

BLM LIBRARY



88008506

SAN JUAN/ SAN MIGUEL RESOURCE MANAGEMENT PLAN



WILDERNESS TECHNICAL SUPPLEMENT

Bureau of Land Management
Montrose District, Colorado

DRAFT APRIL 1984



SF
85.35
.C6
S26
1984
Suppl.

8800 8506

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

SF
85.35
.06
526
1984
Suppl.

WILDERNESS SUITABILITY ANALYSIS

TECHNICAL SUPPLEMENT TO DRAFT SAN JUAN/SAN MIGUEL EIS

RESOURCE MANAGEMENT PLAN FOR THE SAN JUAN AND

UNCOMPAHGRE RESOURCE AREAS

APRIL 1984

U.S. DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

SAN JUAN RESOURCE AREA

DURANGO, COLORADO 81301

UNCOMPAHGRE BASIN RESOURCE AREA

MONTROSE, COLORADO 81401

LABORATORY
D-555A, Building 50
Denver Federal Center
P. O. Box 86067
Denver, CO 80258-0667

Wilderness Technical Supplement

Table of Contents

<u>Item</u>	<u>Page</u>
Introduction--Purpose and Need-----	1
Chapter 1--Alternatives-----	1- 1
Cahone Canyon-----	1- 5
Cross Canyon-----	1- 7
Dolores River Canyon-----	1- 9
McKenna Peak-----	1-11
Menefee Mountain-----	1-13
Squaw/Papoose Canyon-----	1-15
Tabeguache Creek-----	1-16
Weber Mountain-----	1-18
Chapter 2--Affected Environment-----	2- 1
Common resource values to all eight WSAs:	
Socioeconomics-----	2- 2
Air Quality-----	2- 3
Topography-----	2- 3
Minerals-----	2- 4
Resource values unique to each WSA:	
Cahone Canyon-----	2- 6
Cross Canyon-----	2-11
Dolores River Canyon-----	2-16
McKenna Peak-----	2-24
Menefee Mountain-----	2-29
Squaw/Papoose Canyon-----	2-34
Tabeguache Creek-----	2-39
Weber Mountain-----	2-44
Chapter 3--Environmental Consequences-----	3- 1
Impact Analysis Assumptions-----	3- 1
Cahone Canyon-----	3- 2
Cross Canyon-----	3-11
Dolores River Canyon-----	3-14
McKenna Peak-----	3-20
Menefee Mountain-----	3-26
Squaw/Papoose Canyon-----	3-29
Tabeguache Creek-----	3-32
Weber Mountain-----	3-34

1. Inventory - To identify those public lands that possess wilderness characteristics (defined by Congress in the Wilderness Act of 1964), called Wilderness Study Areas (WSAs).

2. Study - Evaluating wilderness and other values, resources and uses within the WSAs and determining which WSAs will be recommended as "suitable" or "unsuitable" for wilderness designation. These are made through the BLM's land use planning system using the criteria and quality standards from the Wilderness Study Policy.

3. Reporting - Consists of forwarding or reporting suitable and unsuitable recommendations through the Secretary of the Interior to the President, including mineral surveys, environmental impact statements, and other appropriate information.

The inventory phase for the eight WSAs in this planning area was completed in December 1980. A total of 102,601 acres was found to contain wilderness values and thus were identified as WSAs.

None of these areas was formally appealed to the Interior Board of Land Appeals (IBLA). In determining these wilderness values, the law directs the BLM to use the criteria given by Congress in the Wilderness Act of 1964. In Section 2(c) of that Act, Congress states that wilderness is essentially an area of undeveloped Federal land in a natural condition, without permanent improvements or human habitation, which has outstanding opportunities for solitude or primitive and unconfined types of recreation. Areas may contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

A series of scoping and issue identification meetings was held in January and February 1981. These meetings were used to identify issues, solicit resource data from the public, and explain the wilderness study procedures to be used in the RMP.

A second series of meetings was held in September of 1983 to present the proposed alternatives for each of the WSAs. At these workshops, information pertaining to a Preferred Alternative was solicited as well as a request for any additional alternatives not addressed by the RMP/EIS.

The study phase for these eight WSAs is being conducted through the San Juan/San Miguel RMP/EIS for the San Juan Resource Area and a portion of the Uncompahgre Resource Area. After the RMP is completed, WSA recommendations will be compiled in a Wilderness Study Report (together with a separate final EIS on the WSAs). The areas found unsuitable and suitable for wilderness designation by BLM, following a U.S. Geologic Survey and U.S. Bureau of Mines mineral survey of recommended suitable areas, will be submitted by the Colorado State Director to the BLM Director through the Secretary of the Interior to the President. Congress is the actual decisionmaker as to which areas are designated or not designated as wilderness.

Assumptions Used in Analyzing Environmental Consequences

1. FLPMA requires BLM to recommend WSAs as suitable or unsuitable for designation as wilderness. These recommendations are thus made in all alternatives. The criteria and quality standards in BLM's Wilderness Study Policy were also analyzed and considered.

2. Each WSA will be managed, if it is designated wilderness, according to the Wilderness Act of 1964 and BLM's Wilderness Management Policy, which provides guidance to activities which are permissible within wilderness. BLM's wilderness management policy guidance also affects the study of each WSA in determining how wilderness and various resource values (including nonconforming uses) will be analyzed.

3. To determine each WSA's suitability, other resource recommendations will be analyzed as though BLM's Interim Management Policy (IMP) and Guidelines for Lands Under Wilderness Review (USD1, BLM, July 12, 1983) is not a factor. Some recommendations may not be performed, however, unless a WSA is released from interim management following a nondesignation decision by Congress.

It is presently assumed that if a WSA is recommended as nonsuitable, a five-year IMP period will be necessary to allow for the wilderness study report, administrative review, the Secretary's and the President's recommendations, and Congress's decision. If a WSA or portion of a WSA is recommended as suitable, a ten-year IMP period also is assumed to allow for the required mineral reports from the U.S. Geological Survey, the U.S. Bureau of Mines, and possible supplemental EIS from BLM. The IMP period, however, may be longer as Congress has no time limit in which to make its decisions; at the time of the decisions, additional analysis may be necessary to determine if the recommendations have been affected by the implementation delays.

Scope of Issues to be Addressed

This Wilderness Technical Supplement addresses public issues and management concerns related to the suitability or nonsuitability of all eight WSAs for NWPS inclusion (see Table 1). Issues for the entire RMP were developed from BLM studies on the area, staff experience, and public meetings held in February 1981 in Montrose, Telluride, Nucla, Cortez, Durango, and Denver.

WSA Locations

All the WSAs are located in the San Juan/San Miguel planning area, which encompasses 994,000 acres within southwest Colorado and southeastern Utah (see Fig. 1-1, Chapter 1).

<u>WSAs</u>	<u>Location (counties)</u>
Cahone Canyon	3 mi W of Cahone (Dolores/Montezuma, CO)
Cross Canyon	14 mi SW of Cahone (Dolores/Montezuma, CO; San Juan, UT)
Dolores River Canyon	17 mi W of Naturita (Montrose/San Miguel, CO)
McKenna Peak	22 mi NE of Dove Creek (Dolores/San Miguel, CO)
Menefee Mountain	3 mi S of Mancos (Montezuma, CO)

<u>WSAs</u>	<u>Location (counties)</u>
Squaw/Papoose Canyon	12 mi SW of Dove Creek (Dolores, CO; San Juan, UT)
Tabeguache Creek	3 mi N of Nucla (Montrose, CO)
Weber Mountain	3 mi S of Mancos (Montezuma, CO)

Table 1. Significant Issues Within WSAs.

<u>WSAs</u>	<u>Issue</u>
Cahone Canyon	Within KGS ^{1/} ; potential for uranium and vanadium; contains cultural resources.
Cross Canyon	Within KGS; potential for uranium and vanadium; contains cultural resources.
Dolores River Canyon	Potential for uranium, vanadium, copper, silver and natural gas; salinity management sites; contains cultural resources and float boating areas.
McKenna Peak	Potential for salinity and livestock management. Slight potential for oil and gas, and uranium and vanadium. Area also contains wild horses.
Menefee Mountain	Within KRCRA ^{2/} ; potential for oil and gas; contains deer and elk winter range.
Squaw/Papoose Canyon	Within KGS; potential for uranium and vanadium; contains cultural resources.
Tabeguache Creek	Contains cultural resources; potential for livestock management.
Weber Mountain	Within KRCRA; potential for oil and gas; contains deer and elk winter range.

^{1/} KGS = Known Geologic Structure.

^{2/} KRCRA = Known Recoverable Coal Resource Area.

Source: BLM Data 1984.

ALTERNATIVES

CHAPTER ONE .

CHAPTER ONE ALTERNATIVES

Introduction

This Wilderness Technical Supplement discusses eight WSAs and examines four to six alternatives for each (Resource Conservation, including Wilderness Manageability and Conflict Resolution; Resource Utilization; Current Management; and Preferred). McKenna Peak and the Dolores River Canyon WSAs are the only ones that have specific Conflict Resolution alternatives. For the others, the No Wilderness Alternative would be the Conflict Resolution Alternative.

The Preferred Alternative recommends as suitable the Dolores River Canyon WSA (see the Wilderness Manageability Alternative) for wilderness designation and the other seven WSAs as unsuitable. If designated by Congress, the Dolores River Canyon would be included in the NWPS according to the provisions under the Wilderness Act of 1964 which directs the administering agency to be responsible for preserving the wilderness character of the area, the Federal Land Policy and Management Act of 1976 (FLPMA), and BLM's Final Wilderness Management Policy.

Section 4 of the Wilderness Act, dealing with wilderness area use, states that wilderness areas shall be devoted to recreation, scenic, scientific, educational, conservation, and historic uses. Subpart C of Section 4 limits that use:

Prohibited Uses and Activities

Except as specifically provided for in this Act (Wilderness Act of 1964), and subject to existing private rights, there shall be no commercial enterprise and no permanent road within any wilderness area designated by this Act and, except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act (including measures required in emergencies involving the health and safety of persons within the area), there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of transport, and no structure or installation within any such area.

The special provisions allowing specific activities to be permitted are discussed in the next subpart of Section 4 and summarized here. Aircraft or motorboat use, where these uses have already become established, may be permitted to continue and necessary measures to control fire, insects, and diseases would be allowed. These activities would be subject to the conditions desired by the managing department head.

Mineral prospecting would be allowed if it could be done in a manner compatible with the preservation of the wilderness environment until the date of wilderness designation. The mining laws and all laws pertaining to mineral leasing in effect before designation would remain in effect, subject, however, to such reasonable regulations governing ingress and egress as prescribed by the Secretary of Agriculture, "including, where essential the use of mechanized ground or air equipment and restoration, as near as practicable, of the surface of the land disturbed" during the mining activity (from The Wilderness Act of 1964, Sec. 4 [3], p. 206).

When it serves the public interests, the President may authorize establishing and maintaining water developments, power projects, transmission lines, roads, and other such facilities. Livestock grazing is permitted to continue subject to such reasonable regulations as are deemed necessary by the Secretary. Commercial services could be performed within the wilderness areas to the necessary extent to realize recreational or other wilderness purposes of the area.

The Act does not exempt the affected resources from State water laws or the jurisdiction and responsibilities with respect to aquatic and terrestrial wildlife in the area.

Present Management

These WSAs have been managed to protect wilderness resource values since FLPMA was passed in 1976. Section 603(c) of FLPMA states:

During the period of review of such areas and until Congress has determined otherwise the Secretary shall continue to manage such lands according to his authority under this act and other applicable law in a manner so as not to impair the suitability of such areas for preservation as wilderness, subject, however, to the continuation of existing mining and grazing uses and mineral leasing in the manner and degree in which the same was being conducted on the date of approval of this act.

These lands were managed until December 12, 1979, under the State of Colorado's interim management policy which parallels FLPMA. As of December 12, 1979, these lands have been managed under the BLM's Interim Management Policy and Guidelines for Lands Under Wilderness Review, which sets policy and guidelines for BLM management of lands which are under wilderness review (this policy statement was revised July 12, 1983).

Prior to the passage of FLPMA, Weber and Menefee mountain WSAs were recommended for possible BLM designation as primitive areas under a 1972 land use plan. The river corridor portion of the Dolores River Canyon WSA was studied and recommended by BLM for inclusion into the Wild & Scenic River system on January 3, 1975.

Private Land Inholdings

For inholdings to be compatible with wilderness values of the surrounding public lands, following any applicable wilderness legislation, land acquisition authority may be necessary. Acquiring inholdings would not be necessary if the properties were used in a manner compatible with surrounding wilderness management of the public lands.

Interrelationships

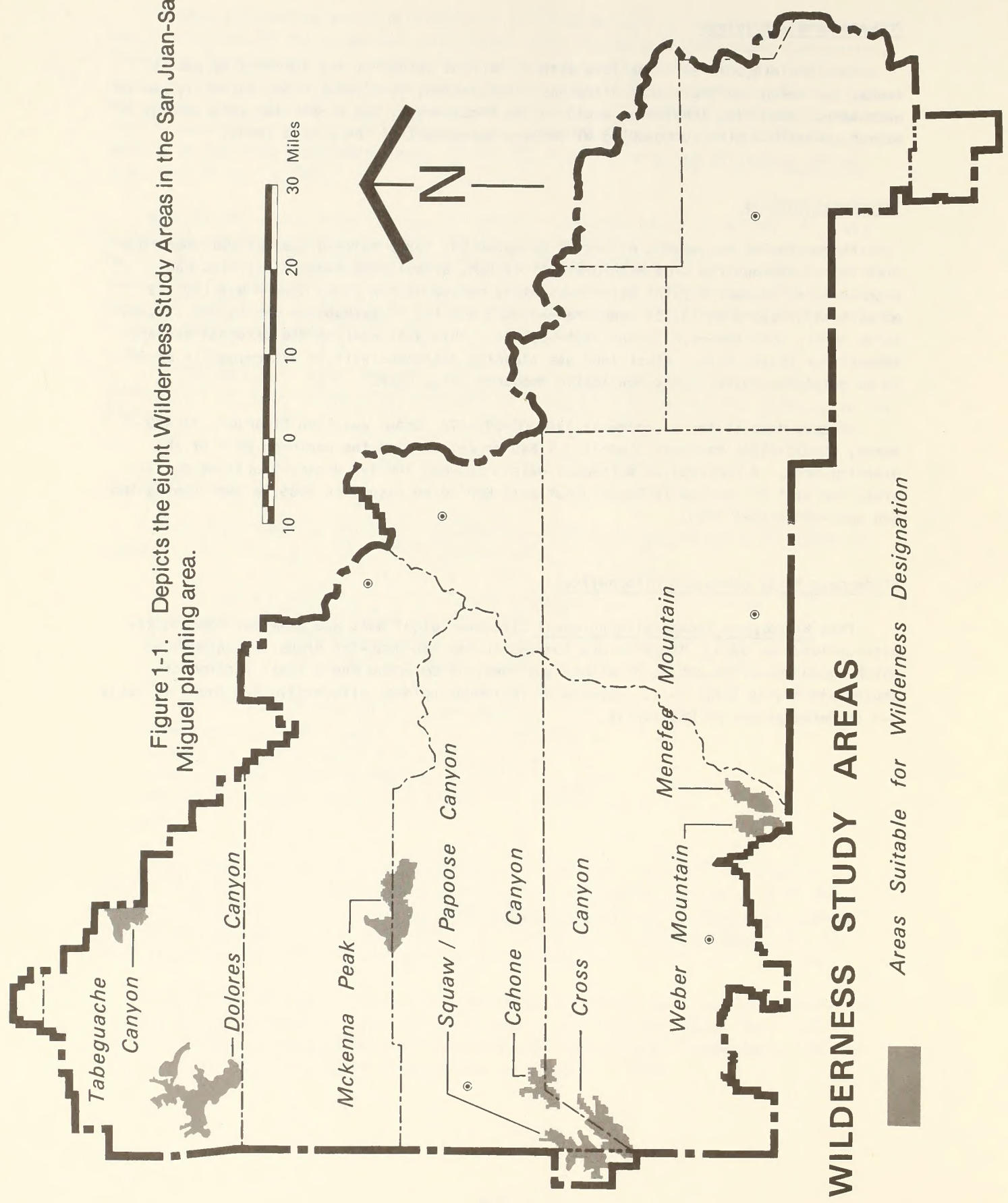
A cooperative agreement, effective December 29, 1981, between the Colorado Montrose District of BLM and the Utah Moab District of BLM, establishes responsibilities and procedures to conduct a joint wilderness study review of the Cross Canyon WSA (12,742 acres total; Colorado--11,734, and Utah--1,008) and the Squaw/Papoose Canyon WSA (11,287 acres total; Colorado--4,611, and Utah--6,676). This will analyze the alternatives and impacts for Utah's WSAs. Final land use planning decisions will be determined in an RMP to be completed by the BLM's Monticello Resource Area, Utah.

Sewemup Mesa (total acreage--19,740; CO-070-176, Grand Junction District, 17,900 acres; CO-030-310A, Montrose District, 1,840 acres) borders the northern part of the planning area. A cooperative agreement exists between the two district offices for its study and will be covered in Grand Junction's RMP to be issued in 1985, a year behind the San Juan-San Miguel plan.

Wilderness Study Areas and Alternatives

This Wilderness Technical Supplement discusses eight WSAs and examines four to six alternatives for each. The WSAs are located in the San Juan-San Miguel planning area which encompasses 994,000 acres within southwestern Colorado and a small portion of southeastern Utah (Fig. 1-1). Impacts of implementing each alternative are found in Table 1-1 (located at end of Chapter 1).

Figure 1-1. Depicts the eight Wilderness Study Areas in the San Juan-San Miguel planning area.



WILDERNESS STUDY AREAS

Cahone Canyon (CO-030-265D)

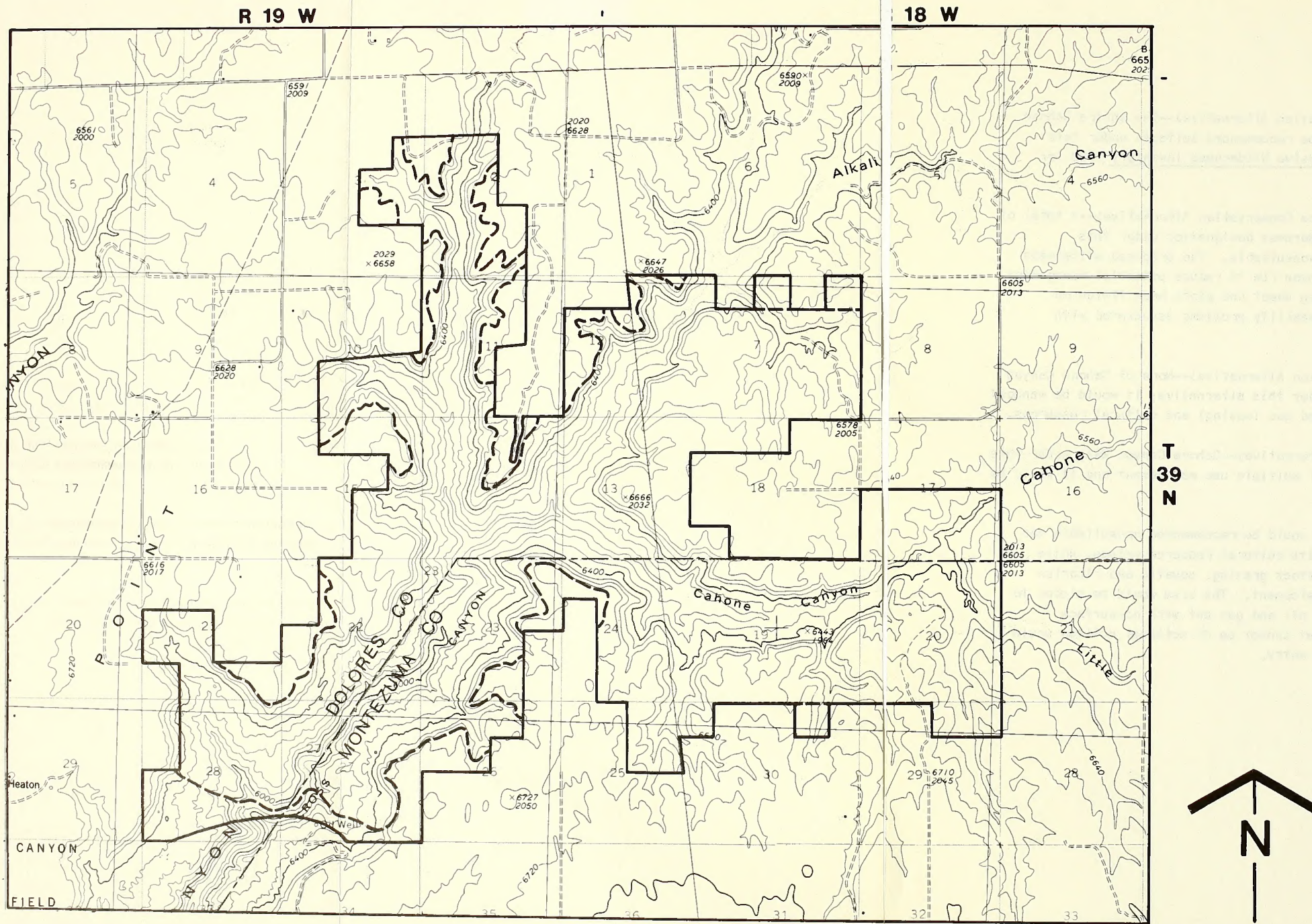
All Wilderness Alternative (Resource Conservation Alternative)--The entire Cahone Canyon WSA, which consists of 9,040 acres, would be recommended suitable under this alternative for wilderness status (see BLM's Intensive Wilderness Inventory 1980 for description).

Wilderness Manageability Alternative (Resource Conservation Alternative)--A total of 7,824 acres would be recommended suitable for wilderness designation under this alternative and 1,216 acres would be recommended nonsuitable. The proposed wilderness boundary would be pulled back in places to the canyon rim to reduce potential management problems with agricultural uses such as cultivating wheat and pinto bean fields on adjacent private farmlands (see Fig. 1-2). Manageability problems associated with pre-FLPMA oil and gas leases would still exist.

No Wilderness Alternative (Resource Utilization Alternative)--None of Cahone Canyon WSA would be recommended for wilderness status under this alternative; it would be managed for livestock grazing, mineral development (oil and gas leasing) and cultural resources.

No Action Alternative (Current Management Alternative)--Cahone Canyon WSA, under this alternative, would be managed according to general multiple use management and it would be open to mineral exploration and development.

Preferred Alternative--The Cahone Canyon WSA would be recommended nonsuitable for wilderness designation and managed primarily for its cultural resource values, while allowing some other uses to continue such as livestock grazing, aquatic and riparian habitat improvements, and limited oil and gas development. The area would be closed to ORV use and parts of the area would be leased for oil and gas but with no-surface occupancy stipulations. The remaining portion that cannot be directional drilled would not be leased. This WSA would be open to mineral entry.



- All Wilderness Alternative
- - - Wilderness Manageability Alternative

0 1/2 1 2 MILES

Cahone Canyon WSA

Figure 1-2. Shows Cahone Canyon WSA's boundary, including two alternatives being considered (see text for descriptions of all alternatives).

Cross Canyon (CO-030-265; UT-060-229)

All Wilderness Alternative (Resource Conservation Alternative)--The entire Cross Canyon WSA, which consists of 12,742 acres (Colorado--11,734 acres; Utah--1,008 acres), would be recommended suitable under this alternative for wilderness status (see BLM's Intensive Wilderness Inventory 1980 for description).

Wilderness Manageability Alternative (Resource Conservation Alternative)--A total of 12,698 acres would be recommended suitable for wilderness designation under this alternative and 650 acres would be recommended nonsuitable. Included in the suitable acreage are 606 acres outside the WSA that would be included to improve the manageability of the area (T. 37 N., R. 20 W.; portions of Secs. 10 and 11) and cherrystemmed ways along the east-central boundary of the WSA (see Fig. 1-3 which also includes Squaw/Papoose Canyon WSA, as they are adjacent to each other). The proposed wilderness boundary would be pulled back in places to the canyon rim to reduce potential management problems with agricultural uses such as cultivating wheat and pinto bean fields on adjacent private farmlands. Manageability problems associated with pre-FLPMA oil and gas leases would still exist.

No Wilderness Alternative (Resource Utilization Alternative)--None of Cross Canyon WSA would be recommended for wilderness status under this alternative; it would be managed for cultural resources, mineral development (oil and gas leasing and uranium and vanadium), livestock grazing, and enhancement of wildlife habitat.

No Action Alternative (Current Management Alternative)--Cross Canyon WSA, under this alternative, would be managed according to general multiple use management (and would be open to mineral exploration and development).

Preferred Alternative--Cross Canyon WSA would be recommended nonsuitable for designation and would be managed primarily for its cultural values, while allowing some other uses to continue, such as livestock grazing, aquatic and riparian habitat improvements and limited oil and gas development. The area would be closed to ORVs and parts of the area would be leased for oil and gas but with no-surface occupancy stipulations; however, it would be open to mineral entry. The remaining portion that cannot be directional drilled would not be leased.

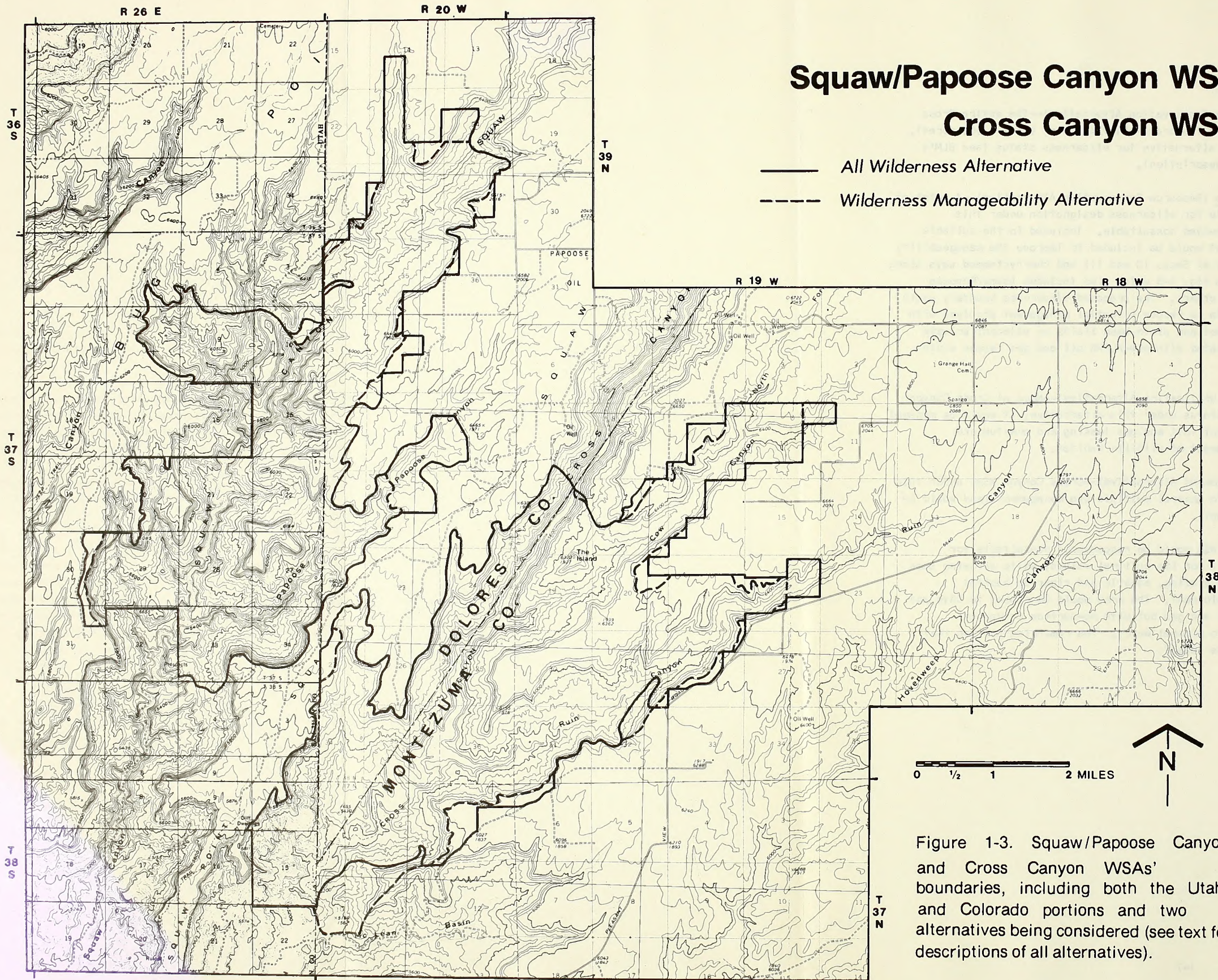


Figure 1-3. Squaw/Papoose Canyon and Cross Canyon WSAs' boundaries, including both the Utah and Colorado portions and two alternatives being considered (see text for descriptions of all alternatives).



AERIAL VIEW OF MULESHOE BEND (WITHIN DOLORES RIVER CANYON WSA).

Dolores River Canyon (CO-030-290)

All Wilderness Alternative (Resource Conservation Alternative)--The entire Dolores River Canyon WSA, which consists of 28,630 acres (the largest WSA in the planning area), would be recommended suitable under this alternative for wilderness status (see BLM's Intensive Wilderness Inventory 1980 for description).

Wilderness Manageability Alternative (Resource Conservation Alternative)--A total of 28,366 acres under this alternative would be recommended suitable for wilderness designation and a total of approximately 913 acres would be recommended nonsuitable (see Fig. 1-4).

The northern portion of the proposed wilderness boundary near Bedrock would be pulled back to allow for possible future development of a gravel pit and recreational boating (kayak, canoe, and raft) facilities. The northwestern boundary is pulled back from patented mining claims. The Bull Canyon vehicle way would be closed to ORVs and would be included in the suitable portion to aid in preventing ORV use within the proposed wilderness area and to provide a more topographically defined boundary. The vehicle way at Anderson and Buck mesas would be closed and included as suitable for wilderness designation for the above-mentioned reasons. Approximately 700 total acres would be added for these two ways to be included in the suitable portion. The southern boundary would be pulled back slightly along topographic lines to provide a more manageable situation and for possible future access to the WSA.

Wilderness Conflict Resolution Alternative (Resource Conservation Alternative)--A total of 23,430 acres of the Dolores River Canyon WSA would be recommended suitable for wilderness status; 5,200 acres would be nonsuitable. The north-central WSA boundary would be pulled back to allow the Bureau of Reclamation to establish their salinity injection well project here (see Fig. 1-4).

No Wilderness Alternative (Resource Utilization Alternative)--None of the Dolores River Canyon WSA would be recommended for wilderness status under this alternative. It would be managed for its recreation values, and salinity control structures and mineral development would be allowed.

No Action Alternative (Current Management Alternative)--Dolores River Canyon WSA, under this alternative, would be managed according to possible designation as a wild and scenic river and according to general multiple use management.

Preferred Alternative--Under this alternative, the WSA (28,366 acres, described in the Wilderness Manageability Alternative) would be recommended preliminarily suitable for wilderness designation. In addition, public easements or land acquisition would be undertaken on the north end near Bedrock to provide better management of the wilderness and primitive recreation values. It would be withdrawn from mineral entry.

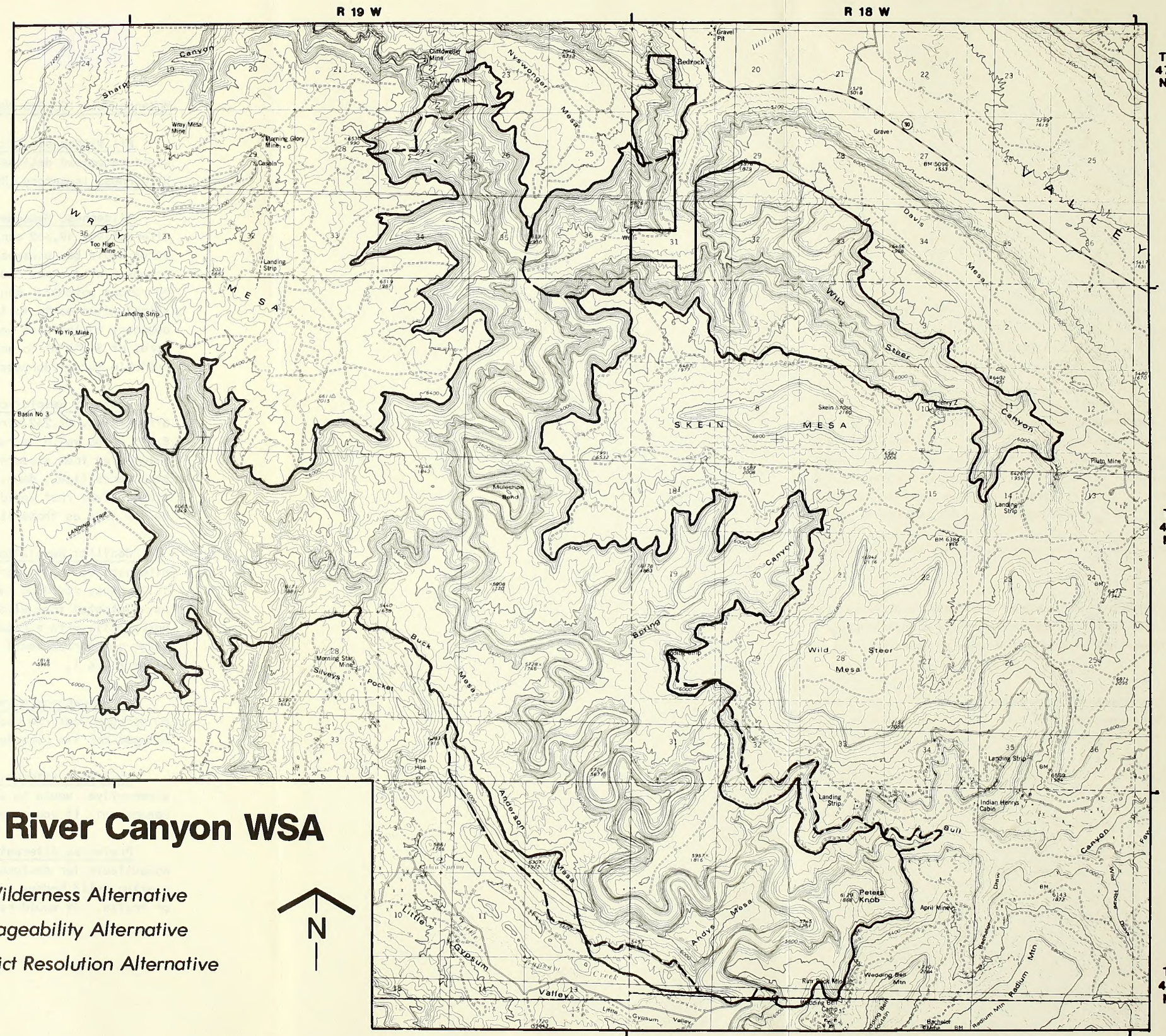


Figure 1-4. Dolores River Canyon WSA's boundary, including three alternatives being considered (see text for descriptions of all alternatives).

All Wilderness Alternative (Resource Conservation Alternative)--This alternative would recommend designating the entire 19,562-acre WSA as described in BLM's Intensive Wilderness Inventory (BLM 1980; see Fig. 1-5).

Wilderness Manageability Alternative (Resource Conservation Alternative)--Under this alternative, 19,362 acres would be recommended suitable for wilderness designation and 200 acres would be recommended nonsuitable (see Fig. 1-5). The southern portion of the proposed wilderness boundary would be pulled back away from the Disappointment Valley Road to reduce potential management problems associated with motorized vehicle conflicts. Some slight adjustments to follow topographic features would also occur on the northern boundary to increase manageability. This alternative would include approximately 320 acres of State of Colorado land (portion of T. 43 N., R. 15 W., Sec. 16) that would be suitable for wilderness designation, upon BLM acquisition.

Conflict Resolution Alternative I (Resource Conservation Alternative)--Under this alternative, 11,232 acres would be recommended suitable for wilderness designation and 8,330 acres would be recommended nonsuitable. The eastern portion of the WSA would be eliminated from wilderness consideration to allow construction of salinity control structures (i.e., dams, contour furrowing, etc.) and range projects (described in the next alternative) that would impair the wilderness resource values. All other boundaries would be the same as those listed under the Wilderness Manageability Alternative I.

Conflict Resolution Alternative II (Resource Conservation Alternative)--Under this alternative, 18,391 acres would be recommended suitable for wilderness designation and 1,171 acres would be recommended nonsuitable. The very eastern portion of the WSA would be eliminated from wilderness consideration to construct a livestock reservoir (mechanical equipment), with a resulting increase in cattle grazing in this portion of the WSA. All other boundaries would be the same as those listed under the Wilderness Manageability Alternative I.

No Wilderness Alternative (Resource Utilization Alternative)--Under this alternative, no acreage would be recommended for wilderness designation. McKenna Peak WSA would be managed for its livestock grazing, wildlife, and soils, and water uses.

No Action Alternative (Current Management Alternative)--McKenna Peak WSA, under this alternative, would be managed according to general multiple natural resource use management; it would be open to mineral exploration and development.

Preferred Alternative--Under this alternative, McKenna Peak WSA would be recommended nonsuitable for designation and would be managed primarily for its watershed, livestock grazing, wild horses, and wildlife values and would have ORV use limited to existing roads or trails. It would remain open to mineral entry and subject to mineral leasing laws.

McKenna Peak WSA

0 1/2 1 2 MILES

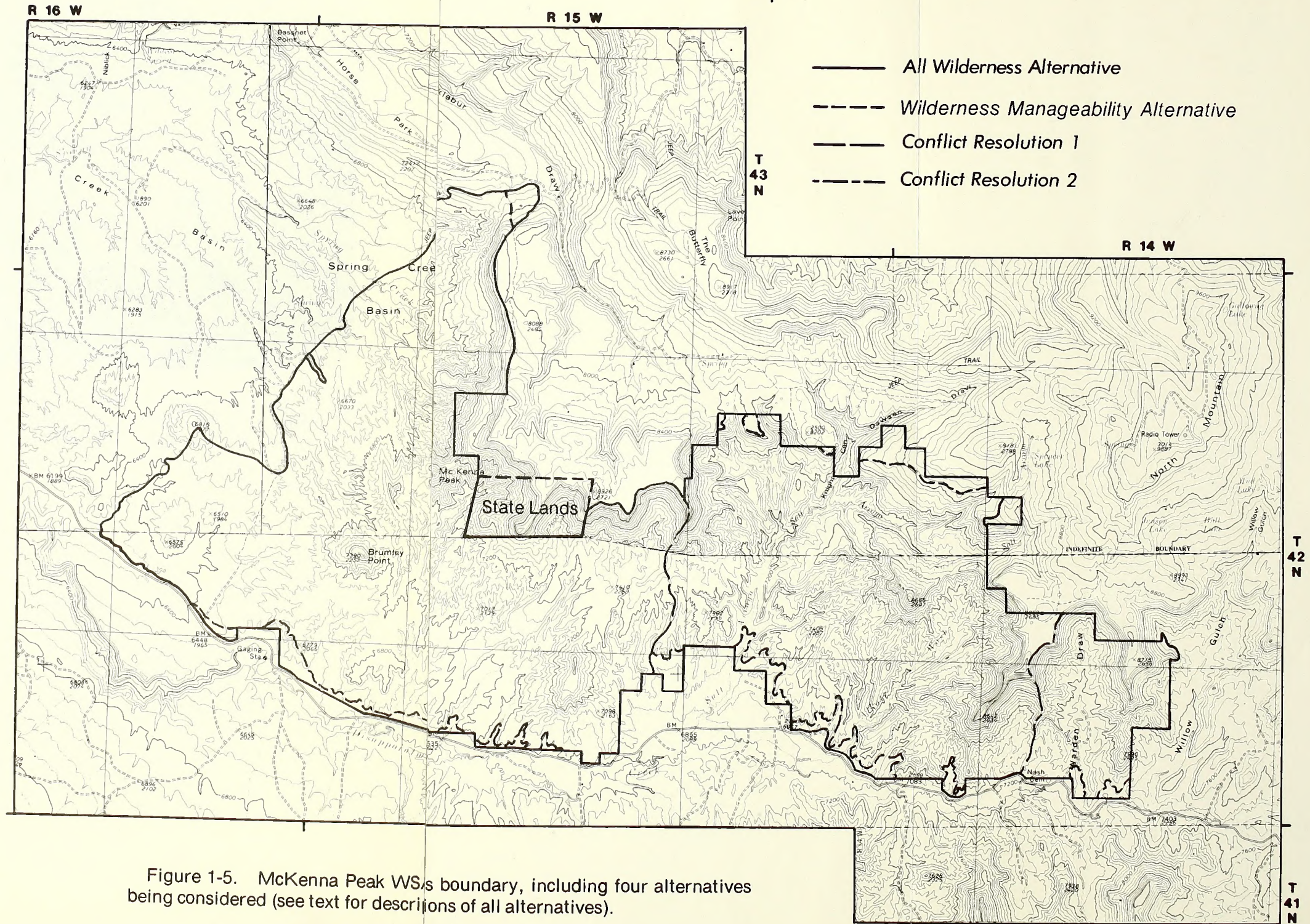
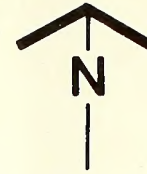


Figure 1-5. McKenna Peak WS's boundary, including four alternatives being considered (see text for descriptions of all alternatives).



AERIAL VIEW OF WEBER MOUNTAIN WSA (FOREGROUND), MENELEE MOUNTAIN WSA (MIDDLEGROUND), AND THE LA PLATA RANGE (BACKGROUND, PART OF SAN JUAN NATIONAL FOREST).

Menefee Mountain (CO-030-251)

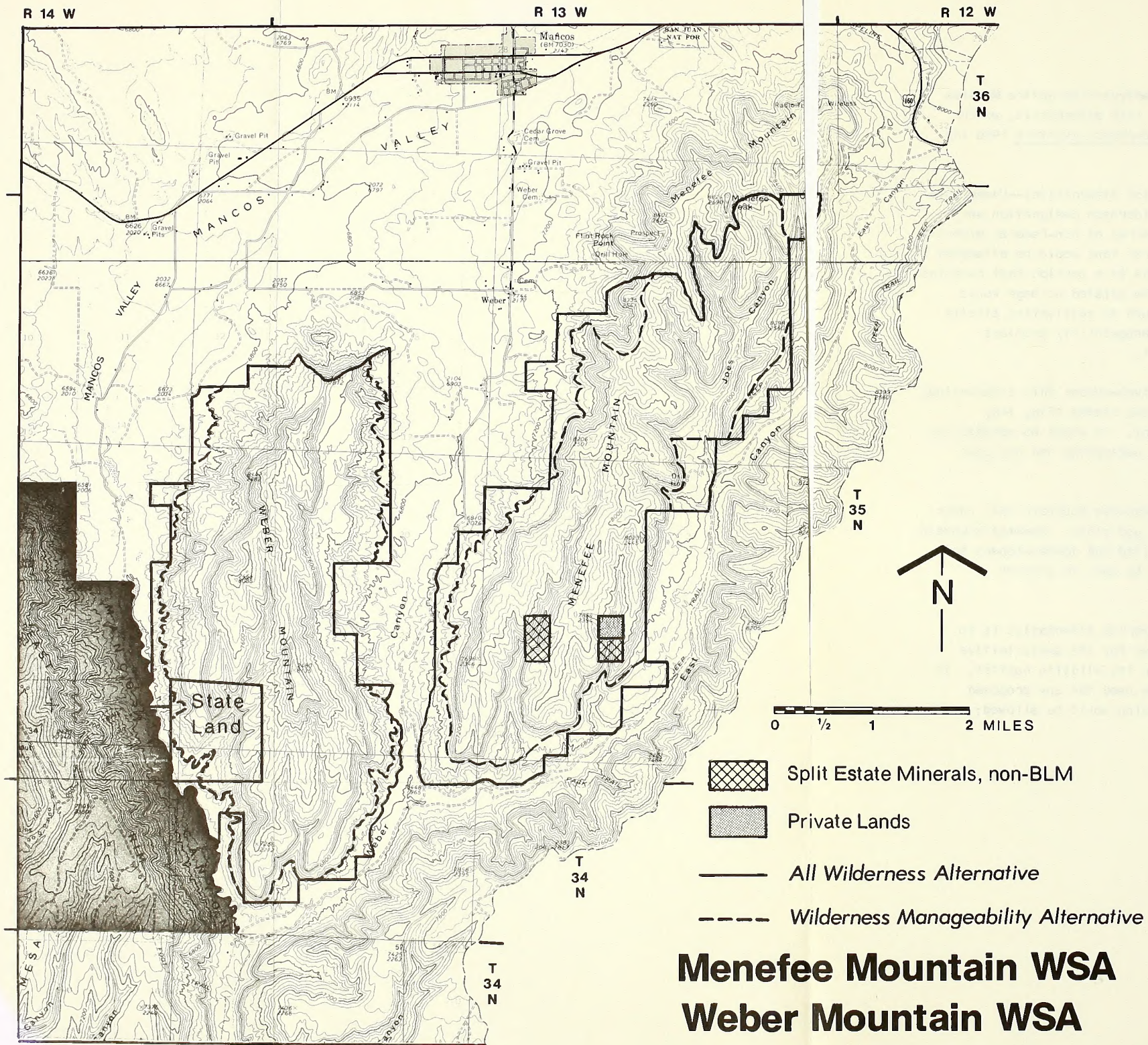
All Wilderness Alternative (Resource Conservation Alternative)--The entire Menefee Mountain WSA would be recommended for wilderness status under this alternative, which would include the entire 7,129 acres (see BLM's Intensive Wilderness Inventory 1980 for description).

Wilderness Manageability Alternative (Resource Conservation Alternative)--Under this alternative, 5,416 acres would be recommended suitable for wilderness designation and 1,713 acres would be recommended nonsuitable. Acquiring 120 acres of non-Federal mineral inholdings and one 40-acre inholding of private land for Federal land would be attempted through purchase or exchange. This alternative reduces the WSA to a portion that contains most of the wilderness values found within the entire WSA. The deleted acreage would reduce potential management problems with agricultural uses such as cultivating alfalfa fields on adjacent private farmlands and cutting firewood. Manageability problems associated with pre-FLPMA oil and gas leases would still exist.

No Wilderness Alternative (Resource Utilization Alternative)--Under this alternative, none of Menefee Mountain WSA would be recommended for wilderness status (Fig. 1-6; includes Weber Mountain WSA as they are adjacent to each other). It would be managed for mineral development (coal, and oil and gas leasing), forestry harvesting and big game wildlife uses.

No Action Alternative (Current Management Alternative)--Menefee Mountain WSA, under this alternative, would be managed according to existing land use plans. Menefee Mountain was never officially designated as a primitive area (nonmotorized and nondeveloped) but has been managed as such under a 1972 land use plan, it would be open to mineral exploration and development.

Preferred Alternative--For Menefee Mountain WSA, the Preferred Alternative is to manage it as nonsuitable for wilderness designation and managed for its semiprimitive nonmotorized recreation values (hiking, hunting, etc.) and for its wildlife habitat. It would be closed to ORV use and VRM Class II standards would be used for any proposed action. It would not be leased for oil and gas. No coal leasing would be allowed; however, it would remain open for mineral entry.



Menefee Mountain WSA Weber Mountain WSA

Figure 1-6. Menefee Mountain and Weber Mountain WSAs' boundaries, including two alternatives being considered (see text for descriptions of all alternatives).

All Wilderness Alternative (Resource Conservation Alternative)--The entire Squaw/Papoose Canyon WSA, consisting of 11,287 acres (Colorado--4,611 acres; Utah--6,676 acres), would be recommended suitable under this alternative for wilderness status (see BLM's Intensive Wilderness Inventory 1980 for description).

Wilderness Manageability Alternative (Resource Conservation Alternative)--A total of 10,547 acres would be recommended suitable for wilderness designation under this alternative and 740 acres would be recommended nonsuitable (see Fig. 1-3). The proposed WSA boundary would be pulled back in places to the canyon rim to reduce potential management problems with agricultural uses such as cultivating wheat and pinto bean fields on adjacent private farmlands. Manageability problems associated with pre-FLPMA oil and gas leases would still exist.

No Wilderness Alternative (Resource Utilization Alternative)--None of Squaw/Papoose Canyon WSA would be recommended for wilderness status under this alternative; it would be managed for its cultural resources and mineral development (oil and gas leasing and uranium and vanadium).

No Action Alternative (Current Management Alternative)--Squaw/Papoose Canyon WSA, under this alternative, would be managed according to general multiple use management and would be open for mineral exploration and development.

Preferred Alternative--The Squaw/Papoose Canyon WSA would be recommended nonsuitable for designation and managed primarily for its cultural resource values, while allowing some other uses to continue, such as livestock grazing, aquatic and riparian habitat improvements and limited oil and gas development. The area would be closed to ORVs and parts of the area would be leased for oil and gas but with no-surface occupancy stipulations. The remaining portion that cannot be directional drilled would not be leased.

Tabeguache Creek (CO-030-300)

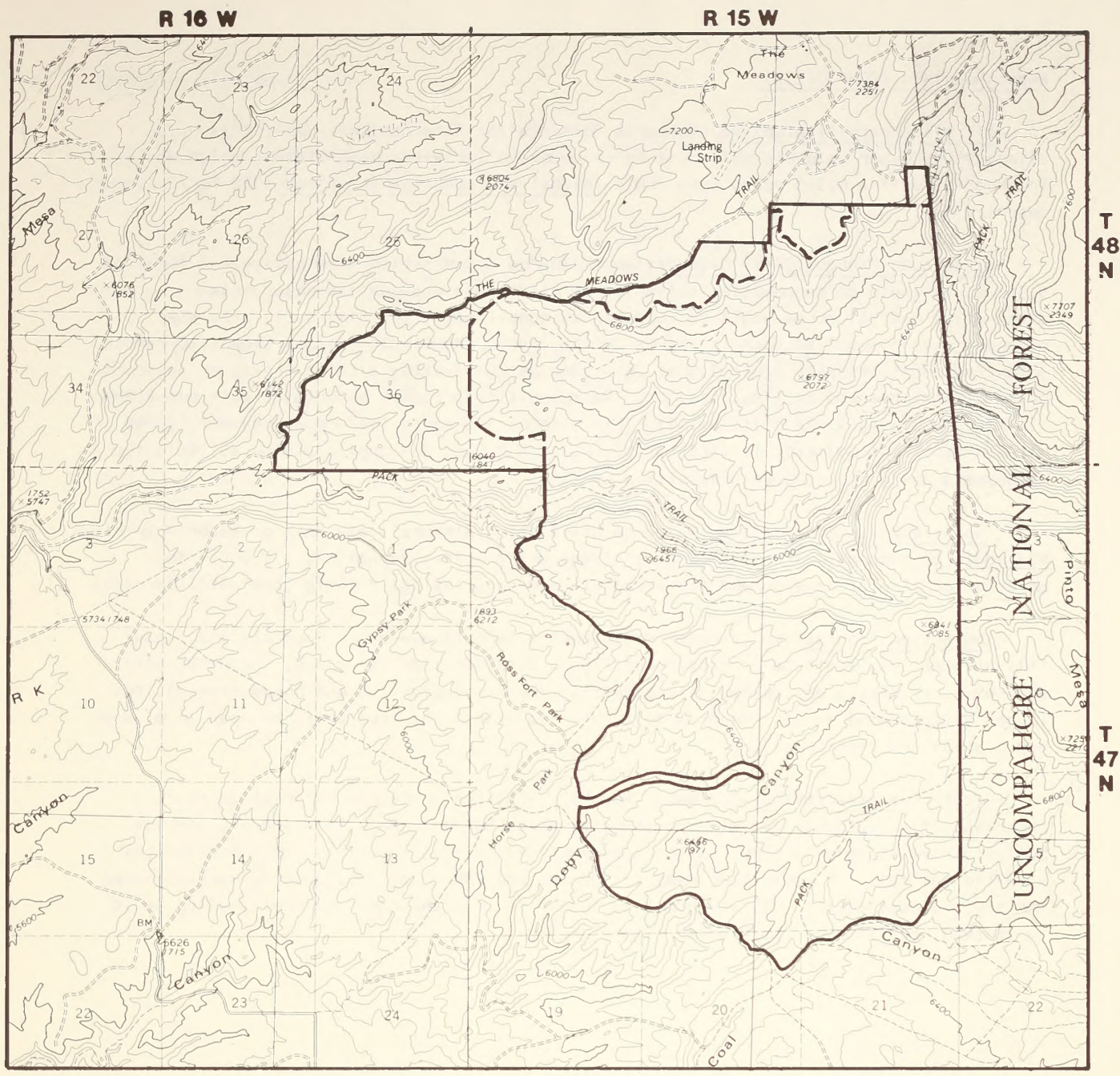
All Wilderness Alternative (Resource Conservation Alternative)--The entire Tabeguache Creek WSA, which consists of 7,908 acres, would be recommended suitable under this alternative for wilderness status (see BLM's Intensive Wilderness Inventory 1980 for description).

Wilderness Manageability Alternative (Resource Conservation Alternative)--A total of 6,876 acres would be recommended suitable for wilderness designation and a total of 1,032 acres would be recommended as nonsuitable (see Fig. 1-7). To reduce potential vehicle use conflicts, the northern WSA boundary would be pulled back away from the road. Easements and(or) land acquisition would be pursued across private land along Tabeguache Creek. A cherrystemmed road in the southern portion of the area would be closed.

No Wilderness Alternative (Resource Utilization Alternative)--None of the Tabeguache Creek WSA would be recommended for wilderness status under this alternative; it would be recommended for cultural and aquatic and riparian management.

No Action Alternative (Current Management Alternative)--The Tabeguache Creek WSA, under this alternative, would be managed according to general multiple use management and it would be open to mineral exploration and development.

Preferred Alternative--The Tabeguache Creek WSA would be recommended nonsuitable for designation and would be managed for its cultural and aquatic and riparian values. The area would be closed to ORVs and would be leased for oil and gas but with no-surface occupancy stipulations. The main canyon complex would be managed as an Outstanding Natural Area and approximately 560 acres would be withdrawn from mineral entry along the canyon bottom.



Tabeguache Creek WSA

- All Wilderness Alternative
- - - - - Wilderness Manageability Alternative

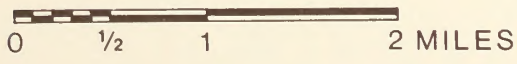


Figure 1-7. Tabeguache Creek WSA's boundaries, including two alternatives being considered (see text for descriptions of all alternatives).

Weber Mountain (CO-030-252)

All Wilderness Alternative (Resource Conservation Alternative)--Under this alternative, Weber Mountain WSA would be recommended for wilderness status, which would include the entire 6,303 acres (see BLM's Intensive Wilderness Inventory 1980 for description).

Wilderness Manageability Alternative (Resource Conservation Alternative)--A total of 5,362 acres would be recommended suitable for wilderness designation under this alternative and 941 acres would be recommended nonsuitable (see Fig. 1-6). The WSA boundary would be pulled back in places to the toe of the pinyon-juniper slopes to reduce potential conflicts with agricultural uses such as cultivating alfalfa fields on adjacent private farmlands and cutting firewood. Manageability problems associated with pre-FLPMA oil and gas leases would still exist. This alternative would include approximately 640 acres of State of Colorado land (T. 35 N., R. 14 W., Sec. 36) that would be suitable for wilderness designation; upon acquisition by BLM.

No Wilderness Alternative (Resource Utilization Alternative)--None of Weber Mountain WSA would be recommended for wilderness status under this alternative. It would be managed for mineral development (coal and oil and gas leasing) and big game wildlife uses.

No Action Alternative (Current Management Alternative)--Weber Mountain WSA, under this alternative, would be managed according to existing land use plans. Weber Mountain was never officially designated as a primitive area (nonmotorized and nondeveloped), but it has been managed as such under a 1972 land use plan. The area would be open to mineral exploration and development.

Preferred Alternative--For Weber Mountain WSA, the Preferred Alternative is to recommend it nonsuitable for wilderness designation but to manage it primarily for its semiprimitive nonmotorized recreation opportunities (hiking, hunting, etc.) and for its wildlife habitat. It would be closed to ORV use and VRM Class II standards would be used for any proposed action. It would not be leased for oil and gas. No coal leasing would be allowed, but it would be open to mineral entry.

Wilderness Manageability

Based on the wilderness values of each WSA described in Chapter Two and the impacts on these wilderness values analyzed in Chapter Three, the manageability of each WSA has been determined as follows.

McKenna Peak, Dolores River Canyon, and Tabeguache Creek WSAs are considered manageable as wilderness under all the alternatives except for the No Wilderness alternatives (see Table 1-1).

Cahone, Cross, and Squaw/Papoose canyon WSAs are not considered manageable as wilderness under all of the alternatives because of potential mineral impacts to wilderness values. To a lesser extent, Weber and Menefee mountain WSAs are also considered difficult to manage under all the alternatives. High oil and gas potential is associated with all five WSAs and pre-FLPMA oil and gas leases exist. In addition, Cross and Squaw/Papoose canyon WSAs have high potential for uranium and vanadium resources with a probability that they contain pre-FLPMA mining claims with valid discoveries.

Table 1-1 compares impacts by alternatives and by resources for the eight WSAs and also includes whether or not each WSA is manageable as wilderness.

Table 1-1. Comparative Analysis of Impacts for the WSA Alternatives*

WSA and alternatives	Wilderness manageability	Lands and access	Recreational/visual resources	Economics	Vegetation/soils/water	Mineral resources	Wildlife		Livestock management
							(including aquatic and terrestrial)	Cultural resources	
Oxbone Canyon WSA— (Resource Conservation)	Not manageable as wilderness due to mineral conflicts, if pre-FLPMA leases are developed.	Close chert system road; eliminate potential conflicts with nonwilderness uses. Allow no utility corridors & no new facilities except those authorized through Wilderness Act provisions. Remove any existing, nonconforming structures unless they are determined to be of cultural or historic value or necessary for administering the area. Land uses restricted by wilderness designation would be adversely affected, causing access difficulties to private lands & minerals.	Primitive types of recreation, no off-road vehicles (ORVs); Visual Resource Management (VRM) Class 1.	Tourism & recreational use could increase.	Would allow natural ecological processes to occur; soil conditions would remain same unless exploration & development within pre-FLPMA mineral leases would occur; any future water quality would remain the same. Stabilize & rehabilitate man-caused disturbances if identified in a wilderness management plan.	Administer all mineral activity as required by Sec. 4(d) of Wilderness Act of 1964. Deny issuance of endorser (T&E) mineral leases within wilderness area. Loss of oil (368,940 barrels) & gas (737,880 mcf) & CO ₂ (46,118 mmct) reserves.	Could protect aquatic & terrestrial habitat. Protect threatened & endangered (T&E) species & maintain or improve habitat.	Could enhance resources & protect them from surface-disturbing activities associated with mineral development. Increased visitor use could affect sites.	No impacts
Wilderness Manageability (Resource Conservation)	Not manageable as wilderness due to mineral conflicts, if pre-FLPMA leases are developed. Loss of wilderness values would occur on boundary adjusted to canyon rim.	Same as All Wilderness, except land uses restricted by wilderness designation would be affected to a lesser degree.	Essentially same as All Wilderness.	Essentially same as All Wilderness.	Suitable portion essentially same as All Wilderness. Unsuitable portion allows more stabilization & rehabilitation activities. Soil conditions may change due to development.	Suitable portion essentially same as All Wilderness. Unsuitable portion would be available for development.	Essentially same as All Wilderness.	Suitable portion essentially same as All Wilderness. Unsuitable portion, disturbances associated with greater access to canyon rims could occur.	No impacts

Table 1-1. Comparative Analysis of Impacts for the WSA Alternatives (Continued)

WSA and alternatives	Wilderness manageability	Lands and access	Recreational/visual resources	Economics	Vegetation/soils/water	Mineral resources	Wildlife (including aquatic and terrestrial)	Cultural resources	Livestock management
Cahone Canyon (cont.)—No Wilderness (Resource Utilization)	No wilderness; No wilderness recommended for cultural, livestock, & mineral uses. Wilderness values would be forgone.	Fewer impacts to private land.	Provide recreation opportunities that don't conflict with mineral development. No ORV use; VPM Class II.	Tourism & recreation use could decrease.	Mineral development could cause degradation of vegetation, soil, & water resources.	Continue oil and gas leases & hard rock & mining.	Terrestrial & aquatic habitat could be adversely affected by mineral development.	Improved access could lead to resource degradation & increased vandalism.	No impact
No Action (Current Management)	No wilderness; general multiple use. Wilderness values adversely affected.	Essentially same as Resource Utilization.	Essentially same as Resource Utilization; no special VPM or ORV management.	Essentially same as Resource Utilization.	Essentially same as Resource Utilization.	Pre-FUPMA oil & gas leases (14) within Sand Canyon Structure (KGS); possible uranium, but no previous exploration oil & gas activity; no unpatented mining claims.	Essentially same as Resource Utilization.	Essentially same as Resource Utilization.	No impact
Preferred	No wilderness; cultural values, some range, aquatic riparian management & oil and gas development. Wilderness values forgone.	Essentially same as Resource Utilization.	Make areas available for dry use activities. Provide for semipermanent recreation experience. Closed to ORV use; VPM Class II.	Essentially same as Resource Utilization.	Essentially same as Resource Utilization.	Lease for oil & gas but no surface occupancy stipulations (5,346 ac) & portion of area designated no leased (3,694 ac).	Essentially same as Resource Utilization.	Essentially same as Resource Utilization.	No impact

Table 1-1. Comparative Analysis of Impacts for the WSA Alternatives (Continued)

WSA and alternatives	Wilderness manageability	Lands and access	Recreational/visual resources	Economics	Vegetation/soils/water	Mineral resources	Wildlife (including aquatic and terrestrial)	Cultural resources	Livestock management
Cross Canyon WSA—All Wilderness (Resource Conservation)	Not manageable as wilderness due to mineral conflicts, if pre-FUPMA leases are developed.	Allow no utility corridors & no new facilities except those authorized through Wilderness Act provisions. Remove any existing, nonconforming structures unless they are determined to be of cultural or historic value or necessary for administering the area.	Primitive types of recreation; no ORVs; VPM Class I.	Tourism & recreation use could increase.	Allow natural ecologic processes to occur. Soil & water could remain unchanged, unless 33 pre-FUPMA mineral leases developed. Stabilize and rehabilitate man-caused disturbances as per work management plan.	Administer all mineral activity as required by Sec. 4(d) of Wilderness Act of 1964. Deny issuance of any future mineral leases.	Could protect aquatic & terrestrial habitat. Protect TLE species & maintain or improve habitat.	Could enhance resources & protect them from surface-disturbing activities associated with mineral development. Increased visitor use could affect sites.	Loss of livestock management opportunities & projects.
Entire acreage recommended is wilderness (12,742 ac; Colorado—11,734 ac; Utah—1,008 ac).						Loss of oil (415,360 barrels) & gas (830,720 mcf) reserves.	Increased visitor use could affect sites.		
Wilderness Manageability (Resource Conservation)	Not manageable as wilderness due to mineral conflicts, if pre-FUPMA leases are developed. Loss of wilderness values on land recommended nonutilizable would occur.	Boundary pulled back to canyon rim; cherry-stem road closed & some added to southern boundary.	Essentially same as All Wilderness.	Essentially same as All Wilderness.	Essentially same as All Wilderness.	Essentially same as All Wilderness.	Essentially same as All Wilderness.	Essentially same as All Wilderness.	Essentially same as All Wilderness.
Suitable, 12,698 ac; nonutilizable, 650 ac.									
No wilderness (Resource Utilization)	No wilderness; cultural, minerals & range uses. Wilderness values would be foregone.	Fewer impacts to private lands.	Provide recreation opportunities that don't conflict with mineral development; VPM Class II; no ORV use.	Tourism & recreation use could decrease. Mineral resources could be developed to potential.	Mineral development could cause degradation of vegetation, soil, & water resources.	Continue oil & gas leases; hard rock mining.	Terrestrial & aquatic habitat could be adversely affected by mineral development.	Improved access could lead to resource degradation & increased vandalism.	Intensive livestock management plan could be implemented, facilities constructed, land treatment's done.

Table 1-1. Comparative Analysis of Impacts for the WSA Alternatives (Continued)

WSA and alternatives	Wilderness manageability	Lands and access	Recreational/visual resources	Economics	Vegetation/soils/water	Mineral resources	Wildlife		
							(Including aquatic and terrestrial)	Cultural resources	Livestock management
Gross Danyon (cont.)—No Action (Current Management)	No wilderness; general multiple use. Wilderness values adversely affected.	Essentially same as Resource Utilization.	Essentially same as Resource Utilization; no VPM or ORV management.	Essentially same as Resource Utilization.	Essentially same as Resource Utilization.	Pre-FUPMA oil and gas leases (33); within Sand Canyon KGS; approx. 700 mining claims in Colorado portion; none in Utah.	Essentially same as Resource Utilization.	Essentially same as No Impacts.	Essentially same as No Impacts.
Preferred	No wilderness; cultural values, some range, aquatic/ riparian management & oil & gas development. Wilderness values for egone.	Provide for a semiprimitive recreation experience; VPM Class II; closed to ORVs.	Essentially same as Resource Conservation.	Essentially same as Resource Conservation.	Leased for oil & gas but with no-surface occupancy stipulations (4,669 ac) or no leasing (7,065 ac).	Essentially same as Resource Conservation.	Essentially same as Resource Conservation.	Essentially same as No Impacts.	Essentially same as No Impacts.

Table 1-1. Comparative Analysis of Impacts for the WSA Alternatives (Continued)

WSA and alternatives	Wilderness manageability	Lands and access	Recreational/visual resources	Economics	Vegetation/soils/water	Mineral resources	Wildlife (including aquatic and terrestrial)	Cultural resources	Livestock management
Dolores River Canyon WSA—All-Wilderness (Resource Conservation)	Manageable as wilderness.	Allow no utility corridors & no new facilities except those authorized through Wilderness Act provisions. Remove any existing, nonconforming structures unless they are determined to be of cultural or historic value or necessary for administering the area.	Primitive types of recreation; no ORVs; VMA Class I.	Tourism & recreation use could increase.	Allow natural ecologic processes to occur. Soils & water could remain unchanged, unless 9 pre-FLPMA mineral leases were developed.	Administer all mineral activity as required by Sec. 4(d) of Wilderness Act of 1964. Deny issuance of any future mineral leases.	Could protect aquatic & terrestrial habitat. Protect T&E species & maintain or improve habitat.	Could enhance resources & protect them from surface-disturbing activities associated with mineral development.	No impact
Entire area (28,630 ac) would be recommended as wilderness.		Land uses restricted by wilderness designation could be adversely affected, causing access difficulties to private lands & minerals.			Stabilize & rehabilitate non-caused disturbances as per wilderness management plan.	Loss of oil & gas reserves. (4,216 mmtcf)	Allow nonaquatic/aquatic riparian improvements & introduction of bighorn sheep & river otters into Dolores River Canyon.	Increased visitation use could effect sites.	
Wilderness Manageability (Resource Conservation)	Manageable as wilderness.	Same as All Wilderness except close way in Bull Canyon; easement & lot/land acquisition across private land near Wild Steer Canyon & Badrock.	Essentially same as All Wilderness.	Essentially same as All Wilderness.	Essentially same as All Wilderness.	Essentially same as All Wilderness.	Essentially same as All Wilderness.	Essentially same as All Wilderness.	No impact
Sul table, 28,366 ac; nonsul table, 913 ac.									
Conflict Resolution (Resource Conservation)	Manageable as wilderness. Loss of wilderness values would occur on nonsul table acres.	Boundary adjustment for Bureau of Reclamation well sites on north-central boundary.	Sul table portion essentially same as All Wilderness. Nonsul table portion similar to No Wilderness.	Sul table portion same as All Wilderness. Nonsul table portion similar to No Wilderness.	Sul table portion essentially same as All Wilderness. Nonsul table portion similar to No Wilderness.	Sul table portion essentially same as All Wilderness. Nonsul table portion similar to No Wilderness.	Sul table portion essentially same as All Wilderness. Nonsul table portion similar to No Wilderness.	Sul table portion essentially same as All Wilderness. Nonsul table portion similar to No Wilderness.	No impact
Sul table, 23,430 ac; nonsul table, 5,200 ac.									

Table 1-1. Comparative Analysis of Impacts for the WSA Alternatives (Continued)

WSA and alternatives	Wilderness manageability	Lands and access	Recreational/visual resources	Economies	Vegetation/soils/water	Mineral resources	Wildlife (including aquatic and terrestrial)	Cultural resources	Livestock management
Dolores River Canyon (cont.) —No Wilderness (Resource Utilization)	No wilderness; recreation management. Wilderness values would be forgone.	Closed to ORVs.	Provide recreation opportunities; VHM Class II.	Tourism & recreation use could decrease; potential mineral resources could be developed.	Mineral development could cause degradation of vegetation, soil, & surface water resources.	Continue oil & gas leases but with no-occupancy stipulations & continue hard rock mining.	Terrestrial & aquatic habitat could be adversely affected by increased mineral development.	Improved access could lead to resource degradation & increased vandalism.	No impacts.
No Action (Current Management)	General multiple use management per Wild & Scenic River Guidelines. Wilderness values adversely affected.	Essentially same as Resource Utilization.	Essentially same as Resource Utilization.	Essentially same as Resource Utilization.	Essentially same as Resource Utilization.	Pre-FLPMA oil & gas leases (9); oil & gas seismic activity authorized; uranium/venadium exploration in area; northern boundary has potential for copper, silver, & gold; approx. 400-500 mining claims.	Essentially same as Resource Utilization.	Essentially same as Resource Utilization.	No impacts.
Preferred Wilderness—subtable, 28,366 ac; nonsubtable, 913 ac.	Manageable as wilderness.	Essentially same as All Wilderness (using Manageability Alternative).	Essentially same as All Wilderness (using Manageability Alternative).	Essentially same as All Wilderness (using Manageability Alternative).	Essentially same as All Wilderness (using Manageability Alternative).	Essentially same as All Wilderness (using Manageability Alternative).	Essentially same as All Wilderness (using Manageability Alternative).	Essentially same as All Wilderness (using Manageability Alternative).	No impacts.

Table 1-1. Comparative Analysis of Impacts for the WSA Alternatives (Continued)

WSA and alternatives	Wilderness manageability	Lands and access	Recreational/visual resources	Economics	Vegetation/soils/water	Mineral resources	Wildlife (including aquatic and terrestrial)	Cultural resources	Livestock management	Wild horses
McKenna Peak-- All Wilderness (Resource Conservation)	Manageable as wilderness.	Allow no utility corridors & no new facilities except those authorized through Wilderness Act provisions. Remove any existing non-conforming structures unless they are determined to be of historic value or necessary for administering the area.	Restrictive types of recreation; no ORVs, VNR Class 1.	Tourism & recreation use could increase.	Could allow natural ecological processes to occur; soil conditions could remain same unless exploration & development within 2 pre-FPPA mineral leases could occur; water quality could remain the same. Stabilize & rehabilitate non-caused disturbances identified in a wilderness management plan.	Administer all mineral activity as required by Sec. 4(d) of Wilderness Act of 1964. Deny issuance of any future mineral leases within wilderness area.	Could protect aquatic & terrestrial habitat. Protect T&E species & maintain or improve habitat.	Protect cultural resources from surface-disturbing activities.	Loss of management opportunities to improve livestock grazing.	Management of 75 Wild horses could enhance wilderness values. Designation could limit management possibilities.
Entire area (19,362 ac) would be recommended as wilderness.										
Wilderness Manageability (Resource Conservation)	Manageable as wilderness.	Southern boundary pulled away from road. Possible inclusion of State land in portion of Sec. 16 as suitable for wilderness (upon BLM acquisition).	Essentially same as All Wilderness.	Essentially same as All Wilderness.	Essentially same as All Wilderness.	Essentially same as All Wilderness.	Essentially same as All Wilderness.	Essentially same as All Wilderness.	Essentially same as All Wilderness.	Essentially same as All Wilderness.
Suitable, 19,362 ac; non-suitable, 200 ac.										

Table 1-1. Comparative Analysis of Impacts for the MSA Alternatives (Continued)

MSA and alternatives	Wilderness manageability	Lands and access	Recreational/visual resources	Economics	Vegetation/soils/water	Mineral resources	Wildlife (including aquatic and terrestrial)	Cultural resources	Livestock management	Wild horses
McKenzie Peak (cont.)— Conflict (Resource Conservation)	Manageable as wilderness. Loss of wilderness values in nonsuitable portion.	Fewer impacts to access.	Suitable portion essentially same as All Wilderness except less acreage. Nonsuitable portion similar to No Wilderness.	Suitable portion essentially same as All Wilderness except less acreage. Nonsuitable portion similar to No Wilderness.	Suitable portion essentially same as All Wilderness except less acreage. Nonsuitable portion similar to No Wilderness.	Suitable portion essentially same as All Wilderness except less acreage. Nonsuitable portion similar to No Wilderness.	Suitable portion essentially same as All Wilderness except less acreage. Nonsuitable portion similar to No Wilderness.	Some impacts possible in nonsuitable areas.	Opportunity available to improve livestock management, construct facilities, & treatments.	Same as All Wilderness.
Suitable, 11,232 acres; nonsuitable, 8,330 acres.										
Conflict (Resource Conservation)	Manageable as wilderness. Loss of wilderness values in nonsuitable portion.	Fewer impacts to access.	Same as Conflict Resolution #1 except less acreage.	Same as Conflict Resolution #1.	Same as Conflict Resolution #1.	Same as Conflict Resolution #1.	Same as Conflict Resolution #1.	Same as Conflict Resolution #1.	Same as Conflict Resolution #1.	Same as All Wilderness.
Suitable, 18,191 ac; nonsuitable, 1,171 ac.										
No Wilderness (Resource Utilization)	No wilderness; recommended for range, wildlife, soils, & water values. Wilderness values would be foregone.		Provide recreation opportunities; ORV use limited to existing roads.	Tourism & recreation use could decrease; potential mineral resources could be developed.	Mineral development could cause degradation of vegetation, soil & water resources. Opportunities available to reduce erosion & salinity from area. Some improvement of vegetation due to increased management of soil, livestock, & wildlife.	Continue oil & gas leases & hard rock mining.	Terrrestrial & aquatic habitat could be adversely affected by mineral development.	Some impacts possible due to intensive management.	Intensive livestock management plan would be implemented, facilities constructed, land treatment's done.	No wild horses.

Table 1-1. Comparative Analysis of Impacts for the MSA Alternatives (Continued)

MSA and alternatives	Wilderness manageability	Lands and access	Recreational/visual resources	Economics	Vegetation/soils/water	Mineral resources	Wildlife (including aquatic and terrestrial)		
							Cultural resources	Livestock management	Wild horse
McKenzie Peak (cont.)-- No Action (Current Management)	General multiple use management. Wilderness values would be adversely affected.		Essentially same as Resource Utilization; no VRM classes or ORV restrictions.	Essentially same as Resource Utilization.	Essentially same as Resource Utilization.	Pre-FLPMA oil & gas leases (2), uranium/ vanadium exploration In area; approx. 400 mining claims.	Essentially same as Resource Utilization.	No impacts.	Approx. 100 wild horses present.
Preferred	No wilderness; watershed, wild horses, range & wildlife values. Wilderness values would be foregone.		ORV use limited to existing roads & trails.	Essentially same as Resource Utilization.	Erosion & salinity control projects could enhance vegetation, soils, & water resources.	Lease for oil & gas. Allow development of locatable minerals.	Essentially same as Resource Utilization.	Essentially same as Resource Utilization.	Manage 5 wild horses.

Table 1-1. Comparative Analysis of Impacts for the WSA Alternatives (Continued)

WSA and alternatives	Wilderness manageability	Lands and access	Recreational/visual resources	Economics	Vegetation/soils/water	Mineral resources	Wildlife (including aquatic and terrestrial)	Cultural resources	Livestock management
<p>Monetize Mountain—All-wilderness (Resource Conservation)</p> <p>Entire area (7,129 ac) would be recommended as wilderness.</p>	<p>Not manageable as wilderness due to mineral conflicts if pre-FUPMA leases are developed.</p>	<p>Allow no utility corridors & no new facilities except those authorized through Wilderness Act provisions. Remove any existing, nonconforming structures unless they are determined to be of cultural or historic value or necessary for administering the area.</p> <p>Land uses restricted by wilderness designation would be adversely affected, causing access difficulties to private lands & minerals.</p>	<p>Primitive types of recreation; no ORVs; VMA Class 1.</p>	<p>Tourism & recreation use would increase.</p>	<p>Would allow natural ecological processes to occur; soil conditions would remain same unless exploration & development within pre-FUPMA mineral leases would occur; water quality would remain the same. Stabilize & rehabilitate man-caused disturbances if identified in a wilderness management plan.</p>	<p>Administer all mineral activity as required by Sec. 4(d) of Wilderness Act of 1964. Deny issuance of any future mineral leases within wilderness area.</p> <p>Loss of coal (62 million tons), oil (2.4 million barrels), & gas (704,352 mcf) reserves.</p>	<p>Could protect aquatic & terrestrial habitat. Protect T&E species & maintain or improve habitat.</p>	<p>Could enhance resources & protect them from surface-disturbing activities associated with mineral development.</p>	<p>No impacts.</p>
<p>Wilderness Manageability (Resource Conservation)</p> <p>Suitable, 5,416 ac; nonsuitable, 1,713 ac.</p>	<p>Not manageable as wilderness due to mineral conflicts. Loss of values in nonsuitable portion would occur.</p>	<p>Acquire 120 ac private minerals & 40 ac private lands. Pull boundary back to toe of pinyon-juniper slopes.</p>	<p>Suitable portion essentially same as All Wilderness. Nonsuitable portion similar to No Wilderness.</p>	<p>Suitable portion same as All Wilderness. Nonsuitable portion similar to No Wilderness.</p>	<p>Suitable portion essentially same as All Wilderness. Nonsuitable portion similar to No Wilderness.</p>	<p>Suitable portion essentially same as All Wilderness. Nonsuitable portion similar to No Wilderness.</p>	<p>Suitable portion essentially same as All Wilderness. Nonsuitable portion similar to No Wilderness.</p>	<p>Suitable portion essentially same as All Wilderness. Nonsuitable portion similar to No Wilderness.</p>	<p>No impacts.</p>
<p>No Wilderness (Resource Utilization)</p>	<p>No wilderness; recommended for mineral, & wildlife uses. Wilderness values would be foregone.</p>	<p>Tourism & recreation use could decrease. Mineral resources could be developed.</p>	<p>Tourism & recreation use would increase.</p>	<p>Mineral development could cause degradation of vegetation, soil, & water resources.</p>	<p>Continue oil & gas leases; allow area to be leased for coal mining.</p>	<p>Terrestrial & aquatic habitat could be adversely affected by mineral development.</p>	<p>Improved access could lead to resource degradation & increased vandalism.</p>	<p>No impacts.</p>	

Table 1-1. Comparative Analysis of Impacts for the NSA Alternatives (Continued)

NSA and alternatives	Wilderness manageability	Lands and access	Recreational/visual resources	Economics	Vegetation/soils/water	Mineral resources	Wildlife (Including aquatic and terrestrial)	Cultural resources	Livestock management
Menafee Mountain (cont.)—No Action (Current Management)	No wilderness. Old primitive area; managed for its recreation values. Wilderness values could be adversely affected.	Essentially same as Resource Conservation.	Essentially same as Resource Conservation; no VPM classes or GRV management.	Essentially same as Resource Conservation.	Essentially same as Resource Conservation.	Pre-FLPMA oil & gas leases, no unpatented mining claims, within Durango RCRPA but no existing coal leases.	Essentially same as Resource Conservation.	Essentially same as Resource Conservation.	No impacts.
Preferred	No wilderness; managed for recreation & primitive values & for wildlife habitat. Wilderness values foregone.	Essentially same as Resource Conservation.	Essentially same as Resource Conservation. Provide for a semiprimitive recreation experience. Provide user facilities as necessary; VPM Class II; closed to GRVs.	Essentially same as Resource Conservation.	Essentially same as Resource Conservation.	No leasing for oil & gas & coal.	Essentially same as Resource Conservation.	Essentially same as Resource Conservation.	No impacts.

Table 1-1. Comparative Analysis of Impacts for the WSA Alternatives (Continued)

WSA and alternatives	Wilderness manageability	Lands and access	Recreational/visual resources	Economics	Vegetation/soils/water	Mineral resources	Wildlife (including aquatic and terrestrial)	Cultural resources	Livestock management
Squaw/Papoose Canyon—All Wilderness Resource Conservation	Not manageable as wilderness due to mineral conflicts, if leases are developed.	Allow no utility corridors & no new facilities except those authorized through Wilderness Act provisions. Remove any existing, nonconforming structures unless they are determined to be of cultural or historic value or necessary for administering the area.	Primitive types of recreation; no ORVs; VPM Class I.	Tourism & recreation use would increase.	Allow natural ecological processes to occur. Soil & water would remain unchanged unless pre-FPMA leases developed. Stabilize & rehabilitate non-caused disturbances as per wilderness management plan.	Administer all mineral activity as per Sec. 4(c) of Wilderness Act of 1964. Deny issuance of any future mineral leases. Loss of oil barrels & gas (990,880 mcf) reserves.	Could protect aquatic & terrestrial habitat. Protect TLE species & maintain or improve habitat.	Could enhance resources & protect them from surface-disturbing activities associated with mineral development. Increased visitor use could affect sites.	No impacts.
Entire WSA (11,287 ac) recommended as wilderness (Colorado—4,611 ac; Utah—6,676 ac).		Land uses restricted by wilderness designation would be adversely affected, causing access difficulties to private lands & minerals.							
Wilderness Manageability (Resource Conservation)	Not manageable as wilderness due to mineral conflicts, if pre-FPMA leases are developed.	Close cherry-stem road; boundary pulled back in places to canyon rim.	Essentially same as All Wilderness.	Essentially same as All Wilderness.	Essentially same as All Wilderness.	Essentially same as All Wilderness.	Essentially same as All Wilderness.	Essentially same as All Wilderness.	Essentially same as All Wilderness.
Suitable, 10,547 ac; non-suitable, 740 ac.									
No Wilderness (Resource Utilization)	No wilderness; managed for cultural & mineral uses. Wilderness values would be foregone.	Fewer impacts to private land.	Provide recreation opportunities that don't conflict with mineral development; VPM Class II; no ORV use.	Tourism & recreation use could decrease. Mineral resources could be developed.	Mineral development could cause degradation of vegetation, soil, & water resources.	Continue oil & gas leases; hard rock mining.	Terrrestrial & aquatic habitat could be adversely affected by mineral development.	Improved access could lead to resource degradation & increased vandalism.	No impacts.

Table 1-1. Comparative Analysis of Impacts for the WSA Alternatives (Continued)

WSA and alternatives	Wilderness manageability	Lands and access	Recreational/visual resources	Economics	Vegetation/soils/water	Mineral resources	Wildlife (including aquatic and terrestrial)	Cultural resources	Livestock management
Squaw/Papoose (cont.) No Action (Current Management)	No wilderness; general multiple use management. Wilderness values adversely affected.		Essentially same as Resource Utilization; no VFM management.	Essentially same as Resource Utilization.	Essentially same as Resource Utilization.	Pre-FUMA oil & gas leases. Two wells drilled within existing KOS, 300 mining claims in Colorado, 140 mining claims in Utah. Past uranium/venadium exploration.	Essentially same as Resource Utilization.	Essentially same as Resource Utilization.	No impacts.
Preferred	No wilderness; cultural values. Allow some range, aquatic/riparian uses & oil & gas development. Wilderness values foregone.	Essentially same as Resource Utilization.	Provide for a primitive recreation experience; VFM Class II; closed to ORVs.	Essentially same as Resource Conservation.	Essentially same as Resource Conservation.	Leased for oil & gas but with no-surface occupancy stipulations (2,749 ac) or no leasing (1,862 ac). Loss of some reserves due to no leasing.	Essentially same as Resource Conservation.	Essentially same as Resource Conservation.	No impacts.

Table 1-1. Comparative Analysis of Impacts for the WSA Alternatives (Continued)

WSA and alternatives	Wilderness manageability	Lands and access	Recreational/visual resources	Economics	Vegetation/soils/water	Mineral resources	Wildlife (including aquatic and terrestrial)	Cultural resources	Livestock management
Tabogauche Creek—All Wilderness (Resource Conservation)	Manageable as wilderness.	Allow no utility corridors & no new facilities except those authorized through Wilderness Act provisions. Remove any existing, nonconforming structures unless they are determined to be of cultural or historic value or necessary for administering the area.	Primitive types of recreation; no ORVs; VPM Class I.	Tourism & recreation use would increase.	Would allow natural ecological processes to occur; soil conditions would remain same unless exploration & development within pre-FPM mineral leases would occur; water quality would remain the same.	Administer all mineral activity as required by Sec. 4(d) of Wilderness Act of 1964. Deny issuance of any future mineral leases within wilderness area.	Could protect aquatic & terrestrial habitat. Protect T&E species & maintain or improve habitat.	Could enhance resources & protect them from surface-disturbing activities associated with mineral development.	No impacts.
Entire area (7,908 ac) would be recommended as wilderness.		Land uses restricted by wilderness designation would be adversely affected, causing access difficulties to private lands & minerals.			Stabilize & rehabilitate man-caused disturbances if identified in a wilderness management plan.	Loss of oil & gas & uranium vanadium reserves.	Increased visitor use could affect sites.		
Wilderness Manageability (Resource Conservation)	Manageable as wilderness.	Pull northern boundary back. Close cherry system road; easements or land acquisition across private lands along Tabogauche Creek.	Suitable portion essentially same as All Wilderness. Nonsuitable portion similar to No Wilderness.	Essentially same as All Wilderness. Nonsuitable portion similar to No Wilderness.	Essentially same as All Wilderness. Nonsuitable portion similar to No Wilderness.	Essentially same as All Wilderness. Nonsuitable portion similar to No Wilderness.	Essentially same as All Wilderness. Nonsuitable portion similar to No Wilderness.	Essentially same as All Wilderness. Nonsuitable portion similar to No Wilderness.	No impacts.
Suitable, 6,876 ac; nonsuitable, 1,032 ac.									
No Wilderness (Resource Utilization)	No wilderness; recommended for cultural & aquatic/riparian management. Wilderness values would be for eggs.		No ORV use; VPM Class II.	Tourism & recreation use could decrease. Mineral resources could be developed.	Mineral development could cause degradation of vegetation, soil, & water resources.	Continue oil & gas leases with no-surface occupancy; hard rock mining.	Terrestrial & aquatic habitat could be adversely affected by mineral development.	Improved access could lead to resource degradation & increased vandalism.	No impacts.

Table 1-1. Comparative Analysis of Impacts for the MSA Alternatives (Continued)

MSA and alternatives	Wilderness manageability	Lands and access	Recreational/visual resources	Economics	Vegetation/soils/water	Mineral resources	Wildlife (including aquatic and terrestrial)	Cultural resources	Livestock management
Taboguache Creek (cont.) - No Action (Current Management)	No wilderness; general multiple use. Wilderness values adversely affected.		Essentially same as Resource Utilization; no VRM or CRV management.	Essentially same as Resource Utilization.	Essentially same as Resource Utilization.	No pre-FLPMA oil & gas leases; 150 unpatented mining claims.	Essentially same as Resource Utilization.	Essentially same as Resource Utilization.	No impacts.
Preferred	No wilderness. Cultural values & allow some aquatic/ riparian uses. Wilderness values foregone.		Provide for a semi-primitive recreation experience; closed to CRVs; VRM Class II.	Essentially same as Resource Conservation.	Essentially same as Resource Conservation.	Leased for oil & gas but with no-surface occupancy stipulations (3,100 ac). Approx. 560 acres would be withdrawn from mineral entry to protect the Outstanding Natural Area designation.	Essentially same as Resource Conservation.	Essentially same as Resource Conservation. Manage as an Outstanding Natural Area.	No impacts.

Table 1-1. Comparative Analysis of Impacts for the WSA Alternatives (Continued)

WSA and alternatives	Wilderness manageability	Lands and access	Recreational/visual resources	Economics	Vegetation/soils/water	Mineral resources	Wildlife (including aquatic and terrestrial)	Cultural resources	Livestock management
Weber Mountain - All Wilderness (Resource Conservation) (6,303 ac) would be recommended as wilderness.	Not manageable as wilderness due to mineral conflicts. Wilderness values for-egone if pre-FUPWA leases are developed.	Adjacent to Mesa Verde designated wilderness. Allow no utility corridors & no new facilities except those authorized through Wilderness Act provisions. Remove any existing, nonconforming structures unless they are determined to be of cultural or historic value or necessary for administering the area.	Primitive recreation, no ORVs; VPM Class I.	Tourism & recreation use would increase.	Would allow natural ecological processes to occur; soil conditions would remain same unless exploration & development within pre-FUPWA mineral leases would occur; water quality would remain the same. Stabilize & rehabilitate men-caused disturbances if identified in a wilderness management plan.	Administer all mineral activity as required by Sec. 4(d) of Wilderness Act of 1964. Deny issuance of any future mineral leases within wilderness area.	Could protect aquatic & terrestrial habitat. Protect T&E species & maintain or improve habitat.	Could enhance resources & protect them from surface-disturbing activities associated with mineral development.	No Impact
Wilderness Manageability (Resource Conservation)	Essentially same as All Wilderness.	Essentially same as All Wilderness, but pull boundary back to top of pinyon-juniper slopes. Also include State land (Sec. 36-640 ac) as suitable for wilderness (upon BLM acquisition).	Essentially same as All Wilderness.	Essentially same as All Wilderness.	Essentially same as All Wilderness.	Essentially same as All Wilderness.	Essentially same as All Wilderness.	Essentially same as All Wilderness.	No Impact
Suit table, 5,362 ac; non-suitable, 941 ac.									

Table 1-1. Comparative Analysis of Impacts for the WSA Alternatives (Continued)

WSA and alternatives	Wilderness manageability	Lands and access	Recreational/visual resources	Economics	Vegetation/soils/water	Mineral resources	Wildlife (including aquatic and terrestrial)	Cultural resources	Livestock management
Weber Mounts in (cont.)—No Wilderness (Resource Utilization)	No wilderness; recommended for mineral & wildlife uses. Wilderness values would be foregone.		Permit recreation opportunities that don't conflict with mineral development.	Tourism & recreation use could decrease. Mineral resources could be developed.	Mineral development could cause degradation of vegetation, soil, & water resources.	Continue oil & gas leases; allow area to be leased for coal mining, mineral development.	Terrestrial & aquatic habitat could be adversely affected by mineral development.	Improved access could lead to resource degradation & increased vandalism.	No impacts.
No Action (Current Management)	Former primitive area; managed for its recreation values. Wilderness values could be adversely affected.	Essentially same as Resource Conservation.	Essentially same as Resource Conservation; no VPM or ORV restrictions.	Essentially same as Resource Conservation.	Essentially same as Resource Conservation.	Pre-FLPMA oil & gas leases; 2 wells drilled; within Durango RPOA but no existing coal leases; no unpatented mining claims; adjacent to existing NGS.	Essentially same as Resource Conservation.	Essentially same as Resource Conservation.	No impacts.
Preferred	No wilderness; recreation & wildlife values. Wilderness values necessary for egone.	Essentially same as Resource Conservation.	Provide for a semi-primitive recreation experience. Provide user facilities as necessary; VPM Class II; closed to ORVs.	Essentially same as Resource Conservation.	Essentially same as Resource Conservation.	No leasing for oil & gas. Area not available for coal leasing.	Essentially same as Resource Conservation.	Essentially same as Resource Conservation.	No impacts.

* All eight WSAs would add diversity to the NPS.
Source: BLM Data 1984.

**AFFECTED
ENVIRONMENT**

CHAPTER TWO.



The total population of southwestern Colorado in 1970 was estimated at 87,000 residents; as of 1980, there were an estimated 100,000 residents. The majority of them are within a 1- to 2-hour drive of a designated wilderness area. Grand Junction (pop. 28,128) is outside of the regional boundaries and is the largest town on the Western Slope of Colorado and is within a 1- to 2-hour's driving time of several designated wilderness areas. Commercial airlines provide transportation to Grand Junction, Aspen, Gunnison, Durango, Montrose, and Cortez.

All of the WSAs considered in this WTS would indirectly affect the expansion of opportunities for solitude or primitive recreation by increasing the wilderness acreage near lands presently designated as wilderness and used by wilderness recreationists.

Wilderness areas near the WSAs are the Weminuche (administered by the U.S. Forest Service) and the Mesa Verde (administered by the National Park Service and not open to recreational use). Grand Gulch and Dark Canyon primitive areas (administered by BLM in Utah) are approximately a 2- to 3-hour's drive from Cortez. Arches and Canyonlands national parks in Utah (not designated wilderness) receive heavy use but do not offer the same type of wilderness experiences as the BLM WSAs offer. Also close to these WSAs within western Colorado are Lizard Head, Mt. Sneffels, Big Blue, La Garita, Black Canyon of the Gunnison, and West Elk designated wilderness areas (see Appendix 3-A).

Although several wilderness areas are found within southwestern Colorado (Lizard Head, Big Blue, Mesa Verde, Mt. Sneffels, West Elk, Weminuche, and Black Canyon of the Gunnison); for the most part, these areas are geographically a portion of the Rocky Mountains. Therefore, all eight WSAs would add to the geographic diversity of wilderness areas.

Common Resource Values to All Eight WSAs

Socioeconomics. The planning area includes portions of nine counties, eight in Colorado and one in New Mexico. The total 1980 population of these counties was approximately 100,000. Four counties within Colorado (Montrose, Dolores, Montezuma, and San Miguel) and one in Utah (San Juan) contain WSAs. Appendix 2-A shows personal income by major sources by county. Government, services, and construction can be seen to be the top three sources of income in the planning area. Mining, transportation, public utilities, and retail trade also are substantial sources of personal income.

Appendix 2-B shows the 1970 and 1980 population, per capita income, and number of persons employed by county and state of the area affected economically by the proposed wilderness areas (current data are unavailable for Utah). Significant population growth may be seen in all counties except Dolores and San Juan. The counties in the planning area have a notably lower per capita income than the Colorado average.

The San Juan-San Miguel planning area derives significant economic benefit from expenditures made for recreation activities. Many of these activities are not presently quantifiable--as for example, recreational hiking, camping, and backpacking. Numerical data do exist; however, for hunting, white water boating, and generalized tourist travel in the area.

The Dolores River is extensively used for white water boating. A 1980 estimate of 12,500 RVDs was made for the Dolores. Expenditures for white water boating are approximately \$1 million annually.

Hunting. In 1980, 344,000 RVDs were spent hunting in the planning area. Hunting occurred at significant levels in all counties and contributed expenditures of approximately \$45 million to the economy (McKean 1983).

Tourist Travel. Tourist travel in the planning area generates significant levels of income and employment. Travel-related payroll for 1980 was estimated at \$28 million and was responsible for 4,600 jobs in the planning area.

In Montezuma County, travel to archaeological sites in Montezuma and Dolores counties contributed significantly to travel level. Annual expenditures of approximately \$500,000 may be expected.

Minerals. In 1980, minerals valued at \$165 million were produced in the planning area, including sand and gravel, uranium and vanadium, petroleum, gas, coal, and metals. BLM lands were estimated to have yielded approximately \$37 million worth of these materials.

Grazing. Approximately 116,000 cattle and 62,000 sheep are estimated to graze in the planning area. The animal unit months (AUMs) of forage required by this number of animals is estimated to be 1.5 million annually with a value of \$12.8 million. Sixty-five thousand AUMs are grazed annually from BLM land and valued at \$0.5 million. In 1980 BLM received nearly \$91,000 in grazing fees for this forage.

Air Quality. The air quality within the planning area is typical of undeveloped parts of the western United States; ambient pollutant levels are usually near or below the measurable limits.

The eight WSAs are managed under Class II air quality standards, according to the BLM's Wilderness Management Policy (Federal Register Vol. 47, No. 23, February 3, 1982). Class II allows moderate deterioration associated with average, well-controlled industrial and population growth. Designating these eight WSAs as wilderness would not change the air quality standards from Class II unless the states of Colorado or Utah reclassified them.

Topography. Mesa tops may extend 20 miles in length and at times more than five miles in width. The Dolores River, the most prominent river system, drains to the northwest and flows through narrow, meandering gorges between high cliffs which often reach 1,000 feet above the riverbed. River canyons may approach 25 miles in length and approximately 0.5 mile in width.

The topographic extremes mentioned above, in combination with the climate and soil vegetative resources, may lead to unique problems. The presence of the many canyons, gullies, and rivers may create localized, cross-country travel difficulties. Often, roads parallel the tops of the canyons, making access difficult and often interfering with desired linear ROWs. However, the diverse terrain does provide many opportunities for solitude and enhances many recreation opportunities.

Resource Values Unique to Each WSA

Following are the resource values found within each WSA:

Cahone Canyon WSA

Vegetation

Cottonwood, boxelder, Russian olive, willow, and tamarisk are found along the canyon bottoms of this study area, with pinyon-juniper dominating the canyon walls.

Threatened or Endangered Species

There are no known T&E species of plants or animals within the boundaries of the Cahone Canyon WSA.

Topography

Cahone Canyon is located approximately 3 miles west of Cahone, Colorado. Three canyons (Cross, Cahone, and Dove Creek), which have been cut by the fluvial erosion of the Morrison Formation and the Dakota Sandstone, dominate this WSA and merge in this area. The canyon walls consist of numerous rock outcrops, talus slopes and areas of shallow, rocky soils.

Geology

The Cahone Canyon WSA is located within the Paradox structural basin. The Cretaceous Burro Canyon and Dakota formations are found within the WSA boundaries and are overlain by Quaternary eolian material. The stratigraphy of the Dakota Sandstone and Morrison Formation, as exposed within this unit, reveals the historic-geologic processes of portions of the Jurassic and Cretaceous Periods; in addition, the Morrison Formation is rich in fossil plants and vertebrates.

The Burro Canyon Formation, cropping out in Cahone Canyon, consists of a series of fluvial sandstone, siltstone, shale, and mudstone beds that have thin, interbedded limestone units. It is then directly overlain by the sandstone, shale, and conglomerate units of the Dakota Formation, which contains thin, discontinuous coal beds.

Soils

Romberg-Cragola rock outcrops dominate in these steep canyons with small areas of Torrifluvents in the narrow valley bottoms. (Detailed soil descriptions for this WSA are found in the Cortez Area Soil Survey available in the Montrose District and San Juan Area offices.)

Recreation

Recreational activities within the study area include hiking and backpacking; horse-back riding along canyon bottoms where numerous, secluded camping spots occur; rock climbing; hunting; photography; and sightseeing for the area's geologic and archaeological features.

Cultural Resources

Approximately 4 percent of the WSA has been intensively inventoried. During earlier low intensity reconnaissances, 76 sites were recorded. The majority of the sites are pueblo habitations; some are rockshelters, ceramics, and lithic scatters, and one is a historic homestead. These are highly important sites and a potential exists for discovering more.

Visual Resources

Cahone WSA contains canyon and mesa formations; however, the canyons receive low visibility and low public sensitivity. Mesas along the study area boundary have moderate public sensitivity and visibility from U.S. Highway 666 and Pleasant View Road. Cahone Canyon WSA falls within BLM's Class B and C scenery (seldom seen; see Appendix 4).

Wilderness Resources

Size. Cahone Canyon, which contains 9,040 acres, is made up entirely of public lands which are administered by BLM.

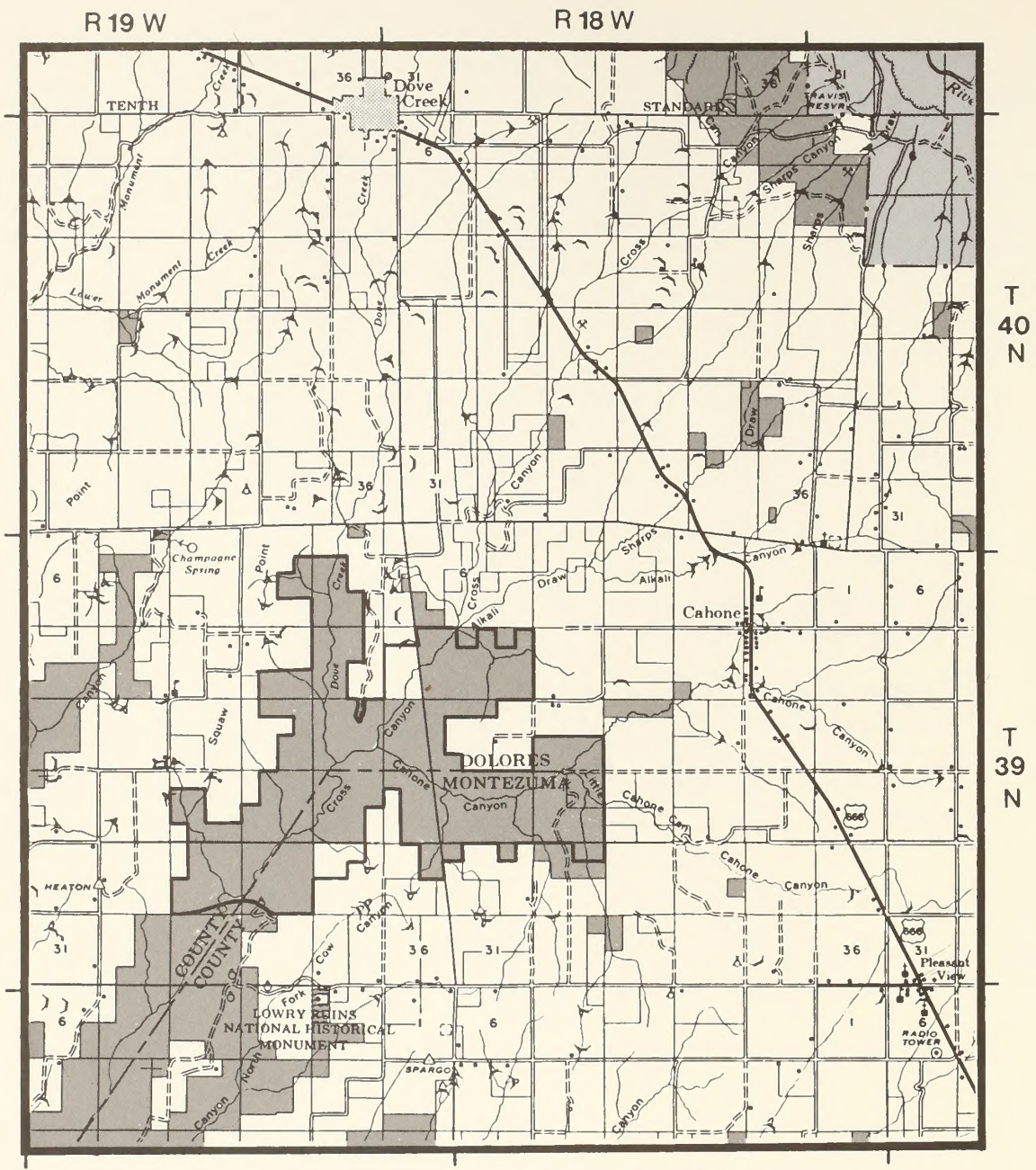
Naturalness. The dominating feature of this WSA is the confluence of the three canyons--Cross, Cahone, and Dove. Two vehicle ways are the only imprints of man here--one on the southern rim and the other on the northern rim. These ways, which are revegetating and are screened by the surrounding pinyon-juniper woodland, do not significantly impair the naturalness of the area. A cherrystem road has eliminated an old access road to an abandoned oil and gas well pad.

Solitude. The combination of vegetative screening (pinyon-juniper on the slopes and canyon rims and riparian growth in the canyon bottoms) and topographic screening (the rugged terrain of the stair-stepped, winding canyons and numerous rock outcrops and boulder-strewn slopes) provides outstanding opportunities for solitude.

Primitive and Unconfined Recreation. The steep, rugged canyons of this WSA provide a scenic backdrop for various primitive recreation activities. The canyon bottoms can be used for hiking or horseback riding, the area's geologic and archaeological features provide for photography and sightseeing, the steep rugged canyon slopes are a challenge for climbing and rock scrambling, and hunting is a historic use of the area. This WSA provides outstanding opportunities for primitive, unconfined types of recreation.

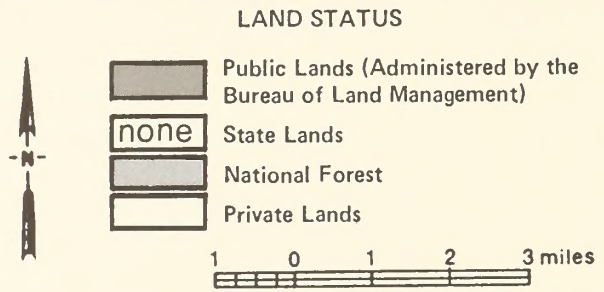
Supplemental Values. The area is rich in archaeological sites dating from the Anasazi culture. Ecologically, this area serves as a natural refuge for native flora and fauna that have been displaced from surrounding areas by agriculture and other human activity. Geologic formations are well exposed for scientific and educational study--the Morrison Formation contains fossil plants and vertebrates.

Ecological Diversity. Cahone Canyon WSA is associated with deep canyon topography. The area is located in the Colorado Plateau Province and has two vegetation types: pinyon-juniper woodland and Great Basin sagebrush. The pinyon-juniper woodland vegetation type is presently represented by two designated wilderness areas (Mesa Verde National Park and Black Canyon of the Gunnison in Colorado--a total of 20,000 acres. The Great Basin sagebrush ecosystem is not represented in the NWPS.



CAHONE CANYON
WSA CO-030-265d

Figure 2-1. Cahone Canyon WSA's land status with original study area boundaries.



Cross Canyon WSA

Vegetation

This WSA falls within the Colorado Plateau Province. Cottonwoods are found along the canyon bottoms with pinyon-juniper dominating the canyon walls.

Threatened or Endangered Species

There are no known T&E species of plants or animals within the boundaries of the Cross Canyon WSA.

Topography

The Cross Canyon WSA is located 14 miles southwest of Cahone, Colorado. Consisting of portions of several canyons (including Cross, Ruin, and Cow) which cut through a series of uplifted sedimentary beds by fluvial erosion, numerous ledges, rock outcrops, and cliffs are exposed in the canyons, which range in depth from 300 feet to 900 feet. Numerous smaller tributary canyons exist in addition to the main canyons. Cross Canyon WSA is a topographic continuation of the Cahone Canyon WSA, separated by previous oil and gas activity and uranium mining and exploration.

Geology

A variety of rock units that represent portions of Mesozoic time are found within the WSA. The Dakota Sandstone and Morrison Formation are exposed by erosion and provide an opportunity to study the stratigraphy of the Jurassic and Upper Cretaceous Periods.

Within Cross Canyon's boundaries, the Jurassic Summerville and Morrison Formations crop out and are overlain by the Cretaceous Burro Canyon and Dakota Formations and by Quaternary eolian material. The Morrison Formation contains fossil wood and plant remains, as well as fossil vertebrate bones. The Cretaceous and Jurassic units are directly overlain by Quaternary eolian material. Cross Canyon WSA is located within the Blanding Basin, an extension of the Paradox structural basin and is on the flank of the Dolores Anticline.

Soils

Romberg-Cragola rock outcrops dominate in these steep canyons with small areas of Torrifluvents in the narrow valley bottoms. (Detailed soil descriptions for this WSA are found in the Cortez Area Soil Survey available in the Montrose District and San Juan Resource Area offices.)

Recreation

Recreational opportunities such as hiking, backpacking, horseback riding, hunting, and photography are offered by Cross Canyon WSA. There are numerous secluded camping sites along the canyon bottoms and more challenging cross-country routes on the canyon slopes and walls. From the mesas and cliff tops are scenic panoramas of the WSA and surrounding areas. Some motor vehicle use has occurred in the lower portion of Cross Canyon and on Cow Mesa.

been previously conducted in a nonimpairing manner, primarily by helicopter. The area is within the Sand Canyon KGS. There are an estimated 415,360 barrels of oil and 830,720 mcf of gas under the WSA. Shell and Mobil oil companies have extended CO₂ production close to the eastern border of the WSA. On March 4, 1983, industry nominated the WSA as an Area of Critical Mineral Potential (ACMP; see Glossary). There are presently no existing Federal coal leases here and the probability of coal is low (see Table 2-1).

Locatable Minerals

There are also approximately 700 mining claims interspersed throughout the entire WSA in Colorado but none are on record within the Utah portion of the area. Potential for locatable energy minerals is high (see Table 2-1; B. Kershaw, personal comm., 1983).

Western Nuclear was permitted to perform core drilling along an existing way in the northwestern portion of the WSA that met the nonimpairment criteria. A road (approx. 300 feet in length) was illegally constructed in association with post-FLPMA uranium claims-- the claimants were contacted and rehabilitation was performed; resource damage was minimal.

Lands

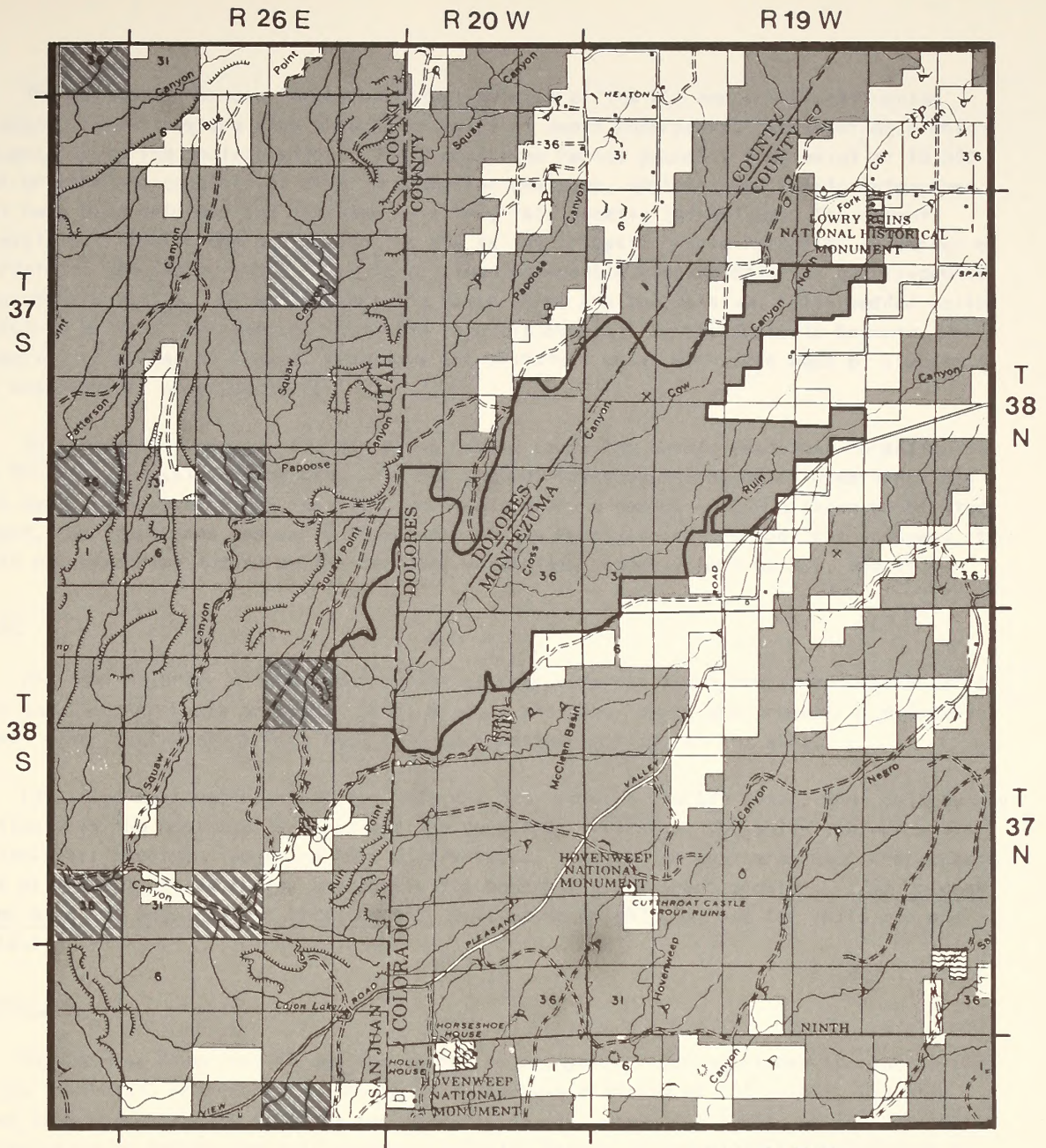
Cross Canyon WSA is located within Dolores and Montezuma counties, Colorado, and San Juan County, Utah (Fig. 2-2). Hovenweep National Monument lies to the south. There are no private land or split estate mineral inholdings within the WSA.

Access

Located approximately 14 miles southwest of Cahone, Colorado, Cross can be reached from the north from Lowry Ruins National Historic Monument or from the Pleasant Valley Road (County Road 10) near Hovenweep National Monument from the south.

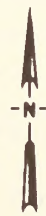
Economics

See narrative under Cahone Canyon WSA.







CROSS CANYON
 WSA CO-030-265
 UT-060-227

Figure 2-2. Cross Canyon WSA's land status with original study area boundaries.



LAND STATUS

-  Public Lands (Administered by the Bureau of Land Management)
-  State Lands
-  National Forest
-  Private Lands



SECTION GRID
 1 square mile
 640 acres

The Paleozoic Hermosa Formation underlies most of the WSA and pre-Pennsylvanian Paleozoic Formations are also thought to exist at depth underneath, representing a thick sequence of marine sedimentation. The Precambrian Period probably does exist at 10,000 feet or more and consists of older Precambrian gneisses, schists, and felsic intrusives that have been deformed and intruded by later, felsic-mafic intrusives. The oldest Triassic unit that crops out within the WSA is the Triassic Chinle Formation (a series of terrestrial sandstone, shale, siltstone, limestone-pebble conglomerate and quartz-pebble conglomerate units). Directly overlying these units are the massive, thick-bedded eolian sandstone units of the Wingate Formation which is overlain by the Triassic Kayenta Formation (a series of fluvial sandstone and siltstone units with thin beds of limestone and shale-pellet conglomerate).

In the western part of the WSA along Coyote Wash, the Navajo Sandstone Formation of the Triassic-Jurassic Period crops out and lies directly on the Kayenta Formation. The rock sequence exposed along the river corridor covers a period of 250 million years (the oldest, the limestones and early limestones of the Pennsylvanian Period; the youngest, the tuffs and breccias formed during tertiary volcanism, probably some 50 m.y. ago).

Soils

The vast majority of the area consist of rock outcrops along the steep canyon walls with some Torriorthents present. Bond, Gladel, and Begay soils are present in Silveys Pocket area, southwest of Buck Mesa (the southwestern portion of the WSA).

(Detailed soil descriptions for this WSA are found in the San Miguel Area Soil Survey available in the Montrose District and San Juan Area offices.) The soils are extremely varied--half mountain types and half desert types. One of the most prominent characteristics of the soil types is its propensity for both gully and sheet erosion. (See Dolores River Wild and Scenic River Study Report, Revised March 1976, p. 6-8 for soils map and table.)

Recreation

The Dolores River has become one of the more popular floating rivers (in the spring) in the Southwest, from Bradfield Ranch to Bedrock--a distance of 105 miles. Boatable flows were predominantly from the end of April to mid-June. The Bureau of Reclamation's construction of McPhee Dam will create a definite change in recreation opportunities on the river. There are currently no developed sites along this particular stretch of river; however, 2- to 3-day float trips can occur from Bradfield Ranch to Slick Rock and 5- to 6-day trips from Bradfield Ranch and Bedrock.

A small number of river users continue their boat trips beyond Bedrock and exit at Dewey Bridge at Moab, Utah. No permit system presently exists on the river other than commercial river outfitter and guide permits that may be issued in 1984.

Other forms of recreation are hiking, photography, backpacking, and viewing the varied wildlife and unique geologic features.

Cultural Resources

The Dolores River terraces and adjoining talus slope areas have been partially inventoried for cultural resources; 19 prehistoric sites, ranging from 10 fairly shallow

lithic scatters of moderate to low importance to 7 large rock shelters of high importance have been recorded; the other two sites are petroglyphs. The one historic site is a fairly unimportant camp.

Visual Resources

This WSA includes some of the most outstanding and diverse canyon features in the RMP area. The scenery above the canyon rims and at the outer reaches of the tributary canyons has been classified less outstanding, including Anderson Mesa to the south and Coyote Wash along the west-central boundary. The Dolores River Canyon WSA falls within BLM's Class A, B, and C scenery (high to moderate sensitivity in the foreground; see Appendix 4).

Along the northern boundaries the scenery is fairly common to the Colorado Plateau Province. Most of the canyon is visible in the foreground from along the canyon bottoms; some areas above the rims but in the area are seldom seen. From Colorado Highway 90 a portion of the upper limits of the area is visible.

Wilderness Resources

Size. With all public lands within the WSA administered by BLM, the Dolores River Canyon contains 28,630 acres, the largest WSA being studied within the San Juan-San Miguel planning area.

Naturalness. Centered on the deeply incised, meandering Dolores River Canyon, this area includes tributary canyons and surrounding rimlands that are primarily natural in character. The canyon system is cut down through a series of sedimentary strata, which results in many colorful ledges and massive cliffs interspersed with talus slopes. Included within the WSA is approximately 33 miles of the Dolores River, proposed by BLM for wild river designation in 1976 (from Gypsum Valley to Bedrock). Imprints of man consist primarily of ways that are not maintained and that do not significantly impair the area's naturalness.

Solitude. The deep, narrow and extremely rugged Dolores River Canyon and its tributaries offer extensive topographic screening. The main canyon consists of tortuous meanders with steep, often sheer walls, many rock outcrops, ledges, and talus fields with large boulders. Tributary canyons are often narrow, sheer walled, and boulder choked. On the mesa tops and benches, pinyon-juniper woodlands provide vegetative screening. The Dolores River Canyon WSA contains outstanding opportunities for solitude.

Primitive and Unconfined Recreation. Historically, the Dolores River has provided a scenic whitewater river run for rafters, kayakers, and a few canoeists. The rugged canyon system offers numerous primitive recreation opportunities, including hiking, backpacking, and rock climbing. This highly scenic canyon system is excellent for both photography and geologic study. The Dolores River Canyon WSA contains outstanding opportunities for primitive and unconfined types of recreation.

Supplemental Values. The Dolores River Canyon WSA contains a number of supplemental values including geologic and scenic values associated with the deeply entrenched, sheer walled canyons and the exposed sedimentary strata; ecologic values including relic areas and rare plants; and archaeological, historic, and paleontologic values. Also within this WSA is the portion of the Dolores River proposed for wild river status.

Ecological Diversity. The Dolores River Canyon WSA is associated with a deep canyon topography and the Colorado Plateau ecoregion. Pinyon-juniper woodland and Great Basin sagebrush are the two primary vegetation types. See Cahone Canyon WSA narrative for more details.

Wildlife--Aquatic

An estimated 63 miles of aquatic and riparian habitat occurs through the WSA. The CDOW considers the Dolores River to have a below-average fishery value.

Wildlife--Terrestrial

A variety of wildlife occurs here, including the collared lizard, year-round habitat for the mule deer (as much as 5/sq. mi), mountain lion, coyote, and bobcat. Raptor species include the peregrine falcon, golden and bald eagles (hunting habitat and also nesting habitat for golden eagles), and the red-tailed hawk. It also contains potential habitat for reintroduction of the bighorn sheep and river otters.

Livestock Grazing

Six grazing allotments are located at least partly within this area, with a total authorized use of approximately 350 AUMs (see Appendix 1). These allotments are grazed by cattle all seasons of the year, with the majority of use occurring from November 1 to May 1. Because of the broken topography, most of this use occurs on the fringe of the WSA with little use taking place in the canyons.

Timber

No commercially valuable timber is available in WSA.

Fire

No known fires occurred between 1970 and 1980; however, there are some indications of small lightning-caused fires involving individual trees. It is highly unlikely that large fires would occur because of the sparseness of the vegetation and the large expanses of slick rock and cliffs in the area.

Water

Within this WSA, La Sal Creek, which flows to the east, and the Dolores River, which flows to the north, are the only perennial water courses. There are also several intermittent and ephemeral tributaries to the Dolores River; the most significant areas are Coyote Wash and Spring and Bull canyons.

On the average, approximately 12" of precipitation falls annually, with approximately 6" falling between May and September. Because of the steep canyons and exposed bedrock characterizing most of this WSA, the potential for flash flooding is high.

The Dolores River at Bedrock (just north of the WSA boundary) has an average annual discharge of 337,600 acre-feet, contributed by runoff of approximately 2,000 square miles of watershed. Discharges in the Dolores River during spring snowmelt have exceeded 9,000 cubic feet per second (cfs), while baseflows occurring later in the year have measured

less than 1 cfs. Upstream from the WSA, water is diverted from the Dolores River for irrigating roughly 40,000 acres of agricultural land. (McPhee Dam, completed upstream from the WSA in 1984, will probably affect the annual flow; see Chapter 3, San Juan/San Miguel RMP.) Because of the significant amount of rock outcrop and soils having moderate-to-high erosion potential, the sediment yield ranges from 0.5 to 1.0 acre-foot per square mile per year.

Annually, the water quality of the Dolores River varies considerably. During the 5-year period from 1971 to 1976, water samples showed the Total Dissolved Solids (TDS) ranged from 140 to 3,700 parts per million (ppm) with the mean being 697 ppm. The dominant constituents were sulfate, bicarbonate, chloride, sodium, and calcium. The mean annual salt load was approximately 107,000 tons. Samples collected during 1969 through 1972 contained radioactive particles, but only one sample exceeded the Colorado Department of Health's acceptable limits for drinking water. A water sample taken on La Sal Creek (upstream from the WSA boundary) showed lead and cadmium in higher concentrations than the State's drinking water standards allow. Most natural surface waters within this WSA are probably contaminated with biologic pathogens that could pose a threat to recreationists if consumed untreated. There is no ground-water data available for this area; however, Table 2-3 contains a listing of inventoried springs found in the WSA.

Leasable Minerals

There are presently nine existing pre-FLPMA oil and gas leases within the WSA, which includes 5,022 acres or approximately 18 percent of the total WSA. There has currently been no development of these leases within the WSA. Oil and gas potential is high (see Table 2-1). Oil and gas seismic activity has been conducted in a nonimpairing manner, primarily by helicopter. There are an estimated 4.2 billion cubic feet of gas under the WSA.

Locatable Minerals

The northern portion of the study area (T. 47 N., R. 19 W.) has a high favorability for both base (copper) and precious (silver) metals in the Chinle and Wingate formations, based on the commodities produced from the Cashin and Cliffdweller mines approximately one mile west of the study area boundary (Nordharsen et al., 1983). Additional GEM reports have shown moderate to high potential in the areas north of Silveys Pocket and upper Bull Canyon. The study area, near La Sal Creek, contains outcrops of the Chinle Formation, which is the major uranium-producing formation in Utah. The favorability for energy locatable minerals is low (GEM Report, GRA 8, May 1983; see Table 2-1).

Within this WSA, there are approximately 400 to 500 mining claims, probably for uranium and vanadium and base and precious metals (B. Kershaw, personal commun., 1983), located primarily in La Sal Creek, Wild Steer Canyon, Coyote Wash, and near Buck Mesa. The WSA, under the Wild and Scenic Rivers Act (January 3, 1975, Sec. 91111), was withdrawn from mineral entry until the withdrawal expired in 1981. There has been minimal uranium exploration in the WSA.

Lands

The Dolores River Canyon WSA is located within Montrose County; only a small portion exists in San Miguel County (see Fig. 2-3). There are no private or split estate mineral inholdings within the WSA. Approximately 4,886 acres of the Bureau of Reclamation's

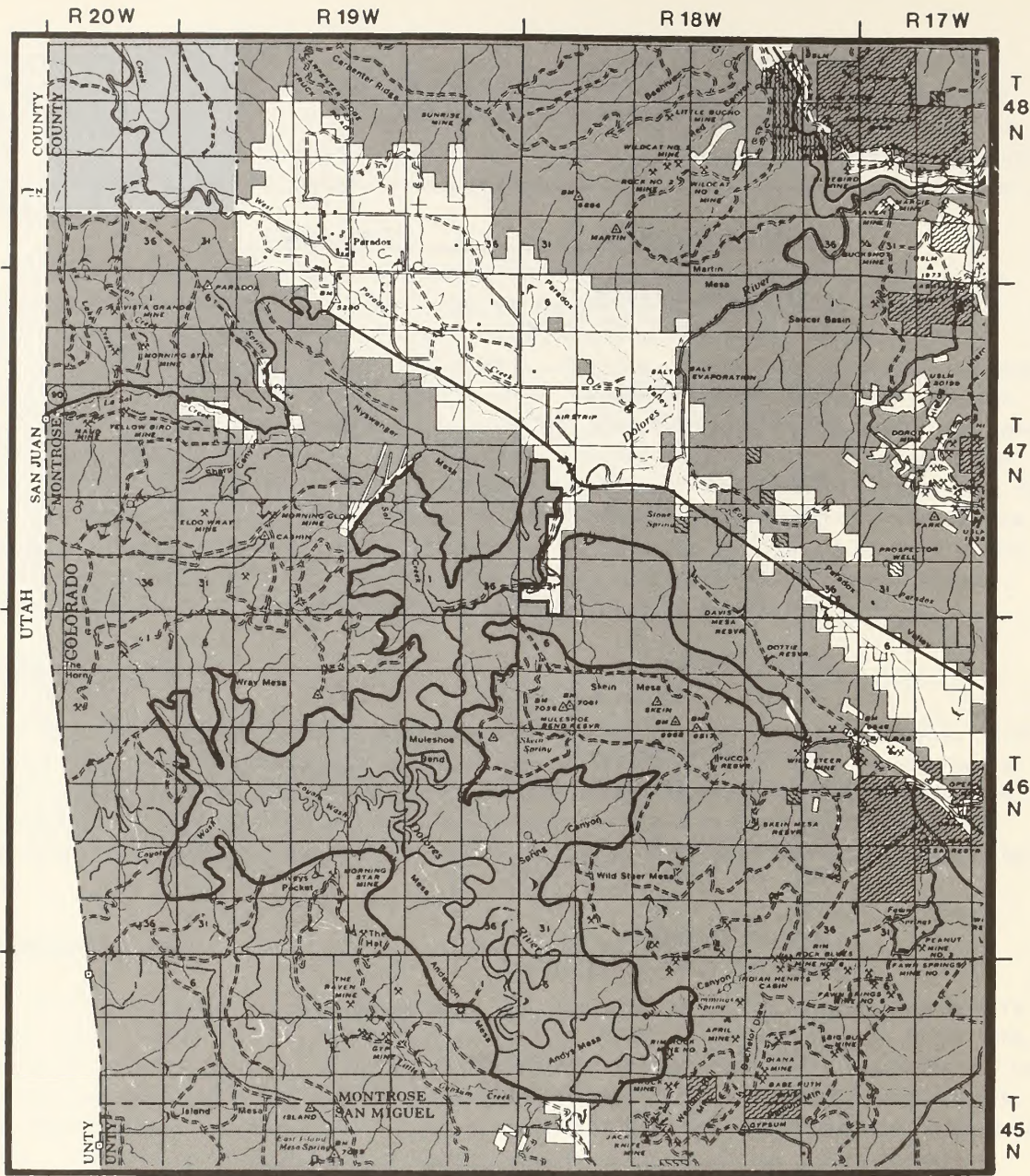
Table 2-3. Recorded Springs Within
the Dolores River Canyon WSA.

Spring name/location	Flow (gpm)
Leaping Man Spring ^{1/} Sec. 4, T. 45 N., R. 18 W.	
Bull Canyon Spring Sec. 4, T. 45 N., R. 18 W.	3.0
Thacker Spring Sec. 4, T. 45 N., R. 18 W.	0.25
Stag Spring Sec. 10, T. 45 N., R. 18 W.	0.13
Genesis Spring Sec. 10, T. 45 N., R. 18 W.	1.0
Mountain Lion Spring Sec. 22, T. 46 N., R. 19 W.	0.33
Unnamed Spring ^{2/} Sec. 19, T. 46 N., R. 18 W.	
Unnamed Spring ^{2/} Sec. 19, T. 46 N., R. 18 W.	

^{1/}Not flowing when inventoried.

^{2/}No data currently available.

Source: BLM Data 1984.



DOLORES RIVER CANYON
WSA CO-030-290

Figure 2-3. Dolores River Canyon WSA's land status with original study area boundaries.

LAND STATUS

- Public Lands (Administered by the Bureau of Land Management)
- State Lands
- National Forest
- Private Lands

1 0 1 2 3 miles

SECTION GRID
1 square mile
640 acres

powersite classifications (done in 1925) are present within the north-central portion of the WSA.

Access

The river generally provides access by float boating in early May through June. There are two main roads leading to the WSA--one leads south from Colorado Highway 90 out of Bedrock (County Road 109); the other is north of Slickrock at the confluence of Big and Little Gypsum valleys. Access is from Coyote Wash in Utah and Sylveys Pocket in Colorado (just south of Coyote Wash).

Economics

Located in Montrose County, Colorado, the study area is 70 miles south of Grand Junction, Colorado, the regional supply center. A number of settlements--Uruan, Nucia, and Naturita--near the WSA are local supply centers for agriculture, ranching, oil and gas operations, and mining activities (see The Dolores River Wild and Scenic River Study Report, Revised, March 1976, p. 12, for more information).



RIVER USERS FLOATING THE DOLORES RIVER NEAR COYOTE WASH CONFLUENCE (DOLORES RIVER CANYON WSA).

McKenna Peak WSA

Vegetation

This WSA falls within the transition zone between the Colorado Plateau and the Rocky Mountain Forest provinces. Vegetation varies from desert forbs and grasses to stands of coniferous forests. The majority of the vegetation within the WSA is a grassland desert shrub or brush vegetation type.

Threatened or Endangered Species

There are no known T&E species of plants or animals within the boundaries of the McKenna Peak WSA.

Topography

The topography of the area consists of Mancos shale badlands, including sandstone cliffs, canyons, and rolling hills. The predominant topographic features of the WSA are McKenna Peak in the northwestern portion of the area, which rises approximately 1,000 feet above the surrounding terrain, and the Mesa Verde sandstone cliff formation. The area is broken up into a series of shallow canyons and low ridges, formed by northeast-trending drainages.

Geology

This WSA is located within the Paradox Basin and is characterized by tectonic features, which include high angle faults, shear zones, and joint systems that strike northwest and west-northwest paralleling the Hamilton Creek and Gypsum Valley anticlines, the Dry Creek and Disappointment synclines, and the Dry Creek basin fault.

Located at the southeastern end of the Disappointment syncline, formations (which are highly eroded) exposed throughout the WSA are Mancos shale capped by the Mesa Verde Formation of Cretaceous age. Numerous fossil marine invertebrates can be found in portions of the WSA.

Soils

Badlands characterize most of the steeper terrain throughout the WSA. Some rock outcrops occur on the steeper areas. Typical Torriorthents occupy the lower slopes covered with pinyon-juniper. The valley bottoms are comprised of the Billings soil type. All of these soil types are highly saline. (Extensive, detailed soil descriptions for this study area are found in the San Miguel Area Soil Survey which is available in the Montrose District and San Juan and Uncompahgre Area offices.)

Recreation

Some of the recreational opportunities found within McKenna Peak WSA are horseback riding, hiking, backpacking, hunting, photography, and sightseeing.

Cultural Resources

No cultural resources are presently known as virtually no inventory work has taken place. The nature of the topography and soils suggests that only a small number of sites are likely to be present.

Visual Resources

The peaks, ridges, and steep slopes contribute to the outstanding diversity of the scenery, which is bordered by less prominent areas that also display some outstanding scenic features; however, the lower adobe formations contain no remarkable features.

The study area is visible in the background from Colorado Highway 141 and in the foreground from Disappointment Creek Road. Some areas in the northeastern part are obscured by the terrain and are seldom visible from main travel routes (it falls within BLM's Class A, B, and C scenery, with high to moderate sensitivity in the foreground; see Appendix 4).

Wilderness Resources

Size. With all public lands within the area administered by BLM, the area consists of 19,562 acres.

Naturalness. The geomorphology of the area is dominated by badland topography, including sandstone cliffs, canyons, and rolling hills.

Mitigated by topographic and vegetative screening, imprints of man (widely dispersed in the area) are not substantially noticeable--fences, a corral, cabin, vehicle ways, a 15-foot wide ditch, and some old seismic work.

Solitude. The outstanding opportunities for solitude in McKenna Peak WSA are a function of the topographic and vegetative screening in the area. The WSA also includes badlands which contain steep, narrow, twisting arroyos. Expansive vistas from the high points give one a feeling of vastness. Pinyon-juniper woodland and rock outcrops in the northeastern part of Spring Creek Basin also provide screening.

Primitive and Unconfined Recreation. The diverse topography of the badlands topography and sandstone cliffs, along with the varied vegetation, provide outstanding opportunities for primitive and unconfined types of recreation, including hiking, backpacking, horseback riding, hunting, photography, sightseeing, and nature study.

Supplemental Values. The area contains unique scenic values due to the unusual geomorphology of the landscape and unspoiled scenic vistas of the surrounding lands. Numerous marine fossils are found within the WSA and a portion of a wild horse herd is also found here.

Ecological Diversity. McKenna Peak is a unique area in regard to ecosystem types. It is within a transition zone between the Colorado Plateau and Rocky Mountain Forest provinces and has three associated vegetation types. The saltbush-greasewood ecosystem is presently represented by one designated wilderness (Great Sand Dunes National Monument in southern Colorado encompasses approx. 18,000 acres).

Also represented by one designated wilderness is the mountain mahogany-oak scrub ecosystem (Lone Peak Wilderness in Utah--a total of 30,000 acres). The pinyon-juniper woodland vegetation type also occurs in McKenna Peak WSA (see Cahone Canyon narrative).

Wildlife

Big game population varies widely between summer and winter. Deer summer populations are approximately 50, with winter numbers between 500 and 600 deer. Elk usually do not occupy the area during the summer but may number as high as 150 in the winter. Numerous other mammals and raptors occupy the WSA including cougars, bobcat, red fox, long tailed weasel, red-tailed hawk, kestrel and some observations of peregrine falcons in the area. Bald eagles winter in the lower reaches of the area and approximately 100 wild horses roam through the western portion.

Livestock Grazing

There are portions of five grazing allotments within the area (see Appendix 1). Approximately 1,000 AUMs are authorized. Sheep use the area from December 1 to February 28 and cattle from November 15 to May 31.

Timber

No commercially valuable stands of timber are present.

Fire

Two small lightning fires occurred during 1970 through 1980. The silty clay soils, steep hillsides, and rocky mesa tops support pinyon-juniper in association with a desert shrub and grassland ecosystem. Because of the overall sparseness of vegetation, it is unlikely that a large fire could take place within the area.

Water

The McKenna Peak WSA is composed of several small tributary drainages that flow, for the most part, in a southerly direction to the main stem of Disappointment Creek. The majority of these drainages are either ephemeral or intermittent; however, in above average water years, Alkali Wash and Salt Arroyo may flow perennially.

The mean annual precipitation within the WSA varies from less than 16" to more than 20". Intense summer thunderstorm activity coupled with the steep badlands, common throughout this WSA, has resulted in severe flooding. Flows in excess of 7,000 cubic feet per second (cfs) have been recorded in Disappointment Creek just outside the southwestern boundary of the WSA.

The badlands and other soils within the WSA are primarily derived from marine-deposited shales. These soils are fine textured and are usually highly saline. Consequently, the sediment yields are high and range from 0.5 to 1.0 acre-feet per square mile per year.

Water samples taken in the WSA, on Salt Arroyo, Alkali Wash and Warden Draw, show that extremely high concentrations of salts are being discharged. In addition,

available data indicate that the salinity concentrations of Disappointment Creek increase greatly as it moves through the region drained by the above three tributaries. (For more salinity information on this area, see the RMP, Chapter 2, Water.)

Presently, no ground-water data exist for this area. During a recent inventory, no water sources (i.e., springs, seeps, etc.) were located within the WSA. Even without any data, it is reasonable to assume that most of the natural surface waters are contaminated with biological pathogens that could pose a threat to recreationists if consumed untreated.

Leasable Minerals

There are portions of two existing pre-FLPMA oil and gas leases, which includes 156 acres or approximately one percent of the total WSA. Presently, there has been no development of these leases within the WSA; the oil and gas potential is moderate (GEM Report, GRA 9, May 1983; see Table 2-1).

Locatable Minerals

There has been some uranium exploration in the area. There are approximately 400 mining claims located throughout the west and central portions of the WSA (B. Kershaw, personal commun., 1983). The locatable energy mineral potential is low (see Table 2-1). Union Carbide performed some uranium core drilling on existing ways in the western part of the WSA. A new road was denied to them as it did not meet the nonimpairment criterion.

Lands

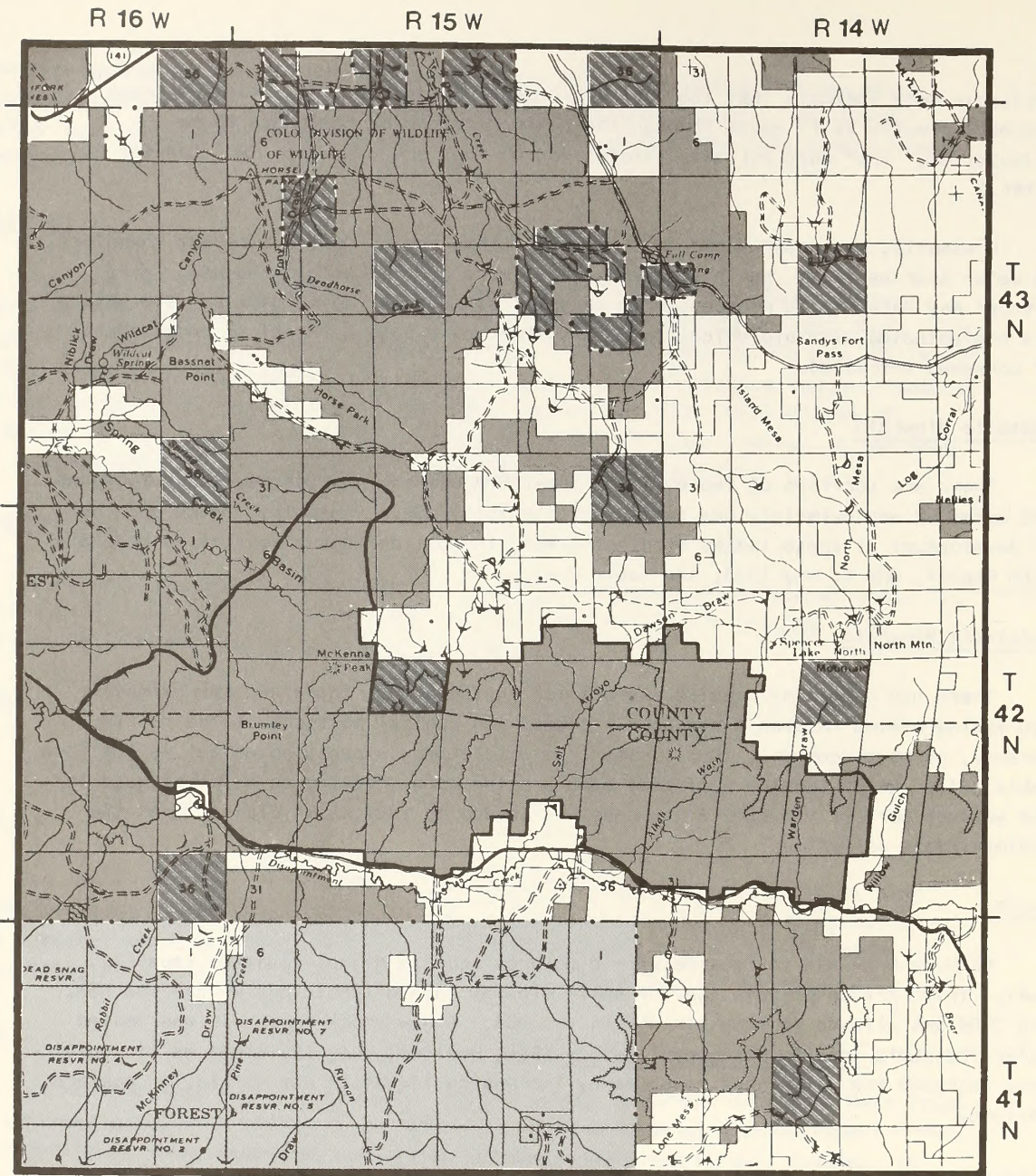
McKenna Peak WSA is located within Dolores and San Miguel counties (see Fig. 2-4). There are no private land or split mineral estate inholdings within the WSA. The CDOW was allowed to trap elk within the WSA. A new stock reservoir was denied under the BLM's Interim Management Policy (BLM, Revised, July 12, 1983) as it could have degraded the wilderness resource by increasing livestock use within the eastern portion.

Access

Access is across BLM lands from the Disappointment Valley Road which leaves Colorado State Highway 141 near Slick Rock, Colorado.

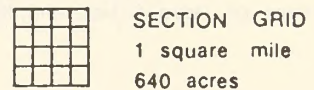
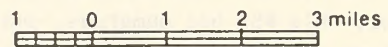
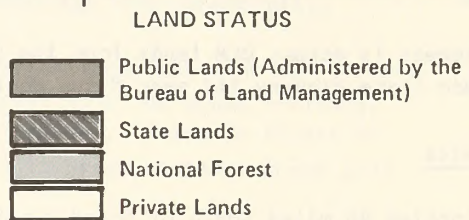
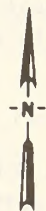
Economics

Located 80 miles south of Grand Junction, Colorado, and 40 miles north of Cortez, this WSA has numerous, small ranching settlements near it but no established towns or villages. The ranches are supplied by road networks from the local supply centers of Dove Creek and Naturita and the regional supply center of Cortez.



McKENNA PEAK
WSA CO-030-286

Figure 2-4. McKenna Peak WSA's land status with original study area boundaries.



Menefee Mountain WSA

Vegetation

This WSA falls within the transition zone between the Colorado Plateau and the Rocky Mountain Forest provinces. The primary vegetation found in the Menefee Mountain WSA is pinyon-juniper, isolated stands of Douglas-fir, and mountain shrubs. The dominant species above 7,000 feet is oakbrush, scattered stands of ponderosa pine and Douglas-fir.

Threatened or Endangered Species

There are no known T&E species of plants or animals within the boundaries of the Menefee Mountain WSA.

Topography

Located south and east of Mancos and 20 miles southeast of Cortez, Menefee Mountain WSA is composed of topography made up of mountains and canyons, including cliffs and varied plant communities. It lies south and east of the Mancos River Valley in Montezuma County; north-south, broad-to-narrow drainages of the Mancos River cut through this area. The elevation ranges from 6,800 feet to 8,300 feet; some parklike meadows are found in the area.

Geology

Isolated ridges, composed of Cretaceous Mancos shale, canyons and cliffs formed by the Mesa Verde group, form distinctive topographic features within Menefee Mountain. Rock units found here represent portions of Mesozoic time. The area is drained north-south by the Mancos River.

The Mesa Verde group contains invertebrate mollusk remains and fossil plant material. The Mancos shale and Menefee Formation are both known to contain fossil wood and coal material (Cook, personal commun., 1982; Wanek, 1959).

Soils

Typic Entroboralfs-Archuleta rock outcrops dominate on the mountain slopes. Romberg-Cragola rock outcrops occur on the toe slopes with Silt-Razor soils in the valley bottoms. (Detailed soil descriptions for this WSA are found in the Cortez Area Soil Survey available in the Montrose District and San Juan Area offices.)

Recreation

The Menefee Mountain WSA provides recreation opportunities for hiking, backpacking, and climbing, and because of its scenic views, also sightseeing and photographic opportunities.

Cultural Resources

Four sites were recorded from four hundred acres of an intensive inventory including a prehistoric lithic scatter, two recent historic hunting camps, and one a possible Navajo camp. Because of the rugged terrain and high elevation, little potential exists for more than a few significant cultural resources in the area, although other nonrecorded sites have been identified by local users.

Visual Resources

Menefee Mountain WSA is visible in the background from U.S. Highway 160 and in the foreground from Weber Canyon Road. Portions of Mesa Verde National Park can be viewed from within the WSA. From the top of Menefee Mountain, the view is of several surrounding mountain ranges (the San Juans and the La Platas) and a series of plateaus. It falls within BLM's Class B scenery (with moderate sensitivity in the foreground; see Appendix 4).

Wilderness Resources

Size. Menefee Mountain WSA contains 7,129 acres, of which 40 acres are private land and 120 acres have split estate mineral rights.

Naturalness. Menefee Mountain WSA is an ecologic island surrounded by private ranch and farmlands and is primarily natural in character. Most imprints of man are found in the northern portion of the unit and within East Canyon. Screened by topography and vegetation, some old, small historic coal mines exist in the WSA. Near the mouth of Joe's Canyon is an old deteriorating log cabin and a fence line mostly screened by vegetation. Within the southern portion of the WSA, a small stock reservoir is located.

Solitude. This WSA has outstanding opportunities for solitude because of the rugged topography, the vegetative screening of oakbrush and pinyon-juniper habitats, and the numerous canyons and lack of a distinct center of activity which tends to disperse use.

Primitive and Unconfined Recreation. The rugged terrain, including steep-sided canyons and cliff-rimmed mesa tops, provide challenging hiking and backpacking opportunities. Along the top of Menefee Mountain is an outstanding panoramic vista of the surrounding mountains and plateaus. The rugged terrain and scenic vistas contribute to outstanding opportunities for primitive and unconfined types of recreation.

Supplemental Values. The area contains habitat for both bald and golden eagles, elk, and deer. Archaeologic sites are found within the area, as well as some small, historic coal mines.

Ecological Diversity. Menefee Mountain WSA is located in a transition zone between the Colorado Plateau and the Rocky Mountain Forest provinces. The area is occupied by two vegetation types: pinyon-juniper woodland and mountain mahogany-oak scrub. (See Cahone Canyon and McKenna Peak WSA narratives for details on these ecosystems.)

Wildlife

Big game populations vary by seasons. Mule deer vary from a summer population of 50 to 75 animals to a winter population of approximately 150 deer. Elk use is minimal in the summer (5) and may rise to 45 in the winter (in the south end). This area is also habitat for blue grouse, black bear, mountain lion, and raptors. Golden eagle nests have been inventoried and bald eagles may occasionally hunt here in the winter. Deer and elk herds migrate along the lower elevations for winter range from the Glade, West Fork of the Dolores River, and La Plata Mountain areas.

Livestock Grazing

Two grazing allotments are located partly within this WSA, with a total of approximately 60 AUMs (see Appendix I). The area is grazed yearlong by cattle and by sheep from May 20 to June 10 and again from October 1 to October 10.

Timber

Several small, isolated areas of timber exist in the area, consisting of approximately 120 acres of commercial timber and 825 acres of woodlands.

Fire

Two fires have occurred between 1970 and 1980--one consumed five acres of bush and pinyon-juniper trees; the other affected less than one acre of vegetation.

Water

The Menefee Mountain WSA lies in tributary headwater drainages of the Mancos River basin. From the WSA, drainages primarily flow in a southerly direction toward the main stem of the San Juan River.

Within the WSA, the mean annual precipitation varies between 16" and 20." Approximately one-half of the annual precipitation falls during the growing season (May to September), with the remainder falling mostly during the winter months as snow. High intensity thunderstorms during the summer, coupled with steep topography and low permeable soils, have the potential to produce flash flooding. The annual sediment yield from all forms of runoff varies from 0.1 to 0.5 acre-feet per square mile. The only known water source within Menefee Mountain WSA is Electric Spring (NW 1/4, NE 1/4, Sec. 1, T. 35 N., R. 13 W.). All streams within the WSA are either ephemeral or intermittent during average water years.

There are currently no ground-water or surface-water quality data for this area. It is reasonable to assume, however, that most natural surface waters are contaminated with biological pathogens that could pose a threat to recreationists if consumed untreated.

Leasable Minerals

There is one pre-FLPMA oil and gas lease within the WSA, which includes 1,132 acres or approximately 16 percent of the total acreage. There is a possibility for a trend to exist from the Sierra field. There is a potential for approximately 2.4 million barrels of oil and 704,352 mcf of gas under the WSA. Oil and gas have a high favorability to occur in the WSA (see GEM Report; GRA II, May 1983).

Two Applications for Permit to Drill (APDs) were approved for oil and gas drilling on two leases. Well pads and a road were constructed, but the drilling was never completed. The operator and lessees were notified that the leases had expired and all activities should cease and that rehabilitation would be required (as of December 8, 1983; T. Galloway, personal commun., 1983); this rehabilitation has occurred.

Several producing oil and gas wells near the northwest boundary are along a possible northeast trend that extends into the area (C. Barrick, personal commun., 1983).

The WSA is located within the Durango Known Recoverable Coal Resource Area (KRCRA). Coal is present in the Menefee Formation of the Mesa Verde group--an estimated 3,700 acres of Federal coal is available, with an average thickness of 9.3 feet (USGS Bulletin 691 and USGS Oil and Gas Investment Map, OM 149). However, there are presently no existing Federal coal leases here. Menefee Mountain WSA contains two coal prospects and one well with a show of oil and gas.

Locatable Minerals

There are no mining claims on record in the WSA (B. Kershaw, personal commun., 1983). Mineral potential in this WSA is low to moderate (see Table 2-1).

Lands

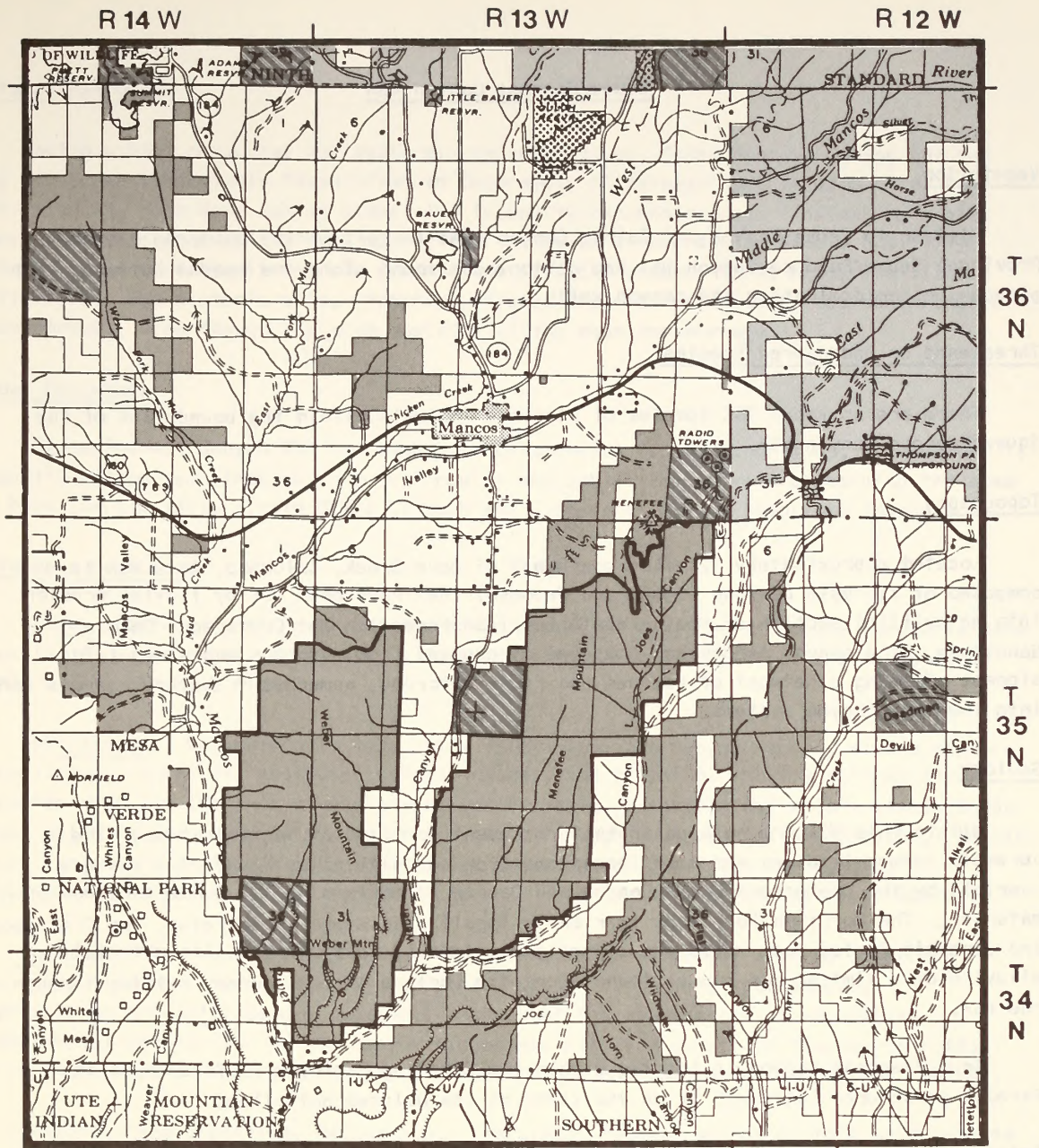
Menefee Mountain WSA is located within Montezuma County, Colorado (see Fig. 2-5). Federal land near the WSA includes Mesa Verde National Park, which administers the Mesa Verde Wilderness Area four miles to the west. Forty acres of private land is located in the southwest portion of the WSA. Section 27 (T. 35 N., R. 13 W.) contains 120 acres of private (split estate) minerals, 80 acres of which is owned by Montezuma County. San Juan National Forest is near the WSA to the northeast (approx. 2 mi).

Access

Access is reached by the Mancos Valley Road, which is east and southeast from Mancos, Colorado.

Economics

The nearest regional supply center is Cortez, located approximately 20 miles to the west of Menefee. Other small towns near the WSA (Dolores and Mancos) are local supply centers for agriculture, ranching, livestock grazing, mining, and oil and gas exploration and development activities.



MENELEE MOUNTAIN
 WSA CO-030-251
 WEBER MOUNTAIN
 WSA CO-030-252

LAND STATUS

- Public Lands (Administered by the Bureau of Land Management)
- State Lands
- National Forest
- Private Lands

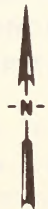


Figure 2-5. Menefee Mountain and Weber Mountain WSAs' land status with original study area boundaries.

Squaw/Papoose Canyon WSA

Vegetation

Similar to Cross Canyon and Cahone Canyon WSAs (a part of the Colorado Plateau Province) Squaw/Papoose Canyon WSA has cottonwoods found along the canyon bottoms, with pinyon-juniper dominating the canyon walls.

Threatened or Endangered Species

There are no known T&E species of plants or animals within the boundaries of the Squaw/Papoose Canyon WSA.

Topography

Located approximately 12 miles southwest of Dove Creek, Colorado, this WSA is composed of two main canyons (Squaw and Papoose) that have been cut by fluvial erosion into an uplifted section of the Jurassic Morrison Formation and Cretaceous Dakota Sandstone. The canyon slopes are composed of exposed rock outcrops and steep talus slopes. Forming a network of ravines and rocky outcrops, numerous tributary canyons merge into the main canyon systems.

Geology

Within this WSA are rock units that represent portions of Mesozoic time. The Jurassic Summerville and Morrison Formations crop out within its boundaries and are overlain by the Cretaceous Burro Canyon and Dakota Formations and by Quaternary eolian material. The Morrison Formation is rich in fossil plants and vertebrates. The Cretaceous and Jurassic Period rock units are directly overlain by Quaternary eolian material; alluvium of a similar age can be found along the various stream courses cutting through the WSA.

Squaw/Papoose Canyon is located within the Blanding Basin, an extension of the Paradox structural basin and is on the flank of the Dolores anticline.

Soils

Romberg-Cragola rock outcrops dominate in these steep canyons with small areas of Torrifluvents in the narrow valley bottoms. (Detailed soil descriptions for this study area are found in the Cortez Area Soil Survey available in the Montrose District and San Juan Area offices.)

Recreation

Available in this WSA are such recreational opportunities as hiking and horseback riding (along secluded canyon bottoms), backpacking, hunting, rock climbing, and photography. Wildlife, archaeological sites, and rugged and scenic terrain also add to the recreational opportunities.

Cultural Resources

Having a high potential for cultural resource values, Squaw/Papoose Canyon has had only 150 acres intensively inventoried in Colorado. Fifty-eight prehistoric sites have been recorded, most done during older, low intensity reconnaissances (indicating a bias towards larger structural sites). Forty-four sites were recorded as pueblo habitation sites, five were rockshelters, six ceramic and lithic scatters, three primarily lithic scatters, and one historic site. Numerous, highly important sites are located throughout these canyons, even though the area contains little mesa top acreage.

Visual Resources

Squaw/Papoose Canyon WSA contains some outstanding canyon formations. The scenery is generally seldom seen from major travel routes and public sensitivity concerning the area has been low (it falls within BLM's Class B and C scenery; seldom seen; see Appendix 4).

Wilderness Resources

Size. Containing all public lands administered by BLM, Squaw/Papoose Canyon is made up of 11,287 acres (4,611 acres within Colorado's Montrose BLM District and 6,676 acres within Utah's BLM Moab District).

Naturalness. Vegetation is especially thick along the canyon floors, with a mixture of cottonwood, tamarisk, saltbush, sedges, rushes, and cattails. Mostly natural in character with the imprints of man's work unnoticeable, a vehicle way exists within Squaw Canyon which is returning to a natural condition through revegetation and erosion. An old fence line exists in the Colorado portion of Squaw Canyon which the surrounding piñon-juniper forest provides screening for and which was bladed during construction.

Solitude. The rugged topography of the steep, stair-stepped, winding Squaw and Papoose canyons provides topographic screening within this unit. Outstanding opportunities for solitude are available because of the combination of vegetative screening (piñon-juniper on the canyon slopes and riparian growth in the canyon bottom) and the topographic screening (steep inclines, ledges and the meandering stream course).

Primitive and Unconfined Recreation. The steep, rugged canyons of this unit provide a scenic backdrop for various primitive recreational activities. The canyon bottoms can be used for hiking or horseback riding, the area's geologic and archaeological features provide for photography and sightseeing, the steep rugged canyon slopes are a challenge for climbing and rock scrambling, and hunting is a historic use of the area. This WSA provides outstanding opportunities for primitive, unconfined types of recreation.

Supplemental Values. The area is rich in archaeological sites dating from the Anasazi culture. Ecologically, this area serves as a natural refuge for native flora and fauna that have been displaced from surrounding areas by agriculture and other human activity. Geologic formations are well exposed for scientific and educational study. The Morrison Formation contains fossil plants and vertebrates.

Ecological Diversity. Squaw/Papoose Canyon WSA is occupied by two vegetation types: piñon-juniper woodland and Great Basin sagebrush. (See Cahone Canyon WSA narrative for details on these ecosystems.)

Wildlife

A year-long resident deer population exists which covers a relatively low density (5/sq mi). No significant influx of winter migrants occurs. Mammals such as cougar, bobcat, grey fox, badger, and long-tailed weasel all exist in the area. Many raptors and some waterfowl occupy the area, while golden eagles hunt in the canyons.

Livestock Grazing

Three grazing allotments are located partly within this area, with a total of approximately 260 authorized AUMs (see Appendix 1). Cattle use the area from April 29 to February 28.

Timber

No commercial timber is present within the WSA.

Fire

No known fires occurred during 1970 through 1980.

Water

See narrative under Cross Canyon, Water.

Leasable Minerals

There are eleven existing pre-FLPMA oil and gas leases within the WSA, which includes 2,357 acres or approximately 21 percent of the entire WSA (this includes the Utah portion). Oil and gas seismic activity has been previously conducted in a nonimpairing manner. Two wells were staked in 1983, but no development has presently occurred on any pre-FLPMA leases within the WSA. Potential for oil and gas is high (see Table 2-1). It is also within the Sand Canyon KGS. On March 4, 1983, industry nominated the WSA as an ACMP (see Glossary). There are presently no Federal coal leases here.

There is a potential for approximately 495,440 barrels of oil and 990,880 mcf of gas in the WSA, which is 11 percent (wildcat ratio) of the calculated reserves, based on production from nearby fields.

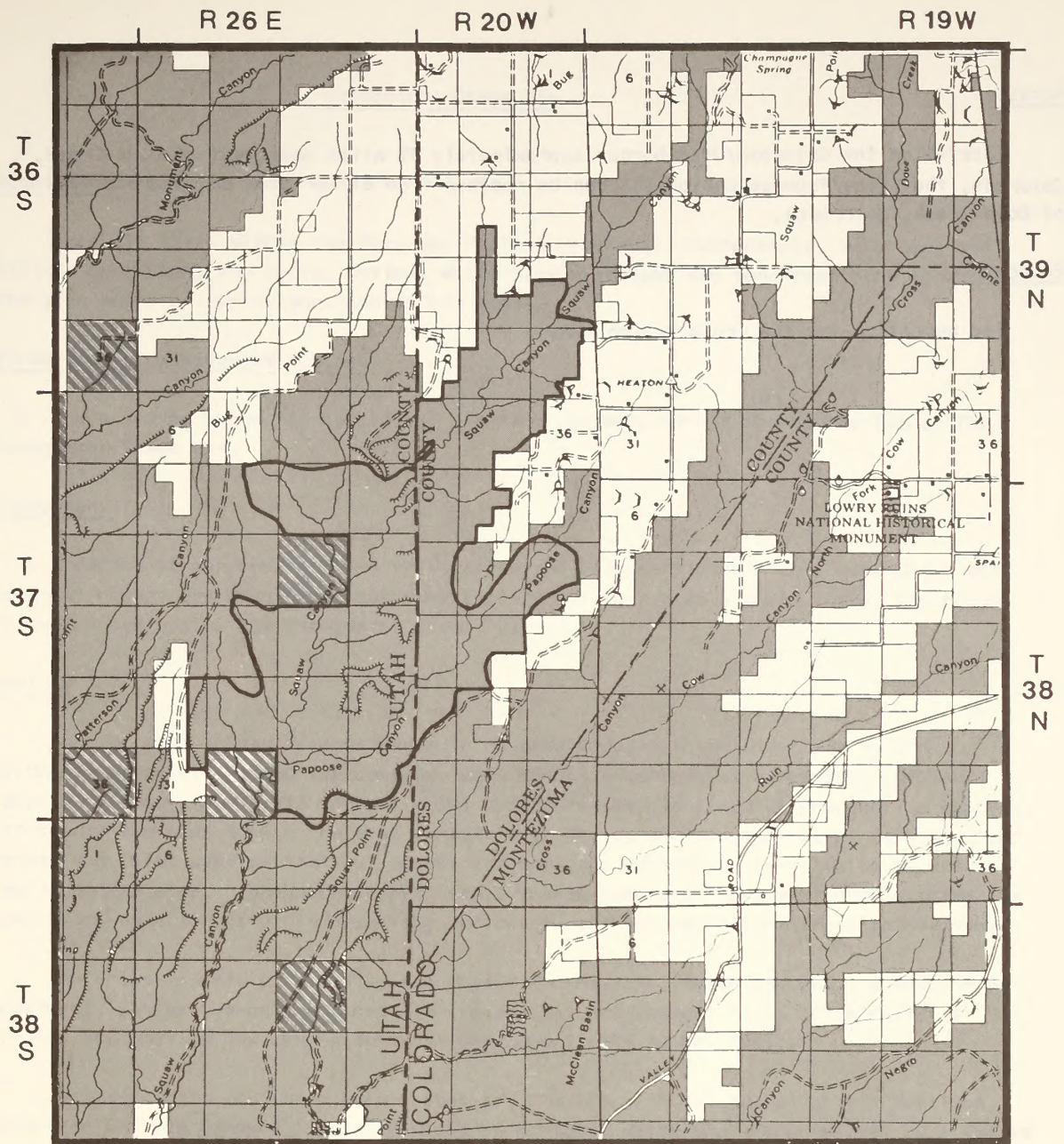
Several nonimpairing oil and gas seismic operations (primarily helicopter) have been permitted within the Squaw/Papoose Canyon WSA.

Locatable Minerals

There has been some uranium exploration in the area. Potential for locatable energy minerals within the WSA is high (see Table 2-1). There are approximately 300 mining claims throughout the Colorado portion of the WSA and approximately 140 claims within the Utah portion of the area (B. Kershaw, personal commun., 1983).

Lands

Squaw/Papoose Canyon WSA is located within Dolores County, Colorado, and San Juan County, Utah (see Fig. 2-6). No private land or split estate mineral inholdings exist.






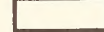
SQUAW/PAPOOSE CANYON

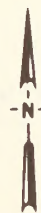
CO-030-265a

UT-060-227

Figure 2-6. Squaw/Papoose Canyon WSA's land status with original study area boundaries.


LAND STATUS

-  Public Lands (Administered by the Bureau of Land Management)
-  State Lands
-  National Forest
-  Private Lands



1 0 1 2 3 miles



 SECTION GRID
1 square mile
640 acres

Access

Located on the Colorado/Utah border approximately 12 miles southwest of Dove Creek, Colorado, the Squaw/Papoose Canyon WSA can be reached from either Utah or Colorado (west of Dove Creek, Colorado).

Economics

See narrative for the Cross Canyon WSA.

Tabeguache Creek WSA

Vegetation

This WSA falls within the Colorado Plateau Province. Cottonwoods, wildrose, and willows grow along the canyon bottom, while pinyon-juniper and ponderosa pine grow along the side walls of the canyons and on the mesas.

Threatened or Endangered Species

There are no known T&E species of plants or animals within the boundaries of the Tabeguache Creek WSA.

Topography

A series of canyons form the tributaries and main portion of Tabeguache Creek WSA. Adjacent ridges and mesa tops have been included in this area and are cut by the rough tributary canyons of the Tabeguache Creek system.

Geology

Located east of the Paradox Basin in an area thought to be underlain by the Uncompahgre Uplift Precambrian complex, this WSA is underlain by a Mesozoic section (approx. 100 m.y. ago) which directly and unconformably overlies the Precambrian complex. Structural features within the area include high angle, northeast-striking faults; shear zones; and joint systems that cut across the dominant northeasterly-striking structural fabric of the area. Tabeguache Creek itself trends generally east-west and is primarily controlled by a series of intersecting northwest- and northeast-striking joint systems.

The Triassic Chinle, Wingate, and Kayenta formations, which represent a section of mudstones, shales, sandstones, and siltstones that are thought to be of terrestrial origin, crop out in the canyon bottoms (GEM Report, GRA 10 May 1983).

Jurassic units that have been mapped are the Brushy Basin Member of the Morrison Formation and the Summerville and Entrada formations, which are characterized by a series of sandstone, shale, siltstone, and mudstone units with conglomerate and limestone members.

Cretaceous units that crop out as mesa tops include the Burro Creek and Dakota formations, which are characterized by a series of shale, sandstone, siltstone, mudstone, and conglomerate units with beds of nonmarine carbonaceous shale and coal in the Dakota Formation.

Quaternary fluvial material directly overlies the exposed Triassic and Jurassic rocks throughout most of the Tabeguache Creek drainage.

Soils

Rock outcrops and Torriorthent soils are dominant along canyon sideslopes. Pinon, Bowdish, and Ansari soils are on mesa tops along with some rock outcrops. (Detailed soil descriptions for this study area are found in the San Miguel Area Soil Survey available in the Montrose District and Uncompahgre Area offices.)

Recreation

Recreation opportunities available in Tabeguache Creek WSA include hiking (along the benchlands above the canyon), horseback riding, hunting, photography, and viewing geologic features.

Cultural Resources

This canyon served as a trail over the Uncompahgre Plateau for the Fremont and Ute Indians. Tabeguache Cave II, just west of the WSA, was partially excavated in the 1930s by C. T. Hurst and yielded remains of three distinct cultural groups--the Archaic, Basketmaker II and a later Ute occupation.

Three sites recorded within the WSA are small lithic scatters and are considered to be limited activity sites of only moderate to low significance. There is a potential for finding important sites because of the topography and the presence of a year-round water supply; however, little inventory work has been done in the area. Some unrecorded sites include large rockshelters.

Visual Resources

This area contains some scenic features along the narrow Tabeguache Creek Valley, including cliffs, monumental rock formations, and topographic benches (covered with sparse to dense desert woodland), which are fairly common in the surrounding scenery. It falls within BLM's Class B and C scenery (with moderate sensitivity; seldom seen; see Appendix 4).

Wilderness Resources

Size. With all public lands within this WSA administered by BLM, Tabeguache Creek WSA contains 7,908 acres.

Naturalness. Characterized by ridges and mesas divided by rough tributary canyons, this area centers on Tabeguache Creek and its deep canyon which is predominantly natural in character. Three vehicle ways are found here, but all are screened by topography and vegetation and none significantly impairs the area's naturalness.

Solitude. This WSA remains as both an example of a scenic canyon and mesa type of landscape, which provides access to the western slope of the Uncompahgre Plateau. Rugged benchlands and tributary canyons cover most of the area and provide topographic screening, thus providing outstanding opportunities for solitude.

Primitive and Unconfined Recreation. The scenic quality of Tabeguache Creek WSA, combined with the perennial stream, provide opportunities for hiking, backpacking, and horseback riding. Hunting, photography, sightseeing, and use of the historic Indian trail as access onto the Uncompahgre Plateau all add to the outstanding opportunities for primitive and unconfined types of recreation.

Supplemental Values. The area, which contains a variety of geologic, educational, scientific, and archaeological values, is also a natural refuge for wildlife and one of only a few pristine canyons along the Uncompahgre Plateau.

Ecological Diversity. Tabeguache Creek WSA is associated with the pinyon-juniper woodland ecosystem. (See Cahone Canyon WSA narrative for details.)

Wildlife

Big game species use varies by season. Deer use during the summer is approximately three per square mile, with winter use increasing to six per square mile. Elk summer use is incidental, with generally one to two per square mile in the winter. Tabeguache Creek WSA also contains rainbow and brown trout, suckers, cougar, bobcat, red fox, raptors, and snakes.

Livestock Grazing

There are portions of four grazing allotments within the area (see Appendix 1). A total of approximately 130 AUMs is authorized. The area is grazed by cattle from May 15 to June 14 and again from October 16 to March 31.

Timber

No commercially valuable timber is present.

Fire

Two fires of less than one acre in size occurred between 1970 and 1980; they involved individual trees or small groups of trees which were ignited by lightning.

Water

The annual precipitation within this WSA varies between 18" and 20."

The annual sediment yield from all sources of erosion ranges from 0.2 to 0.5 acre-feet per square mile.

Tabeguache Creek, the only perennial water course in this WSA, flows in a westerly direction until it joins the San Miguel River which flows to the northwest. The water quality in Tabeguache Creek is fairly acceptable. Salinity concentrations are moderate during low flows but are diluted during the spring runoff season when flows are high. Even though the chemical water quality of Tabeguache Creek is fairly good, it is safe to assume that biologic pathogens are present which could pose a threat to recreationists if consumed untreated.

There presently is no ground-water data for this WSA. The area does contain one known spring, however, which is extremely saline--Stinking Spring (NE 1/4 SE 1/4 Sec. 33, T. 48 N., R. 15 W.), flowing approximately 0.125 gallons per minute (gpm), was measured to contain several thousand ppm of TDS (see Glossary).

Leasable Minerals

There are no existing pre-FLPMA oil and gas leases within this WSA. There are presently no Federal coal leases here; however, coal does exist in the Dakota Sandstone.

Several nonimpairing oil and gas seismic operations (primarily helicopter) have been permitted within Tabeguache Creek WSA. Potential for oil and gas is moderate (GEM Report, GRA 8, May 1983; see Table 2-1).

Locatable Minerals

There are approximately 150 mining claims, probably staked for uranium and vanadium, located in the northern and western portions of the WSA (B. Kershaw, personal commun., 1983). Potential for locatable energy minerals is low (see Table 2-1).

Lands

Tabeguache Creek WSA is located within Montrose County, Colorado (see Fig. 2-7). No private land or split estate mineral inholdings exist.

Access

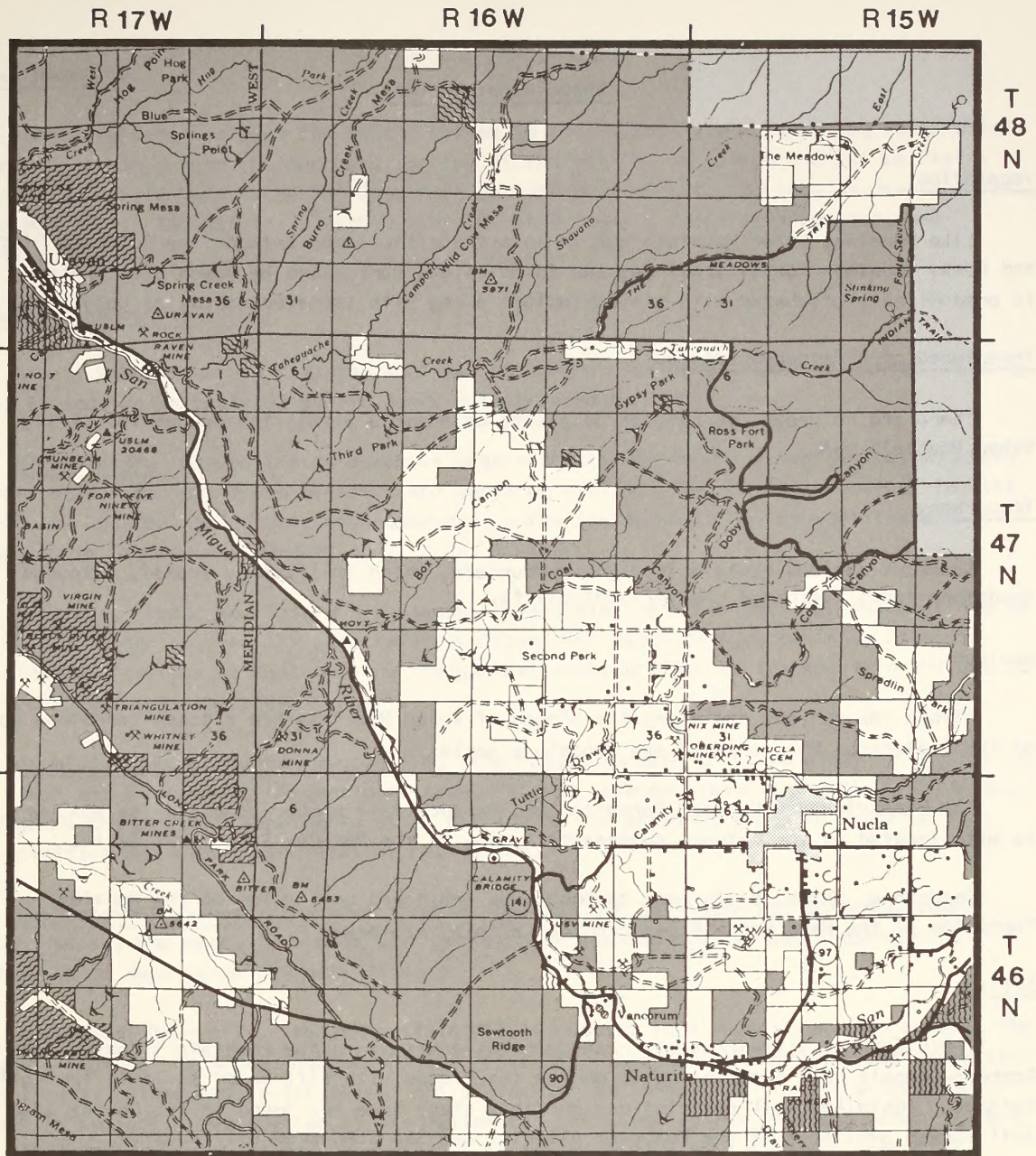
Fifteen miles east of Uravan, the WSA is reached by taking Colorado Highway 97 to Nucla, and then travelling north approximately 4 miles.

Economics

See narrative under the Dolores River Canyon WSA.

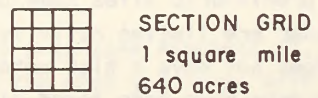
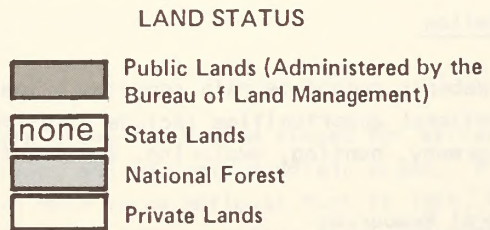
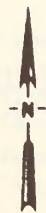


CLOSEUP OF ONE OF THE MANY CACTUS SPECIES IN THE PLANNING AREA.



TABEGUACHE CREEK
WSA CO-030-300

Figure 2-7. Tabeguache Creek WSA's land status with original study area boundaries.



Weber Mountain WSA

Vegetation

Like Menefee, Weber Mountain WSA is in a transition zone between the Colorado Plateau and Rocky Mountain Forest provinces and is an island surrounded by ranch and farmland; it is predominantly timbered with pinyon-juniper along with isolated stands of Douglas-fir.

Threatened or Endangered Species

There are no known T&E species of plants or animals within the boundaries of the Weber Mountain WSA.

Topography

Numerous canyons radiate from Weber Mountain, which is linearly shaped. Exposed sandstone forms overhangs and vertical cliffs.

Geology

Within the canyons and along the slopes of Weber Mountain are exposed sandstone rocks of the Cretaceous Mancos shale and sandstone series.

The Pennsylvanian Hermosa Formation and Paradox Salt Member underlie the WSA, which is also located on the extreme southeastern edge of the Paradox Structural Basin.

Sandstone, shale, siltstone, carbonaceous shale and coal units of the Menefee Formation of the Mesa Verde Group crop out within this area.

Soils

Typic Eutroboralfs-Archuleta rock outcrops dominate on the mountain slopes. Romberg-Cragola rock outcrops occur on the toe slopes with Silt-Razor soils in the valley bottoms. (Detailed soil descriptions for this study area are found in the Cortez Area Soil Survey available at the Montrose District and San Juan Area offices.)

Recreation

Weber's rugged terrain provides a challenge to the climber and hiker. Other recreational opportunities include wildlife viewing and panoramic vantage points for photography, hunting, exploring, and sightseeing.

Cultural Resources

Out of a total of 6,303 acres, only 320 acres have been intensively inventoried and seven prehistoric sites have been recorded. Three of the sites are habitations and the remainder are limited activity sites. Some important sites are expected to exist but the area does not have a high potential for a large number of sites. Some unrecorded pictographs have been found within the WSA by local users.

Visual Resources

The study area includes the Mancos Valley to the south; U.S. Highway 160 is oriented toward the north. From the northern portion of the WSA the San Juans and the La Platas can be viewed. In Mesa Verde National Park an interpretive site provides an overlook to Weber Mountain. The WSA falls within BLM's Class B scenery (middle/foreground; see Appendix 4).

Wilderness Resources

Size. Weber Mountain WSA, the smallest WSA being studied by BLM within this planning area, is made up entirely of public lands administered by BLM.

Naturalness. Consisting of numerous canyons radiating from a linear-shaped mountain, exposed sandstone rock forms overlays and vertical cliffs. The WSA has one minor imprint within its boundaries--an old, dry reservoir in the center which has revegetated and is returning to its natural condition.

Solitude. Weber Mountain WSA possesses outstanding opportunities for solitude due to its rugged topography and its associated drainages and vegetative screening. Also contributing to feelings of solitude are the general configuration of the mountain and the limited access into the area.

Primitive and Unconfined Recreation. The rugged terrain provides hardy challenges to the hiker and backpacker. Exceptional scenic vistas, chance encounters with wildlife such as bighorn sheep, and archaeological sites all add to the areas outstanding opportunities for primitive and unconfined types of recreation.

Supplemental Values. The area contains habitat for both bald and golden eagles, bighorn sheep, and deer. The area also contains archaeological sites and a portion is contiguous to Mesa Verde National Park.

Ecological Diversity. Weber Mountain WSA is located in a transition zone between the Colorado Plateau and Rocky Mountain Forest provinces. The two vegetation types associated with it are: pine-Douglas-fir forest and pinyon-juniper woodland. The pine-Douglas-fir forest is currently represented by ten designated wilderness areas (263,000 acres). (See the Cahone Canyon WSA narrative for details on the pinyon-juniper woodland ecosystem type.)

Wildlife

As in Menefee Mountain WSA, deer herds migrate along the bottom slopes for winter range from the Glade, West Fork of the Dolores River, and La Plata Mountain areas. A small herd of bighorn sheep, which was released in Mesa Verde National Park in 1946, has been observed here. Other wildlife found here are black bear, mountain lion, and raptors.

Livestock Grazing

There are portions of four grazing allotments within the area (see Appendix 1). A total of approximately 150 AUMs is authorized. Cattle graze the area yearlong, with the majority of use occurring from January 1 to April 30.

Timber

Small, isolated stands of timber exist, consisting of 1,950 acres of woodland.

Fire

Six known fires of less than one acre were lightning-ignited during 1970 through 1980.

Water

See Menefee Mountain WSA, Water.

Leasable Minerals

There is a potential for approximately 2.02 million barrels of oil and 604,824 mcf of gas under the WSA. There are four pre-FLPMA oil and gas leases, which includes 2,272 acres or approximately 36 percent of the total WSA. Presently, there has been no development of these leases within the WSA. High to moderate potential for oil and gas exists here, as the Sierra field exists on the northern end of the WSA.

The WSA is within the Durango KCRA. There are 2,290 Federal coal acres in the WSA in the Menefee Formation, with an average thickness of 8.0 feet (USGS Bulletin 691 and USGS Oil and Gas Investment Map OM 149). There are presently no existing Federal coal leases here.

Locatable Minerals

There are no mining claims on record within the WSA (B. Kershaw, personal commun., 1983). Mineral potential is rated as moderate (GEM Report, GRA II; May 1983; see Table 2-1).

Lands

Weber Mountain WSA is located within Montezuma County, Colorado (see Fig. 2-5). No private land or split estate mineral inholdings exists.

Access

Access to Weber Mountain WSA is south of Mancos, Colorado (located on U.S. Highway 160), along the Mancos Valley Road or south along the Weber Canyon Road.

Economics

See narrative under Menefee Mountain WSA.

**ENVIRONMENTAL
CONSEQUENCES**

CHAPTER THREE -

CHAPTER THREE
ENVIRONMENTAL CONSEQUENCES

Impact Analysis Assumptions

Chapter Three examines the expected environmental consequences of the various alternatives. As there are 43 alternatives for eight WSAs, a method of reducing repetition is necessary. Therefore, wherever the environmental consequences of a particular alternative duplicate a previously examined alternative, that alternative is referenced. Impacts that are specific to the WSA or alternative are then examined. To provide a standard framework for impact analysis and comparison among alternatives, the following assumptions were used:

1. The short term is considered to be between the date of the submission of the Wilderness Report to Congress (between 1988 and 1990), as that is when Congress could act on the report. The long term is set at the year 2004; the environmental trends of whichever alternative is chosen should appear by then.

2. BLM will have the funding and work force to implement the chosen alternative.

3. If an area is designated wilderness, the Final Wilderness Management Policy (BLM, Federal Register, February 3, 1982) will be used as a guide to those activities that are permissible. A wilderness management plan will be developed within two years after a WSA is designated wilderness. This plan could limit impacts to soils, water, recreation uses, and wildlife, etc., if funding and manpower are available.

4. Recreation use will increase initially in an area designated as wilderness at the rate of the national level (10% yearly).

5. Wilderness designation will preclude mining activities under the 1872 Mining Law unless valid claims can be established when the wilderness is designated.

6. Developing the oil and gas reserves may continue on existing pre-FLPMA leases, even within designated wilderness.

7. If an area containing non-Federal mineral lands or privately owned lands is designated wilderness, acquiring those private or State interests may occur through purchase or exchange. Acquiring nonpublicly owned lands will occur only if the State or private owners concur with the acquisition, or if the acquisition is specifically authorized by Congress.

Nonaffected Resources

Climate, air quality, geology, forestry, the social environment, and topography of the planning area are resources and descriptions that would not be affected by any of the alternatives.

Cahone Canyon WSA

All-Wilderness Alternative (Resource Conservation Alternative)

The entire Cahone Canyon WSA would be recommended suitable for wilderness under this alternative (9,040 acres).

Wilderness Resource

Designating wilderness would have both short- and long-term beneficial impacts to the wilderness resource values present in the area by providing additional protection. Mining activities would be limited to valid mining claims with valid existing rights at the time the wilderness was designated, which would preclude the majority of mining activities and associated developments (such as road construction, subsequent timber removal, and exploration with bulldozers).

Protecting the wilderness resource values would in turn benefit other related resource values such as wildlife, watershed, scenic, and visual resources. Designating these lands as wilderness would provide long-term benefits by preserving land to permit the natural ecological processes to continue with little or no interference by man. Approximately 36 percent of the area contains pre-FLPMA oil and gas leases. A high potential exists (because the area is within a KGS with nearby producing wells) for developing these 14 leases (BLM Data 1984). If this mineral development were to occur, it could have severe impacts to the wilderness values; therefore, it would be questionable whether this area could be managed as wilderness.

Ecological Diversity

As a designated wilderness area, Cahone Canyon WSA, because of its ecologic values, would have long-term positive impacts to the diversity of the NWPS. Ecologically, it would add diversity by representing a new ecosystem (Great Basin sagebrush) and by increasing the acreage of the inadequately represented pinyon-juniper ecosystem. Both of these ecotypes are atypical of the NWPS.

Soils

Short- and long-term impacts would remain essentially unchanged by this alternative; however, increased recreation use could result in soil compaction and erosion in localized areas such as campsites and trails. Prohibiting mineral activities, except those with valid existing rights, would benefit soil resources by eliminating soil disturbances associated with mineral operations.

Water

An increase in recreation use could result in heavy and frequent use of selected campsites, usually located near surface water, which could degrade, in both the short and the long term, the hydrologic conditions of these areas. Concentrated recreation use has the potential to compact soils and reduce the vegetation cover by trampling, firewood collecting, horse grazing, etc., which results in increased surface runoff and sediment yields. Improper sanitation could result in increased water quality problems by spreading fecal bacteria in the surface water system.

Eliminating mineral exploration and activities, except those with valid existing rights, would benefit water quality by preventing sediment sources associated with these activities.

Visual Resources

Under this alternative, the entire WSA would receive VRM Class I management (see Appendix 4), restricting visual modifications to minimal levels. A potential for severe landform and vegetation modifications exists because of present mineral exploration and development rights.

If designation results in increased recreation use, slight visual modifications may occur due to developing new trails and campsites. Potential vegetation losses due to natural fires may be slightly increased by wilderness designation due to decreased fire suppression efforts.

Vegetation

Some increased trampling around heavily used campsites could occur; otherwise, impacts would be minimal.

Eliminating mineral exploration and development, except those with valid existing rights, could benefit the vegetation resource by preventing vegetation removal and alteration. In addition, protecting the wilderness resources would allow the natural ecological processes to continue with little or no interference from man's activities.

Livestock Grazing

No significant impacts to livestock grazing will occur.

Terrestrial Wildlife

By implementing this alternative, there would be no impacts in the short term to terrestrial wildlife species. In the long term, there could be some unquantifiable impacts to wildlife if visitor use increases. Some animal populations, primarily big game, could be displaced as a result of potential increases in noise and decreases in space also because of the possible increases in visitors.

In the long term, terrestrial wildlife could be benefitted by wilderness designation, primarily because mineral activity, with the exception of valid existing rights, would be precluded, which would preserve the wildlife habitat from adverse alteration.

Aquatic and Riparian Habitat

Wilderness designation for this alternative could aid in preserving aquatic and riparian habitat by protecting the water resources from any siltation or acidity associated with mineral development.

Increased visitor use may have an unquantifiable impact to the quality of the aquatic and riparian resources (vegetation trampling, bank erosion and compaction, and litter).

Cultural Resources

Cultural values, which would be available for future study and evaluation, would be protected by their isolation from surface-disturbing activities, excepting those with valid existing rights, and thereby they would be left in a pristine condition. Vandalism may occur whether the area is designated or not. Designation may increase stabilization costs because access would be limited.

Lands and Access

Designating Cahone Canyon WSA as a wilderness area could result in a decreased number of authorizations for ROWs on public land and other land uses. Significant energy development (CO₂ and oil and gas) and topographic limitations (steep canyons) cause a high demands for energy-related ROWs. Formally designating this area would preclude any roads, pipelines, or powerlines from being constructed, unless associated with valid existing rights. Such facilities would need to be located outside of designated wilderness areas, resulting in any roads, pipelines or powerlines being rerouted around the areas, often avoiding public lands and causing more impacts to private lands. Such rerouting costs the applicant more and such costs are passed on to the consumers.

Recreation

This alternative would enhance opportunities for primitive recreation. Recreation visitor use would be expected to increase. The increased exposure the area would receive, due to public comment and news media coverage, as well as through outdoor recreation magazines and wilderness guide books during the decisionmaking process, could cause this additional visitation.

This increase in use would have an effect on users in the long and short term. Centers of activity could become crowded or overused, causing some users to move to other locations or to forego trips into the area. In the long term, much of this use could be regulated through a wilderness management plan.

The quality of hunting and big game populations in the area over the short and long term would depend to a great extent on management actions taken by the CDOW but is not expected to change. ORV uses would not be permitted; however, these uses are presently low to nonexistent because of the rugged, steep terrain.

Minerals

Designating Cahone Canyon WSA as wilderness would withdraw it from appropriation under the mining laws and from leasing under the mineral leasing laws, subject to valid existing rights when the area is designated wilderness.

There are no unpatented mining claims within the WSA. There are 14 pre-FLPMA oil and gas leases (covering 3,268 acres) within the WSA. The potential exists for an estimated 368,940 barrels of oil, 738 million cubic feet of gas, and 46 billion cubic feet of CO₂, which is 11 percent (wildcat ratio) of the calculated reserves, based on production from nearby fields. If designated wilderness, the CO₂ and oil and gas resources would be withdrawn and be unavailable; except pre-FLPMA oil and gas leases, which have valid existing rights for development. These would be long-term impacts, both to the minerals program and for future area mineral development.

Economics

Economic impacts cannot realistically be quantified because of the lack of any specific development plan or schedule for the minerals present. The withdrawal of the mineral resource, with the exception of valid existing rights, could potentially have long-term effects upon the planning area's economy, but the degree and extent are unknown without more specific projections for development. Minimal impacts due to changes in levels of recreation use are projected to occur under this alternative.

Wilderness Manageability Alternative (Resource Conservation Alternative)

Under this alternative, 1,216 acres along the canyon rim would be recommended nonsuitable to reduce potential management problems associated with agricultural uses. The remaining 7,824 acres would be recommended suitable as wilderness.

Impacts to the soils, water, vegetation, visual, livestock grazing, terrestrial and aquatic wildlife, lands, economics, and recreation resources would essentially be the same under this alternative as those impacts listed under the All-Wilderness Alternative.

Wilderness Resource

This alternative primarily adjusts the WSA boundaries to provide for increased manageability of the wilderness resource values. The boundaries have been adjusted to reduce potential conflicts with farmlands, motorized vehicle uses, and peripheral nonwilderness uses. These boundary adjustments should serve to protect the wilderness resource values; especially the core portion of the area. The impacts described under the All-Wilderness Alternative would essentially apply under this alternative. If mineral development were to occur, it could have severe impacts to the wilderness values; therefore, it is questionable whether this area could be managed as wilderness.

Minerals

All the impacts described in the All-Wilderness Alternative would apply with the exception that fewer acres would be withdrawn, thus more would be available for mineral development.

No Wilderness Alternative (Resource Utilization Alternative)

This alternative recommends no acres suitable as wilderness.

Not designating Cahone Canyon WSA as wilderness would have both short- and long-term adverse impacts to the wilderness resource values present within the area. With nondesignation, mining exploration and development, with its associated road construction, vegetation removal, and surface disturbance, would impair the area's naturalness.

In the short term, primitive recreation use, wildlife distribution and propagation, watershed protection and enhancement, and soils and vegetation resources would be adversely affected. In the long term, the wilderness resource values and other uses or resources associated with wilderness would be lost forever in their natural state.

Outstanding opportunities for solitude could be eliminated, thus resulting in more pressure for using the existing wilderness areas in the region. Two of the highest human-oriented and intangible values of the wilderness resource are the psychological and spiritual aspects of the wildland resources as they relate to feelings of solitudes--these aspects would be foregone.

Ecological Diversity

A long-term, negative impact of not designating Cahone Canyon as wilderness would be loss of diversity in the NWPS. This area has the potential to increase diversity in the pinyon-juniper woodland ecosystem and to the presently unrepresented Great Basin sagebrush ecosystem, ecotypes which are atypical of the NWPS.

Soils

The most significant impacts to soils could occur as a result of any mineral operations and related facilities. Although mineral operations are regulated to prevent unnecessary and undue degradation of resources, some degradation will occur. Future mineral activities (oil and gas) would result in increased soil erosion; however, the magnitude of this impact cannot be quantified until the extent of mining and drilling activity is known.

Water

Increased sediment yields and impacts to water quality could result from future mineral operations and related facilities.

Visual Resources

The potential for landform and vegetation modifications due to mineral development, recreation, forestry, and livestock grazing would remain essentially the same as those discussed under the All-Wilderness Alternative. Potential vegetation losses due to natural fires would be slightly decreased under this alternative due to greater emphasis on fire suppression.

Vegetation

Under this alternative, mineral operations could be undertaken which would destroy vegetation in the area of operations. Reclaiming disturbed areas might not completely mitigate vegetation losses due to disturbances caused by such operations. The net result would be either losses of vegetation or changes in vegetation types.

Wildlife (Terrestrial)

Under this alternative, small game, birds and mule deer could be adversely affected by developing mineral deposits. Those impacts would occur through habitat disruption, increased vehicle access, and visual or noise disturbance associated with future mining activities.

Wildlife (Aquatic)

Increased mining activities, which would result in increased acidity and siltation of surface water, could cause an unquantifiable deterioration of aquatic habitat and associated aquatic wildlife.

Cultural Resources

Improved access into the area, which might occur in association with mineral development, could lead to increased deterioration of cultural sites through vandalism. Access improvement may decrease the cost of stabilization.

Lands and Access

ROWS necessary to serve mineral-related development would be allowed, so no significant impacts would occur to lands or access under this alternative.

Livestock Grazing

No significant impacts to livestock grazing would occur.

Recreation

In the short term, impacts to recreation are not expected to occur. There would be no immediate, extreme changes in recreation use within or near Cahone Canyon WSA if it is not designated wilderness. Some increased use can be anticipated if mineral development occurs within this area that would not occur with wilderness designation and would result in local population increases.

Primitive types of recreation use such as backpacking and horseback riding may substantially decline within the area due to mining and drilling activities. This in turn might subject adjacent wilderness or primitive areas, such as Grand Gulch in Utah, to additional visitor use demands because of decreased wilderness acreage in the region.

Minerals

This alternative would allow exploration and development of mineral resources subject to the surface management regulations, which are designed to prevent unnecessary and undue degradation of the environment and which require reasonably reclaiming disturbances caused by mining activities. No deadline for proving the economic feasibility of a mining operation would exist when the market for the particular mineral may be depressed.

The CO₂ and oil and gas reserves described in the Resource Conservation Alternative would be available for future consideration and would not be withdrawn from mineral leasing.

Economics

Commodity Values. Under this alternative, the mineral resources within the Cahone Canyon WSA could be developed to their maximum potential consistent with the normal

environmental stipulations of multiple use management. There would be no time limit for development. No way exists to forecast future values of an undiscovered mineral resource.

Employment. Employment associated with the other mineral resources could be developed to its fullest potential. No method exists to forecast employment for undeveloped and undiscovered minerals. Without designation, employment generated by tourists and recreation would probably continue at present rates if extensive mineral development occurs.

Income by Industry. Under this alternative, income generated by tourism is projected to follow its current upward trend, assuming that significant mineral development occurs. If significant mineral development were to occur, tourist-related income could be expected to grow at a reduced rate. Under this scenario, income generated by mines would increase.

No Action Alternative (Current Management Alternative)

No acres would be recommended suitable for wilderness under this alternative. Impacts would be similar to those listed in the No Wilderness Alternative (Resource Utilization Alternative) for all resources.

Preferred Alternative

No acres would be recommended as suitable for designation as wilderness. Impacts would be similar to those listed in the Cahone Canyon WSA's No Wilderness Alternative (Resource Utilization Alternative) for livestock grazing, lands and access.

Wilderness Resource

Impacts would be similar to the No Wilderness Alternative, but to a lesser degree because of ORV closure and no-surface occupancy stipulations or no leasing for oil and gas.

Soils

Both short- and long-term impacts could occur to soils due to the 14 pre-FLPMA oil and gas leases which could be developed in the area. Otherwise, impacts to soils would be minimal because the area would be closed to ORVs and future oil and gas leasing would be restricted to either no-surface occupancy or no leasing to protect the area.

Water

Impacts would be similar to the Cahone Canyon WSA's All-Wilderness Alternative (Resource Conservation Alternative) with nonmineral development. If mineral development occurs on the pre-FLPMA oil and gas leases, the impacts would be similar to those listed under the Cahone Canyon WSA's No Wilderness Alternative.

Visual Resources

Under this alternative, the area would be managed under VRM Class II guidelines, which limit visual modification (see Appendix 4). A potential exists for modification due to pre-FLPMA oil and gas leases.

Vegetation

Impacts would be similar to the Cahone Canyon WSA's All-Wilderness Alternative, except mineral exploration may not be totally excluded due to pre-FLPMA leases and some vegetation may be adversely affected.

Terrestrial and Aquatic Wildlife

Impacts would be similar to those listed under the Cahone Canyon WSA's All-Wilderness Alternative, except mineral development could disturb wildlife. The impacts cannot be quantified due to the lack of knowledge concerning future development of potential minerals.

Cultural Resources

Impacts are similar to those listed under the Cahone Canyon WSA's All-Wilderness Alternative, except adverse impacts could occur due to mineral development and subsequently increased access. Less visitor use could result in less damage to cultural resources.

Recreation

Impacts would be similar to those listed under the Cahone Canyon WSA's All-Wilderness Alternative, except the area would not be designated wilderness. Primitive recreation opportunities could be enhanced and some increased use in the future could be expected unless mineral development occurs. With mineral development, impacts to primitive recreation would be adverse.

Minerals

Most of the area (5,346 acres) would be placed in a category for no-surface occupancy for CO₂ and oil and gas leasing. The remainder of the area (41%) would not be leased in the future for CO₂ or oil and gas because these resources could not be reached by directional drilling from the canyon rim. The impacts to the oil company and operator are higher initial cost, higher technical requirements to develop the lease, and higher maintenance cost during production. Another impact is that fewer of the reserves will be produced because the wells probably will be abandoned early due to the higher maintenance costs associated with directional wells. Because 60 percent of the area could be directionally drilled, 50 to 75 percent of the CO₂ and oil and gas reserves could probably be recovered under this alternative if the lessee so desires to spend the high costs. However, this desire would be limited only to exploration wells. It is unlikely that the lessees would agree to drilling production wells using directional methods. The area would not be withdrawn for future possible development. The pre-FLPMA oil and gas leases and their potential development could allow a much more extensive development of the area than described above due to their development rights.

No mining claims currently exist, and the area would remain open to mineral entry. However, the ORV closure will require a mining claimant to file a Plan of Operations before conducting any surface-disturbing action, which will require additional mitigation work on the claimant's part and BLM to review and approve the plan.

Economics

Impacts would be similar to those listed under the No Wilderness Alternative, except a reduced level of mineral development would be expected to occur with a consequently reduced impact on income generated from tourism and mineral development.



TYPICAL 115-KV POWERLINE.

Cross Canyon WSA

All-Wilderness Alternative (Resource Conservation Alternative)

This alternative recommends the entire Cross Canyon WSA as suitable for wilderness (12,742 acres).

Impacts to visual, soils, water, terrestrial and aquatic wildlife habitat, vegetation, cultural, lands and access, economics, and recreation resources would be essentially the same under this alternative as those listed under the Cahone Canyon WSA's All-Wilderness Alternative but to a greater degree.

Wilderness

Designating Cross Canyon WSA as wilderness would have both short- and long-term beneficial impacts to the wilderness resource values present by providing additional protection. Mineral activities would be limited to valid existing rights, which would preclude the majority of the locatable mineral activity. There are 33 pre-FLPMA oil and gas leases (covering 9,073 acres) present in the WSA. These leases could be developed and have impacts to the natural values present and also to the area's manageability.

Designating these lands as wilderness would provide long-term benefits by preserving land to permit the natural ecological processes to continue with little or no interference from man. This area would probably not be manageable as a wilderness area in the future due to extensive pre-FLPMA oil and gas leases with valid existing rights (approx. 71% of the area). A high potential for developing these leases occurs because of CO₂ and oil and gas reserves existing immediately adjacent to the area. In addition, extensive uranium and vanadium mining claims are present in the area. Topography and vegetation are such that developing these mineral reserves probably would make the area unmanageable as wilderness.

Ecological Diversity

These impacts would be the same as those listed under the Cahone Canyon WSA's All-Wilderness Alternative.

Livestock Grazing

Livestock grazing facilities would be limited both in size and construction methods under this alternative to be compatible with BLM's Wilderness Management Policy.

Minerals

Designating Cross Canyon WSA as wilderness would withdraw it from appropriation under the mining laws and from leasing under the mineral leasing laws, subject to valid existing rights when it is designated. Cross Canyon WSA has been nominated as an Area of Critical Mineral Potential (ACMP; see Glossary).

There are approximately 700 unpatented mining claims within the WSA. There are 33 pre-FLPMA oil and gas leases (or a total of 9,073 acres) within the WSA. The potential

exists for an estimated 415,360 barrels of oil, 831 million cubic feet of gas. If designated wilderness, oil and gas and uranium resources would be withdrawn and unavailable except for possibly developing the pre-FLPMA oil and gas leases (with valid existing rights) and mining claims (that have valid discoveries). These would be long-term impacts both to the minerals program and for future area mineral development.

Wilderness Manageability Alternative (Resource Conservation Alternative)

The Wilderness Manageability Alternative recommends 650 acres as nonsuitable to reduce agricultural conflicts; however, to improve the area's manageability, an additional 606 acres outside the WSA boundary are recommended suitable, resulting in a total of 12,698 acres suitable for wilderness.

Impacts to soils, water, vegetation, visual, economics, livestock grazing, terrestrial and aquatic wildlife, recreation, and lands would essentially be the same under this alternative as those listed in Cross Canyon WSA's All-Wilderness Alternative. Impacts as a result of mineral development may vary due to pre-FLPMA oil and gas leases (with valid existing rights) and mining claims (that have valid discoveries).

Wilderness Resource

This alternative is primarily an adjustment of the WSA boundaries to provide for increased manageability of the wilderness resource values. The boundaries have been adjusted to exclude potential conflicts with farmlands, motorized vehicle use, and peripheral nonwilderness uses. In addition, lands have been included outside the WSA and two cherrystemmed ways were closed to improve the area's manageability as wilderness. These adjustments should serve to protect the wilderness resource values, especially the core portion of the area. The impacts described under the All-Wilderness Alternative would essentially apply under this alternative. If mineral development were to occur, it could have severe impacts to the wilderness values; therefore, it is questionable whether this area could be managed as wilderness.

Minerals

All the impacts described in Cross Canyon WSA's All-Wilderness Alternative would apply with the exception that fewer acres would be withdrawn and would be available for mineral development.

No Wilderness Alternative (Resource Utilization Alternative)

None of the Cross Canyon WSA would be recommended suitable under this alternative; it would be managed to enhance other resources. Impacts would be similar to those listed under Cahone Canyon WSA's No Wilderness Alternative, except that an AMP on the grazing allotment could be developed and grazing improvements could be constructed (vegetation treatments, water developments, and fences).

No Action Alternative (Current Management Alternative)

This alternative does not recommend any of the Cross Canyon WSA as suitable for wilderness.

Impacts would be similar to those listed under Cahone Canyon WSA's No Wilderness Alternative.

Preferred Alternative

No acres would be recommended as suitable for designation as wilderness. Impacts would be similar to those listed in Cahone Canyon WSA's Preferred Alternative for soils, water, visual, vegetation, terrestrial and aquatic wildlife, cultural, wilderness, recreation, lands, and economics.

Livestock Grazing

Developing the AMP and needed facilities (vegetation treatment, fences, and water developments) would be allowed within the constraints of visual, cultural, and recreation management objectives.

Minerals

Most of the area (a total of 7,065 acres) would be placed under a category for no leasing for future oil and gas leasing because Cross Canyon's oil and gas reserves cannot be developed by directional drilling. The remainder (40%) would be leased with a no-surface occupancy provision to protect the area from development.

Impacts would be similar as those listed under Cahone Canyon WSA's Preferred Alternative as those impacts relate to higher costs of directional drilling, etc. It is felt that less than 25 percent of the CO₂ and oil and gas reserves could be recovered under this alternative.

Numerous mining claims exist and the ORV closures will require claimants to file a Plan of Operations on any surface-disturbing actions, which will require additional mitigation work on the claimant's and BLM's part. The entire area would remain open to mineral entry.

Dolores River Canyon WSA

All-Wilderness Alternative (Resource Conservation Alternative)

This alternative recommends the entire Dolores River Canyon WSA as suitable for wilderness (28,630 acres).

Impacts would be similar to those listed under Cahone Canyon WSA's All-Wilderness Alternative for soils, water, visual, vegetation, livestock grazing, terrestrial and aquatic wildlife, cultural, recreation, and economics, but to a greater degree. Float boating could be restricted if the WSA is designated wilderness.

Wilderness Resource

Impacts would be similar to those listed in the discussion for Cahone Canyon WSA's All-Wilderness Alternative except the ease of manageability would differ. This area would be manageable as wilderness in the future. Only two possible problems exist--nine pre-FLPMA oil and gas leases (18% of area) and numerous mining claims exist in the area. The potential exists for developing the leases or mining claims (if they have a valid discovery), but topography has in the past and probably will in the future greatly limit mineral operations. There is a high probability that this area could be managed as wilderness in the future with only minor manageability problems due to mineral development.

Ecological Diversity

Impacts to diversity in the NWPS would be similar to those described in the Cahone Canyon All-Wilderness Alternative, but to a greater degree (because of the larger acreage involved).

Lands and Access

No significant impact to lands or access would occur from designating the Dolores River Canyon WSA as wilderness.

Minerals

Designating the Dolores River Canyon WSA as wilderness would withdraw it from appropriation under the mining laws and from leasing under the mineral leasing laws, subject to valid existing rights when the area is designated wilderness.

There are approximately 400 to 500 unpatented mining claims within the WSA. There are nine pre-FLPMA oil and gas leases (5,022 acres) within the WSA. The potential exists for an estimated 4.2 billion cubic feet of gas. If the WSA is designated as wilderness, locatable minerals and oil and gas resources would be withdrawn and would be unavailable except for possibly developing the pre-FLPMA oil and gas leases or mining claims that have valid existing rights for developing the minerals. These would be long-term impacts both to the minerals program and for future area mineral development.

Wilderness Manageability Alternative (Resource Conservation Alternative)

To provide for a more manageable area, two ways would be included and the WSA boundary would be adjusted in several places to more closely follow the canyon topography. These changes would result in a total of 28,366 acres recommended as suitable for wilderness.

Impacts to the soils, water, vegetation, visual, livestock grazing, terrestrial and aquatic wildlife, recreation, lands, and economics would essentially be the same under this alternative as those impacts listed in the Dolores River Canyon WSA's All-Wilderness Alternative.

Wilderness Resource

This alternative is primarily an adjustment of the WSA boundaries to increase the manageability of the wilderness resource values. The boundaries have been adjusted to reduce potential management problems with motorized vehicle use and to reduce peripheral nonwilderness uses. These adjustments should serve to protect the wilderness resource values, especially the core portion of the area. The impacts described under the Dolores River Canyon WSA's All-Wilderness Alternative would essentially apply under this alternative.

Minerals

All the impacts described in the Dolores River Canyon WSA's All-Wilderness Alternative would apply with the exception that fewer acres would be withdrawn and would be available for mineral development.

Conflict Resolution Alternative (Resource Conservation Alternative)

To allow the Bureau of Reclamation to establish a salinity injection well, 5,200 acres would be recommended as nonsuitable. A total of 23,430 acres would be suitable.

Impacts would be similar to those listed under the Dolores River Canyon WSA's All-Wilderness Alternative for soils, terrestrial and aquatic wildlife, wilderness (for those lands recommended suitable), cultural, land and access, livestock grazing, and economics. The major change is that the area would be reduced by about 18 percent. Some surface-disturbing impacts could occur to soils and cultural resources. A smaller area would be included as suitable for wilderness, which could affect both user experiences and the area's manageability. There would be a loss of wilderness values on the 5,200 acres considered nonsuitable.

Water

Impacts would be similar to those listed under the Dolores River Canyon WSA's All-Wilderness Alternative, except the changes in boundary would allow the Bureau of Reclamation to construct a salinity injection project in the canyon. Roads and other facilities would be constructed to serve the project; most of these would be in or immediately adjacent to the flood plain. Impacts to water quality would occur from constructing and operating the facilities. Positive impacts to water quality would also occur from constructing the facility due to reducing salinity in the Colorado River system.

Visual Resources

Impacts to visual resources are similar to those listed under the Dolores River Canyon WSA's All-Wilderness Alternative, except constructing the salinity facilities could have unquantifiable impacts to the visual resources in the northern portion of the canyon.

Vegetation

Impacts to vegetation are similar to those listed under the Dolores River Canyon WSA's All-Wilderness Alternative, except constructing the salinity facilities would disturb vegetation in the riparian zone along the river. Riparian vegetation is important in areas of low rainfall.

Aquatic and Riparian Habitat

Impacts could occur due to constructing and operating proposed salinity facilities in the canyon but cannot be quantified without more specifics. All other impacts would be similar to those listed under the Dolores River Canyon WSA's All-Wilderness Alternative.

Recreation

The facilities associated with the salinity project could change the recreation opportunities along the stretch of the river where the facilities are to be constructed. Between two and three miles of river could change from a primitive classification to a roaded-natural classification (see RMP, Appendix 3). Other impacts would be similar to those listed under the Dolores River Canyon WSA's All-Wilderness Alternative.

Minerals

Impacts would be similar to those listed under the Dolores River Canyon WSA's All-Wilderness Alternative, except 5,200 acres would not be withdrawn from mineral entry.

No Wilderness Alternative (Resource Utilization Alternative)

The Dolores River Canyon would not be recommended as suitable under this alternative.

Wilderness Resource

Not designating the Dolores River Canyon WSA as wilderness would have both short- and long-term adverse impacts to the wilderness resource values present within the area. With nondesignation, mining and salinity development, with associated road construction, vegetation removal, and surface disturbance, would impair the area's naturalness.

In the short term, primitive recreation use, wildlife distribution and propagation, watershed protection and enhancement, and soils and vegetation resources would be adversely affected. In the long term, the wilderness resource values and other uses or resources associated with wilderness would be lost forever in their natural state. Ecological processes could be significantly altered which could in turn adversely affect resources and lands adjacent to the WSA.

Outstanding opportunities for solitude would be eliminated, thus resulting in more pressure on more use in the existing wilderness areas in the region. Two of the highest human-oriented values and intangibles of the wilderness resource are the psychologic and spiritual aspects of the wildland resource as it relates to feelings of solitude; these aspects would be foregone.

Ecological Diversity

Impacts would be similar to those given in the Cahone Canyon No Wilderness Alternative, but to a greater degree.

Soils

The most significant impact to soils could occur as a result of any mineral operations and salinity facilities. Although mineral operations are regulated to prevent unnecessary and undue degradation of resources, some degradation will occur. Future mineral or salinity activities could result in increased soil erosion; however, the magnitude of this impact cannot be quantified until the extent of the activity is known.

Water

Under this alternative, increased surface-water sediment yields could result from future mineral and salinity operations and related facilities. Water quality could also be adversely affected by mineral development. Proposed salinity projects could improve downstream water quality.

Visual Resources

The potential for landform and vegetation modification could exist due to mineral development, recreation, salinity projects, and livestock grazing. The area would be managed under VRM Class II guidelines. Impacts may still occur due to authorized uses (see Appendix 4).

Vegetation

Under this alternative, mineral and salinity operations could be undertaken that would destroy vegetation in the area of operations. Reclaiming disturbed areas might not completely mitigate vegetation loss due to disturbances caused by such operations. The net result would be either a vegetation loss or change in vegetation types.

Wildlife (Terrestrial)

Under this alternative, small game, birds, and mule deer could be adversely affected by developing minerals and salinity projects. Those impacts would occur through habitat disruption and visual or noise disturbance associated with future activities.

Wildlife (Aquatic)

Increased mining and salinity activities, which could result in increased acidity and siltation of surface water, could cause an unquantifiable deterioration of aquatic habitat and associated aquatic wildlife.

Cultural Resources

Improved access into the area, which might occur in association with mineral development, could lead to increased deterioration of cultural sites through vandalism.

Lands and Access

No significant impacts would occur to lands or access under this alternative.

Livestock Grazing

No significant impacts to livestock grazing would occur.

Recreation

The area would be closed to ORV use. In the short term, impacts to recreation are not expected to occur. There would be no immediate, extreme changes in recreation use within or immediately around the area if it is not designated wilderness. Some increased use can be anticipated if a major mineral or salinity development occurs within this area and results in a local population increase that would not occur with wilderness designation.

Primitive types of recreation use such as floatboating, backpacking and horseback riding may decline within the area due to mining and salinity activities. This in turn might subject adjacent wilderness or primitive areas to additional visitor use demands because of decreased wilderness acreage in the area.

Minerals

This alternative would allow exploration and development of mineral resources subject to the surface management regulations which are designed to prevent unnecessary and undue degradation of the environment and which require reasonably reclaiming disturbance caused by mining activities. There would be no deadline for proving the economic feasibility of a mining operation when the market for the particular mineral may be depressed. The oil and gas and locatable minerals would be available for future consideration and not withdrawn from mineral entry.

Economics

Commodity Values. Under this alternative, the mineral resources within the WSA could be developed to their maximum potential consistent with the normal environmental stipulations of multiple use management. There would be no time limit on development.

Employment. Employment associated with the other mineral resources could be developed to its full potential. No method exists to forecast employment for undeveloped and undiscovered minerals. Without designation, employment generated by tourism and recreation would probably continue at its present rate.

Income by Industry. See narrative under Cahone Canyon WSA's No Wilderness Alternative.

No Action Alternative (Current Management Alternative)

None of the Dolores River Canyon would be recommended as suitable but managed for potential designation as a Wild and Scenic River. Impacts would be the same as those listed under the Dolores River Canyon WSA's No Wilderness Alternative (Resource Utilization Alternative) for all resources.

Preferred Alternative

This alternative recommends 28,366 acres as suitable for wilderness (using boundaries described previously under the Wilderness Manageability Alternative). Impacts would be the same as those listed under the Dolores River Canyon WSA's Wilderness Manageability Alternative (Resource Conservation Alternative). The area would be recommended as preliminarily suitable for wilderness designation subject to the wilderness manageability boundaries.

All-Wilderness Alternative (Resource Conservation Alternative)

This alternative recommends the entire McKenna Peak WSA as suitable for wilderness (19,562 acres).

Impacts to visual, terrestrial and aquatic wildlife, cultural, lands and access, and recreation would be similar to those described for the Cahone Canyon WSA's All-Wilderness Alternative.

Wilderness Resource

Designating McKenna Peak WSA as wilderness under this alternative would have both short- and long-term beneficial impacts to the wilderness resource values present in the area by providing additional protection. Mining activities would be limited to mining claims with valid discoveries when McKenna Peak WSA would be designated wilderness, which would preclude the majority of mining activities and associated developments (such as road construction, subsequent timber removal, and exploration with bulldozers). Protecting the wilderness resource values would in turn benefit other resource values which are related such as wildlife, watershed, scenic, and visual resources. Designating these lands as wilderness would provide long-term benefits by preserving land to permit the natural ecological processes to continue with little or no interference from man.

This area would be manageable as wilderness. Only two pre-FLPMA oil and gas leases exist in the area, totalling 156 acres on the southern boundary. Mining claims (approx. 400 acres) exist mainly in the western portion of the WSA. The overall mineral potential is low to moderate for development. The topography would generally provide sufficient barriers to limit casual vehicle use.

Ecological Diversity

As a designated wilderness area, McKenna Peak WSA would have several positive impacts to the NWPS. The WSA is occupied by three vegetation types: saltbush-greasewood, mountain mahogany-oak scrub, and pinyon-juniper woodland. Each of these ecosystems is represented by only small acreage in the NWPS and the addition of McKenna Peak WSA would add ecological diversity in every type.

Soils

Impacts which are unquantifiable would be similar to those listed under Cahone Canyon WSA's All-Wilderness Alternative, except that intensive management of the saline soils, which has a high, natural erosion rate, could not occur. This management could involve seedings, spreader dikes, and gully plugs to reduce erosion rates and improve watershed condition; however, the impact will be a continuation of a high erosion rate. Wilderness designation could help improve erosion conditions by closing the area to vehicles and to mineral development, except to those with valid existing rights or discoveries.

Water

Impacts would be similar to those listed under the Cahone Canyon WSA's All-Wilderness Alternative, except that intensively managing the saline water found in the WSA could be greatly limited by wilderness designation. This management could involve spreader dikes and gully plugs to evaporate the water prior to its entering Disappointment Creek. These actions would require heavy equipment for constructing and maintaining the projects. Wilderness designation would preclude this type of management with the resultant impact the continuation of highly saline water contributions into Disappointment Creek.

Vegetation

Impacts would be similar to those listed under the Cahone Canyon WSA's All-Wilderness Alternative, except that vegetation conditions will generally remain static with slight improvements due to protection afforded by wilderness designation.

Livestock Grazing

The allotments within this WSA are all proposed for intensive livestock grazing. Several projects (water and vegetation treatments) are proposed which probably would not be compatible with wilderness designation. Intensive grazing could still occur but would have to be done without the improvements that might affect the natural values.

Wild Horses

BLM would have to manage the horses so as not to affect their wild and free roaming state and to not adversely affect the natural values in the WSA; therefore, management costs could be greater. Positive impacts to visitors would be the opportunities to view wild horses in their natural environment; however, increased visitor use may result in negative impacts to the horses.

Minerals

Designating McKenna Peak WSA as wilderness would withdraw it from appropriation under the mining laws and from leasing under the mineral leasing laws, subject to valid existing rights when it is designated wilderness.

There are approximately 400 unpatented mining claims within the WSA. There are two pre-FLPMA oil and gas leases, covering a total of 156 acres. No professional estimate of the oil and gas reserves can be calculated. However, the WSA lies within an area designated by the USGS as prospectively valuable for oil and gas resources. The GEM Report (GRA-9, May 1983) classifies the area as moderately favorable for accumulation of the mineral resources.

If designated wilderness, the oil and gas and locatable mineral resources will be withdrawn and unavailable except for possibly developing the pre-FLPMA oil and gas leases (with valid existing rights) and mining claims (with valid discoveries), which would be a long-term impact to future mineral development of the area.

Economics

See narrative under the Cahone Canyon WSA's All-Wilderness Alternative.

Wilderness Manageability Alternative (Resource Conservation Alternative)

To reduce potential management problems, 200 acres would be recommended as nonsuitable for wilderness. This change would result in 19,362 acres suitable as wilderness.

Impacts to soils, water, visual, vegetation, livestock grazing, terrestrial and aquatic wildlife, lands, wild horses, cultural, recreation and economics would essentially be the same under this alternative as those impacts listed under the McKenna Peak WSA's All-Wilderness Alternative.

Wilderness Resource

This alternative is primarily an adjustment of the WSA boundaries to provide for increased manageability of the wilderness resource values. The boundaries have been adjusted to reduce potential conflicts with farmlands, motorized vehicle use, and peripheral nonwilderness uses. These adjustments should serve to protect the wilderness resource values, especially the core portion of the area. The impacts described under the McKenna Peak WSA's All-Wilderness Alternative would essentially apply under this alternative.

Minerals

All the impacts described in the McKenna Peak WSA's All-Wilderness Alternative would apply with the exception that fewer acres would be withdrawn and would be available for mineral development.

Lands and Access

Three hundred and twenty acres of the State of Colorado land (T. 43 N., R. 15 W., Sec. 16) could be included to improve manageability (upon acquisition by BLM).

Wilderness Conflict Resolution Alternative One (Resource Conservation Alternative)

To allow construction of salinity control structures and livestock management facilities in the eastern portion of the WSA, 8,330 acres would be recommended as nonsuitable. This would result in 11,232 acres suitable for wilderness.

Impacts would be similar to those impacts listed under the McKenna Peak WSA's All-Wilderness Alternative (for the suitable portion) for visual, wildlife, vegetation, cultural, soils, water, minerals, recreation, and economics. Impacts would be similar to the No Wilderness Alternative (nonsuitable portion) for McKenna Peak WSA for recreation, visual resources, economics, vegetation, soils and water, minerals, and wildlife. The main difference is that the impacts would be changed (both positively and negatively) by approximately 40 percent.

Soils

This alternative would allow intensive management and projects to be developed that could reduce erosion in the area. The impact, the extent of which cannot be quantified

would reduce erosion and sediment entering the Disappointment Creek. Impacts from wilderness designation described in the McKenna Peak WSA's All Wilderness Alternative could occur, but on fewer acres.

Water

This alternative would allow intensive management and projects to be developed that could reduce the salinity and sediment being produced from the area, the degree and extent of which cannot be quantified. Impacts from wilderness designation described in the McKenna Peak WSA's All Wilderness Alternative could occur, but on fewer acres.

Vegetation

This alternative would allow intensive livestock grazing and soils and water management and projects to occur. The result would be improving vegetation conditions on more than 8,000 acres, which should mean better habitat conditions for the area's grazing animals. Impacts from wilderness designation would occur on the remaining portion of the area.

Livestock Grazing

This alternative would allow intensive livestock grazing and projects to occur, resulting in improved grazing and livestock distribution in the area. No significant impacts to livestock grazing would occur on the portion designated as wilderness.

Wilderness Resource

Impacts would be similar to those listed under the McKenna Peak WSA's All-Wilderness Alternative, except the area would be reduced. The area would be manageable as wilderness subject to valid existing rights of mineral claimants and lessees.

Minerals

Impacts would be similar to those listed under the McKenna Peak WSA's All-Wilderness Alternative, except the withdrawn area would be reduced by approximately 8,000 acres.

Wilderness Conflict Resolution Alternative Two (Resource Conservation Alternative)

To construct a livestock reservoir in the far eastern portion of the WSA, it would be necessary to recommend 1,171 acres as nonsuitable. The remaining 18,391 acres would be suitable for wilderness.

Impacts would be similar to those listed under the McKenna Peak WSA's All-Wilderness Alternative for visual, soils, water, wildlife, livestock grazing, wild horses, cultural, lands, recreation, and economics. The main difference is that impacts would be changed (both positively and negatively) by approximately 5 percent.

Vegetation

Intensive management and better livestock distribution could improve vegetation conditions in the area, which would improve watershed condition and overall habitat

condition for grazing animals. Impacts described under the McKenna Peak WSA's All-Wilderness Alternative would occur on the remaining area.

Wilderness Resource

Impacts would be similar to those listed under the McKenna Peak WSA's All-Wilderness Alternative, except the area would be reduced. The area would be manageable as wilderness subject to valid existing mineral rights.

Minerals

Impacts would be similar to those listed under the McKenna Peak WSA's All-Wilderness Alternative, except fewer acres would be withdrawn from entry.

No Wilderness Alternative (Resource Utilization Alternative)

Under this alternative, none of McKenna Peak WSA would be recommended as suitable for wilderness but would be managed to enhance other resources.

Impacts would be similar to those described for the Cahone Canyon WSA's No Wilderness Alternative for wilderness, cultural, lands and access, recreation and minerals, and economics, except very few pre-FLPMA leases exist in this WSA and mineral development should be very limited.

Ecological Diversity

Not designating McKenna Peak WSA as wilderness would have long-term, negative impacts on the NWPS through loss of diversity. This area has the potential to increase diversity in three ecotypes which are atypical of the NWPS: saltbush-greasewood, mountain mahogany-oak scrub, and pinyon-juniper woodlands.

Soils

Impacts would be similar to those listed under Cahone Canyon WSA's No Wilderness Alternative and the Conflict Resolution Alternative One for the McKenna Peak WSA. ORVs would be limited to existing roads and trails to limit impacts to the soil and water resources.

Water

Impacts would be similar to those listed under the Cahone Canyon WSA's No Wilderness Alternative and the Conflict Resolution Alternative One for the McKenna Peak WSA.

Visual Resources

No specific visual management objectives would be prescribed. Visual design input would be on a case-by-case basis for specific projects.

Vegetation

Impacts would be similar to those listed under the Cahone Canyon WSA's No Wilderness Alternative and the Conflict Resolution Alternative One for the McKenna Peak WSA.

Terrestrial and Aquatic Wildlife

Competition would be removed for some forage due to removing wild horses from the area. Impacts would be similar to those listed under Cahone Canyon WSA's No Wilderness Alternative.

Livestock Grazing

The entire area would be available for intensive livestock grazing and needed facilities with few limits on their design or facility locations. There would be less competition for forage due to removing the wild horses.

Wild Horses

Wild horses would be removed and placed under the BLM's Adopt-A-Horse Program (a land use decision, not a result of designating the area as wilderness). Impacts would consist of fewer viewing opportunities for people and removing wild horses from the present ecological system.

No Action Alternative (Current Management Alternative)

None of McKenna Peak WSA would be recommended as suitable under this alternative.

Impacts would be similar to those listed under the McKenna Peak WSA's No Wilderness Alternative (Resource Utilization Alternative) for all resources except vegetation, wildlife, livestock, and wild horses (which would remain with limited management). The impact would be continued competition between grazing animals for forage, reduced vigor and density of vegetation due to localized overuse, possibly expanding the wild horses in a new area because they would be searching for forage, and decreases in available wildlife and livestock forage.

Preferred Alternative

No acres would be recommended as suitable for designation as wilderness. Impacts would be similar to those listed under the McKenna Peak WSA's No Wilderness Alternative (Resource Utilization Alternative) for all resources except wild horses. Instead of removing all horses, a herd of 50 animals would be maintained. Impacts should be minimal to the vegetation, wildlife, and livestock resources in the area with some continued competition for forage, water, and space.

Menefee Mountain WSA

All-Wilderness Alternative (Resource Conservation Alternative)

This alternative recommends as suitable for designation of the entire Menefee Mountain WSA (7,129 acres).

Impacts to visual, soils, water, terrestrial wildlife, vegetation, livestock grazing, cultural, and recreation resources would be essentially the same as those listed under the All-Wilderness Alternative for Cahone Canyon WSA.

Wilderness Resource

Designating Menefee Mountain WSA as wilderness would have both short- and long-term beneficial impacts to the wilderness resource values present by providing additional protection to those values. Mineral activities would be limited to valid existing rights, which would preclude the majority of the mineral activity. There is currently one pre-FLPMA oil and gas lease present, affecting 1,132 acres or 16 percent of the entire WSA acreage. This lease could be developed and could have impacts to the natural values present and also to the area's manageability. If mineral development were to occur, it could have severe impacts to the wilderness values; therefore, it is questionable whether this area could be managed as wilderness. The area is manageable as wilderness, except for the pre-FLPMA oil and gas lease and its potential development. This lease is located on the southeastern portion of the area, and, if developed, impacts to the wilderness resources could be contained there. This lease is not located on lands where the north-east trend for gas has potential to exist.

Designating these lands as wilderness would provide long-term benefits by preserving land to permit the natural ecological processes to continue with little or no interference by man.

Ecological Diversity

Wilderness designation of Menefee Mountain would increase diversity to the NWPS by adding greater representation of the mountain mahogany-oak scrub and piñon-juniper woodland ecosystems, both atypical of the NWPS. This would be positive impacts in the long term.

Lands and Access

The Wilderness Act provides that for those areas of privately owned land wholly within wilderness, "such State or private owner shall be given such rights as may be necessary to assure adequate access to such State-owned or privately owned land by such State or private owner and their successors in interest, or the State owned or privately owned land shall be exchanged for federally owned land in the same state of approximately equal value under authorities available to the Secretary of Agriculture." (Wilderness Act of 1964; 78 Stat. 890; 16 USC 1131-1136, Sec. 5(a), p. 207). There are 40 acres of private land and minerals and 120 acres of non-Federal private, split estate minerals included in this alternative. Should this area be designated as wilderness and the

private parties desire reasonable access to develop their properties, the wilderness values of the southern portion of Menefee Mountain WSA could be adversely affected. The county commissioners of Montezuma County, who own an 80-acre split-estate mineral inholding within the south-central portion of the Menefee WSA, stated at a public meeting held in Cortez, Colorado, in the fall of 1983, that they would be open to a future exchange proposal from BLM.

Minerals

Impacts to minerals would be similar to those listed under the Cahone Canyon's WSA's All-Wilderness Alternative, except that there is only one pre-FLPMA oil and gas lease consisting of 1,132 acres. No recorded mining claims exist in the WSA, but approximately 3,700 acres of Federal coal or 62 million tons are present. These resources would not be available in the future due to the withdrawal of all minerals (because of wilderness designation). However, impacts as a result of mineral development may vary due to the pre-FLPMA oil and gas lease (those with valid existing rights).

Economics

Impacts are similar to those listed under Cahone Canyon WSA's All-Wilderness Alternative.

Wilderness Manageability Alternative (Resource Conservation Alternative)

To reduce management problems related to agricultural uses and firewood cutting; 1,713 acres of the WSA would be recommended nonsuitable. The remaining 5,416 acres would be suitable for wilderness designation.

Impacts to soils, water, visual, vegetation, terrestrial wildlife, recreation, livestock grazing, lands, access, cultural resources and economics would be similar to those listed under the Cahone Canyon WSA's All-Wilderness Alternative. Impacts as a result of mineral development may vary due to pre-FLPMA oil and gas leases (those with valid existing rights).

Wilderness Resource

This alternative would adjust the WSA boundary to provide increased manageability of the wilderness resource. The boundaries have been adjusted to reduce potential conflicts with farmlands, motorized vehicle use, and peripheral nonwilderness uses. These adjustments will protect the wilderness resource values. The impacts described under the Cahone Canyon WSA's All-Wilderness Alternative would apply. The BLM would attempt to acquire the non-Federal inholdings through purchase and/or exchange to improve manageability of the area as wilderness.

Minerals

All of the impacts described in the Cahone Canyon WSA's All-Wilderness Alternative would apply with the exception of fewer acres not being withdrawn and which would be available for mineral development.

No Wilderness Alternative (Resource Utilization Alternative)

Under this alternative, none of the Menefee Mountain WSA would be recommended as suitable for wilderness but would be managed to enhance other resources. Impacts from this alternative to Menefee Mountain WSA would be similar to those described under the Cahone Canyon WSA's No Wilderness Alternative, except a larger amount of acreage would be involved and loss of diversity in the NWPS would occur in different ecotypes (pinyon juniper woodland and mountain mahogany-oak scrub).

No Action Alternative (Current Management Alternative)

The No Action Alternative does not recommend any of the area as suitable for wilderness. Impacts from this alternative to Menefee Mountain WSA would be similar to those described for the Cahone Canyon WSA's No Action Alternative, except a larger amount of acreage would be involved.

Preferred Alternative

No acres would be recommended as suitable for wilderness in the Preferred Alternative. Impacts from this alternative to Menefee Mountain WSA would be similar to those described for the Cahone Canyon WSA's No Action Alternative, except a larger amount of acreage would be involved, and minerals would be different (see narrative below).

Minerals

The area would not be available for coal and oil and gas development. The impacts would be similar to those listed under the All-Wilderness Alternative as the reserves would not presently be available. A major point of concern is that oil and gas reserves could not be tapped from outside the no-surface occupancy area because directional drilling is not a viable solution. Based on one-quarter mile horizontal deviation for a 6,000-foot hole, 1,300 feet to the production zone in this area would only allow approximately 286 feet of horizontal deviation. The only major difference is that the area would not be withdrawn from mineral entry for locatable minerals.

Squaw/Papoose Canyon WSA

All-Wilderness Alternative (Resource Conservation Alternative)

This alternative recommends the entire WSA as suitable for wilderness designation (11,287 acres).

Impacts to visual, soils, water, terrestrial and aquatic wildlife, vegetation, livestock grazing, cultural, lands and access, recreation, and economics would be essentially the same under this alternative as those listed under the Cahone Canyon WSA's All-Wilderness Alternative, but to a greater degree.

Wilderness Resource

Impacts would be similar to the Cross Canyon WSA's All-Wilderness Alternative. The major difference is that only about 21 percent (covering 2,357 acres) of the WSA has pre-FLPMA oil and gas leases with valid existing rights. The area also has extensive mining claims which could yet be proven to have valid discoveries. These minerals could be developed and could have severe impacts both on the natural values present and on the area's manageability.

Designating these lands as wilderness would provide long-term benefits by preserving land to permit the natural ecological processes to continue with little or no interference from man. This area would probably be manageable as wilderness in the future except for the pre-FLPMA oil and gas leases and mining claims with valid existing rights and those with valid discoveries. Developing these minerals has a high potential due to values known to exist in the immediate vicinity. Because the leases and mining claims are scattered throughout the area, it is potentially not manageable as wilderness in the future.

Ecological Diversity

As a designated wilderness area, Squaw/Papoose Canyon WSA would have positive impacts to the NWPS similar to those described under the Cahone Canyon All-Wilderness Alternative.

Minerals

Designating Squaw/Papoose Canyon WSA as wilderness would withdraw it from appropriation under the mining law and from leasing under the mineral leasing laws, subject to valid existing rights when the WSA would be designated wilderness. Squaw/Papoose Canyon, like Cross Canyon, has been nominated as an ACMP.

There are approximately 440 mining claims and 11 pre-FLPMA oil and gas leases (covering a total of 2,357 acres) within the WSA. The potential exists for an estimated 495,440 barrels of oil and 990 million cubic feet of gas. If designated wilderness, oil and gas and uranium resources would be withdrawn and unavailable except for developing the pre-FLPMA oil and gas leases or mining claims with valid discoveries. This would be a long-term impact both to the mineral program and to future area minerals development.

Wilderness Manageability Alternative (Resource Conservation Alternative)

To provide for a more manageable area, this alternative would recommend 740 acres as nonsuitable due to potential problems with agricultural uses, resulting in 10,547 acres suitable for wilderness designation.

Impacts to soils, water, visual, vegetation, terrestrial and aquatic wildlife, livestock grazing, lands and access, cultural resources, recreation, and economics would be similar to those listed under Cahone Canyon WSA's All-Wilderness Alternative. Impacts as a result of mineral development may vary due to pre-FLPMA oil and gas leases (those with valid existing rights) and mining claims (those with valid discoveries).

Wilderness Resource

This alternative would adjust the WSA boundary to provide increased manageability of the wilderness resource. The boundaries have been adjusted to reduce potential conflicts with farmlands, motorized vehicle use, and peripheral nonwilderness uses. These adjustments should serve to protect the wilderness resource values. The impacts described under the Cahone Canyon WSA's All-Wilderness Alternative would apply. If mineral development were to occur, it could have severe impacts to the wilderness values; therefore, it is questionable whether this area could be managed as wilderness.

Minerals

All of the impacts described in the Cahone Canyon WSA's All-Wilderness Alternative would apply with the exception that fewer acres would be withdrawn and would be available for mineral development.

No Wilderness Alternative (Resource Utilization Alternative)

This alternative recommends no acres as suitable for wilderness. Impacts from this alternative to Squaw/Papoose Canyon WSA would be similar to those described for Cahone Canyon WSA's No Wilderness Alternative, except a larger amount of acreage would be involved.

No Action Alternative (Current Management Alternative)

None of the WSA is recommended as suitable for wilderness under the No Action Alternative. Impacts from this alternative to Squaw/Papoose Canyon WSA would be similar to those described for Cahone Canyon WSA's No Wilderness Alternative, except a larger amount of acreage would be involved.

Preferred Alternative

No acres would be recommended as suitable for designation as wilderness but would be managed to enhance other resources. Impacts from this alternative to Squaw/Papoose Canyon WSA would be similar to those described for Cahone Canyon WSA's Preferred Alternative, except a larger amount of acreage would be involved. Mineral impacts would vary because

about 40 percent of the area would be restricted to no leasing and the other 60 percent would be restricted to no-surface occupancy for oil and gas purposes. Impacts would be similar to those listed under Cahone Canyon WSA's Preferred Alternative as that alternative relates to higher costs, etc., due to impacts caused by directional drilling, ORV closure, and resulting impacts to mining claimants. Approximately 50 percent of the CO₂ and oil and gas reserves could be recovered under this alternative.

Tabeguache Creek WSA

All-Wilderness Alternative (Resource Conservation Alternative)

The entire Tabeguache Creek WSA would be recommended as suitable for wilderness (7,908 acres).

Impacts to visual, soils, water, terrestrial and aquatic wildlife, vegetation, livestock grazing, lands and access, cultural resources, recreation, and economics would be essentially the same under this alternative as those impacts described under Cahone Canyon WSA's All-Wilderness Alternative.

Wilderness Resource

Designating the Tabeguache Creek WSA as wilderness would have both short- and long-term beneficial impacts to the wilderness resource values present by providing additional protection. Some areas in the WSA have mining claims (uranium), with valid existing rights. Mineral activities would be limited to valid existing rights, which could have impacts to the natural values present and the area's manageability, if it is a valid discovery. This would preclude the majority of the mineral activity.

Designating these lands as wilderness could provide long-term benefits by preserving land to permit the natural ecological processes to continue with little or no interference by man. The area is manageable as wilderness, recognizing that the mining claims and their potential development could affect manageability.

Ecological Diversity

The Tabeguache Creek WSA, designated as wilderness, would increase the diversity of the NWPS by increasing the total acreage represented by the pinyon-juniper woodland ecosystem. This ecotype is atypical of the NWPS and enlarging the representative area would be a long-term positive impact.

Minerals

Impacts would be similar to those listed under the Cahone Canyon WSA's All-Wilderness Alternative, except that there are no pre-FLPMA oil and gas leases. No professional estimate of the oil and gas reserves was calculated. However, the southern half of the WSA lies within an area designated by the USGS as prospectively valuable for oil and gas resources. The GEM Report (GRA-8, May 1983) classifies the area as moderately favorable for accumulation of the mineral resource. Approximately 150 mining claims with valid existing rights are present within the WSA. These resources would not be available in the future due to the withdrawal of all minerals because of designation.

Wilderness Manageability Alternative (Resource Conservation Alternative)

To reduce potential vehicle use problems, 1,032 acres would be recommended as nonsuitable for wilderness. The remainder of the WSA (6,876 acres) would be suitable for wilderness designation.

Impacts to soils, water, visual, vegetation, terrestrial and aquatic wildlife, livestock grazing, lands and access, cultural resources, recreation, and economics would be similar to those impacts listed under the Tabeguache Creek's All-Wilderness Alternative.

Wilderness Resource

This alternative would adjust the WSA boundary to provide increased manageability of the wilderness resources. The boundaries have been adjusted to reduce potential conflicts with motorized vehicle use and peripheral nonwilderness uses. These adjustments should serve to protect the wilderness resource values. The impacts described under the Tabeguache Creek WSA's All-Wilderness Alternative would apply.

Minerals

All of the impacts described in Cahone Canyon WSA's All-Wilderness Alternative would apply with the exception that fewer acres would be withdrawn and would be available for mineral development.

No Wilderness Alternative (Resource Utilization Alternative)

No acres are suitable for wilderness designation in this alternative. Impacts from this alternative to Tabeguache Creek WSA would be similar to those impacts listed for Cahone Canyon WSA's No-Wilderness Alternative (Resource Utilization Alternative), except that the loss of diversity in the NWPS would occur in only one ecotype, the pinyon-juniper woodland.

No Action Alternative (Current Management Alternative)

None of the WSA would be recommended suitable for wilderness under the No Action Alternative. Impacts would be similar to those listed under the Tabeguache Creek WSA's No Wilderness Alternative for all resources.

Preferred Alternative

No acres would be suitable for designation as wilderness. Impacts would be similar to those listed under Cahone Canyon WSA's Preferred Alternative, except that no pre-FLPMA oil and gas leases exist in the WSA. Future oil and gas leases would be issued with a no-surface occupancy provision and the area would be closed to ORVs. This area would be managed as an Outstanding Natural Area and approximately 560 acres would be withdrawn from mineral entry in the canyon bottom.

Weber Mountain WSA

All-Wilderness Alternative (Resource Conservation Alternative)

This alternative recommends the entire WSA as suitable for wilderness (6,303 acres). Impacts to visual, soils, water, lands and access, terrestrial wildlife, vegetation, livestock grazing, cultural resources, wilderness, economics, and recreation would be essentially the same as those listed under the All-Wilderness Alternative for Cahone Canyon WSA, but to a slightly lesser degree.

Ecological Diversity

This area, designated as wilderness, would have long-term positive impacts to the NWPS by increasing diversity. Diversity would be increased by adding acreage to two vegetation types, pinyon-juniper woodland and pine-Douglas-fir forest.

Minerals

Designating Weber Mountain WSA as wilderness would withdraw it from appropriation under the mining laws and from leasing under the mineral leasing laws, subject to valid existing rights when it is designated wilderness.

There are no unpatented mining claims, but four pre-FLPMA oil and gas leases (covering 2,272 acres) exist within the WSA. The potential exists for an estimated 2.02 million barrels of oil and 605 million cubic feet of gas under this WSA which is 11 percent (wildcat ratio) of the calculated reserves, based on production from nearby fields. In addition, an estimated 2,290 acres of Federal coal exists within the WSA (an estimated 33 million tons). If designated wilderness, the coal and oil and gas resources would be withdrawn and be unavailable except for the possible development of the pre-FLPMA oil and gas leases that have a valid existing right for developing the minerals, a long-term impact to the mineral program and future mineral development of the area.

Wilderness Manageability Alternative (Resource Conservation Alternative)

The Manageability Alternative recommends 941 acres nonsuitable to reduce potential problems with agricultural uses and firewood cutting. Land suitable for wilderness within the WSA would then amount to approximately 5,362 acres.

Impacts to soils, water, visual, vegetation, livestock grazing, terrestrial, wildlife, cultural resources, and recreation would essentially be the same under this alternative as those listed under the Weber Mountain WSA's All-Wilderness Alternative. Impacts as a result of mineral development may vary due to pre-FLPMA oil and gas leases (those with valid existing rights).

Wilderness Resource

This alternative is primarily an adjustment of the WSA boundaries to provide increased manageability of the wilderness resource values. The boundaries have thus been adjusted to reduce potential conflicts with farmlands, motorized vehicle use, and peripheral non-wilderness uses. These adjustments should serve to protect the wilderness resource

values, especially the core portion of the area. The impacts described under the Weber Mountain WSA's All-Wilderness Alternative would apply under this alternative. If mineral development were to occur, it could have severe impacts to the wilderness values; therefore, it is questionable whether this area could be managed as wilderness.

Minerals

All of the impacts described in the Weber Mountain WSA's All-Wilderness Alternative would apply with the exception that fewer acres would be withdrawn and would be available for mineral development.

No Wilderness Alternative (Resource Utilization Alternative)

This alternative does not recommend any of the Weber Mountain WSA as suitable for wilderness; it would be managed for other resource values.

Impacts to visual, soils, water, lands and access, terrestrial wildlife, vegetation, livestock grazing, cultural resources, wilderness, economics and recreation would be essentially the same as those listed under the All-Wilderness Alternative for Cahone Canyon WSA, but to a slightly lesser degree. The only differences would be loss of diversity in the NWPS in different ecotypes (pine-Douglas-fir forest and pinyon-juniper woodland); and the possible future development of coal and its associated impacts to soils and water, etc.

Minerals

This alternative would allow exploration and development of mineral resources subject to the surface management regulations which are designed to prevent unnecessary and undue degradation of the environment and which require reasonably reclaiming disturbances caused by mining activities. There would be no deadline for proving the economic feasibility of a mining operation when the market for the particular mineral may be depressed.

The coal, oil and gas reserves described in the Weber Mountain WSA's Resource Conservation Alternative would be available for future consideration and would not be withdrawn from mineral leasing.

No Action Alternative (Current Management Alternative)

The WSA is not suitable for wilderness under this alternative. Impacts would be similar to those listed under the Weber Mountain WSA's No-Wilderness Alternative (Resource Utilization Alternative) for soils, water, visual, vegetation, livestock grazing, wildlife, wilderness, cultural resources, lands, minerals, and economics.

Recreation

Because the area was treated as a primitive area in the 1971 land use plan, the primitive recreation values would be maintained to the extent possible while allowing mineral activities to occur (because the area is not currently withdrawn from mineral entry). The impacts to recreation would be similar to those listed under the Weber Mountain WSA's No Wilderness Alternative if mineral development were to occur.

Preferred Alternative

No acres would be recommended as suitable for wilderness designation. Impacts would be similar to the Menefee Mountain WSA's Preferred Alternative, including minerals.

APPENDICES

APPENDICES

Table of Contents

<u>Number</u>	<u>Name</u>	<u>Page</u>
1.	Grazing Allotments Within WSAs-----	1- 1
2-A.	Personal Income Within Planning Area-----	2- 1
2-B.	1970 and 1980 Population, Per Capita Income and Employment-----	2- 2
3-A.	Wilderness Study Policy and Planning Criteria-----	3- 1
	Table 3A. Regional Wilderness Opportunities-----	3- 4
3-B.	Table 3B. Occurrence of Vegetation Types in NWPS-----	3-25
4.	VRM Classification Process-----	4- 1

Appendix One

Grazing Allotments Within WSAs.

WSA	Grazing allotment	Acreage (by allotment)	AUMs (by allotment)*	Total acreage allotted	Total acreage unallotted	
Cahone	8007	7,920	400	9,040	0	
	8014	1,120	<u>15</u>			
	Total		415			
Cross (Colorado)	8007	11,672	452	12,662	80	
	(Utah)	Squaw Canyon	590			28
		Cross Canyon	400			<u>20</u>
	Total		500			
Dolores	7036	8,040	100	24,840	3,790	
	7016	7,280	80			
	7011	4,191	60			
	7037	1,950	45			
	7048	3,200	45			
	7026	179	<u>45</u>			
	Total		375			
McKenna Peak	7046	2,580	130	17,622	1,940	
	7016	3,000	200			
	7005	8,622	248			
	7104	920	135			
	7028	2,500	<u>190</u>			
	Total		903			

Appendix One. (Continued)

WSA	Grazing allotment	Acreage (by allotment)	AUMs (by allotment)*	Total acreage allotted	Total acreage unallotted
Menefee	8048	2,224	50	2,924	4,205
	8046	700	<u>10</u>		
	Total		60		
Squaw/Papoose (Colorado)	8002	3,500	160	11,287	0
	8005	200	20		
	8007	1,450	80		
(Utah)	Bug Squaw	1,960	151	11,287	0
	Squaw Canyon	4,177	<u>410</u>		
Total		821			
Tabeguache	7031	4,028	75	7,908	0
	7007	740	10		
	7042	2,140	30		
	7107	1,000	<u>20</u>		
Total		135			
Weber	8046	450	6	4,453	1,850
	8043	2,703	35		
	8044	800	100		
	8045	500	<u>10</u>		
Total		151			

Note: See San Juan/San Miguel RMP for more detailed information. Acreage and AUM figures are approximations.

* AUMs = Animal Unit Months (amount of forage required to sustain one cow or five sheep for a month).

Source: BLM Data 1984.

Table 2-A. Personal Income Within Planning Area. ^{1/}

Major sources of income	County										Total reported ^{2/}	Percent of total
	Colorado					New Mexico						
	Archuleta	Dolores	La Plata	Montezuma	Montrose	San Juan	San Miguel	Rio Arriba				
Farm	13,008	2,852	1,416	4,078	3,999	0	86	3,997			29,436	7
Agriculture	D	58	753	843	913	0	D	648			3,215	1
Minerals	547	D	2,417	4,753	15,502	4,532	4,037	993			32,781	8
Construction	D	146	12,085	14,415	6,789	91	1,567	5,696			40,789	10
Manufacturing	638	L	6,819	3,246	7,825	157	142	3,103			21,930	5
Transportation & public utilities	382	708	10,466	4,919	16,552	L	D	6,999			40,026	9
Wholesale trade	334	388	5,269	5,015	4,942	L	D	969			15,917	4
Retail trade	1,883	611	21,453	11,213	14,038	D	2,251	9,436			40,005	9
Finance, insurance & real estate	D	D	7,716	2,904	4,744	99	1,481	2,523			19,467	5
Services	D	212	35,023	8,122	13,715	D	2,017	18,530			77,619	18
Government	3,278	1,293	30,403	15,663	22,913	633	2,817	28,565			10,261	24
Total labor & properties income	20,070	6,268	133,820	75,171	111,932	5,512	14,398	81,459			331,446	

^{1/}Source: Regional Economic Information System 1982; figures in \$1,000.

^{2/}Figures in this column are 95% of total due to presence of L and D figures; D = Not reported to avoid confidential disclosure; L = Less than \$50,000.

Source: BLM Data 1984.

Table 2-B. 1970 and 1980 Population, Per Capita Income, and Employment.

County	Population		Per Capita Income		Employment	
	1970	1980	1970	1980	1970	1980
<u>Colorado</u>						
Archuleta	2,733	3,664	2,744	7,467	934	1,129
Dolores	1,641	1,658	2,022	7,471	567	562
La Plata	19,199	27,195	2,779	7,378	7,183	13,782
Montezuma	12,952	16,510	2,441	7,108	4,474	6,322
Montrose	18,366	24,352	2,758	6,815	7,004	10,680
San Juan	831	833	2,301	6,454	529	489
San Miguel	1,949	3,192	2,148	5,747	726	1,698
<u>New Mexico</u>						
Rio Arriba	21,268	23,617	2,074	5,588	6,201	8,756
<u>Totals</u>						
Colorado	2,207,259	2,889,735	3,887	10,033	869,534	1,399,733
New Mexico	1,170,055	1,299,968	3,072	7,878	323,581	518,000

Sources: U.S. Census 1980; Regional Economic Information System 1984; Colorado Division of Employment and Training 1984.

General Terms

These terms apply to all orders placed with us.

1. Introduction

These terms and conditions apply to all orders placed with us. We warrant that the goods are as described in the order. We do not warrant that the goods are fit for a particular purpose unless we have been specifically asked to do so. We do not warrant that the goods are free from defects unless we have been specifically asked to do so.

These terms and conditions apply to all orders placed with us. We warrant that the goods are as described in the order. We do not warrant that the goods are fit for a particular purpose unless we have been specifically asked to do so. We do not warrant that the goods are free from defects unless we have been specifically asked to do so.

2. Description of Goods

The goods are described in the order. We warrant that the goods are as described in the order.

The goods are described in the order. We warrant that the goods are as described in the order.

The goods are described in the order. We warrant that the goods are as described in the order.

The goods are described in the order. We warrant that the goods are as described in the order.

The goods are described in the order. We warrant that the goods are as described in the order.

The goods are described in the order. We warrant that the goods are as described in the order.

The goods are described in the order. We warrant that the goods are as described in the order.

The goods are described in the order. We warrant that the goods are as described in the order.

3. Price and Payment

The price of the goods is as shown in the order. Payment is due on delivery of the goods.

Wilderness Study Policy and Planning Criteria

Introduction

BLM's wilderness study process was developed primarily to determine an area's suitability or nonsuitability for inclusion in the NWPS. Using BLM's resource planning process, it is determined if wilderness is the most appropriate use of the land and its resources. Only those study areas in which wilderness is the most appropriate use will be recommended for wilderness designation.

Along with criteria developed for other resources and issues, there are two wilderness planning criteria that should be utilized, as described in the Federal Register, Vol. 47, No. 23 on February 3, 1982.

Criterion No. 1. Evaluation of Wilderness Values

Consider the extent to which each of the following components contributes to the overall value of an area for wilderness purposes:

- A. Mandatory Wilderness Characteristics: The quality of an area's wilderness characteristics--size, naturalness, and outstanding opportunities for solitude and primitive, unconfined recreation.

- B. Special Features: The presence or absence and the quality of the optional wilderness characteristics--geological, ecological, or other features of historical, educational, scientific or scenic value.

- C. Multiple Resource Benefits: The benefits to other multiple resource values and uses which only wilderness designation of the area could ensure.

- D. Diversity in the NWPS: Consider the extent to which wilderness designation of the area under study would contribute to expanding the diversity of the NWPS from the standpoint of each of the factors listed below:
 - 1. Expanding the diversity of natural systems and features, as represented by ecosystems and land forms.

 - 2. Assessing the opportunities for solitude or primitive, unconfined recreation within a day's driving time (5 hours) of major population centers (Standard Metropolitan Statistical Areas; SMSAs).

 - 3. Balancing the geographic distribution of wilderness areas.

Criterion No. 2. Manageability

The area must be capable of being effectively managed to preserve its wilderness character.

Before a roadless area may reach study status, it must be inventoried and meet the mandatory requirements for wilderness (see Section A, Criterion 1). Upon reaching study status, a much more holistic approach is used to determine if the area should be recommended as wilderness. Table 3-A notes wilderness (designated, endorsed, and study areas are all included) within 200 air miles of the planning area (Colorado, Utah, New Mexico, and Arizona).

The principal reason a 200-mile boundary was chosen to represent the region is that it encompasses wilderness which contains similar ecoregion and vegetation types. However, some areas were not included because, although they fell within the region, they were not within one of the two ecoregions (either the Colorado Plateau Province or the Rocky Mountain Forest Province) represented by the WSAs in the SJRA. Because a portion of the Colorado Plateau Province falls outside of the regional boundary, wilderness there was considered for inclusion in Table 3-A. But, unless these areas had similar vegetation types to those in the SJRA, they were not listed.

Second, the regional boundary approximates the 5-hour per day's drive component of Criterion No. 1. Only one SMSA is within 200 miles of a WSA in the planning area. However, the following SMSAs are all within 250 miles of at least one WSA: Boulder-Denver; Colorado Springs; Pueblo; Fort Collins (all in Colorado); Albuquerque, New Mexico; and Orem-Provo and Salt Lake City, Utah.

Table 3-A. Components

Table 3-A notes wilderness opportunities in the region with respect to ecosystem diversity and supplemental values. It considers Federal lands designated as wilderness, areas officially recommended for wilderness, and other Federal lands under wilderness study. The first three columns relate basic information--study area name, location (by state), inventory number, and the administering agency.

Columns four (ecoregion) and five (vegetation type) relate the specific ecosystem types found within each wilderness area, which refers to Section D(1) of Criterion No. 1 that calls for expanding the diversity of wilderness as represented by ecosystems and landforms. All information is based on the U.S. Forest Service's Rare II ecosystem classification scheme. The classification developed for Rare II used the ecoregion concept by R. G. Bailey in conjunction with the more detailed potential natural vegetation (PNV) of A. W. Kuchler. An ecoregion for purposes of the RMP and Supplement is always continuous. Ecologic communities having characteristics similar to those of a particular region may exist far beyond its boundaries, thus belonging to a different ecoregion. An ecoregion may best be thought of as a geographical area, over which the environmental complex, produced by climate, topography, and soil, is sufficiently uniform to permit development of characteristic types of ecologic associations. Ecoregions are used with PNVs to relate an unique ecosystem.

The column labeled "Total Acreage" notes the net acres of an area which are under Federal jurisdiction.

Probable season-of-use and supplemental values and prominent recreation opportunities are the last two columns on the right side of Table 3-A. Both columns relate information that are of concern to the user/visitor, but one in particular (supplemental values) also

relates to the Planning Criteria established for wilderness. Section B of Criterion 1 notes the presence or absence of any special features found within the area. These supplemental values and optional wilderness characteristics fall within six categories: archaeological, ecological, geological, historical, paleontological, and scenic.

Prominent recreational opportunities noted are rock and mountain climbing, exploring, rockhounding, and float boating. It is assumed that all wilderness areas provide the following recreation opportunities: hiking and backpacking, horseback riding, sightseeing, photography, hunting, fishing, and cross-country skiing.

Table 3-A. Regional Wilderness Opportunities (Colorado)

Area (status) ^{1/}	Inventory number (OO)	Adminis- tering agency	Eco- region ^{2/}	Vegetation types ^{3/}	Total acreage	Probable season of use ^{4/}	Supplemental values/Prominent recreational opportunities ^{5/}
Adobe Bad lands (S)	030-3708	BLM	RMF/CP	34/21	10,560	Spring, fall	Ecological-T&E species (cactus); Geological; Scenic
American Flats (S)	3-217	BLM	RMF	45/20	3,400		Ecological-T&E species (2 plants); Scenic
Big Blue (D)	02223; 02228; 02359	USFS	RMF	20/45	98,235		Ecological; Scenic-14,000' peaks
Black Canyon (S)	050-131	BLM	RMF	17/21	2,300		Scenic-proposed wild river
Black Canyon of the Gunnison (D)	NF003	NPS	RMF	21	11,180	year- round	Scenic-proposed wild river
Black Ridge Canyons (S)	070-113	BLM	CP	21	18,150	Spring, fall	Archaeological; Ecological-3 T&E species (butterfly & 2 fish species); Geological-natural arches; Paleontological; Scenic
Black Ridge Canyons West (S)	070-113A UT-060- 116/117	BLM	RMF	32	54,290	Spring, fall	Archaeological; Ecological-T&E species (butterfly & 2 fish species); Geological-natural arches
Browns Canyon (S)	050-002	BLM	RMF	17	6,614		Archaeological/Recreational-float boating
Cahone Canyon (S)	030-2650	BLM	CP	21/32	9,040	Spring, fall	Archaeological-lithic sites, ruins, and food storage structures; Ecological; Geological
Camel Back (S)	030-353	BLM	CP/RMF	21/34	10,900	Spring fall	Ecological-T&E cactus species; Geological; Scenic
Cannibal Plateau (S)	02218	USFS	RMF	20/45	31,990		Scenic-14,000' peaks

Table 3-A. Regional Wilderness Opportunities (Colorado) -- Continued

Area (status) ^{1/}	Inventory number (CO)	Adminis- tering agency	Eco- region ^{2/}	Vegetation types ^{3/}	Total acreage	Probable season of use ^{4/}	Supplemental values/Prominent recreational opportunities ^{5/}
Collegiate Peaks (D)	HC&G 2180	USFS	RMF	20/45	166,638		Scenic/Recreational-Continental Divide National Scenic Trail
Colorado National Monument (E)	NP909	NPS	RMF	21	13,842	Spring, fall	Archaeological; Geological; Scenic
Gross Canyon (S)	030-265 UT-060- 229	BLM	CP	21/32	12,742	Spring, fall	Archaeological-Numerous sites and Anasazi Ruins; Geological; Geological
Demaree Canyon (S)	070-009	BLM	CP	21	21,050	/	
Dolores River Canyon (S)	030-290	BLM	CP	21/32	28,630	Spring	Archaeological; Ecological; Geological; Paleontological; Scenic/Recreational-float boating
Dominguez Canyon (S)	030-363 070-150	BLM	CP	21	75,800	Spring, fall	Archaeological; Ecological-3 T&E species (plants); Geological-exposed sedimentary strata and precambrian bedrock relating 600 m.y. of geologic history
Eagle Mountain (S)	070-392	BLM	RMF	20	330		Scenic
Fossil Ridge (S)	204	USFS	RMF	45/20	47,400		Scenic
Great Sand Dunes (D)		NPS	RMF	39/34	33,450		Ecological; Scenic
Gunnison Gorge (S)	030-388	BLM	RMF/CP	34/21	20,240	Spring, summer, fall	Ecological; Geological; Scenic-State endangered river offers and proposed wild river; Gold Medal Fisheries

Table 3-A. Regional Wilderness Opportunities (Colorado) -- Continued

Area (status) ^{1/}	Inventory number (CO)	Adminis- tering agency	Eco- region ^{2/}	Vegetation types ^{3/}	Total acreage	Probable season of use ^{4/}	Supplemental recreational opportunities ^{5/}
Handies Peak (S)	030-241	BLM	RMF	45/20	16,100		Scenic-14,000' peaks
Hunter-Frying Pan (D)		USFS	RMF	20/45	74,450		Scenic
La Garita (D)	NF043	USFS	RMF	20/45	103,986		Scenic-14,000' peak/Recreation-Continental Divide National Scenic Trail
Little Bookcliffs Wild Hrse Area (S)	070-066	BLM	CP	21	26,525		Ecological-wild horses; Geological
Lizard Head (D)	02235	USFS	RMF	20/45	41,158		Scenic-14,000' peaks
Maroon Bells- Snowmass (D)	NF047	USFS	RMF	14/45	172,560		Scenic-14,000' peaks/Recreational-rock/ mountain climbing
McKenna Peak (S)	030-286	BLM	RMF/CP	34/21,31	19,562	Spring, fall	Ecological-wild horse herd; Geological-badlands; Scenic
Menefee Mountain (S)	030-251	BLM	RMF/CP	21/31	7,129	Spring, summer, fall	Archaeological; Ecological-I T&E species (raptor);
Mesa Verde (D)		NPS	CP	21	8,100		Closed to public use due to important cultural values
Mt. Sneffels (D)	02231	USFS	RMF	20/45	16,200		Scenic-14,000' peak
Needle Creek (S)	030-299B	BLM	RMF	20/45	4,200		Geological; Scenic

Table 3-A. Regional Wilderness Opportunities (Colorado) -- Continued

Area (status) ^{1/}	Inventory number (00)	Adminis- tering agency	Eco- region ^{2/}	Vegetation types ^{3/}	Total acreage	Probable season of use ^{4/}	Supplemental values/Prominent recreational opportunities ^{5/}
Old Spring Mountain (S)	010-046	BLM	RMF	31	17,740	Summer, fall (hunting)	/
On-Be-Joyful (S)		USFS	RMF	20/45	5,500		Scenic
Palmside, The (S)	070-132	BLM	OP	21	26,050		Ecological-T&E species (butterfly); Geological
Papa Keal (S)	050-137	BLM	RMF	17	1,020	/	/
Piedra (S)	A2292	USFS	RMF	20/17	41,500		Scenic
Powderhorn (S)	030-089	BLM	RMF	20/17,45	44,880		Scenic
Raggeds (D)	A2181	USFS	RMF	14/45	59,105		Scenic
Red Cloud Peak (S)	030-208	BLM	RMF	45/20	32,800		Scenic
Sand Castle (S)	050-135	BLM	RMF	20	1,644		Geological
Sangre de Cristo (S)	A2266	USFS (BLM)	RMF	20/17,45	217,832 (4,910)		Scenic/Recreational-mounta in climbing
San Luis Hills (S)	050-141	BLM	RMF	46	10,240		Geological
Sewmup Mesa (S)	030-310A 070-176	BLM	CP	21	19,140		Archaeological; Ecological; Geological-collapsed salt dome
South Piney Creek (S)	050-132B	BLM	RMF	17/21	870	/	/

Table 3-A. Regional Wilderness Opportunities (Colorado) -- Continued

Area (status) ^{1/}	Inventory number (OO)	Adminis- tering agency	Eco- region ^{2/}	Vegetation types ^{3/}	Total acreage	Probable season of use ^{4/}	Supplemental values/ recreational opportunities ^{5/}
South San Juan (D)	A2284	USFS	RMF	20/45	127,685	Scenic	
South San Juan Expansion (S)	B2284	USFS	RMF	20	32,800	Scenic	
Squaw/Papoose Canyon (S)	030-265A UT-060- 227	BLM	OP	21/32	11,287	Spring, fall	Archaeological-lithic sites, ruins, food storage structures; Ecological; Geological/ Recreational-rock climbing
Tabeguache Creek (S)	030-300	BLM	OP	21	7,908	Spring, fall	Archaeological; Geological-exposed sedimentary strata covering 100 m.y. of geologic history
Weber Mountain (S)	030-252	BLM	OP/RMF	21/17	6,303	Spring, summer, fall	Archaeological; Ecological
Weminuche (D)	NF088	USFS	RMF	20/45,17	459,172	Scenic	
Weminuche Contiguous (S)	030-238B	BLM	RMF	45	1,840	Ecological-1 T&E species (plant); Scenic	
West Elk (D)	NF089	USFS	RMF	14/17,45	176,092	Ecological; Scenic	
West Needte (S)	A2303	USFS	RMF	31/20	14,560	Scenic	
West Needte Contiguous (S)	030-229A	BLM	RMF	20/45	5,780	Scenic	
Whitehead Gulch (S)	030-230B	BLM	RMF	20/45	5,640	Scenic	
Zapata Creek (S)	050-139B	BLM	RMF	17/21	720	Scenic	

Notes: Clists (see archaeological values) are ancient tombs or caskets.

Threatened and endangered (T&E) species include plants and animals.

Included in this list are all areas under the jurisdiction of the National Park Service (NPS), U.S. Forest Service (USFS), and the Bureau of Land Management (BLM); also included are the planning area's eight wilderness Study Areas (WSAs). The size criteria of 5,000 acres for WSAs can be disregarded in special cases; thus, some acreage listed is less than the required size.)

Abbreviations: m.y. = million years ago; NRA = National Recreation Area.

1/(D) = Designated/statutory wilderness.

(S) = BLM's WSAs or USFS's Further Planning Areas.

(E) = Administratively endorsed as suitable.

2/All of these areas fall within the following two ecoregions: CP = Colorado Plateau; RMF = Rocky Mountain Forest.

3/Primary vegetation type is listed first and then the secondary type (there may be two secondary types listed); their corresponding names follow:

- 14--Western spruce-fir forest; 17--Pine-Douglas-fir forest; 18--Arizona pine forest; 19--Spruce-fir-Douglas-fir forest;
- 20--Southwestern spruce fir forest; 21--Pinyon-juniper woodland; 31--Mountain mahogany-oak scrub; 32--Great Basin sagebrush;
- 33--Blackbrush; 34--Saltbush-greasewood; 39--Desert (vegetation largely absent); 45--Alpine meadows and barren;
- 46--Fescue-mountain muhly prairie; 47--Grama-galletta steppe; 51--Galletta-three awn shrubsteppe.

4/Unless otherwise noted, probable season of use is summer.

5/ / = No supplemental values noted.

Table 3-A. Regional Wilderness Opportunities (Utah)

Area (status) ^{1/}	Inventory number (UT)	Adminis- tering agency	Eco- region ^{2/}	Vegetation types ^{3/}	Total acreage	Probable season of use ^{4/}	Supplemental values/Prominent recreational opportunities ^{5/}
Arches National Park (E)	NP900	NPS	CP	21	61,547	Spring, fall	Archaeological; Geological=natural arches; Scenic
Behind the Rocks (S)	060-140A	BLM	CP	21	12,635	Spring, fall	Archaeological; Geological; Scenic
Blue Hills-Mt. Ellen (S)	050-238	BLM	CP	34/21, 18	58,480	Spring, summer, fall	Ecological=largest free-roaming bison herd in continental U.S., southeastern limit for bristlecone pine; Geological=outstanding igneous intrusions, vistas of central Utah, Waterpocket fold
Blues, The (S)	040-268	BLM	CP	21/32	20,290	Spring, summer, fall	Geological=bad lands="the blues"; Recreational=rock climbing, exploring
Box-Death Hollow (S)	04259	USFS	CP	21	31,600	/	
Bridger Jack Mesa (S)	060-167	BLM	CP	21	5,290	Spring, fall	Scenic
Bryce Canyon National Park (E)	NP903	NPS	CP	18	16,300		Geological; Scenic
Bull Mountain (S)	050-242	BLM	CP	21/18	11,800	Spring, fall	Geological=vistas of central Utah.
Bullet Canyon (S)	060-196	BLM	CP	21	8,520		Archaeological=ruins; Geological=buttes, pinnacles, fins, alcoves
Burning Hills (S)	040-079	BLM	CP	21/34	61,550	Spring, summer, fall	Archaeological=storage cists; Geological; Scenic

Table 3-A. Regional Wilderness Opportunities (Utah) -- Continued

Area (status) ^{1/}	Inventory number (UT)	Administering agency	Ecoregion ^{2/}	Vegetation types ^{3/}	Total acreage	Probable season of use ^{4/}	Supplemental values/Prominent recreational opportunities ^{5/}
Butler Wash (S)	060-169	BLM	QP	21	24,160	Spring, fall	Archaeological- <u>numerous sites</u> ; Geological- <u>intricate pinnacles/needles</u>
Canyonlands National Park (E)	NP905	NPS	QP	33/21	287,985	Spring, fall	Archaeological; Ecological; Geological; Scenic
Capitol Reef National Park (E)	NP906	NPS	QP	21/32	218,305	Spring, fall	Archaeological; Ecological; Geological; Historical; Scenic
Carcass Canyon (S)	040-076	BLM	QP	21	46,711	Spring, summer, fall	Geological- <u>arches</u> ; Paleontological- <u>fossils</u> , Scenic/Recreational- <u>exploring</u>
Cheesebox Canyon (S)	060-191	BLM	QP	33/34	15,410	Spring, fall	Archaeological- <u>Anasazi sites</u> ; Geological- <u>narrow steep-walled canyons, slick rock</u>
Coal Canyon (S)	060-100C	BLM	QP	21/34	61,430	Fall, early winter	Ecological; Geological; Scenic
Cockscomb (S)	040-275	BLM	QP	34	10,080	Spring, summer, fall	Scenic
Crack Canyon (S)	060-028A	BLM	QP	34/51	25,315	Spring, fall	Ecological- <u>wild horse herd</u> ; Geological- <u>sandstone sawteeth, fins</u>
Dark Canyon Primitive Area (S)	ISA	BLM	QP	33/21	62,040	Spring, fall	Archaeological; Ecological; Geological- <u>labyrinth canyon complex, deep plunge pools</u> ; Scenic/Recreational- <u>stream systems</u>

Table 3-A. Regional Wilderness Opportunities (Utah) -- Continued

Area (status) ^{1/}	Inventory number (UT)	Adminis- tering agency	Eco- region ^{2/}	Vegetation types ^{3/}	Total acreage	Probable season of use ^{4/}	Supplemental values/Prominent recreational opportunities ^{5/}
Dark-Woodenstoe Canyon (E)	04436	USFS	OP	17	46,000	Spring, fall	Archaeological; Ecological; Geological; Scenic
Death Ridge (S)	040-078	BLM	OP	21	62,780	Spring, summer, fall	Ecological-diversity; Geological; Scenic
Desolation Canyon (S)	060-068A	BLM	OP	21/34,11	289,650	Late spring, summer fall	Archaeological; Ecological-4 T&E species (3 fish & 1 raptor); Geological-5,000-ft canyons; Historical/Recreational-float boating
Devils Canyon (S)	060-025	BLM	OP	21/51	9,610	Spring, fall	Ecological-wild horse herd
Devils Garden (S)	ISA	BLM	OP	640	640	Spring, summer, fall	Geological; Scenic
Dirty Devil (S)	050-236A	BLM	OP	21	61,000	Spring, fall	Archaeological-petroglyphs; Ecological; Geological-petrified wood; Historical-Butch Cassidy's hideout (Robber's Roost); Scenic/ Recreational-float boating, rockhounding
Escalante Canyon Tract 1 (S)	ISA	BLM	OP	33	360	Scenic	Scenic
Escalante Canyon Tract 5 (S)	ISA	BLM	OP	33	760	Scenic-Coyote Gulch	Scenic-Coyote Gulch
Fiddler Butte (S)	050-241	BLM	OP	21/33,34	59,400	Spring, fall	Archaeological-pictographs; Geological- active Cedar Point dune formation/ Recreational-rockhounding

Table 3-A. Regional Wilderness Opportunities (Utah) -- Continued

Area (status) ^{1/}	Inventory number (UT)	Administering agency	Ecoregion ^{2/}	Vegetation types ^{3/}	Total acreage	Probable season of use ^{4/}	Supplemental values/Prominent recreational opportunities ^{5/}
Fifty Mile Mountain (S)	040-080	BLM	OP	21/34	146,143	Spring, fall	Archaeological; Geological-natural arches
Fish Creek Canyon (S)	060-204	BLM	OP	33/21	46,440		Archaeological-Anasazi occupation site; Geological; Scenic
Fishlake Mountain (E)	04307	USFS	RMF	19/32	18,810	Summer, fall (hunting)	/
Floy Canyon (S)	060-068B	BLM	CP/RMF	21/31,11	72,605	Fall, early winter	Geological-rock outcrops, pinnacles, chimneys; Recreational-waterfalls and stream systems
Flume Canyon (S)	060-100B	BLM	CP/RMF	21/31	50,800	Fall, early winter	/
French Spring/Happy Canyon (S)	050-236B	BLM	CP	51/21	25,000	Spring, fall	Scenic
Grand Gulch Primitive Area (S)	15A	BLM	CP	21/33,32	37,580	Spring, summer, fall	Archaeological-Anasazi ruins, pictographs, petroglyphs and Basketmaker storage pits; Scenic
Horseshoe Canyon (S)	050-237	BLM	CP	51/21	40,840	Spring, fall	Archaeological-pictographs; Ecological; Geological-Historical/Recreational-rockhounding, float boating
Horseshoe Canyon (S)	050-237A 060-045	BLM	CP	51/33,21	20,500	Spring, fall	Archaeological-pictographs; Ecological; Geological-Historical/Recreational-rockhounding, float boating

Table 3-A. Regional Wilderness Opportunities (Utah) -- Continued

Area (status) ^{1/}	Inventory number (UT)	Adminis- tering agency	Eco- region ^{2/}	Vegetation types ^{3/}	Total acreage	Probable season of use ^{4/}	Supplemental values/Prominent recreational opportunities ^{5/}
Indian Creek (S)	060-164	BLM	CP	33	6,870	Spring, fall	/
Jack Canyon (S)	060-068A	BLM	CP	21/11	7,500	Spring, summer	Ecological; Geological; Scenic
Link Flats (S)	ISA	BLM	CP	33/21	910		Ecological; Scenic
Little Rockies (S)	060-247	BLM	CP	21/33	38,700	Spring, fall	Ecological--desert bighorn population; Geological--National Natural Landmark/ Recreational--rockhounding
Mancos Mesa (S)	060-181	BLM	CP	33	51,440	Summer, fall	Archaeological--pictographs, petroglyphs; Ecological--desert bighorn population; Geological--slickrock and Navajo sandstone slickrock
Mexican Mountain (S)	060-054	BLM	CP	21/34	59,600	Spring, fall	Archaeological--petroglyphs, pictographs; Ecological--desert bighorn population; Geological--San Rafael Reef; Historical-- alternate route of Old Spanish Trail; Recreational--Black Boxes of the San Rafael River offer unique float boating
Middle Point (S)	060-175	BLM	CP	21/33	5,990		Contiguous with Dark Canyon ISA
Mill Creek Canyon (S)	060-139A	BLM	CP	21	9,780	Light, constant day-use	Archaeological--prehistoric occupation site; Geological--narrow slickrock canyons; Scenic
Moki-Mancos Mesa (S) (Glen Canyon NRA)		NPS	CP	33/34	588,000		/

Table 3-A. Regional Wilderness Opportunities (Utah) -- Continued

Area (status) ^{1/}	Inventory number (UT)	Administering agency	Eco-region ^{2/}	Vegetation types ^{3/}	Total acreage	Probable season of use ^{4/}	Supplemental values/Prominent recreational opportunities ^{5/}
Mojave Mountain (S)	040-217	BLM	QP	21	14,830	Spring, fall	Archaeological-pictographs; Ecological; Geological-Coral Pink Sand Dunes; Scenic
Mt. Hilliers (S)	050-249	BLM	QP	21/18, 19	20,000	Spring	Ecological-largest known stand of bristlecone pine in the Henry Mountains; Geological-sedimentary beds with igneous intrusions
Mt. Pennell (S)	050-248	BLM	QP	21/18, 19	27,300	Spring	Ecological
Muddy Creek (S)	060-007	BLM	QP	34/51	31,400	Spring, fall	Archaeological; Ecological-wild horse herd; Historical/Recreational-float boating, "the chute"
Mud Spring Canyon (S)	040-077	BLM	QP	21	65,000	Spring, fall	Ecological-botanical; Geological-"blues" badlands and cockscomb/Recreational-rock climbing
Mule Canyon (S)	060-205B	BLM	QP	21/17	5,990		Archaeological-Anasazi ruins; Geological-Slickrock Canyon
Negro Bill Canyon (S)	060-138	BLM	QP	21	7,620	Light, constant day-use	Scenic-narrow slickrock canyon with perennial stream
North Escalante Canyon-The Gulch (S)	ISA	BLM	QP	21/51	119,300		Scenic

Table 3-A. Regional Wilderness Opportunities (Utah) -- Continued

Area (status) ^{1/}	Inventory number (UT)	Adminis- tering agency	Eco- region ^{2/}	Vegetation types ^{3/}	Total acreage	Probable season of use ^{4/}	Supplemental values/Prominent recreational opportunities ^{5/}
Paria-Hackberry (S)	040-247	BLM	OP	21/34	135,822	Spring, summer, fall	Ecological-plant relict area; Geological- natural arches and bridges; Scenic/ Recreational-rockhounding, rock climbing
Phipps Death Hollow (S)	ISA	BLM	OP	21	42,731	Spring, summer, fall	Archaeological-pictographs, petroglyphs, grainites; Geological-natural arches, 1,000- foot cliffs; Historical; Scenic-waterfalls
Pine Canyon (S)	060-188	BLM	OP	21	10,890		Archaeological-ruins and sites; Scenic
Red Canyon North (E)	04254	USFS	RMF	18	9,100	/	/
Red Canyon South (E)	04260	USFS	RMF	18	4,555	/	/
Road Canyon (S)	060-201	BLM	OP	21/33	52,420		Archaeological-Anasazi sites; Historical- Hole-in-the-Rock trail; Scenic
San Rafael Reef (S)	060-029A	BLM	OP	51/21,34	55,540	Spring, fall	Archaeological-pictographs, petroglyphs; Ecological-wild burro herd; Geological & Scenic-rock fins
Scorpion (S)	040-082	BLM	OP	21/51	35,884	Spring, fall	Geological-extremely narrow canyons
Sheiks Flat (S)	060-224	BLM	OP	21	3,140	Spring, fall	Archaeological-ruin sites
Sids Mountain (S)	060-023	BLM	OP	21/51,34	80,550	Spring, fall	Archaeological-Buckhorn Wash Archaeological District; Geological-sandstone megaliths; Scenic

Table 3-A. Regional Wilderness Opportunities (Utah) -- Continued

Area (status) ^{1/}	Inventory number (UT)	Adminis- tering agency	Eco- region ^{2/}	Vegetation types ^{3/}	Total acreage	Probable season of use ^{4/}	Supplemental values/Prominent recreational opportunities ^{5/}
Slickhorn Canyon (S)	060-197/ 198	BLM	OP	21/33	45,390	Spring, fall	Archaeological; Geological; Historical; Scenic
Spruce Canyon (S)	060-100C	BLM	OP	21	20,350	Fall, early winter	Ecological; Geological; Scenic
Sheep Creek (S)	040-061	BLM	OP	21	21,896	Spring, fall	Scenic/Recreational-rockhounding
Turtle Canyon (S)	060-067	BLM	OP	21	33,690	Spring, summer	Archaeological-Fremont Rock Art; Ecological; Geological-pinnacles, balanced rocks; Scenic
Wahweep (S)	040-248	BLM	OP	21/34	134,400	Spring, fall	Ecological-4 T&E species (plants); Geological; Scenic
Westwater Canyon (S)	060-118	BLM	OP	21/34	31,160	Spring, summer	Archaeological-rock art, historic sites; Ecological-4 T&E species (fish); Geological- Precambrian rock outcrops; Recreational-float boating
Winter Ridge (S)	080-730	BLM	RMF	21	43,963		Ecological-wild horse herd; Geological- exposed oil-impregnated sands

Notes: Cists (see archaeological values) are ancient tombs or caskets. Threatened and endangered (T&E) species include plants and animals. Included in this list are all areas under the jurisdiction of the National Park Service (NPS), U.S. Forest Service (USFS), and the Bureau of Land Management (BLM); also included are the planning area's eight Wilderness Study Areas (WSAs). The size criteria of 5,000 acres for WSAs can be disregarded in special cases; thus, some acreage listed is less than the required size.)

Abbreviations: m.y. = million years ago; NRA = National Recreation Area.

1/ (D) = Designated/statutory wilderness.

(S) = BLM's WSAs or USFS's Further Planning Areas.

(E) = Administratively endorsed as suitable.

2/ All of these areas fall within the following two ecoregions: CP = Colorado Plateau; RMF = Rocky Mountain Forest.

3/ Primary vegetation type is listed first and then the secondary type (there may be two secondary types listed); their corresponding names follow:

- 14--Western spruce-fir forest; 17--Pine-Douglas-fir forest; 18--Arizona pine forest; 19--Spruce-fir-Douglas-fir forest;
- 20--Southwestern spruce fir forest; 21--Pinyon-juniper wood land; 31--Mountain mahogany-oak scrub; 32--Great Basin sagebrush;
- 33--Blackbrush; 34--Saltbush-greasewood; 39--Desert (vegetation largely absent); 45--Alpine meadows and barren;
- 46--Fescue-mountain muhly prairie; 47--Grass-galletta steppe; 51--Galletta-three awn shrubsteppe.

4/ Unless otherwise noted, probable season of use is summer.

5/ / = No supplemental values noted.

Table 3-A. Regional Wilderness Opportunities (New Mexico)

Area (status) ^{1/}	Inventory number (NM)	Administering agency	Eco-region ^{2/}	Vegetation types ^{3/}	Total acreage	Probable season of use ^{4/}	Supplemental values/recreational opportunities ^{5/}
Ah-shi-lee-pah (S)	010-009	BLM	OP	21/47	6,563	Spring, summer, fall	Educational; Geological; Paleontological; Scenic-badland formations; Scientific
Bandelier (D)	NP-002	NPS	RMF	17/20	29,000		Archaeological; Geological-fossils; Scenic
Bisti (S)	010-057	BLM	OP	47	3,968	Spring, summer, fall	Educational; Geological; Paleontological; Scenic-badland formations; Scientific
Cabezon (S)	010-022	BLM	OP	21	8,112	Spring, summer, fall	Archaeological-portion of Chacoan signaling system (method Anasazi's had of communicating with a series of towers and platforms on mesa tops); Ecological-2 T&E species (cactus); Geological-volcanic rock; Paleontological; Scenic
Chama River Canyon (D)	NF924	USFS	RMF	21/17,18	50,300	Summer, fall	Scenic/Recreational-float boating
Columbine Hondo (S)	03032	USFS	RMF	17/20,45	46,000		/
Cruces Basin (D)		USFS	RMF	20/18	18,000		/
De-na-zin (S)	010-004	BLM	OP	47	18,554	Spring, summer, fall	Archaeological; Geological; Paleontological; Scenic-badland formations
Dome (D)		USFS	RMF	17/20,21	5,200	Spring, summer, fall	/

Table 3-A. Regional Wilderness Opportunities (New Mexico) -- Continued

Area (status) ^{1/}	Inventory number (NM)	Adminis- tering agency	Eco- region ^{2/}	Vegetation types ^{3/}	Total acreage	Probable season of use ^{4/}	Supplemental values/Prominent recreational opportunities ^{5/}
Eagle Peak (S)	020-019	BLM	QP	47/21	32,748	Summer, fall	Archaeological; Ecological-T&E raptors
El Malpais (S)	ISA	BLM	QP	17/21	84,000	Spring, fall	Geological & Scenic-four distinct basalt flows
Empedrado (S)	010-063	BLM	QP	47/21	9,410	Spring, summer, fall	Archaeological
Ignacio Chavez (S)	010-020	BLM	QP	47/21	9,961	Summer, fall	Geological-volcanic and sedimentary rock; Scenic
La Lena (S)	010-063A	BLM	QP	47	10,310	Spring, summer, fall	Archaeological
Latir Peak (D)		USFS	RMF	20/45	20,000	Summer, fall	Ecological; Scenic
Mesita Blanca (S)	020-018	BLM	QP	47/21	16,429	Summer, fall	Archaeological; Ecological-T&E raptors; Recreational-float boating
Navajo Peak/Rio Chama (S)	010-059	BLM	RMF	32/17	11,985	Spring, summer, fall	Ecological-3 T&E species (all raptors)
Ojito (S)	010-024	BLM	QP	21	11,919	Spring, summer, fall	Archaeological; Scenic

Table 3-A. Regional Wilderness Opportunities (New Mexico) -- Continued

Area (status) ^{1/}	Inventory number (NM)	Adminis- tering agency	Eco- region ^{2/}	Vegetation types ^{3/}	Total acreage	Probable season of use ^{4/}	Supplemental values/ recreational opportunities ^{5/}
Pecos (D)	NF062	USFS	RMF	20/45, 18, 17	223,300	Summer, fall	Ecological; Scenic
San Antonio (S)	010-035	BLM	RMF	17/21	7,050	Summer, fall	Scenic-Rio San Antonio Canyon
Santa (D)	NF927	USFS	OP	17/20, 21	31,100	Spring, summer, fall	Scenic/Recreational-rock climbing
San Pedro Parks (D)	NF070	USFS	RMF	20/17	41,130	Summer, fall, winter	Scenic/Recreational
Wheeler Peak (D)	NF090	USFS	RMF	45/20	20,000	Summer, fall	Scenic-Wheeler Peak is the highest peak in New Mexico

Notes: Cists (see archaeological values) are ancient tombs or caskets.

Threatened and endangered (T&E) species include plants and animals.

Included in this list are all areas under the jurisdiction of the National Park Service (NPS), U.S. Forest Service (USFS), and the Bureau of Land Management (BLM); also included are the planning area's eight Wilderness Study Areas (WSAs). The size criteria of 5,000 acres for WSAs can be disregarded in special cases; thus, some acreage listed is less than the required size.)

Abbreviations: m.y. = million years ago; NRA = National Recreation Area.

^{1/}(D) = Designated/statutory wilderness.

(S) = BLM's WSAs or USFS's Further Planning Areas.

(E) = Administratively endorsed as suitable.

^{2/}All of these areas fall within the following two ecoregions: OP = Colorado Plateau; RMF = Rocky Mountain Forest.

3/ Primary vegetation type is listed first and then the secondary type (there may be two secondary types listed); their corresponding names follow:

- 14--~~Western spruce-fir forest~~; 17--~~Pine-Douglas-fir forest~~; 18--~~Arizona pine forest~~; 19--~~Spruce-fir-Douglas-fir forest~~;
- 20--~~Southwestern spruce fir forest~~; 21--~~Pinyon-juniper woodland~~; 31--~~Mountain mahogany-oak scrub~~; 32--~~Great Basin sagebrush~~;
- 33--~~Blackbrush~~; 34--~~Saltbush-greasewood~~; 39--~~Desert (vegetation largely absent)~~; 45--~~Alpine meadows and barren~~;
- 46--~~Fescue-mountain muhly prairie~~; 47--~~Gama-gallega steppe~~; 51--~~Galletta-three awn shrubsteppe~~.

4/ Unless otherwise noted, probable season of use is summer.

5/ / = No supplemental values noted.

Table 3-A. Regional Wilderness Opportunities (Arizona)

Area (status) ^{1/}	Inventory number (AZ)	Administering agency	Eco-region ^{2/}	Vegetation types ^{3/}	Total acreage	Probable season of use ^{4/}	Supplemental values/recreational opportunities ^{5/}
Big Sage Natural Area (S)		BLM	OP	32	160	/	
Paria Canyon Primitivie Area (S)	ISA UT-ISA	BLM	OP	34/21	27,515	/	
Petrified Forest (D)	NP013	NPS	OP	47	50,260	/	
Kanab Creek (E)	A3060	USFS	OP	21	64,162		Scenic-adjacent to Grand Canyon National Park
Kanab Creek (S)	B3060	USFS	OP	21	9,008		Scenic-adjacent to Grand Canyon National Park
Saddle Mountain (E)	A3062 B3062	USFS	OP	21	39,190		Scenic-adjacent to Grand Canyon National Park
Strawberry Crater North (S)	3059	USFS	OP	21	1,790	Fall, winter, spring	Geological
Strawberry Crater South (S)	3048	USFS	OP	21	8,050	Fall, winter, spring	/
Vermilion Cliffs Natural Area (S)	ISA	BLM	OP	32	14,671		Geological

Notes: Cists (see archaeological values) are ancient tombs or caskets.

Threatened and endangered (T&E) species include plants and animals.

Included in this list are all areas under the jurisdiction of the National Park Service (NPS), U.S. Forest Service (USFS), and the Bureau of Land Management (BLM); also included are the planning area's eight wilderness Study Areas (WSAs). The size criteria of 5,000 acres for WSAs can be disregarded in special cases; thus, some acreage listed is less than the required size.)

Abbreviations: m.y. = million years ago; NRA = National Recreation Area.

1/ (D) = Designated/statutory wilderness.

(S) = BLM's WSAs or USFS's Further Planning Areas.

(E) = Administratively endorsed as suitable.

2/ All of these areas fall within the following two ecoregions: OP = Colorado Plateau; RMF = Rocky Mountain Forest.

3/ Primary vegetation type is listed first and then the secondary type (there may be two secondary types listed); their corresponding names follow:

- 14--Western spruce-fir forest; 17--Pine-Douglas-fir forest; 18--Arizona pine forest; 19--Spruce-fir-Douglas-fir forest;
- 20--Southwestern spruce fir forest; 21--Pinyon-juniper woodland; 31--Mountain mahogany-oak scrub; 32--Great Basin sagebrush;
- 33--Blackbrush; 34--Saitbrush-greasewood; 39--Desert (vegetation largely absent); 45--Alpine meadows and barren;
- 46--Fescue-mountain muhly prairie; 47--Grass-galletta steppe; 51--Galletta-three awn shrubsteppe.

4/ Unless otherwise noted, probable season of use is summer.

5/ / = No supplemental values noted.

Table 3-B. Occurrence of Vegetation Types in NMPS.*

Vegetation no.	Vegetation type	Occurrence	Representation in National Wilderness Preservation System					Total acres**	
			Designated (no. of areas)	Endorsed (no. of areas)	Study/Planning (no. of areas)	Planning (no. of areas)	Total (no. of areas)		
<u>Rocky Mountain Forest Province (RMF)</u>									
14	Western spruce-fir forest	Northwestern Colorado, south-central Wyoming	26	3,468,000	33	1,663,000	35	1,045,000	6,176,000
17	Pine-Douglas-fir forest	Western Colorado, north-central New Mexico, southeastern Wyoming	10	263,000	0	--	17	264,000	527,000
18	Arizona pine forest	South-central Utah	3	62,000	2	32,000	0	--	94,000
19	Spruce-fir-Douglas-fir forest	Central Utah	0	--	5	46,000	0	--	46,000
20	Southwestern spruce-fir forest	Southwestern Colorado, north-central New Mexico	14	858,000	0	--	13	276,000	1,134,000
21	Pinyon-juniper woodland	Colorado, Utah, north-central New Mexico	1	11,000	5	165,000	16	208,000	384,000
31	Mountain mahogany-oak scrub	Western Colorado, Utah, south-central Wyoming	1	30,000	4	51,000	10	86,000	167,000
32	Great Basin sagebrush	Southwestern Colorado, central Utah, north-central New Mexico	0	--	2	5,600	7	24,000	47,000
34	Saltbush-greasewood	South-central Colorado, north-central New Mexico, northeastern Utah	1	18,000	1	26,000	6	53,000	97,000
39	Desert	South-central Colorado	1	15,000	0	--	0	--	15,000
46	Fescue-mountain muhly prairie	Central Colorado, north-central New Mexico	0	--	0	--	1	10,000	10,000
45	Alpine meadows and barren	Colorado, northeastern Utah, Wyoming, Idaho, Montana, Oregon	26	1,675,000	17	803,000	22	394,000	2,872,000

Table 3-B. Occurrence of Vegetation Types in NMPS* (Continued)

Vegetation no.	Vegetation type	Occurrence	Representation in National Wilderness Preservation System						
			Designated (no. of areas)	Endorsed (no. of areas)	Study/Planning (no. of areas)	Total acres**			
<u>Colorado Plateau Province (CP)</u>									
17	Pine-Douglas-fir forest	Southeastern Utah, Northeastern Arizona, New Mexico	3	19,000	1	46,000	6	79,000	144,000
21	Pinyon-juniper woodland	Southwestern Colorado, Utah, Arizona, New Mexico	1	8,100	6	34,000	101	2,107,000	2,149,000
32	Great Basin sagebrush	Southwestern Colorado, northwestern New Mexico, Arizona, southern Utah	0	--	1	55,000	15	343,000	398,000
33	Blackbrush	Southeastern Utah, far northeastern Arizona	0	--	2	218,000	11	558,000	776,000
34	Saltbush-greasewood	West-central Colorado, southeastern Utah	0	--	0	--	15	468,000	468,000
47	Grass-galletta steppe	Far southwestern Colorado, northeastern Arizona, New Mexico	3	91,000	0	--	9	138,000	229,000
51	Galletta-three awn shrubsteppe	East-central Utah	0	--	0	--	12	215,000	215,000

* All acreages are only approximate as appeals and other changes in original wilderness inventories may have occurred.

** All numbers/figures rounded to the nearest thousand.

areas and wilderness study areas.

Note: This table is a summary of ecosystem diversity within the NMPS; it also includes possible additions to the NMPS, including endorsed wilderness.

Source: BLM Data 1984.

Summary

The contribution of an area to diversity in the NWPS is a valid factor for consideration--it is used as an integral part of the overall evaluation of an area's wilderness values.

As shown in the Regional Wilderness Opportunities table, there are nine areas located in the transition zone between the Rocky Mountain Forest and Colorado Plateau provinces.* However, none of these nine areas are designated as wilderness (all are study areas). Three of the areas are WSAs noted in this document: McKenna Peak, Weber Mountain, and Menefee Mountain.

All of the WSAs in the SJRA are composed partially of the Pinyon-juniper woodland vegetation types (#21), either RMF or CP. As noted in Table 3-B, there are presently only two designated wilderness areas of this type, a total of less than 20,000 acres.** However, one of these, the Mesa Verde National Wilderness Park, because of the valuable cultural resources located within it, is not open to the public. Thus, only 12,000 acres of this vegetation type (Black Canyon of the Gunnison National Monument) are open for public use.

McKenna Peak WSA in the SJRA is quite a unique area in regard to ecosystem types. A transition zone between CP/RMF, it also has three vegetation types associated with the two ecoregions. The saltbush-greasewood ecosystem (#34) is presently represented by only one designated wilderness; Great Sand Dunes National Monument encompasses approximately 18,000 acres in its wilderness. Another ecosystem type found in McKenna Peak WSA is the mountain mahogany-oak scrub (#31). Represented in the NWPS by 30,000 acres in the designated Lone Peak Wilderness of Utah. As previously noted, McKenna Peak WSA also has a pinyon-juniper woodland ecosystem within its bounds. McKenna Peak WSA has several special features which enhance its wilderness characteristics. It is one of five study areas in the region which sustain a wild horse herd. The badlands geography of the area is associated with only seven study areas besides McKenna Peak. In addition, these two supplemental values together occur only in McKenna Peak WSA.

Squaw/Papoose, Cross, and Cahone canyons are all associated with deep canyon topography. Each of these areas has two vegetation types: pinyon-juniper woodland (#21), and Great Basin sagebrush (#32). The Great Basin sagebrush ecosystem is not presently represented in the NWPS. All of these canyon study areas have associated supplemental values, with important and numerous cultural resources found here. They rate high in supplemental values and also in multiple resource benefits.

Menefee Mountain WSA also has special qualities with respect to diversity. Like several other WSAs in the SJRA, it is located in a transition zone between the CP and the RMF. It has two associated vegetation types: pinyon-juniper woodland and mountain mahogany-oak scrub. Noted previously, neither of these ecosystems is adequately represented in the NWPS.

*There is a regional total of 160 wilderness areas.

**Compared to more than 1.5 million acres of alpine meadows (#45) in 26 designated wilderness areas.

The Dolores River Canyon WSA is associated with deep canyons in the CP ecoregion. Two primary vegetation types are present: pinyon-juniper woodland, and Great Basin sagebrush, ecosystems only represented by small acreages in Colorado and New Mexico. The Dolores River Canyon WSA is valuable, many supplemental values and optional wilderness characteristics, such as archaeological, ecological, geological, paleontological, and scenic values. In addition, its archaeological values would also be a multiple resource benefit. The prominent recreational value, float boating, is regarded as one of the prime opportunities available in the region.

Weber Mountain WSA is another area located in a transition zone between RMF and CP. Vegetation types associated with it are: pine-Douglas-fir forest, and pinyon-juniper woodland. The pine-Douglas-fir forest is presently represented by 13 designated areas and approximately 283,000 acres of land in the NWPS. Previously discussed, the pinyon-juniper woodland ecosystem is represented by two small acreages in Colorado, one of which is not accessible to the public.

Appendix Four

Visual Resource Management (VRM) Classification Process

Establishing VRM Classes

Four steps are involved in the visual resource management classification process. These are (1) outlining and numerical evaluation of scenic quality; (2) outlining of visual sensitivity levels; and (3) delineating distance zones; and (4) assigning VRM classes.

Scenic Quality

The first step is accomplished by outlining scenery of similar nature on a topographic map. Once the area has been outlined, numerical values are given to its key factors (landform, color, water, vegetation, uniqueness, and intrusions). When these values are established, the total determines whether the area is an A, B, or C scenery unit.

Class A scenery combines the most outstanding characteristics of each rating factor. Class B scenery combines some outstanding features and some that are fairly common to the physiographic region. Class C scenery combines features that are fairly common to the physiographic region.

Visual Sensitivity Levels

Sensitivity levels indicate the relative degree of user interest in visual resources and concern for changes in the existing landscape character. This section is designed to bring input from area and district management to the weighing of the two sensitivity criteria: (1) use volume (both vehicular and pedestrian), and (2) expressed user attitudes toward change. These criteria are evaluated from a matrix, and a final sensitivity rating of high, medium, or low is given. After this evaluation, the sensitivity rating will figure in the final VRM classification.

Distance Zones

The distance zones are outlined on topographic maps in three areas: (1) foreground/middleground, (2) background, and (3) seldom seen. The foreground/middleground zone is a distance of from zero to 3 to 5 miles away, where activities can be viewed in detail. The background is the remaining area up to 15 miles distance, and seldom seen is that are beyond 15 miles or not seen at all from any corridor of travel.

VRM Classes

After classification as to scenic quality, visual sensitivity, and distance zones, areas are assigned to one of five management classes. These management classes are designed to maintain or enhance visual quality and describe the different degrees of modification of the basic elements of the landscape allowed.

(1) Manage VRM Class I areas to protect natural scenic quality. Design surface construction projects with low visual contrast standards.

(2) Manage VRM Class II areas to preserve natural scenic quality. Design surface construction projects with low to moderate visual contrast standards.

(3) Manage VRM Class III areas to preserve natural scenic quality. Design surface construction projects with moderate visual contrast standards.

(4) Manage VRM Class IV areas to preserve natural scenic quality. Allow strong visual contrast in project design. No special standards needed.

(5) Manage VRM Class V areas to restore damaged visual qualities. (Note: Surface construction projects include vegetation modifications; earthwork and structures.)

Analyzing Visual Impacts

For activities proposed on public lands, impacts are evaluated with the visual resource contrast rating system. This system is a method of evaluating the visual contrast of a proposed activity with the existing landscape character.

The amount of contrast is measured by separating the landscape into its major features (land and water surface, vegetation, and structures) and then predicting the magnitude of change in contrast of each of the basic elements (form, line, color, and texture) to each of the features. Assessing the amount of contrast for a proposed activity in this manner will indicate the severity of impact and serve as a guide in determining what is required to reduce the contrast to the point where it will meet the visual management class's requirements for the area. Objectives for the VRM classes are listed below:

Class I. One element should not exceed a weak degree of contrast (1), and the total for any feature may not exceed 10.

Class II. The degree of contrast for any one element should not exceed a moderate value (2), and the total contrast rating for any feature may not exceed 10.

Class III. The degree of contrast of any one element should not exceed a moderate value (2), and the total contrast rating for any feature may not exceed 16.

Class IV. The total contrast rating for any feature should not exceed 20.

Class V. This is an interim classification for rehabilitation or enhancement.

Form 1279-3
(June 1984)

BORROWER

SF 85.35 .06 526
Wilderness suitability
analysis

DATE LOANED	BORROWER

USDI - BLM

