong effect on wildlife. From a general standpoint, riparian vegetation and the water resource would be protected, and this is very important to all wildlife. A number of species, including nine endangered ones, are dependent on riparian areas for most of their living requirements.

More specifically, raptors, which are sensitive to disturbance, would be protected by such limitations. Several of these raptors are endangered species.

The restrictions on access and developments might cause minor impacts for wildlife actions proposed in the Gila MFP. The proposed creosote control project would be subject to approval by the State Director.

c. Visual

Existing visual resources would be protected. Minor modifications in the basic elements of the landscape as a result of natural ecological changes and very limited management activity would be permitted.

The removal of the USGS gauging station would slightly enhance the visual resources in the east end of the Gila Lower Box WSA.

d. Cultural

There would be an emphasis on interpreting the resources and restricting vehicles. Interpretation would retard vandalism through the presence of BLM personnel, education, and restricted vehicular access.

e. Livestock Grazing

Under this alternative, the proposed dirt tank on the Donaldson allotment (1016) could be constructed using

motorized equipment. No access road would be maintained. Permits for vehicular access could be authorized for maintenance of 1 mile of boundary fence between Caprock (1078) and the Lazy B Cattle Company (5058) allotments, 3/4 miles of interior fence and 1/4 mile of road to a salting area on the Caprock allotment (1078) (see Chapter IV, Manageability). Minor inconveniences to the permittee may occur since normal use of the existing trail to check livestock would not be allowed.

f. Realty Actions

A temporary ROW for a new gauging station on the Gila River inside the WSA has been issued to the USGS. Under the All Wilderness Alternative, the ROW would be cancelled and the facility removed.

g. Wilderness Values

Wilderness designation would provide the wilderness values present in the area with long-term Congressional protection. The area would retain its natural appearance and be managed to provide outstanding opportunities for solitude and primitive recreation. The special features of the area would be maintained through wilderness management.

The removal of the USGS's new gauging station would slightly enhance the naturalness in the east end of the WSA. Management actions proposed in the Gila Lower Box part of the Multiple Use Management Plan would enhance the special ecological features of scientific and educational value within the WSA. The transplanting of desert bighorn sheep into the WSA would enhance the special wildlife features of the WSA.

Several factors could impact the capability of the Gila Lower Box WSA to be managed as wilderness in the long-term. Nonwilderness uses on private and state lands in and adjacent to the WSA or construction or upgrading of access could degrade wilderness values. Present uses of these lands are compatible with wilderness.

At the present time, it appears that the area could be managed as wilderness in the long-term.

B. Amended Boundary

Under the Amended Boundary Alternative, 5,835 acres of public land within the Gila Lower Box WSA would be recommended as

suitable for wilderness designation (see Map 1 for amended WSA boundary). The amended boundary would exclude 2,720 acres of public land on the southwest, south, and east boundaries of the WSA. If the area within the amended boundary is designated wilderness, existing and potential uses (see Chapter III) would be regulated by the Wilderness Management Policy (1981) as follows.

Generally, motorized access on vehicle trails within the amended boundary would not be allowed. However, permits for vehicular access to maintain existing rangeland developments within the amended boundary could be authorized.

A Multiple Use Management Plan could be prepared for the Lower Gila River as described under the All Wilderness Alternative.

The planned watershed actions in the Gila MFP would be affected as described under the All Wilderness Alternative with one exception. The proposed creosote eradication site would be outside of the amended boundary and therefore unaffected by the WMP. Desert bighorn sheep could be transplanted in the WSA.

The area within the amended boundary would be managed as a VRM Class I.

The proposed dirt tank on the Donaldson allotment (1016) could be constructed. There would be no access road.

Since locatable minerals potential is considered to be of little importance in the Gila Lower Box WSA, full development of the pre-FLPMA mining claims in the WSA is not assumed.

The U.S. Geological Survey's temporary ROW and new gauging station would be excluded from the amended boundary.

The Amended Boundary Alternative would not have significant impacts on recreation, air, and education/research in the Gila Lower Box WSA. For this reason, these resources were not included in the following discussions.

1. Impacts to Minerals

Impacts to minerals would be the same as described under the All Wilderness Alternative. The amended boundary does not exclude the existing mining claims.

2. Impacts to Other Resources and Uses

- a. Water, Soils, Vegetation

Impacts to water, soils and vegetation would be the same as those described under the All Wilderness Alternative.

b. Wildlife

Creosote is the dominant vegetation on most of the area that would be recommended as nonsuitable for wilderness designation. The impact on wildlife would not be significant. Effects on wildlife in the WSA from a proposed creosote control project in this area would be extremely minor.

c. Visual

The impacts to visual resources inside the amended boundary would be the same as those described under the All Wilderness Alternative.

d. Cultural

Impacts to cultural would be the same as those described under the All Wilderness Alternative.

e. Livestock Grazing

The impacts to livestock grazing would be the same as those described under the All Wilderness Alternative.

f. Realty Actions

Under this alternative, the USGS's gauging station ROW located outside the amended boundary would remain valid for the designated time period.

g. Wilderness Values

The impacts to wilderness values under the Amended Boundary Alternative would be the same as those described under the All Wilderness Alternative with the following exceptions.

Approximately 2,720 acres in the southwest, south, and east portions of the WSA would not be protected by Congressional designation. The east boundary of the WSA would be adjusted to exclude the USGS gauging station. This would slightly enhance the naturalness of the area recommended suitable for wilderness. The boundary adjustments in the south and southwest exclude portions of the WSA with low quality opportunities for solitude (see Chapter IV, Solitude). At the present time, it appears that the area within the amended boundary could be managed as wilderness.

C. No Action

Under the No Action Alternative, the Gila Lower Box WSA would be recommended nonsuitable for wilderness designation.

If the WSA is not designated wilderness, existing and potential uses (see Chapter III) would continue without regard to the Interim Management Policy and Guidelines for Lands Under Wilderness Review (1979) as follows.

Vehicle use would be restricted to existing roads and trails in the Gila River area (Gila MFP 1977). No cross-country vehicle use would be allowed.

A Multiple Use Management Plan could be prepared for the Lower Gila River Valley as described under the All Wilderness Alternative. Watershed and wildlife management actions planned in the Gila MFP would be implemented. Desert bighorn sheep could be transplanted in the WSA.

The entire WSA would be managed as a VRM Class II.

The proposed dirt tank on the Donaldson allotment (1016) could be constructed with an access road.

The No Action Alternative would not have significant impacts on recreation, air, education/research, cultural, and realty actions. For this reason, these resources were not included in the following discussions.

1. Impacts to Wilderness Values

Under the No Action Alternative, the wilderness values of the Gila Lower Box area would not be provided with long-term Congressional protection. The Multiple Use Management Plan would enhance the special ecological features of scientific and educational value within the WSA.

If desert bighorn sheep are transplanted into the WSA, this would enhance the special wildlife features of the WSA.

Vegetative treatments for watershed and wildlife would have a local impact on naturalness in the short-term. Since only a portion of the WSA would be affected, the vegetative treatments would have a slight impact on the overall naturalness of the WSA.

Water control structures to protect watershed could be constructed in the central and southeastern part of the WSA. The impacts on naturalness could be minimal to major depending on the number, size, and locations of the structures.

The recreation activity plan could include plans for signs, facilities, and trails. Since the emphasis would be on endangered species and riparian habitat, extensive

development plans are unlikely. Minimal development could negligibly impact primitive recreation opportunities.

2. Impacts to Other Resources and Uses

a. Water, Soils, Vegetation

The watershed improvement projects would reduce flood and sediment damage from small ephemeral tributaries of the Gila River by reducing the volume and peak rate of surface runoff. This would be significant for the individual watersheds where constructed, and also contribute to a reduction in flood and sediment damage downstream. Creosote control to improve wildlife habitat would reduce surface runoff, increase vegetative composition, and stabilize soil in the long-term.

Creosote control by mechanical treatments or other methods would result in the removal of vegetation and a disturbance of the surface layer of soil in the short-term. In the long-term, vegetation composition would change from predominantly shrubs to predominantly grass and would result in increased ground cover. The increased ground cover would result in increased soil stability and decreased soil erosion.

Under this alternative, motorized access would remain the same. The dirt tank, with the possibility of an access road, could be built. Vegetation and topsoil would be removed where the developments were constructed. Vegetation loss from the initial construction of water control structures would be compensated in the long-term by an improvement in vegetation cover and soil stabilization.

b. Wildlife

Wildlife would be protected by actions recommended in the Gila MFP (see Chapter III, Wildlife). The impacts of these actions would be the same as those described under the All Wilderness Alternative.

c. Visual

Under a VRM Class II, changes in the basic elements of the landscape as a result of management activities would be permitted as long as the changes do not attract attention.

The proposed vegetative treatments to eradicate creosote in T. 19 S., R. 20 W., Section 35, would have

a slight impact on visual resources in the short-term. The water control structures proposed for the central and southeastern parts of the WSA would slightly impact visual resources in the long-term.

Since existing BLM plans do not identify any activities that would significantly impact visual resources, the existing Class A scenic quality in the Lower Box and the existing Class B scenic quality in the southwest and southern parts of the WSA would probably be substantially retained in the long-term.

d. Minerals

There would be no impact to minerals under this alternative. Also, there would be no economic benefit lost under this alternative.

f. Livestock Grazing

Under this alternative, there would be no impacts to livestock grazing.

D. No Wilderness

Under the No Wilderness Alternative, the Gila Lower Box WSA would be recommended nonsuitable for wilderness designation.

If the WSA is not designated wilderness, existing and potential uses (see Chapter III) would continue without regard to the Interim Management Policy and Guidelines for Lands Under Wilderness Review (1979) as follows.

Approximately 2,469 acres of the Gila Lower Box WSA would be recommended for special designation (LC/L MFP Amendment/EIS, in preparation). (See Map 1 for general location of the area being considered for special designation.) The objectives would be to protect and improve riparian vegetation, to maintain and improve water quality and channel stability, and to maintain the recreational and cultural resources. Livestock grazing would be allowed to the extent that it is compatible with the other objectives.

The special management requirements would include fencing the river valley at the top of the river breaks, excluding livestock where riparian vegetation is in poor condition for two or three years or during the growing season, possibly developing new livestock waters outside of the area, and placement of salt and mineral supplements to avoid livestock concentrations. Young trees would be planted in specified areas and a Habitat Management Plan written for the area. No surface occupancy for energy minerals activities would be allowed and the area would be withdrawn from locatable mineral

entry. The area would be signed and closed to off-road vehicle use. Primitive recreation sites with trash cans and signs could be developed at either end of the canyon.

Desert bighorn sheep could be transplanted in the area.

The entire WSA area would be managed as a VRM Class II.

The proposed dirt tank on the Donaldson allotment (1016) could be constructed. Since the proposed site for the tank is outside the area considered for special designation, an access road could be constructed.

The No Wilderness Alternative would not have significant impacts on recreation, air, education/research, and realty actions in the Gila Lower Box WSA. For this reason, these resources were not included in the following discussions.

1. Impacts to Wilderness Values

The wilderness values of the Gila Lower Box would not be provided with long-term Congressional protection. Approximately 2,469 acres of the WSA could be administratively protected for special designation. Management of all the WSA acreage as specified in land use plans would be subject to administrative change in the long-term.

The management of wildlife under a HMP and the transplanting of desert bighorn sheep into the area would enhance the special wildlife features of the WSA. The special management requirements for livestock grazing within the area for special designation designed to improve the riparian vegetation would enhance the natural values in the Lower Box portion of the WSA in the long-term. The designation of the area as limited to existing roads and trails for ORV use, the development of primitive recreation sites at either end of the Gila River Canyon, the installation of signs at major access points describing cultural resources, and the acquisition of state and private lands would generally enhance existing primitive recreation opportunities within the area considered for special designation. The portion of the WSA within the area considered for special designation could be expected to substantially retain its wild character as long as the area is administratively protected.

The development of livestock waters outside of the special designation area could impact the natural values of the southern part of the WSA. The impact could be negligible to moderately significant depending on the number, type, and location of the waters and access requirements.

2. Impacts to Other Resources and Uses

a. Water, Soils, Vegetation

The special management objectives of the area considered for special designation includes improving riparian habitat and channel stability. This would impact water quality by reducing sediment load associated with channel erosion and in reducing flood velocities. The impacts would be highly favorable and are significant to the entire Gila Lower Box and downstream water users.

By restricting livestock use through total exclusion on certain areas in the short-term (2-3 years) and exclusion where necessary during the growing season in the long-term, bottomland species could reestablish themselves and soil would be stabilized. Highly significant impacts could result.

If new rangeland developments for watering purposes were constructed outside the area considered for special designation, impacts to vegetation, water, and soils would be the same as described under the All Wilderness Alternative.

b. Wildlife

Impacts to wildlife would be the same as those described under the All Wilderness Alternative because the area considered for special designation would protect wildlife values in much the same way wilderness designation would (see Chapter III, Wildlife).

c. Visual

The entire WSA would be managed as a VRM Class II, which permits minor to moderate changes in the basic elements of the landscape as a result of management activities as long as the changes do not attract attention.

Since existing and proposed BLM plans do not identify any activities that would significantly impact visual resources, the existing Class A scenic quality in the Lower Box and the existing Class B scenic quality in the southwest and southern parts of the WSA would probably be substantially retained in the long-term.

d. Cultural

Known petroglyph panels and rock shelters would be impacted as described under the All Wilderness

Alternative. Interpretation of these sites could be conducted without the restrictions imposed by the WMP.

e. Minerals

Impacts remain minimal due to poor potential for all minerals, especially within the area proposed for special designation. Under this alternative, there would be no economic impact to the minerals industry.

f. Livestock Grazing

The Gila River and part of the adjacent creosote breaks and grass hills would be fenced so that livestock could be managed. This would have a significant effect on the Caprock allotment (1078). Livestock would be excluded during the growing seasons of the shrub and tree species (see Chapter II, Vegetation). This would promote soil stabilization and diversity of wildlife habitat.

Since the area considered for special designation would be fenced, minor inconveniences and costs could occur to the permittee on allotment (1078) due to the movement of cattle from one pasture to another. The additional costs to the operator would be reflected by hiring personnel, as well as the operator's time required to move the cattle. The livestock operator may lose revenues from the cattle that would not be allowed to graze from April through September on the Caprock allotment (1078), which is included in the area considered for special designation.

The proposed dirt tank would be constructed with an access road and all rangeland developments could be checked and maintained on a convenience basis using motorized equipment. If new rangeland developments for livestock watering purposes were constructed outside the area considered for special designation, impacts to livestock grazing would be the same as described under the All Wilderness Alternative.

VII. RECOMMENDED ACTION

A. Recommended Action Description

The recommended action for the Gila Lower Box WSA is the Amended Boundary Alternative. A total of 5,835 acres would be recommended suitable for wilderness designation and 2,720 acres would be recommended nonsuitable for wilderness designation.

The following state and private lands should have a high priority for acquisition if the area is designated wilderness:

T. 19 S., R. 19 W., Section 19: SW $\frac{1}{4}$ SW $\frac{1}{4}$
 T. 19 S., R. 20 W., Section 25: E $\frac{1}{2}$ E $\frac{1}{2}$
 Section 21: SE $\frac{1}{4}$ SE $\frac{1}{4}$
 Section 28: W $\frac{1}{2}$ NE $\frac{1}{4}$

B. Rationale

The portion of the Gila Lower Box WSA recommended suitable for wilderness designation in the Amended Boundary Alternative has high quality wilderness values. The Amended Boundary Alternative excludes portions of the WSA lacking high quality wilderness values and eliminates conflicts with the USGS gauging station.

The area recommended suitable for wilderness designation consists of the Gila Lower Box Canyon, the south slopes of Canador Peak and the Rimrock, and part of the creosote covered river breaks to the south. This entire area appears natural.

The varied topography of the winding Gila River Canyon, side canyons, and river breaks provides excellent opportunities for solitude. The amended boundary excludes portions of the WSA on the west and southwest boundaries where the potential for solitude is impacted by the sights and sounds of Highway 82 and the farming along the Gila River.

The portion of the Gila Lower Box WSA recommended suitable for wilderness designation offers a wide diversity of quality recreational opportunities. Recreational opportunities are, for the most part, centered around the scenery, water, vegetation, wildlife, and cultural values of the Gila River Canyon and its side canyons. These opportunities include hiking, camping, picnicking, nature study, sightseeing, photography, bird watching, hunting, trapping, swimming, and floating the river with rafts, canoes, or kayaks during the spring runoff. This area also contains special ecological, geological, cultural, and scenic features. The diversity and quality of recreation opportunities and special features of the Gila Lower Box WSA are major factors in the overall value of the area for wilderness.

Adjustments in the original WSA boundary were made in the Amended Boundary Alternative to exclude the old USGS gauging station at the east end of the Lower Box Canyon. Under the Amended Boundary Alternative, the USGS could be granted a permanent ROW and the new gauging station would not be removed. The gauging station is necessary to measure flood levels so that flood warnings can be issued downstream.

Adjustments in the original WSA boundary were also made on the south and east so that the boundaries of the area recommended suitable for wilderness designation are along legal subdivisions (township and range lines). Locating the boundaries along legal subdivisions would simplify subsequent on-the-ground identification of wilderness boundaries and written legal description of the boundaries.

The acquisition of the state and private lands (described in the Recommended Action Description above) would enhance the manageability of the area as wilderness in the long-term. Management of the acquired lands as wilderness would eliminate the potential impacts on wilderness values as a result of nonwilderness uses on non-Federal lands and the potential impacts of granting access across the WSA to private inholdings. In addition, these lands contain cultural, scenic, and wildlife values and would enhance the special features of the area recommended suitable for wilderness designation.

C. Consistency With Other Plans

The recommended action may conflict with a Gila MFP (1977) decision for watershed. The MFP calls for the selection of feasible locations and construction of earthen water control structures or alternative methods of erosion control. These measures would be designed to reduce flood and sediment damage, to reduce soil loss from erosion, and to increase ground water recharge. Watershed restoration projects such as these would have to be approved by the BLM Director. The recommended action is not inconsistent with other decisions in the Gila MFP.

The recommended action may be inconsistent with the Department of Energy's plans for the four powersite withdrawals within the area recommended suitable for wilderness designation.

At this time, the recommended action does not appear to be inconsistent with the conditions of the San Carlos Indian Irrigation Project withdrawal.

There are no other known inconsistencies between the recommended action and the policies of local, state, or Federal plans. Continuing coordination and consultation with other agencies will take place during the public comment period on the Draft Environmental Assessment for Wilderness Study Areas in the Las Cruces District.

APPENDIX F

LAS UVAS MOUNTAINS WSA (NM-030-065)

I. GENERAL DESCRIPTION

A. Location

The Las Uvas Mountains Wilderness Study Area (WSA) is located in northwestern Dona Ana County, approximately 30 miles northwest of Las Cruces, New Mexico, and 7 miles south of Hatch, New Mexico.

The Souse Springs, New Mexico, U.S. Geological Survey (USGS) topographic quadrangle covers the WSA. The map is at the 7½ minute scale.

B. Climate and Topography

The Las Uvas Mountains WSA is characterized by an arid, continental climate, with mild winters and pleasant to hot summers.

Average annual precipitation in the area is slightly less than 9 inches, however, a wide variation in annual totals is characteristic of arid climates. More than half of the total annual precipitation occurs from July to September. Rainfall during these months usually is from convective thunderstorms that are commonly brief and intense.

During the summer months, daytime temperatures quite often exceed 100°F. The average monthly maximum temperature during July, the warmest month, is in the middle 90's. In January, the coldest month, average monthly minimum temperature is in the middle 20's.

Winds generally predominate from the southeast in summer and from the northwest in winter. Wind speeds are usually moderate. Spring is the windy season. Dry, gusty winds are predominantly from the west-southwest and may exceed 30 mph in the afternoons.

This WSA consists of the northwest part of the Sierra de Las Uvas. The Las Uvas are composed of tilted bedded volcanic rock with a gentle western slope and cliffs on the east side. The WSA is characterized by mesas, buttes, and deep canyons. Elevations within the WSA range from 4,600 feet in the northern part of the area to 6,198 feet near Little White Gap in the south.

C. Land Status

The WSA contains 11,067 acres of public land. There are 40 acres of private land within the WSA boundary. There are no state inholdings. (See Map 1 for land status within the WSA boundary.)

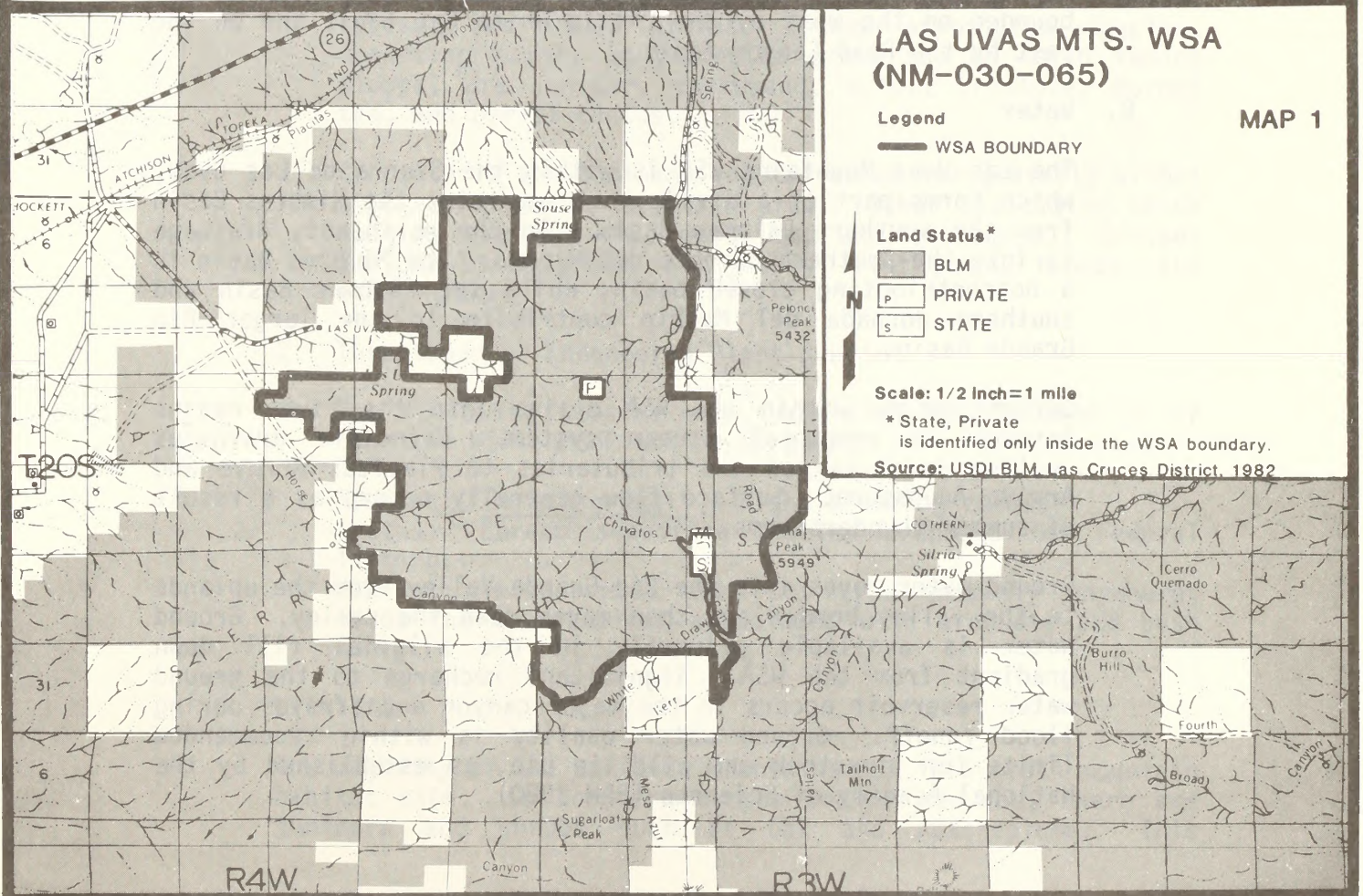
D. Access

Legal access to the northeast boundary of the Las Uvas Mountains WSA is by way of County Road E05 which runs south off of State Highway 26 approximately $\frac{1}{2}$ mile west of Hatch.

County Road E02, which runs southeast off of State Highway 26, approximately 7 miles southwest of Hatch, terminates on private land about $\frac{1}{2}$ mile from the WSA. County Road E06 (Barksdale Road), which branches off of U.S. Highway 85 about 9 miles southeast of Hatch, also terminates on private land about $\frac{1}{2}$ mile from the WSA. The White Gap Pass Road connects the ends of these two county roads and provides physical access along the southern boundary of the WSA.



Aerial view of the Las Uvas Mountain WSA.



II. EXISTING RESOURCES

A. Geology

The Las Uvas Mountains WSA lies within the Basin and Range Physiographic Province. This Province is characterized by fault block mountains separated by basins filled with alluvial and shallow lake deposits.

Locally, the Sierra de Las Uvas is a faulted, domed uplift within a structural feature known as the Goodsight-Cedar Hills depression. The major stages of evolution have been late Cretaceous uplift, Tertiary volcanism, mountain building, and rifting.

Volcanism produced several ashflow tuffs. Late Tertiary volcanism produced eruptions of basaltic andesite. It appears that eruptions of basaltic andesite, uplift of the Sierra de las Uvas dome, and initial faulting within the Rio Grande Rift were contemporaneous events.

The fault pattern within the WSA is complex. Most are high-angle normal faults trending northwest. Two major structures occur in the WSA: a northwest-trending graben near Big White Gap bounded on the southwest by the Big White Gap fault; and a north-trending graben northeast of Big White Gap bounded on the west by the Little White Gap fault and on the east by the Road Canyon fault.

B. Water

The Las Uvas Mountains WSA is within the Sierra de Las Uvas, which forms part of a divide that separates the Mimbres Basin from the southern Palomas Basin. To the northeast, drainage is into the southern Jornada del Muerto. The Mimbres Basin is a noncontributing closed basin, while the Palomas Basin and southern Jornada del Muerto contribute to the larger Rio Grande Basin.

Surface water within the WSA drains into the river basins through an ephemeral stream system. Principle drainages include Horse Canyon and tributaries to Placitas Arroyo and Arroyo Angostura. Surface flow generally occurs as a result of summer thunderstorms.

Ground water moves into the Rio Grande Valley from the uplands to the valley border and then moves down the valley. Ground water is available primarily in the alluvial fill down gradient from the WSA. Significant recharge to the ground water reservoir occurs in the major canyon and arroyos during flood runoff. Ground water quality is within recommended limits for livestock and wildlife use, as established by the National Academy of Sciences (BLM 1980).

C. Soils

Two major soil types occur within the Las Uvas Mountains WSA. At higher elevations on mountain tops and steep sideslopes, soils are typically cobbly and shallow over basalt bedrock. The soils are interspersed between areas of rock outcroppings. Around the mountain footslopes in the northern part of the WSA, the soils are gravelly and typically have a cemented caliche layer within 30 inches of the surface.

D. Vegetation

1. General

Vegetation and associated range sites within the Las Uvas Mountains WSA consists of two major types:

Vegetative Type	Range Site	Federal Acres
Grass	Mountains	9,276
Creosote	Gravelly	1,791

The Las Uvas Mountains are predominantly covered with grass species consisting of black grama, fluffgrass, tobosa, and other gramas. Other associated species, occurring mainly in protected areas and on north facing slopes, are juniper, snakeweed, sotol, creosote, Mormon tea, and barrel cactus.

Creosote is the dominant vegetation on the gravelly slopes that surround the mountain area. Other associated shrub species are mariola, mesquite, and snakeweed. Grasses include black grama, bush muhly, fluffgrass, tobosa, and other gramas.

2. Threatened or Endangered Plant Species

The following species was identified and located in or near the WSA (NMSHP and USFWS 1982).

Species: Cereus greggii - night blooming cereus
 Status: Bureau sensitive species proposed for Federal listing.
 Habitat: widespread; does not grow commonly anywhere; needs the microhabitat associated with creosote and bush muhly.

E. Wildlife

The majority of the Las Uvas Mountains WSA is a grass mountain habitat site. On northern slopes and in canyons, there are junipers and shrubs such as oak and Apacheplume. This

variation in the vegetation allows for more diversity in the wildlife community than would otherwise be expected.

An abundance of rimrock along the mesas of the area provides raptor nest sites and habitat for other rock-dwelling wildlife. Golden eagles are common. Other common species dependent on this habitat are banded rock rattlesnakes and rock squirrels.

There are good populations of both scaled and Gambel's quail (BLM IHICS Data 1979). A resident mule deer herd is found in the Las Uvas, but New Mexico Department of Game and Fish only estimates their numbers at one-half deer per section. The optimum size, according to the same estimate, would be three deer per section.

F. Visual

The Las Uvas Mountains have a Class B (moderate) scenic quality rating. The Las Uvas are characterized by mesas, buttes, and canyons. Landforms tilt to the north and colors are typically light and dark brown. Vegetation colors are light browns and dark greens. Canyon bottoms support an array of prickly pear, other cacti, creosote, grasses, mesquite, yucca, and sotol. At higher elevations, juniper trees dot the landscape and contrast with surrounding grasses.

Portions of the WSA are in three Visual Resource Management (VRM) Classes as follows: Class II-5,849 acres, Class III-609 acres, and Class IV-4,609 acres.

G. Cultural

There are no known historic or prehistoric sites in the Las Uvas Mountains WSA; however, there has been no survey for them. Along with Blue Creek, this WSA has the lowest cultural resources potential of all of the WSAs in the Las Cruces District.

H. Air

Generally, the quality of air within the Las Uvas Mountains WSA is good. The air quality in the WSA does not exceed the state or Federal air quality standards and is classified as a Class II area. This classification allows a moderate amount of degradation of air quality.

Since no major industrial or population centers are located in the nearby vicinity, the only major degradation of air quality occurs during the spring months (March-May). West-prevailing winds, commonly gusting in excess of 30 mph, result in dust storms throughout the southern part of the state.

III. EXISTING AND POTENTIAL USES

A. Mineral Development

1. Energy Minerals

There are no known occurrences of leasables in the Las Uvas Mountains WSA. There are three existing lease applications for oil and gas within the WSA.

Oil and gas potential in the WSA does not appear to be favorable because of the extensive igneous activity and structural complexities associated with the Goodside-Cedar Hills depression (BLM Minerals Resource Inventory 1981). The nearest exploration wells are the Porter No. 1 Rincon Federal, located about 7 miles northeast of the WSA, and the Cities Service No. 1 Government-Corralitos "A", about 7 miles southeast of the WSA. Both were dry holes but drill stem tests in the Cities Service No. 1 indicated fair to good reservoirs (Thomson and Bieherman 1975).

Within the Las Uvas Mountains, there are no known geothermal energy occurrences. The Radium Springs Known Geothermal Resource Area (KGRA) is located about 15 miles southeast of the WSA. The basaltic rocks of the Sierra de Las Uvas indicate a less promising geothermal potential than rocks with a high silica content, such as rhyolite. However, because of the Sierra de Las Uvas' history of igneous activity and its position within the Rio Grande rift, the occurrence of geothermal resources in the WSA is at least a possibility. The potential for geothermal energy is moderate.

2. Non-Energy Minerals

There are no known pits or quarries for common variety minerals, although some arroyo bottoms and terraces contain commercial deposits of sand and gravel. The Bell Top Formation and Las Uvas basaltic andesite contain rocks suitable for use as decorative or building stone. The potential for development of the sand and gravel and stone is low. Higher quality and more accessible deposits occur elsewhere in the region.

Zeolite minerals occur in tuffs of the Bell Top Formation in the Cedar Hills, about 10 miles southeast of the WSA (BLM 1981). The tuffs of the Bell Top Formation in the Cedar Hills and the Sierra de Las Uvas may not be of the same composition, but their similar geologic history and proximity to each other indicates that the occurrence of zeolites is at least a possibility.

B. Watershed

Water use within the Las Uvas Mountains WSA is primarily by livestock and wildlife. There are six dirt tanks inside the WSA that utilize surface runoff (see Livestock Grazing). Additionally, there is a water spreading system comprised of a series of small rock dikes within the WSA.

C. Livestock Grazing

1. Allotments

Parts of four grazing allotments are present within the Las Uvas Mountains WSA. Steep slopes on the east side make part of this WSA inaccessible to livestock grazing. Licensed grazing use on public land includes cattle and a few horses. The W. Cothern allotment (3015) is under an implemented Allotment Management Plan (AMP).

ALLOTMENTS WITHIN THE WSA^{a/}

Allotment Name and Number	Total Acres	Total AUMs	Approximate Acres in WSA	Percent Allotment
J. Bustamante 3010	3,465	252	1,408	41%
Sierra Alta Ranch 3012	6,695	1,380	567	8%
W. Cothern 3015	23,294	4,497	2,671	11%
Las Uvas Ranch 3031	17,289	3,089	6,421	37%
TOTAL			11,067	

2. Ranch Management

EXISTING RANGELAND DEVELOPMENTS WITHIN THE WSA^{a/}

Allotment Name and Number	Type of Development	Location
J. Bustamante 3010	2 dirt tanks	T. 20 S., R. 3 W., Sec. 5
W. Cothern 3015	interior fence	3/4 mile
Las Uvas Ranch 3031	dirt tank	T. 20 S., R. 4 W., Sec. 23
	dirt tank	T. 20 S., R. 4 W., Sec. 30
	2 dirt tanks	T. 20 S., R. 3 W., Sec. 8
	interior fence	1/2 mile

Boundary Fences:

Cothern 3015 and Las Uvas Ranch 3031	2 miles
Cothern 3015 and Sierra Alta Ranch 3012	1½ miles
Las Uvas Ranch 3031 and Bustamante 3010	3 miles
Bustamante 3010 and Sierra Alta Ranch 3012	2½ miles

Note: a/Information shown in tables reflects only Federal acres and animal unit months (AUMs), and rangeland developments on public land.

D. Recreation

Recreation activities in and around the Las Uvas Mountains WSA generally require motorized use. They are primarily rockhounding, sightseeing, hunting, and off-road vehicle (ORV) use. Rockhounding for agate nodules occurs throughout the Las Uvas Mountains. Sightseeing is usually associated with ORV use. The White Gap Pass Road, which forms the southern boundary of the WSA, provides a particularly scenic and challenging route through the mountains. The Rustler Fire Trail in the eastern part of the WSA provides a challenge for the ORV enthusiast and access for hunters.

Primitive recreation opportunities are described in Chapter IV, Primitive and Unconfined Recreation.

E. Realty Actions

A temporary State Aid Withdrawal is located within the Las Uvas Mountains WSA. The State of New Mexico has completed their land selection and the withdrawal will be reviewed to determine if it should be cancelled.

The Village of Hatch presently has a right-of-way (ROW) for water facilities within the WSA. The site is not being used, and the Las Cruces District could initiate procedures to revoke the ROW before 1985.

F. Wildlife

There are no existing wildlife developments in the Las Uvas Mountains WSA, but a deer Habitat Management Plan is proposed in the Southern Rio Grande Management Framework Plan (BLM 1981) for the mountain range. New waters and vegetation treatments could be proposed in this plan.

G. Vegetative Products

An area of approximately 5,120 acres in the south part of the Las Uvas Mountains WSA, around Chivato Canyon, has been identified as a potential vegetative collection and sale area for cacti, ocotillo, and yucca.

IV. WILDERNESS CRITERIA

A. Evaluation of Wilderness Values

1. Quality of Mandatory Wilderness Characteristics

a. Naturalness

The Las Uvas Mountains WSA generally appears natural. Human imprints affecting the naturalness of the WSA include dirt tanks, vehicle trails, a cherry-stemmed road, fences, and the Rustler Fire Trail.

Six dirt tanks are within the WSA. The tanks are located on the southwest, south, east, and northeast edges of the WSA less than $\frac{1}{4}$ mile from the boundary. All are accessible by low grade vehicle trails.

The access road to Chivato Tank in T. 20 S., R. 3 W., Section 20: SE $\frac{1}{4}$, and the tank itself are cherry-stemmed. This cherry-stem penetrates approximately $1\frac{1}{2}$ miles into the WSA.

The naturalness in the northeast and east parts of the WSA is moderately impacted where most of the dirt tanks are located. However, due to their locations on the edges of the WSA and topographic screening, the dirt tanks and cherry-stemmed road are substantially unnoticeable when considering the overall naturalness of the WSA. The fences also have an insignificant effect on naturalness because they are constructed of materials that generally blend in with the landscape.

The Rustler Fire Trail has a somewhat more significant impact on naturalness. The Trail was constructed by the Bureau of Land Management (BLM), using heavy machinery, in 1968. Other than some maintenance done in 1972-1974, the BLM has not performed or authorized any additional work on the Trail. The Trail runs north up Chivato Canyon from Chivato Tank, climbing the steep face of a bluff. It fans out into three separate dead-end trails on top. There are approximately 4 miles of the trail in the WSA. Although the trail is revegetating, it is visually noticeable on top of the bluff and when looking north up Chivato Canyon. However, the Trail does not degrade the overall naturalness of the Las Uvas Mountains WSA.

b. Solitude

The Las Uvas Mountains WSA provides outstanding opportunities for solitude. The entire WSA contains rugged canyon and mesa type topography which provides

plenty of opportunities to escape the sights and sounds of other visitors. The size and shape of the WSA and moderate vegetative screening provided by scattered juniper enhance these opportunities.

c. Primitive and Unconfined Recreation

The Las Uvas Mountains WSA provides opportunities for hiking, backpacking, and hunting. The area provides good opportunities for day hiking. The area is not large enough for an extended backpacking trip.

The WSA does not offer a wide diversity of high quality primitive recreation opportunities.

2. Special Features

The Las Uvas Mountains WSA provides habitat for the night blooming cereus, a Bureau sensitive plant species proposed for Federal listing (see Chapter II, Vegetation). This is an ecological feature of scientific value.

3. Multiple Resource Benefits

Congressional designation of this area as wilderness would provide a greater degree of long-term protection for the area's wilderness values than would administrative designations available to the BLM.

A more detailed discussion of multiple resource benefits of wilderness designation is located in Chapter VI, Impacts, under the All Wilderness Alternative.

4. Diversity

a. Ecosystems Present

The Bailey (1976) - Kuchler (1966) system classifies the Las Uvas Mountains WSA as being in the Chihuahuan Desert Province with a potential natural vegetation of grama-tobosa shrubsteppe.

The general nature of the Bailey-Kuchler System fails to show the specific vegetative types in the WSA. Further refinement of the system shows the following vegetation types in the WSA:

<u>Vegetation Type</u>	<u>Acres</u>
grama-tobosa shrubsteppe	9,276
creosote	1,791

b. Distance from Population Centers

The Las Uvas Mountains WSA is approximately 2 hours driving time from El Paso, Texas; 1 hour from Las Cruces, New Mexico; 3 hours from Albuquerque, New Mexico; 5 hours from Tucson, Arizona; and 7 hours from Phoenix, Arizona.

B. Manageability

Two factors affect the capability of the Las Uvas Mountains WSA to be managed as wilderness: land status patterns and the Rustler Fire Trail.

The WSA is almost totally surrounded by state and private lands. There is a 40 acre private inholding in the north-central part of the WSA. In the northwest part of the WSA, the boundary is convoluted because of the land status patterns. As a result, the state land in T. 20 S., R. 4 W., Sections 12 and 13, is surrounded on three sides by the WSA and is near the center of the area. Nonwilderness or nonconforming uses on these surrounding nonpublic lands, especially in Sections 12 and 13, or on the private inholding, could negatively impact wilderness values.

There is a possibility of ORV use continuing in the WSA. Unauthorized ORV use in a wilderness area would impact the naturalness and opportunities for solitude in that part of the area.

V. PUBLIC INVOLVEMENT OVERVIEW

Personal letters, form letters, and petitions were received on the Las Uvas Mountains unit during both the public comment on the BLM New Mexico Wilderness Review Initial Inventory Decision (July 1979) and the BLM New Mexico Wilderness Study Area Proposals (March 1980).

In the March 1980 WSA Proposals, the BLM proposed to drop this area. This recommendation was based on the number and location of imprints, vehicle trails and roads, and the convoluted configuration of the intensive inventory unit.

Numerous personal contacts made during the public review period and the analysis of public comments revealed controversy over the BLM's recommendation to drop the entire unit. The application of the road definition to the Rustler Fire Trail and the BLM's evaluation of wilderness characteristics in the west half of the unit were questioned. Comments indicated that an area of approximately 10,000 acres surrounding the Fire Trail should be a WSA.

The final WSA decision rested largely with the application of the road definition to the Rustler Fire Trail and a re-evaluation of the Trail's effects on apparent naturalness and outstanding opportunities. Based on public comments and additional field checks, the BLM determined that an area of 11,067 acres in the western part of the intensive inventory unit met the basic wilderness criteria. This area was designated the Las Uvas Mountains WSA.

VI. ALTERNATIVES AND IMPACTS

A. All Wilderness

Under this alternative, the entire 11,067 acres of public land within the Las Uvas Mountains WSA would be recommended as suitable for wilderness designation. (See Map 1 for location of the WSA boundary.)

If designated as wilderness, existing and potential uses (see Chapter III) would be regulated by the Wilderness Management Policy (1981) as follows.

Generally, motorized access on vehicle trails within the WSA would not be allowed. However, permits for vehicular access to maintain existing rangeland developments in the WSA could be authorized. The Rustler Fire Trail would be closed to vehicles and allowed to rehabilitate.

A Habitat Management Plan (HMP) for deer would be prepared for the entire Las Uvas Mountains area. Vegetative treatments proposed in the HMP would not be allowed in the WSA portion of the HMP area unless approved by the State Director.

The WSA would be managed as a VRM Class I.

Vegetative collection and sales would not be authorized in the southeast part of the WSA.

The All Wilderness Alternative would not have significant impacts on cultural, air, and realty actions in the Las Uvas Mountains WSA. For this reason, these resources were not included in the following discussions.

1. Impacts to Minerals

There has been no energy minerals production within the WSA. Because the potential appears to be low, impacts to the energy minerals industry would be minor in the short-term. The loss of economic benefits to the energy minerals industry also would be minimal in the short-term.

Exploration and leasing for energy minerals would not be allowed after wilderness designation. As a result, there would be no opportunity for further assessment of the energy minerals potential or for production and development. The energy minerals industry could be adversely affected in the long-term.

Locatable minerals may be impacted if zeolites occur in the WSA. Prospecting, exploration, and location of mining claims would not be allowed after wilderness designation, so there would be no opportunity for further assessment of the area's mineral potential. Since there is currently no

activity, the loss of economic benefits in the short-term would be minimal. However, the mining industry could be adversely affected in the long-term.

2. Impacts to Other Resources and Uses

a. Water, Soils, Vegetation

Restrictions on surface disturbing and mechanized activities would provide long-term protection for the existing water, soils, and vegetation including Cereus greggii, a Bureau sensitive plant species proposed for Federal listing.

The Rustler Fire Trail in Chivatos Canyon would be closed and allowed to revegetate, which could also decrease soil loss. There would be a slight improvement of water quality in Chivatos tank by curtailing sediment sources in the Chivatos Canyon drainage.

b. Wildlife

Since surface-disturbing activities would be limited, wildlife habitat would be protected from this type of degradation. This would be a slight impact since not much activity is anticipated.

Some habitat manipulations might be proposed in the deer HMP. They either would not be allowed or would have to be approved by the State Director. This could have a moderate impact on deer habitat, but the Las Uvas deer herd is not highly significant.

Wildlife would also be protected from harassment and disturbance. This would be significant for nesting raptors.

c. Visual

Existing visual resources would be protected. Minor modifications in the basic elements of the landscape as a result of natural ecological changes and very limited management activity would be permitted.

d. Livestock Grazing

Permits for vehicular access could be authorized for maintenance of the following rangeland developments: 2 dirt tanks on Sierra Alta (3012), 4 dirt tanks on Las Uvas (3031), and $\frac{1}{4}$ mile of boundary fence between Bustamante (3010) and Sierra Alta (3012). Permittees on the Las Uvas (3031) and Bustamante (3010) allotments would not be allowed to use motor vehicles

to check cattle on existing vehicle trails. Checking livestock on foot or horseback could result in less effective livestock management due to the inconvenience and time requirements and could impact costs depending on the use normally made of vehicle trails.

e. Recreation

Existing recreation use patterns would be impacted since ORV enthusiasts and hunters would not be permitted motorized access on the Rustler Fire Trail.

f. Vegetative Products

The collection and sale of vegetative products in the southeast part of the WSA would be lost.

g. Wilderness Values

Wilderness designation would provide the wilderness values present in the area with long-term Congressional protection. The area would be managed to maintain its natural appearance and opportunities for solitude and primitive recreation. The special features of the area would be maintained through wilderness management.

The following factors could slightly impact the capability of the Las Uvas Mountains WSA to be managed as wilderness: adjacent land status patterns and the Rustler Fire Trail.

The sights and sounds of nonwilderness uses on the non-Federal lands that almost totally surround the Las Uvas Mountains WSA could degrade natural values and opportunities for solitude. The impacts could be minimal to major depending on the type and extent of activity occurring and the location and type of access.

There is a possibility of unauthorized ORV use continuing on the Rustler Fire Trail. Such use would impact the naturalness and opportunities for solitude in the vicinity of the Trail.

B. No Action/No Wilderness

Under the No Action/No Wilderness Alternative, the Las Uvas Mountains WSA would be recommended nonsuitable for wilderness designation.

If the WSA is not designated wilderness, existing and potential uses (see Chapter III) would continue without regard

to the Interim Management Policy and Guidelines for Lands Under Wilderness Review (1979) as follows.

A deer HMP for the Las Uvas Mountains would be prepared. All proposed projects in the HMP could be implemented.

Approximately 5,849 acres in the north and central parts of the WSA would be managed as a VRM Class II. Approximately 609 acres in the northwest part of the WSA would be managed as a VRM Class III. Approximately 4,609 acres in the south part of the WSA would be managed as a VRM Class IV.

Vegetative collection and sales could be authorized in the southeast part of the WSA.

The No Action/No Wilderness Alternative would not have significant impacts on cultural, air, realty actions, vegetative products, and recreation in the Las Uvas Mountains WSA. For this reason, these resources were not included in the following discussions.

1. Impacts to Wilderness Values

Under the No Action/No Wilderness Alternative, the wilderness values and special features of the Las Uvas Mountains WSA would not be provided with long-term Congressional protection. Management of the area as specified in land use plans would be subject to administrative change in the long-term. Since existing and proposed BLM plans do not identify any activities which would impair wilderness values, the entire area would probably retain its natural character in the short-term.

2. Impacts to Other Resources and Uses

a. Water, Soils, Vegetation

A slight increase in soil loss and sediment load could result from motorized access in the WSA, particularly in the Chivatos Canyon drainage. Increased sediment would contribute to a shortened usefulness or increased maintenance costs of the existing dirt tanks in several ephemeral drainages. Continued use of the Rustler Fire Trail would inhibit vegetative recovery.

b. Wildlife

The deer HMP could be implemented without Wilderness Management Policy constraints.

c. Visual

In the VRM Class II area, minor to moderate changes in the basic elements of the landscape as a result of management actions would be permitted as long as the changes do not attract attention. In the VRM Class III area, moderate changes in the landscape as a result of management actions would be allowed as long as the visual contrast is subordinate to the existing landscape. In the VRM Class IV area, significant changes in the basic elements of the landscape as a result of management activities would be permitted.

Since existing and proposed BLM plans do not identify any activities which would impair visual resources, the existing Class B scenic quality would probably be substantially maintained in the short-term. However, the VRM classes III and IV could, in the long-term, allow degradation of the existing visual resources.

d. Minerals

There would be no impact to leasable or locatable minerals. The minerals industry would need only to comply with the Surface Management Regulations (43 CFR 3809). Mineral exploration and development would be regulated to prevent unnecessary and undue degradation to the land. No economic benefits would be forgone under this alternative.

e. Livestock Grazing

All rangeland developments could be checked and maintained on a convenience basis using motorized equipment. There would be no impacts to livestock grazing.

VII. RECOMMENDED ACTION

A. Recommended Action Description

The recommended action for the Las Uvas Mountains WSA is the No Action/No Wilderness Alternative. The entire 11,067 acre WSA would be recommended nonsuitable for wilderness designation.

B. Rationale

The quality of the area's wilderness characteristics is the primary reason for this recommendation. Potential manageability conflicts also contributed to this recommendation.

Overall, the Las Uvas Mountains WSA generally appears natural. However, portions of the WSA are impacted by the imprints of man. The quality of naturalness in the northeast and southeast parts of the WSA is diminished by dirt tanks and the Rustler Fire Trail, respectively. The WSA does not offer a wide diversity of high quality primitive recreation opportunities. Recreation activities presently occurring in and around the Las Uvas Mountains WSA are generally vehicle related. These activities include rockhounding, sightseeing, hunting, and ORV use. The Las Uvas Mountains WSA is better suited for these types of activities than for primitive types of recreation. Special features are not especially significant.

The uncertain long-term management of the non-Federal lands adjacent to the WSA and the 40 acres of private land within the WSA represent potential wilderness management conflicts of minor concern.

Without wilderness designation, the existing wilderness values in the Las Uvas Mountains WSA would be substantially retained under the short-term management prescribed in existing and proposed BLM plans.

The impacts to other resource values and uses would be moderate. An area of approximately 5,120 acres in the southeast part of the WSA could be opened for vegetative sale and collection. The Las Uvas deer Habitat Management Plan could be implemented without the constraints of the Wilderness Management Policy.

C. Consistency With Other Plans

The recommended action for the Las Uvas Mountains WSA does not conflict with any of the decisions in the Southern Rio Grande MFP (1981).

At this time, there are no known inconsistencies between the recommended action and the policies of local, state, or Federal plans. Continuing coordination and consultation with other agencies will take place during the public comment period on the Draft Environmental Assessment for Wilderness Study Areas in the Las Cruces District.

APPENDIX G

ORGAN MOUNTAINS WSA (NM-030-074)

I. GENERAL DESCRIPTION

A. Location

The Organ Mountains Wilderness Study Area (WSA) lies in eastern Dona Ana County, approximately 15 miles east-northeast of Las Cruces, New Mexico.

The U.S. Geologic Survey (USGS) topographic maps covering the WSA are the Organ and Organ Peak, New Mexico quadrangles. Both of these maps are at the 7½ minute scale.

B. Climate and Topography

The Organ Mountain WSA is characterized by a semiarid, continental climate. Significant differences in climatic conditions are associated with changes in elevation and exposure.

Average annual precipitation in the area, above 6,000 feet, is close to 16 inches, nearly double the total in the valley. Maximum precipitation occurs in the summer in both the mountains and the valley, primarily from convective thunderstorms. A slight secondary maximum occurs in the winter with some light snowfall common at higher elevations.

During the summer months, daytime temperatures quite often exceed 100°F at elevations below 5,000 feet. Average monthly maximum temperature during July at higher elevations is in the mid 80's. In January, the coldest month, average monthly minimum temperature is in the low 20's. Temperatures vary markedly depending on exposure, with the northeast aspect being considerably cooler.

Wind speeds are usually moderate, although relatively strong winds often accompany frontal activities and thunderstorms. Spring is the windy season and gusty winds may exceed 30 mph in the afternoons. Winds generally predominate from the southeast in summer and from the northwest in winter, but local surface wind directions will vary greatly because of local topography.

The Organ Mountains are a north-south trending mountain range characterized by extremely rugged terrain with a multitude of steep-sided crevices, canyons, and spires. The spires are the most striking features of the Organ Mountains. At a distance, they resemble the giant pipes of a stupendous organ.

Elevations within the WSA range from about 5,000 feet along the pediments up to 8,010 feet. The towering and precipitous mountain mass of the Organs is bounded by pediments that are covered with extensive block and boulder laden alluvial cone-fans. These pediments and fans are variably incised by water courses heading to the top of the mountains.

C. Land Status

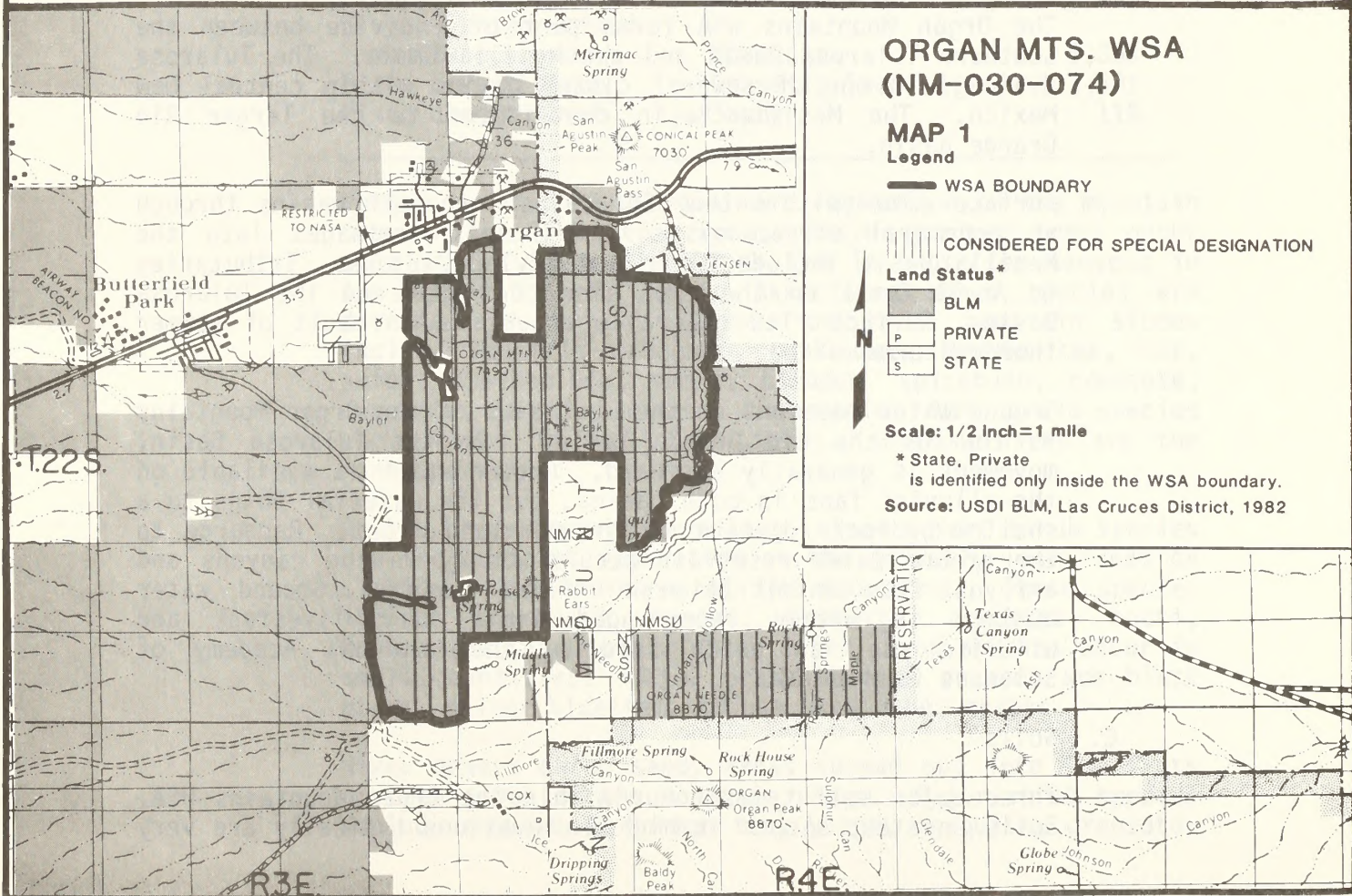
The Organ Mountains WSA contains 7,144 acres of public land. There are 40 acres of private land within the boundaries of the WSA. (See Map 1 for land status.)

D. Access

Legal access to the Organ Mountains WSA is available along the east and west boundaries. The Aguirre Spring Campground access road is a paved BLM road running south off of U.S. Highway 70, about 3½ miles east of Organ. On the west side of the WSA, the BLM's West Side access road runs south from U.S. Highway 70, about 1 mile west of Organ.



The Rabbit Ears near Mine House Spring.



II. EXISTING RESOURCES

A. Geology

The Organ Mountains WSA is situated within the Basin and Range Physiographic Province. This Province is characterized by fault block mountains separated by basins filled with alluvial and shallow lake deposits.

The Organ Mountains consist of igneous, sedimentary, and metamorphic rocks ranging from Precambrian to Cenozoic in age. During the Tertiary time period, a quartz monzonite batholith was emplaced. This batholith comprises a major portion of the WSA. Paleozoic sedimentary rocks consisting of limestones, dolomites, and shales crop out along the base of the western slope of the mountains. These sedimentary rocks were altered to varying degrees when in contact with the batholithic rocks.

The present topographic form of the Organ Mountains reflects Basin and Range block faulting. There is evidence to suggest that the present Organ Mountains are the result of cauldron subsidence, resurgence, tectonic activity, and subsequent erosion (Seager 1975).

B. Water

The Organ Mountains WSA forms part of a divide between the southern Tularosa Basin and the Mesilla Basin. The Tularosa drainage is one of several closed basins within central New Mexico. The Mesilla Basin contributes to the larger Rio Grande Basin.

Surface water within the WSA drains into both basins through an ephemeral stream system. Principal drainages into the Mesilla Basin include Blair and Baylor Canyons. Tributaries to Anvil Creek on the east side contribute to the Tularosa Basin. Surface flow generally occurs as a result of summer thunderstorms.

Ground water movement on the west side of the Organ Mountains is towards the Rio Grande Valley. In the Tularosa Basin, movement is generally eastward. Ground water is available on the alluvial fans in both basins, but the material thins to a shallow bedrock adjacent to the mountain front. Recharge to the ground water reservoir occurs mainly in the canyons and arroyos from infiltration of flood runoff. Ground water quality is within recommended limits for livestock and wildlife use, as established by the National Academy of Sciences (BLM 1980).

C. Soils

Three major soil types occur within the Organ Mountains WSA. Soils on steep slopes at higher elevations typically are very

cobbly and stony and range from shallow to moderately deep. These soils are interspersed between areas of rock outcropping on ridges, ledges, and cliffs. The east footslopes of the Organ Mountains are characterized by low ridges and broad alluvial fans. The soils, formed from granitic bedrock types, are very gravelly to cobbly and typically are shallow on ridgetops and deeper on the less sloping stable areas. On the western footslopes of the mountains, the soils are formed from mixed igneous parent materials and typically have a gravelly surface and cobbly subsurface layer.

D. Vegetation

1. General

Three life zones occur in the Organ Mountains. They consist of the Transition Zone from 7,000 feet to the peaks, the Upper Sonoran from 4,500 to 8,000 feet, and the Lower Sonoran below 5,000 feet. The vegetation and associated range sites within the Organ Mountains WSA consist of four major types:

Vegetative Type	Range Site	Federal Acres
Ponderosa pine	Mountain tops	163
Pinyon-juniper-mixed mountain shrub	Mountains	3,362
Mixed desert shrub	Gravelly loam	3,501
Mixed desert shrub	Sandy	118

Ponderosa pine is the dominant vegetation on the mountain tops in the Transition Zone. Pinyon-juniper trees occur at slightly lower elevations and in protected canyons in the Upper Sonoran Zone. Associated shrub species are diverse and varied. Shrubs on these mountain slopes include mountain mahogany, snakeweed, Mormon tea, oak, sotol, Apacheplume, sumac, tarbush, spicebush, creosote, mesquite, mariola, mimosa, and acacia. Many grass species are present in small quantities. Grama grasses are the most prevalent.

In the Lower Sonoran Life Zone, mixed desert shrub species are the dominant vegetation on the gravelly loam areas on slopes around the base of the mountains. These species include snakeweed, mimosa, mesquite, creosote, cacti, Mormon tea, and sotol. Many other shrub species occur in small quantities. Major grass species present are black grama, silver bluestem, tobosa, and other gramas.

Mixed desert shrub sandy areas spread out into the flats on both sides of the mountain range. Major shrub species include snakeweed, Mormon tea, yucca, mesquite, creosote,

and Apacheplume. Grass species include bush muhly, tobosa, threeawns, and grammas in small quantities.

2. Threatened or Endangered Plant Species

The following species were identified and located in or near the WSA (NMSHP and USFWS, 1982).

Species: Cereus greggii - night blooming cereus
Status: Selected as a Bureau sensitive species proposed for Federal listing.
Habitat: widespread; does not grow commonly anywhere; needs the microhabitat associated with creosote and bush muhly.

Species: Oenothera organensis - Organ mountain primrose
Status: Selected as a Bureau sensitive species proposed for Federal listing.
Habitat: Grows around spring areas; restricted to the Organ Mountains.

Species: Perityle cerna - rock daisy
Status: Selected as a Bureau sensitive species proposed for Federal listing.
Habitat: Grows on vertical cliffs with little or no direct sunlight.

Species: Sicyos glaber
Status: Selected by the New Mexico State Heritage Program as a special concern element.
Habitat: Occurs in rocky soils on west facing slopes at approximately 6,000 feet.

Species: Scrophularia laevis - smooth figwort
Status: Selected by the New Mexico State Heritage program as a special concern element.
Habitat: Occurs on the highest peaks.

Species: Aletes filifolius
Status: Selected by the New Mexico State Heritage program as a state sensitive species.
Habitat: Occurs on rocky canyon slopes, 6,200-7,300 feet.

Species: Coryphantha organensis - Organ Mountain
coryphantha
Status: Selected by the New Mexico State Heritage program as a special concern element.
Habitat: Canyons and west facing slopes in the Organ Mountains.

E. Wildlife

1. General

Within the Organ Mountains WSA, there are great elevational differences (5,000 feet to 8,010 feet). Because of this, there is quite a variation in vegetation. Three life zones are found in the WSA.

About half of the WSA has been mapped as mixed shrub desert (41 percent) and creosote (9 percent). These habitat sites are within the Lower Sonoran Life Zone. The Upper Sonoran Zone is the mixed shrub mountain habitat sites between 4,500 feet and 8,000 feet. Small pockets of ponderosa pine, representative of the Transition Zone, are found at the highest elevations.

The Organs have a varied wildlife community attributable largely to the elevation and vegetation differences. Several other factors also contribute.

Springs and seeps are well-distributed in the WSA. Some are seasonal, some yearlong. There is enough water for wildlife needs.

Much of the range is unvegetated cliffs which have a particular wildlife community associated with them. Golden eagles, prairie falcons, red-tailed hawks, and great horned owls nest in the cliffs, as do smaller birds such as canyon wrens and white-throated swifts, which are abundant in the WSA.

Certain mammals and reptiles are also associated with the rocky areas. Ringtails and rock rattlesnakes are typical rock-dwellers.

In the mixed shrub types, mule deer are common. The New Mexico Department of Game and Fish (NMDGF) (1980) estimates that there are 13 deer per section and the optimum number is 36 deer per section.

Mountain lions are fairly common in the San Andres Mountains, just north of the WSA. It is likely that they are also found in the WSA.

2. Threatened or Endangered Fauna Species

A state-listed endangered species, the Trans-Pecos rat snake has been collected in the Organs. It is an arboreal snake which is often found in rocky, shrub-covered areas. It is threatened because of over-collecting.

Desert bighorn sheep, another state-listed endangered species, may be in the Organs. There are many reports

from the military land south of the WSA, although none have been confirmed by NMDGF. When the San Andres herd was larger (pre-scabies outbreak), rams sometimes wandered south at least to San Augustine Peak and probably past Highway 70 into the WSA (Sandoval 1982).

The U.S. Fish and Wildlife Service (FWS) returned a threatened and endangered species list request for the Organ Mountains WSA showing the peregrine falcon. However, this species was never observed during BLM's wildlife inventory (1977-1978). Fort Bliss (1980) surveyed the military portions of the Organs for peregrines and concluded that there were none nesting. The FWS (Carley 1982) stated that they knew of no aeries, but that the location and habitat is such that peregrines might nest there in the future, and migrating birds probably stop over.

F. Visual

The Organ Mountains form the eastern backdrop for the city of Las Cruces, the second largest urban area in New Mexico. The mountains are one of the most unique and spectacular topographic features in the region and visually dominate the landscape within a 25 to 30 mile radius.

Three scenic quality rating units describe the Organ Mountains WSA. The central part of the WSA, composed of the peaks and lower elevations of the mountains, has a Class A (high) rating. The higher elevations are characterized by steep, angular, barren rock outcroppings with massive, jagged, vertical intrusions dominating the highest peaks. More rounded peaks are less predominant but add interest to the strong ridgeline/sky interface. Moderately sloping rounded and boulder strewn hills characterize the lower elevations. Muted gray green and light browns are representative colors in the lower elevations while granitic gray to light pinkish gray typify the high pinnacles. The form and color of the vegetation is diverse. Low shrubs and grasses of light brownish green are the dominant ground cover. As the elevation increases, the vegetation changes from patches of yucca to juniper to oak to ponderosa pine, all of a dark green color. Streams flow intermittently and snow cover at the highest elevations is not uncommon during the winter months, particularly on the east-facing slopes.

The northeast part of the WSA has a Class B or moderate rating. This part of the WSA is characterized by low hills with rounded slopes and scattered boulders in light brown or tan. Light brown grasses and low shrubs are prevalent with occasional dark green small trees.

The southwest part of the WSA has a Class C, or low rating. This area is a flat to gently rolling alluvial plain.

Coloration is typically light reddish brown. Vegetation is primarily grasses and low shrubs in muted greens and light browns.

The WSA is within a Visual Resource Management Class II area.

The Southern Rio Grande MFP (1981) contains a decision to designate the Organ Mountain Scenic Area (8,947 acres) as an Area of Critical Environmental Concern (ACEC) for visual resources (see Map 1 for general location of the ACEC). The special management objectives of the ACEC would be to protect, prevent irreparable damage, and enhance the scenic values of the Organ Mountains. The Organ Mountains meet the two criteria required for an area to be considered as a potential ACEC for scenic values: (1) the area rates high (Class A) in scenic quality and (2) the area has a rating of five for scarcity. Class A scenic quality ratings are assigned to areas that combine the most outstanding characteristics of each of the following seven rating factors: landform, vegetation, water, color, influence of adjacent scenery, scarcity, and cultural modifications. The Organ Mountains were rated high for scarcity because they are recognized as an uncommon geologic formation within the Basin and Range Physiographic Province. The high visual sensitivity is further supported by the number of users. The Organ Mountains are viewed daily by a resident population in excess of 50,000 people. They are traversed by U.S. Highway 70 with an average annual daily traffic (AADT) volume of over 5,000 vehicles and paralleled by Interstate Highway 10 with an AADT of over 11,000 vehicles. Recreation use within designated areas exceeds 80,000 annual visits. A yet to be determined number of dispersed recreation users in the Organ Mountains will further increase the visitor use figure. The scenic resources of the Organ Mountains are also important in terms of people's perceptions and attitudes toward the management of that resource. As documented in the Southwestern New Mexico Socio-Economic Profile prepared by Harbridge House Inc. in October 1978, residents of Las Cruces share the attitude that the Organ Mountains should be preserved and protected, citing them as centers of recreational activity and a source of considerable civic pride.

G. Cultural

There are no known cultural sites within the Organ Mountains WSA, although several are located along its perimeter. While there has been no formal survey of the area, it has received more visitation than all of the other WSAs combined. Any large, obvious prehistoric sites probably would have been reported by now. There are historic reports of Apaches in the area. The main historic use of the area was for mining from 1849 to 1900. The WSA was the scene of the first action of the Civil War in New Mexico as Confederate forces used the present Baylor Pass Trail to outflank Union forces; however,

nothing remains of this event now. While there are no major sites in the area, the history contributes to the supplementary values of the area.

H. Air

Generally, the quality of air within the Organ Mountains WSA is good. The air quality in the WSA does not exceed the state or Federal air quality standards and is classified as a Class II area. This classification allows a moderate amount of degradation of air quality.

Activities within the Rio Grande Valley, located approximately 10 miles west of the WSA, could slightly lower the air quality, but the change probably would not be noticeable, nor would it lower the present Class II rating of air quality in the WSA.

The only major degradation of air quality occurs during the spring months (March-May). West-prevailing winds, commonly gusting in excess of 30 mph, result in dust storms throughout the southern part of the state.

III. EXISTING AND POTENTIAL USES

A. Mineral Development

1. Energy Minerals

There are presently no known occurrences of energy minerals within the WSA. One oil and gas lease application has been filed on parcels located within the boundaries of the WSA.

Potential is very low in the Organ Mountains WSA. Petroleum accumulations are not likely because associated faults and igneous activity are not conducive to hydrocarbon accumulations. Geothermal energy is not favorable because of a lack of geothermal indicators and the old age of the basement rock.

Currently, the Organ Mountain Recreation Lands (OMRLs), the Organ Mountain Recreation Area, and the Baylor Recreation Site are not open to leasing (NOL). Planning documents recommend a portion of the WSA as an Area of Critical Environmental Concern (ACEC) for scenic values (LC/L MFP Amendment/EIS, in preparation). A portion of the WSA has also been identified as having special wildlife values. Both areas would have a No Surface Occupancy (NSO) stipulation. The Baylor Recreation Site and Organ Mountain Recreation Areas would remain as NOL. The remainder of the WSA is described as the OMRLs with a protective stipulation recommended.

2. Non-Energy Minerals

There are currently no active mines in the WSA. Small reserves of ore are known to exist at several places and geologic relationships are favorable for ore deposits at many other places. Gold, silver, copper, lead, zinc, and fluor spar have been produced from deposits in the general area in the past. All of these minerals except gold are on the National Defense Stockpile Inventory of Strategic and Critical Minerals.

There are approximately 100 mining claims recorded within the WSA. These claims are both pre- and post-FLPMA.

Geochemical data, alteration patterns, and geophysical data gathered during the McAnulty project (1979) suggest that certain zones in the Organ Mountains WSA are favorable for mineral deposits. The most favorable area indicated for commercial mineral deposits is in the Paleozoic sedimentary rocks along the west side of the WSA. The Baylor Peak area is considered favorable, but less prospective. Most of the area underlain by intrusive rocks in the eastern part of the WSA appears less likely

to contain commercial mineral deposits. The potential for strategic and critical mineral occurrence is high.

Strong interest in the area is indicated by the number of claims and the amount of assessment work.

B. Watershed

Water use within the Organ Mountains WSA is primarily by livestock and wildlife. There are two dirt tanks inside the WSA that utilize surface runoff and five springs that provide seasonal water (see Livestock Grazing). Additionally, several well facilities and dirt tanks are located just outside the WSA for livestock watering and limited domestic use.

The Organ Mountains WSA is within the Lower Rio Grande declared underground water basin and ground water use is administered by the New Mexico State Engineer.

C. Livestock Grazing

1. Allotments

Parts of five grazing allotments are present within the Organ Mountains WSA. Most of the Organ Mountain range is limited to livestock use due to the steep slopes. Licensed grazing use on public land includes cattle and a few horses.

ALLOTMENTS WITHIN THE WSA^{a/}

Allotment Name and Number	Total Acres	Total AUMs	Approximate Acres in WSA	Percent Allotment
A. B. Cox 5002	15,180	1,504	68	.4%
San Augustine Ranch 5003	4,897	624	2,428	50%
D. Hopkins 5006	1,340	275	1,012	76%
S. Walter 5012	1,180	168	439	37%
Baylor Canyon 5013	10,988	1,428	3,197	29%
TOTAL			7,144	

2. Ranch Management

EXISTING RANGELAND DEVELOPMENTS WITHIN THE WSA^{a/}

Allotment Name and Number	Type of Development	Location
San Augustine Ranch 5003	spring interior fence	T. 22 S., R. 4 E., Sec. 20 3/4 mile
D. Hopkins 5006	spring dirt tank	T. 22 S., R. 3 E., Sec. 12 T. 22 S., R. 3 E., Sec. 13
Baylor Canyon 5013	dirt tank and spring 2 springs interior fence	T. 22 S., R. 3 E., Sec. 24 T. 22 S., R. 3 E., Sec. 25 2 3/4 miles

Boundary Fences:

Baylor Canyon 5013 and Hopkins 5006	1 mile
Hopkins 5006 and Walter 5012	1 1/2 miles
San Augustine Ranch 5003 and Walter 5012	3/4 mile
Cox 5002 and Baylor Canyon 5013	1 mile

Note: ^{a/}Information shown in tables reflects only Federal acres and animal unit months (AUMs), and rangeland developments on public land.

3. Potential Rangeland Developments

A spring development with a trough has been proposed on the San Augustine Ranch (5003) in T. 22 S., R. 4 E., Section 8.

D. Recreation

The entire Organ Mountains WSA is within the Organ Mountain Recreation Lands (OMRLs). The OMRLs were designated as Class II General Outdoor Recreation Lands in 1971. The Baylor Recreation Site and portions of the Organ Mountains Recreation Area are within the WSA. These areas were classified for recreational purposes under the Classification and Multiple Use Act and are segregated from all forms of mineral entry. The OMRLs are designated limited to existing roads and trails for off-road vehicle (ORV) use. No motorized cross-country travel is allowed.

The Aguirre Spring campground is a developed recreation site less than 1/4 mile from the southeast boundary of the WSA. The campground is on New Mexico State University land across which BLM has a perpetual easement for recreational purposes and developments. The campground has 35 picnic/camping units and

firewood is provided. An additional 20 picnic/camping units are planned for the Aguirre Spring campground. The additional units are also $\frac{1}{4}$ mile from the southeast boundary of the WSA. There are plans to provide water facilities at the campground in the near future. There are approximately 80,000 visitors to the Aguirre Spring Campground annually.

Two National Recreation Trails are in the OMLs. The Baylor Pass National Recreation Trail bisects the WSA. In addition to hiking, horseback riding is allowed on the trail.

The Mesilla Valley Track Club sponsors the Baylor Pass Run which has been held every fall since 1971. Over 150 runners participated in the race across Baylor Pass in 1981.

Parking facilities are available at the Aguirre Spring campground, Baylor Pass trailhead, and San Augustine wayside on U.S. Highway 70 for access into the WSA.

Recreational activities in the Organ Mountains include deer and bird hunting, rock collecting, picnicking, camping, hiking, rock climbing, horseback riding, and geological, botanical, and zoological sightseeing.

A special permit deer hunt is held in the Organs each year. Bird hunting takes place along the slopes of the Organs in the northeast and southwest parts of the WSA.

Rock collecting in the Organs is excellent. Numerous rocks and minerals of gemstone quality are found along the base of the mountains.

Technical rockclimbing opportunities in the Organs are nationally significant. Climbing in the Organs is done on quartz monzonite, similar to the type of granite in Yosemite National Park. Most of the climbing opportunities are between Baylor Pass and the Organ Needle, and in the Sugarloaf area east of the WSA. The Southwest Mountaineers, a local group from Las Cruces, has 60 members with 30 or so who are avid climbers. Groups of 20 or more persons climb in the Organs two or three times a month, while small groups of three to five get out on their own every week.

E. Education/Research

There is a potential in this area for geological studies. In the higher elevations, there is a possibility for dendrochronological studies of the ponderosa pine by the Tree Ring Laboratory of the University of Arizona in connection with climatic reconstruction work being done by Dr. Ferguson.

F. Realty Actions

There are sections of two power transmission lines that border the Organ Mountains WSA. On the north, Plains Electric Generation and Transmission Cooperative, Inc. has a right-of-way (ROW) for a 115 kv transmission line. This ROW has recently been amended for route changes, but does not enter the WSA. Along the east side, El Paso Electric Company has a ROW for a transmission line. A third transmission line links to the Stevenson-Bennett Mine on the west side.

G. Wildlife

There are no existing wildlife developments in the Organ Mountains WSA. However, a deer Habitat Management Plan is proposed in the Southern Rio Grande Management Framework Plan (BLM 1981) for the Organ Mountains.

According to Andy Sandoval of the New Mexico Department of Game and Fish, survey work will be pursued for bighorn sheep. If sheep are found, more will probably be put into the Organs to supplement this native herd.

IV. WILDERNESS CRITERIA

A. Evaluation of Wilderness Values

1. Quality of Mandatory Wilderness Characteristics

a. Naturalness

The natural appearance of the Organ Mountains WSA is affected by a variety of the imprints of man: rangeland developments, access routes, historic mining activity, the outside sights of developments along the north boundary of the WSA, and the city of Las Cruces and White Sands military base. In most cases, the influence of these imprints is mitigated by vegetative and topographic screening and by their location in relation to the WSA's boundaries and other imprints.

The earthen dams along the west and east sides of the Organs are generally well camouflaged by vegetative and topographic screening and do not detract from the natural appearance of the WSA. Approximately 8 miles of barbed wire fence are within the WSA and on the boundary. Most have wooden posts which blend in with the landscape.

The naturalness of the WSA has been affected somewhat by the evidence of historic mining activity along the west face of the Organs. The road to Mine House Spring is cherry-stemmed out of the WSA. Past Mine House Spring, the route is unmaintained and provides access to the patented Ruby Mine that is inactive. The tailings piles, structures, and mine entrance are topographically screened from the rest of the WSA.

The Stevenson-Bennett Mine is located at the base of a ridge in the northwest part of the WSA. The road and mine are cherry-stemmed out of the WSA. The large cut in the hillside is several hundred feet long. The mine cut and large piles of gravel next to the mine create a visual impact when viewing the area from the north and west, but the topography camouflages the mine and gravel piles from most of the WSA.

Imprints of man originating from outside the WSA do not significantly affect the overall natural appearance of the WSA, although developments in San Augustine Pass and the cities of Organ and Las Cruces, and the White Sands Missile Range can be seen from the WSA.

The developments in San Augustine Pass include evidence of mining activity, U.S. Highway 70, several hundred buildings, and two powerlines with double post

structures 20 and 50 feet tall. These imprints negatively impact the northern part of the WSA but are screened topographically from most of the WSA, as is the town of Organ. Although the city of Las Cruces and the White Sands military base contrast with the natural appearance of the WSA, they are far enough removed that they do not dominate the view and should heighten public awareness and appreciation of the natural appearance of the Organ Mountains WSA.

The major topographic features of the WSA remain unaffected by the imprints of man. Rugged canyons and steep ridges have restricted development to the gentler slopes along the eastern and western boundaries. The Organ Mountains WSA appears to have been affected primarily by the forces of nature and the imprint of man's work is substantially unnoticeable.

b. Solitude

The Organ Mountains WSA provides outstanding opportunities for solitude. The rugged topography of the mountain range bisecting the unit creates numerous opportunities for solitude. Baylor Peak rises over 2,700 feet above the surrounding plains and half a dozen major ridges descend from the backbone of the range, with each breaking off into countless smaller ridges with drainages between each one. As a result, a great deal of topographic relief is present and topographic screening and opportunities for seclusion are offered in almost every drainage and on many ridges. Along the eastern and western boundaries, the terrain is less rugged, however, there is still a 10-20 degree slope and several small arroyos and ridges which offer a moderate amount of topographic screening.

Opportunities for solitude in the northern end of the WSA are slightly impacted by the sounds of traffic on U.S. Highway 70. Topographic features generally block the sound out of the drainages.

c. Recreation

The Organ Mountains have been intensively managed for recreational purposes since 1971 and nonmotorized activities constitute their primary use (see Chapter III, Recreation).

Opportunities for primitive and unconfined types of recreation in the Organ Mountains WSA are enhanced by several factors: size and boundary configuration, topographic relief, opportunities for challenge and

risk, vastness of scale, opportunities to use outdoor skills, the quality and diversity of the recreational resource and supplemental values.

The majority of the public land in the WSA is blocked up so that visitors may spend an afternoon or weekend hiking and exploring the unit. In addition, New Mexico State University lands south and east of the WSA are managed by the BLM for both developed and primitive types of recreation.

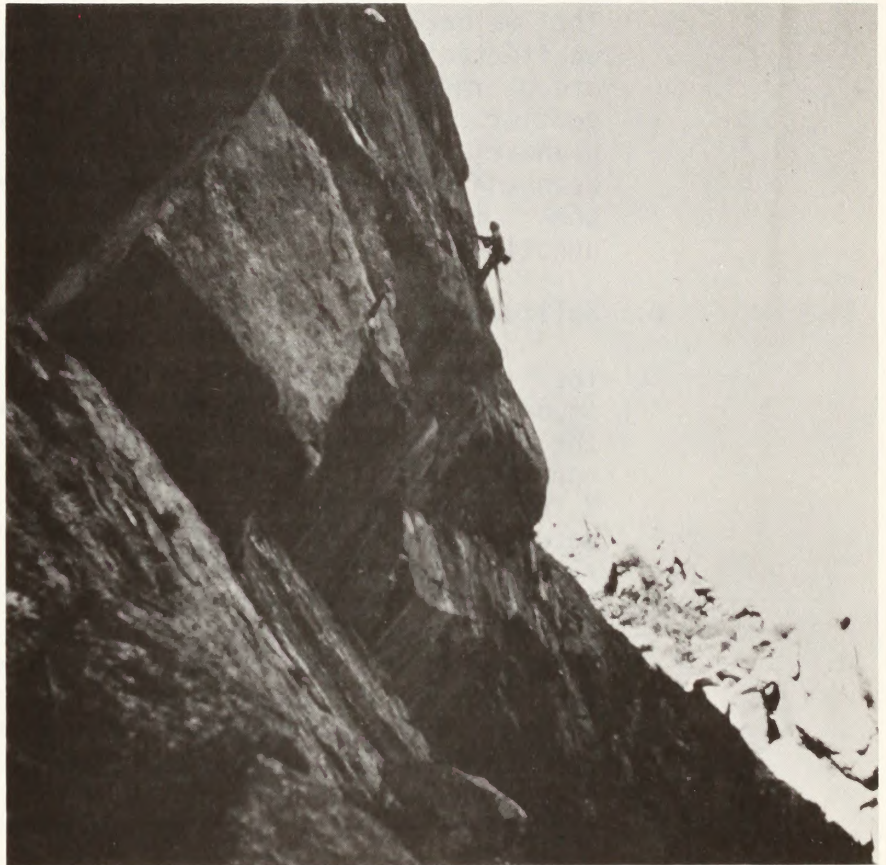


Photo courtesy of Paul Kemp.

Climbers on the Citadel.

The topography of the Organ Mountains is so rugged and diverse that visitors traveling off trails have excellent opportunities for challenge and risk. The vastness of scale in the WSA is significant. Baylor Peak rises over 2,700 feet above the surrounding plains and the mountain range dominates the landscape for miles around.

The lack of recreational facilities within the WSA offers excellent opportunities to use outdoor skills and interact with a natural environment.

A diversity of high quality recreational activities can be accommodated within the WSA. The rugged terrain offers outstanding opportunities for horseback riding and day hiking, and both individuals and groups often use the area for these purposes. There are also several rock faces in the southern half of the WSA and rockclimbing opportunities in the Organs are nationally significant. Opportunities for sightseeing geologic features are excellent throughout the WSA and opportunities for sightseeing botanical features are present around Baylor Pass.

The Organ Mountains WSA offers outstanding opportunities for a primitive and unconfined type of recreation.

2. Special Features

The Organ Mountains WSA contains special ecological and scenic features.

The ecological features include both vegetation and wildlife values of scientific and educational interest. Within the Organs, there are great elevational differences. As a result, three life zones occur in the area which accounts for the great diversity in vegetation. The WSA provides habitat for three Bureau sensitive plant species proposed for Federal listing, three plant species selected by the New Mexico State Heritage Program as special concern elements, and one plant species chosen by the New Mexico State Heritage Program as a state sensitive species. (See Chapter II, Vegetation.)

The Organ Mountains also have a diverse wildlife community. This can be largely attributed to the elevation and vegetation differences and, to a lesser extent, the presence of special habitat features such as springs, seeps, cliffs, and rocky areas. The WSA provides habitat for the state endangered Trans-Pecos ratsnake. The state endangered desert bighorn sheep may also occur in the area. (See Chapter II, Wildlife).

The Organ Mountains WSA has outstanding scenic features. The area has a Class A (high) scenic quality rating. Planning documents recommend a portion of the WSA as an ACEC for visual resources (see Chapter II, Visual).

Potential future projects of scientific and educational value in this WSA include dendrochronological studies of the ponderosa pine in connection with climatic reconstruction work (see Chapter III, Education/Research).

3. Multiple Resource Benefits

Congressional designation of this area as wilderness would provide a greater degree of long-term protection for the area's wilderness values than would administrative designations available to the BLM.

A more detailed discussion of multiple resource benefits of wilderness designation is located in Chapter VI, Impacts, under the All Wilderness Alternative.

4. Diversity

a. Ecosystems Present

The Bailey (1976) - Kuchler (1966) system classifies the Organ Mountains WSA as being in the Chihuahuan Desert Province with a potential natural vegetation of juniper-pinyon woodland.

The general nature of the Bailey-Kuchler System fails to show the vegetative variety and diversity of the WSA. Further refinement of the system shows the following vegetation types in the WSA:

<u>Vegetation Type</u>	<u>Acres</u>
western ponderosa forest	163
mountain mahogany oak scrub	3,362
Trans-Pecos shrub savanna	3,619

b. Distance from Population Centers

The Organ Mountains WSA is approximately 1½ hours driving time from El Paso, Texas; ½ hour from Las Cruces, New Mexico; 4½ hours from Albuquerque, New Mexico; 5½ hours from Tucson, Arizona; and 7½ hours from Phoenix, Arizona.

B. Manageability

Both positive and negative factors affect the potential of the Organ Mountains WSA to be managed as wilderness: locatable minerals potential, existing withdrawals, existing access and recreational facilities, and visibility of boundaries.

Strategic minerals are known to occur in the Organ Mountains WSA and there has been production in the past. There is potential for commercial mineral deposits along the west face of the Organs. Several mines along the west side are patented.

The Stevenson-Bennett patented mining claim has been cherry-stemmed out of the WSA and the Ruby patented mining claim is an inholding. In addition, a patented mining claim in T. 22 S., R. 3 E., Section 12: W $\frac{1}{2}$, is surrounded on the east and west sides by the WSA. Numerous unpatented mining claims are associated with the patented mines.

There are both pre-FLPMA and post-FLPMA unpatented mining claims within the Organ Mountains WSA. The presence of these claims affects the manageability of the WSA in two ways:

1. During the time that an area is under wilderness review, the WSA is managed under the Interim Management Policy and Guidelines for Lands Under Wilderness Review (IMP) (1979). Under the IMP, mining claimants are recognized as having a valid existing right if a valid discovery had been made on the claim before the passage of FLPMA on October 21, 1976. If the claimant can show evidence of his discovery to the BLM, activities for the use and development of the claims will be exempt from the nonimpairment criteria of the IMP. Mining operations on such claims would be regulated only to prevent unnecessary or undue degradation of the WSA. Therefore, the possibility exists that the wilderness values of the Organ Mountains WSA could be degraded before the area is designated wilderness if the above criteria are met.
2. Once an area is designated wilderness, the provisions of the Wilderness Management Policy (WMP) (1981) apply. Under the WMP, holders of mining claims (both pre-FLPMA and post-FLPMA) validly established in the area prior to its designation as wilderness may develop their claims in accordance with the 43 CFR 3809 regulations "Surface Management of Public Lands Under U.S. Mining Laws." Although exercise of the rights of mining claimants must be with the least possible impact on the wilderness resource and claimants will be required to prevent unnecessary or undue degradation of the land, mining operations could impair wilderness values if there are no reasonable alternatives. In this case, there is a possibility that the wilderness values of the WSA could be degraded after the area is designated wilderness.

The three patented mines are presently inactive and their impact upon manageability is insignificant. However, a reopening of the patented mines and full-scale development of the mining claims would certainly degrade wilderness values.

Positive factors influencing the manageability of the Organ Mountains WSA include the approximately 1,479 acres of the WSA (T. 22 S., R. 3 E., parts of Sections 13, 14, 23, 24 and T. 22 S., R. 4 E., parts of Sections 6, 8, 17, 20) which have been segregated from mining and mineral leasing. Retention of this segregation (under the Classification and Multiple Use

Act of 1964) would enhance efforts to preserve the wilderness character of the WSA since it is more restrictive than that portion of the 1964 Wilderness Act which allows wilderness areas to remain open for mineral leasing and mining claim location through December 31, 1983.

The manageability of the WSA is enhanced by the presence of approximately 2,089 acres (T. 22 S., R. 4 E., Sections 19, 29, 30, and part of 31) belonging to New Mexico State University (NMSU) that are contiguous to the south and southeast boundaries of the WSA (see Map 1 for land status). The NMSU lands are also very rugged and densely vegetated with ponderosa pine, oak, and juniper. These lands are managed by the BLM for recreational purposes under a perpetual easement from the University and present administration enhances the manageability of the WSA.

The WSA is accessible from several roads. The Aguirre Spring Road and West Side access road constitutes the eastern and western boundaries of the WSA, and U.S. Highway 70 lies a half-mile to the north. Recreational facilities at the Aguirre Spring campground attract high levels of use, some of which spills over into the WSA. Parking facilities are available at the Aguirre Spring campground, on the West Side road from Baylor Pass Trailhead (T. 22 S., R. 3 E., Section 14), and at the San Augustine Wayside on U.S. Highway 70 (T. 22 S., R. 4 E., Section 6). No further access is necessary as visitors may enter and traverse the WSA without leaving land administered by the BLM.

The roads to the Stevenson-Bennett Mine and Mine House Spring have been cherry-stemmed out of the WSA. The gate on the road to the Stevenson-Bennett Mine is usually locked and the road to Mine House Spring requires a four-wheel drive vehicle. These roads may cause manageability problems by allowing vehicular access into the WSA.

On-the-ground management of the WSA would be enhanced by the visibility of its boundaries. The eastern and western boundaries of the WSA are for the most part alongside Government maintained roads, while portions of the northern boundary lie along a powerline. Part of the southern boundary lies along a dirt road while the southeastern portion of the WSA borders the NMSU recreation lands. Since physical boundaries would be easier to identify than "invisible" legal lines, conflicts resulting from unintentional trespass by wilderness visitors onto private land or by unauthorized uses into the wilderness area should be minimal.

The acquisition of private land (in T. 22 S., R. 3 E., Sections 1 and 12, and T. 22 S., R. 4 E., Section 6) adjacent to the north boundary of the WSA would enhance the manageability of the area's wilderness. The acquisition would enhance the topographic integrity of the area and eliminate the potential for impacts on wilderness values as a result of nonwilderness uses on the private land.

V. PUBLIC INVOLVEMENT OVERVIEW

Personal letters, form letters, and petitions were received on the Organ Mountains unit during the public comment periods on the BLM New Mexico Wilderness Review Initial Inventory Decisions (July 1979) and the BLM New Mexico Wilderness Study Area Proposals (March 1980). Maps were included with the comments.

Approximately 71 percent of the personal letters favored wilderness review of the area. Supporting reasons listed lack of roads, few imprints of civilization, excellent recreation and solitude, interesting terrain, and the supplemental values of endangered species as justification for further wilderness study. Other comments pointed out that wilderness areas near population centers are needed and that the Organs need protection.

Approximately 29 percent of the personal letters opposed wilderness review of the area. Imprints of man's activities, lack of outstanding opportunities for solitude or primitive recreation, presence of roads, and mining conflicts were given as reasons for opposing further wilderness review.

VI. ALTERNATIVES AND IMPACTS

None of the alternatives would have significant impacts on air, education/research, and realty actions in the Organ Mountains WSA. For this reason, these resources were not included in the following discussions.

A. All Wilderness

Under this alternative, the entire 7,144 acres of public land within the Organ Mountains WSA would be recommended as suitable for wilderness designation. (See Map 1 for location of the WSA boundary.)

If designated as wilderness, existing and potential uses (see Chapter III) would be regulated by the Wilderness Management Policy (1981) as follows.

Generally, motorized access on vehicle trails within the WSA would not be allowed. However, permits for vehicular access to maintain existing rangeland developments in the WSA could be authorized.

Desert bighorn sheep could be transplanted in the WSA. A Habitat Management Plan (HMP) would be prepared for the Organ Mountains.

The Baylor Pass Run would not be permitted.

The WSA would be managed as a VRM Class I.

Strategic and critical minerals are known to occur in and around the Organ Mountains WSA and there has been production in the past. Therefore, it is assumed that existing valid mining claims could be fully developed in the long-term.

The proposed spring on the San Augustine allotment (5003) could be developed. Road construction would not be allowed.

1. Impacts to Minerals

There has been no energy minerals production within the WSA. Because the potential appears to be low, impacts to the energy minerals industry would be minor in the short-term. The loss of economic benefits to the energy minerals industry would be minimal in the short-term. However, exploration and leasing for energy minerals would not be allowed after wilderness designation. As a result, there would be no opportunity for further assessment of the energy minerals potential or for production and development. The energy minerals industry could be adversely affected in the long-term.

Strategic and critical minerals are known to occur in the WSA and several mines along the west face of the Organs are patented. Numerous unpatented claims are located within the WSA and a recent BLM Mineral Resource Inventory (1981) indicates excellent mineral potential. However, there is currently no mining activity other than assessment work. Valid claims located before wilderness designation could be developed to their full potential. However, during development, the mining companies may incur additional costs of operation depending on restrictions on the type and location of access. Since there is currently no mining activity, the economic impact would be minimal in the short-term.

No new exploration, prospecting, or location of mining claims would be allowed after wilderness designation. Mineral trends could not be followed outside of the existing valid claim boundaries. Full development of the mining district could not take place under this alternative. Most of the minerals are on the list of strategic and critical minerals. Economic impacts to the minerals industry on a regional scale would be moderate in the long-term.

2. Impacts to Other Resources and Uses

a. Water, Soils, Vegetation

Restrictions on surface disturbing and mechanized activities would provide long-term protection for the existing water, soils, and vegetation including threatened or endangered plant species (see Chapter II, Vegetation) in the WSA.

The proposed development of the spring on the San Augustine allotment (5003) would affect vegetation production and compact soils on approximately 40 acres as a result of increased livestock use. Vegetation probably would not reestablish itself in this area. However, this additional source of water could redistribute existing grazing use for better utilization of the vegetative resource on this allotment.

Loss of vegetation and topsoil would result from the development of valid existing mining claims. The impacts on soils and vegetation could be moderate to major depending on the locations and extent of the mining activity.

b. Wildlife

Restrictions on exploration, prospecting, and location of mining claims after wilderness designation would

protect wildlife and wildlife habitat from disturbance to some degree. If there is a large increase in hikers, this might disturb some animals. This would be most significant for desert bighorn sheep, if they are ever transplanted into the area or if they are already actually occupying the Organ Mountains.

Development of existing valid mining claims would seriously degrade wildlife habitat and disturb or displace wildlife in the immediate vicinity of the mining activity. This would be a severe impact for deer, raptors, and desert bighorn sheep.

Conservation measures for the Trans-Pecos rat snake, a state-endangered species, are to protect it from collecting (Hubbard et al 1979). Since access would be restricted in a wilderness area, this species would be slightly impacted. The deer HMP may propose some habitat manipulations which either would not be allowed under the Wilderness Management Policy or would have to be approved by the State Director.

c. Visual

Existing visual resources would be protected. Minor modifications in the basic elements of the landscape as a result of natural ecological changes and very limited management activity would be permitted.

If mining operations for locatable minerals are initiated on existing valid claims within the area, existing visual resources would be degraded in the short-term for the life time of the mines. In addition, it is unlikely that the reclamation of the mined areas would be successful enough to meet the standards of a VRM Class I area.

d. Cultural

The Wilderness Management Policy would prevent modern intrusions (such as powerlines, roads, etc.) along the Baylor Pass Trail. This would protect the historical significance of Baylor Pass.

e. Livestock Grazing

The proposed spring could be developed on the San Augustine allotment (5003). Vehicular access for maintenance purposes could be authorized on a permit basis.

Maintenance of existing rangeland developments, even though there is no motorized access at the present time, would be on a permit basis (see Chapter III,

Livestock Grazing). A minor inconvenience may occur in securing permits for use of motor vehicles, motorized equipment, and other forms of mechanical equipment in order to comply with the concept of wilderness preservation.

f. Recreation

The Baylor Pass Run would not be permitted.

Mining operations for locatable minerals on valid claims would degrade the quality of the nonmotorized recreation opportunities in the Organ Mountains.

Management of the deer population under a HMP could improve hunting opportunities in the long-term.

g. Wilderness Values

Wilderness designation would provide the wilderness values present in the area with long-term Congressional protection. Most of the area could be managed to maintain its natural appearance, opportunities for solitude and primitive recreation, and special features in the long-term.

Management of the deer population under a HMP and the transplant of desert bighorn sheep in the WSA would enhance the special wildlife features of the area.

If mining operations for locatable minerals are initiated on valid claims, it would not be possible to manage the west face of the Organs to maintain the existing natural values, opportunities for solitude and primitive recreation, and special features. The result of extensive mining development and the required vehicular access would be an irrevocable degradation of naturalness and opportunities for solitude and primitive recreation.

The cherry-stemmed roads into the Stevenson-Bennett Mine and Mine House Spring could cause minor manageability problems by allowing vehicular access into the area. Vehicular access would periodically disrupt solitude in the vicinity of the roads.

B. No Action

Under the No Action Alternative, the Organ Mountains WSA would be recommended nonsuitable for wilderness designation.

If the WSA is not designated wilderness, existing and potential uses (see Chapter III) would continue without regard

to the Interim Management Policy and Guidelines for Lands Under Wilderness Review (1979) as follows.

Approximately 6,690 acres in the Organ Mountains WSA would be within the 8,947 acres administratively designated as the Organ Mountains Scenic Area ACEC (SRG MFP 1981). The objectives of the ACEC are to protect, to prevent irreparable damage, and to enhance the scenic values of the Organ Mountains. (See Map 1 for general location of the ACEC.)

The special management requirements of the ACEC include closure of the area to plant collection and sale, closure to ORV use except on existing roads and trails, and retention of the existing segregation of approximately 1,479 acres from all forms of mineral entry (under the Classification and Multiple Use Act of 1964). Other special management requirements include management of the ACEC as a VRM Class I, removal of the exposed gravel piles near the Stevenson-Bennett mine, and withdrawal of the remainder of the ACEC from locatable and saleable mineral entry subject to valid existing rights. A NSO stipulation would apply to any oil and gas or geothermal activities. No new rights-of-way would be approved. Cooperative agreements would be sought with the Regents of NMSU and the State Land Office to ensure that the management of University and State lands in the Organs are managed as a VRM Class I. (See Map 1 for land status.)

Desert bighorn sheep could be transplanted in the WSA.

The Baylor Pass Run would be allowed.

The proposed spring on the San Augustine allotment (5003) could be developed. Road construction would not be allowed.

1. Impacts to Wilderness Values

The wilderness values of the Organ Mountains WSA would not be provided with long-term Congressional protection. Designation of the Organ Mountain Scenic Area as an ACEC for visual resources would provide all but 593 acres along the west boundary of the WSA with administrative protection, at least in the short-term. However, management of the area as an ACEC would be subject to administrative change in the long-term.

The enhancement provisions of the ACEC special management requirements would benefit the special scenic values of the WSA by requiring removal of the large gravel piles adjacent to the Stevenson-Bennett Mine.

The mineral withdrawal would provide the natural values, opportunities for solitude and primitive recreation, and special features in a major part of the WSA with some

protection from the surface disturbance associated with mineral development.

The impacts of mining operations on existing valid claims would be the same as those described under the All Wilderness Alternative.

2. Impacts to Other Resources and Uses

a. Water, Soils, Vegetation

The proposed spring could be developed. Impacts to vegetation, soils, and water resulting from the spring development would be the same as those described under the All Wilderness Alternative.

Withdrawing the rest of the area from mineral entry would protect the existing vegetation and threatened or endangered plants from further surface disturbing activities. Impacts to water resources would not be significant. The impacts of development of existing valid claims on public land would be the same as those described under the All Wilderness Alternative.

b. Wildlife

Valid existing mining claims could be developed. Habitat would be destroyed and later reclamation might be difficult because of the slow growth of shrub communities, the low rainfall, and the shallow soils. Animals in the area of the mining activity would be disturbed or displaced. A state-endangered species, the Trans-Pecos rat snake, could be affected (see Wildlife section under the All Wilderness Alternative).

The deer HMP could be fully implemented without any of the constraints of the Wilderness Management Policy.

c. Visual

Existing visual resources would be protected. Minor modifications in the basic elements of the landscape as a result of natural ecological changes and very limited management activity would be permitted. The enhancement provisions of the ACEC special management requirements would benefit the special scenic values of the WSA by requiring the removal of the large gravel piles adjacent to the Stevenson-Bennett Mine.

The impacts on visual resources of mining operations on existing valid claims would be the same as those described under the All Wilderness Alternative. The mineral withdrawal would protect existing visual

resources from the impacts of prospecting, location, and development of new mining claims in the long-term.

d. Cultural

The proposed ACEC for the Organ Mountains would eliminate locatable minerals entry. The historic events surrounding Baylor Pass could be interpreted without modern intrusions caused by mineral development.

e. Minerals

Impacts under this alternative would be the same as described under the All Wilderness Alternative.

f. Livestock Grazing

There would be no impacts to livestock grazing under this alternative.

g. Recreation

Mining operations for locatable minerals on valid existing claims would degrade the quality of the nonmotorized recreation opportunities in the Organ Mountains.

Management of the deer population under a HMP could improve deer hunting opportunities in the long-term.

C. No Wilderness

Under the No Wilderness Alternative, the Organ Mountains WSA would be recommended nonsuitable for wilderness designation.

If the WSA is not designated wilderness, existing and potential uses (see Chapter III) would continue without regard to the Interim Management Policy and Guidelines for Lands Under Wilderness Review (1979) as follows.

Vehicle use within the WSA would be restricted to existing roads and trails. No cross-country vehicle use would be allowed.

Desert bighorn sheep could be transplanted in the WSA. A deer HMP would be prepared for the Organ Mountains.

The Baylor Pass Run would be permitted.

The WSA would be managed as a VRM Class II.

Since there has been past production of strategic and critical minerals in the Organ Mountains, it is assumed that valid

mining claims along the west face of the mountains could be fully developed in the long-term.

The proposed spring on the San Augustine allotment (5003) could be developed. Road construction would not be allowed.

1. Impacts to Wilderness Values

The natural values, opportunities for solitude and primitive recreation, and special features of the Organ Mountains WSA would not be provided long-term Congressional protection. Management of the area as specified in land use plans would be subject to administrative change in the long-term.

The impacts of mining operations on existing valid claims or new valid claims would be the same as those described under the All Wilderness Alternative.

Management of the deer population under a HMP and the transplant of desert bighorn sheep in the Organ Mountains would enhance the special wildlife features of the WSA.

2. Impacts to Other Resources and Uses

a. Water, Soils, Vegetation

There would be a loss of vegetation and topsoil as a result of future mining operations and related facilities.

Several of the threatened or endangered plant species located within the WSA inhabit rocky areas where most mining activity takes place (see Chapter II, Vegetation). Their habitat could be impacted through surface disturbing activities.

The proposed spring could be developed. Impacts to vegetation, soils, and water resulting from the spring development would be the same as those described under the All Wilderness Alternative.

b. Wildlife

Impacts to wildlife would be the same as those described under the No Action Alternative, except that additional mining claims could be located in the future. This could result in additional habitat degradation.

c. Visual

Changes in the basic elements of the landscape as a result of management actions would be permitted as

long as the changes do not attract attention. The existing Class A scenic quality would probably be maintained under a VRM Class II in the short-term. However, mining operations for locatable minerals could degrade visual resources in the long-term. The impact could be minimal to major depending on the location, type, and extent of the mining operation and the access requirements.

d. Cultural

The historic events surrounding Baylor Pass could be interpreted without restrictions imposed by the Wilderness Management Policy.

e. Minerals

Minerals could be explored and prospected in the areas outside of the Baylor Recreation Site and Organ Mountain Recreation Area, both withdrawn from all forms of mineral entry by the Classification and Multiple Use (C&MU) Act. Location of mining claims could continue outside of the C&MU areas. No economic benefits would be forgone under this alternative.

f. Livestock Grazing

The proposed spring could be developed. Rangeland developments could be checked and be maintained on a convenience basis using motorized equipment. There would be no impacts to livestock grazing under this alternative.

g. Recreation

Mining operations for locatable minerals would degrade the quality of the nonmotorized recreation opportunities in the Organ Mountains.

Management of the deer population under a HMP could improve deer hunting opportunities in the long-term.

VII. RECOMMENDED ACTION

A. Recommended Action Description

The recommended action for the Organ Mountains WSA is the All Wilderness Alternative. A total of 7,144 acres would be recommended suitable for wilderness designation.

Approximately 474 acres of private land adjacent to the north boundary of the WSA should have a high priority for acquisition if the area is designated wilderness.

B. Rationale

The Organ Mountains WSA is being recommended suitable for wilderness designation primarily because of the area's high quality wilderness values. The WSA generally appears natural. Imprints of man within the boundaries of the WSA are minimal. Rugged canyons and steep ridges have restricted development to the gentler east and west slopes. Evidence of historic mining activities represent the most noticeable impacts affecting the naturalness of the WSA. However, the mining impacts are generally topographically and vegetatively screened and have only local impacts on naturalness. Views of Las Cruces, Organ, and the White Sands Missile Range from the WSA emphasize the natural values of the Organ Mountains WSA.

The rugged topography and vegetative cover of the Organ Mountains WSA provides numerous excellent opportunities for solitude. The Organ Mountains have been managed by the BLM for recreational purposes since 1971 and nonmotorized recreation constitutes their primary use. A diversity of high quality recreational opportunities are available in the WSA. These include hiking, backpacking, horseback riding, sightseeing, and nationally significant rock climbing opportunities. The Organ Mountains WSA also contains significant vegetation, wildlife, and scenic special features of scientific and educational value. Adjacent NMSU land (2,089 acres) managed by the BLM for recreational purposes enhances the capability of managing the Organ Mountains WSA for primitive recreation and solitude in the long-term (see Map 1 for general location of NMSU lands).

Strategic minerals are known to occur in the Organ Mountains WSA and there has been production along the west face of the range in the past. However, the wilderness values of the Organ Mountains WSA are of such high quality that the value of the area for wilderness outweighs the potential mineral resource conflicts associated with wilderness designation.

The acquisition of private land adjacent to the north boundary of the WSA would enhance the manageability of the area as wilderness in the long-term. Management of the acquired land as wilderness would eliminate the potential for impacts on

wilderness values as a result of nonwilderness uses on the private land.

C. Consistency With Other Plans

The recommended action for the Organ Mountains WSA does not conflict with any of the decisions in the Southern Rio Grande MFP (1981).

At this time, there are no known inconsistencies between the recommended action and the policies of local, state, or Federal plans. Continuing coordination and consultation with other agencies will take place during the public comment period on the Draft Environmental Assessment for Wilderness Study Areas in the Las Cruces District.

APPENDIX H

ROBLEDO MOUNTAINS WSA

I. GENERAL DESCRIPTION

A. Location

The Robledo Mountains Wilderness Study Area (WSA) is located in central Dona Ana County. The WSA is approximately 8 miles northwest of Las Cruces, New Mexico, on the west bank of the Rio Grande.

The U.S. Geologic Survey (USGS) topographic map covering the WSA is the Las Cruces, New Mexico, quadrangle at the 15-minute scale.

B. Climate and Topography

The Robledo Mountains WSA is characterized by an arid, continental climate with mild winters and pleasant to hot summers.

Average annual precipitation in the area is slightly less than 9 inches, however, a wide variation in annual totals is characteristic of arid climates. More than half of the total annual precipitation occurs from July to September. Rainfall during these months usually is from convective thunderstorms that are commonly brief and intense.

During the summer months, daytime temperatures quite often exceed 100°F. The average monthly maximum temperature during July, the warmest month, is in the middle 90's. In January, the coldest month, average monthly minimum temperature is in the middle 20's.

Winds generally predominate from the southeast in summer and from the northwest in winter. Wind speeds are usually moderate. Spring is the windy season. Dry, gusty winds are predominantly from the west-southwest and may exceed 30 mph in the afternoons.

This WSA contains most of the Robledos, a small north-south trending chain of rugged volcanic mountains. Lookout Peak and Robledo Mountain are the prominent topographic features in the WSA. Maximum and minimum elevations within the WSA are about 5,876 feet and 4,300 feet, respectively. The WSA is characterized by rugged, steep canyons and southward dipping cuerdas.

C. Land Status

The WSA contains 12,811 acres of public land. There are no state or private lands within the WSA boundary. (See Map 1 for land status within the WSA boundary.)

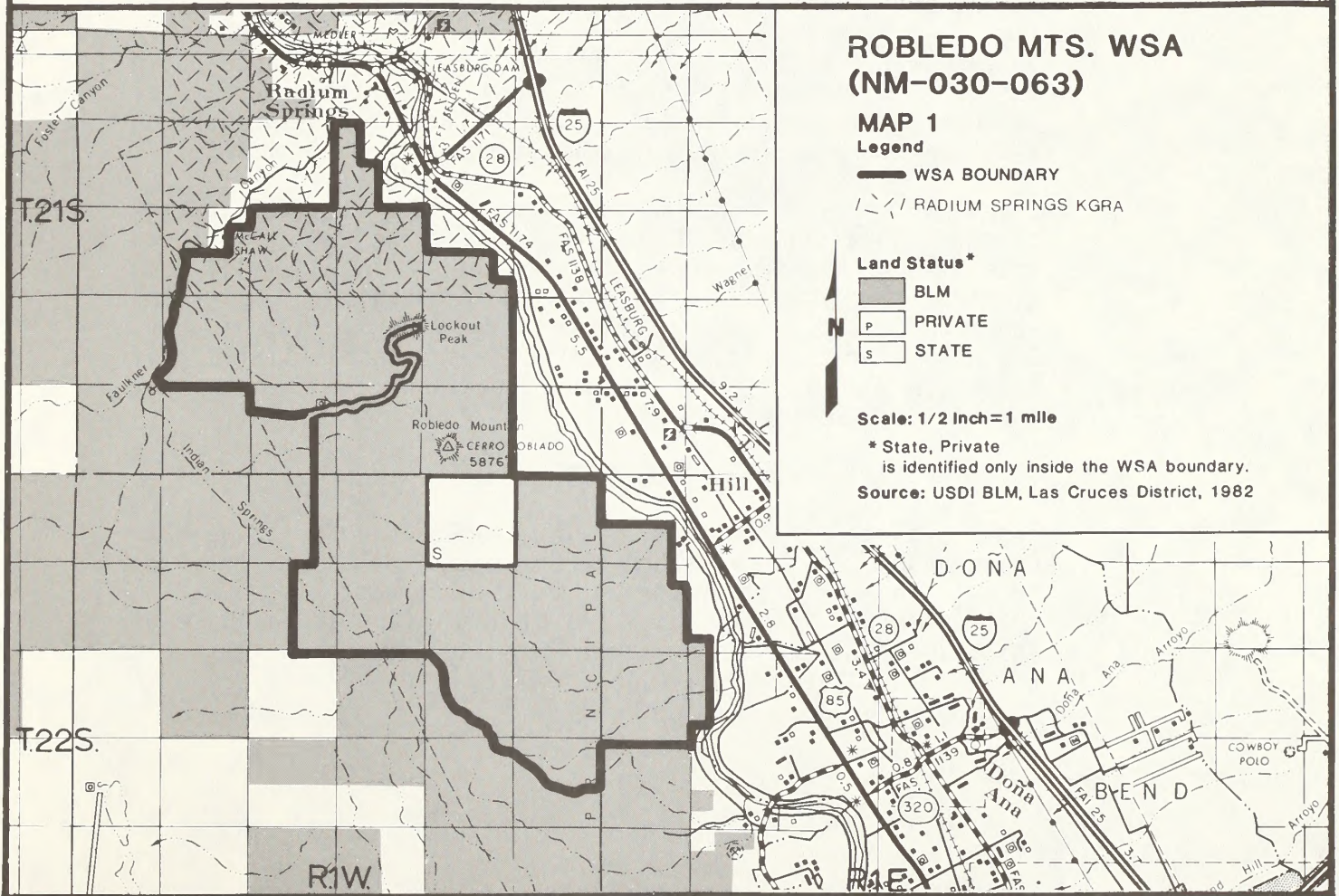
D. Access

There is no legal access to the Robledo Mountains WSA. County Road D59, which branches south off of State Highway 85 about 3/4 of a mile west of Radium Springs, crosses the state section on the northern boundary of the WSA. Physical access is available by hiking about 1/2 mile south from D59 to the north boundary of the WSA.

Physical access to the southern boundary of the WSA is available by four-wheel drive trails branching off of State Highway 430.



The east side of the Robledo Mountains WSA.



II. EXISTING RESOURCES

A. Geology

The Robledo Mountains WSA lies within the Basin and Range Physiographic Province. This province is characterized by fault block mountains separated by basins filled with alluvial and shallow lake deposits.

The Robledo Mountains are an uplifted fault block within the Rio Grande rift. The mountains are bounded on the east and west by northeast trending faults. There are several smaller transverse faults occurring within the Robledos.

The mountains consist chiefly of Paleozoic sedimentary and Cenozoic igneous rocks. The sedimentary rocks are primarily limestones, dolomite, shales, and siltstones. The igneous rocks include a few basalt cinder cones and plugs in the southern part of the Robledos and a Tertiary intrusive rhyolite sill in the northern part.

B. Water

The Robledo Mountains WSA forms part of the boundary between the southern Jornada del Muerto and the Mesilla Valley. Both basins contribute to the larger Rio Grande Basin.

Surface water within the WSA drains into the Rio Grande Basin through an ephemeral stream system. Principle drainages include Faulkner, Indian Springs, and Apache Canyons. Surface flow generally occurs as a result of summer thunderstorms.

Ground water moves into the Rio Grande Valley from the uplands to the valley border and then moves down the valley. Ground water is available primarily in the alluvial fill down gradient from the WSA. Significant recharge to the ground water reservoir occurs in Faulkner Canyon during flood runoff. Ground water quality is within recommended limits for livestock and wildlife use, as established by the National Academy of Sciences (BLM 1980).

C. Soils

Two major soil types occur within the Robledo Mountains WSA. On mountain tops and steep sideslopes, soils are shallow, stony, and are interspersed between areas of limestone outcroppings. On footslopes and alluvial fans at the base of the mountains, slopes are more gentle. The soils typically are deeper, have a gravelly surface, and a layer high in calcium carbonates (caliche).

D. Vegetation

1. General

Vegetation and associated range sites within the Robledo Mountains WSA consists of three major types:

Vegetative Type	Range Site	Federal Acres
Grass-mixed desert shrub	Mountains	8,925
Creosote	Gravelly	2,688
Mixed desert shrubs	Gravelly sand	1,198

Grass species (black grama, tobosa, other grammas, and fluffgrass) exchange dominance with mixed desert shrub species such as creosote, tarbush, ocotillo, mariola, sotol, spicebush, acacia, sumac, yucca, and cacti in the Robledo Mountains. A few scattered juniper trees are also present.

Creosote gravelly areas occur on both sides of the mountain range in the flats. Other shrub species include mariola, tarbush, and mesquite. Fluffgrass is the only common grass species.

Shrub species on gravelly sand in sandy arroyos include brickelbush, desert willow, creosote, mesquite, and tarbush. Associated grass species are fluffgrass and tobosa.

2. Threatened or Endangered Plant Species

The following species was identified and located in or near the WSA (NMSHP and USFWS 1982).

Species: Cereus greggii - night blooming cereus

Status: Bureau sensitive species proposed for Federal listing.

Habitat: widespread; does not grow commonly anywhere; needs the microhabitat associated with creosote and bush muhly.

E. Wildlife

1. General

Nearly half of the Robledo Mountains WSA is a mixed shrub mountain habitat site with a large area of grass. Small portions along the outside edges are creosote foothills and creosote breaks.

There are several special habitat features that enhance the value of the WSA for wildlife. The limestone cliffs are pocketed with caves which are used by many animals. Bats roost in these caves and larger animals use them for shelter. Golden eagles and other raptors also nest on these cliffs. Whitewash (droppings from raptors) indicate that many birds roost on the cliffs overlooking the river.

The nearness of the Rio Grande is also significant to wildlife in the WSA. Mule deer and other large mammals can water there and move back up the canyons into the WSA. Mule deer numbers in the area are low.

Bird life is fairly varied because there are four different habitat sites within the WSA and a fifth one, riparian (the Rio Grande), close by. Some birds which use the Rio Grande as a migration route may occasionally stop over in the WSA.

2. Threatened or Endangered Fauna Species

Some of the birds which may occasionally use the WSA are Federal-endangered species, such as the bald eagle and the peregrine falcon. However, these birds do not depend on the WSA as crucial habitat and are only transitory in the unit.

A state-listed endangered species which is known from the area is the Trans-Pecos rat snake. Collecting is the main threat this species faces. Its preferred vegetation is rocky areas supporting shrubby vegetation, which is typical of much of the WSA.

F. Visual

The Robledo Mountains scenic quality rating unit has a Class B or moderate rating. The Robledos reach a maximum elevation of 5,876 feet. Banded blocky outcrops are characteristic of upper elevations with fan and fluvial deposits forming downward sloping rounded hills at lower elevations. The entire landform tilts southward. Landform colors are banded with alternate light and dark reddish browns. Vegetation is sparse and irregular in colors of dark creosote green and lighter gray greens and tans.

Portions of the Robledo Mountains WSA are in two Visual Resource Management (VRM) Classes as follows: Class II-6,533 acres, Class III-6,278 acres.

G. Cultural

There are 20 known historic and prehistoric sites in the Robledo Mountains WSA. The most significant and unique of these sites are small caves and pithouse village sites that

are undisturbed. In addition, there is a 10 room pueblo in the WSA. After the Alamo Hueco and Cooke's Range WSAs, this WSA contains the most significant prehistoric resources of all the WSAs in the Las Cruces District. The major historic site in the WSA is a heliograph station on top of Lookout Peak, established in the early 1880's to communicate with similar stations on Apache activities. A portion of the station still remains on top of Lookout Peak.

H. Air

Generally, the quality of air within the Robledo Mountains WSA is good. The air quality in the WSA does not exceed the state or Federal air quality standards and is classified as a Class II area. This classification allows a moderate amount of degradation of air quality.

Since no major industrial or population centers are located in the nearby vicinity, the only major degradation of air quality occurs during the spring months (March-May). West-prevailing winds, commonly gusting in excess of 30 mph, result in dust storms throughout the southern part of the state.

III. EXISTING AND POTENTIAL USES

A. Mineral Development

1. Energy Minerals

There are no known occurrences of energy minerals in the Robledo Mountains WSA. One Federal oil and gas lease application, and 4 Federal geothermal leases and 1 lease application have been filed on parcels located within the WSA.

The extreme northern portion of the WSA in T. 21 S., R. 1 W., Sections 15, 20, 21, 22, and 23, lies within the Radium Springs Known Geothermal Resource Area (KGRA). (See Map 1 for general location of the KGRA.) The entire WSA has been classified as prospectively valuable for geothermal resources by the Minerals Management Service (MMS). The nearest known occurrence of geothermal resources is the former Radium Springs resort, about one mile northeast of the WSA, where hot water was pumped from a rhyolite sill. The presence of the WSA in the Rio Grande rift, the proximity to a known geothermal resource, and the occurrence of other geologic indicators suggests that the WSA has moderate potential for geothermal energy.

The entire area has also been classified by the MMS as prospectively valuable for oil and gas. The nearest oil and gas test well is the Sinclair No. 1 Federal, about 2 miles southwest of the WSA in T. 22 S., R. 1 W., Section 27: NW $\frac{1}{4}$. This well was drilled to a depth of 6,510 feet and was a dry hole. The bottom of the hole is in a rhyolite sill. At the present time, the potential for oil and gas occurrences within the WSA appears to be low due to absence of good petroleum source rocks and other geologic indicators (BLM Minerals Resource Inventory 1981). However, further prospecting and exploration are needed to fully assess this potential.

2. Non-Energy Minerals

The southern half of the WSA contains limestones and siltstones that are potentially valuable as building or decorative stone. BLM Community Pit No. 1, about one mile southeast of the WSA in T. 22 S., R. 1 E., Section 19: SE $\frac{1}{4}$ SE $\frac{1}{4}$, contains some of the same rock formations found within the WSA. This community pit supplies large quantities of rock which are used extensively in construction trades in the Las Cruces area. Sand and gravel occur along the eastern edge of the WSA in the terraces above the Rio Grande Valley and also near the northern end of the WSA in arroyos.

The potential for future extraction of known occurrences of building and decorative stone in the southern portion of the WSA, especially in the vicinity of T. 22 S., R. 1 E., Section 18, and T. 22 S., R. 1 W., Sections 13 and 24, is good. The potential for future sand and gravel extraction is also very good. The Las Cruces area is experiencing rapid growth and the demand for construction materials will continue. The Robledo Mountains could supply some of these common variety materials. The potential for development of these saleable minerals is moderate to high.

There is one mining claim located in the southern portion of the WSA.

Minerals known to occur within or adjacent to the WSA are:

a. High-Magnesium Dolomite

Kottowski (1957) reports that the Robledo Mountains contain a large volume of high-purity dolomite. About 4.5 million tons are reported to occur in the Ordovician Upham dolomite and 18 million tons in the Silurian Fusselman dolomite. Chemical analyses show that the Upham dolomite contains 44.9 percent magnesium carbonate and that the Fusselman dolomite contains 45.5 percent magnesium carbonate. These dolomites are potential sources of magnesium.

b. High-Calcium Limestone

Kottowski (1962) reports the occurrence of high-calcium limestones in the Robledo Mountains. Cliff forming high-calcium limestones of Pennsylvanian age crop out in the north central part of the WSA. However, the outcrops which form near vertical cliffs high above the mountain base are inaccessible and would be very expensive to mine.

More accessible high-calcium limestones are present in the Hueco Formation in the southeastern portion of the WSA. A channel sample from an outcrop in T. 22 S., R. 1 E., Section 18: NW $\frac{1}{4}$, showed 97.6 percent calcium carbonate, 0.5 percent magnesium carbonate, and 0.3 percent silica. These high-calcium limestones are an excellent source for Portland cement. Potential for an economic deposit is high.

c. Manganese

Farnham (1961) described several manganese occurrences in the Robledos: the Willis properties in T. 22 S., R. 1 E., Sections 18, 19, and 30, and the Gilliland deposits in T. 22 S., R. 1 W., Section 2. These

deposits contain earthy manganese oxides with minor amounts of pyrolusite and psilomelane. Calcite occurs as gangue. The manganese occurs in stringers and small irregular masses along fractures and bedding planes in limestone. The deposits are small and sporadic, seldom more than 3-8 feet wide and 20-30 feet long. In 1943, several tons of hand-sorted ore, containing about 23 percent manganese, were shipped from the Willis deposits to a stockpile in Deming, New Mexico. There has been no other known production.

d. Iron

Porous and broken ore consisting of intergrown hematite, goethite, and limonite occurs in the Iron Hill deposits, less than $\frac{1}{2}$ mile southwest of the WSA. The deposits have replaced limestone and filled broken and dissolved openings in the limestone. The deposits occur both parallel and transverse to the bedding. There are about 16 prospects consisting of pits, shafts, and adits. According to Kelly (1949), the ore would probably average 50 percent iron and reserves would be 10,000 to 20,000 tons. There has been no production from the Iron Hill deposits. This iron trend may continue at depth northeastward into the WSA.

The small size and irregular occurrence of the deposits, plus the fact that the demand for iron would continue to be supplied by the large deposits of the midwestern United States for quite some time, makes exploitation of the Iron Hill deposits unlikely.

Because of the geologic environment in the Robledo Mountains (Tertiary intrusives, normal faulting, favorable limestone host rocks, and known mineral occurrences), there is moderate potential for discovery of additional mineral occurrences within the WSA. Only further exploration and geologic investigations could provide the information necessary to more fully evaluate the nature of known occurrences and the potential for additional discoveries.

Of the locatable minerals discussed thus far, only manganese is on the National Defense Stockpile Inventory of Strategic and Critical Minerals. The high-calcium limestone appears to have the most potential for being explored and developed at some unknown time in the future. Continued growth in the Las Cruces-El Paso areas would necessitate a continuing need for cement-grade limestone to be used in the construction industries. It is possible that the Robledo Mountains could be a future source of high-calcium limestone.

B. Watershed

Within the Robledo Mountains WSA, water is used primarily by livestock and wildlife. Water developments that are within the WSA boundary include two dirt tanks that utilize surface runoff, one well facility with a storage tank and drinking trough, and a short section of pipeline with a drinking trough (see Livestock Grazing). The Robledo Mountains WSA is within the Lower Rio Grande declared underground water basin and ground water use is administered by the New Mexico State Engineer.

C. Livestock Grazing

1. Allotments

Parts of four grazing allotments are present within the Robledo Mountains WSA. Most of this WSA is ungrazed by livestock due to the steep slopes or the lack of water. Licensed grazing use on public land includes cattle and a few horses. The Corralitos Venture (3013) is under an implemented Allotment Management Plan (AMP). There is a 45-acre tract of unallotted Federal land on the northern end of the WSA near the Rio Grande.

ALLOTMENTS WITHIN THE WSA^{a/}

Allotment Name and Number	Total Acres	Total AUMs	Approximate Acres in WSA	Percent Allotment
F. Burke 3008	10,802	1,020	291	3%
Corralitos Venture 3013	130,109	13,860	151	.1%
Cohorn and Johnson 3040	8,968	636	8,438	94%
Indian Springs 3047	14,931	1,700	3,886	26%
Unallotted	45	0	45	
TOTAL			12,811	

2. Ranch Management

EXISTING RANGELAND DEVELOPMENTS WITHIN THE WSA^{a/}

Allotment Name and Number	Type of Development	Location
F. Burke 3008	dirt tank	T. 22 S., R. 1 W., Sec. 24
Cohorn and Johnson 3040	windmill	T. 22 S., R. 1 E., Sec. 17
	trough and storage tank	T. 22 S., R. 1 E., Sec. 18
	pipeline	3/4 mile
	interior fence	1 1/2 miles
Indian Springs 3047	trough	T. 21 S., R. 1 W., Sec. 33
	interior fence	1/4 mile

Boundary Fences:

Indian Springs 3047 and Cohorn-Johnson 3040	4 3/4 miles
Cohorn-Johnson 3040 and Rio Grande	1 mile
Cohorn-Johnson 3040 and unallotted Federal land	1/2 mile
Cohorn-Johnson 3040 and Corralitos Venture 3013	1/2 mile
Corralitos Venture 3013 and Indian Springs 3047	1/2 mile

Note: ^{a/}Information shown in tables reflects only Federal acres and animal unit months (AUMs), and rangeland developments on public land.

3. Potential Rangeland Developments

An interior fence, 3 miles long in T. 21 S., R. 1 W., Sections 20, 21, 27, 28, and 29, has been proposed on the Indian Springs allotment (3047). Locations of the proposed rangeland developments are tentative.

D. Recreation

Recreation activities in and around the Robledo Mountains WSA are primarily rockhounding and off-road vehicle (ORV) use. The area around the southwestern part of the WSA is well known for its fossils, especially deposits of petrified marine algae. Desert roses formed from barite are also found here.

A lot of ORV use occurs in the area due south of the WSA and on the vehicle trail that forms the southern boundary of the WSA. ORV use occurs on vehicle trails within the WSA, on roads forming the WSA boundaries, and on the cherry-stemmed road to Lookout Peak. Based on the terrain, soil characteristics, and size of the Robledo Mountains, ORV opportunities are considered excellent. The area receives quite a bit of recreational use because of the ORV opportunities and its proximity to Las Cruces.

Primitive recreation opportunities are discussed in Chapter IV, Primitive and Unconfined Recreation.

E. Realty Actions

The Industrial Communications and Equipment Company and the Bureau of Reclamation have rights-of-way (ROWs) for communication sites on top of Lookout Peak.

A small portion of the Robledo Mountains WSA near the Rio Grande is withdrawn by a Presidential Executive Order and reserved for the use of the U.S. Department of State in connection with the Rio Grande Canalization Project. This land withdrawal is scheduled to be reviewed for possible revocation by 1985.

Elephant Butte Irrigation District presently has an application for a ROW on file with the Bureau of Land Management. The application is for a proposed flood control structure on Faulkner Canyon and includes 10 acres of land within the WSA.

IV. WILDERNESS CRITERIA

A. Evaluation of Wilderness Values

1. Quality of Mandatory Wilderness Characteristics

a. Naturalness

Imprints of man within the Robledo Mountains WSA are generally unnoticeable. The one dirt tank and two drinking troughs within the WSA are all located less than $\frac{1}{2}$ mile from the boundary. The vehicle trail in T. 22 S., R. 1 W., Sections 3, 10, and 11, is topographically screened from most of the WSA.

The windmill, pipeline, trough, and storage tank located in T. 22 S., R. 1 E., Sections 17 and 18, were installed in 1981. The windmill is located in a drainage and is several hundred feet inside the WSA boundary. The development is substantially unnoticeable and was allowed under the Interim Management Policy and Guidelines for Lands Under Wilderness Review (1979).

The last mile of the cherry-stemmed road to Lookout Peak and the communication sites on top of the Peak have a negative impact on the naturalness of the area between Lookout Peak and Robledo Mountain. When considered as a whole, the WSA is apparently natural.

b. Solitude

The rugged topography of the Robledo Mountains provides outstanding opportunities for solitude, especially in the many drainages in the southeastern and northwestern parts of the WSA.

Vehicle use on the cherry-stemmed road to Lookout Peak negatively impacts opportunities for solitude in the area between Lookout Peak and Robledo Mountain.

c. Primitive and Unconfined Recreation

Primitive recreation opportunities in the Robledo Mountains WSA include hiking, backpacking, caving, hunting, and rockhounding. Primitive recreation opportunities in the WSA are not considered outstanding.

Hiking and backpacking opportunities are somewhat limited by the size and shape of the WSA. The area is not large enough to accommodate a backpack trip of any length. The state land in T. 22 S., R. 1 W., Section

2, disrupts the topographic integrity of the WSA and limits hiking opportunities.

Geronimo's Cave presents the only known caving opportunity in the WSA. The cave is located just east of Lookout Peak in T. 21 S., R. 1 W., Section 26. The cave entrance is through a crevice and the cave contains a 40 foot pit. The one active speleological group in the Las Cruces area, the Mesilla Valley Grotto, visits the cave occasionally.

Off-road vehicle use and rockhounding opportunities are discussed in Chapter III, Recreation.

2. Special Features

The Robledo Mountains WSA contains special ecological and cultural features of scientific and educational interest.

The ecological features include both vegetation and wildlife values. The Robledos provide habitat for the night blooming cereus, a Bureau sensitive plant species proposed for Federal listing (see Chapter II, Vegetation). Special wildlife habitat features such as cliffs, caves, and the nearby Rio Grande account for the variety of wildlife found in the WSA. The area also provides habitat for the Trans-Pecos rat snake, a state endangered species. (See Chapter II, Wildlife.)

The Robledo Mountains WSA encompasses 20 known historic and prehistoric cultural sites. The area contains the third most significant prehistoric resources of all the WSAs in the Las Cruces District. (See Chapter II, Cultural.)

3. Multiple Resource Benefits

Congressional designation of this area as wilderness would provide a greater degree of long-term protection for the area's wilderness values than would administrative designations available to the BLM.

A more detailed discussion of multiple resource benefits of wilderness designation is located in Chapter VI, Impacts, under the All Wilderness Alternative.

4. Diversity

a. Ecosystems Present

The Bailey (1976) - Kuchler (1966) system classifies the Robledo Mountains WSA as being in the Chihuahuan Desert Province with a potential natural vegetation of grama-tobosa shrubsteppe.

The general nature of the Bailey-Kuchler System fails to show the vegetative variety and diversity of the WSA. Further refinement of the system shows the following vegetation types in the WSA:

Vegetation Type	Acres
grama-tobosa shrubsteppe	8,925
creosote	2,688
Trans-Pecos shrub savanna	1,198

b. Distance from Population Centers

The Robledo Mountains WSA is approximately 2 hours driving time from El Paso, Texas; 1 hour from Las Cruces, New Mexico; 3 hours from Albuquerque, New Mexico; 5 hours from Tucson, Arizona; and 7 hours from Phoenix, Arizona.

B. Manageability

Several factors affect the capability of the Robledo Mountains WSA to be managed as wilderness: land status patterns, the cherry-stemmed road to Lookout Peak, the possibility of ORV use, and an existing pre-FLPMA geothermal lease.

The 640 acres of state land in T. 22 S., R. 1 W., Section 2, is located in the center of the mountains and disrupts the topographic continuity of the WSA. This limits primitive recreation opportunities because the total Robledo Mountain area is not available to the recreationist. In addition, nonconforming or nonwilderness uses such as geothermal development on this section would negatively affect wilderness values in the Robledos.

The cherry-stemmed road to Lookout Peak impacts the naturalness of the local area between Lookout Peak and Robledo Mountain. The continued use of vehicles on this road would result in even more significant impacts on solitude.

There is also the possibility of ORV use in the canyons off the Lookout Peak road and on the vehicle trail in T. 22 S., R. 1 W., Sections 3, 10, and 11. The area presently receives ORV use.

There is a pre-FLPMA geothermal lease covering the northeast part of the Robledo Mountains WSA. Exploration and development could occur on this lease under a wilderness designation, even if the activities impaired wilderness values. This lease is within the Radium Springs KGRA and there is a very good possibility of activities on the lease in the future. (See Map 1 for general location of the KGRA.) The pre-FLPMA geothermal lease represents a significant wilderness manageability conflict.

V. PUBLIC INVOLVEMENT OVERVIEW

Personal letters, form letters, and petitions were received on the Robledo Mountains unit during both the public comment period on the BLM New Mexico Wilderness Review Initial Inventory Decision (July 1979) and the BLM New Mexico Wilderness Study Area Proposals (March 1980). Maps and one detailed report with a list and legal descriptions of developments were included.

In the March 1980 WSA Proposals, the BLM proposed to drop this area. This recommendation was based on the cumulative impacts of vehicle trails and rangeland developments and the effects of the unit's boundary configuration on wilderness characteristics.

The analysis of public comments revealed concern over the BLM's evaluation of the Robledos' wilderness characteristics. Approximately 75 percent of the personal letters supported WSA designation of part of the unit. Sizes for the proposed WSA varied from 8,500 to 42,000 acres. Other supporting reasons included outstanding opportunities for solitude and primitive recreation due to the topographic screening offered by the many hills and drainages. Many supplemental values were listed, including the unit's proximity to Las Cruces, the outstanding variety of ecotypes found in the unit, and the uncommon plant species and birds observed in the area.

Comments supporting the BLM's recommendation to drop the Robledos were also received. Most of these comments cited rangeland developments, vehicle trails, and mining activity as negatively impacting the naturalness of the area and detracting from opportunities for solitude or primitive recreation.

A re-evaluation of the Robledos' wilderness characteristics, based on public comments, additional field checks, and inventory information, indicated that part of the unit met the basic wilderness criteria. The area around Lookout Peak and Robledo Mountain was designated a WSA.

VI. ALTERNATIVES AND IMPACTS

A. All Wilderness

Under this alternative, the entire 12,811 acres of public land within the Robledo Mountains WSA would be recommended as suitable for wilderness designation. (See Map 1 for location of the WSA boundary.)

If designated as wilderness, existing and potential uses (see Chapter III) would be regulated by the Wilderness Management Policy (1981) as follows.

Generally, motorized access on vehicle trails within the WSA would not be allowed. However, permits for motorized access on vehicle trails to maintain existing rangeland developments in the WSA could be authorized.

The WSA would be managed as a VRM Class I.

Since the WSA has moderate geothermal potential and falls partially within a Known Geothermal Resource Area (KGRA), it is assumed that geothermal exploration and development would occur on the existing pre-FLPMA geothermal lease in the northeast part of the WSA. (See Map 1 for general location of the KGRA.)

The proposed 3 miles of interior fence could be implemented on the Indian Springs allotment (3047). Road construction and motorized access along the fence would not be allowed.

The Elephant Butte Irrigation District would not be granted a right-of-way for a flood control structure in the northern part of the WSA.

The All Wilderness Alternative would not have significant impacts on cultural resources, or air quality in the Robledo Mountains WSA. For this reason, these resources were not included in the following discussions.

1. Impacts to Minerals

There is currently no mineral production in the Robledo Mountains WSA. However, the WSA has moderate potential for geothermal energy. A pre-FLPMA lease covers the northeast part of the WSA and is within the Radium Springs KGRA. Three post-FLPMA leases are also in the WSA.

Inherent in the pre-FLPMA lease is the valid existing right to explore for and develop geothermal energy resources. In the short-term (the life of the lease), there would be no impact on the pre-FLPMA leaseholder. The post-FLPMA leaseholders, however, could be impacted in

the short-term since any exploration or development work that would damage wilderness values would not be allowed.

Because the WSA has low potential for oil and gas, impacts to the oil and gas industry would be minor in the short-term.

After wilderness designation, the existing geothermal leases, if unexplored, would not be reissued. No new leases, either geothermal or oil and gas, would be leased after wilderness designation. Future options to explore for and develop geothermal or oil and gas resources in the WSA would be forgone. The energy minerals industries, especially the geothermal industry, could be adversely impacted in the long-term.

If the area is designated wilderness, approximately 12,811 acres that could be potentially favorable for oil and gas and geothermal leasing would not be leased. Assuming that 12,811 acres of Federal minerals could have been leased noncompetitively at a rental fee of \$1.00 per acre, a total of \$12,811, of which the State of New Mexico receives 50 percent, would be lost.

High-calcium limestone, high-magnesium dolomite, and manganese are known to occur within the WSA but there is currently no mining activity. If mining claims are located prior to designation and are determined to be valid, they could be developed to their full potential. However, during development, the mining companies may incur additional costs of operation depending on restrictions on the type and location of access. Since there is currently no activity and the potential is low, the economic impact would be minimal in the short-term.

After wilderness designation, additional exploration for locatable minerals outside of existing claim boundaries would not be allowed. The minerals industry could be adversely affected in the long-term.

The disposal of known occurrences of building and decorative stone and sand and gravel under the Mineral Materials Sales Act would not be allowed. The potential economic benefits to the construction industry would be forgone.

2. Impacts to Other Resources and Uses

a. Water, Soils, Vegetation

Restrictions on surface disturbing and mechanized activities would provide long-term protection for the

existing water, soils, and vegetation including Cereus greggii, a Bureau sensitive plant species proposed for Federal listing (see Chapter II, Vegetation) in most of the WSA.

A significant loss of vegetation and topsoil would result from the development of the pre-FLPMA geothermal lease in the northeast part of the WSA. Soil and vegetation disturbances caused by the installation of the proposed interior fence on the Indian Springs allotment (3047) would be insignificant. This rangeland development could redistribute existing grazing animals for better utilization of the vegetative resource on this allotment.

Off-road vehicle (ORV) use on existing trails would be prohibited, allowing some vegetative reestablishment.

b. Wildlife

Since mining, geothermal, and ORV activity would be limited, wildlife would be impacted. Habitat would be protected from destruction and wildlife from disturbance. Restricted access could protect a state-endangered snake found in the area by discouraging commercial collectors from looking for this species.

If the pre-FLPMA geothermal lease is developed, there would be some loss of wildlife habitat. This would be a minor impact.

c. Visual

Existing visual resources would be protected. Minor modifications in the basic elements of the landscape as a result of natural ecological changes and very limited management activity would be permitted.

Geothermal exploration and development on the pre-FLPMA geothermal lease in the northeast part of the WSA could degrade the visual resources along the north and northeast slopes of Lookout Peak in the long-term.

d. Livestock Grazing

The proposed interior fence on the Indian Spring allotment (3047) could be constructed of wooden posts and barbed wire so as not to impact visual resources. Livestock could be redistributed. Due to the rugged terrain, travel for maintenance would be done by

horseback or on foot whether or not the area is designated wilderness.

Maintenance of existing rangeland developments, even though there is no access at the present time, could be on a permit basis (see Chapter III, Livestock Grazing). Minor inconveniences may occur in securing the permits since the permittee would not be allowed vehicular access to maintain these developments.

e. Recreation

Existing recreation use patterns would be impacted since ORV enthusiasts would not be permitted motorized access on existing vehicle trails within the WSA.

f. Realty Actions

The ROW application submitted by Elephant Butte Irrigation District for a flood control structure located on Faulkner Canyon would be denied.

g. Wilderness Values

Wilderness designation would provide the wilderness values present in the area with long-term Congressional protection. However, several factors could impact the ability of the BLM to manage the Robledo Mountains WSA as wilderness in the long-term. Exploration and development could occur under a wilderness designation on the pre-FLPMA geothermal lease in the northeast part of the WSA, even if the activities impaired wilderness values. Geothermal activities or other nonwilderness uses could also occur on the state or private lands adjacent to the north and east boundaries of the WSA. Geothermal activities could degrade natural values and opportunities for solitude. The impacts would be minimal to major depending on the type and extent of the activity and access requirements.

Vehicle use on the cherry-stemmed road to Lookout Peak would periodically disrupt the solitude in the area between Lookout Peak and Robledo Mountain.

Unauthorized ORV use in the canyons off the Lookout Peak road and on the vehicle trail through the southwestern part of the WSA would also periodically disrupt solitude and could, in the long-term, degrade natural values.

B. No Action/No Wilderness

Under the No Action/No Wilderness Alternative, the Robledo Mountains WSA would be recommended nonsuitable for wilderness designation.

If the WSA is not designated wilderness, existing and potential uses (see Chapter III) would continue without regard to the Interim Management Policy and Guidelines for Lands Under Wilderness Review (1979) as follows.

Approximately 6,533 acres in the north, central, and east parts of the WSA would be managed as a VRM Class II. Approximately 6,278 acres in the southwest part of the WSA would be managed as a VRM Class III.

The four existing geothermal leases (pre- and post-FLPMA) in the northern half of the WSA could be fully explored and developed. Mining claims could be located and developed for high-calcium limestone in the southeastern part of the WSA. Building and decorative stone could be extracted from the southern part of the WSA. Sand and gravel could be extracted from arroyos along the east and north boundaries of the WSA.

The proposed 3 miles of interior fence could be implemented on the Indian Springs allotment (3047) via vehicular access.

The Elephant Butte Irrigation District would be granted a ROW for a flood control structure in the northern part of the WSA.

The No Action/No Wilderness Alternative would not have significant impacts on cultural resources, air quality, and realty actions in the Robledo Mountains WSA. For this reason, these resources were not included in the following discussions.

1. Impacts to Wilderness Values

The wilderness values and special features of the Robledo Mountains WSA would not be provided with long-term Congressional protection. Management of the area as specified in land use plans would be subject to administrative change in the long-term.

The development of the Elephant Butte Irrigation District's ROW for a flood control structure would impact the wilderness values in the northern part of the area. However, due to the rugged topography of the Robledo Mountains WSA, this development would not affect the overall apparent naturalness of the area or opportunities for solitude.

Geothermal exploration and development in the north half of the Robledo Mountains WSA would result in the

irrevocable degradation of naturalness and opportunities for solitude.

The extraction of building and decorative stone or sand and gravel or mining operations for high-calcium limestone would impact naturalness and solitude locally. There would probably not be significant impacts in the short-term on the overall naturalness of the area or on opportunities for solitude. However, in the long-term, the impacts could be minimal to major depending on the type, location, and extent of the activities and access requirements.

2. Impacts to Other Resources and Uses

a. Water, Soils, Vegetation

There would be a significant loss of vegetation and topsoil as a result of geothermal development (north portion), and the development of high-calcium limestone areas, sand and gravel pits, and building and decorative stone areas (southeast portions) within the WSA. The habitat of Cereus græggii, a Bureau sensitive species proposed for Federal listing, could be impacted through surface disturbing activities.

A moderate increase in sediment load discharged into the Rio Grande could result from new access roads, development of geothermal energy, and development of high-calcium limestone. Increased sediment would contribute to an existing situation where sediment movement into the Rio Grande Valley is already very high.

b. Wildlife

ORV access, geothermal development, and mining activity would destroy some wildlife habitat and disturb animals. Additional human presence could also lead to increased poaching. This would be a moderate impact.

c. Visual

In VRM Class II areas, minor to moderate changes in the basic elements of the landscape as a result of management actions would be permitted as long as the changes do not attract attention. In VRM Class III areas, moderate changes in the landscape as a result of management actions would be allowed as long as the visual contrast is subordinate to the existing landscape.

Geothermal exploration and development, extraction of building and decorative stone or sand and gravel, or mining of high-calcium limestone could degrade existing visual resources in the long-term.

d. Minerals

There would be no impact on mineral exploration and development and no loss of economic benefits. Mineral exploration and development would comply with the Surface Management Regulations (43 CFR 3809) to prevent unnecessary and undue degradation of the land.

e. Livestock Grazing

Rangeland developments could be checked and maintained on a convenience basis using motorized equipment. There would be no impacts to livestock grazing.

f. Recreation

Geothermal exploration and development in the Robledo Mountains WSA could require the construction of new vehicular access. Improved vehicular access would enhance opportunities for motorized recreation. ORV use could increase.

VII. RECOMMENDED ACTION

A. Recommended Action Description

The recommended action for the Robledo Mountains WSA is the No Action/No Wilderness Alternative. The entire 12,811 acre WSA would be recommended nonsuitable for wilderness designation.

B. Rationale

Potential wilderness manageability conflicts and resource conflicts were the primary reasons for this recommendation. The quality of the area's wilderness values also contributed to the recommendation.

This WSA has moderate potential for geothermal energy. The northeast part of the WSA is within the Radium Springs Known Geothermal Resource Area (KGRA). (See Map 1 for general location of the KGRA.) Exploration and development on the pre-FLPMA geothermal lease in this part of the WSA could damage wilderness values, whether or not the area were designated wilderness. The pre-FLPMA lease represents a significant wilderness manageability conflict.

Three post-FLPMA geothermal leases cover the central parts of the WSA. If the area were designated wilderness, post-FLPMA leaseholders could be impacted in the short-term since any exploration or development work that would damage wilderness values would not be allowed. At some time after wilderness designation, unexplored leases would not be reissued. The future options to explore for and develop geothermal energy resources in the area would be lost. The recommended action (No Action/No Wilderness) would eliminate the potential conflicts with post-FLPMA leaseholders and would preserve future options to explore for and develop geothermal energy.

The uncertain long-term management of the state land in T. 22 S., R. 1 W., Section 2, also represents a potential wilderness manageability conflict. Nonwilderness uses on this section, such as geothermal exploration and development, could degrade wilderness values in the WSA.

Access into the central part of the WSA via the cherry-stemmed road to Lookout Peak would be a management problem. The road effectively cuts the WSA in half and brings periodic vehicle traffic into the core of the area. Vehicles traversing this road would disrupt solitude. Although the road is well screened from much of the WSA, it does create a visual impact. There is also the possibility of ORV use in the canyons off the Lookout Peak road and on the vehicle trail in the southwest part of the WSA.

Under the recommended action, the Elephant Butte Irrigation District could be granted a ROW for a flood control structure

in the northern part of the WSA. The No Action/No Wilderness Alternative would also preserve future options for the mining and construction industries. High-magnesium dolomite, high-calcium limestone, and manganese deposits are known to occur in the WSA. Iron deposits may occur in the WSA. Under the No Action/No Wilderness Alternative, the full potential of the area could be assessed, and mining claims located and developed in the future. The future options for extracting building and decorative stone and sand and gravel would also be preserved under the recommended action.

Although the Robledo Mountains WSA meets the wilderness criteria, not one of the area's basic wilderness characteristics is of exceptional quality. The cherry-stemmed road to Lookout Peak and the communication sites on the Peak impact the naturalness of the area between Lookout Peak and Robledo Mountain. Vehicle use on the cherry-stemmed road also impacts opportunities for solitude. Primitive recreation opportunities in the WSA are not outstanding.

C. Consistency With Other Plans

The recommended action for the Robledo Mountains WSA does not conflict with any of the decisions in the Southern Rio Grande MFP (1981).

At this time, there are no known inconsistencies between the recommended action and the policies of local, state, or Federal plans. Continuing coordination and consultation with other agencies will take place during the public comment period on the Draft Environmental Assessment for Wilderness Study Areas in the Las Cruces District.

APPENDIX I

BROKEOFF MOUNTAINS WSA (NM-030-112)

I. GENERAL DESCRIPTION

A. Location

The Brokeoff Mountains Wilderness Study Area (WSA) is administered by the White Sands Resource Area of the Las Cruces District. The WSA is located in the southeastern corner of Otero County, New Mexico (T. 24-26 S., R. 19-20 E.), just north of Guadalupe Mountains National Park (see Map 1 for general location).

The following U.S. Geological Survey topographic maps cover the WSA: Cienega School, El Paso Gap, La Paloma Canyon, Panther Canyon and Sheep Draw, New Mexico, quadrangles. All of these maps are at the 15-minute scale.

B. Climate and Topography

Hot summers (60-100°) and mild winters (25-55°) characterize the WSA. Precipitation occurs primarily during the summer and ranges between 8 and 14 inches annually.

The WSA consists of a desert mountain range which follows a north-south trend and joins the southwestern wall of the Guadalupe Escarpment near the New Mexico-Texas State Line. The range gradually ascends from an average height of 4,600 feet in the northern half of the WSA to a high point of 6,550 feet on Cutoff Ridge.

Two canyons, 500-600 feet deep, and a ridge are the dominant topographic features. Chosie Canyon (with its tributary Wildcat Canyon) and Humphrey Canyon (which splits into Panther and West Dog Canyons) empty to the west and their drainages engulf the central two-thirds of the WSA. Cutoff Ridge, in the southernmost portion of the WSA, rises 3,000 feet above the surrounding terrain and leads directly to the Guadalupe Escarpment. Several smaller ridges and canyons are present in the central and northern portions of the WSA while the western boundary consists of flat terrain.








C. Land Status

The WSA contains 30,103 acres of public land and 1,520 acres of state inholdings. (See Map 1 for land status within the WSA.)

**BROKEOFF MTS. WSA
(NM-030-112)**

MAP 1

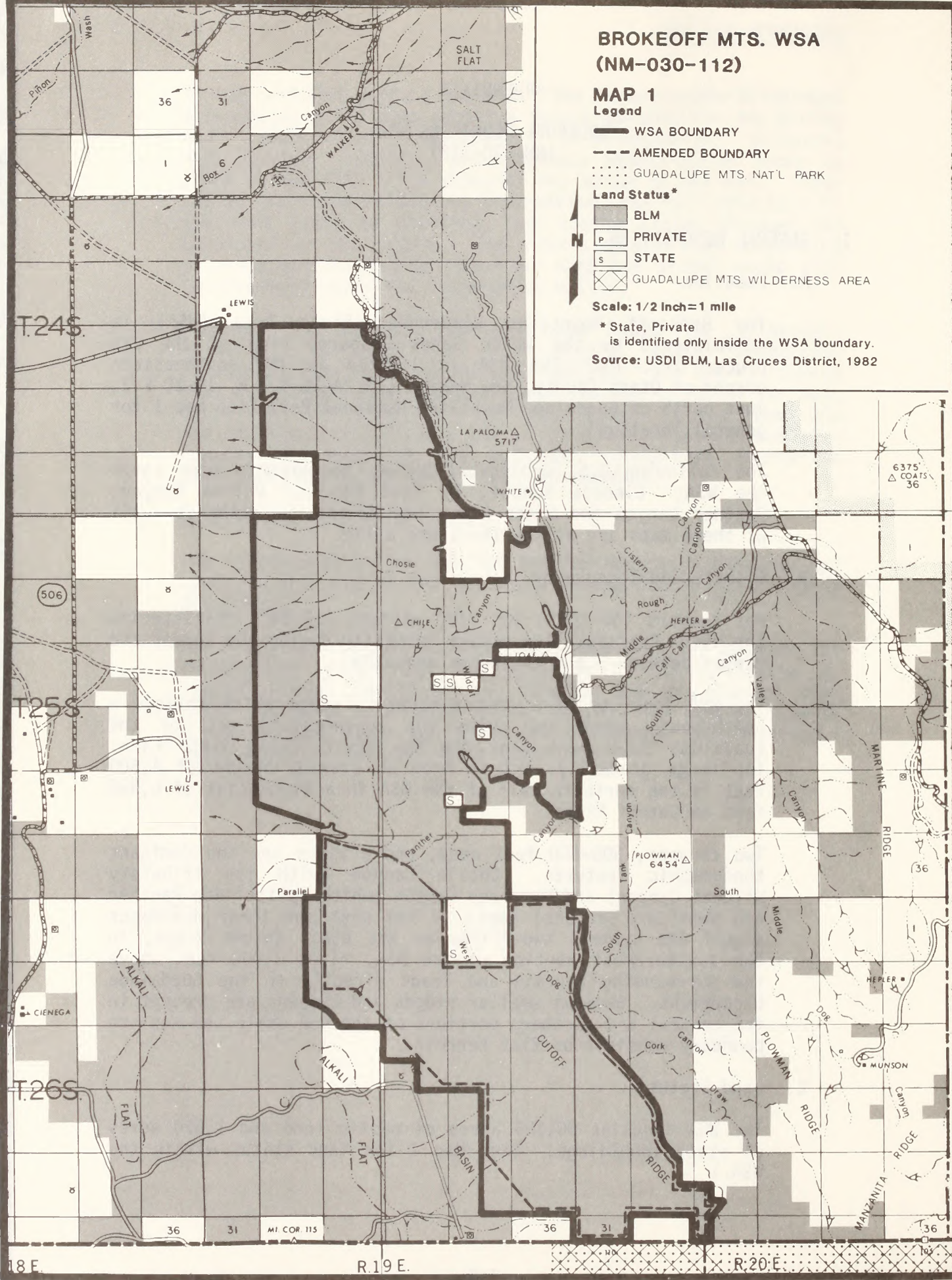
Legend

-  WSA BOUNDARY
-  AMENDED BOUNDARY
-  GUADALUPE MTS NAT'L PARK
- Land Status***
-  BLM
-  PRIVATE
-  STATE
-  GUADALUPE MTS WILDERNESS AREA

Scale: 1/2 Inch=1 mile

* State, Private is identified only inside the WSA boundary.

Source: USDI BLM, Las Cruces District, 1982



D. Access

The western boundary of the WSA is accessible from privately maintained ranch roads branching off State Highway 506. These roads can be followed around the northern and eastern edges of the WSA.

II. EXISTING RESOURCES

A. Geology

The Brokeoff Mountains consist of north to northwest trending blocks of faulted Permian sediments. These sediments were deposited approximately 250 million years ago along the northwest shelf of the Delaware Basin, now a prolific oil producing area. Dolomite, limestone, and lesser amounts of gypsum, sandstone and shale accumulated in this basin which began subsiding in the late Pennsylvanian time and continued to subside during the Permian time.

Several geologic features indicate that the Brokeoff Mountains have favorable oil and gas potential. A major stratigraphic consideration is the presence of favorable source and reservoir rocks. Permian reservoir rocks have been exposed and eroded throughout much of the area and Permian hydrocarbon reservoirs have been subject to fresh water flushing. However, assuming that the pre-Permian section containing good petroleum source and reservoir rocks exists in this area and is similar to elsewhere in the Delaware Basin, petroleum accumulations in pre-Permian reservoir rocks may remain intact. Furthermore, Black (1975) has projected the Abo reef trend (late Pennsylvanian-early Permian) as extending southwest across the Huapache monocline toward the Brokeoff Mountains area. If this projection is correct, shallow reservoirs of oil and gas may be present.

Although Basin and Range faulting has probably had a disruptive effect on hydrocarbon accumulations, some tilted fault blocks may enclose sands which are potential oil and gas traps. Also, tectonic disruption and fresh water flushing are less evident on the western flanks of the mountains and into the basin (Black 1975).

Exposed sediments contain a variety of paleontological features. None of these features are considered unique and most are molds or silica replacements exhibiting only gross detail. The more common types include brachiopods, pelecypods, gastropods, fusulinids, corals, crinoids, and ammonites. Sponges, echinoid spines, and trilobite fragments occur less frequently.

B. Water

The Brokeoff Mountains WSA is situated within a closed basin (Salt Basin) which comprises approximately 5,900 square miles in Texas and New Mexico.

Principle drainage courses within the WSA include Chosie and West Dog Canyons which empty on the alkali flats to the west. Streams within these drainages flow for only brief periods following heavy precipitation.



View of the west side of the Brokeoff Mountains WSA.

Ground water in the WSA and to the immediate west occurs primarily in two geologic units: Bone Springs limestone and valley fill. In the valley to the west, water is normally less than 200 feet below the surface; in the upland area bordering the valley bottom, the depth normally exceeds 400 feet. Significant recharge to the ground water occurs in the WSA through infiltration in the large network of ephemeral streams.

There are no wells located within the WSA, however, several are situated in the surrounding area. The water quality is generally acceptable for livestock and irrigation. However, it is less acceptable for domestic uses due to a high concentration of bicarbonates and sulfates. There is no water available for recreational use.

C. Soils

Five soil associations are present in the Brokeoff Mountains WSA (USDA 1981).

SOIL ASSOCIATIONS WITHIN THE WSA

Soil Association	Acres	Percent of WSA	Texture	Slope
Rock Outcrop - Lozier Complex	25,778	85.7%	Gravelly Loam	20-65%
Reakov-Tome - Tencee Complex	3,030	10%	Silt Loam	0-5%
Gypsum Land - Holloman Complex	303	1%	Very Fine Sandy Loam	0-5%
Ector - Rock Outcrop Complex	83	1%	Gravelly Loam	20-50%
Lozier - Rock Outcrop Complex	909	3%	Very Gravelly Loam	5-20%
TOTAL	30,103			

D. Vegetation

1. Range Sites

Three range sites are present in the Brokeoff Mountains WSA. The range sites listed are broad sites with approximate acreages, percent of the WSA and major vegetation.

RANGE SITES WITHIN THE WSA

Range Site	Acres	Percent of WSA	Major Vegetation
Limestone Hill	26,865	89%	Grassland - (black grama, ring muhly, bush muhly, threawn, slim triden, fluffgrass) (Scattered pinyon-juniper)
Gravelly Loam	2,926	10%	Grassland - (black grama, dropseed, tobosa, burrograss) Desert Shrub - (broom snakeweed, yucca, winterfat, creosotebush)
Gypsum	312	1%	Grassland - (gyp grama, alkali sacaton, burrograss, tobosa) Desert Shrub - (Mormon tea, chamisa, creosotebush)
TOTAL	30,103		

2. Threatened and Endangered Species

There are no known Federally listed threatened or endangered plant species within the WSA. Sophora gypsophila var. guadalupensis is a rare plant species currently under review for listing as threatened or endangered. This plant is known to occur in the Brokeoff

Mountains with a high probability of occurrence in the southern half of the WSA.

E. Wildlife

A variety of wild animals utilize the many different habitat types created by the various geomorphic features and diversity of vegetation of the Brokeoff Mountains (USDI 1974).

Cliffs, ledges, and rock outcrops provide suitable nesting and perching habitat for numerous bird species, particularly raptors. Canyon bottoms and mountain slopes throughout the area are utilized by mule deer year-round, however, populations fluctuate seasonally depending on the severity of winters in the nearby Guadalupe Mountains. Elk occasionally migrate from the Guadalupe Mountains and may be seen in the fall and winter. The degree to which these elk use the Brokeoffs is not believed to be critical to the herd's viability.

There are no Federally listed threatened or endangered animal species which depend exclusively on the habitats present in the Brokeoff Mountains.

F. Visual

The Brokeoff Mountains break off from the southwestern wall of the Guadalupe Escarpment. The Range then extends to the north, paralleling the western wall of the Escarpment, and provides scenic vistas for visitors to the Guadalupe Mountains National Park. Due to the presence of rugged topographic features and the natural appearance of the area, most of the WSA has outstanding scenic quality. Approximately 28,780 acres with outstanding scenic quality have been rated as Class II, while 1,323 acres along the western boundary are Class III.

G. Cultural

Archaeological information for the Brokeoffs is incomplete. One processing/procurement site has been found in the area, however, it is not believed to be unique. Site density within the WSA is believed to be low.

H. Air

Generally the air quality of the Brokeoff Mountains is very good. The WSA has been given Class II air quality classification, which allows for moderate deterioration associated with moderate well-controlled industrial and population growth. The nearest major sources of pollution are in El Paso, Texas and Ciudad Juarez, Mexico, 80 miles to the west.

III. EXISTING AND POTENTIAL USES

A. Mineral Development

The Brokeoff Mountains WSA is located on the western edge of the Delaware Basin, a known oil and gas producing area. Presently, all production in this basin is east of the Huapache monocline which is approximately 15-20 miles east of the WSA. Only sporadic exploration has taken place west of this monocline. In New Mexico, six wildcat wells have been drilled within a 10 mile radius of the WSA. Three of these wells, Coral Oil and Gas #1 Warren, approximately seven miles northwest of the WSA, and Weaver #1 Thompson and Campbell #1 McMillan Federal, approximately 7½ and 6½ miles north of the WSA respectively, have had shows of oil or gas. Two wells within one mile of the WSA boundary (T. 25 S., R. 20 E., Section 18 and T. 25 S., R. 19 E., Section 31) did not have shows.

The Minerals Management Service has classified this area as prospectively valuable for oil and gas. Thirty Federal oil and gas leases are within the boundaries of the WSA. Twenty-three of these leases (19,500 acres) are pre-Federal Land Policy and Management Act (FLPMA) leases, while the other seven (6,500 acres) are post-FLPMA.

The true potential of the Brokeoff Mountains WSA for oil and gas can only be assessed after additional exploration and drilling have been accomplished. On the basis of currently available geologic information, the oil and gas potential is theoretically favorable.

B. Livestock Grazing

1. Allotments

There are seven grazing allotments located wholly or partially within the WSA. Three of these allotments graze sheep as well as cattle and horses: Hughes Brothers Partnership, John White, and Clifton Dean. The other four allotments graze only cattle and horses: D. F. Lewis, C. Rainwater, Jim Ballantine, and Marlin Richardson. The sheep and cattle allotments are located in the mountainous areas on the east side of the WSA. The other four cattle allotments are located in the foothills and lower areas on the west side of the WSA.

ALLOTMENTS WITHIN THE WSA

Allotment Number and Name	Total Acres	Total AUMs	Acres in WSA	Percent Allotment	AUMs in WSA	Percent of AUMs
#9021 Hughes Brothers	14,539	3,336	3,173	22%	711	21%
#9033 Lewis, D. F., et al	19,760	2,112	5,348	27%	745	35%
#9038 C. Rainwater	5,810	852	2,961	51%	443	52%
#9040 Jim Ballantine	11,824	1,577	2,960	25%	464	29%
#9039 Marlin Richardson	15,965	3,048	11,175	70%	2,107	69%
#9062 John White	9,519	1,589	1,874	20%	314	20%
#9008 Clifton Dean	2,612	588	2,612	100%	588	100%
TOTAL			30,103		5,372	

2. Ranch Management

Maintenance, repair, and cleaning of dirt tanks occurs approximately every 5 years and requires the use of heavy equipment such as a bulldozer. Water hauling requires motorized access while other activities (e.g. livestock counts, fence maintenance, placing salt and roundup) involve the use of both horses and motorized vehicles depending on the accessibility of a particular area and the magnitude of the work to be accomplished.

C. Recreation

The BLM has little visitor use data for the Brokeoff Mountains. Approximately 100-200 deer hunters are believed to visit the area every fall (Bruce Morrison 1982). Big game hunting is the primary use in the area and associated activities include off-road vehicle use, hiking, and camping.

IV. WILDERNESS CRITERIA

A. Evaluation of Wilderness Values

1. Quality of Mandatory Wilderness Characteristics

a. Naturalness

The Brokeoff Mountains WSA generally appears to have been affected primarily by the forces of nature.

Imprints of man have their greatest impact in the northern half of the area. Although this portion of the WSA generally appears to be natural, its natural appearance is partially compromised by vehicular access routes and rangeland improvements. Seven miles of vehicular access routes cross this portion of the WSA. The most noticeable of these is a route which follows a ridge crest to a dirt tank and lacks both vegetative and topographic screening. Rangeland improvements include: a white metal tank which can be seen for over a mile; a dirt tank; and 23 miles of sheep fence.

Rangeland improvements south of Humphrey Canyon include three revegetated dirt tanks, an abandoned drinking trough and 10 miles of sheep fence. These improvements are screened by topographic features and create very little visual contrast. As a result, this portion of the WSA appears to be virtually pristine.

b. Solitude

The area offers outstanding opportunities for solitude which are enhanced primarily by the WSA's size, boundary configuration, and rugged topography and, to a lesser degree, by vegetative screening, remoteness of various portions of the WSA, and designated Wilderness to the south.

The WSA contains the most prominent portion of the Range and is approximately 12 miles long (north to south) and 2-5 miles wide. The rectangular shape enhances opportunities to find a secluded spot.

Nine canyons, 500-600 feet deep, lie between the major ridges and empty to the west. These features divide into countless smaller ridges with drainages between each and provide screening and opportunities for seclusion. The western boundary of the WSA is less rugged, consisting primarily of flat to rolling terrain.

Due to the rugged terrain and lack of vehicular access to the southern half of the WSA, opportunities to find a secluded spot in this area are excellent. In addition, this area is contiguous with the Guadalupe Mountains Wilderness which also offers outstanding opportunities for solitude. The rugged terrain of the northern half of the WSA is sufficient to offer ample opportunities for solitude. However, vehicular access is greater and the topography is less challenging than in the southern half.

c. Recreation

The WSA offers outstanding opportunities for primitive and unconfined types of recreation which are enhanced primarily by the WSA's size, topographic relief, opportunities to use outdoor skills and the quality and diversity of the recreational resource.

The WSA is blocked up so that visitors may spend several days hiking and exploring the Brokeoffs. In addition, the adjacent Guadalupe Mountains Wilderness is managed by the National Park Service for primitive and unconfined types of recreation.

A wide diversity of high quality recreational activities can be accommodated within the WSA. The rugged terrain provides outstanding opportunities for hiking, backpacking, and horseback riding. The WSA is large enough to accommodate a trip 3-4 days in length. In addition, trips of a longer nature may be taken by continuing into the Guadalupe Mountains Wilderness. Scenic vistas are present throughout the WSA and opportunities for sightseeing and photography are excellent. Deer are also present and opportunities for big game hunting are available.

2. Special Features

As previously discussed in Chapter II, the WSA contains outstanding scenic quality. Cultural and paleontological features are also present, however, these features are fairly common and not believed to possess significant scientific or educational values. None of these features significantly contribute to the WSA's wilderness character.

3. Multiple Resource Benefits

Congressional designation as wilderness would provide a greater degree of long-term protection for the area than would the administrative designations available to the Bureau. A more detailed discussion of multiple resource benefits may be found in the impacts section.

4. Diversity

a. Ecosystems Present

Using R. G. Bailey's Ecoregions of the United States (1976) and A. W. Kuchler's Potential Natural Vegetation (1966) as a guide, the Brokeoff Mountains WSA lies within the Chihuahuan Desert Province and consists of approximately 26,564 acres of grama-tobosa shrubsteppe and 3,539 acres of Trans-Pecos shrub savanna.

b. Distance to Population Centers

The WSA is a two hour drive from El Paso, Texas and a three hour drive from Las Cruces, New Mexico.

B. Manageability

The Brokeoff Mountains WSA is presently capable of being effectively managed to preserve its wilderness character over the long-term. In making this determination, several factors were evaluated, including: size, land status, management of and access to inholdings, and management of contiguous National Park Service lands. The implications of oil and gas leases within the WSA were also considered, however, their impacts cannot be assessed at this time.

The WSA contains 30,103 acres of public land and 1,520 acres of state inholdings. There are also 265 acres of state land (T. 26 S., R. 20 E. Section 32) which are surrounded by the WSA on three sides and the Guadalupe Mountains Wilderness on the fourth. Grazing is currently the only use of these inholdings and access is available in the form of vehicle routes and arroyo bottoms. Management of these lands does not presently conflict with wilderness preservation. However, manageability of the WSA could be improved by their acquisition (particularly the 265 acres lying between the WSA and the Guadalupe Mountains Wilderness) since the BLM could then ensure that they continue to be managed in a manner fully compatible with wilderness preservation. This would also increase the acreage in direct contact with the Guadalupe Mountains Wilderness.

Most of the WSA has been leased for oil and gas development. Pre-FLPMA leases account for 19,500 acres of these leases and may be regulated only so long as development of lease rights is not unreasonably interfered with. There are also 6,500 acres of post-FLPMA leases, which may be regulated to prevent impairment of wilderness values. The effects of these leases on the manageability of the WSA cannot be assessed until additional exploration is conducted.

V. PUBLIC INVOLVEMENT OVERVIEW

Public comment periods were conducted during the initial and intensive wilderness inventories in 1979 and 1980. Several comments were received in opposition to WSA status for the Brokeoff Mountains. General reasons for opposing WSA status included oil and gas exploration activity, minerals potential, and current livestock use. One comment stated that Wilderness designation would rule out states' rights on state sections. These issues were not addressed during the inventory process since a WSA decision could only be based on the presence or lack of wilderness characteristics.

The comments were retained and used during the preparation of this document. The opinions expressed in the comments will be considered in the preparation of a final recommendation.

VI. ALTERNATIVES AND IMPACTS

A. All Wilderness

Under this alternative, the entire 30,103 acre WSA would be recommended as suitable for wilderness designation.

1. Impacts to Minerals

Despite the theoretically favorable potential for oil and gas in the Brokeoff Mountains WSA, there is no exploration or production at this time. After wilderness designation, the existing oil and gas leases, if unexplored, would not be reissued. No new leases would be let after wilderness designation. Therefore, if this inactivity continues, oil and gas leases within the WSA would expire beginning in February 1984 and after the last lease expires in 1992, oil and gas activities would not be permitted. Future options to explore for and develop oil and gas resources in the WSA would be forgone.

On the other hand, if oil and gas drilling is initiated and in progress on the anniversary date of a lease, a two year lease extension would be granted. Should any wells go into production prior to the lease expiration date, they would be allowed to continue production until reserves are exhausted. Of the 30 oil and gas leases within the WSA, 23 (19,500 acres) are pre-FLPMA leases. Development of these leases could be allowed to impair wilderness values.

On the seven post-FLPMA leases (6,500 acres) all activities are subject to the nonimpairment criteria and, in most instances, full development of lease rights will not be allowed.

2. Impacts to Other Resources and Uses

In September 1981, the BLM released its Wilderness Management Policy which provides guidance for BLM personnel in managing Wilderness. However, considering the broad range of discretion granted the individual manager, it is necessary that the basic thrust of wilderness management planned for the Brokeoffs be explained.

If the Brokeoffs are designated Wilderness, management would be low-key and emphasize opportunities for solitude rather than recreational opportunities. Actions designed to attract visitors (e.g., publication of brochures promoting the Brokeoffs, construction of elaborate trailhead facilities) would not be proposed. It is unlikely that any visitor facilities (e.g., trails, springs, directional signs) would be needed within the

Wilderness and unless sufficient need can be proven, none would be installed.

a. Livestock Grazing

The Wilderness Act specifically allows grazing to continue in designated Wilderness where such use was established prior to designation of a given area. However, some restrictions would still be imposed. For example: the construction of new rangeland improvements would be approved with necessary stipulations to prevent impairment of Wilderness values.

According to the BLM's Wilderness Management Policy, "occasional use of motorized equipment" is permitted "where practical alternatives do not exist" and should be "expressly authorized in grazing permits." If the Brokeoffs are designated Wilderness, a management plan would be prepared explaining what types of access and rangeland management activities would be restricted or permitted. Excessive restrictions on rangeland management activities would have an impact on livestock grazing.

b. Recreation

Hunting constitutes the primary recreational use of the Brokeoffs. Since hunting is allowed in Wilderness Areas, it would not be directly affected by Wilderness designation. However, motorized access would be limited to the surrounding boundary roads and some hunters could decide to visit other areas. Off-road vehicle use would be prohibited, however, this would not be a significant impact due to the light use presently occurring and the vast amount of land available for these activities elsewhere.

c. Wilderness Values

Wilderness designation would benefit the wilderness values present by providing them with long-term Congressional protection. The area would retain its natural appearance and be managed to provide outstanding opportunities for solitude and a primitive and unconfined type of recreation. Due to increased public awareness, visitation could increase.

d. Other Resources

Restrictions on surface disturbing and mechanized activities would provide protection for the following resources: wildlife habitat, soils, watershed, air, cultural, and the rare plant Sophora gypsophylla var.

guadalupensis. Scenic values, including views from State Highway 506 and the Guadalupe Mountains Wilderness, also would be preserved.

B. Amended Boundary

Under this alternative 11,635 acres of public land would be recommended as suitable for Wilderness designation. The amended boundary would exclude 18,468 acres of public land in the northern portion of the WSA.

1. Impacts to Minerals

Approximately 9,735 acres of pre-FLPMA leases and 1,900 acres of post-FLPMA leases are included within the amended boundary. Approximately 14,365 acres of pre- and post-FLPMA leases currently within the WSA lie outside the amended boundary. Those leases within the amended boundary would be subject to the impacts discussed under the All Wilderness Alternative.

2. Impacts to Other Resources and Uses

a. Wilderness Values

The most outstanding values of the WSA would be protected under this alternative. The southernmost third of the WSA is virtually pristine and its wilderness values are supplemented by the contiguous Guadalupe Mountains Wilderness Area. In addition, this portion contains the Brokeoffs' most rugged topographic features and opportunities for solitude and primitive and unconfined types of recreation are truly outstanding.

b. Threatened and Endangered Species

The rare plant Sophora gypsophilia var. guadalupensis would be protected since it occurs primarily in the southern portion of the WSA.

c. Visual Resources

The amended boundary consists entirely of Class II scenery and includes the most prominent topographic features in the Brokeoffs. The 1,323 acres of Class III and 17,688 acres of the Class II scenery are outside of the amended boundary.

d. Livestock Grazing

The number of grazing allotments affected would be reduced from seven under the All Wilderness

Alternative to four under the Amended Boundary and the number of AUMs affected reduced from 5,372 to 1,901.

e. Recreation

This alternative would have minimal impacts on hunting and other activities dependent on motorized access. This portion of the WSA is very rugged and access would be limited regardless of whether or not the area is designated Wilderness.

f. Other Resources

Impacts to water, air, wildlife, soils, vegetation and cultural resources would be the same as those discussed under the All and No Wilderness Alternatives. Only the acreage figures (11,635 all wilderness and 18,468 non-wilderness) would change.

C. No Action/No Wilderness

Under the No Action/No Wilderness Alternative, the entire WSA would be recommended as nonsuitable for wilderness designation. If the area is not designated as Wilderness, it is assumed that for all activities, except minerals management, practices would continue at current levels. Before surface disturbing activities are approved, an EA would be prepared to determine site-specific impacts.

Due to the area's theoretically favorable oil and gas potential, it is anticipated that oil and gas exploration would occur. Geophysical exploration would be subject to site-specific environmental review. Exploratory drilling could also occur and reclamation of disturbed areas would be performed to the specifications placed on the Application for Permit to Drill.

1. Impacts of Nondesignation on Wilderness Values

The natural appearance of the Brokeoffs would be impaired by the surface disturbance and installation of facilities normally associated with oil and gas exploration and any opportunity for the area to retain its primeval character and influence would be lost. Opportunities for solitude and primitive and unconfined types of recreation also would be impaired by the presence of motorized equipment and oil and gas crews.

2. Impacts to Other Resources and Uses

a. Vegetation/Soils/Water

Geophysical exploration off existing roads could produce minor impacts on all range sites. Existing

vegetation could be trampled and broken, and soils could be compacted slightly. Long-term impacts associated with exploration would be insignificant, provided routes are not bladed and abandoned.

The removal of vegetation and accompanying soil disturbance associated with construction of drill sites, access roads, and facilities would be a minor impact on existing and potential productivity of all range sites, and create a minor increase in wind and water erosion potential.

Surface disturbance to the habitat of the Sophora gypsophila var. guadalupensis could have detrimental effects on this plants' status. If it is eventually classified as threatened or endangered, no disturbance of the plant or its habitat would be permitted regardless of the WSA's final designation.

b. Wildlife

Cumulative impacts of oil and gas activities in the Brokeoffs could significantly impact wildlife and their habitat. Vehicular traffic, drilling operations, and other associated activities may displace and harass wildlife. Associated surface disturbing activities may remove vegetation (which currently provides cover and food) and disturb wildlife in the general vicinity associated with increased human use (e.g., poaching, off-road vehicle use, indiscriminate shooting).

Seismic exploration and drilling activity could impact mule deer and bird (particularly raptors) populations if such disturbances occur during fawning or the nesting season. Mud and brine evaporation pits containing salts and possibly an oil film could trap or poison small animals and birds.

A benefit would be the use of abandoned wells as a water source for wildlife. Reclamation of abandoned drill pads and roads with grass, forb, and shrub species could increase plant and wildlife population diversity.

c. Visual Resources

Oil and gas exploration probably could not satisfy the standards required by a Class II area. Therefore, the area would probably be reclassified as a less stringent class, thereby allowing for greater modification of the landscape and degradation of its scenic quality.

d. Cultural Resources

Cultural resources could be impacted throughout all phases of oil and gas exploration. In addition, there could be increased access to sites and a greater chance of unauthorized disturbance.

Because the inventory data for the WSA is almost nonexistent, critical areas might exist which have not been identified in this document. Surveys are required before any new surface disturbing activities take place, and all sites which are located are protected through compliance with Section 106 of the National Historic Preservation Act of 1966. This would lessen the impacts of proceeding with oil and gas activities with a very limited inventory base.

e. Mineral Development

If the Brokeoffs are not designated Wilderness, all leases would be open for exploration and development subject to site-specific environmental review. No leases (existing or future) would be required to satisfy the nonimpairment criteria.

f. Livestock Grazing

Oil and gas exploration could have a variety of impacts on grazing operations. Construction activities, increased traffic on an allotment, and a change in normal grazing patterns around well sites would interfere with ranch operations. Assuming an average stocking rate of 72 animal unit months per section, for every nine acres of existing vegetation permanently lost to drilling sites, access roads, and associated facilities, one animal unit month of forage would be unavailable for use by livestock.

Construction of a road to a previously inaccessible area or establishment of a new water source after a well is abandoned would benefit livestock grazing by opening up new territory which was previously too far from water.

g. Recreation

Construction of additional roads into the Brokeoffs could benefit activities dependent on motorized access. On the other hand, significant amounts of surface disturbance would disrupt hunting opportunities.

h. Air

There would be no impacts to air under this alternative.

VII. RECOMMENDED ACTION

A. Recommended Action Description

The recommended action for the Brokeoff Mountains WSA is the No Action/No Wilderness Alternative. The entire 30,103 acre WSA would be recommended as nonsuitable for wilderness designation.

B. Rationale

Resource conflicts and potential wilderness manageability conflicts are the primary reasons for this recommendation. Based on current available geologic information, the oil and gas potential of the Brokeoff Mountains is theoretically favorable. The WSA is located on the western edge of a known oil and gas producing area. Six wildcat wells have been drilled within a 10 mile radius of the WSA. Three of these wells have had shows of oil or gas. Pre-FLPMA oil and gas leases cover 65 percent of the WSA. An additional 22 percent of the WSA is covered by post-FLPMA leases.

Since the true potential of the WSA can only be assessed after additional exploration and drilling have been accomplished, it is reasonable to assume that exploration activities will continue in the future. Exploration and development activities on pre-FLPMA leases could damage wilderness values whether or not the area is designated wilderness. The pre-FLPMA leases covering 65 percent of the WSA represent a potential wilderness manageability conflict.

If the area were designated wilderness, post-FLPMA leases could be impacted in the short-term since any exploration or development work that would damage wilderness values would not be allowed. At some time after wilderness designation, unexplored leases would not be reissued. The future options to explore for and develop oil and gas resources in the area would be lost. The recommended action (No Action/No Wilderness) would eliminate the potential conflicts with post-FLPMA leases and would preserve future options to explore for and develop oil and gas resources.

The uncertain long-term management of state inholdings (1,520 acres) also represents a potential wilderness manageability conflict. Nonwilderness uses on the state inholdings, such as oil and gas exploration activities, could degrade wilderness values in the WSA.

C. Consistency With Other Plans

This recommendation does not conflict with any decision in the Mesa Planning Unit Management Framework Plan of 1974.

GLOSSARY

- ACT** - A bill passed by the House and Senate and signed by the President.
- AMENDMENT** - A change to the Constitution or a law.
- ARTICLE** - One of the seven sections of the Constitution.
- CONGRESS** - The legislative branch of the federal government, consisting of the House of Representatives and the Senate.
- COURT** - A judicial body that interprets the law and resolves disputes.
- EXECUTIVE** - The branch of government responsible for enforcing the law.
- LEGISLATIVE** - The branch of government responsible for making the law.
- JUDICIAL** - The branch of government responsible for interpreting the law.
- STATE** - One of the 50 political divisions of the United States.
- TERRITORY** - A region of land that is not yet a state.
- UNION** - The United States of America.
- WAR** - A conflict between two or more nations.
- WARRANT** - A legal document that authorizes a search or seizure.

GLOSSARY

ADIT. A nearly horizontal entrance to a mine.

AGGREGATE. A mineral material such as sand, gravel, shells, or broken stone.

ALLOTMENT. An area of land designated and managed for grazing of livestock.

ALLOTMENT MANAGEMENT PLAN (AMP). A documented program which applies to rangeland operations on public land, which is prepared in consultation with the permittee(s) or lessee(s) involved, and which: (1) prescribes the manner in and extent to which livestock operations will be conducted in order to meet the multiple-use, sustained-yield, economic, and other needs and objectives as determined for public land through land use planning; (2) describes the type, location, ownership, and general specifications for the rangeland developments to be installed and maintained on public land to meet the livestock grazing and other objectives of land management; and (3) contains such other provisions relating to livestock grazing and other objectives as may be prescribed by the authorized officer consistent with applicable law.

ALLUVIAL. Pertaining to alluvium; deposited by a stream or running water.

ALLUVIAL CONE. An alluvial fan with steep slopes.

ALLUVIUM. A general term for clay, silt, sand, gravel, or similar unconsolidated sediments deposited by a stream or other body of running water.

ANDESITE. A volcanic rock composed essentially of andesine and one or more mafic constituents. The mafic constituents may be pyroxene, hornblende, or biotite.

ANIMAL-UNIT MONTH (AUM). The amount of forage consumed by one mature cow (1,000 lb.) or its equivalent for one month.

ANTICLINE. An upfold of stratified rock in which the beds bend downward in opposite directions from the crest.

AREAS OF CRITICAL ENVIRONMENTAL CONCERN (ACEC). Areas within the public land where special management attention is needed to protect and prevent irreparable damage to important historical, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards.

ARKOSE. A sandstone containing 25 percent or more of feldspars, usually derived from silicic igneous rocks.

ASPECT SPECIES. A vegetative species that appears to be dominant in the landscape, although it may be only a small percent of the total vegetative composition.

AVIFAUNA. All birds of a given region.

BASALT. A dark to medium-dark colored commonly extrusive mafic igneous rock.

BASIN AND RANGE PHYSIOGRAPHIC PROVINCE. A province in the southwestern United States characterized by a series of tilted fault blocks forming longitudinal ridges or mountains and broad intervening basins.

BATHOLITH. A great mass of intruded igneous rock that extends downward to unknown depth.

BOLSONS. A flat-floored desert valley that drains to a playa.

BUREAU SENSITIVE. Fish, wildlife, and plants which are candidates for Federal listing or species proposed for Federal listing automatically become Bureau Sensitive species.

CALDERA. A large basin-shaped volcanic depression the diameter of which is much greater than the vent.

CARBONACEOUS. 1. Coaly. 2. Pertaining to, or composed largely of, carbon. 3. The carbonaceous sediments include original organic tissues and subsequently produced derivatives of which the composition is chemically organized.

CAULDRON. An inclusive term for all volcanic subsidence structures regardless of shape or size.

CHERRY-STEMMED. An unofficial term used to describe the way an inventory unit boundary is drawn to exclude a road that enters the unit; the resulting boundary resembles a cherry-stem.

CLOSED BASIN. A basin is considered closed with respect to surface flow if its topography prevents the occurrence of visible outflow. It is closed hydrologically if neither surface nor underground outflow can occur.

CONFORMABLE. 1. Strata or groups of strata lying one above another in parallel order are said to be conformable. 2. When beds or strata lie upon one another in unbroken and parallel order, and this arrangement shows that no disturbance or denudation has taken place at the locality while their deposition was going on, they are said to be conformable.

CONGLOMERATES. Clastic sedimentary rock composed of rounded fragments varying from small pebbles to large boulders in a cement of calcareous material such as iron oxide, silica, or hardened clay.

CONTIGUOUS LANDS. As it pertains to Wilderness, lands or legal subdivisions having a common boundary. Lands having only a common corner are not contiguous.

COPPICE DUNES. Sand dunes stabilized around shrubs.

CRITICAL MINERALS. Those minerals that are critical to the economy and security of the United States and for which we are now dependent on foreign sources. These minerals are listed in the National Defense Stockpile Inventory of Strategic and Critical Materials.

CUESTAS. A hill or ridge with a steep face on one side and a gentle slope on the other.

DEFORMATION. Any change in the original form or volume of rock masses produced by tectonic forces; folding, faulting, and solid flow are common modes of deformation.

DIKE. A tabular body of igneous rock that cuts across the structure of adjacent rocks or cuts massive rocks.

DIRT TANK. Usually a permanent earthen structure for holding water temporarily. These are built in high rainfall runoff areas such as an arroyo, canyon, or swale area.

DRAINAGE BASIN. A part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded water.

ECOSYSTEM. An ecological community considered together with the nonliving factors of its environment as a unit.

ECOTONE. A transition area between plant communities which has some of the characteristics of each.

EMBAYMENT. Term describing a continental border area that has sagged concurrently with deposition so that an unusually thick section of sediment results. An embayment is similar to a basin of sedimentation of a geosyncline, and some embayments may be one flank of a larger subsiding feature.

ENDANGERED SPECIES.

Federally listed - Any species of animal or plant in danger of extinction throughout all or a significant portion of its range.

State (Group I) - Species whose prospect of survival or recruitment in the state are in jeopardy in the foreseeable future.

State (Group II) - Species whose prospect of survival or recruitment within the state may become jeopardized in the foreseeable future.

EPHEMERAL STREAMS. A stream or portion of a stream which flows only in direct response to precipitation. Such flow is usually of short duration.

EROSION CONTROL STRUCTURES. Usually one large earthen, rock, wire, cement, etc. structure used to hold large concentrated flows of water and release this water in small non-eroding amounts.

EXTENSION AREA. A test range in excess of that provided by the main White Sands Missile Range (WSMR) required for an indefinite period of time to support future military programs.

EXTRUSIVE ROCK. Rocks derived from magma poured out or ejected at the earth's surface.

FAULT. A fracture in the earth's crust accompanied by a displacement of one side with respect to the other.

FAULT BLOCK. A block of the earth's crust bounded on at least two opposite sides by faults; it may be elevated or depressed relatively to the adjoining region.

FAULT SCARP. The cliff formed by a fault. Most fault scarps have been modified by erosion since the faulting.

FISSURE. 1. An extensive crack, break, or fracture in the rocks. A mere joint or crack persisting only for a few inches or a few feet is not usually termed a fissure by geologists or miners, although in a strict physical sense, it is one. 2. Where there are well-defined boundaries, very slight evidence of ore within such boundaries is sufficient to prove the existence of a lode. Such boundaries constitute the sides of a fissure.

FLPMA. Federal Land Policy and Management Act of 1976, which mandated the BLM Wilderness Review. Often referred to and pronounced "FLIPMA".

FOLD, FLEXURE. A type of fold, in size microscopic to orogenic, in which movement took place normal to the axial line and parallel with the limbs, producing notable shortening.

FORMATION. The primary unit of formal mapping or description. Most formations possess certain distinctive or combinations of distinctive lithic features. Boundaries are not based on time criteria. Formations may be combined into groups or subdivided into members.

GANGUE. The nonvaluable minerals in ore.

GEOPHYSICAL EXPLORATION. The use of geophysical instruments and methods to determine subsurface conditions by analysis of such properties as specific gravity, electrical conductivity, or magnetic susceptibility. This usually has an economic objective, e.g. discovery of fuel or mineral deposits.

GEOTHERMOMETRY. Measurement and study of the earth's heat, usually measured through shallow temperature gradient holes less than 500 feet.

GRABEN. A block generally long compared to its width that has been down thrown along faults relative to the rocks on either side.

GRANDFATHERED. Section 603(c) of FLPMA directs the BLM to manage lands under wilderness review "so as not to impair the suitability of such areas for preservation as wilderness..." However, Section 603(c) also provides a special exception to the "nonimpairment" criteria. Mining, grazing, and mineral leasing uses existing on the date of approval of FLPMA (October 21, 1976) may continue in the same manner and degree as on that date even if these uses impair wilderness values. Such uses are "grandfathered".

HEAT FLOW. Dissipation of heat coming from within the earth by conduction or radiation at the surface; average about 1.2×10^{-6} cal./cm.²/sec.

HORST. A block of the earth's crust separated by faults from adjacent blocks that have been relatively depressed.

HYDROCARBONS. Any organic compound, gaseous liquid or solid, consisting solely of carbon and hydrogen such as crude oil.

HYDROTHERMAL. Relating to hot water in the formation of minerals by the action of hot solutions rising up through the earth's crust from a cooling magma.

IGNEOUS ROCKS. Rocks formed by solidification of magma.

INHOLDING. Private or state owned land inside the boundary of a wilderness study area but excluded from the wilderness study area.

INITIAL INVENTORY. The first step in the BLM Wilderness Review Process. Inventory units or roadless areas which are obviously unsuitable for wilderness are separated from those which warrant intensive inventory for wilderness characteristics.

INSTANT STUDY AREAS. Section 603 of the Federal Land Policy and Management Act mandated that all primitive or natural areas formally identified prior to November 1, 1975, will be studied for wilderness suitability and recommended to the President by July 1, 1980. There are three such areas in New Mexico.

INTENSIVE INVENTORY. The second major step in the BLM Wilderness Review Process. Roadless areas are carefully inventoried for wilderness characteristics. The result of the intensive inventory is the identification of wilderness study areas.

INTERIOR FENCE. Fences used to divide allotments into pastures or holding areas.

INTRUSION. A feature (landform, vegetation, or structure) which is generally considered out of context because of excessive contrast and disharmony with characteristic landscape.

INTRUSIVE ROCK. A rock that consolidated from magma beneath the surface of the earth.

INVENTORY UNIT. Areas or islands of public land indexed for easy reference at the start of the wilderness inventory. These units may or may not be roadless. A roadless determination requires more detailed field work.

LIFE ZONE. Any series of biogeographic zones into which a continent, region, etc., is divided by latitude and altitude on the basis of the characteristic animal and plant life in a zone.

LITHIC. A stone or rock exhibiting modification by humans. It generally applies to projectile points, scrapers, chips, etc., rather than ground stone.

MAGMA. Naturally occurring mobile rock material, generated within the earth and capable of intrusion and extrusion, from which igneous rocks are thought to have been derived through solidification and related processes.

MAGNETIC PROSPECTING/GRAVITY SURVEYS. A technique of applied geophysics; a survey using a magnetometer or a gravity meter on the ground or from the air to measure variations in magnetic or gravitational intensity.

MALPAIS. Rough country composed of dark basaltic lava.

MANAGEMENT FRAMEWORK PLAN (MFP). A planning decision document that establishes, for a given planning area, land use allocations, coordination guidelines for multiple use, and management objectives to be achieved for each class of land use or protection. A MFP is prepared in three steps: (1) resource recommendations, (2) impact analysis and alternative development, and (3) decision making.

METAMORPHIC ROCKS. Rocks formed in the solid state in response to changes of temperature, pressure, and chemical environment.

METAMORPHISM. Process by which consolidated rocks are altered in composition, texture, or internal structure by conditions and forces not resulting simply from burial and the weight of subsequently accumulated overburden.

METAVOLCANICS. Partly metamorphosed volcanic rocks.

MINERALIZATION. The process of converting or being converted into a mineral, as a metal into an oxide, sulfide, etc.

OFF-ROAD VEHICLE (ORV). Any motorized vehicle designed for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other terrain.

OVERSTORY. The upper canopy(s) of plants.

PALEOENVIRONMENTAL STUDIES. Studies using fossilized pollen and other geological and biological remains to determine past climatic conditions.

PARTHENOGENIC. Unisexual reproduction where offspring are produced from unfertilized eggs.

PEDIMENT. A broad gentle sloping bedrock surface that is situated at the foot of a much steeper mountain slope in an arid or semi-arid region.

PERIPHERAL SPECIES. Species whose normal range is in adjoining states or Mexico and which are at the edge of their range in New Mexico.

PETROGLYPH. A form of rock art manufactured by incising, scratching, or pecking designs into rock surfaces.

PLACER. A place where gold is obtained by washing; an alluvial or glacial deposit, as of sand or gravel, containing particles of gold or other valuable minerals.

PLATFORM. The area of thinner sediments adjoining a geosynclinal wedge of thicker equivalent beds or a basin of thicker equivalent sediments.

PLAYA. The usually dry and nearly level lake plain that occupies the lowest parts of closed depressions.

PLUGS. Volcanic necks consisting of a mass of solidified igneous rock.

PLUTON. In the strictest sense, a body of igneous rock that has formed beneath the surface of the earth by consolidation from magma.

PROVINCE. A large area or region unified in some way and considered as a whole.

PSEUDORIPARIAN AREAS. Intermittent drainages (arroyos) supporting a more varied vegetative composition than the surrounding upland areas.

PSILOMELANE. An ore of manganese.

PUBLIC LAND. Any land and interest in land owned by the United States and administered by the Secretary of the Interior through the Bureau of Land Management, without regard to how the United States acquired ownership, except:

- lands located on the Outer Continental Shelf
- lands held for the benefit of Indians, Aleuts, and Eskimos
- lands in which the United States retains the minerals, but surface is private.

PUMICE. An excessively cellular, glassy lava, generally of the composition of rhyolite.

PYROLUSITE. The principal ore of manganese.

PYROXENE. A group of dark, rock-forming silicate minerals.

RANGE SITE. Is a distinctive kind of rangeland that differs from other kinds of rangeland in its ability to produce a characteristic natural plant community. A range site is the product of all the environmental factors responsible for its development. It is capable of supporting a native plant community typified by an association of species that differs from that of other range sites in the kind or proportion of species or in total production (SCS 1976).

RANGELAND DEVELOPMENT. Any facility or structure relating to rangelands which is designed to control patterns of use, provide water, and stabilize soil and water conditions.

RAPTORS. Any predatory bird such as a falcon, hawk, eagle, or owl that has feet with sharp talons or claws adapted for seizing prey and a hooked beak for tearing flesh.

RARE II. The wilderness inventory on lands administered by the Secretary of Agriculture through the United States Forest Service. The acronym stands for Roadless Area Review and Evaluation, and the "II" signifies that it is the second time the Forest Service has inventoried and evaluated the lands it administers.

RED BEDS. Term applied to red sedimentary rocks which usually are sandstones and shales, though in exceptional cases red limestones have been reported.

RHYOLITE. The extrusive equivalent of granite.

RIFT. Commonly refers to an elongated valley formed by tensional forces beneath the earth's crust.

RIGHT-OF-WAY. An easement or permit which authorizes public land to be used for a specified purpose that generally requires a long narrow strip of land; examples are roads, powerlines, pipelines, etc.

RIPARIAN VEGETATION. Vegetation which occurs in or adjacent to essentially perennial drainage ways or their floodplains.

ROAD. For the purposes of the BLM's wilderness inventory, the following definition has been adopted from the legislative history of FLPMA:

"The word 'roadless' refers to the absence of roads which have been improved and maintained by mechanical means to ensure relatively regular and continuous use. A trail maintained solely by the passage of vehicles does not constitute a road."

To clarify this definition, the following subdefinitions also apply:

"Improved and maintained" - Actions taken physically by man to keep a road open to vehicular traffic. "Improved" does not necessarily mean formal construction. "Maintained" does not necessarily mean annual maintenance.

"Mechanical means" - Use of hand or power machinery or tools.

"Relatively regular and continuous use" - Vehicular use which has occurred and will continue to occur on a relatively regular basis. Examples are: access roads for equipment to maintain a stock water tank or other established water sources, access roads to maintained recreation sites or facilities, or access roads to mining claims.

ROADLESS. Refers to the absence of roads which have been improved and maintained by mechanical means to ensure relatively regular and continuous use. A trail maintained solely by the passage of vehicles does not constitute a road.

ROADLESS AREA. That area which is roadless, as defined above, and is bounded by a road, the edge of a right-of-way, other land ownership, or a significant imprint of man.

SEDIMENTARY ROCKS. Rocks formed by the accumulation of sediment.

SHEAR ZONE. A geologic zone in which shearing has occurred on a large scale so that the rock is crushed and brecciated.

SILICEOUS; SILICIOUS. Of or pertaining to silica; containing silica, or partaking of its nature. Containing abundant quartz.

SILL. A tabular igneous intrusion that parallels the planar structure of the surrounding rock.

SPECIAL CONCERN ELEMENT. Plant species considered rare or endangered by the New Mexico State Heritage Program, but not legislatively protected.

SPLIT ESTATE. Refers to the situation where the subsurface mineral estate is owned or controlled by a party other than the owner of the surface of the same land area.

SOLITUDE. Outstanding opportunities for solitude or primitive and unconfined recreation are wilderness characteristics examined in the intensive wilderness inventory. Factors contributing to opportunities for solitude are vegetative screening, topographic relief, vistas, and physiographic variety. 1. The state of being alone or remote from habitations; isolation. 2. A lonely, unfrequented, or secluded place.

STANDARD METROPOLITAN STATISTICAL AREA (SMSA). A metropolitan area that has a large population nucleus together with adjacent communities which have a high degree of economic and social integration with that nucleus. Each SMSA has one or more central counties containing the area's main population concentration; an urbanized area with at least 50,000 inhabitants.

STEPPE. Arid land usually characterized as being level and without forests; usually in large tracts and in regions of extreme temperature range and loess soil.

STORAGE TANK. A permanent water holding structure used to supply water to troughs, pipelines, etc.

STRATIFORM. Composed of layers.

STRINGER. A narrow vein or irregular filament of mineral occurring in a rock.

SULFIDE. A compound of sulfur with one other more positive element or radical.

SUPERGENE. Applied to ores or ore minerals that have been formed by generally descending water. Ores or minerals formed by downward enrichment.

SUPPLEMENTAL VALUES. Features of ecological, geological, or other scientific, educational, scenic, or historical value that may be present in an inventory unit. These are not necessary criteria for wilderness suitability, as is stated in the Wilderness Act of 1964, but must be assessed during the intensive wilderness inventory.

SUSTAINED YIELD. Management of a biological resource (as timber) such that the portion removed by one harvest is replaced by growth or reproduction before another harvest occurs.

SYNCLINE. A trough of stratified rock in which the beds dip toward each other from either side.

TECTONIC. Relating to the deformation of the earth's crust.

THREATENED SPECIES. Any species likely to become endangered within the foreseeable future throughout all or a significant part of its range.

TRAVERTINE. Calcium carbonate deposits commonly associated with hot springs.

TROUGH. An elongate and wide depression with gently sloping borders.

TUFF. A compacted deposit of volcanic ash and dust that may contain sand and clay.

UNALLOTTED FEDERAL LANDS. Federal lands which currently are not committed to livestock grazing use.

UNCONFORMABLE. Having the relation of unconformity to the underlying rocks; not succeeding the underlying strata in immediate order of age and in parallel position.

UNDERSTORY. The plants growing beneath the canopy of other plants.

UPLIFT. Elevation of any extensive part of the earth's surface relative to some other parts.

VEHICLE TRAIL. A two-wheel track created only by the passage of vehicles. A trail is not a road.

VEIN. A tubular body, long in two dimensions and short in the third. An occurrence of ore minerals, usually disseminated throughout gangue, or veinstone.

VESICULAR BASALT. Basalt with abundant vesicles formed as a result of the expansion of gases during the fluid stage of lava.

VISUAL RESOURCE MANAGEMENT (VRM) CLASSES.

CLASS I - Natural ecological changes and very limited management activity are allowed. Any contrast created within the characteristic landscape must not attract attention.

CLASS II - Changes in any of the basic elements (form, line, color, texture) caused by a management activity should not be evident in the landscape. A contrast may be seen but should not attract attention.

CLASS III - Contrasts to the basic elements caused by a management activity may be evident and begin to attract attention in the landscape. The changes, however, should remain subordinate in the existing landscape.

CLASS IV - Contrasts may attract attention and be a dominant feature in the landscape in terms of scale. However, the changes should repeat the basic elements of the landscape.

WATER SPREADER. Usually several small, earthen, rock structures used to slow the water flow and give the runoff a chance to be absorbed by the soils and plants.

WILDERNESS. The definition contained in Section 2(c) of the Wilderness Act of 1964 is as follows: "A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are

untrammelled by man, where man himself is a visitor who does not remain." Wilderness is an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man'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 condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

WILDERNESS AREA. An area formally designated by Congress as part of the National Wilderness Preservation System.

WILDERNESS CHARACTERISTICS. Those characteristics of wilderness as described in Section 2(c) of the Wilderness Act. These include size, naturalness, solitude, primitive and unconfined type of recreation, and supplemental values.

WILDERNESS INVENTORY. An evaluation of the public land in the form of a written description and a map showing those lands that meet the wilderness criteria as established under Section 603(a) of FLPMA and Section 2(c) of the Wilderness Act. The lands meeting the criteria will be referred to as Wilderness Study Areas (WSAs). Those lands identified as not meeting wilderness criteria will be released from further wilderness consideration.

WILDERNESS REVIEW. The term used to cover the entire wilderness inventory, study, and reporting phases of the wilderness program of the BLM.

WILDERNESS STUDY. The process of analyzing and planning wilderness preservation opportunities along with other resource opportunities within the BLM's planning system.

WITHDRAWAL. An action that restricts the use of public land and segregates the land from some or all of the public land or mineral laws.

ZEOLITES. A large group of minerals that are characterized by their easy and reversible loss of water. They are used in the base exchange method of water softening and as gas absorbents or drying agents (filters).

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