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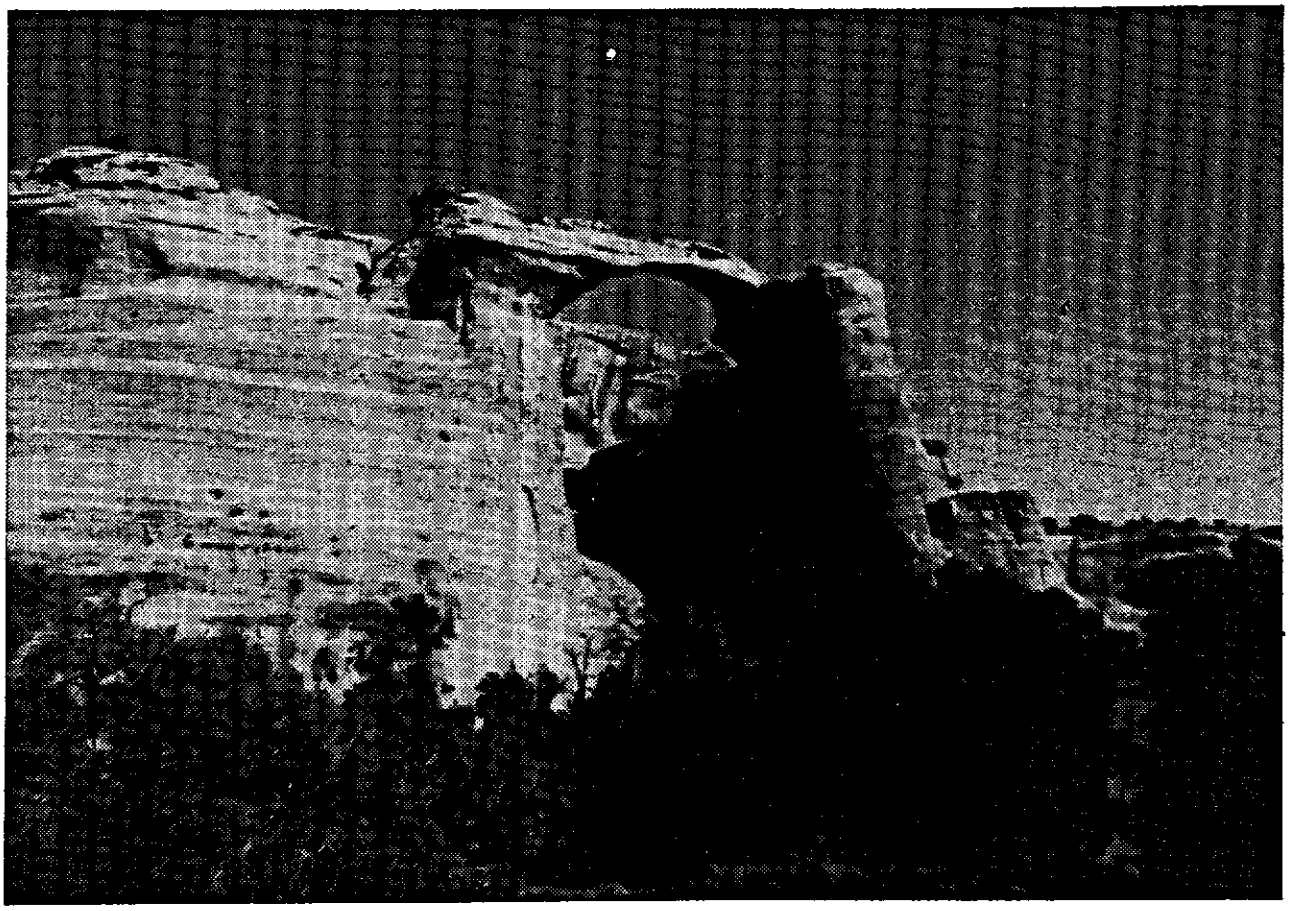
October 1991

WILDERNESS STUDY REPORT

Volume Four, Pages 427-549

Grand Junction District Study Areas



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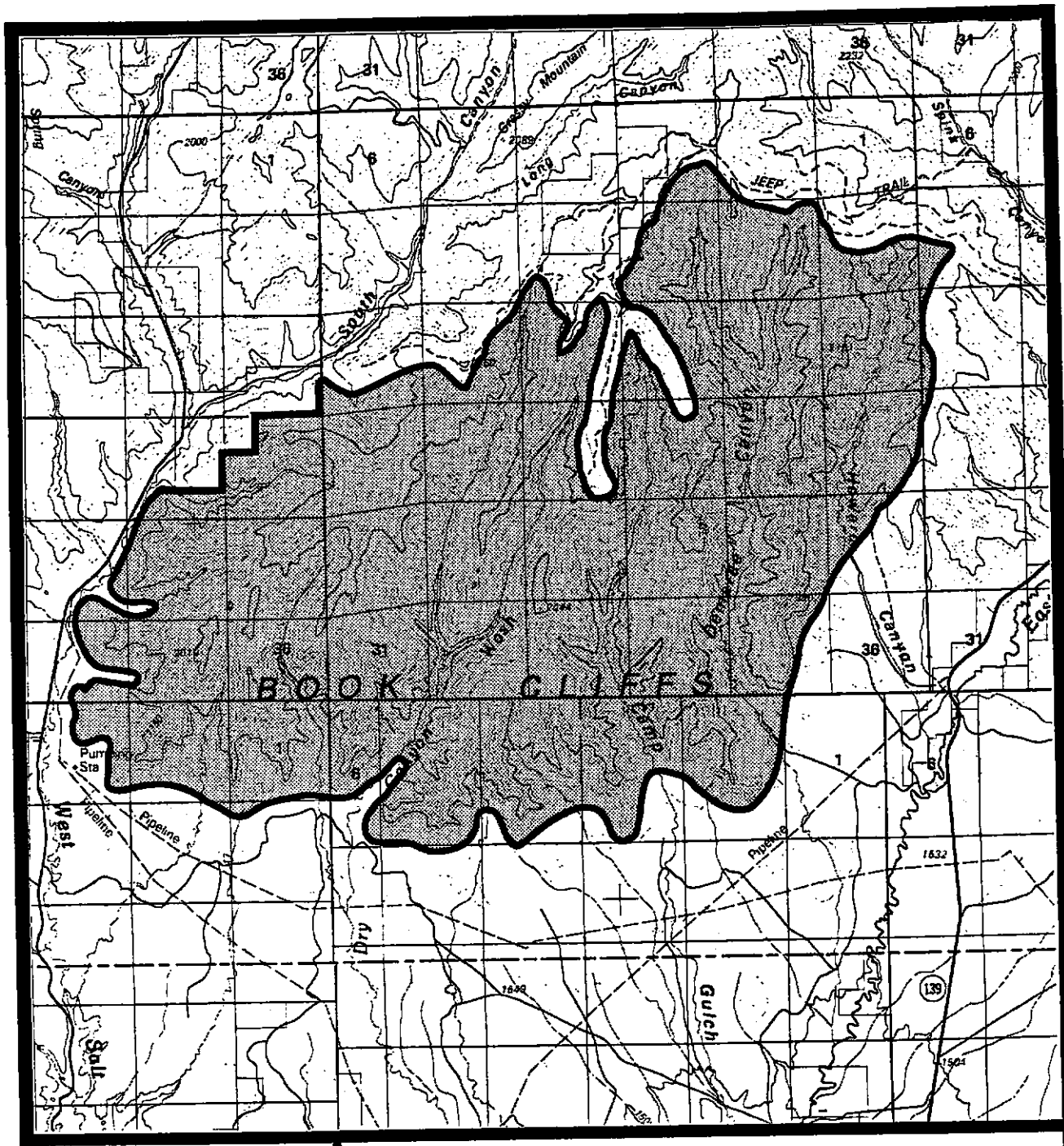
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Demaree Canyon WSA
Proposal
CO-070-009
January 1991

DEMAREE CANYON

WILDERNESS STUDY AREA

The Study Area – 21,050 acres

The Demaree Canyon Wilderness Study Area (CO-070-009) is located in Garfield County, Colorado, approximately 25 miles northwest of Grand Junction. The WSA contains 21,050 acres of public land administered by BLM. (See Table 1) There are no private inholdings in this WSA. The area is part of the Book Cliffs, a prominent line of cliffs extending from Grand Junction, Colorado to Price, Utah. The area is bounded on the north by the Petro Lewis oil and gas road, coal exploration roads and a pipeline right-of-way; and on the east, south and west by human imprints from past oil and gas exploration. This includes active oil and gas wells, roads, pipelines and a pumping station. Two producible wells are located within the WSA. The area is shown on the map.

The WSA consists of a series of north-south trending canyons separated by narrow ridges. The base of the steep, south facing slopes of the Book Cliffs define the southern boundary of the WSA. (See Photo 1) Vegetation is scattered pinyon-juniper on the canyon slopes and on the ridges. Sagebrush, saltbush and various grasses are found in the five major canyon bottoms.

The WSA was studied under section 603 of the Federal Land Policy and Management Act (FLPMA) and was included in the Grand Junction Resource Management Plan and Environmental Impact Statement (EIS) published in November, 1985. Two alternatives were analyzed in this EIS: all wilderness and no wilderness. The no wilderness alternative (21,050 acres) is the recommendation of this report.

Recommendation and Rationale

0 acres recommended for wilderness

21,050 acres recommended for nonwilderness

The recommendation is to not designate the Demaree Canyon WSA as wilderness and to release the area for uses other than wilderness. The all wilderness alternative is the environmentally preferable alternative since its implementation would result in the least change to the natural environment over the long term.

The primary reason this WSA is not being recommended for wilderness is to maintain the potential for development of high mineral values. The Demaree Canyon WSA has been placed in a high development potential category for oil and gas because large known geologic structures (KGSs) of producing oil and gas fields overlap into the WSA on the north and west boundaries of the WSA. A smaller KGS extends into the southeast corner of the WSA. The WSA also lies within the Book Cliffs coal field and is estimated to contain 139 million tons of recoverable coal.

As of October 1990, there were 20 oil and gas leases and 220 acres of a coal lease in the WSA all dating from before the passage of the Federal Land Policy and Management Act of 1976. Pre-FLPMA leases are not subject to the regulations created by FLPMA and therefore lease holders are allowed to develop their leases including the construction of access roads, drill pads, and pipeline gathering systems even if they impair wilderness values. These 20 pre-FLPMA oil and gas leases comprise 10,385 acres or 49 percent of the WSA. The leases are held by production which means that the lease will remain in effect until all wells on or for the benefit of the lease are no longer capable of production in paying quantities. There are also 2 post-FLPMA oil and gas leases within the WSA (560 acres, 3 percent of the WSA). Two producible wells are within the WSA while 20 producing wells are located within one mile of the WSA boundary. (See Photo 2) Scattered dry holes are located around the perimeter of the WSA.

The WSA contains 220 acres of a pre-FLPMA coal lease along the northeastern boundary. The overburden thickness makes underground mining the most feasible recovery method. The cherry-stemmed roads in the north central part of the WSA provided

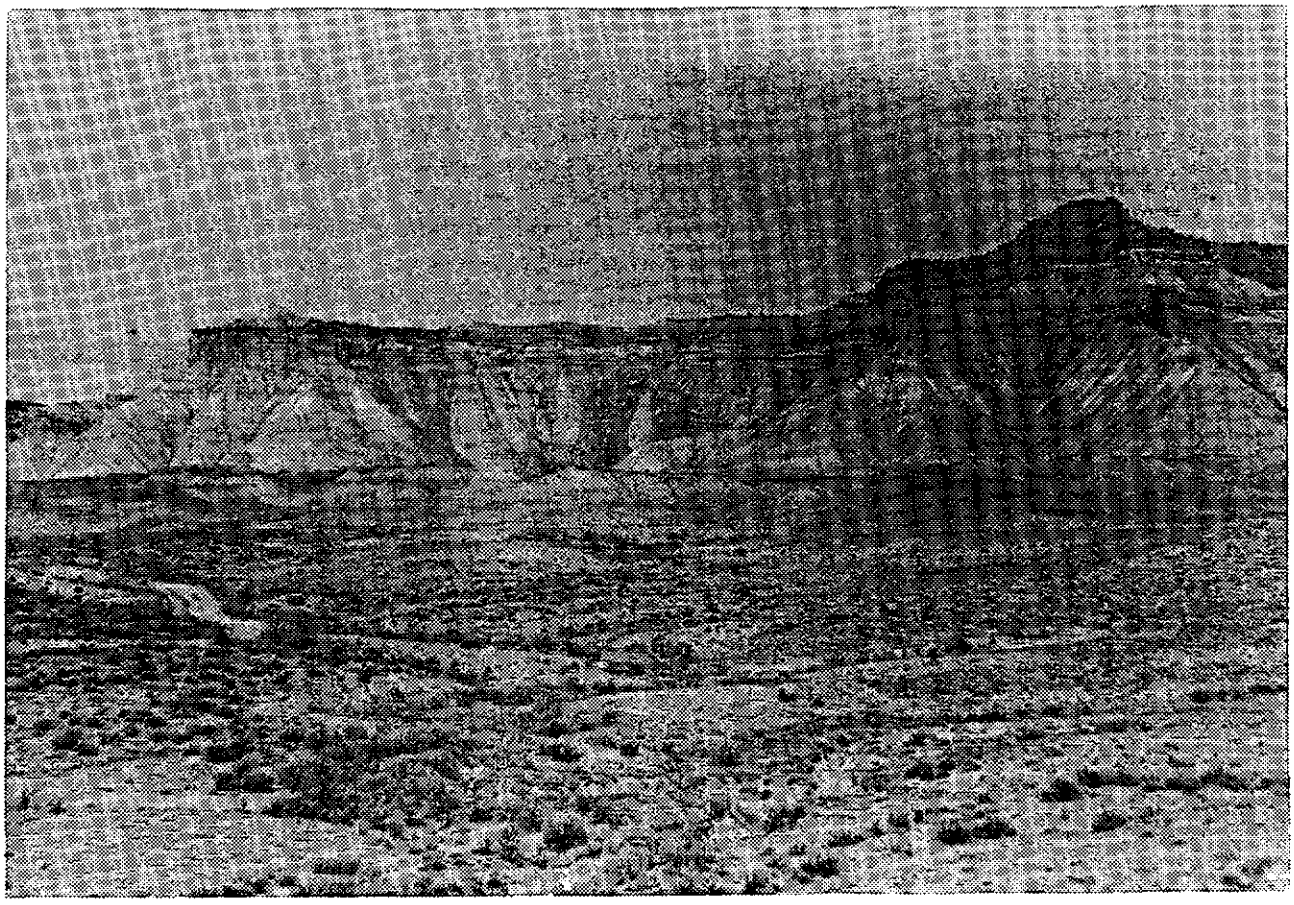


Photo 1. Demaree Canyon WSA. Book Cliffs escarpment on the southern boundary of the WSA.

access to coal drill holes, products of ongoing coal exploration.

The 20 pre-FLPMA oil and gas leases and the pre-FLPMA coal lease would be allowed to be developed even if the area was designated wilderness. It is projected that development of the 20 oil and gas leases would involve an estimated 6 new wells, 6 miles of roads and 4 miles of new pipeline over 20 years with a resultant disturbance of 43 acres. It is projected that the one pre-FLPMA coal lease covering 220 acres of the WSA would be developed using underground mining techniques. No surface facilities or surface disturbance from coal mining are projected inside the WSA. This mining activity would have limited visibility from inside the WSA because of topographic screening.

Release of the Demaree Canyon WSA from further wilderness review would allow a potential production range from between 300,000 to 700,000 cubic feet of gas per day during the next 20 years. Coal production from new leasing after release from wilderness review would increase from 1.6 million tons to 15 million tons over 20 years.

Wilderness values are not manageable on about 8,000 acres of this WSA due to pre-FLPMA leases. Oil, gas and coal development from existing pre-FLPMA leases would result in the loss of wilderness characteristics in the western one-half and northern portions of the WSA. Projected development of 20 pre-FLPMA oil and gas leases would result in a total surface disturbance of 43 acres and create sights and sounds impacts on 2,880 acres. This oil and gas activity would disturb naturalness and outstanding opportunities for solitude on scattered rectangular and linear tracts (roads) primarily in canyon bottoms and along ridge tops. The widespread network of these impacts would result in a loss of wilderness characteristics on about 8,000 acres. The remaining 13,000 acres would be manageable as wilderness.

The WSA's wilderness character has been modi-

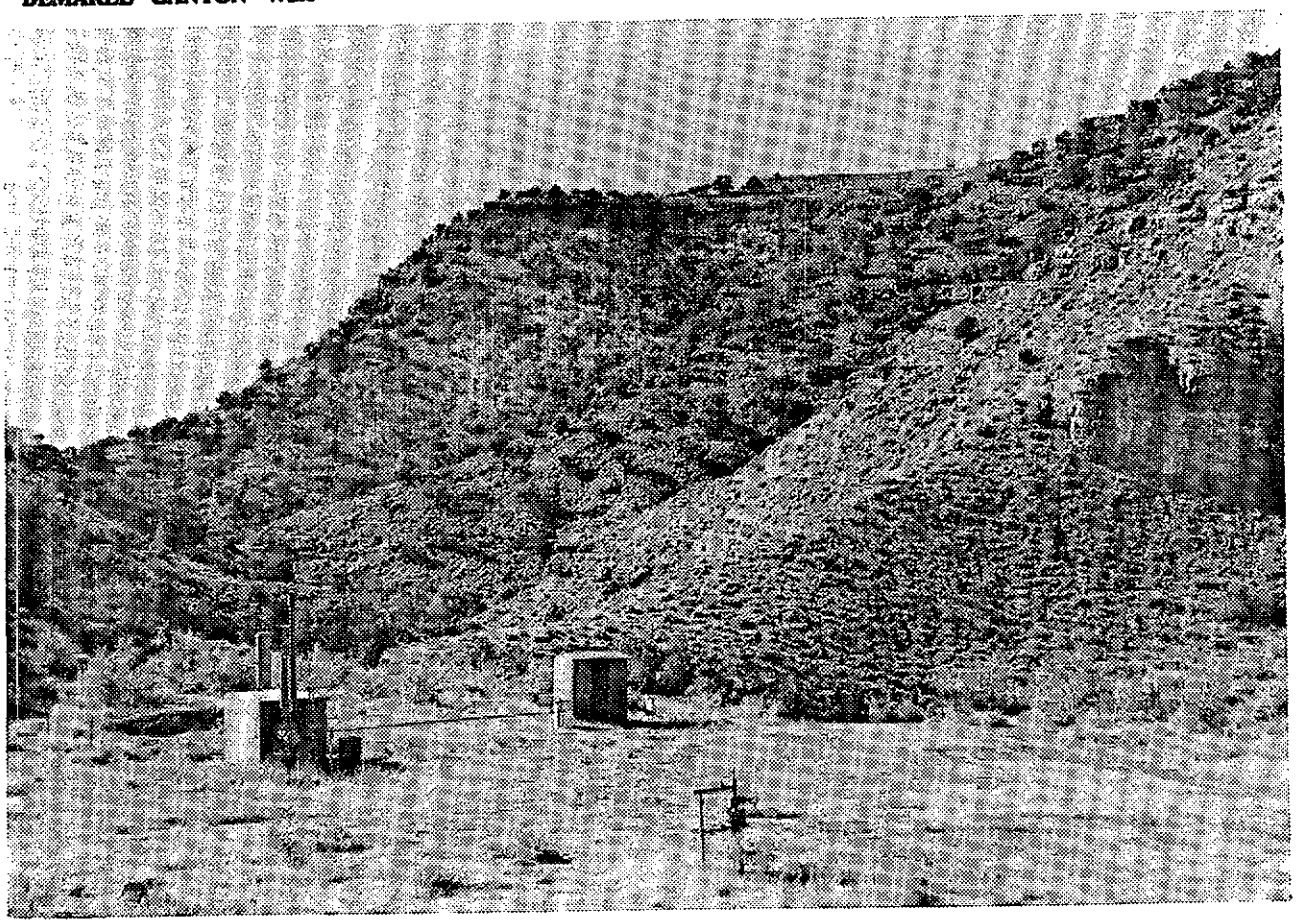


Photo 2. Demaree Canyon WSA. Producible well on pre-FLPMA lease in Dry Canyon.

fied along its southern boundary since qualifying as a WSA in 1980. Two producible wells and approximately one mile of new road are now part of human imprints in the area. Several dry holes and the associated drill pads and access roads have also been added to the area under pre-FLPMA lease development. Opportunities to reclaim these imprints cannot be properly assessed until development, production and lease relinquishment occur. Evidence of a historic underground coal mine exists in Demaree Canyon.

Outstanding opportunities for solitude, except in the area of oil and gas wells if activities are occurring, can be found in the WSA because of its highly dissected topography. (See Photo 3) Outstanding opportunities for primitive recreation are not found within the WSA. No special recreational values are present that would enhance primitive recreation opportunities. No special features are found in this WSA.

Table 1 - Land Status and Acreage Summary of the Study Area

	Acres
Within Wilderness Study Area	
BLM (surface and subsurface)	21,050
Split estate (BLM surface only)	0
Inholdings (State, private)	0
Total	21,050
Within the Recommended Wilderness Boundary	
BLM (within WSA)	0
BLM (outside WSA)	0
Split Estate (within WSA)	0
Total BLM land recommended for wilderness	0
Inholdings (State, private)	0
Within the Area Not Recommended for Wilderness	
BLM	21,050
Split Estate	0
Total BLM land not recommended for wilderness	21,050
Inholdings (State, Private)	0

Criteria Considered in Developing the Wilderness Recommendations

Wilderness Characteristics

Naturalness

The Demaree Canyon WSA is characterized by a highly dissected topography. The dominant landform is a series of north-south canyons separated by ridges. The Book Cliffs that form the southern boundary of the WSA provide an abrupt break between the topography of the WSA and the Grand Valley. Vegetation is scattered pinyon-juniper and dense mountain brush on the ridges and canyon slopes with sagebrush, saltbush and grasses in the lower elevations.

Minor human imprints recorded during the 1979 inventory included several fencelines, an abandoned underground coal mine, several stock reservoirs, a water gathering device for wildlife, and some trails. (See Photo 4) These human impacts are well screened and scattered throughout the WSA. Overall in 1979 the WSA appeared to be affected primarily by the forces of nature.

Since 1979, ongoing development of pre-FLPMA oil and gas leases have introduced about 1 mile of new road, 2 producible wells and 3 dry holes. These activities have modified the natural landscape primarily along the southern portion of the WSA resulting in the loss of naturalness on approximately 1,000 acres. One dry hole on the northern boundary of the WSA has been successfully rehabilitated.

Solitude

Outstanding opportunities for solitude occur throughout that portion of the WSA (about 20,000 acres)

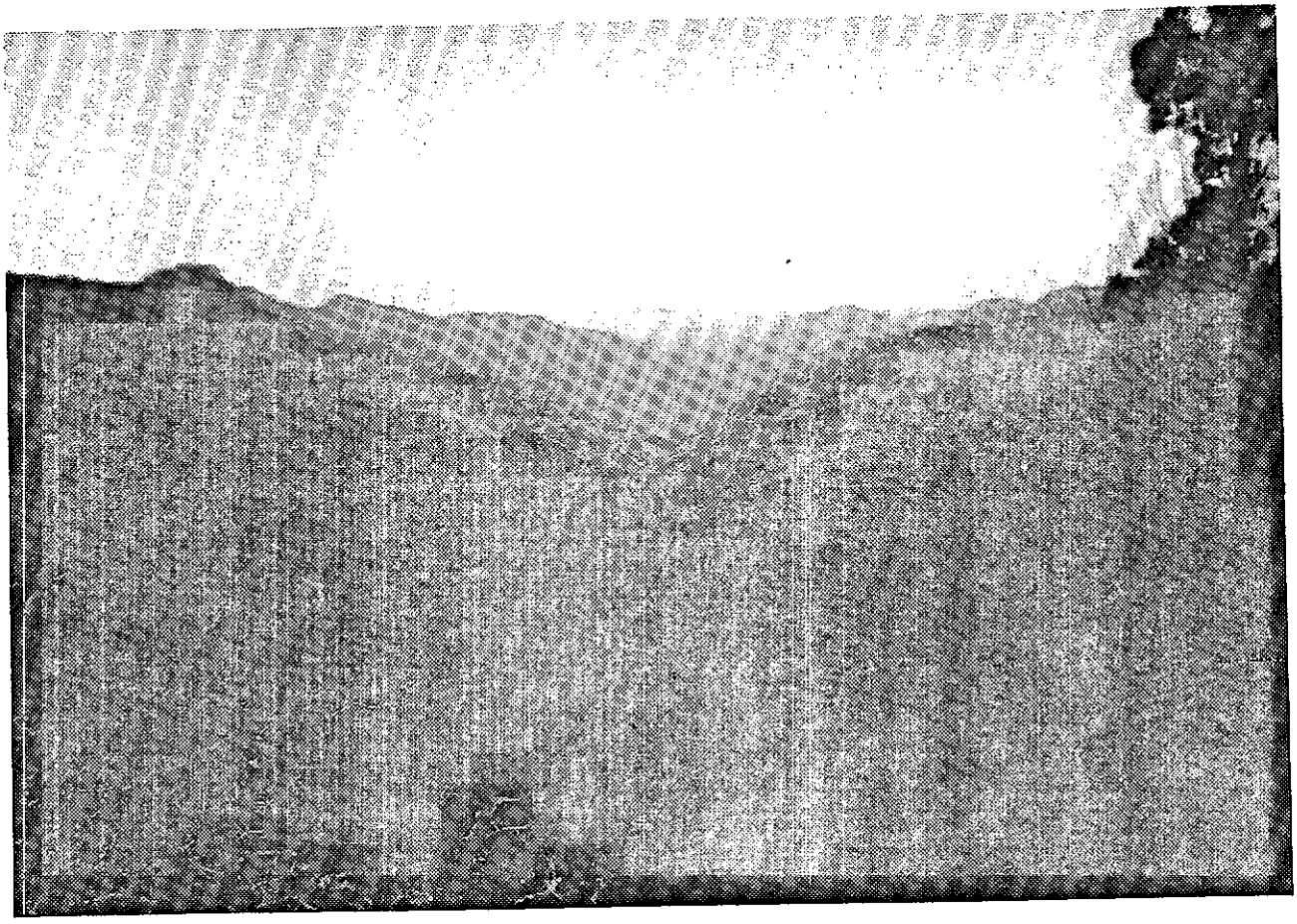


Photo 3. Demaree Canyon WSA. Upper Demaree Canyon provides oustanding opportunities for solitude.

not impacted by oil and gas development. The highly dissected topography of the WSA provides numerous opportunities to be separated from the sights and sounds of other visitors. The WSA's 5 major canyons penetrate the entire length of the WSA (4 to 6 miles north to south) and provide numerous branches and side canyons in which to disperse. The large size and blocked configuration of the WSA also enhance opportunities to be isolated. Opportunites to view scenic vistas such as the Grand Mesa and the LaSal Mountains from the high points along the ridgetops in the WSA can also enhance the visitor's feelings of isolation.

Primitive and Unconfined Recreation

Outstanding opportunities for primitive and unconfined recreation were not considered to occur in the Demaree Canyon WSA. Hunting (200 visitors days per year) is the primary recreation opportunity in the WSA. About 100 visitor days per year of other nonmotorized recreation occur such as hiking. There are no special recreational values that would provide for outstanding opportunities for primitive recreation.

Special Features

There are no special features in this WSA but it is 1 of only 2 WSAs within the Book Cliffs in Colorado being studied for wilderness.

Diversity in the National Wilderness Preservation System

Assessing the diversity of natural systems and features as represented by ecosystems

Wilderness designation of this WSA would not add a new ecosystem and landform to the National Wilderness Presevation System. This WSA is in the Colorado Plateau Province (Bailey-Kuchler classification system) and contains the pinyon-juniper woodland. This ecosystem is currently represented

by only 1 wilderness area in Colorado and 11 in the National Wilderness Preservation System. Although there are 17 other WSAs representing this ecotype, Demaree Canyon WSA is only 1 of 2 WSAs in the Book Cliffs in Colorado, neither of which are recommended for wilderness designation. However, there are 8 WSAs in the Book Cliffs in Utah. Two of these Utah WSAs are recommended for wilderness. See Table 2.

Table 2 - Ecosystem Representation

Bailey-Kuchler Classification Province/Potential Natural Vegetation	NWPS Areas areas	NWPS Areas acres	Other BLM Studies areas	Other BLM Studies acres
Nationwide				
Colorado Plateau Province				
Pinyon-Juniper Woodland	11	1,401,745	85	2,142,602
Colorado				
Colorado Plateau Province				
Pinyon-Juniper Woodland	1	8,105	17	293,837

Expanding the opportunities for solitude or primitive recreation within a day's driving time (five hours) of major population centers

The Demaree Canyon WSA is within a five hour drive of four major population centers and within one hour of Grand Junction (85,000 residents), the largest metropolitan area on the western slope of Colorado. Table 3 summarizes the number and acreage of designated wilderness areas and other BLM wilderness study areas within a five hour-drive of these population centers.

Table 3 - Wilderness Opportunities for Residents of Major Population Centers

Population Center	NWPS Areas areas	NWPS Areas acres	Other BLM Studies areas	Other BLM Studies acres
Denver	20	1,728,410	21	372,010
Boulder	20	1,728,410	21	372,010
Salt Lake City/Ogden	11	685,088	42	1,826,904
Provo/Orem	12	730,088	52	2,307,031

Balancing the geographic distribution of wilderness areas

The Demaree Canyon WSA would contribute to balancing the geographic distribution of areas within the National Wilderness Preservation System in west-central Colorado. The nearest designated wilderness areas are about 3 to 4 hours from the Demaree Canyon WSA. These include the Black Canyon of the Gunnison (11,180 acres), and the Flat Tops Wilderness Area (235,035 acres). The Black Ridge Canyons WSAs (73,937 acres), the Little Book Cliffs WSA (26,525 acres), and the Westwater Canyon WSA (31,160 acres) in Utah are all within one hour of the Demaree Canyon WSA. Only the Black Ridge Canyons WSAs and the Westwater Canyon WSA are recommended for wilderness.

MANAGEABILITY

About two-thirds or 13,000 acres of the Demaree Canyon WSA could be managed to preserve wilderness values. However, the remainder of the WSA would not be manageable. Projected development of 16 pre-FLPMA oil and gas leases would impact wilderness values on about 8,000 acres of the WSA in the western one-half and northern portions of the unit. See the *Recommendation and Rationale* section.

ENERGY AND MINERAL RESOURCE VALUES

Mineral evaluations of the WSA were prepared in 1984 by BLM in a Geology, Energy and Minerals (GEM) report titled *Geology and Mineral Resource Potential of the Demaree Canyon WSA* and in 1990 by the U.S. Geologic Survey and U.S. Bureau of Mines in their report *Mineral Summaries, BLM; Wilderness Study Areas in Colorado.*

The WSA has a high potential resource occurrence for oil and gas and has been placed in a high development potential category because it is near known geologic structures (known to have production potential), is in the vicinity of producing wells (2 producible wells are in the WSA), and is likely to be involved in oil and gas devel-

Photo 4. Demaree Canyon WSA. Natural revegetation on abandoned coal mine in Demaree Canyon.

opment activities. Currently, there are 20 pre-FLPMA oil and gas leases and 2 post-FLPMA oil and gas leases in the WSA. If the 20 pre-FLPMA leases, 2 post-FLPMA leases and future leasing of 4,500 acres (7 of the 12 wells projected could produce gas) were developed, the WSA would be projected to produce 700,000 cubic feet of gas per day over 20 years.

The WSA has a high potential resource occurrence for coal and lies within the Book Cliffs coal field. It is estimated that there are 130 million tons of recoverable coal in the entire WSA. The WSA contains 220 acres of a pre-FLPMA coal lease in the northeast corner. An abandoned underground coal mine is located in Demaree Canyon on the eastern side. There are no known locatable minerals in this WSA.

Impacts on Resources

Table 4 summarizes the comparative impacts for the two alternatives considered in Demaree Canyon.

Table 4 - Comparative Summary of the Impacts by Alternative

Impact Topics	Recommendation: No Wilderness Alternative	All Wilderness Alternative
Impacts on Wilderness Values	*Surface disturbance (92 acres) and impacts from sights and sounds (6,000 acres) from development of oil and gas and coal leases would result in the loss of wilderness characteristics throughout the WSA because of the widespread nature of these impacts (especially roads).*	*Wilderness values on 13,064 acres would be maintained by wilderness designation. Surface disturbance (43 acres) and sights and sounds (2,880 acres) from industry development would result in the loss of wilderness characteristics on 2,923 acres. The widespread network of these impacts would result in a loss of wilderness characteristics in the western one-half and northern portion of the WSA.*
Impacts on Oil and Gas Exploration and Development	*Seven wells in the WSA could produce about 700,000 cubic feet of gas per day during the next 20 years. These 7 wells represent 1 percent of the 570 new wells projected to be drilled and producible and 1 percent of the production in the Grand Junction Resource Area in the next 20 years.*	*Development of 20 pre-FLPMA leases (49 percent of the WSA) would produce about 300,000 cubic feet of gas per day during the next 20 years. The opportunity to drill and produce gas from the remainder of the WSA would be foregone.*
Impacts on Coal Exploration and Development	*Coal leasing and development would result in production of 15 million tons of coal.*	*Development of the 220-acre pre-FLPMA coal leases would result in production of 1.6 million tons of coal. The opportunity to produce the remaining 13.4 million tons would be foregone under wilderness designation.*

Table 4 - Comparative Summary of the Impacts by Alternative (continued)

Impact Topics	Recommendation: No Wilderness Alternative	All Wilderness Alternative
Impacts on Wildlife Habitat and Populations	*Surface disturbance would result in a 1 percent loss in forage for big game. Sights and sounds associated with energy development and operation would reduce the herds by 25 percent for a loss of 30 deer and 90 elk.*	*Surface disturbance would result in a 1 percent loss in forage for big game. The sights and sounds associated with development and operation of the pre-FLPMA leases would reduce the deer herd by 3 percent for a loss of 8 deer and no elk.*
Impacts on Cultural Resources	*Cultural sites on 12,160 acres would continue to be vulnerable to vandalism and unauthorized collection. Data from cultural sites on 92 acres would be recovered or protected. Cultural resources on the remaining 8,798 acres are expected to remain largely undisturbed.*	*Data from cultural sites on 43 acres would be recovered or protected. Cultural resources on the remaining 21,007 acres would be protected.*
Impacts on Recreation and Off-Highway Vehicles	*Over 20 years, the existing predominantly natural settings that provide nonmotorized recreation would shift to a roaded setting. The WSA's natural and roadless character would be lost on 6,000 acres (29 percent of WSA). Over 10 years the current 50 days of off-highway vehicle use per year would increase to 90 days per year. The 200 user days of hunting would increase to 360 user days over 10 years. The 100 user days of nonmotorized recreation would remain unchanged.*	*Over 20 years, the existing predominantly natural settings which provide nonmotorized recreation would shift to a more developed setting of roads, pipelines, and oil and gas facilities. The WSA's natural and roadless character would be lost on 2,880 acres (14 percent of the WSA). Nonmotorized recreation opportunities would be disrupted by industry vehicle use on a daily basis throughout the WSA. Recreational off-highway vehicle use (50 user days per year) would be displaced to other areas. Nonmotorized recreation use (300 user days per year) would increase to about 550 user days per year over 10 years.*

Local Social and Economic Considerations

Designation of the Demaree Canyon WSA as wilderness would incrementally help to increase recreation use in the Grand Junction area. Greater public awareness of this WSA together with other newly designated wilderness areas would draw wilderness users from outside west-central Colorado. Increases in wilderness use would generate some increase in local income.

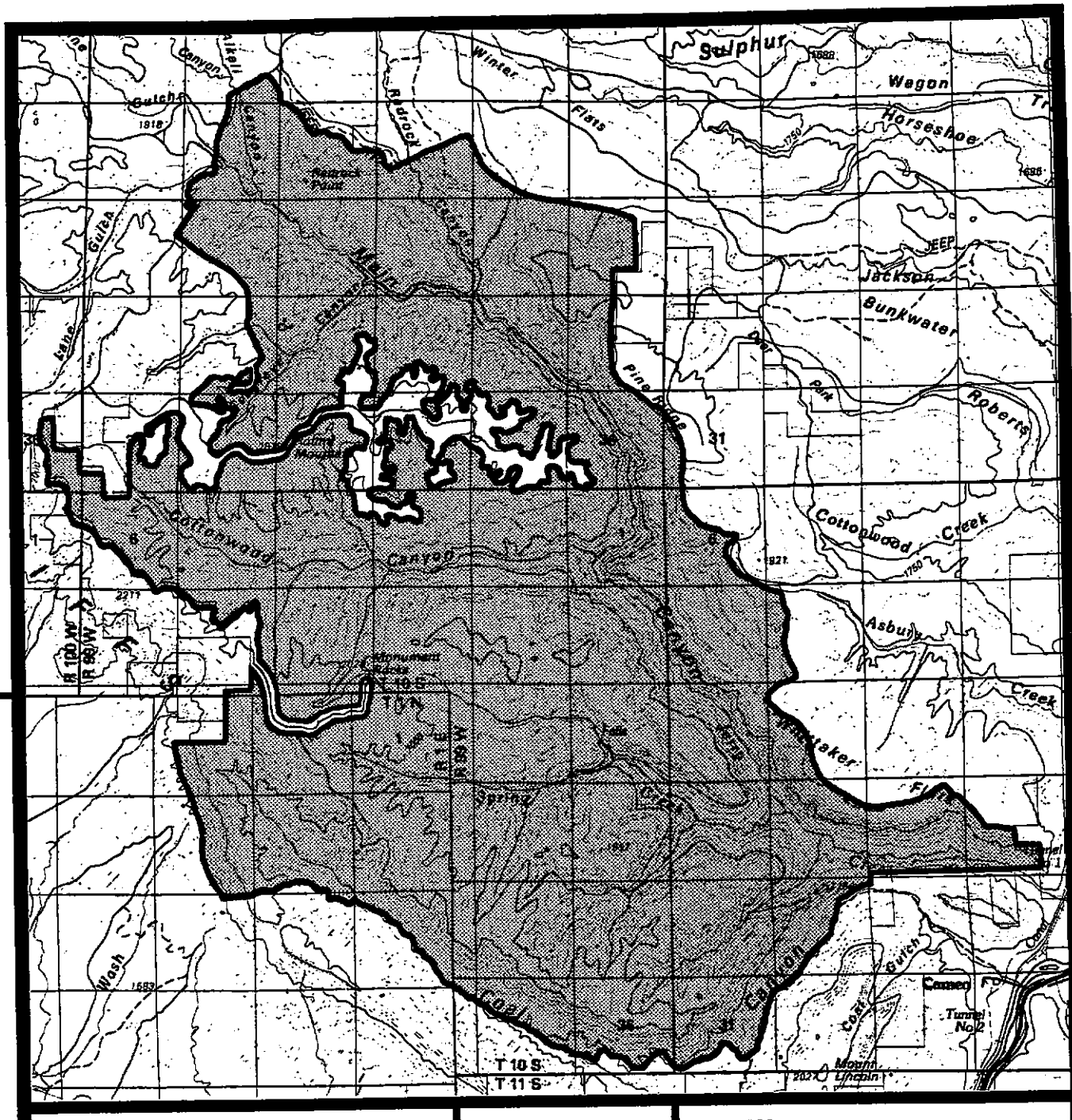
Designation of the Demaree Canyon WSA could result in a loss of potential gas production of about $500,000 in gas sales per year representing about $75,000 in federal royalty revenue and about 4 local jobs. The 2 existing post-FLPMA oil and gas leases would not be developed. Designation of Demaree Canyon WSA would prevent new coal leasing adjacent to existing leases. This could prevent logical expansion of coal lease tracts.

Summary of WSA Specific Public Comments

Public involvement has occurred throughout the wilderness review process. Comments received during the inventory process and early stages of the EIS were used to develop issues and alternatives for analysis.

During the formal review of the Draft EIS, a total of 33 comments were received specific to the Demaree Canyon WSA. Of these, 11 comments were received during the public hearings. All of the comments favored wilderness designation except for one. That one opposing comment was from an oil company favoring having no lands closed to leasing. Many of the comments received favoring wilderness designation for this WSA were very general. Several commenters said that designation of the WSA would preserve a part of the Book Cliffs region.

Although solicited, no comments specific to Demaree Canyon WSA were received from any federal, state or local agency.



RECOMMENDED FOR WILDERNESS (NONE)

RECOMMENDED FOR NONWILDERNESS

LAND OUTSIDE WSA RECOMMENDED FOR WILDERNESS.

SPLIT ESTATE (NONE)

STATE (NONE)

PRIVATE (NONE WITHIN THE WSA)

SCALE 1:100000

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Little Book Cliffs WSA
Proposal
CO-070-066

January 1991

LITTLE BOOK CLIFFS

WILDERNESS STUDY AREA

The Study Area -- 26,525 acres

The Little Book Cliffs Wilderness Study Area (CO-070-066) is located in Mesa County, Colorado, approximately 10 miles northeast of Grand Junction. The WSA contains 26,525 acres of public land administered by BLM. (See Table 1) There are no private inholdings in the WSA. The area is part of the Book Cliffs, a prominent line of cliffs extending from Grand Junction, Colorado to Price, Utah. The area is bounded by roads, a powerline right-of-way, private property, a chaining and other human imprints. Two miles of oil and gas roads have been built inside the WSA to support pre-FLPMA leases having valid existing rights. Five gas wells have been drilled near the WSA boundaries. The WSA is shown on the map.

The WSA is a gently upward sloping plateau dissected by four major canyon systems. (See Photo 1) The canyons are characterized by steep cliff walls up to 1,000 feet high. The base of the Book Cliffs define part of the WSAs southern boundary. Vegetation is scattered pinyon-juniper on the canyon slopes and ridges. (See Photo 2) Sagebrush, saltbush, and rabbitbrush is found in the canyon bottoms.

The WSA was studied under section 603 of the Federal Land Policy and Management Act (FLPMA) and was included in the Grand Junction Resource Management Plan and Environmental Impact Statement (EIS) published in November, 1985. Two alternatives were analyzed in this EIS: all wilderness and no wilderness. The no wilderness alternative (26,525 acres) is the recommendation of this report.

Recommendation and Rationale

0 acres recommended for wilderness

26,525 acres recommended for nonwilderness

The recommendation is to not designate the Little Book Cliffs WSA as wilderness and to release the area for uses other than wilderness. The all wilderness alternative is the environmentally preferable alternative since its implementation would result in the least change to the natural environment over the long term.

The primary reason this WSA is not being recommended for wilderness is to maintain the potential for development of high mineral values. The Little Book Cliffs WSA has been placed in the high development potential category for oil and gas because the area is prospectively valuable, has large known geologic structures (KGSs) of producing oil and gas fields surrounding it, is in the vicinity of producible oil and gas wells, and is likely to be involved in oil and gas development. The WSA also lies within the Book Cliffs coal field and is estimated to contain 174 million tons of recoverable coal.

As of October 1990 there were 25 oil and gas leases and 1,934 acres in three coal leases all dating from before the passage of the Federal Land Policy and Management Act of 1976. Pre-FLPMA leases are not subject to the regulations created by FLPMA and therefore lease holders are allowed to develop their leases including the construction of access roads, drill pads, and pipeline gathering systems even if they impair wilderness values. (See Photo 3) These 25 pre-FLPMA oil and gas leases comprise 11,320 acres or 43 percent of the WSA. The leases are held by production which means that the lease will remain in effect until all wells on or for the benefit of the lease are no longer capable of production in paying quantities. There is also 1 post-FLPMA oil and gas lease within the WSA (1,460 acres, 6 percent of the WSA).

Of the five wells drilled within the WSA, three have been plugged and abandoned as dry holes, one has unknown production potential and is temporarily abandoned awaiting a market for the gas and one is shut-in with an initial potential flow of 55,000 cubic feet of gas per day. Approximately 20 wells are located within a mile of the WSA. Most of them are located to the north of the WSA and are currently shut-in. Most have a potential production in the range

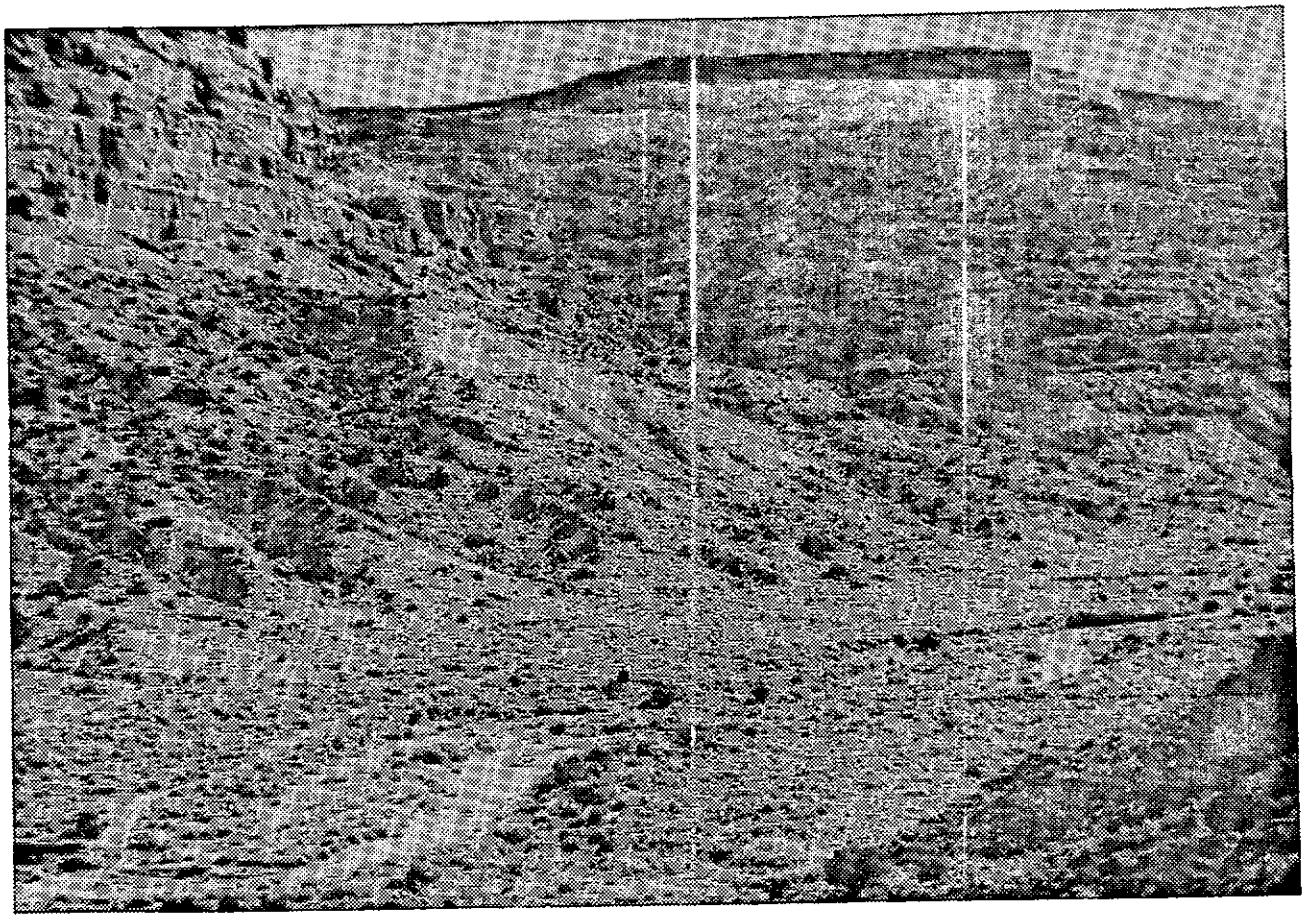


Photo 1. Little Book Cliffs WSA. Main Canyon is one of four major canyons in the WSA.

of 50,000 to 100,000 cubic feet of gas per day. Most of the wells southwest of the WSA have been plugged and abandoned as dry holes.

The WSA contains 1,934 acres in three pre-FLPMA coal leases along the southern boundary. The overburden thickness makes underground mining the most feasible recovery method. Historically, coal mining has occurred all along the Book Cliffs within a mile of the WSA boundary. The Cameo Mine portal site and loadout facility is located near the eastern edge of the WSA.

The 25 pre-FLPMA oil and gas leases and three pre-FLPMA coal leases would be allowed to be developed even if the area is designated wilderness. It is projected that development of the 25 oil and gas leases would involve an estimated 8 new wells, 8 miles of roads and 6 miles of new pipeline over 20 years with a disturbance of 61 acres. It is projected that the three pre-FLPMA coal leases covering 1,934 acres of the WSA would be developed using underground mining techniques over 20 years. Although surface facilities would be outside the WSA, coal development would include a mine refuse disposal site, upgrading of 6 miles of WSA boundary road, drilling of 4 exploration holes, and construction of two ventilation shafts and one half mile of road (overall disturbance of 31 acres).

Release of the Little Book Cliffs WSA from further wilderness review would allow a potential production range from 250,000 to 1,000,000 cubic feet of gas per day during the next 20 years. Coal production from new leasing after release from wilderness review would increase from 14 million tons to 84 million tons over 40 years.

Wilderness values are not manageable on about 11,800 acres of this WSA due to pre-FLPMA leases. Oil, gas and coal development from existing pre-FLPMA leases would result in the loss of wilderness characteristics throughout the WSA.

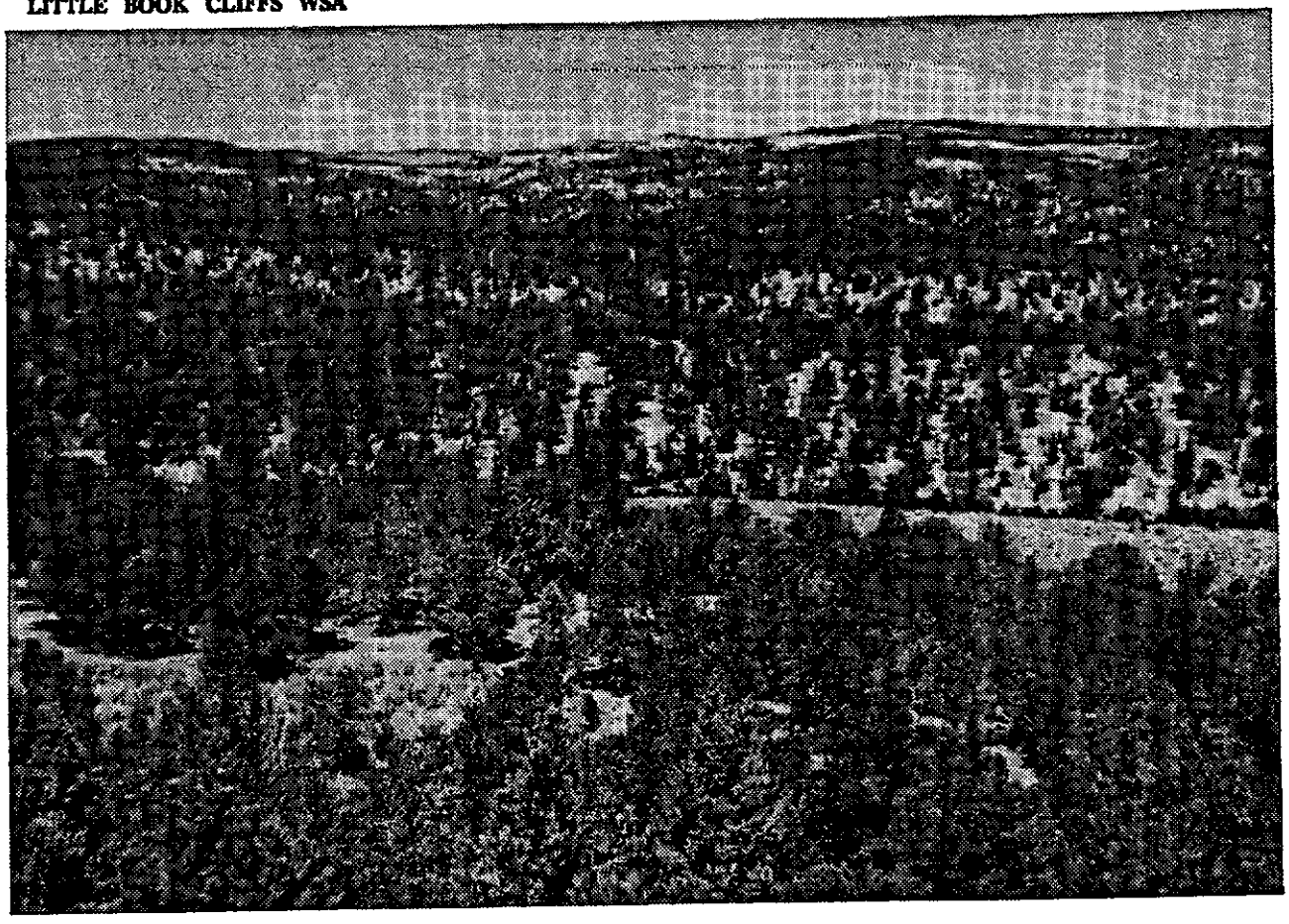


Photo 2. Little Book Cliffs WSA. Rolling hills and pinyon-juniper woodland characterize upper Cottonwood Canyon.

Projected development of 25 pre-FLPMA oil and gas leases and three pre-FLPMA coal lease would result in a total surface disturbance of 92 acres and create sights and sounds impacts on 4,320 acres. This oil and gas activity would disturb naturalness and outstanding opportunities for solitude on scattered rectangular and linear tracts (roads) primarily in canyon bottoms and along ridge tops. The widespread network of these impacts would result in a loss of wilderness characteristics on about 11,800 acres. The remaining 14,700 acres (55 percent of the WSA), primarily in the southern half of the WSA, would be manageable as wilderness.

The WSA's wilderness character has been modified since qualifying as a WSA in 1980. Five wells (one has been reclaimed) and approximately two miles of new roads are now part of human imprints in the area. A 40-foot cut was made through a low ridge between Main and Coal Canyons as part of oil and gas road construction. This cut is visible for approximately one-half mile. Opportunities to reclaim these imprints cannot be properly assessed until development, production and lease relinquishment occur.

Outstanding opportunities for solitude, except in the area of oil and gas wells, access roads and related activities, can be found in the WSA because of its rolling topography in the upland area, canyon systems and dense pinyon-juniper woodlands. The WSA's size, topographic diversity, scenic beauty, the presence of a wild horse herd, and numerous canyon systems all create outstanding opportunities for horseback riding, hiking, backpacking, photography, scenic viewing and viewing of wild horses. (See Photo 4) Oil and gas activities do occasionally interrupt these opportunities. Several special features are present in the WSA; the prominent one is the presence of 65-125 wild horses.

Table 1 - Land Status and Acreage Summary of the Study Area

	Acres
Within Wilderness Study Area	
BLM (surface and subsurface)	26,525
Split estate (BLM surface only)	0
Inholdings (State, Private)	0
Total	26,525
Within the Recommended Wilderness Boundary	
BLM (within WSA)	0
BLM (outside WSA)	0
Split Estate (within WSA)	0
Total BLM Land Recommended for Wilderness	0
Inholdings (State, Private)	0
Within the Area Not Recommended for Wilderness	
BLM	26,525
Split Estate	0
Total BLM Land Not Recommended for Wilderness	26,525
Inholdings (State, Private)	0

Criteria Considered in Developing the Wilderness Recommendations

Wilderness Characteristics

Naturalness

The Little Book Cliffs WSA is characterized by a gently sloping plateau dissected by four major canyon sytems. Part of the southern edge of the WSA is the 2,000 foot high face of the Book Cliffs, which is an abrupt topographic break between the WSA and the Grand Valley. Pinyon-juniper woodland is the dominant vegetation in the upland area while big sagebrush, rabbitbrush and fourwing saltbush are the dominant vegetation in the canyons.

Minor human imprints recorded during the 1979 inventory included several short sections of fenceline and two trails in the canyon bottoms, and several trails, a corral and a fenceline in the upland area. In 1979, all trails were unconstructed and unmaintained. Since that time, oil and gas activity, BLM administrative use for wild horse management (fence maintenance), and heavy OHV use in Main Canyon have created the appearance of a "road" in this Canyon bottom. With the exception of the trail in Main Canyon, these imprints are well screened and scattered throughout the WSA giving the WSA the appearance of being affected primarily by the forces of nature.

During interim wilderness management, five wells have been drilled in the WSA on pre-FLPMA leases. One has been rehabilitated. The remaining

four pads detract from the naturalness of the WSA. The two miles of oil and gas roads in the WSA are approximatly 12 to 15 feet wide. A 40-foot cut, made through a low ridge between Main and Coal Canyons as part of an oil and gas road, detracts from the naturalness of the WSA in this area (visible for one-half mile up and down the canyons).

Solitude

Outstanding opportunities for solitude occur throughout that portion of the WSA (about 25,000 acres) not currently impacted by oil and gas development. The WSA's four major canyons and many side canyons provide visitors with many opportunities to disperse. The gentle twisting configuration of the canyons limits the views within the canyons, increasing the feeling of solitude. The rolling topography of the upland areas provides for outstanding opportunities for solitude because of its effective screening. The upland topography is easily traveled which allows for easy dispersion of visitors. In addition, the dense pinyon-juniper woodland in the higher part of the WSA provides effective screening. Oil and gas activities associated with 5 wells and 2 miles of oil and gas roads occasionally detract from these feelings of solitude.

Primitive and Unconfined Recreation

Outstanding opportunities for several types of primitive recreation exist within the Little Book Cliffs WSA. The WSA's size, topographic diversity, scenic beauty, the presence of the wild horse herd, and traversable canyon systems all create outstanding opportunities for horseback riding, hiking, backpacking, photography, scenic viewing, and viewing of wild horses. The outstanding scenic beauty in conjunction with the presence of the wild horse herd offers outstanding opportunities for photography and wild horse viewing. The ruggedness of the WSA provides the backpacker with a high degree of challenge. Oil and gas activities associated with 5 wells and 2 miles of oil and gas roads occasionally interrupt outstanding opportunitiess for primitive and unconfined recreation.

Special Features

Several special features characterize the WSA. The most prominent one is the presence of 65-125 wild horses; about two-thirds of the WSA overlaps the Little Book Cliffs Wild Horse Range. Cultural values present in the unit include archaeological sites (camps) and a historical trail. Two small natural bridges and other interesting geologic features are found in the unit. The WSA is in close proximity to Grand Junction, Colorado.

Diversity in the National Wilderness Preservation System

Assessing the diversity of natural systems and features as represented by ecosystems

Wilderness designation of this WSA would not add a new ecosystem and landform to the National Wilderness Presevation System. This WSA is in the Colorado Plateau Province (Bailey-Kuchler classification system) and contains the pinyon-juniper woodland. This ecosystem is currently represented by only one wilderness area in Colorado and 11 in the National Wilderness Preservation System. Although there are 17 other WSAs representing this ecotype, Little Book Cliffs WSA is only 1 of 2 WSAs in the Book Cliffs in Colorado, neither of which are recommended for wildernesss designation. However, there are 8 WSAs in the Book Cliffs in Utah. Two of these Utah WSAs are recommended for wilderness. (See Table 2)

Table 2 - Ecosystem Representation

Bailey-Kuchler Classification Province/Potential Natural Vegetation	NWPS Areas areas	NWPS Areas acres	Other BLM Studies areas	Other BLM Studies acres
Nationwide				
Colorado Plateau Province				
Pinyon-Juniper Woodland	11	1,401,745	85	2,142,602
Colorado				
Colorado Plateau Province				
Pinyon-Juniper Woodland	1	8,105	17	293,837

Expanding the opportunities for solitude or primitive recreation within a day's driving time (five hours) of major population centers

The Little Book Cliffs WSA is within a five hour drive of six major population centers and adjacent to Grand Junction (85,000 residents), the largest metropolitan area on the western slope of Colorado. Table 3 summarizes the number and acreage of designated wilderness areas and other BLM wilderness study areas within a five hour drive of these population centers.

Table 3 - Wilderness Opportunities for Residents of Major Population Centers

Population Center	NWPS Area areas	NWPS Area acres	Other BLM Studies areas	Other BLM Studies acres
Denver	20	1,728,410	21	372,010
Boulder	20	1,728,410	21	372,010
Colorado Springs	19	1,845,350	19	336,925
Ft. Collins	20	1,598,113	14	150,539
Salt Lake City/Ogden	11	685,088	42	1,826,904
Provo/Orem	12	730,088	52	2,307,031

Balancing the geographic distribution of wilderness areas

The Little Book Cliffs WSA would contribute to balancing the geographic distribution of areas within the National Wilderness Preservation System in west-central Colorado. The nearest designated wilderness areas are about 3 to 4 hours from the Little Book Cliffs. These include the Black Canyon of the Gunnison (11,180 acres), and the Flat Tops Wilderness Area (235,035 acres). The Black Ridge Canyons WSAs (73,937 acres), the Demaree Canyon WSA (21,050 acres), and the Westwater Canyon WSA (31,160 acres) in Utah are all within one hour

Photo 3. Little Book Cliffs WSA. This 40-foot cut through a ridge between Coal and Main Canyons is for road access to a pre-FLPMA oil and gas lease.

of the Little Book Cliffs WSA. Only the Black Ridge Canyons WSAs and the Westwater Canyon WSA are recommended for wilderness.

MANAGEABILITY

A little more than half or approximatly 14,700 acres of the Little Book Cliffs WSA could be managed to preserve wilderness values. However, the remainder of the WSA (about 11,800 acres) would be manageable with some loss of wilderness characteristics in the short term. Projected development of 25 pre-FLPMA oil and gas leases and 3 pre-FLPMA coal leases would impact wilderness values on about 11,800 acres of the WSA in the northern one-half of the WSA. See the *Recommendation and Rationale* section.

ENERGY AND MINERAL RESOURCE Values

Mineral evaluations of the WSA were prepared in 1984 by BLM in a Geology, Energy and Minerals, (GEM) report titled *Geology and Mineral Resource Potential of the Little Book Cliffs WSA* and in 1990 by the U.S. Geological Survey and the U.S. Bureau of Mines in their report *Mineral Summaries. BLM, Wilderness Study Areas in Colorado.*

The WSA has been placed in a high development potential category for oil and gas because it is near known geologic structures (known to have production potential), is in the vicinity of producing wells, and is likely to be involved in oil and gas development activities. Currently, there are 25 pre-FLPMA oil and gas leases and 1 post-FLPMA oil and gas lease in the WSA. If the 25 pre-FLPMA leases, 1 post-FLPMA lease and future leasing of 13,725 acres (10 of the 17 wells projected could produce gas) were developed, the WSA would be projected to produce 500,000 to 1,000,000 cubic feet of gas per day over 20 years.

The WSA lies within the Book Cliffs potential coal field. It is estimated that there are 174 million tons of recoverable coal in the entire WSA. The WSA

includes 1,934 acres in three pre-FLPMA coal leases along Coal Canyon. The Cameo Mine portal site and loadout facilities are located near the eastern edge of the WSA.

There are no known locatable minerals in this WSA. No mining claims have been filed.

Impacts on Resources

Table 4 summarizes the comparative impacts for the two alternatives considered in the Little Book Cliffs WSA.

Table 4 - Comparative Summary of the Impacts by Alternative

Impact Topics	Recommendation: No Wilderness Alternative	All Wilderness Alternative
Impacts on Wilderness Values	*Surface disturbance (192 acres total) and impacts from the sights and sounds (16,800 acres) from development of oil and gas and coal leases would result in the loss of wilderness characteristics throughout the entire WSA.*	*Wilderness designation would protect 14,711 acres (55 percent of the WSA), primarily in the southern half of the WSA. Anticipated surface disturbance and sights and sounds associated with energy development would result in the loss of wilderness characteristics in most of the remainder of the WSA (about 11,814 acres).*
Impacts on Oil and Gas Exploration and Development	*Based on projections, 10 wells in the WSA could produce between 500,000 to 1,000,000 cubic feet of gas per day during the next 20 years. These 10 wells represent 2 percent of the 570 wells projected to be drilled and producible and 1 percent of the production in the Grand Junction Resource Area in the next 20 years.*	*Pre-FLPMA leases on 43 percent of the WSA would be available for oil and gas development. Based on projections, 5 wells in the WSA would produce between 250,000 to 500,000 cubic feet of gas per day during the next 20 years. The opportunity to drill and produce gas from the remainder of the WSA would be foregone.*
Impacts on Coal Exploration and Development	*Development of existing pre-FLPMA and projected coal leasing would result in an estimated production of 84 million tons of coal over a 40-year period.*	*Development of existing pre-FLPMA coal leases would result in an estimated production of 14 million tons of coal over a 40-year period.*
Impacts on Wildlife Habitat and Population	*Surface disturbance would result in one-tenth of 1 percent loss in forage for big game. The sights and sounds associated with energy development on 13,000 acres would stress or impact 473 deer and should result in actual loss of about 120 animals (25%).*	*Wilderness designation would protect about 19,000 acres of the WSA's 22,643 acre critical deer winter range. Surface disturbance would result in one-tenth of 1 percent loss in forage for big game. The sights and sounds associated with energy development on 3,285 acres would stress or impact 118 deer and would result in actual loss of about 30 animals (25%).*

Table 4 - Comparative Summary of the Impacts by Alternative

Impact Topics	Recommendation: No Wilderness Alternative	All Wilderness Alternative
Impacts on Cultural Resources	*Cultural sites on 7,040 acres would continue to be vulnerable to vandalism and unauthorized collection. Data from cultural sites on 192 acres would be recovered or protected. Cultural sites on the remaining 19,293 acres are expected to remain largely undisturbed.*	*Data from cultural sites on 92 acres would be recovered or protected. Cultural resources on the remaining 26,433 acres would be protected.*
Impacts on Recreation and Off-Highway Vehicles	*Over 20 years, the existing predominantly natural settings that provide nonmotorized recreation would shift to a roaded setting connecting oil and gas and coal facilities. The WSA's natural and roadless character would be lost on 16,800 acres (64 percent of WSA). Annual nonmotorized (4,000 user days per year) and motorized recreation (800 user days per year) uses would be almost double in 10 years.*	*Over 20 years, the existing predominantly natural settings would shift to a more developed setting of roads, pipelines, and oil and gas and coal facilities. The WSA's natural and roadless character would be lost on 4,320 acres over 10 years. Nonmotorized recreation use would increase to about 6,750 user days per year. About 800 user days of off-highway vehicle use per year would be displaced.*

Local Social and Economic Considerations

Designation of the Little Book Cliffs WSA as wilderness would incrementally help to increase recreation use in the Grand Junction area. Greater public awareness of this WSA with its wild horse herd together with other newly designated wilderness areas would draw wilderness users from outside west-central Colorado. Increases in wilderness use would generate some increase in local income although not large.

Designation of the Little Book Cliffs WSA could result in a loss of potential gas production of about $600,000 in gas sales per year representing about $80,000 in federal royalty revenue and about 5 local jobs. The 1 existing post-FLPMA oil and gas leases would not be developed. Designation of Little Bookcliff WSA would prevent new coal leasing adjacent to existing leases. This could prevent logical expansion of coal lease tracts.

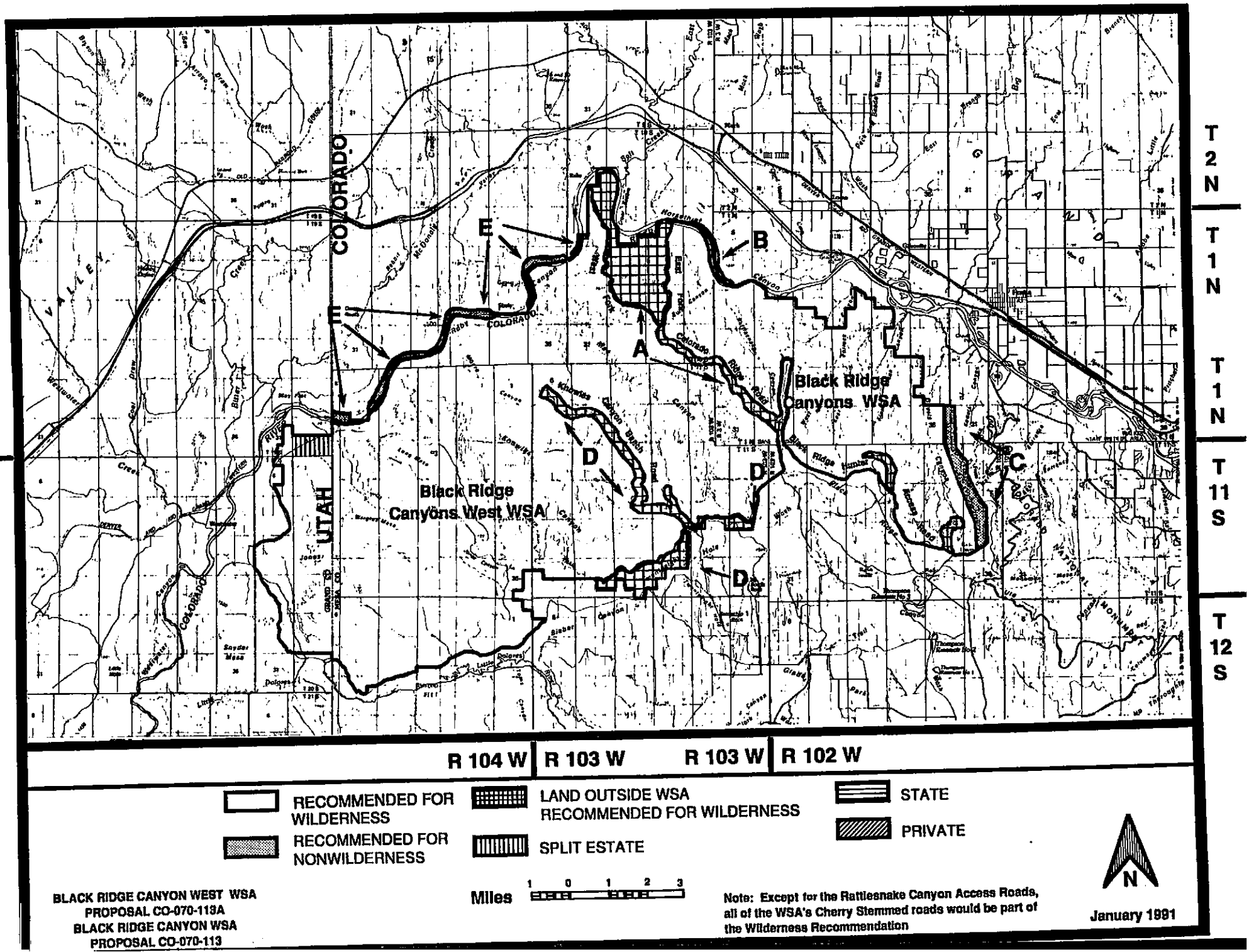
Summary of WSA Specific Public Comments

Public involvement has occurred throughout the wilderness review process. Comments received during the inventory process and early stages of the EIS were used to develop issues and alternatives for analysis.

During the formal review of the Draft EIS, a total of 37 comments were received specific to the Little Book Cliffs WSA. Of these, 12 comments were received during the public hearings. All of the comments favored wilderness designation except for one. That one opposing comment was from an oil company favoring having no lands closed to leasing. Many of the comments received favoring wilderness designation for this WSA cited the wild horse herd as being a major value of the WSA. Several commenters said that designation of the WSA would preserve a part of the Book Cliffs region.

The Mesa County Commission commented on the draft EIS stating that the proposed action (Little Book Cliffs WSA was not recommended for wilderness) " seemed reasonable and consistent" with the county's land use plans. Although solicited, no comments specific to Little Book Cliffs WSA were received from any federal, state or other local agency.

Photo 4. Little Book Cliffs WSA. The WSA is home to 100 wild horses as part of the Little Book Cliffs Wild Horse Range.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BLACK RIDGE CANYON WSA
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Note: Except for the Rattlesnake Canyon Access Roads, all of the WSA's Cherry Stemmed roads would be part of the Wilderness Recommendation
January 1991

BLACK RIDGE CANYONS
WILDERNESS STUDY AREA

The Study Area – 18,143 acres

The Black Ridge Canyons WSA (CO-070-113) is located in Mesa County 10 miles west of Grand Junction, Colorado. The WSA contains 18,143 acres of public lands administered by the BLM. (See Table 1). The area is bounded on the north by private lands, a road and the Colorado River shoreline; on the east by a powerline right-of-way and 8 communication sites; on the south by the Black Ridge Hunter Access Road and cherrystemmed roads to a uranium prospect, stock reservoirs and a trailhead for Rattlesnake Canyon; and on the west by the Colorado Ridge Road. The WSA is shown on the map. Four major canyons (500-600 feet deep) dissect this northern terminus of the Uncompahgre Plateau creating a spectacular setting. (See Photo 1) The Rattlesnake Canyon area has one of the largest concentration of natural arches in the World. (Arches National Park, 100 miles away, has the largest.) (See Photo 2) Pinyon- juniper woodland and sagebrush parks are the dominant vegetation in the upland area while the canyons have scattered pinyon-juniper woodland in the broad, open areas and grassy meadows and riparian vegetation along canyon bottoms.

The WSA was studied under Section 603 of the Federal Land Policy and Management Act (FLPMA) and was included in the Grand Junction Resource Management Plan and Environmental Impact Statement (EIS) published in November, 1985. Three alternatives were analyzed in the EIS; all wilderness, no wilderness, and partial wilderness (17,560 acres in the WSA and 2,035 acres outside the WSA would be designated as wilderness while 583 acres would be released for uses other than wilderness). Under the partial wilderness alternative, the area to be designated as wilderness would be combined with the contiguous Black Ridge Canyons West WSA to form one 73,937 acre wilderness. The Colorado Ridge Road separating the Black Ridge Canyons WSA from the Black Ridge Canyons West WSA would be closed. (See Map)

Recommendation and Rationale

19,595 acres recommended for wilderness

583 acres recommended for nonwilderness

It is recommended that 17,560 acres of the Black Ridge Canyons WSA be designated as wilderness and that this area would be combined with additional lands to be designated wilderness in the Black Ridge Canyons West WSA, and lands outside the WSAs boundaries to form one 73,937 acre wilderness area. This includes 17,560 acres inside the Black Ridge Canyons WSA and 2,035 acres (parcel A) outside the WSA boundary which would be added to the wilderness recommendation. It is also recommended that 583 acres in the Black Ridge Canyons WSA (parcels B and C) be released for uses other than wilderness. These WSAs are shown on the map. The environmentally preferable alternative would be to designate the entire 18,143 acres of the Black Ridge Canyons WSA as wilderness since this would result in the least change to the natural environment over the long term.

The 17,560 acre area which makes up most of the WSA and the 2,035 acre triangular parcel of land between the Black Ridge Canyons WSA and Black Ridge Canyons West WSA are recommended for wilderness designation because of their naturalness, outstanding scenery and landscape variety, spectacular geologic features, cultural and paleontological values, ecological diversity, and outstanding opportunities for solitude and primitive, unconfined recreation. Four major canyons and several minor canyons, 13 known rock arches and other geologic features, changing vegetation patterns and the shoreline of the Colorado River create a spectacular setting for the recreationist. (See Photo 3)

The 2,035 acre triangular parcel (parcel A) located between Black Ridge Canyons WSA, Black Ridge Canyons West WSA and the Colorado River did not qualify as a WSA because of its size and the roads on its east and west boundaries. However, the wilderness recommendation includes closure of these roads to all users except the livestock operator who owns a

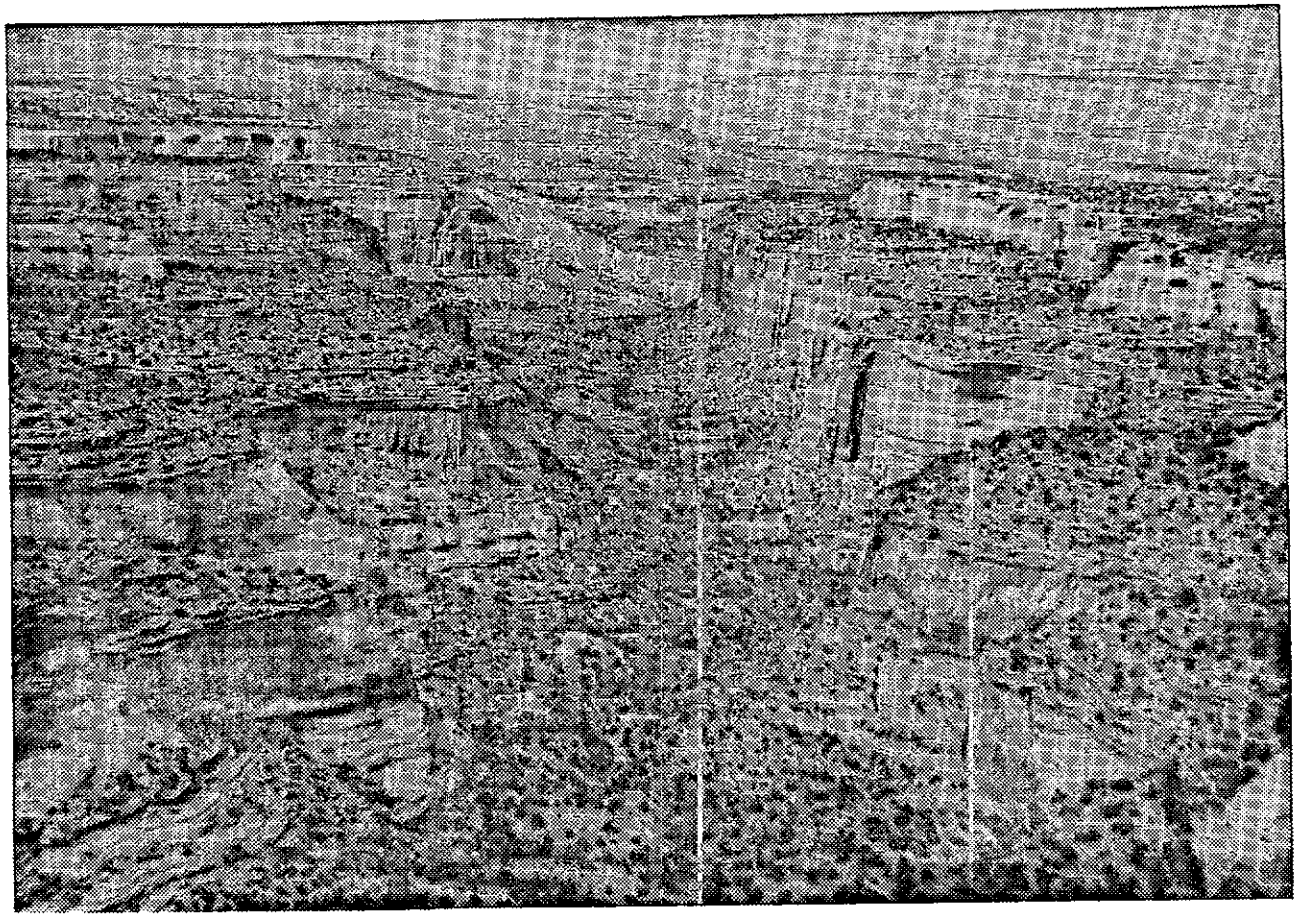


Photo 1. Black Ridge Canyons WSA. Devils Canyon is one of four major canyons in the WSA.

small parcel of private land along the river. Use by the operator is estimated to be three times a year for livestock operations. This very limited use of these roads was not considered a sufficient barrier to separate this triangular parcel from the contiguous lands recommended for wilderness.

Wilderness designation would provide for long-term protection of the area's outstanding opportunities for solitude and outstanding opportunities for hiking, backpacking, scenic viewing, nature study, and photography. The canyon systems provide the visitor with a variety of spectacular settings each with its own unique features. The ruggedness of the WSA adds to the recreational experience by providing a high degree of challenge and risk.

There are approximately 18 miles of deep canyons that can be hiked. (See Photo 4) Hikers can also use the benches on either side of the canyons or enjoy the upland mesas. One very popular hike is the day trip onto the bench above Rattlesnake Canyon to enjoy its 10 arches. Floatboating on the Colorado River provides outstanding views of the WSA as well as access into its canyons.

Wilderness designation would protect cultural resources in the WSA from vandalism and unauthorized collection. Cultural resources within one-half mile of cherrystemmed roads and trails would no longer be as vulnerable to destruction because roads and trails would be closed to recreational off-highway vehicle use. Similarily, wilderness designation would help protect fossils from vandalism and unauthorized collection but would preclude large scale scientific excavations.

Wilderness designation would preserve an area of valuable wildlife habitat. This area provides habitat for desert bighorn sheep, deer, mountain lion, and bald and golden eagles. There were about 60 desert bighorn sheep in the WSA in 1989.

The two parcels of land along the boundary of the WSA which are not recommended for wilderness are shown on the map. Of the 583 acres recommended for release for uses other than wilderness,

Photo 2 . Black Ridge Canyons WSA. Thirteen natural arches occur in the WSA.

410 acres (parcel C) comprise the utility corridor along the eastern edge of the WSA, and 173 acres (parcel B) comprise the rivershore on the north side of the Colorado River. The 173 acres of north rivershore in the WSA are not recommended for wilderness because the physical separation of these lands from the remainder of the WSA south of the river would make them difficult to manage as wilderness.

No major manageability problems or resource conflicts would result from wilderness designation. Wilderness designation would preclude excavations of large fossils but no large scale excavations are expected to be proposed. The WSA contains 386 unpatented mining claims inside the area recommended for wildernesss. There is a moderate resource potential for uranium occurrences in the Morrison Formation in the southeast portion of the WSA and a low resource potential elsewhere in the WSA according to the U.S. Geologic Survey (USGS) and the Bureau of Mines (BM) report. The development potential for the mining claims and the remainder of the WSA is projected to be low because most of the area has a low mineral resource potential. Much of the shoreline along the river is considered to have a high potential for placer deposits (US Geological Survey 1988). This area has no claims and is within a protective mineral withdrawal. It is considered to have a low development potential because there are no existing claims. There are no oil and gas leases in the area recommended for wilderness. The USGS and BM report for this area states that development potential for oil and gas is low based on the lack of a stratigraphic section favorable for oil and gas occurrence.

The area recommended for wilderness contains portions of 6 grazing allotments totalling 1,014 animal unit months (AUMs). Livestock operators use motorized vehicles 3 times a year to monitor and move livestock and to maintain reservoirs. Colorado Division of Wildlife may need administrative vehicle access on existing boundary roads in the northeast corner of the WSA to collect captured bighorn sheep during relocation operations.

Table 1 - Land Status and Acreage Summary of the Study Area

	Acres
Within Wilderness Study Area	
BLM (surface and subsurface) *	18,143
Split estate (BLM surface only)	0
Inholdings (State, Private)	0
Total	18,143
Within the Recommended Wilderness Boundary	
BLM (within WSA)	17,560
BLM (outside WSA)	2,035
Split Estate (within WSA)	0
Total BLM land recommended for wilderness	19,595
Inholdings (State, private)	0
Within the Area Not Recommended for Wilderness	
BLM	583
Split Estate	0
Total BLM Not Recommended for Wilderness	583
Inholdings (State, private)	0

**Seven acres underlying the Colorado River were subtracted from the total acre age in the WSA.*

Criteria Considered in Developing the Wilderness Recommendations

Wilderness Characteristics

Naturalness

The Black Ridge Canyons WSA is predominantly natural with negligible human imprints. The WSA is characterized by a high east-west ridgeline which is dissected by 4 major canyon systems that drain north into the Colorado River, the northern boundary of the WSA. These canyons cut deeply (500-600 feet) into the northern, sloping edge of the Uncompahgre Plateau creating extreme topographic variety between the mesa tops and the canyon bottoms. Each canyon is characterized by a deep main canyon with several short side canyons. There are approximately 18 miles of canyons in this WSA.

An outcropping of precambrian granite occurs in the bottom of each canyon. Spectacular waterfalls and pools occur in the granite due to its high degree of resistance to erosion. The canyons vary from narrow chasms to more open canyons which are up to half-a-mile wide. Numerous natural arches and natural amphitheatre-like alcoves occur in these canyons. Most of these arches are concentrated in Rattlesnake Canyon but arches also occur in the other canyons.

Situated between each of the canyons is a mesa sloping downward toward the Colorado River. The mesas vary topographically from large, relatively flat areas to mesas with highly dissected ravine systems with hillocks interspersed between drainages. These mesas terminate in cliffs above the Colorado River resulting from fault lines that roughly parallel the course of the river. A series of spectacular

curving strata on the northern boundary of the WSA results from this faulting.

Vegetation within the canyon floors consists of a combination of grassy meadows and sparse stands of pinyon-juniper woodland. Isolated stands of cottonwood trees and other riparian species such as willows, river birch and box elder can be found along the drainages. Vegetation on the mesas consists of moderately dense stands of pinyon-juniper woodland. Flatter areas with well-developed soils on the mesas typically consist of big sagebrush meadows with a scattering of grasses.

The canyon systems are primarily free of any human imprints and appear to affected by the forces of nature. There are two tar paper shacks in the canyons. They have minimal visibility and have little effect on the naturalness of the canyons. The imprints on the mesa include fence lines, stock reservoirs, several trails, and a corral. All of these imprints because of location and screening have a minor effect on the naturalness of the WSA. The mesas also appear to be affected primarily by the forces of nature.

The pinyon-juniper woodland, sagebrush and riparian vegetation types in this WSA provide for a variety of wildlife including deer, mountain lion, bighorn sheep and bald and golden eagles. Bald eagles winter in the area and are present every day from mid-December through mid-March along Horsethief Canyon. One pair of peregrine falcons nest to the east and one pair nest to the west of the WSA and undoubtedly hunt the WSA. Cottonwood trees that grow along the Colorado River are an important part of the raptor habitat. The Colorado River endemic fishes can all be found in the Colorado River at the north edge of the WSA. The Colorado River squawfish and the candidate species, razorback sucker, are the two species of primary concern. Golden eagles and canyon tree frogs are sensitive species that are found here. The bird species, Scott's oriole, gray vireo, and Cassins kingbird are also found here.

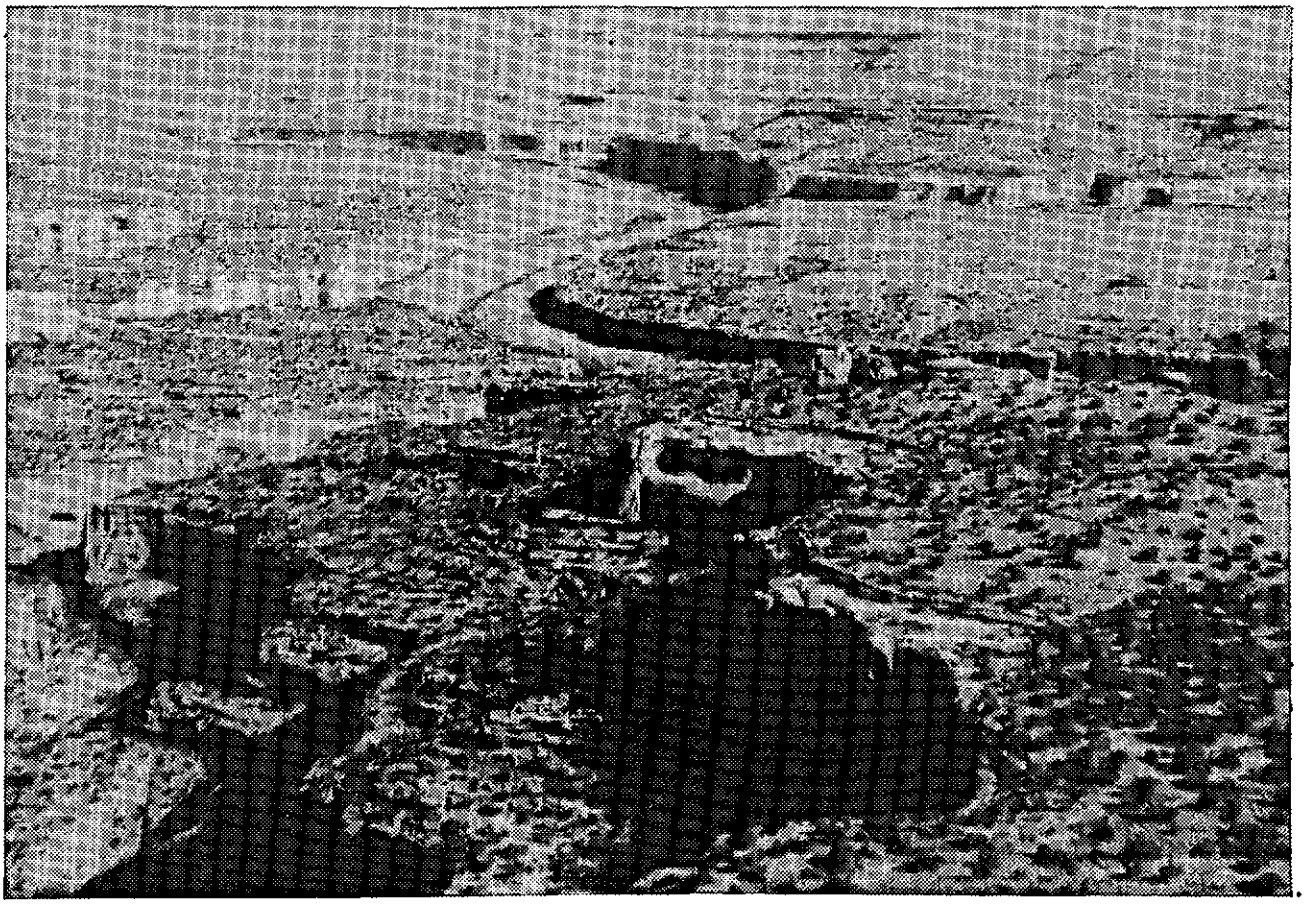


Photo 3. Black Ridge Canyons WSA. Lower Rattlesnake Canyon with Colorado River in background.

Solitude

The Black Ridge Canyons WSA provides outstanding opportunities for solitude. The large number of canyon systems allow visitors to disperse throughout the WSA without concentrating people into certain preferred settings. The many side canyons and amphitheatre-like alcoves allow visitors to isolate themselves from the main canyons. Opportunities for solitude within a single canyon are further accentuated by isolation provided by the benches at various levels above the canyons. The relatively broad expanses on the mesas offer additional outstanding solitude in that visitors can be widely dispersed. Excellent topographic and vegetative screening on the mesas and the large size and configuration of the WSA also enhance outstanding opportunities for solitude.

Motorized boating use along 2 miles of the Colorado River creates noise that primarily affect visitors along the river but has minimal effect on recreationists in the remainder of the WSA because of the muffling effect of the intervening topography.

Because of its small size, the 2,035 acre triangular parcel of land between the east and west forks of the Colorado Ridge Road does not possess outstanding opportunities for solitude. However, when considered with the adjacent WSAs, the area as an extension of these WSAs shares their outstanding opportunities for solitude.

Primitive and Unconfined Recreation

The Black Ridge Canyons WSA provides outstanding opportunities for primitive and unconfined recreation in close proximity to the Grand Junction area (population-85,000). The unit's outstanding scenery and landscape variety, interesting geologic features, 4 major canyons (18 miles total), the Colorado River and cultural and paleontological resources contribute to outstanding opportunities for primitive recreation in the WSA. Topographic diversity, unusual geologic features such as rock arches, spires and windows, and intermittent water courses all appeal to hikers. Outstanding opportunities for hiking are enhanced by the geologic features such as the 13 arches. Many visitors float the Colorado River to gain access into the canyons or for fishing. Other activities include picnicking, camping, viewing the unit's outstanding scenery, horseback riding, deer hunting, bird watching, and rockhounding.

Because of its small size, the 2,035 acre triangular parcel of land between the east and west forks of the Colorado Ridge Road does not possess outstanding opportunities for primitive and unconfined rereation. However, the area as an extension of the WSA shares these outstanding opportunities.

Special Features

The WSA possesses outstanding geological, paleontolgical, archaeological, and ecological values. Erosion has exposed sedimentary strata and a precambrian bedrock of schist, gneiss, and granite covering a period of geologic history dating back 600 million years. Dark precambrian schist, gneiss and granite which are laced with pegmatite dikes twist along the canyon floors. Thirteen arches, natural amphitheatres, various sized alcoves, sheer canyon walls, gigantic boulders and talus slopes all attest to the on-going forces of erosion working on the canyons and mesas.

The area also contains significant paleontolgical resources. There is a high potential for significant fossils such as dinosaurs to be found in the Morrison Formation outcrops in this WSA.

Evidence of habitation by the Desert Archaic, Fremont and Ute Indians occurs throughout the WSA and represents 10,000 years of history and prehistory. Sites include overhangs, rock art and open camps.

Bald eagles winter in the WSA and are present every day from mid-December through mid-March. Two pairs of peregrine falcons nest just outside the WSA and undoubtedly hunt the WSA.

The Colorado River which forms part of the northern boundary of the WSA has been recommended for scenic designation under the Wild and Scenic Rivers Act.

Diversity in the National Wilderness Preservation System

Assessing the diversity of natural systems and features as represented by ecosystems

Wilderness designation of this WSA would add an outstanding representative of the juniper-pinyon woodland of the Colorado Plateau Province to the National Wilderness Preservation System but would not add a new ecosystem or landform. This ecosystem is currently represented by only 1 area in Colorado and 11 in the National Wilderness Preservation. Although there are 17 other WSAs representing this ecosystem in Colorado, the Black Ridge Canyons WSA has become one of the most popular in the region because of its spectacular setting and concentration of arches. This information is summarized in Table 2.

Table 2 - Ecosystem Representation

Bailey-Kuchler Classification Province/Potential Natural Vegetation	NWPS Areas areas	NWPS Areas acres	Other BLM Studies areas	Other BLM Studies acres
Nationwide				
Colorado Plateau Province				
Juniper-Pinyon Woodland	11	1,401,745	85	2,142,602
Colorado				
Colorado Plateau Province				
Juniper-Pinyon Woodland	1	8,105	17	293,837

Expanding the opportunities for solitude or primitive recreation within a days driving time (five hours) of major population centers

The Black Ridge Canyons WSA is within a five hour drive of two major population centers and within one hour of Grand Junction, the largest metropolitan area on the western slope of Colorado, with a population of about 85,000 residents. Table 3 summarizes the number and acreage of designated areas and other BLM Study Areas within a five hour drive of these population centers.

Table 3 - Wilderness Opportunities for Residents of Major Population Centers

Population Center	NWPS Areas areas	NWPS Areas acres	Other BLM Studies areas	Other BLM Studies acres
Salt Lake City /Ogden	11	685,088	42	1,826,904
Provo/Orem	12	730,088	52	2,307,031

Balancing the geographic distribution of wilderness areas

The Black Ridge Canyons WSA would contribute to balancing the geographic distribution of areas within the National Wilderness Preservation System. The nearest designated wilderness areas are about two hours from the Black Ridge Canyons WSA. The Sewemup Mesa WSA (18,835 acres) and the Dominguez Canyon WSA (73,888 acres) are both recommended for wilderness and are both within an hour and 30 minutes of the Black Ridge Canyons WSA.

MANAGEABILITY

The Black Ridge Canyons WSA can be managed to maintain wilderness values. There would only be some minor manageability problems as discussed under the *Recommendation and Rationale* section.

ENERGY AND MINERAL RESOURCE VALUES

The U.S. Geological Survey (USGS) prepared a mineral assessment of the Black Ridge Canyon WSA in 1988. There is a moderate resource potential for uranium occurrences in the Morrison Formation in the extreme southeastern corner of the WSA and a low resource potential in the remainder of the WSA. There are 386 existing claims in the WSA. All of these claims were filed in January of 1988. The development potential for the mining claims is projected to be low because most of the area has a low mineral resource potential.

An area along the south side of the Colorado River with high resource/low development potential for placer gold deposits is presently closed under a temporary withdrawal. The report *Mineral Summaries, BLM, Wilderness Study Areas in Colorado* (1990) by the USGS and U.S. Bureau of Mines stated that the gold values in most samples taken from these deposits were far below economic levels. The temporary mineral withdrawal is proposed for permanent withdrawal to protect the river's scenic and natural values. Since there are no existing claims within the high resource potential area and none may be filed, no development is projected.

There are no oil and gas leases in the Black Ridge Canyons WSA. The development potential for oil and gas is low based on the lack of a stratigraphic section favorable for oil and gas occurrence.

IMPACTS ON RESOURCES

Table 4 summarizes the comparative impacts for the three alternatives considered in this WSA.

Table 4 - Comparative Summary of the Impacts by Alternative

Impact Topics	Recommendation Combined WSAs	All Wilderness Alternative	No Wilderness Alternative
Impacts on Wilderness Values	*Wilderness designation would provide long term legislative protection on 18,545 acres. Wilderness values would not be protected on 1,050 acres subject to intermittent sights and sounds of motorized boating on 4 miles of the Colorado River (one-quarter mile influence zone) and in the 410-acre utility corridor.*	*Wilderness designation would provide long term legislative protection on 15,903 acres. Wilderness values would not be protected on 2,240 acres subject to intermittent sights and sounds of recreational off-highway vehicles on 10 miles of roads and motorized boating on 2 miles of the Colorado River.*	*Management of a portion of the WSA (17,733 acres) as Black Ridge Canyons Recreation Lands would maintain wilderness values in the canyons (about 12,000 acres). Off-highway vehicles traveling on 10 miles of roads and 1 mile of trail, and motorboats traveling on 2 miles of the Colorado River would impair wilderness values on about 2,560 acres over time. Wilderness values would be lost in the 410-acre utility corridor.*

Table 4 - Comparative Summary of the Impacts by Alternative (continued)

Impact Topics	Recommendation: Combined WSAs	All Wilderness Alternative	No Wilderness Alternative
Impacts on Paleontological Excavations and Study	*Wilderness designation would help protect fossils from vandalism and unauthorized collection but would preclude excavations of large fossils. Six nonimpairing excavations would add to the scientific knowledge of the area.*	*Wilderness designation would help protect fossils from vandalism and unauthorized collection but would preclude scientists from removing large fossils. Six nonimpairing excavations would add to the scientific knowledge of the area. Leaving10 miles of roads open to recreational off-highway vehicles would make fossils within one-half mile of these roads vulnerable to vandalism and unauthorized collection.*	*Allowing the six non-surface disturbing excavations would allow scientists to excavate small fossils known to occur in the area. Allowing the two large scale surface-disturbing excavations would allow scientists to remove large fossils. Recreational off-highway vehicles traveling on 10 miles of roads and 1 mile of trail would make fossils within one-half mile of these roads vulnerable to vandalism and unauthorized collection.*
Impacts on Wildlife Habitat and Populations	*Wilderness designation would protect 18,545 acres of wildlife habitat. Wildlife habitat would be degraded on 1,050 acres from the sights and sounds of motorized boats traveling on 4 miles of the Colorado River. However, no animals would be lost.*	*Wilderness designation would protect about 15,903 acres of wildlife habitat. Wildlife habitat would continue to be degraded on 2,240 acres from sights and sounds of recreational off-highway vehicles on 10 miles of roads and motorized boats on 2 miles of the Colorado River.*	*Management of the area as Recreation Lands would protect about 15,583 acres of wildlife habitat. Wildlife habitat would be degraded on 2,560 acres from the sights and sounds of motorized vehicles traveling on 10 miles of roads, 1 mile of trail and motor boats traveling on 2 miles of the Colorado River. However, no animals would be lost.*
Impacts on Cultural Resources	*Wilderness designation would protect cultural resources on about 19,000 acres of the Black Ridge Canyons WSA from vandalism and unauthorized collection. Data from cultural sites on 3 acres would be recovered or protected.*	*Cultural resources on 3,200 acres would be vulnerable to vandalism and unauthorized collection. Cultural resources on the remaining 14,943 acres would be protected.*	*Cultural sites on 3,840 acres would be vulnerable to vandalism and unauthorized collection. Data from cultural sites on 3 acres would be recovered or protected. Cultural resources on 14,303 acres would remain largely undisturbed.*

Table 4 - Comparative Summary of the Impacts by Alternative (continued)

Impact Topics	Recommendation: Combined WSAs	All Wilderness Alternative	No Wilderness Alternative
Impacts on Recreation and Off-Highway Vehicles	*Wilderness designation would maintain the natural and predominantly natural settings and nonmotorized recreation opportunities on 18,545 acres of the WSA but would not protect the natural settings and primitive recreation on 1,050 acres. The current nonmotorized use (3,500 user days per year) would increase to about 9,000 user days within 10 years (10 percent per year). Closing 10 miles of boundary roads and 1 mile of trail would displace about 700 user days of motorized recreation use.*	*Wilderness designation would maintain the natural and predominantly natural settings and nonmotorized recreation opportunities on 15,903 acres. Sights and sounds from motor vehicles and motorized boats would impair recreation values on 2,240 acres. Nonmotorized recreation would increase to 9,000 user days per year over 10 years. About 200 user days of nonmotorized recreation per year would be displaced.* *The motorized use (500 user days per year) on boundary roads would increase to about 1,100 user days over 10 years.*	*Natural settings and nonmotorized recreation would be protected on a total of 14,770 acres within the Recreation Lands. Natural settings and nonmotorized recreation would be lost on 2,560 acres by the sights and sounds of motorized vehicles traveling on 10 miles of boundary roads, 1 mile of trail, and 2 miles of the Colorado River. Nonmotorized recreation is projected to increase to 9,000 user days per year over 10 years. Motorized recreation (about 700 user days per year) is projected to increase to 1,500 user days per year over 10 years (7 percent per year).*
Impacts on Utility Rights-of-Way	*A small utility corridor between Fruita and Glade Park could provide utilities for Glade Park residents and an alternative route for the Fruita water line.*	*New utilities from the Fruita area to service Glade Park would have to be routed around the WSA and Colorado National Monument.*	*Providing a small utility corridor between Fruita and Glade Park could help provide utilities to the residents of Glade Park and an alternative route for the Fruita water line.*

Local Social and Economic Considerations

Designation of the Black Ridge Canyons WSA as wilderness would incrementally help to increase recreation use in the Grand Junction area. Greater public awareness of this WSA would also draw wilderness users from outside west central Colorado. Wilderness use after designation is projected to grow from 3,500 to 9,000 visitor days within 10 years. This increase would generate some increase in local income and, although not large, could be noticed in the the Grand Junction area. These economic benefits to the Grand Junction area could be more noticeable if all areas proposed for wilderness in west central Colorado became wilderness.

Designation of most of the Black Ridge Canyons WSA as wilderness would probably result in the loss of a few unpatented mining claims in the WSA. Very few claims are projected to have any assessment work done on them. See the *Energy and Mineral Resource Values* section.

Summary of WSA Specific Public Comments

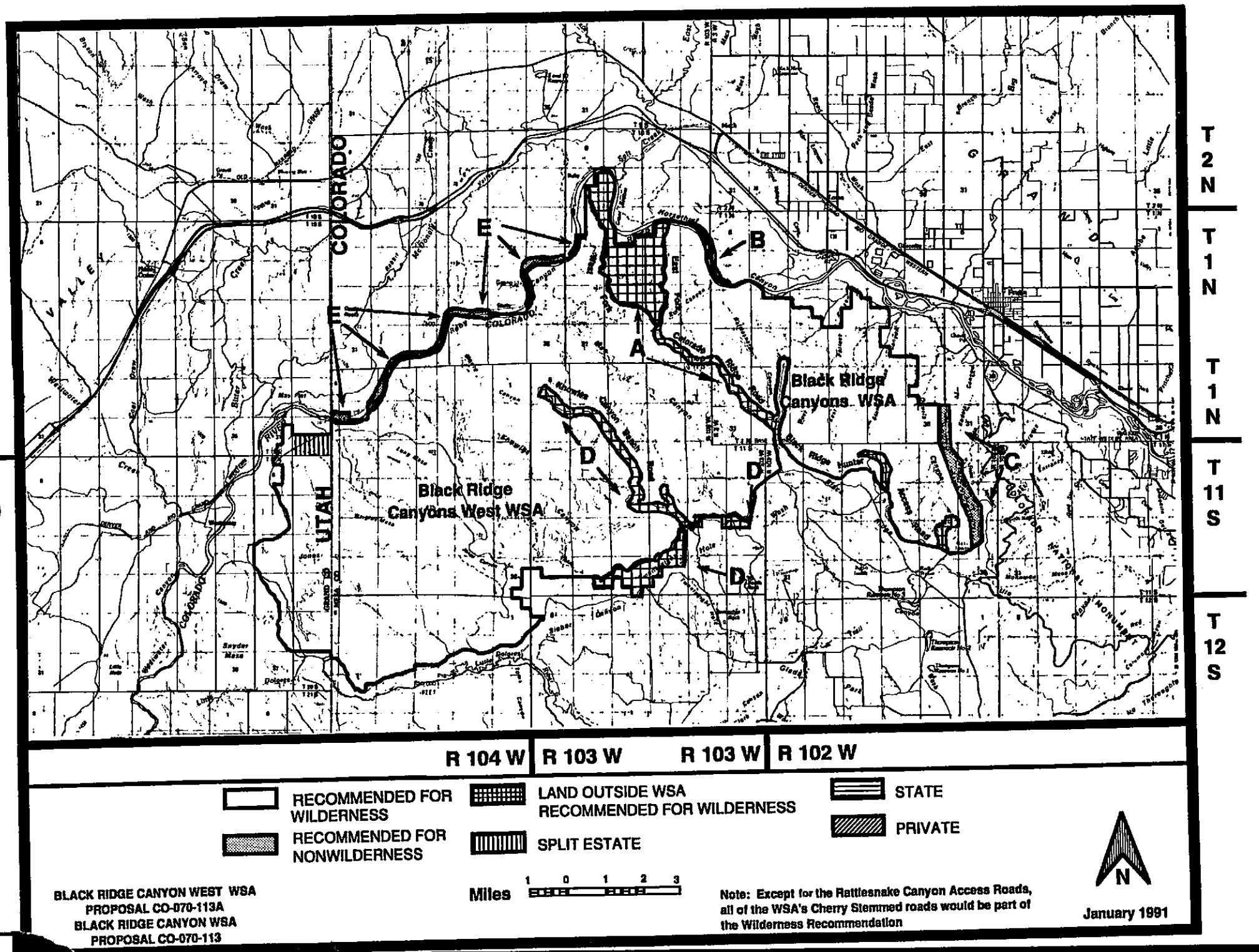
Public involvement has occurred throughout the wilderness review process. Comments received during the inventory process and early stages of the EIS were used to develop issues and alternatives for analysis.

During the formal review of the Draft EIS, a total of 51 comments were received specific to the Black Ridge Canyons WSA. Twenty of these comments were oral testimony received at public hearings. There were 48 comments in favor of wilderness designation and 3 comments against wildernesss designation. Many of the commenters had visited this WSA and discussed its special features and outstanding opportunities for solitude and primitive and unconfined recreation. Some commenters stated that the scenic, geologic, recreational and archaeologic resources of this unit would significantly enhance the National Wilderness Preservation System.

Two commenters opposing wilderness designation wanted trails in the WSA and roads on the boundary of the WSA to be left open to maintain good motorized access for rockhounding. One commenter opposed wilderness for the WSA because "it was too close to town."

The Mesa County Commission commented on the Draft EIS, stating that the proposed action to designate the Black Ridge Canyons WSA as wilderness "seemed reasonable and consistent" with the county's land use plans. Comments received from the state of Colorado's Department of Natural Resources supported the Draft EIS on wilderness recommendations but did not specifically reference the Black Ridge Canyons WSA. No other federal, state or local agency commented on the Draft EIS.

Photo 4. Black Ridge Canyons WSA. Rattlesnke Canyon provides a spectacular setting for hiking.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Note: Except for the Rattlesnake Canyon Access Roads, all of the WSA's Cherry Stemmed roads would be part of the Wilderness Recommendation
January 1991

BLACK RIDGE CANYONS WEST

WILDERNESS STUDY AREA

The Study Area -- 54,265 acres

The Black Ridge Canyons West WSA (CO-070-113A, UT-060-116/117) is located in Mesa County, Colorado, and Grand County, Utah. The WSA is located 15 miles west of Grand Junction, Colorado and contains 54,265 acres of public lands administered by the BLM. (See Table 1) The area is bounded on the north by private lands and the Colorado River shoreline, on the east by the Colorado Ridge Road, and on the south and west by boundary roads, the cherrystemmed Knowles Canyon bench road and private lands. The WSA is shown on the map. Three extensive canyon systems (almost 1,000 feet deep) dissect this northern terminus of the Uncompahgre Plateau creating a spectacular setting. (See Photo 1) Pinyon-juniper woodland and sagebrush parks are the dominant vegetation in the upland area while the canyons have scattered pinyon-juniper woodland in the broad, open areas and grassy meadows and riparian vegetation along canyon bottoms. (See Photo 2)

The WSA was studied under Section 603 of the Federal Land Policy and Management Act (FLPMA) and was included in the Grand Junction Resource Management Plan and Environmental Impact Statement (EIS) published in November, 1985. Three alternatives were analyzed in the EIS; all wilderness, no wilderness, and partial wilderness (53,617 acres in the WSA and 725 acres outside the WSA would be designated as wilderness while 648 acres would be released for uses other than wilderness). Under the partial wilderness alternative, the area to be designated as wilderness would be combined with the contiguous Black Ridge Canyons WSA to form one 73,937 acre wilderness. The Colorado Ridge Road separating the Black Ridge Canyons West WSA from the Black Ridge Canyons WSA would be closed. (See Map)

Recommendation and Rationale

54,342 acres recommended for wilderness

648 acres recommended for nonwilderness

It is recommended that 54,342 acres of the Black Ridge Canyons West WSA be designated as wilderness and that this area would be combined with additional lands to be designated wilderness from Black Ridge Canyons WSA, and from outside the WSA's boundaries to form one 73,937 acre wilderness area. This includes 53,617 acres inside the Black Ridge Canyons West WSA and 725 acres (parcel D) from outside the WSA boundary which would be added to the wilderness recommendation. It is also recommended that 648 acres (parcel E) on the north side of the Black Ridge Canyons West WSA be released for uses other than wilderness. These WSAs are shown on the map. The environmentally preferable alternative would be to designate the entire 54,265 acres of the Black Ridge Canyons West WSA as wilderness since this would result in the least change to the natural environment over the long term.

The 725 acre parcel (parcel D) contiguous to the southeastern boundary of the Black Ridge Canyons West WSA did not qualify initially as part of the WSA because of a road separating it from the WSA. However, the wilderness recommendation includes closure and rehabilitation of this road. Therefore, this parcel was recommended for wilderness as part of the contiguous WSA recommended for wilderness.

The 53,617 acre area which makes up most of the WSA and the 725 acre contiguous parcel of land on the southern boundary of the WSA are recommended for wilderness designation because of their naturalness, outstanding scenery and landscape variety, spectacular geologic features, cultural and paleontological values, ecological diversity, and outstanding opportunities for solitude and primitive and unconfined recreation. Three extensive canyon systems and several minor canyons, seven known rock arches and other geologic features, changing vegetation patterns and the shoreline of the Colorado

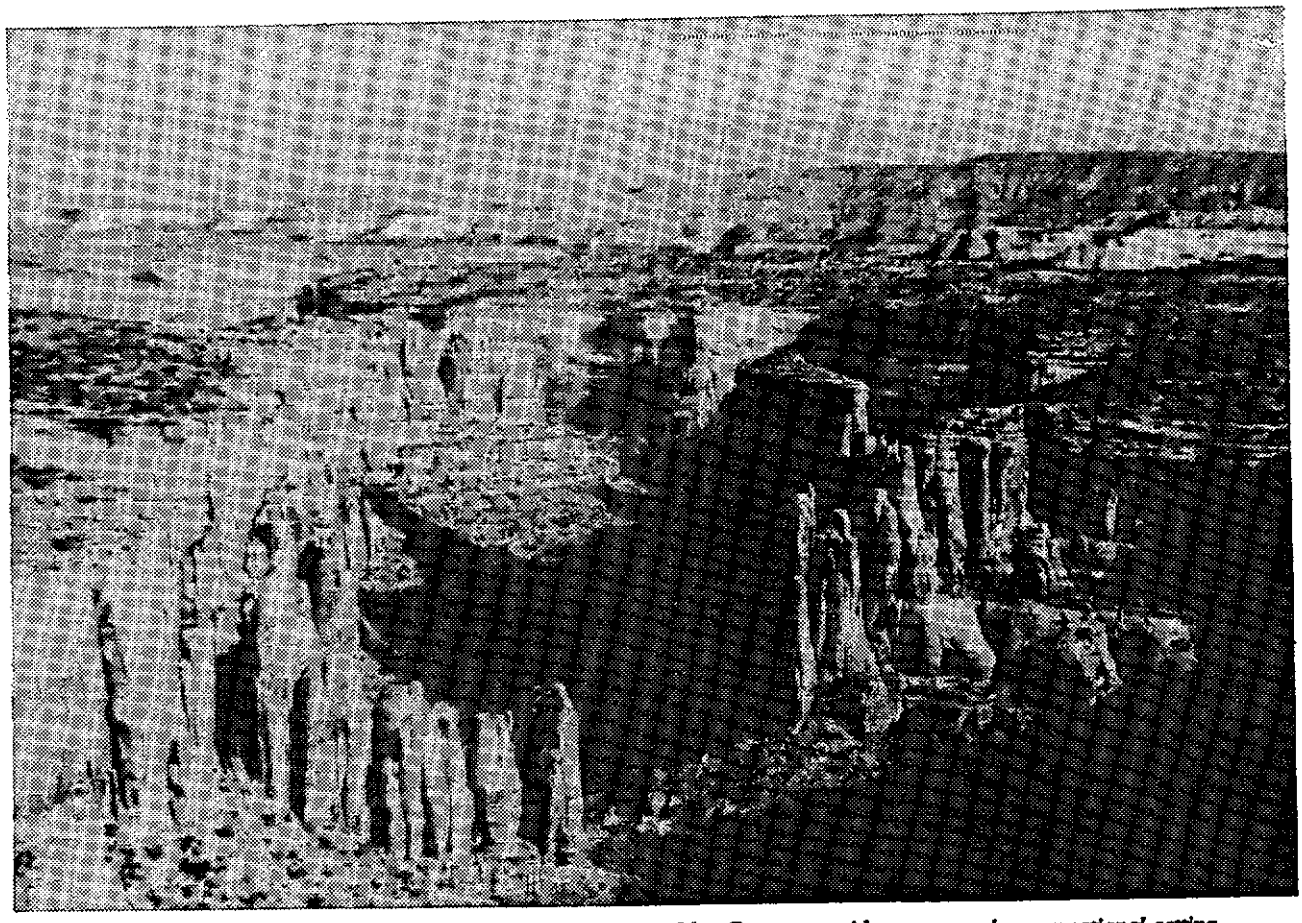


Photo 1. Black Ridge Canyons West. Erosional features in Mee Canyon provide a spectacular recreational setting.

River create a spectacular setting for the recreationist. (See Photo 3)

Wilderness designation would provide for long-term protection of the area's outstanding opportunities for solitude and outstanding opportunities for hiking, backpacking, scenic viewing, nature study, and photography. The canyon systems provide the visitor with a variety of spectacular settings each with its unique features. The ruggedness of the WSA adds to the recreational experience by providing a high degree of challenge and risk.

There are approximately 59 miles of deep canyons that can be hiked. (See Photo 5) Hikers can also use the benches on either side of the canyons or enjoy the upland mesas. One very popular hike is the trip into Mee Canyon to view a huge cave created by the meandering stream. (See Photo 4) Floatboating on the Colorado River provides outstanding views of the WSA as well as access into its canyons.

Wilderness designation would protect cultural resources in the WSA from vandalism and unauthorized collection. Cultural resources within one-half mile of cherrystemmed roads and trails would no longer be as vulnerable to destruction because roads and trails would be closed to recreational off-highway vehicle use. Similarily, wilderness designation would help protect fossils from vandalism and unauthorized collection but would also preclude large scale scientific excavations.

Wilderness designation would preserve an area of valuable wildlife habitat. This area provides habitat for desert bighorn sheep, deer, mountain lion, and bald and golden eagles. There were about 60 desert bighorn sheep in the WSA in 1989.

The four parcels of land (parcel E) along the northern boundary of the WSA which are not recommended for wilderness are shown on the map. These parcels, consisting of 648 acres on the north side of the Colorado River, are recommended for release for uses other than wilderness because

the physical separation of these lands from the remainder of the WSA south of the river would make them difficult to manage as wilderness.

No major manageability problems or resource conflicts would result from wilderness designation. Wilderness designation would preclude excavations of large fossils but no large scale excavations are expected to be proposed. The WSA contains 18 unpatented mining claims inside the area recommended for wilderness. According to the U.S. Geologic Survey (USGS) and the Bureau of Mines (BM) report, the development potential for these mining claims and for the remainder of the WSA is projected to be low because the area has a low mineral resource potential. There are no oil and gas leases in the area recommended for wilderness. The USGS and BM report for this area states that development potential for oil and gas is low based on the lack of a stratigraphic section favorable for oil and gas occurrence.

The area recommended for wilderness contains portions of 5 grazing allotments totalling 3,714 animal unit months (AUM). Livestock operators use motorized vehicles 5 times a year in the WSA to monitor and move livestock and maintain reservoirs.

Table 1 - Land Status and Acreage Summary of the Study Area

Within Wilderness Study Area	Colorado Acreage	Utah Acreage	Total Acreage
BLM (surface and subsurface) *	49,065	4,880	53,945
Split estate (BLM surface only)	0	320	320
Inholdings (State, Private)	0	0	0
Total	49,065	5,200	54,265
Within the Recommended Wilderness Boundary			
BLM (within WSA)	48,417	4,880	53,297
BLM (outside WSA)	725	0	725
Split Estate (within WSA)	0	320	320
Total BLM Land Recommended for Wilderness	49,142	5,200	54,342
Inholdings (State, private)	0	0	0
Within the Area Not Recommended for Wilderness			
BLM	648	0	648
Split Estate	0	0	0
Total BLM Not Recommended for Wilderness	648	0	648
Inholdings (State, private)	0	0	0

* Twenty-five acres underlying the Colorado River have been subtracted from the total acre count in the WSA.

Criteria Considered in Developing the Wilderness Recommendations

Wilderness Characteristics

Naturalness

The Black Ridge Canyons West WSA is predominantly natural with negligible human imprints. The WSA is characterized by a high east-west ridgeline which is dissected by 3 extensive canyon systems that drain north into the Colorado River, the northern boundary of the WSA. These canyons cut deeply (about 1,000 feet) into the northern, sloping edge of the Uncompahgre Plateau creating extreme topographic variety between the mesa tops and the canyon bottoms. Each canyon is characterized by a deep main canyon with several side canyons. There are approximately 59 miles of canyons in this WSA.

An outcropping of precambrian granite occurs in the bottoms of each canyon. Spectacular waterfalls and pools occur in the granite due to its high degree of resistance to erosion. The canyons vary from narrow chasms to more open canyons which are up to half-a-mile wide. Natural arches and amphitheatre-like alcoves occur in these canyons.

Situated between each of the canyons is a mesa sloping downward toward the Colorado River. The mesas vary topographically from large, relatively flat to areas with highly dissected ravine systems with hillocks interspersed between drainages. These mesas terminate in cliffs above the Colorado River resulting from fault lines that roughly parallel the course of the river.

Vegetation within the canyon bottoms consists of a combination of grassy meadows and sparse stands of pinyon-juniper woodland. Isolated stands of cottonwood trees and other riparian species such as willows, river birch and box elder can be found along the drainages. Vegetation on the mesas consists of moderately dense stands of pinyon-juniper woodland. Flatter areas with well-developed soils on the mesas typically consist of big sagebrush meadows with a scattering of grasses.

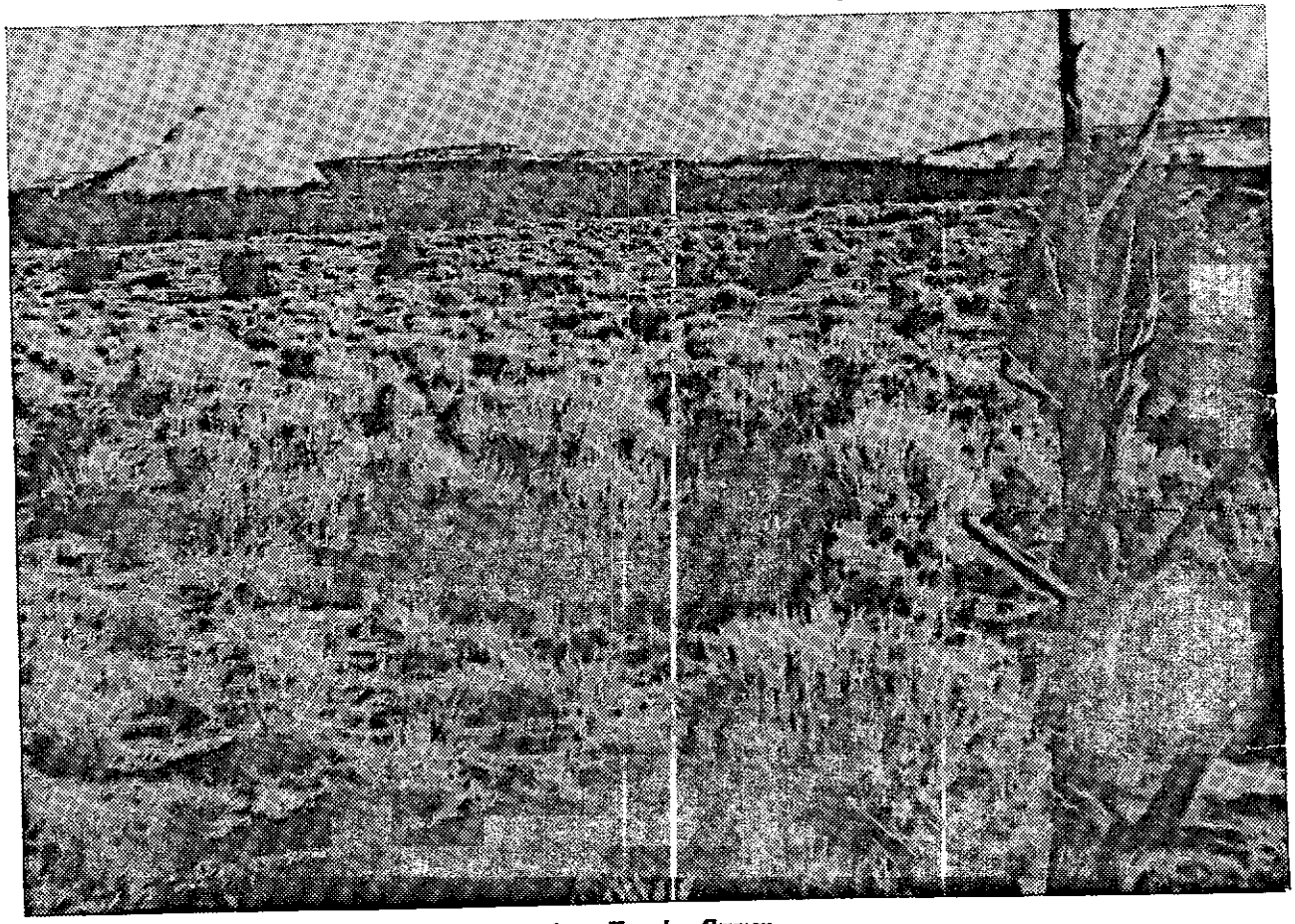


Photo 2. Black Ridge West WSA. The mesa above Knowles Canyon.

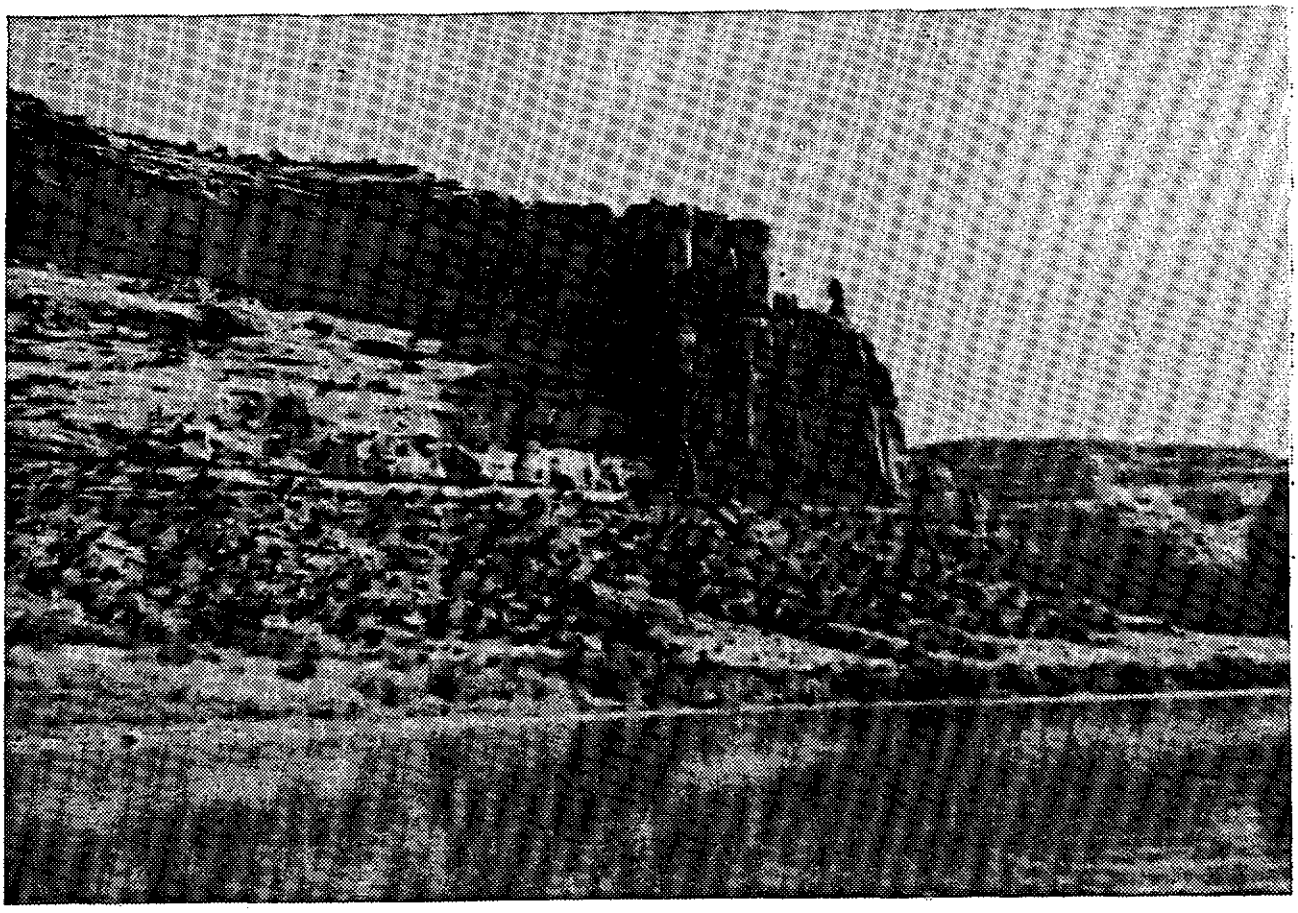


Photo 3. Black Ridge Canyons West WSA. The mouth of Mee Canyon from the Colorado River.

The canyon systems are primarily free of any human imprints and appear to be affected by the forces of nature. The imprints on the mesa include fence lines, stock reservoirs, a rock quarry and trails. All of these imprints, because of location and screening, have a minor effect on the naturalness of the WSA. The mesas also appear to be affected primarily by the forces of nature.

The pinyon-juniper woodland, sagebrush and riparian vegetation types in this WSA provide for a variety of wildlife including deer, mountain lion, bighorn sheep and bald and golden eagles. Bald eagles winter in the area and are present every day from mid-December through mid-March along Ruby Canyon. One pair of peregrine falcons nests in the WSA and undoubtedly hunt the WSA. Cottonwood trees that grow along the Colorado River are an important part of the raptor habitat.

The Colorado River endemic fishes can all be found in the Colorado River at the north edge of the WSA. The Colorado River squawfish and the candidate species, razorback sucker, are the two species of primary concern. Golden eagles and canyon tree frogs are sensitive species that are found here. The bird species, Scott's oriole, gray vireo, and Cassins kingbird are also found here.

Solitude

The Black Ridge Canyons West WSA provides outstanding opportunities for solitude. The number of canyon systems allow visitors to disperse throughout the WSA without concentrating people into certain settings. Large side canyons and amphitheatre-like alcoves allow visitors to isolate themselves from the main canyons. Opportunities for solitude within a single canyon are further accentuated by isolation provided by the benches at various levels above the canyons. The relatively broad expanses on the mesas offer additional outstanding solitude in that visitors can be widely dispersed. Excellent topographic and vegetative screening on the mesas and the large size and configuration of the WSA all enhance outstanding opportunities for solitude.

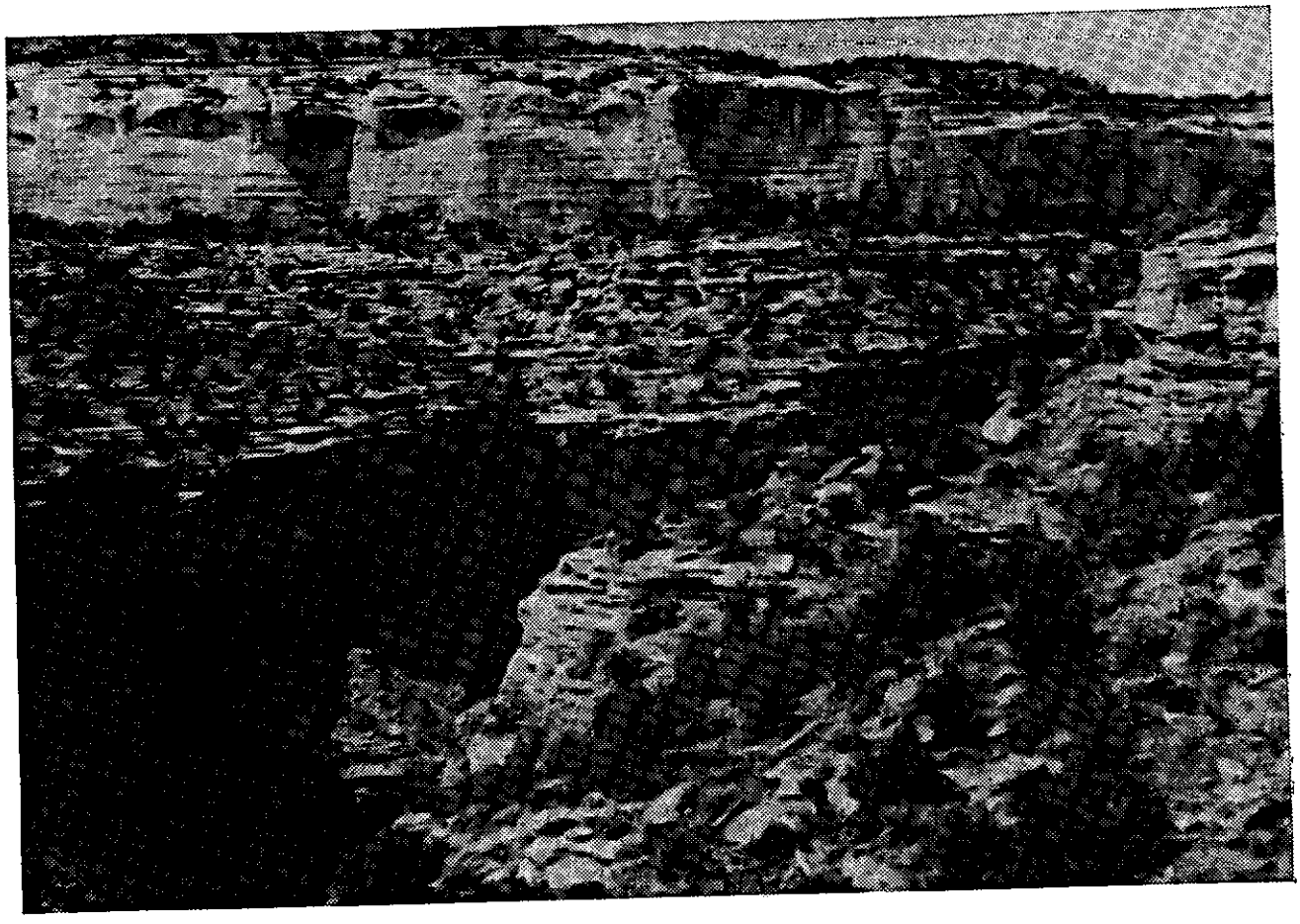


Photo 4. Black Ridge Canyons West WSA. Mee Canyon cave.

Motorized boating use along 7 miles of the Colorado River creates noise that primarily affect visitors along the river but has minimal effect on recreationists in the remainder of the WSA because of the muffling effect of the intervening topography.

Because of its small size, the 725 acre parcel of land on the southern boundary of the WSA does not possess outstanding opportunities for solitude. However, when considered with the adjacent WSA, the area as an extension of the WSA shares its outstanding opportunities for solitude.

Primitive and Unconfined Recreation

The Black Ridge Canyons West WSA provides outstanding opportunities for primitive and unconfined recreation in close proximity to the Grand Junction area (population-85,000). The WSA's outstanding scenery and landscape variety, interesting geologic features, 3 extensive canyons (totalling 59 miles), the Colorado River, and cultural and paleontological resources contribute to outstanding opportunities for primitive recreation in the WSA. (See Photo 5)

Topographic diversity, unusal geologic features such as rock arches, spires and windows, and intermittent water courses all appeal to hikers. Outstanding opportunities for hiking are enhanced by the geologic features such as the giant cave in Mee Canyon. Many visitors float the Colorado River for the purpose of gaining access into the canyons or for fishing. Other activities in the WSA include picnicking, camping, viewing outstanding scenery, horseback riding, deer hunting, bird watching, and rockhounding.

Special Features

The WSA possesses outstanding geological, paleontolgical, archaeological, and ecological values. Erosion has exposed sedimentary strata and a precambrian bedrock of schist, gneiss, and granite covering a period of geologic history dating back 600 million years. Dark precambrian schist, gneiss and granite which are laced with pegmatite dikes twist along the canyon floors. Seven arches, natural amphitheatres, various sized alcoves, sheer canyon

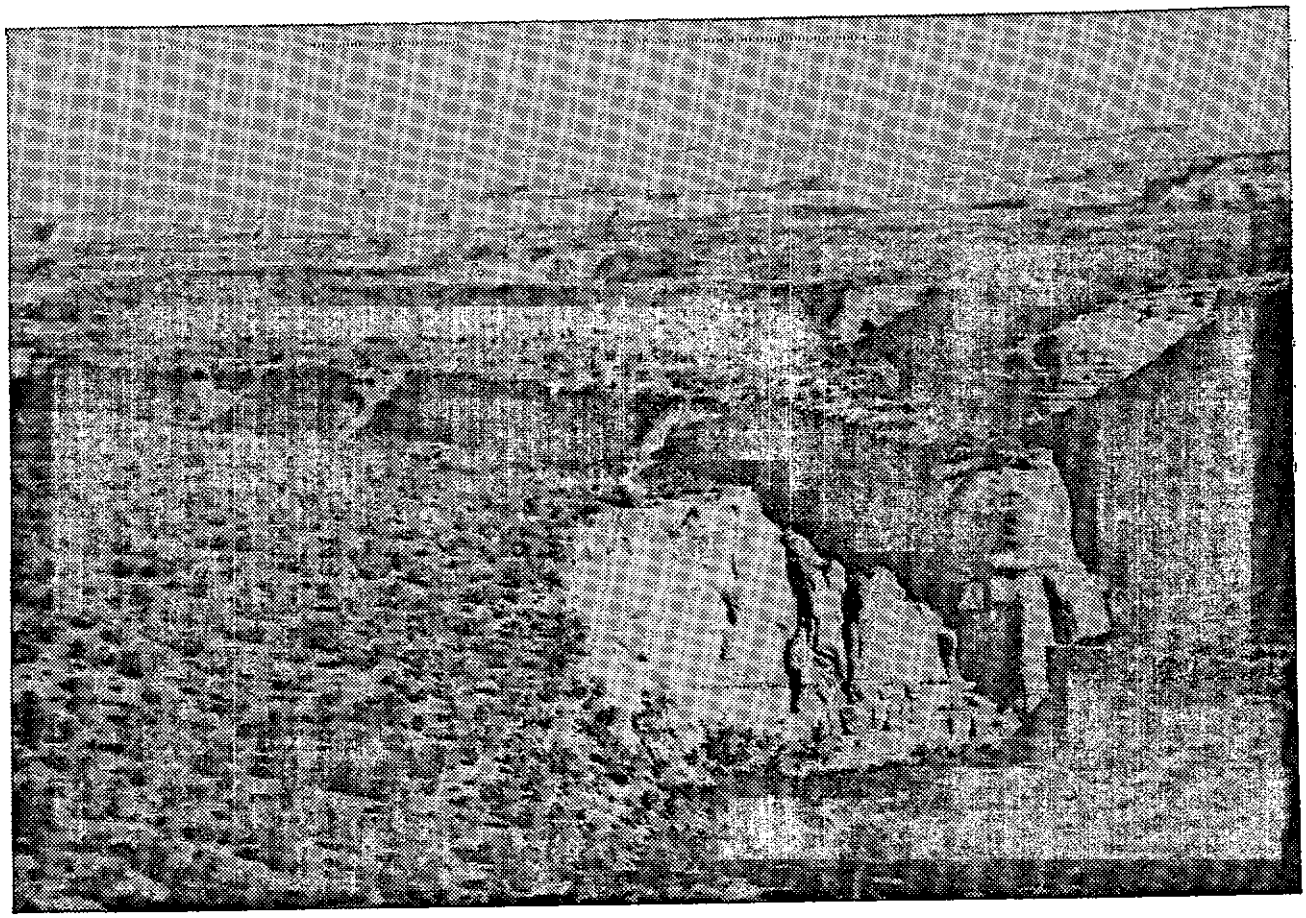


Photo 5. Black Ridge Canyons West WSA. Jones Canyon is one of three extensive canyon systems in the WSA.

walls, gigantic boulders and talus slopes all attest to the on-going forces of erosion working on the canyons and mesas.

The unit also contains significant paleontolgical resources. The Burro Canyon Formation in this WSA has produced a 115-120 million year old sycamore, which may be among the world's oldest known flowering plants. There is also a high potential for significant fossils such as dinosaurs to be found in the Morrison Formation outcrops in this WSA.

Evidence of habitation by the Desert Archaic, Fremont and Ute Indians occur throughout the WSA and represent 10,000 years of history and prehistory. Sites include overhangs, rock art and open camps.

Bald eagles winter in the WSA and are present every day from mid-December through mid-March. A pair of peregrine falcons nest just inside the WSA and undoubtedly hunt the WSA.

The Colorado River which forms part of the northern boundary of the WSA has been recommended for scenic designation under the Wild and Scenic Rivers Act.

Diversity in the National Wilderness Preservation System

Assessing the diversity of natural systems and features as represented by ecosystems

Wilderness designation of this WSA would add an outstanding representative of the juniper-pinyon woodland of the Colorado Plateau Province to the National Wilderness Preservation System but would not add a new ecosystem or landform. This ecosystem is currently represented by only 1 area in Colorado and 11 in the National Wilderness Preservation System. Although there are 17 other WSAs representing this ecosystem in Colorado, the Black Ridge Canyons West WSA has become one of the most popular in the region because of its spectacular setting and interesting geologic features. This information is summarized in Table 2.

Table 2 - Ecosystem Representation

Bailey-Kuchler Classification Province/Potential Natural Vegetation	NWPS Areas areas	NWPS Areas acres	Other BLM Studies areas	Other BLM Studies acres
Nationwide				
Colorado Plateau Province				
Juniper-Pinyon Woodland	11	1,401,745	85	2,142,602
Colorado				
Colorado Plateau Province				
Juniper-Pinyon Woodland	1	8,105	17	293,837

Expanding the opportunities for solitude or primitive recreation within a day's driving time (five hours) of major population centers

The Black Ridge Canyons West WSA is within a five hour drive of two major population centers and within one hour of Grand Junction, the largest metropolitan area on the western slope of Colorado with a population of about 85,000 residents. Table 3 summarizes the number and acreage of designated areas and other BLM Study Areas within a five hour drive of these population centers.

Table 3 - Wilderness Opportunities for Residents of Major Population Centers

Population Center	NWPS Areas areas	NWPS Areas acres	Other BLM Studies areas	Other BLM Studies acres
Salt Lake City/Ogden	11	685,088	42	1,826,904
Provo/Orem	12	730,088	52	2,307,031

Balancing the geographic distribution of wilderness areas

The Black Ridge Canyons West WSA would contribute to balancing the geographic distribution of areas within the National Wilderness Preservation System. The nearest designated wilderness areas are about two hours from the Black Ridge Canyons West WSA. The Sewemup Mesa WSA (18,835 acres) and the Dominguez Canyon WSA (73,888 acres) are both recommended for wilderness and are both within an hour and 30 minutes of the Black Ridge Canyons West WSA.

Manageability

The Black Ridge Canyons West WSA can be managed to maintain wilderness values. There would only be some minor manageability problems as discussed under the *Recommendation and Rationale* section.

Energy and Mineral Resource Values

The U.S. Geological Survey and U.S. Bureau of Mines prepared a mineral assessment of the Black Ridge Canyon West WSA in 1988. There is a low mineral resource potential in the WSA. The 18 existing claims in the WSA were filed in January of 1988. The development potential for the mining claims is projected to be low because the area has a low mineral resource potential. Much of the shoreline along the river is considered to have a high resource potential for placer deposits. There are no claims within this area and the area has been withdrawn from mineral entry; therefore, the development potential is considered low. There are no oil and gas leases in the Black Ridge Canyons West WSA. The development potential for oil and gas is low based on the lack of a stratigraphic section favorable for oil and gas occurrence.

Impacts on Resources

Table 4 summarizes the comparative impacts for the three alternatives considered for the WSA.

Table 4 - Comparative Summary of the Impacts by Alternative

Impact Topics	Recommendation: Combined WSAs	All Wilderness Alternative	No Wilderness Alternative
Impacts on Wilderness Values	*Wilderness designation would provide long-term legislative protection on 53,222 acres. Wilderness values would not be protected on 1,120 acres from intermittent sights and sounds of motorized boating on 7 miles of the Colorado River (one-quarter mile influence zone).*	*Wilderness designation would provide longterm legislative protection on 51,545 acres. Wilderness values would not be protected on 2,720 acres subject to intermittent sights and sounds of recreational offhighway vehicles on 10 miles of roads and motorized boating on 7 miles of the Colorado River.*	*Management of a portion of the WSA (50,260 acres) as Black Ridge Canyons Recreation Lands would maintain wilderness values on about 45,000 acres centered on the canyons. Approximately 900 acres of cryptogamic soil area would lose its naturalness from yearly herding by cattle over 10 years. Discplowing and seeding of 400 acres would impair naturalness in the WSA for up to 3 years. Recreational offhighway vehicles traveling on 15 miles of roads and trail and motorboats traveling on 7 miles of the Colorado River would impair wilderness values on 4,320 acres over time.*

Table 4 - Comparative Summary of the Impacts by Alternative (continued)

Impact Topics	Recommendation: Combined WSAs	All Wilderness Alternative	No Wilderness Alternative
Impacts on Paleontological Excavations and Study	*Wilderness designation would help protect fossils from vandalism and unauthorized collection but would preclude excavations of large fossils. This is considered to be a minor impact since no large-scale excavations are expected to be proposed. Allowing six nonimpairing excavations would allow scientists to excavate small fossils.*	*Wilderness designation would help protect fossils from vandalism and unauthorized collection but would preclude excavation of large fossils. Allowing six nonimpairing excavations would allow scientists to excavate small fossils. This is considered a minor impact since no large-scale excavations are expected to be proposed.*	*Allowing six non-surface disturbing excavations would produce small fossils that would add to our knowledge of the area. Leaving 10 miles of roads and 5 miles of trail open to recreational off-highway vehicles would make fossils vulnerable to vandalism and unauthorized collection. Fossils within one-half mile of these roads and trails would be vulnerable.*
Impacts on Wildlife Habitat and Populations	*Wilderness designation would protect about 52,822 acres of wildlife habitat. Wildlife habitat would be degraded on 1,120 acres from sights and sounds of motorized boats traveling on 7 miles of the Colorado River.* *It would also continue to be degraded on 400 acres proposed for disc-plowing and seeding under the No Wilderness Alternative. Without the project, there is a potential long-term loss of 1,000 deer due to reduced annual carrying capacity of up to 60 deer.*	*Wilderness designation would protect about 51,145 acres of wildlife habitat. Wildlife habitat would continue to be degraded on 1,600 acres from the sights and sounds of vehicles traveling on 10 miles of road and on 1,120 acres along the Colorado River.* *It also would continue to be degraded on 400 acres proposed for disc-plowing and seeding under the No Wilderness Alternative. Without the project, there is a potential long-term loss of 1,000 deer due to reduced annual carrying capacity of up to 60 deer.*	*Management of the area as Recreation Lands would protect about 49,945 acres of wildlife habitat. Habitat on 6,400 acres would be degraded by the sights and sounds of motorized vehicles on 10 miles of roads and 5 miles of trail and by motor boats on 7 miles of the Colorado River.* *Disc-plowing and seeding on 400 acres of critical critical deer winter range would improve the range and maintain 60 deer in the area's annual carrying capacity.*

Table 4 - Comparative Summary of the Impacts by Alternative (continued)

Impact Topics	Recommendation: Combined WSAs	All Wilderness Alternative	No Wilderness Alternative
Impacts on Cultural Resources	*Wilderness designation would protect cultural resources on about 54,000 acres of Black Ridge Canyons West from vandalism and unauthorized collection. Data from cultural sites on 20 acres would be recovered or protected.*	*Cultural resources on 3,200 acres would be vulnerable to vandalism and unauthorized collection. Data from cultural sites on 20 acres would be recovered or protected. Cultural resources on the remaining 51,045 acres would be protected.*	*Cultural sites on 6,400 acres would be vulnerable to vandalism and unauthorized collection. Data from cultural sites on 436 acres would be recovered or protected. Cultural resources on 47,865 acres would remain largely undisturbed.*
Impacts on Recreation and Off-Highway Vehicles	*Wilderness designation would maintain the natural and predominantly natural settings and nonmotorized recreation opportunities on 53,222 acres of the WSA but would not protect 1,120 acres along the Colorado River. Nonmotorized recreation use of 8,800 visitor days per year would increase (10 percent per year) to about 20,600 visitor days within 10 years. Closing 10 miles of boundary road and 5 miles of trail would displace 950 visitor days of motorized recreation use.*	*Wilderness designation would maintain the natural and predominantly natural settings and nonmotorized recreation opportunities on 51,545 acres. Sights and sounds from motor vehicles and motorized boats would impair wilderness values on 2,270 acres. Nonmotorized recreation would increase to 20,600 visitor days per year over 10 years. About 500 visitor days of motorized recreation per year would be displaced.* *The motorized use (450 visitor days per year) on the boundary road would increase to about 1,050 visitor days over 10 years.*	*Natural settings and nonmotorized recreation would be protected on a total of 45,940 acres within the Recreation Lands. Natural settings and nonmotorized recreation would be lost on 4,320 acres by the roads and 5 miles of trail and by motor boats traveling on 7 miles of the Colorado River. Nonmotorized recreation use is projected to increase to 16,200 visitor days per year in 10 years.* *Motorized recreation (about 950 visitor days per year) is projected to increase to 1,700 visitor days per year over 10 years.*
Impacts on Utility Rights-of-Way	*Designating the Black Ridge Canyons West WSA as unsuitable for public utilities would have no effect on residents living in the area.*	*Prohibiting utility rights-of-way in the WSA would not affect the residents in the nearby area.*	*Designating the Black Ridge Canyons West WSA unsuitable for public utilities would have no effect on the residents living in the area.*

Local Social and Economic Considerations

Designation of the Black Ridge Canyons West WSA as wilderness would incrementally help to increase recreation use in the Grand Junction area. Greater public awareness of this WSA would also draw wilderness users from outside west central Colorado. Wilderness use after designation is projected to grow from 8,800 to 16,200 visitor days within 10 years. This increase would generate some increase in local income and although not large, could be noticed in the the Grand Junction area. These economic benifits to the Grand Junction area could be even more noticeable if all areas proposed for wilderness in west central Colorado became wilderness.

Designation of most of the Black Ridge Canyons West WSA as wilderness would probably result in the loss of a few unpatented mining claims in the WSA. Very few claims are projected to have any assessment work done on them. There is only a low mineral potential for development.

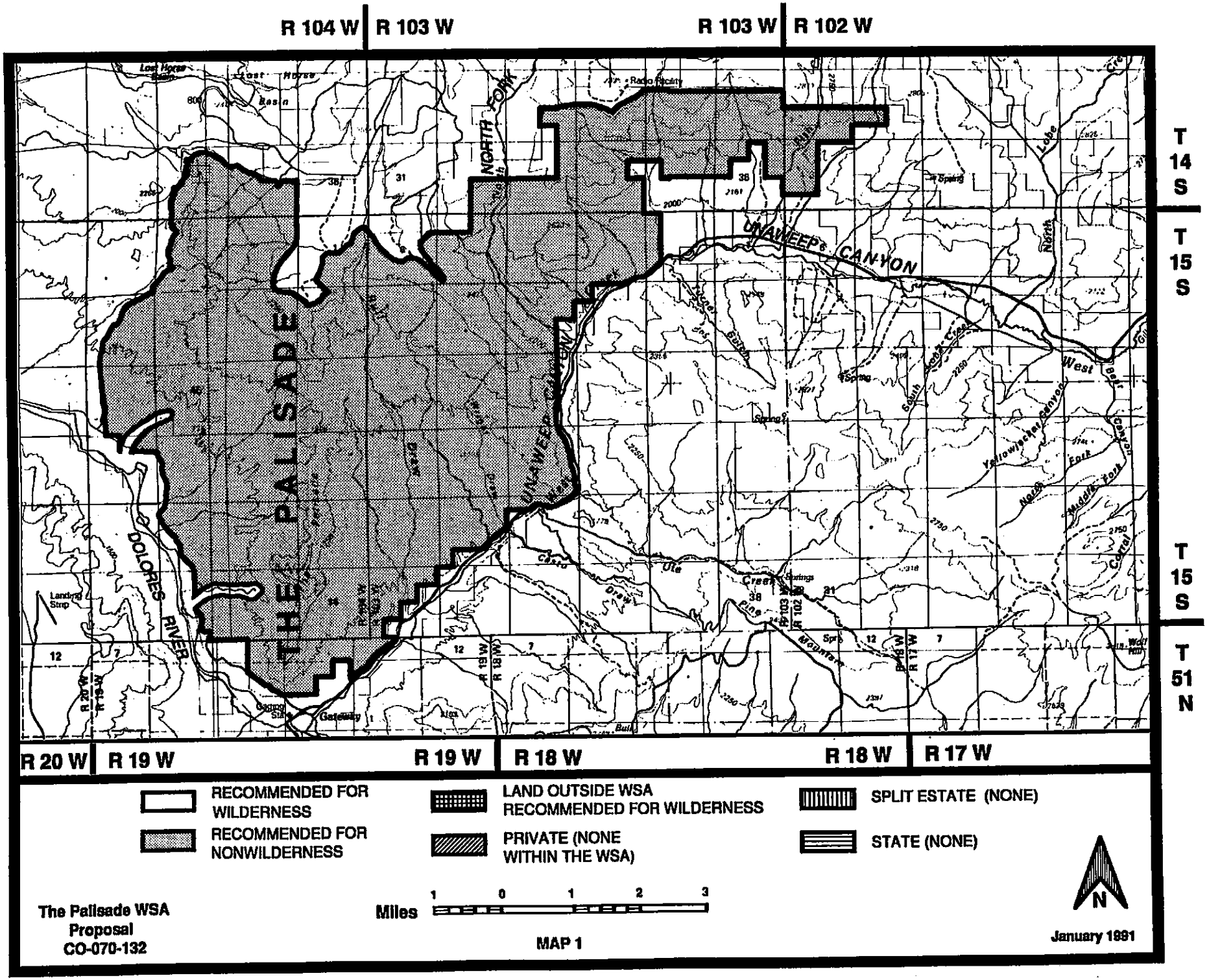
Summary of WSA Specific Public Comments

Public involvement has occurred throughout the wilderness review process. Comments received during the inventory process and early stages of the EIS were used to develop issues and alternatives for analysis.

During the formal review of the Draft EIS, a total of 51 comments were received specific to the Black Ridge Canyons West WSA. Twenty of these comments were oral testimony received at public hearings. There were 48 comments in favor of wilderness designation and 3 comments against wildernesss designation. Many of the commenters had visited this WSA and discussed its special features and outstanding opportunities for solitude and primitive and unconfined recreation. Some commenters stated that the scenic, geologic, recreational and archaeologic resources of this area would significantly enhance the National Wilderness Preservation System.

Two commenters opposing wilderness designation wanted trails in the WSA and boundary roads to be left open in the area to maintain good motorized access for rockhounding. One commenter opposed wilderness for the WSA because "it was too close to town."

The Mesa County Commission commented on the Draft EIS stating that the proposed action to designate the Black Ridge Canyons West WSA as wilderness "seemed reasonable and consistent" with the county's land use plans. Comments received from the state of Colorado's Department of Natural Resources supported the Draft EIS on wilderness recommendations but did not specifically reference the Black Ridge Canyons West WSA. No other federal,state or local agency commented on the Draft EIS.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THE PALISADE
UNAWEEP CANYON
NORTH FORK
DOLORES RIVER
RECOMMENDED FOR WILDERNESS
RECOMMENDED FOR NONWILDERNESS
LAND OUTSIDE WSA RECOMMENDED FOR WILDERNESS
PRIVATE (NONE WITHIN THE WSA)
SPLIT ESTATE (NONE)
STATE (NONE)
N
The Palisade WSA
Proposal
CO-070-132
Miles
1 0 1 2 3
MAP 1
January 1991

THE PALISADE

WILDERNESS STUDY AREA

The Study Area – 26,050 acres

The Palisade Wilderness Study Area (CO-070-132) is located in Mesa County, Colorado, immediately north of the town of Gateway and approximately 60 miles south of Grand Junction. The WSA contains 26,050 acres of public land administered by BLM. (See Table 1) There are no private inholdings in this WSA. The area's eastern one-half is part of Unaweep Canyon while its western half is part of the Dolores River Canyon. The state of Colorado designated the Unaweep Canyon corridor as the Unaweep/Tabeguache Scenic Byway in October of 1990. The area is bounded on the north by private lands and human imprints; on the southeast by Colorado Highway 141 and private lands; and on the southwest and west by a county road, a mining road, two cherry-stemmed roads, private property and human imprints. The WSA is shown on the map.

The most prominent feature of this WSA is The Palisade which is a three-mile-long, rocky, butte-like spine that cuts the unit north and south. (See Photo 1) The WSA is further characterized by a prominent 12-mile-long cliff line and steep slopes on its southeast and southwest flanks. Deep, rugged canyons drain from Pinyon Mesa to the south in the eastern portion of the WSA. The lower elevations of the WSA are characterized by rolling to flat desert valley bottoms. The higher elevations support grassy meadows and moderate to heavy stands of intermixed pinyon, juniper and oak brush. The upper drainages have aspen, ponderosa pine and some riparian vegetation. The lower elevations have pinyon, juniper and desert shrubs.

The WSA was studied under section 603 of the Federal Land Policy and Management Act (FLPMA) and was included in the Grand Junction Resource Management Plan (RMP) and Environmental Impact Statement (EIS) published in November, 1985. Two alternatives were analyzed in this EIS: all wilderness and no wilderness.

Recommendation and Rationale

0 acres recommended for wilderness

26,050 acres recommended for nonwilderness

The recommendation is to not designate The Palisade WSA as wilderness and to release the area for uses other than wilderness. (See Map) The all wilderness alternative is the environmentally preferable alternative since its implementation would result in the least change to the natural environment over the long term.

The primary reasons this WSA is not recommended for wilderness are its difficult manageability, a lack of public support in the community of Gateway which is adjacent to the WSA, and conflicts with long-term established uses in parts of the WSA.

BLM managers are very concerned with potential trespass problems across private lands if the WSA is designated as a wilderness. Trespass onto private lands presently occurs in the area of the canyons in the eastern part of the WSA and above the rim on the northern boundary of the WSA. The WSA is not being recommended because of potential trespass problems onto private lands. The primary legal access into the WSA is from its western boundary and along approximately three miles of public access bordering Colorado Highway 141 on the WSA's east and southeast boundaries. There is no legal access into the North Fork of West Creek or into Fish Creek. (See Map) Both creeks are popular hiking and fishing areas that provide physical access onto the north rim. There is no public access across the the twelve-mile-long northern boundary except in the northwest corner. It is very difficult to hike the north rim which generally follows the WSA boundary without trespassing onto private lands.

The unit's triangular configuration and general north-south drainages and ridges tend to funnel recreationists onto private property along the northern boundary of the WSA. Restricting recreationists to an acquired trail right-of-way along the rim was considered during the RMP process but was determined to not be

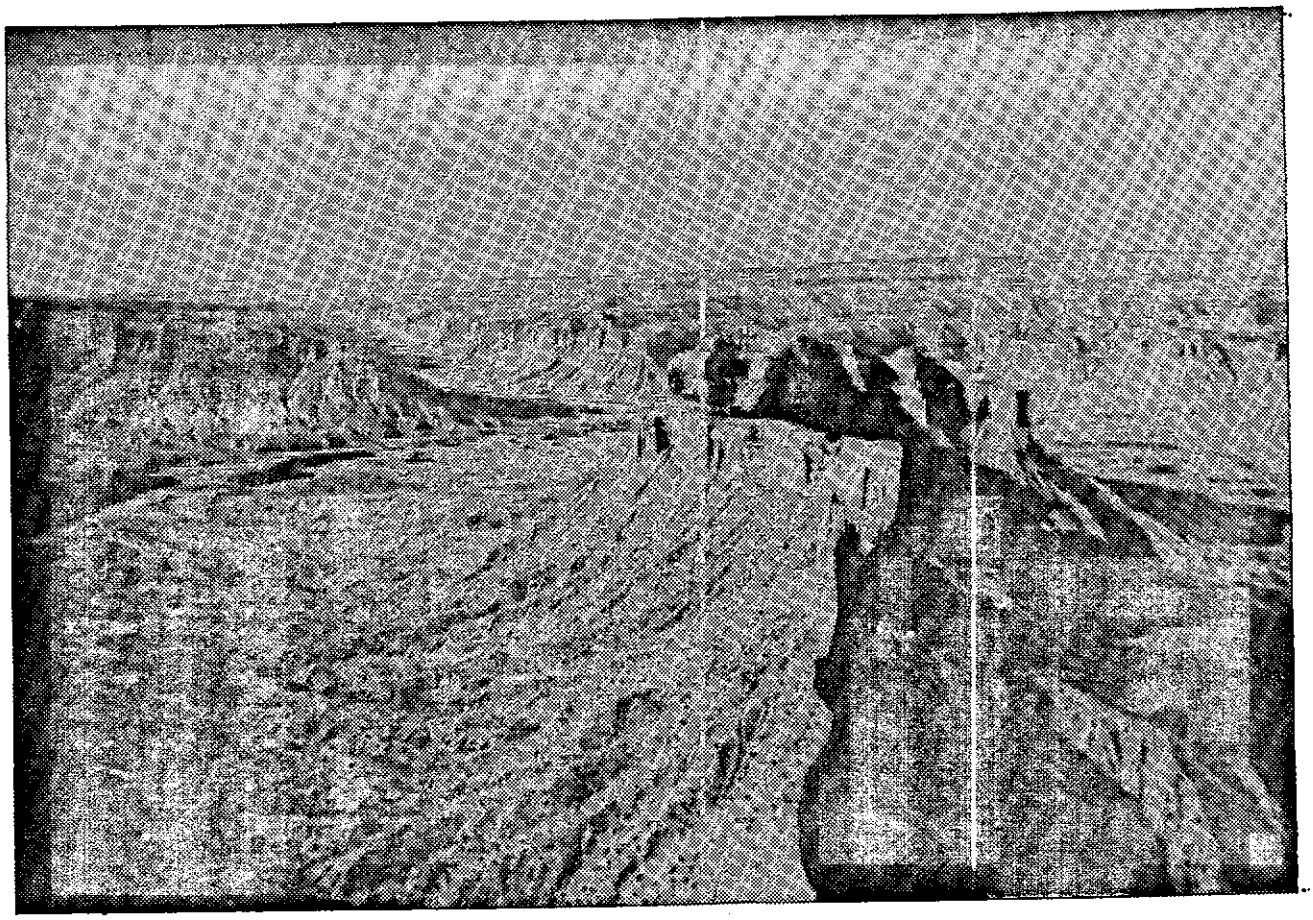


Photo 1. Palisade WSA. Looking south along the ridge-like butte called the Palisade.

feasible because of problems of restricting recreationists to a designated trail. Trail rights-of-way were also considered for the North Fork of West Creek and Fish Creek but were also not considered feasible.

The Bull Draw area on the southeastern flank of the WSA has been used historically by the residents of the Gateway area for firewood gathering, fence post cutting, trash dumping, and off-highway-vehicle use. BLM has increased its patrols in this area and has provided information about alternate areas where these activities are allowed in a controlled manner. Although these uses are not legal in the WSA and their imprints are visible throughout the Bull Draw area, they did not disqualify this area from being part of the WSA.

Established off-highway-vehicle use on trails in the Bull Draw area and to a lesser degree along the washes in the western boundary create user and resource conflicts. The Bull Draw area is not only popular among Gateway OHV enthusiasts but also attracts residents from throughout west central Colorado because this low elevation area is usually open for use throughout late fall and early spring. The 1,400 visitor days of motorized use in the WSA is restricted to 8 miles of existing trails based on the Grand Junction Resource Area Record of Decision (1987). Off-highway-vehicle use in the Bull Draw area is considered by management a better long-term use of the resource than wilderness.

The WSA's ecological diversity and geologic history were major considerations in designating 19,178 acres (74 percent) of the area as an Outstanding Natural Area (ONA) through the Grand Junction Final RMP/EIS. BLM can designate ONAs to protect areas with outstanding scenic splendor, natural wonder and scientific importance. These values have been recognized in The Palisade WSA. Although BLM managers are concerned with recreational trespass in the unit, nonmotorized recreation use including hiking, sightseeing and nature

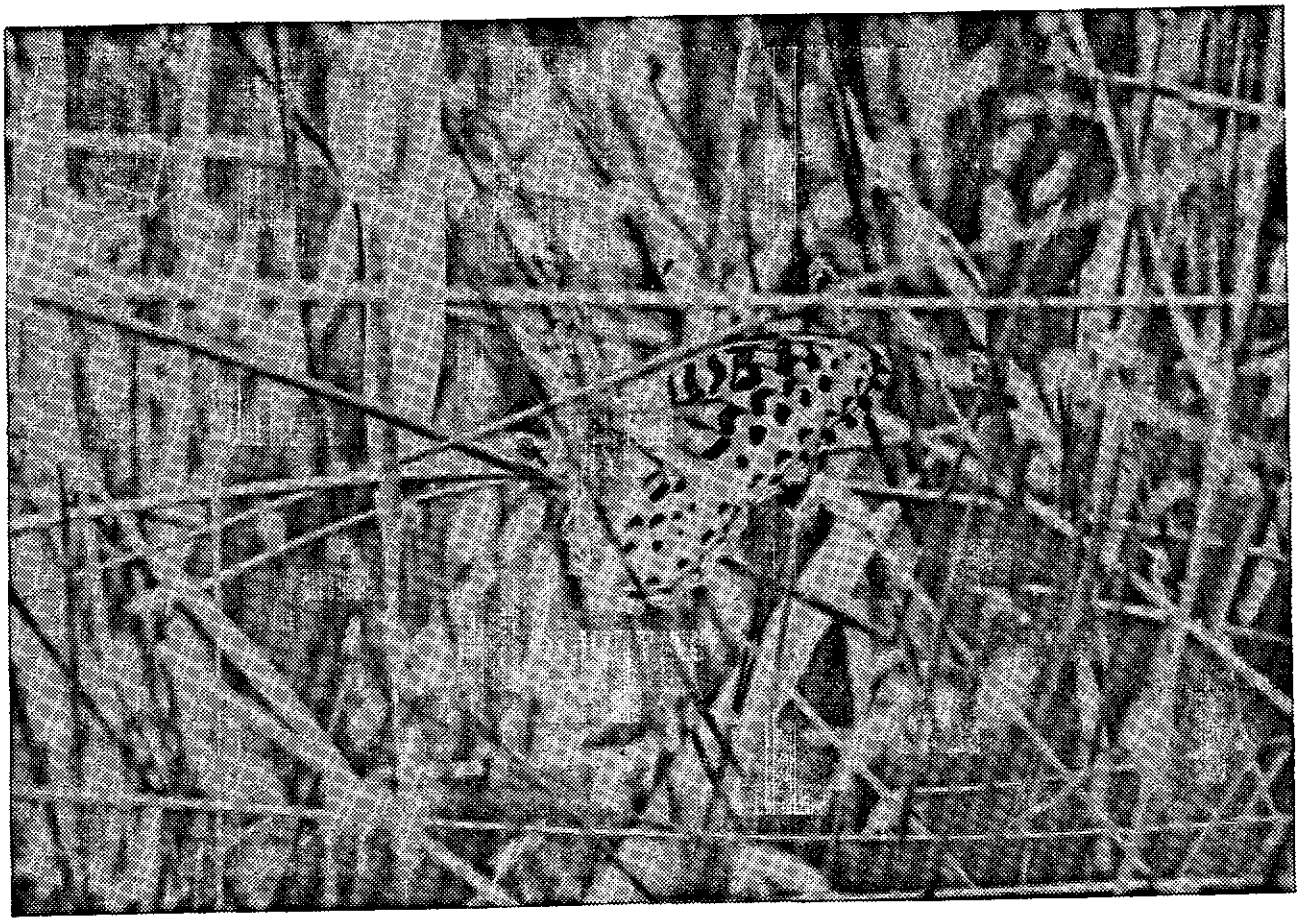


Photo 2. Palisade WSA. The rare butterfly, Great Basin Silverspot butterfly, inhabits the Unaweep Seep in the WSA.

study in the ONA would be allowed consistent with the protection of resource values and within the limitations of existing legal access. The entire ONA would be closed to OHVs.

The ONA designation would protect the Palisade WSA's scenic, geologic and natural values, and minimize management problems related to recreation use and local traditional uses by excluding conflict areas. The ONA would continue to have low visitor use because of access limitations. Grazing would remain unchanged in the ONA; there are no proposed grazing projects. The visual character of the rocky spine called The Palisade (1,920 acres) would be managed to preserve this landscape while the remainder of the ONA would be managed to retain the existing landscape character but allow minor changes.

The WSA including the ONA would continue to be open to oil and gas leasing and development with a no surface occupancy stipulation which means that all drilling would have to be done outside the WSA. It is projected that no future oil and gas leases would be developed given the low development potential of the WSA. The WSA including the ONA would be open to prospecting and location. Although there are 36 existing claims in the WSA, it is projected that little if any prospecting and attendant surface disturbance would occur, and no valid claims would be filed given the low resource potential. The 19,178 acre ONA would be closed to mineral material sales. The remainder of the WSA (6,782 acres) would be open for sales but no mineral extraction activities are projected based on abundant supplies elsewhere.

Unaweep Seep which is within the ONA boundary, would continue to be managed as a Research Natural Area to protect important breeding habitat for the Great Basin Silverspot butterfly (*Speyeria nokomis nokomis*). (See Photo 2) An additional 263 acres surrounding the Unaweep Seep would also be managed to protect this habitat as approved in the

Grand Junction RMP/EIS. The WSA provides winter range for 2,000 deer and 900 elk. A water catchment device is proposed for Bull Draw for big game use. The Colorado Division of Wildlife has also proposed to introduce desert bighorn sheep into the area between the WSA and the Utah state line just a few miles to the west. It is estimated that The WSA could provide habitat for about 100 desert bighorn sheep.

Table 1 - Land Status and Acreage Summary of the Study Area

	Acres
Within Wilderness Study Area	
BLM (surface and subsurface)	26,050
Split-Estate (BLM surface only)	0
Inholdings (State, Private)	0
Total	26,050
Within the Recommended Wilderness Boundary	
BLM (outside WSA)	0
Split Estate (within WSA)	0
Total BLM Land Recommended for Wilderness	0
Inholdings (State, Private)	0
Within the Area Not Recommended for Wilderness	
BLM	26,050
Split Estate	0
Total BLM Land Not Recommended for Wilderness	26,050
Inholdings (State, Private)	0

Criteria Considered in Developing the Wilderness Recommendation

Wilderness Characteristics

Naturalness

The Palisade WSA is characterized by vertical cliffs, deep rugged canyons, and rolling to flat desert valley bottoms dissected by gulches. The higher elevations consist of open, sloping to flat grasslands and meadows with moderate to heavy stands of intermixed pinyon, juniper and oak brush. The upper drainages contain aspen and ponderosa pine while the North Fork of West Creek and Fish Creek have riparian vegetation. The lower elevations are characterized by pinyon-juniper and desert shrub vegetation.

The human imprints that exist within the WSA are either of a minor nature, well-screened, or are dispersed enough so as to cumulatively, or singularly, be substantially unnoticeable and thus leave the entire WSA with an overall natural appearance. Imprints include the remains from an old sawmill, several trails in the eastern portion, several fencelines

and corrals in the western portion, two stock reservoirs including a short way on Pinon Mesa leading to one of these reservoirs, and a few mine workings atop the Palisade. Short access roads leading to an abandoned drill pad and a miner's cabin have been cherry-stemmed in the western portion of the WSA.

Solitude

The Palisade WSA offers outstanding opportunities for solitude primarily due to topographic screening in the many gulches and canyons in the lower elevations. The heavy vegetation and difficult accessibility of the upper elevations enhance opportunities for outstanding solitude. The outstanding views both inside and outside the WSA give one a feeling of spaciousness. The blocked configuration of the WSA also enhances opportunities for solitude by ensuring that outside influences will not disrupt feelings of seclusion.

Primitive and Unconfined Recreation

The Palisade WSA provides a rugged and varied landscape in which to hike, backpack, sightsee, horseback ride, climb, hunt, photograph, or study nature. The hiker or backpacker is presented with a high degree of challenge and risk due to the variety and steepness of the terrain in parts of the WSA. In addition, the hiker is constantly exposed to outstanding scenery both inside and outside the WSA. Opportunities exist to view and photograph the Great Basin Silverspot butterfly in one of two critical habitats in Colorado. Hunting is considered fair to good in the WSA while fishing is considered good for brook and rainbow trout in the North Fork of West Creek.

Special Features

The Palisade, the ridge-like butte that cuts the WSA north and south, is one of the most prominent features of the Dolores River Valley. It and many of the other rock features such as the hoodoos (mushroom shaped rocks) in the WSA lend themselves well to geologic interpretation.

A major value of the WSA is its ecological diversity created by over 3,000 feet of elevation change from valley bottom to its northern rim on Pinon Mesa. Within this elevation range are the Upper Sonoran life zone (semidesert shrublands, pinyon-juniper woodland in upper elevations), foothills life zone (mountain shrub and pinyon-juniper woodland), and montane life zone (ponderosa pine, Douglas fir on north-facing slopes and stands of aspen in disturbed areas). Riparian vegetation is found along several of the water courses in the WSA. This diversity of plant life provides a diversity of habitat for a variety of wildlife.

The most significant scientific value in the WSA is the presence of a rare butterfly, the Great Basin Silverspot (*Speyeria nokomis nokomis*). Approximatly 75 percent of the butterfly's critical habitat in this area is in the WSA. The habitat in use is one of two such habitats in Colorado. This habitat area called Unaweep Seep (37 acres) was designated a Research Natural Area prior to development of the Grand Junction RMP.

Peregrine falcons nested on the narrow ridge-like butte within the past decade. As approved in the Grand Junction RMP, surface-disturbing activities are prohibited between March 15 and July 1 within a quarter mile of nesting sites.

The sensitive plant the Dolores skeletonweed (*Lygodesmia dolorensis*) which has some chance of being listed under the Endangered Species Act, grows in the lowest prickly pear cactus zones.

Diversity in the National Wilderness Preservation System

Assessing the diversity of natural systems and features as represented by ecosystems

Wilderness designation of this WSA would not add a new ecosystem to the National Wilderness Preservation System. However, it could add an uncommon landform (see Special Features section). The WSA is in the Colorado Plateau Province (Bailey-Kuchler classification system) and includes these vegetation zones: Great Basin sagebrush, juniper-pinyon woodland, mountain mahogany-oak scrub and pine-Douglas fir forest. The only designated Colorado wilderness area in the Colorado Plateau Province is in Mesa Verde National Park and it is characterized by pinyon-juniper woodland. This wilderness is closed to public recreation. One other wilderness in this Province is the Box-Death Hollow Wilderness Area in south-central Utah.

Table 2 - Ecosystem Representation

Bailey-Kuchler Classification Province/Potential Natural Vegetation	NWPS Areas areas	NWPS Areas acres	Other BLM Studies areas	Other BLM Studies acres
Nationwide				
Colorado Plateau Province				
Great Basin Sagebrush	2	95,875	5	58,421
Juniper-Pinyon Woodland	11	1,401,745	85	2,142,602
Pine-Douglas Fir Forest	6	125,523	8	18,930
Colorado				
Colorado Plataeu Province				
Great Basin Sagebrush	0	0	4	57,541
Juniper-Pinyon Woodland	1	8,105	17	293,837
Pine-Douglas Fir Forest	0	0	3	855

Expanding the opportunities for solitude or primitive recreation within a day's driving time (5 hours) of major population centers

The Palisade WSA is within a five hour drive of two major population centers and within about one hour of Grand Junction, the largest metropolitan area (85,000 residents) on the western slope. Table 3 summarizes the number and acreage of designated wilderness areas and BLM Wilderness Study Areas within a five hour drive of these population centers.

Table 3 - Wilderness Opportunities for Residents of Major Population Centers

Population Center	NWPS Areas areas	NWPS Areas acres	Other BLM Studies areas	Other BLM Studies acres
Salt Lake City/Ogden	11	685,088	42	1,826,904
Provo/Orem	12	730,088	52	2,307,03 1

Balancing the geographic distribution of wilderness areas

The Palisade WSA would contribute to balancing the geographic distribution of areas within the National Wilderness Preservation System. The nearest designated wilderness areas are the spruce-fir forested Flat Tops Wilderness (235,035 acres) and the West Elk Wilderness (176,092 acres). Unlike The Palisade WSA which is generally accessible throughout the year, these areas are only accessible during the summer and early fall due to weather in higher elevations. The Dominguez Canyon WSA (75,800 acres recommended for wilderness) and the Dolores RiverCanyon WSA (29,415 acres recommended for wilderness) are both within an hour and 30 minutes of The Palisade WSA.

Manageability

The portion of the WSA designated as an Outstanding Natural Area could be effectively managed to preserve its wilderness character if trespass onto private lands contiguous to the WSA could be prevented. As discussed under the *Recommendation and Rationale* section, preventing trespass would require the acquisition and maintenance of approximately 14 miles of trail easements, fencing, signing; and patrolling by BLM rangers. A public education effort for this WSA would have to emphasize how to prevent trespass through the use of established access routes.

The areas outside the Outstanding Natural Area could also be managed to preserve their wilderness characteristics but management conflicts with OHV vehicles and some traditional resource uses would have to be overcome. Established off-highway-vehicle use on the trails in Bull Draw and to a lesser degree along the washes along the western boundary have created user and resource conflicts. The Bull Draw area attracts OHV enthusiasts from throughout west-central Colorado because this low elevation area is commonly open throughout the year.

The Bull Draw area has been used historically by residents of the Gateway area for firewood gathering, fence post cutting, trash dumping and recreation. Although some of these uses are not legal in a WSA and their imprints are visible throughout the Bull Draw area, they did not disqualify this area from being part of the WSA. BLM has increased its patrols in this area and has provided information about alternate areas that provide for these activities in a controlled manner.

Energy Mineral Resource Values

Mineral evaluations of the WSA were prepared in 1983 by BLM in a Geology, Energy and Minerals (GEM) report titled *Geology and mineral resource potential of the Palisade Wilderness Study Area, Mesa County, and Colorado* and in 1990 by the US Geological Survey and US Bureau of Mines in their report *Mineral Summaries, BLM, Wilderness Study Areas in Colorado.*

Low grade, extremely localized uranium/vanadium deposits occur in this WSA only on the top of the narrow, ridge-like butte called the Palisade based on a report by the US Geological Survey (1983). Access is a major problem because the Morrison Formation in which these deposits occur is located atop the Palisade and can only be reached by helicopter. Although some mining occurred during the uranium boom, activity was minimal. Currently, there are 26 mining claims in the WSA. The overall economic potential of the area would be considered low.

The potential for oil and gas occurence in the WSA is considered low based on the lack of a stratigraphic section favorable for such an occurrence (USGS 1983). There are no oil and gas leases in the WSA.

Impacts on Resources

Table 4 summarizes the comparative impacts for the proposed action (no wilderness) and all wilderness alternative considered for The Palisade WSA.

Table 4 - Comparative Summary of the Impacts by Alternative

Impact Topics	Recommendation: No Wilderness Alternative	All Wilderness Alternative
Impacts on Wilderness	*Proposed management inside the ONA would protect the wilderness values of the narrow, ridgelike butte called the Palisade and ridge extending to the east but would not ensure long-term legislative protection. This ecologically diverse unit would not add to the diversity of the National Wilderness Preservation System. Recreational off-highway vehicle use of about 1,400 user days per year on 8 miles of existing trails would result in the loss of wilderness characteristics on 2,560 acres.*	*Wilderness designation would provide long-term protection of the WSA's wilderness values. It would also enhance this ecotype's representation in the National Wilderness Preservation System. This ecologically diverse unit would add to the diversity of the National Wilderness Preservation System.*
Impacts on Cultural Resources	*Cultural sites on 5,120 acres would continue to be vulnerable to vandalism and unauthorized collection. Data from cultural sites on 1.5 acres would be recovered or protected. Cultural resources on the remaining 20,930 acres would remain largely undisturbed.*	*Data from cultural sites on 1 acre would be recovered or protected. Cultural resources on the remaining 26,049 acres would be protected.*
Impacts on Recreation and Off-Highway Vehicle Use	*Proposed management of the ONA would maintain its natural settings and nonmotorized use. Nonmotorized use in the WSA would increase to about 1,200 visitor days (7 percent increase per year) over 10 years. Off-highway vehicle use (8 miles of existing trails) outside the ONA would impair the natural character of 2,560 acres over time. Off-highway vehicle use would increase to an estimated 2,500 user days over 10 years primarily in the Bull Draw area.*	*Natural and predominantly natural settings and nonmotorized recreation uses would be maintained. Nonmotorized recreation use would increase to 1,500 user days per year over 10 years. About 1,400 user days of off-highway vehicle use would be displaced. This represents about 1 percent of the off-highway vehicle use in the resource area.*

Local Social and Economic Considerations

Designation of The Palisade WSA as wilderness would incrementally help to increase recreation use in the Grand Junction area. Greater public awareness of this WSA would draw wilderness users from outside west-central Colorado. Wilderness use in this WSA if designated could increase from about 600 user days per year to 1,400 user days per year within 10 years. This increase would generate some increase in local income, and although not large, could be noticed in the smaller communities in the area of the WSA. These economic benefits to smaller communities could be even more noticeable if all areas proposed for wilderness in west-central Colorado became wilderness.

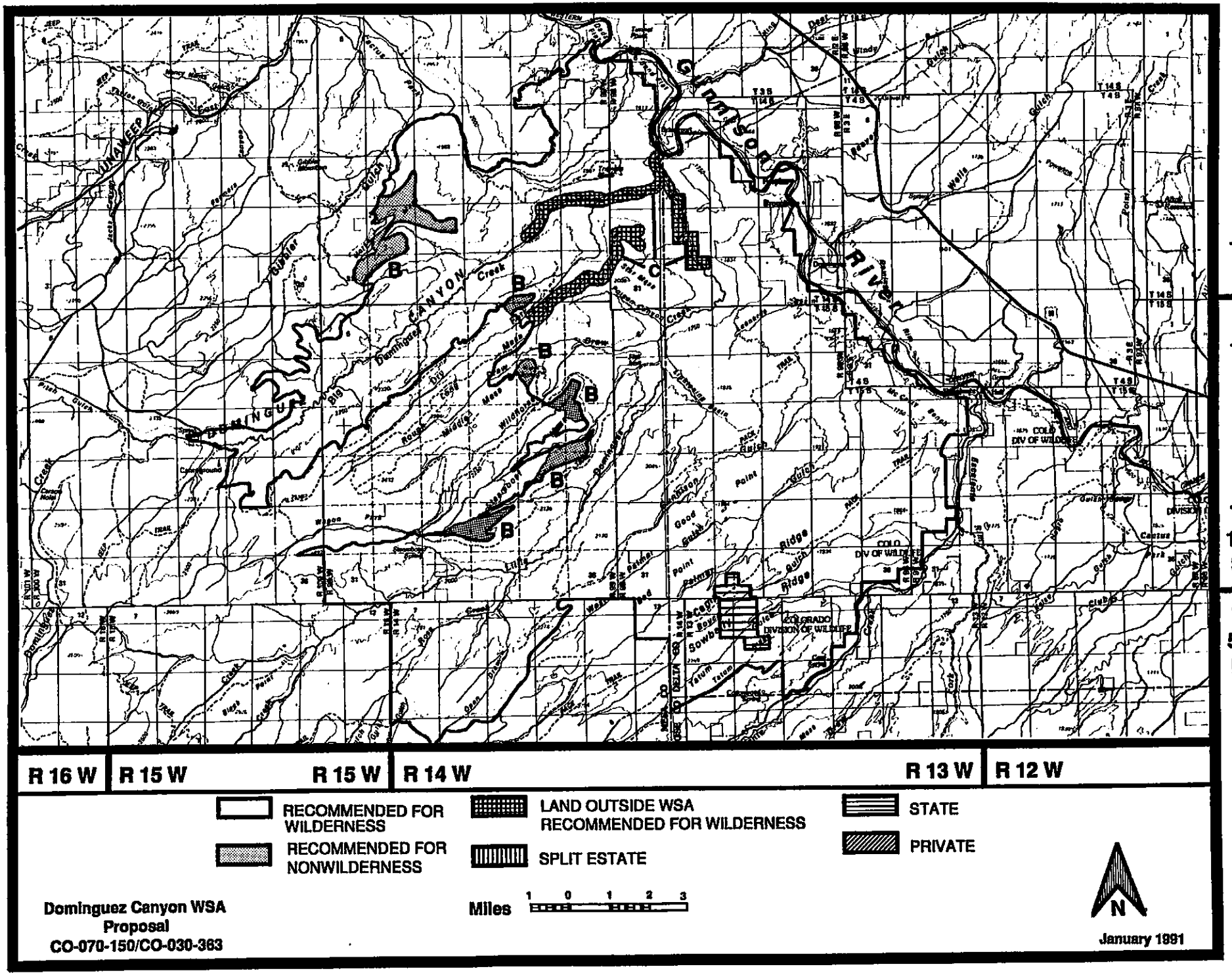
Designation of The Palisade as wilderness would probably result in the loss of 36 unpatented mining claims in the WSA. However, there is only a low mineral potential.

Summary of WSA Specific Public Comments

Public involvement has occurred throughout the wilderness review process. Certain comments received during the inventory process and early stages of the EIS preparation were used to develop significant study issues and various alternatives for the ultimate management of those lands with wilderness values.

During formal public review of the Draft EIS, a total of 42 comments specifically addressing this WSA were received. Of those, 28 were written and 14 were oral statements received at the 4 public hearings on the EIS. 41 of the commenters supported wilderness designation for all or part of the WSA. Only 1 commenter supported no wilderness for the WSA. Several residents of the Gateway area during the Gateway hearing informally expressed concerns about having wilderness at their "back door" and potential trespass problems onto private lands. Although only one individual testified formally, these residents as a group talked to the Area Manager and opposed wilderness designation of this WSA. Those favoring wilderness commented on the WSA's wilderness qualities, especially its ecological and scenic values. Several commenters stated that boundaries could be adjusted to minimize resource conflicts such as OHV use.

The 1 commentor opposing wilderness designation wanted to see the area continued to be managed for multiple-use as in the past. Another concern was how few people are able to use areas designated wilderness. The Mesa County Commission only commented on those WSAs recommended for wilderness; no specific comment on this WSA was received other than the overall wilderness recommendation in the Draft EIS seemed "reasonable and consistent". No other federal, state or local agency commented on this WSA.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Proposal
CO-070-150/CO-030-363
January 1991

DOMINGUEZ CANYON

WILDERNESS STUDY AREA

The Study Area -- 75,800 acres

The Dominguez Canyon WSA (CO-070-150/CO-030-363) is located in Mesa and Montrose Counties, approximately 20 miles southeast of Grand Junction and 15 miles west of Delta. The WSA contains 75,800 acres of public land administered by BLM and a 600 acre state inholding. (See Table 1) The area is bounded on the north and northwest by roads and chainings; on the east by private lands and a low impact road in the lower canyons of Big and Little Dominguez Creeks; on the south by private lands, roads and imprints of man; and on the west by the Uncompahgre National Forest, chainings and roads. The WSA is shown on the map. The WSA is characterized by two deeply dissected major canyon systems draining northeast off the Uncompahgre Plateau into the Gunnison River. (See Photo 1) The drainage patterns have contributed to the formation of isolated northeast-southwest trending mesas. Vegetation ranges from riparian vegetation and Douglas-fir in the canyons to pinyon-juniper woodland with sagebrush parks on the mesas.

The WSA was studied under Section 603 of the Federal Land Policy and Management Act (FLPMA) and was included in the Grand Junction and Uncompahgre Resource Management Plans and Environmental Impact Statements (EIS) published in November, 1985 and September, 1988 respectively. Three alternatives were analyzed in the EIS; all wilderness, no wilderness, and partial wilderness (73,888 would be designated as wilderness and 2,245 acres would be released for uses other than wilderness)

Recommendation and Rationale

73,888 acres recommended for wilderness

2,245 acres recommended for nonwilderness

It is recommended that 73,888 acres of the Dominguez Canyon WSA be designated as wilderness. This includes 320 acres of a recently acquired private inholding and 13 acres outside the WSA boundary which would be added to the wilderness recommendation. It is also recommended that 2,245 acres be released for uses other than wilderness. These areas are shown on the map. The environmentally preferable alternative would be to designate the entire 75,800 acres as wilderness since this would result in the least change from the natural environment over the long term.

The 73,888 acre area which makes up most of the WSA is recommended for wilderness designation because of its outstanding scenery, spectacular geologic features, ecological diversity, two cascading mountain streams and outstanding opportunities for solitude and primitive, unconfined recreation. (See Photo 2) Wildernesss designation would help protect the area's archaeological and paleontological resources.

Wilderness designation would provide for long-term protection of the area's outstanding opportunities for solitude as well as outstanding opportunities for hiking, backpacking, horseback riding, scenic viewing, nature study, and photography. The highly scenic canyon of Big Dominguez Creek provides easy to moderately difficult hiking and horseback riding routes. (See Photo 3) Hiking opportunities are also excellent along Little Dominguez Creek. Challenging cross-country routes are available throughout much of the WSA with its rugged tributary canyons, and isolated and steep-sided mesas. The presence of perennial water in both Big and Little Dominguez Creeks and their spectacular canyons greatly enhances the recreation opportunities in the WSA.

Wilderness designation would preserve an area of valuable wildlife habitat. This area provides habitat for desert bighorn sheep, deer, elk, mountain lion, black bear, wild turkey and chukar. There were about 65 desert bighorn sheep in the WSA in 1987. Aquatic habitat is found along the Big and Little Dominguez Creeks.

The parcels of land along the periphery of the WSA which are not recommended for wilderness are shown on the map. The recommended boundary changes on the west side (parcel B; 1,205 acres) of

the WSA are to minimize off-highway vehicle use conflicts and to create a more easily identifiable and manageable topographic boundary, the canyon rims. The recommended western boundary would generally follow the canyon rims and would improve manageability by minimizing vehicle and firewood trespass from the adjacent roads and chainings.

The parcels of land outside the WSA which are recommended for wilderness are shown on the map (parcel C). The recommended boundary changes would include 320 acres of a recently acquired private inholding and 13 acres of low impact, two-track roads in the canyon bottoms. The recently acquired inholding is generally natural in character and would improve the manageability of the canyon of Little Dominguez Creek. The roads include two tracks going to the acquired inholding and to mining claims that are no longer being maintained.

No major manageability problems or resource conflicts would result from wilderness designation. Minor conflicts with OHV use and forestry trespass have been corrected through boundary adjustments. The WSA does not contain any unpatented mining claims inside the area recommended for wildernesss. The U.S. Geologic Survey and the Bureau of Mines report indicate low mineral occurrence potential and low development potential for oil and gas in the WSA due to lack of a stratigraphic section favorable for oil and gas occurrence. No development is projected. There are also no oil and gas leases in the area recommended for wilderness.

The area recommended for wilderness contains portions of 4 grazing allotments totalling 3,600 animal unit months (AUMs). Although 7 earthen reservoirs have been proposed in the WSA, no major conflicts with wilderness management are projected. The reservoirs will be constructed

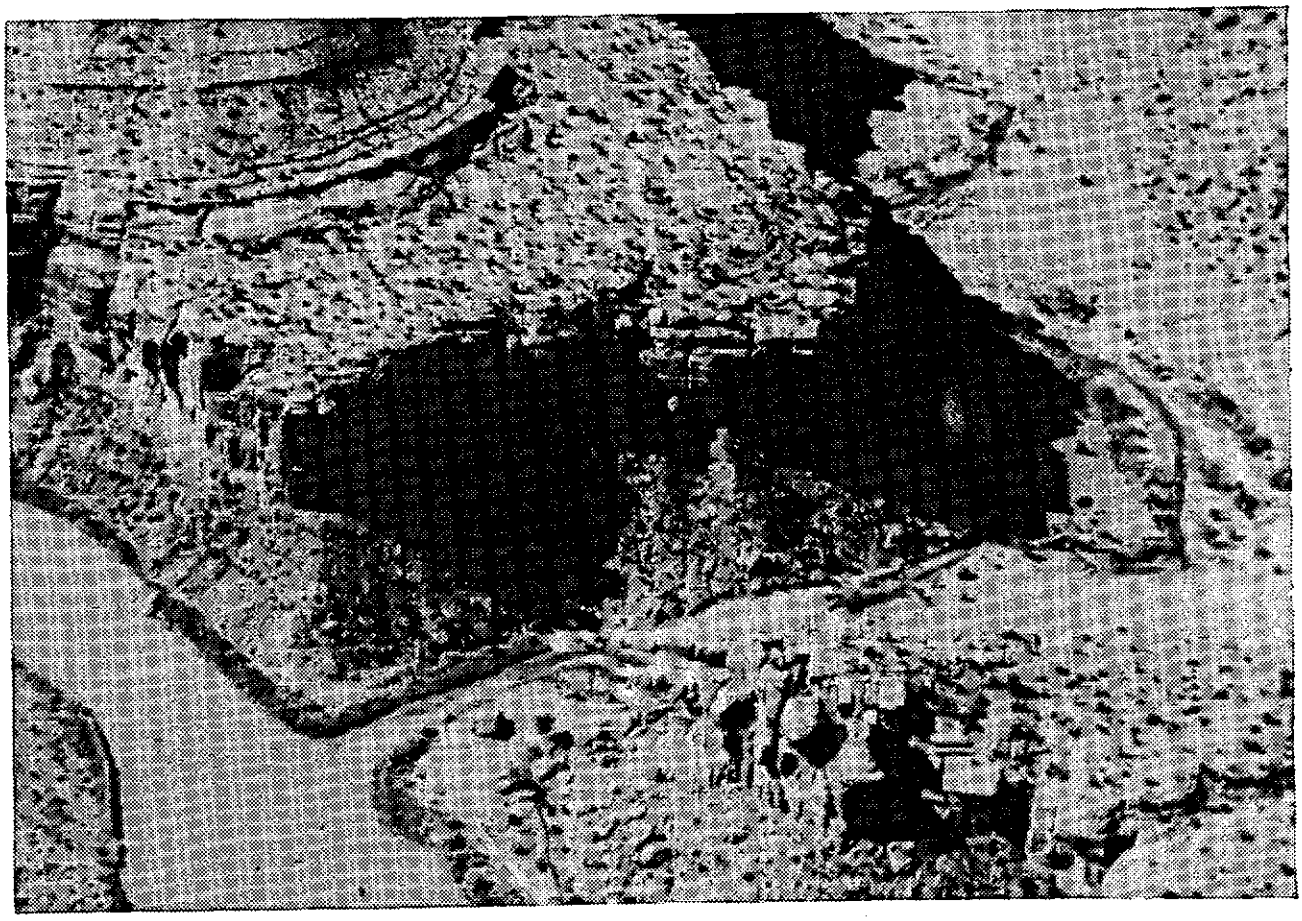


Photo 1. Dominguez Canyon WSA. Confluence of Big Dominguez Creek and Gunnison River.

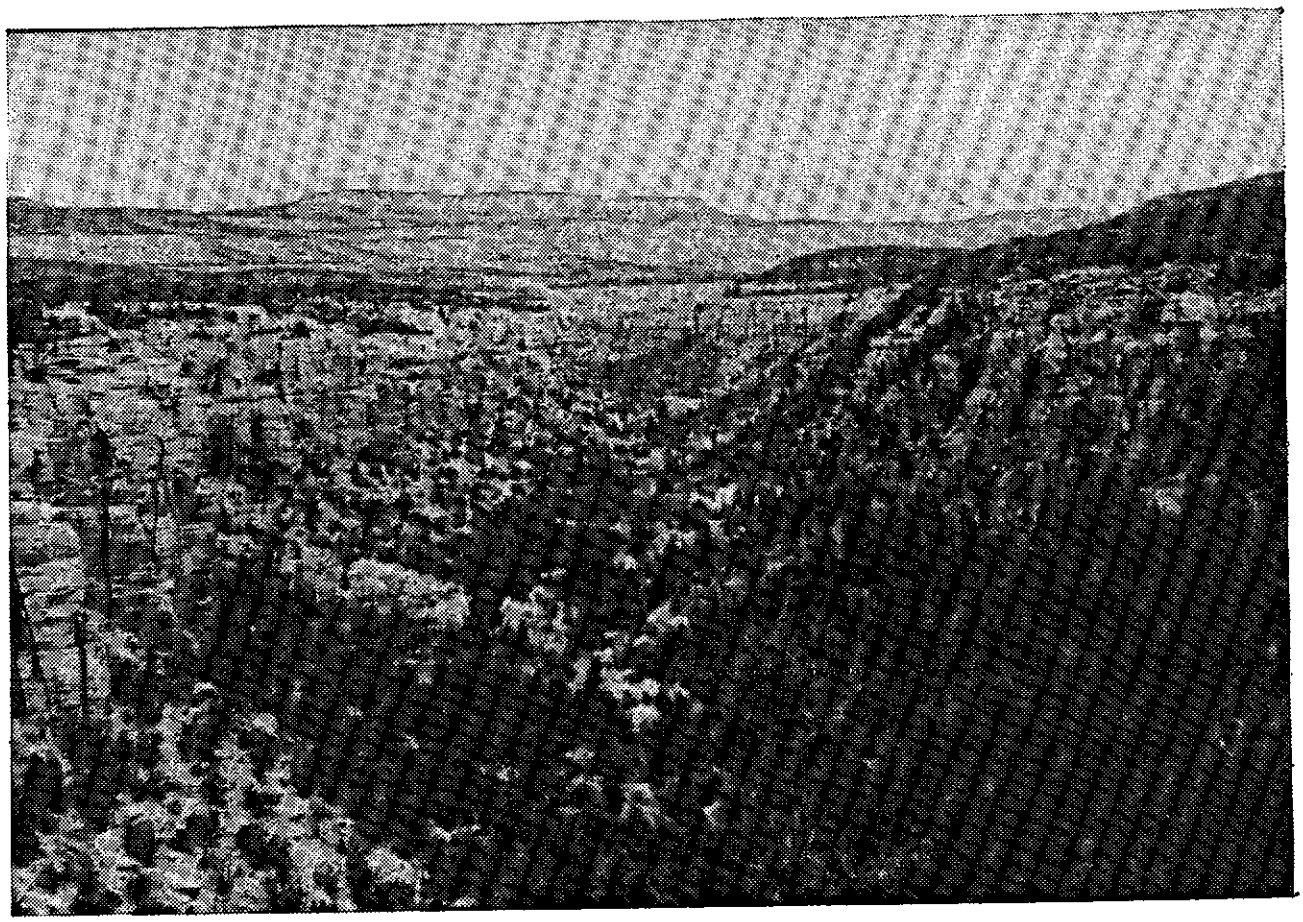


Photo 2. Dominguez Canyon WSA. The canyon of Little Dominguez Creek is 17 miles long and is natural in character.

consistent with wilderness management policy and will provide for resource protection and effective management of resources in the reservoir area. Administrative access by vehicle is needed by the Colorado Division of Wildlife 5 days approximately every 8 years to manage the bighorn sheep herd in the WSA. This vehicle access would be on the periphery of the WSA and would only be a minor problem every 8 years or so.

There are no water rights in the WSA that would be affected by wilderness designation. The Dominguez reservoir project, which was being considered along the eastern boundary of the WSA by the Bureau of Reclamation, has been dropped. The proposed project included the construction of two reservoirs on the Gunnison River to provide water for municipal and recreational uses. In a July 1986 letter to BLM, the Bureau of Reclamation stated that: "No funding to continue planning is expected in the near future. At the present time, there is a regional surplus of power, and the Dominguez Project would not be needed until the power it produces would be marketable. The municipal and industrial water plan would not be revived unless there were commitments for large amounts of water. Potential future M and I shortages in the immediate area could be served from smaller scale projects." A local citizen's group is interested in promoting the project as a privately funded reservoir. In view of the lack of demonstrated demand and economic feasibility, the Dominguez reservoir project is not expected to be developed regardless of wilderness designation.

Table 1 - - Land Status and Acreage Summary of the Study Area

	Acres
Within Wilderness Study Area	
BLM (surface and subsurface)	75,800
Split estate (BLM surface only)	0
Inholdings (State, Private)	600
Total	76,400
Within the Recommended Wilderness Boundary	
BLM (within WSA)	73,555
BLM (outside WSA)	333
Split Estate (within WSA)	0
Total BLM Land Recommended for Wilderness	73,888
Inholdings (State, Private)	600
Within Area Not Recommended for Wilderness	
BLM	2,245
Split Estate	0
Total BLM Land Not Recommnded for Wilderness	2,245
Inholdings (State, Private)	0

Criteria Considered in Developing the Wilderness Recommendations

Wilderness Characteristics

Naturalness

This WSA is characterized by large mesas dissected by deep canyons and arroyos. The northeast-southwest trending, finger-like mesas are covered with pinyon-juniper woodland and sagebrush parks and vary in size up to 12 miles long and 2 miles wide. The 2 major canyon systems occurring in the WSA are drained by Big Dominguez Creek (14 miles long) and Little Dominguez Creek (about 17 miles long). Both of these drainages are steep-walled, red slickrock canyons with a depth varying from 600 to over a 1,000 feet.

Big and Little Dominguez Creeks originate on the crest of the Uncompaghre Plateau and flow northeasterly to the Gunnison River. These perennial drainages each have numerous side canyons which vary in length from less than half-a-mile to over 2 miles. The main canyons contain many large U-shaped natural amphitheaters. A narrow granite gorge about 100 to 200 feet deep occurs in the lower half of the canyon of Big Dominguez Creek. This canyon varies in width from one-fourth to one mile wide while the canyon of Little Dominguez Creek is more narrow with a width of less than one-fourth mile.

Riparian vegetation lines the banks of both Big and Little Dominguez Creeks and includes cottonwoods, willow, tamarisk, river birch, alder and horsetail. Pinyon-juniper woodland occurs in both canyons on the more arid benches above the canyon bottoms. These woodlands vary from sparse stands in the lower elevation to dense stands in the upper parts of the canyons. Ponderosa pine and Douglas fir occur

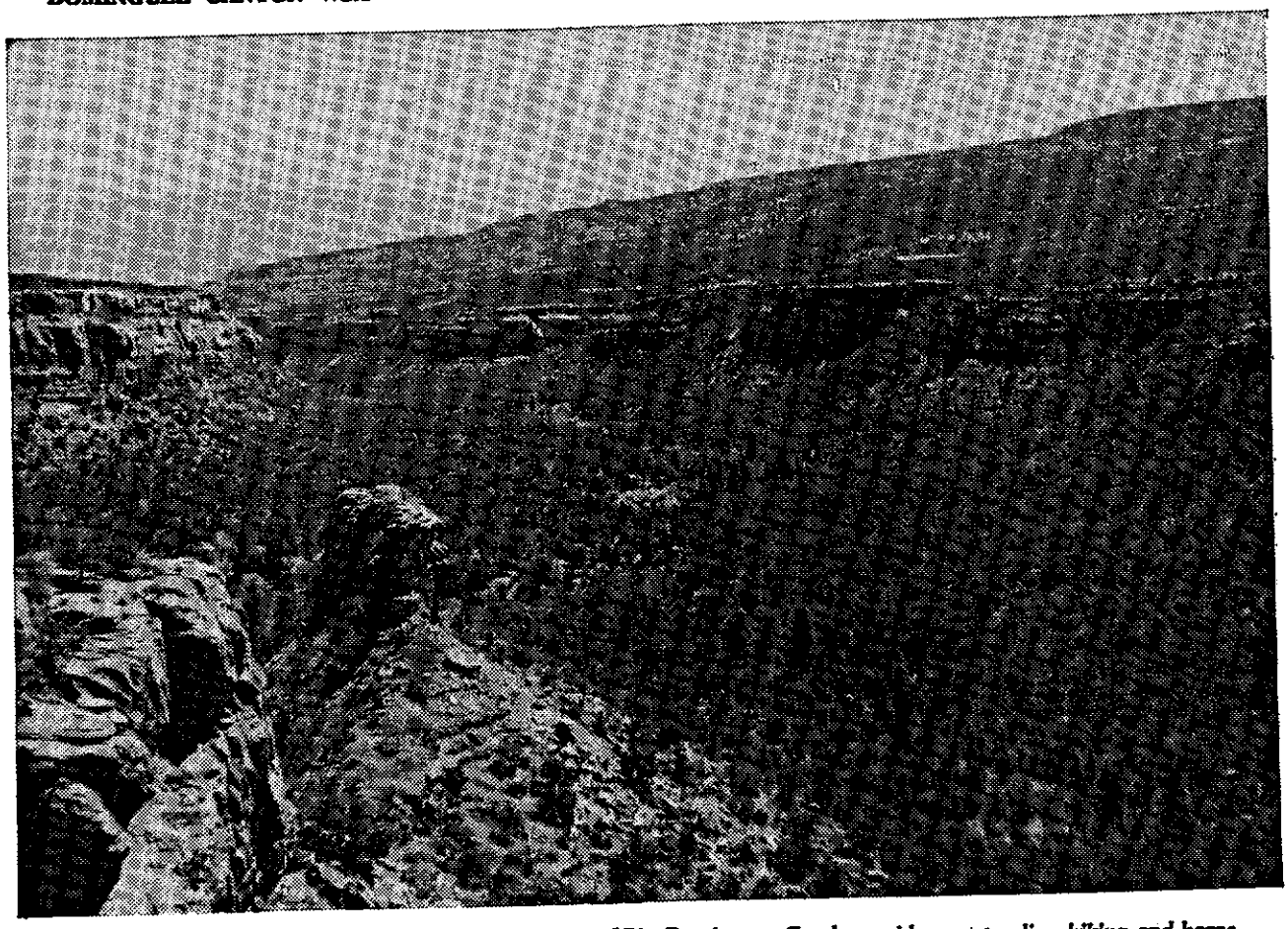


Photo 3. Dominguez Canyon WSA. The canyon of Big Dominguez Creek provides outstanding hiking and horseback riding.

along the stream course of both canyons as well as in moist areas like the base of some of the large alcoves.

Human imprints on the mesa tops include trails, mineral exploration pits, stock ponds, corrals, fences and past evidence of trespass wood cutting. All the trails except the one on Triangle Mesa have low to moderate impact on naturalness. The Triangle Mesa trail is very visible and detracts from the naturalness of the Triangle Mesa area because of the bench cuts and the color contrasts. There are no valid mining claims in this area and BLM is working to reclaim this high impact human imprint. The remaining imprints on the mesas are substantially unnoticeable due to the visual characteristics of the imprints, the size of the mesas and their vegetative and topographic characteristics. Overall, the mesas in this WSA appear to be affected primarily by the forces of nature. The visually intrusive way on Triangular Mesa is being rehabilitated by BLM.

Both of the main canyon systems appear to be affected primarily by the forces of nature except for several minor human imprints. Several ways, mineral exploration pits, two cabins and several other minor imprints detract very little from the naturalness of the canyons.

Solitude

Outstanding opportunities for solitude occur throughout the Dominguez Canyon WSA. Extensive canyon systems, large and diverse mesa tops, good physical access between canyons and mesas, and a variety of landscape settings allow visitors to become dispersed and separated from the sites and sounds of other wilderness travelers. Size, configuration and topographic and vegetative screening also contribute to the WSA's outstanding opportunities for solitude. Broad vistas are also visible from the mesas. Views of the San Juan Mountains, West Elk Range, Grand Mesa and the Uncompahgre Plateau

add to the sense of solitude and feelings of separation from the sights and sounds of man.

Although the mesas are relatively flat, the dense pinyon-juniper woodland provides effective visual screening. This vegetation would allow visitors to pass without being aware of each other. The topographic variety on and around the mesas would also provide effective screening. The twisting nature of the canyons, numerous large amphitheaters, dense and varied vegetation and the canyons' width all contribute to opportunities for outstanding solitude. The narrow granite gorge in the lower part of the canyon of Big Dominguez Creek contains many small, secluded beach areas where outstanding solitude can also be experienced.

Primitive and Unconfined Recreation

The Dominguez Canyon WSA contains outstanding opportunities for hiking, backpacking, scenic viewing, horseback riding, fishing, hunting and photography. Several old trails, packtrails and hiking trails provide good physical access throughout the WSA. The high degree of landscape diversity created by the mesas, canyons, various geologic features, perennial streams, vegetative types, rock art, wildlife and outstanding scenery provide an attractive setting for the visitor. The diversity of this landscape allows the visitor's experience to be heightened by constantly moving through a changing physical setting.

Outstanding opportunities for wildlife viewing and hunting exist in the WSA. The pinyon-juniper woodland, sagebrush and riparian vegetation support a variety of wildlife including bighorn sheep, deer, elk (winter), mountain lion, black bear, wild turkey, chukar, waterfowl and numerous small game.

The presence of two perennial streams in a semi-arid canyon environment adds significant value to recreation opportunities in the WSA. Visitors to the canyons may swim in warm pools carved in precambrian granite, view cascading waterfalls, photograph historic and prehistoric rock art, study geologic features such as hoodoos (mushroom shaped rocks) and giant amphitheatres, fish for trout in Big Dominguez Creek, view bighorn sheep, and explore side canyons.

The area's scenic beauty and surrounding vistas provide for outstanding scenic viewing. The mesas in the WSA provide outstanding views of the canyons, mountains, and valleys of the surrounding lands including the San Juan Mountains, West Elk Range, Grand Mesa, and the Uncompahgre Plateau which enhance the visitor's experience.

Special Features

The WSA possesses outstanding geological, paleontolgical, archaeological, historical and ecological values. Erosion has exposed seven sedimentary strata and a precambrian bedrock of schist, gneiss, and granite covering a period of geologic history dating back 600 million years. Dark precambrian schist, gneiss and granite which are laced with pegmatite dikes twisting along the canyon floors, at times form a small inner gorge. Numerous free-standing pinnacles and perched rocks (hoodoos) appear throughout the canyons in clusters. Natural amphitheatres, various sized alcoves, sheer canyon walls, gigantic boulders and talus slopes all attest to the on-going forces of erosion working on the canyons and mesas.

The WSA is rich in fossilized bone. In 1967, fossilized bones of two sauropods (plant eating) dinosaurs were excavated near the mouth of Little Dominguez Creek. These medium-sized dinosaurs are significant for scientific study because they represent a new genus and species in the chain of dinosaur evolution. In 1979, a scapula from an ultrasaurus was found in the WSA. This is the largest dinosaur known to have existed.

The WSA possesses significant cultural values including lithic sites, rock shelters, petroglphs, stone circles, and wickiups. Some of the wickiups have been tree ring dated back to the mid-1700s.

Among the ecological values in the WSA are three rare and endanged plants. They include the monkey flower (*Mimulus eastwoodii*), the Uinta Basin hookless cactus (*Sclerocactus glaucus*) and the spineless hedgehog cactus (*Astragalas linifolius*). Although there are no known rare and endangered animal species in the WSA, it is believed that the area does provide habitat for wintering bald eagles.

Diversity in the National Wilderness Preservation System

Assessing the diversity of natural systems and features as represented by ecosystems

Wilderness designation of this WSA would not add a new ecosystem or landform to the National Wilderness Preservation System but would add an outstanding representative of the juniper-pinyon woodland of the Colorado Plateau Province. This ecosystem is currently represented by only one wilderness area in Colorado and only 11 in the National Wilderness Preservation System. Although there are 17 other WSAs representing this ecosystem in Colorado, the Dominguez Canyon WSA is believed to be one of the most spectacular. This information is summarized in Table 2.

Table 2 - Ecosystem Representation

Bailey-Kuchler Classification Province/Potential Natural Vegetation	NWPS Areas areas	NWPS Areas acres	Other BLM Studies areas	Other BLM Studies acres
Nationwide				
Colorado Plateau Province				
Juniper-Pinyon Woodland	11	1,401,745	85	2,142,602
Colorado				
Colorado Plateau Province				
Juniper-Pinyon Woodland	1	8,105	17	293,837

Expanding the opportunities for solitude or primitive recreation within a days driving time (five hours) of major population centers

The Dominguez Canyon WSA is within a five hour drive of three major population centers and within one hour of Grand Junction, the largest metropolitan area on the western slope of Colorado with a population of about 85,000 residents. Table 3 summarizes the number and acreage of designated areas and other BLM study areas within a five hour drive of these population centers.

Table 3 - Wilderness Opportunities for Residents of Major Population Centers

Population Center	NWPS Areas areas	NWPS Areas acres	Other BLM Studies areas	Other BLM Studies acres
Denver	20	1,728,410	21	372,010
Salt Lake City /Ogden	11	685,088	42	1,826,904
Provo/Orem	12	730,088	52	2,307,031

Balancing the geographic distribution of wilderness areas

The Dominguez Canyon WSA would contribute to balancing the geographic distribution of areas within the National Wilderness Preservation System. The nearest designated wilderness areas are about two hours from the Dominguez Canyon WSA. The Sewemup Mesa WSA (18,835 acres) and the Dolores River Canyon WSA (29,415 acres) are both recommended for wilderness and are both within an hour and 30 minutes of the Dominguez Canyon WSA.

Manageability

The Dominguez Canyon WSA can be managed to maintain wilderness values but there could be some minor vehicle intrusion manageability problems as discussed under the *Recommendation and Rationale* section. The 65 desert bighorn sheep herd is the key management species in the WSA according to the Colorado Division of Wildlife (CDOW). The Colorado Division of Wildlife objective for this herd is to allow it to increase to 500. The CDOW would need vehicle access into the area for 5 days every 8 years to capture animals for examination, treatment, marking and possible translocation. This is considered a minor problem for wilderness management. Access would only be allowed to peripheral areas and would be closely regulated.

Energy and Mineral Resource Values

The U.S. Geological Survey prepared a mineral assessment of the Dominguez Canyon WSA in 1987. Although occurence of amethyst, uranium, copper and barium have been reported by the U.S. Geological Survey (1987) within the WSA, the area has a low mineral occurrence and development potential. There are no existing claims in the WSA.

There are no oil and gas leases in the Dominguez Canyon WSA. The development potential for oil and gas is low based on the lack of a stratigraphic section favorable for oil and gas occurrence.

Impacts on Resources

Table 4 summarizes the comparative impacts for the three alternatives considered in the Dominguez Canyon WSA.

Table 4 - Comparative Summary of the Impacts by Alternative

Impact Topics	Recommendation: Partial Wilderness Alternative	All Wilderness Alternative	No Wilderness Alternative
Impacts on Wilderness	*Wilderness designation would provide long-term legislative protection on 73,888 acres and would enhance this ecotype's representation in the National Wilderness Preservation System. Wilderness values would be temporarily impaired on 4,500 acres from range projects. The range projects would be substantially unnoticeable within 3 years following construction. Of the 2,245 acres not recommended, 320 acres would continue to be impacted by recreational off-highway vehicles on 1 mile of trail.*	*Impacts would be the same as those described under the Recommendation except wilderness designation would provide long-term legislative protection on an additional 1,192 acres that would be added to the National Wilderness Preservation System.*	*Managing the WSA to provide for back country recreation and scenic values would maintain wilderness characteristics on 70,000 acres of the WSA. However, long-term legislative protection of these values would not be provided. Wilderness values would be temporarily lost on approximately 14,000 acres as a result of range projects and paleontological excavations. Wilderness values would be lessened in the area of some range projects (fences, troughs) and permanently impaired on 1,800 acres from construction of 2.5 miles of stock trail up the canyon walls. Recreational off-highway vehicles on 1 mile of designated trail would continue to disrupt outstanding opportunities for primitive and unconfined recreation on 320 acres.*

Table 4 - Comparative Summary of the Impacts by Alternative (continued)

Impact Topics	Recommendation: Partial Wilderness Alternative	All Wilderness Alternative	No Wilderness Alternative
Impacts on Paleontological Excavations and Study	*Wilderness designation would help protect fossils from vandalism and unauthorized collection but would prelcude large-scale excavations. One nonimpairing excavation would add to the scientific knowledge of the area. Prohibiting large-scale excavations would be a major impact since this area is known to produce important fossils. Paleontological resources would be vulnerable to vandalism and unauthorized collection within one-half mile of the trail open to recreational off-highway vehicles.*	*Impacts would be the same as those under the Recomendation except that the entire area would be less vulnerable to vandalism and unauthorized collection because the 1 mile of trail would be closed to recreational off-highway vehicles.*	*Use of mechanized equipment and motorized vehicles in paleontological excavations would allow scientists to remove large fossils. A total of 640 acres (one-half mile on both sides of l mile of trail) inside the WSA would be vulnerable to vandalism and unauthorized collection of paleontological resources.*
Impacts on Livestock Grazing	*Construction of 7 livestock reservoirs would result in improved livestock distribution and make about 408 additional AUMs of forage available for use within the WSA portion of the Dominguez Allotment. Existing use would increase from 1,984 AUMs to 2,392 AUMs inside the WSA portion of Dominguez Allotment. This use is under the total federal authorized use (3,600 AUMs) inside WSA portion of Dominguez Allotment.*	*Construction of 7 livestock reservoirs would result in improved livestock distribution and make about 408 additional AUMs of forage available for use within the WSA portion of the Dominguez Allotment. This use is under the total federal authorized use (3,600 AUMs) inside the WSA portion of Dominguez Allotment.*	*Constructing up to 12 livestock reservoirs and other related projects would result in improved livestock distribution and make about 1,500 additional AUMs of forage available for use within the Dominguez Allotment. The 1,500 additional AUMs would increase existing use of 1,984 AUMs to 3,489 AUMs inside the WSA portion of Dominguez Allotment. This use is under the total federal authorized use (3,600 AUMs) inside the WSA portion of Dominguez Allotment.*

Table 4 - Comparative Summary of the Impacts by Alternative (continued)

Impact Topics	Recommendation: Partial Wilderness Alternative	All Wilderness Alternative	No Wilderness Alternative
Impacts on Recreation and Off-Highway Vehicles	*Wilderness designation would maintain the natural setting and nonmotorized recreation in the WSA. Visitor use would increase from 3,000 to 7,000 visitor days per year within 10 years. Limiting motorized use to 1 mile of designated trail in the nonrecommended area would decrease recreational off-highway vehicle use from 80 to 50 visitor days per year. This use would continue to impair natural and nonmotorized recreation opportunities on 320 acres.*	*Impacts would be the same as those described under the Recommendation except natural settings and nonmotorized recreation would be maintained in the entire WSA and the 80 days of recreational off-highway vehicle use would be displaced.*	*Natural settings and nonmotorized recreation would be maintained in the WSA. Nonmotorized visitor use would increase from 3,000 to 5,500 visitor days per year within 10 years. Limiting motorized use on l mile of designated trail would decrease recreational off-highway visitor use from 80 to 50 visitor days per year.*
Impacts on Cultural Resources	*Cultural sites on 640 acres would continue to be vulnerable to vandalism and unauthorized collection. Data from cultural sites on 8 acres would be recovered or protected. Cultural resources on the remaining 73,240 acres would be protected.*	*Impacts would be the same as those described under the Proposed Action except cultural resources would not be vulnerable to vandalism and unauthorized collection from recreational off-highway vehicles on 1 mile of trail. The trail would be closed.*	*Cultural resources on 640 acres would continue to be vulnerable to vandalism and unauthorized collection. Data from cultural sites on 34 acres would be recovered or protected. Cultural resources on the remaining 75,126 acres would remain largely undisturbed.*

Local Social and Economic Considerations

Designation of the Dominguez Canyon WSA as wilderness would incrementally help to increase recreation use in the Grand Junction area. Greater public awareness of this WSA would also draw wilderness users from outside west-central Colorado. Wilderness use after designation is projected to grow from 3,000 to 7,000 visitor days within 10 years. This increase would generate some increase in local income and although not large, could be noticed in the smaller communities in the area of the WSA. These economic benifits to smaller communites could be even more noticeable if all areas recommended for wilderness in west-central Colorado became wilderness.

Summary of WSA Specific Public Comments

Public involvement has occurred throughout the wilderness review process. Comments received during the inventory process and early stages of the EIS were used to develop issues and alternatives for analysis.

During the formal review of the Draft EIS, a total of 46 comments were received specific to the Dominguez Canyon WSA. There were 41 comments in favor of wilderness designation and 5 comments against wildernesss designation. Many of the commenters had visited this WSA and discussed its special features and outstanding opportunities for solitude and primitive and unconfined recreation. Many of these commenters also opposed the proposal in the Draft EIS to reduce the size of the wilderness by 19,000 acres to decrease trespass potential onto private lands. Some commenters stated that the scenic, recreational and archaeologic resources of this unit would significantly enhance the National Wilderness Preservation System.

Those 5 commenters opposing wilderness designation had many different concerns. One common concern was the impact of the wilderness visitors on the area's resources including its naturalness, water and rock art. Two commenters were concerned that BLM would not be able to protect these resources once the Dominguez Canyon was designated wilderness. Two commenters expressed concern that the fire and geologic hazards in the area would pose special problems for visitors. Other comments concerned inadequate acccess to the area, public use of the Bridgeport Bridge and trespass. Trespass and vandalism of mining claims was another concern. One rancher who has a grazing allotment in the WSA was concerned about new "roads" that have appeared in the unit since it became a WSA and well-known by the public.

The Mesa County Commission commented on the draft EIS stating that the proposed action to designate the Dominguez Canyon WSA as wilderness "seemed reasonable and consistent" with the county's land use plans. Initially the Delta County Commissioners strongly endorsed wilderness designation for the Dominguez Canyon WSA stating that "the area exhibits unique characteristics which should be preserved as best possible in their natural state." However, this support was later withdrawn pending satisfactory resolution of concerns raised by a local rancher who has grazing rights in the WSA. No comments were received from Montrose County. Comments received from the state of Colorado's Department of Natural Resources supported the Draft EIS on wilderness recommendations but did not specifically reference Dominguez Canyon WSA. No other federal,state or local agency commented on the Draft EIS.

Table 5
Estimated Cost of Acquisition of Non Federal Holdings Within Areas Recommended for Designation1/

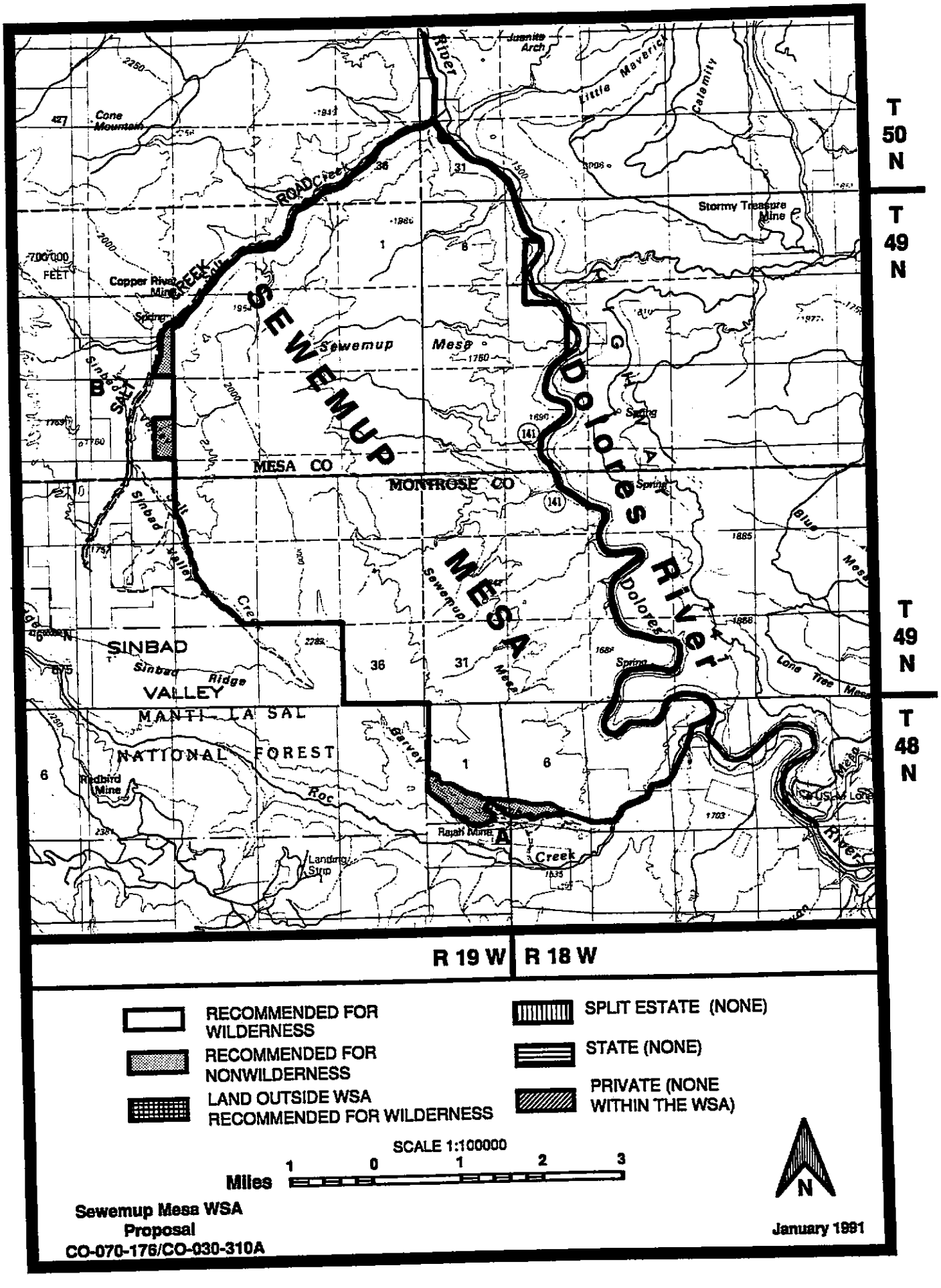
Legal Description	Total Acreage	Number of Owners 2/	Type of Ownership By Estate		Presently Proposed for Acquisition	Preferred Method of Acquisition	Estimated Cost of Acquisition 3/	
			Surface Estate	Subsurface Estate			Land Costs	Processing Costs
T.15S.,R.98W.,Sec 33 S1/2SW1/4;NE1/4SW1/4; SW1/4SE1/4 T.51N.,R.13W.,Sec 7 SESE; Sec 8, S1/2SW1/4 Sec 17, NW1/4;NE1/4SW1/4; NW1/4SE1/4 Sec 18, E1/2NE1/4	600	1	State	State	No	Exchange	N/A	$12,000

1/Standard Disclaimer: the estimated costs listed in this appendix in no way represents a formal appraisal value of the land or mineral estate, but are rough estimates based on sales or exchanges of lands or mineral estate with similar characteristics to those within the WSA. The estimates are for the purpose of establishing a range of potential costs to the government of acquiring non-federal holdings and in no way represent an offer to purchase or exchange at the cost estimate included in the appendix.

Processing costs are all miscellaneous expenses other than land costs including work month costs, appraisals, title work, escrow tests, etc.

2/If a larger parcel as shown in the first column has been recently subdivided or is jointly owned, this column represents the number of owners that could be involved in any acquisition negotiation.

3/Where exchange is the proposed acquisition method, only administrative costs of processing the exchange are shown. Land costs would not be applicable. Where direct purchase is proposed, an estimate of both the land costs and the processing costs are provided.



RECOMMENDED FOR WILDERNESS

RECOMMENDED FOR NONWILDERNESS

LAND OUTSIDE WSA RECOMMENDED FOR WILDERNESS

SPLIT ESTATE (NONE)

STATE (NONE)

PRIVATE (NONE WITHIN THE WSA)

Sewemup Mesa WSA
Proposal
CO-070-176/CO-030-310A

January 1991

SEWEMUP MESA

WILDERNESS STUDY AREA

The Study Area – 19,140 acres

The Sewemup Mesa WSA (CO-070-176/CO-030-310A) is located in Mesa and Montrose Counties, approximately 10 miles south of Gateway and 70 miles south of Grand Junction, Colorado. The WSA contains 19,140 acres of public land administered by BLM. (See Table 1) The area is bounded on the north by a county road, on the east by Colorado 141 and private lands, on the south by a maintained dirt road and private lands and on the west by the Manti-LaSal National Forest and private lands. The WSA consists of a sloping, isolated mesa top with sheer cliff faces 500 to 700 high and an area of hogbacks and rolling hills below the mesa's western escarpment. (See Photo 1) Pinyon-juniper woodland is the dominant vegetation on the mesa top while pinyon-juniper woodland, sagebrush and grassy meadows characterize the lower area.

The WSA was studied under Section 603 of the Federal Land Policy and Management Act (FLPMA) and was included in the Grand Junction Resource Management Plan and Environmental Impact Statement (EIS) published in November, 1985. Three alternatives were analyzed in the EIS: all wilderness, no wilderness, and partial wilderness (18,835 would be designated as wilderness and 305 acres would be released for other uses).

Recommendation and Rationale

18,835 acres recommended for wilderness

305 acres recommended for nonwilderness

It is recommended that 18,835 acres of the Sewemup Mesa WSA be designated as wilderness and 305 acres be released for uses other wilderness. These areas are shown on Map 1. The environmentally preferable alternative would be to designate the entire 19,140 acres as wilderness since this would result in the least change from the natural environment over the long term.

The 18,835 acre area which makes up most of the WSA is recommended for wilderness designation primarily because of its outstanding naturalness including its unmodified landform and outstanding opportunities for solitude and primitive, unconfined recreation. Wildernesss designation would protect the landform known as Sewemup Mesa which is considered to be the last, undisturbed, publicly owned, high pinyon-juniper mesa in western Colorado. Included in the area recommended for wilderness are scenic cliffs 500 to 700 feet high surrounding the isolated mesa top, uncommon and sensitive plants, threatened and endangered animals and significant cultural values.

Wilderness designation would provide for long-term protection of the area's outstanding opportunities for solitude as well as outstanding opportunities for hiking, backpacking, scenic viewing, nature study, and technical rock climbing. The high degree of landscape diversity created by numerous, rocky, intermittent drainages, dense stands of pinyon-juniper woodland and pockets of Ponderosa pine provide an interesting landscape in which to hike and observe nature. (See Photo 2) Extensive outcroppings of slickrock including the Entrada Knolls in the northwestern corner of the mesa and the diversity of vegetation also add to the landscape variety of the area, helping to provide outstanding primitive recreation opportunities. The area also contains outstanding opportunities for technical rock climbing on the Wingate cliff faces that surround most of Sewemup Mesa.

Wilderness designation would ensure protection of an outstanding area in which to study an undisturbed area of the Colorado Plateau where historical grazing has had minimal impact on the mesa's vegetation. No other area within this region contains an ecosystem as it appeared before humans began changing vegetation patterns through the grazing of domestic livestock. Because of this minimal historic grazing, uncommon and sensitive plants occur on the mesa top. (See Photo 3) One sensitive plant found in the WSA is the monkey flower (*Mimulus eastwoodii*). Uncommon plants found in the WSA include spike pappusgrass (*Enneapogon desvauxii*), which has not been found anywhere else in Colorado, and purple

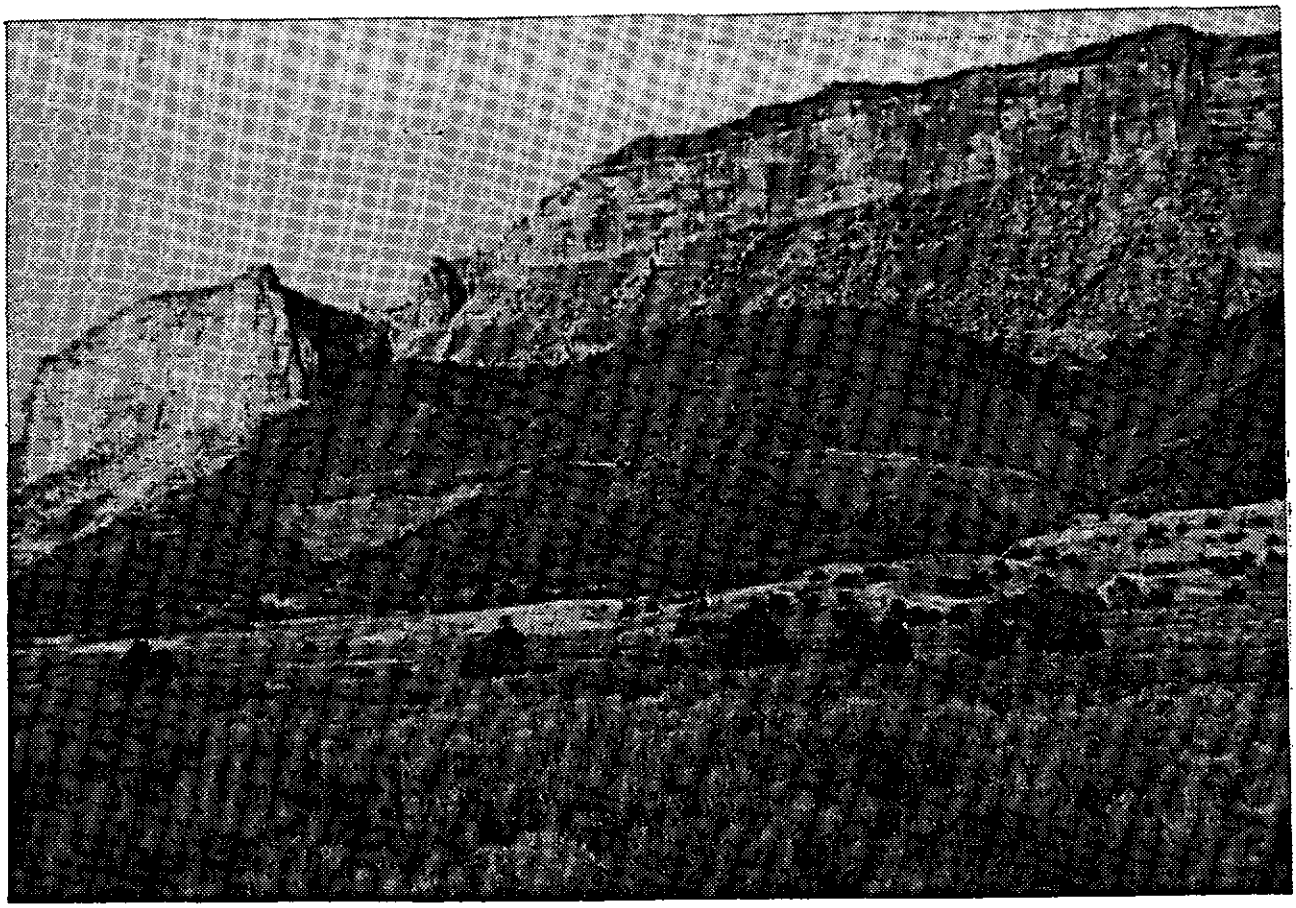


Photo 1. Sewemup Mesa WSA. Sewemup escarpment from Sinbad Valley.

lovegrass (*Eragrostis spectabilis*) and wolftail (*Lycurus phleoides*) which have not been recorded anywhere else in western Colorado.

Wilderness designation would preserve an area of valuable wildlife habitat. This area contains approximately 1,000 acres of critical deer winter range. A plan exists to reintroduce the desert bighorn sheep to Sewemup Mesa in the future. A peregrine falcon eyrie and two golden eagle eyries are also located in the area recommended. Mountain lions also inhabit the area.

The two parcels of land along the boundary of the WSA which are not recommended for wilderness are shown on the map. The recommended boundaries on the south and west sides of the WSA were pulled back to create a more manageable boundary which could be more easily recognized by the wilderness visitor. The recommended south boundary follows the ridgeline above Garvey Gulch. Parcel A (160 acres) would be outside the recommended wilderness boundary. The recommended west boundary follows a 3 mile long north-south line that would be more easily recognized by the wilderness visitor. Parcel B (145 acres) would also be outside the recommended wilderness boundary.

No major manageability problems or resource conflicts would result from wilderness designation. The WSA contains 72 unpatented mining claims (uranium/vanadium) inside the area recommended for wilderness, but the U.S. Geologic Survey (USGS) and Bureau of Mines (BM)(1988) report indicate only low to moderate mineral potential. No development is projected. There are also eight oil and gas leases in the area recommended for wilderness. All were issued after the passage of the Federal Land Policy and Management Act. If the WSA does not become wilderness, a no surface occupancy stipulation applies which means that any drilling would have to be done outside the WSA. The USGS/BM report for this area states that development potential for oil and gas is low based on

the lack of a stratigraphic section favorable for oil and gas occurrence. The area recommended for wilderness also contains portions of 3 grazing allotments totaling 212 animal unit months (AUM). No grazing occurs on the mesa top. No range improvements have been proposed and no conflicts with range management are projected.

Table 1 - Land Status and Acreage Summary of the Study Area

	Acres
Within Wilderness Study Area	
BLM (surface and subsurface)	19,140
Split estate (BLM surface only)	0
Inholdings (State, Private)	0
Total	19,140
Within the Recommended Wilderness Boundary	
BLM (within WSA)	18,835
BLM (outside WSA)	0
Split Estate (within WSA)	0
Total BLM Land Recommended for Wilderness	18,835
Inholdings (State, Private)	0
Within the Area Not Recommended for Wilderness	
BLM	305
Split Estate	0
Total BLM Land Not Recommended for Wilderness	305
Inholdings (State, Private)	0

Criteria Considered in Developing the Wilderness Recommendations

Wilderness Characteristics

Naturalness

The Sewemup Mesa WSA is predominantly natural with some neglible human imprints in the Sinbad Valley portion of the WSA. Sewemup Mesa which makes up about 14,000 acres (73 per cent) of the WSA is an isolated mesa top surrounded by sheer, 500 to 700 foot cliffs on three sides. The southern edge of the mesa has a broken, rocky slope rather than a solid cliff face. The Sinbad Valley portion of the unit is part of a collapsed salt dome which over geologic time has created a deep valley nearly circular in shape. The outside edges of the valley contain small hogback-like formations that dip away from the center of the valley thus revealing the general shape of the salt dome before its collapse.

The mesa top slopes from about 7,300 feet on its western edge above Sinbad Valley to about 5,000 feet on its eastern edge above the Dolores River valley. On this mesa are numerous parallel canyon systems that create a complex and varied topography. These drainages contain many tributary forks which add to the topograhic complexity of the mesa top. The most prominent topographic feature of the mesa is a pair of bluffs in the northwest corner which are the sole remnant of the Entrada Formation which at one time overlay the entire WSA.

The vegetation on the mesa top is dominated by pinyon-juniper woodland. Tree density is relatively high on the upper part of the mesa with a progressive thinning toward the lower elevations of the mesa. Scrub oak and serviceberry occur in the higher elevations of the mesa. Several small grassy parks occur on the eastern edge of the mesa where fire has opened the pinyon-juniper woodland. Isolated stands of Ponderosa pine occur on the northwestern corner of the mesa and at the head of some of the drainages.

The vegetation of the Sinbad Valley portion of the WSA consists of widely spaced pinyon-juniper woodlands on the slopes of the hogbacks and on the tops of the small hills where soils are not well developed. The vegetation in the flatter portions of Sinbad Valley where soils are well developed consist of sagebrush and various native grasses. Various wildflowers are also common throughout the WSA.

Most of the human imprints in this WSA are in Sinbad Valley. These imprints include three revegetating trails and the remains of an old fenceline. These imprints, because of their location and revegetation, have minimal impact on naturalness. The Sewemup Mesa portion of the unit does not contain any human imprints and represents an ecosystem affected solely by the forces of nature.

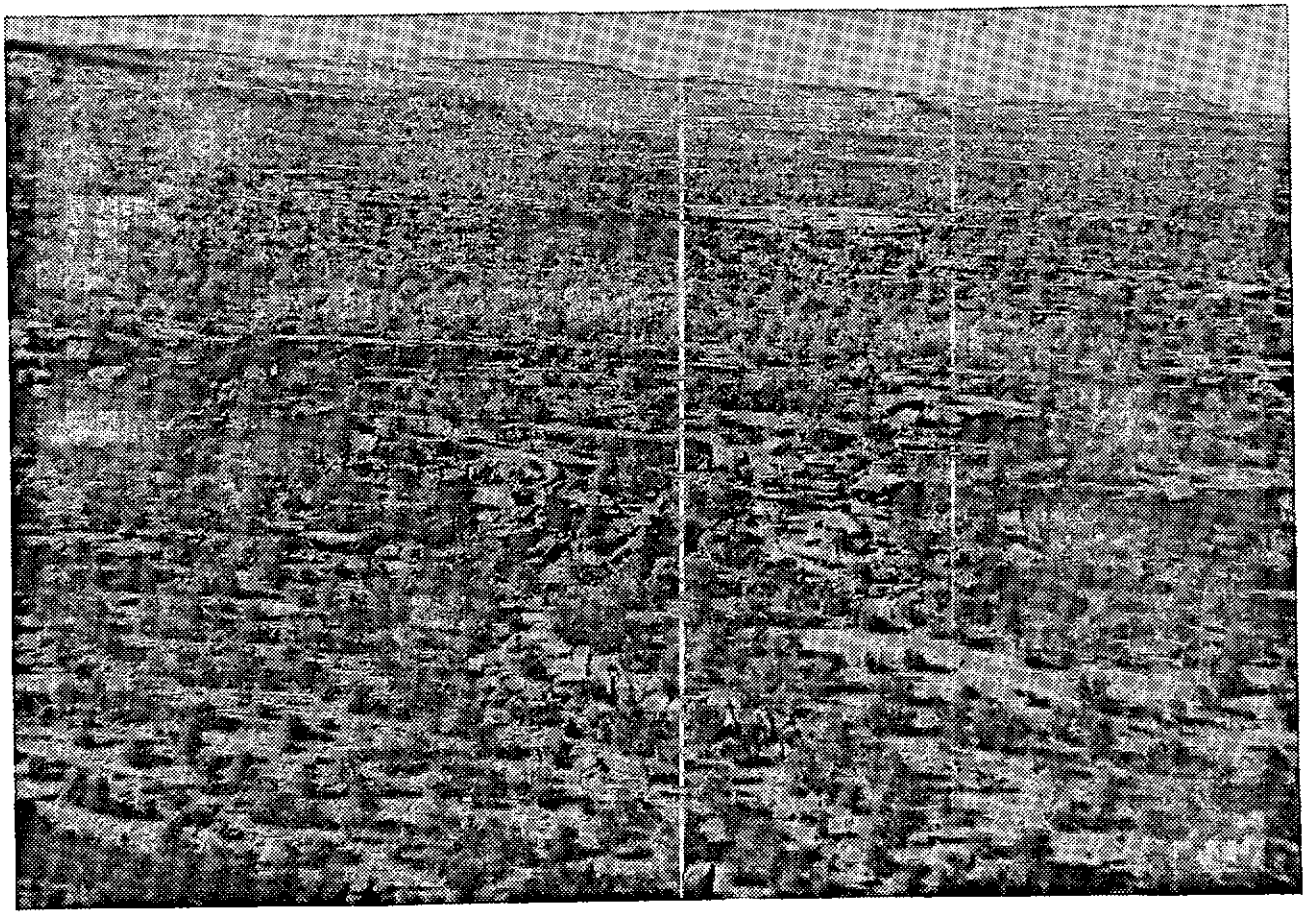


Photo 2. Sewemup Mesa WSA. The mesa top's topographic variety.

Solitude

Outstanding opportunities for solitude occur throughout the Sememup Mesa WSA. The presence of numerous narrow and twisting drainages on the mesa top create a landscape in which visitors can easily become dispersed and separated from the sites and sounds of other wilderness travelers. The mesa's topography together with its dense vegetation enhance outstanding opportunities for solitude. Stands of pinyon-juniper separate visitors from one another by visual screening and muffling their sounds. Topography and vegetation in the Sinbad Valley part of the WSA provide for outstanding opportunities for solitude. The large size (19,140) of the WSA and its relative inaccessibility, primarily due to topography, further enhance its outstanding opportunities for solitude.

The presence of sheer cliffs surrounding Sewemup Mesa adds to the feeling of outstanding solitude by providing a significant although not an impassable barrier to the outside world. Broad vistas generally free of human imprints are also visible from the mesa top. All of the eastern flank of the La Sal Mountains, which rise from the floor of Sinbad Valley to almost 13,000 feet, can be seen adding to the feeling of solitude from experiencing the distant vistas of the surrounding lands. A major portion of the Uncompahgre Plateau is also visible from Sewemup Mesa.

Primitive and Unconfined Recreation

The Sewemup Mesa WSA contains outstanding opportunities for hiking, backpacking, scenic viewing, nature study and technical rock climbing. The high degree of landscape diversity created by an isolated mesa with numerous drainages, sandstone outcroppings, sheer canyon walls, various vegetation types including species not found elsewhere in western Colorado, interesting wildlife, historic values and outstanding scenery, provide an uncommon natural setting attractive to the hiker, backpacker and naturalist. The diversity of this landscape allows the visitors' experience to be heightened by constantly moving through a changing physical setting.

The area's scenic beauty and the surrounding vistas provide for outstanding scenic viewing. Views of the beautiful La Sal Mountains are visible throughout much of the WSA and greatly enhance the recreation experience. The overall naturalness of the WSA provides outstanding opportunities to study the flora of the mesa top. This WSA represents the last high mesa in western Colorado that has not been impacted by people.

The WSA also contains outstanding opportunities for technical rock climbing on the Wingate cliffs that surround most of the Sewemup Mesa. Developed crack systems, solid rock and vertical walls of five to seven hundred feet make this an outstanding area in which to climb.

Special Features

The WSA possessses outstanding ecological values because litttle grazing appears to have occurred on the mesa top except a limited amount in the southeast corner. Very limited physical access has maintained a remnant ecosystem characteristic of the Colorado Plateau as it was prior to the impact of settlement and domestic livestock grazing. All plant communities present on the mesa top are undisturbed by people. Floristic studies on Sewemup Mesa completed in 1988 identified one grass collected for the first time in Colorado and two grasses collected for the first time in western Colorado.

The WSA is rich in pre-history and history. The Fremont Culture used the area from A.D. 500 to A.D. 1300 followed by use by the Ute Culture to A.D. 1900. Petroglyphs and archaeological sites occur throughout the area. The historical values of the WSA are primarily associated with the cattle rustling activities of the McCarty gang. Historical accounts report that these outlaws would herd rustled cattle up onto Sewemup Mesa, cut out the brands and then sew the hide up. This is believed to be the origin of the name Sewemup Mesa. They would let the stolen cattle graze on the mesa until the local sheriffs stopped searching for them, at which time the McCarty Gang would round up the cattle and sell them. The well-preserved McCarty outlaw cabin is within the boundaries of the WSA.

Sewemup Mesa WSA provides important wildlife habitat for deer, elk, peregrine falcon and golden eagles. One-hundred desert bighorn will be introduced into the WSA in the future to re-establish a historic herd. The peregrine falcon eyrie site that occurs in this WSA is very important for the survival of this threatened and endangered species.

The geology of the WSA is of scientific, educational and scenic value. The collapsed salt dome of Sinbad Valley is a major geologic feature that is uncommon on the Colorado Plateau. The sheer cliff faces that delineate much of Sewemup Mesa towering over the tilted strata on the fringes of Sinbad Valley provide mute evidene of the geologic forces that shaped the Colorado Plateau. The process of canyon formation can be studied on the Dolores River side of the WSA.

Diversity in the National Wilderness Preservation System

Assessing the diversity of natural systems and features represented by ecosystems

Wilderness designation of this WSA would add an outstanding representative of the juniper-pinyon woodland of the Colorado Plateau Province to the National Wilderness Preservation System (NWPS) but would not add a new ecosystem or landform. This ecosystem is currently represented by only 1 wilderness area in Colorado and 11 in the NWPS. Although there are 17 other WSAs representing this ecosystem in Colorado, the Sewemup Mesa WSA is believed to be one of the most natural. (See Table 2)

Table 2 - Ecosystem Representation

Bailey-Kuchler Classification Province/Potential Natural Vegetation	NWPS Areas areas	NWPS Areas acres	Other BLM Studies areas	Other BLM Studies acres
Nationwide				
Colorado Plateau Province				
Juniper-Pinyon Woodland	11	1,401,745	85	2,142,602
Colorado				
Colorado Plateau Province				
Juniper-Pinyon Woodland	1	8,105	17	293,837

Expanding the opportunities for solitude or primitive recreation within a day's driving time (five hours) of major population centers

The Sewemup Mesa WSA is within a five hour drive of two major population centers (Standard Metropolitan Statistical Areas of 100,000 or more) and one and half hours of Grand Junction, the largest metropolitan area on the western slope of Colorado with a population of about 85,000 residents. Table 3 summarizes the number and acreage of designated areas and other BLM study areas within a five hour drive of these population centers.

Table 3 - Wilderness Opportunities for Residents of Major Population Centers

Population Center	NWPS Areas		Other BLM Studies	
	areas	acres	areas	acres
Salt Lake City/Ogden	11	685,088	42	1,826,904
Provo/Orem	12	730,088	52	2,307,031

Balancing the geographic distribution of wilderness areas

The Sewemup Mesa WSA would contribute to balancing the geographic distribution of areas within the National Wilderness Preservation System. The nearest designated wilderness areas are about two hours from Sewemup Mesa. The Dominguez Canyon WSA (73,888 acres) and the Dolores River Canyon WSA (29,415 acres) are both recommended for wilderness and are both within an hour and 30 minutes of the Sewemup Mesa WSA.

Manageability

The Sewemup Mesa WSA can be managed to maintain wilderness values. No manageability or resource conflicts would result from wilderness designation.

Energy and Mineral Resource Values

The U.S. Geological Survey and Bureau of Mines prepared a mineral assessment of the Sewemup Mesa WSA in 1988. There is a moderate mineral

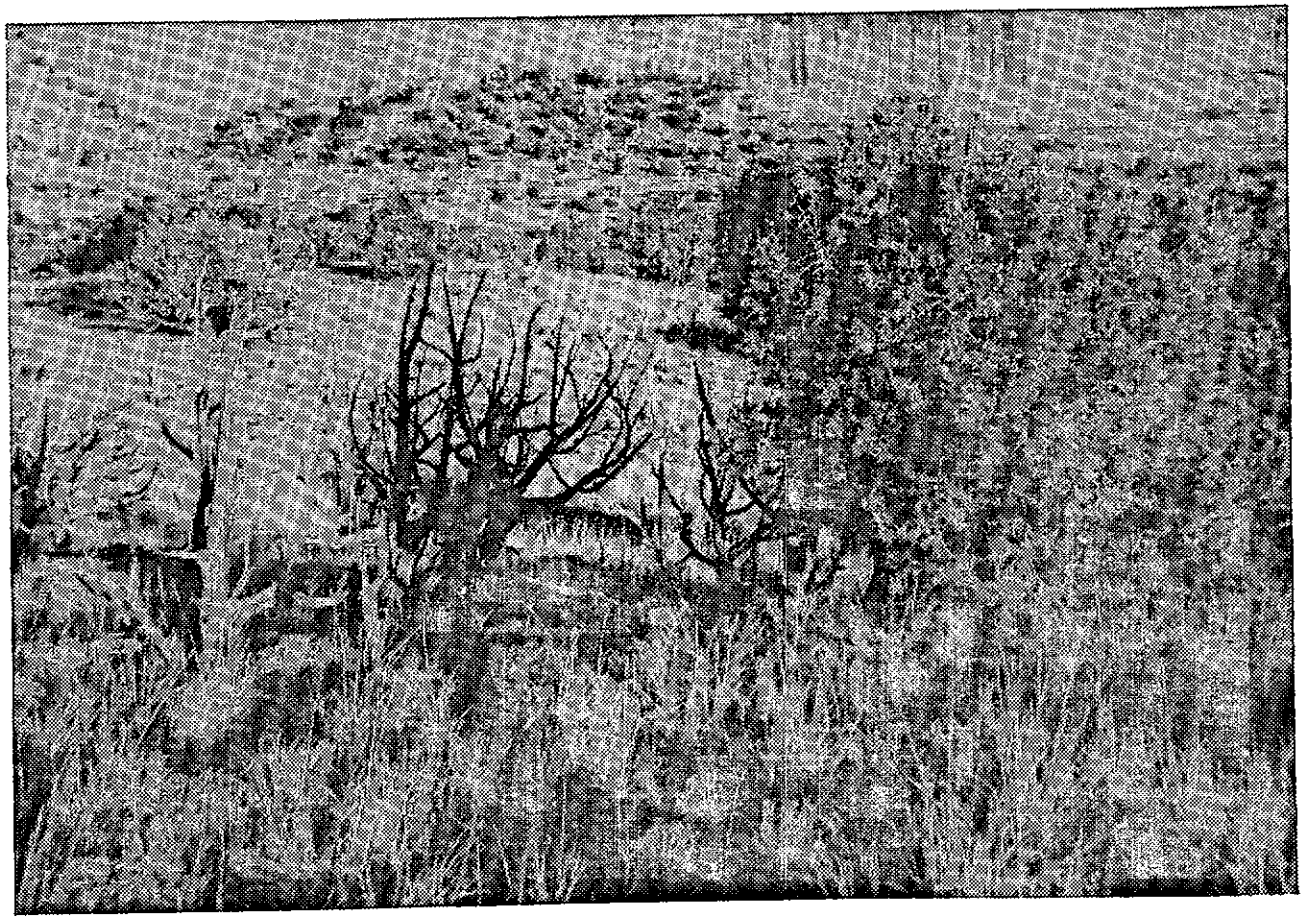


Photo 3. Sewemup Mesa WSA. An ungrazed grassy meadow on Sewemup Mesa.

resource potential for undiscovered uranium, vanadium and copper in the Morrison Formation at the southeast edge of the WSA. A moderate mineral resource potential also exists for copper and silver in fault zones located along the northern, western and southern sides of the WSA. There is a low mineral resource potential for other metals.

There are 72 unpatented mining claims inside this WSA. Only development necessary to satisfy annual assessment work has been done on these claims (a minimum of $100 worth of work per year). This has involved only hand tools and the surface has not been noticeably disturbed.

There is 1 oil and gas lease covering 640 acres in the Sewemup Mesa WSA. It was issued after the passage of the Federal Land Policy and Management Act (FLPMA). The development potential for oil and gas is low based on a lack of a stratigraphic section favorable for oil and gas occurrence.

Table 4 - Comparative Summary of the Impacts by Alternative

Impact Topics	Recommendation: Partial Wilderness Alternative	All Wilderness Alternative	No Wilderness Alternative
Impacts on Wilderness Values	*Wilderness designation would provide long-term legislative protection on 18,835 acres. Long-term legislative protection would not be provided on 305 acres recommended nonsuitable. Wilderness designation would enhance this ecotype's representation in the National Wilderness Preservation System.*	*Wilderness designation would provide long-term legislative protection on the entire WSA. It would protect the WSA's wilderness characteristics and enhance this ecotype's representation in the National Wilderness Preservation System.*	*The WSA (19,140 acres) would not be added to the National Preservation System. Management of part of the WSA as an Outstanding Natural Area (14,340 acres) would maintain the WSAs wilderness values and protect other special features but would not provide long-term legislative protection on the 14,340 acres.*
Impacts on Recreation and Off-Highway Vehicles	*Wilderness designation would maintain the present natural settings and provide for nonmotorized recreation opportunities such as hiking and backpacking. Nonmotorized recreation such as hiking and backpacking would increase from 500 to 1,400 visitor days per year within 10 years. About 50 visitor days per year of off-highway use would be displaced to other areas.*	*Impacts would be the same as those described under the Partial Wilderness Alternative except wilderness designation would ensure the natural and predominantly natural settings and nonmotorized recreation opportunities such as hiking and backpacking are protected in the entire WSA rather than just 18,835 acres.*	*The WSA's natural setting and outstanding opportunities for nonmotorized recreation would be maintained in the ONA (about 14,340 acres). Nonmotorized recreation use would increase from 500 to 1,000 visitor days per year within 10 years. Recreational use below the mesa would shift from nonmotorized to motorized use with some resultant loss of naturalness.*

Impacts on Resources

Table 4 summarizes the comparative impacts for the three alternatives considered in the Sewemup Mesa WSA.

Local Social and Economic Considerations

Designation of the Sewemup Mesa WSA as wilderness would incrementally help to increase recreation use in the Grand Junction area. Greater public awareness of this WSA would also draw wilderness users from outside west-central Colorado. Wilderness use after designation is projected to grow from 500 to 1,400 visitor days within 10 years. This increase would generate some increase in local income and, although not large, could be noticed in the smaller communities in the area of the WSA. These economic benefits to smaller communites could be even more noticeable if all areas proposed for wilderness in west-central Colorado became wilderness.

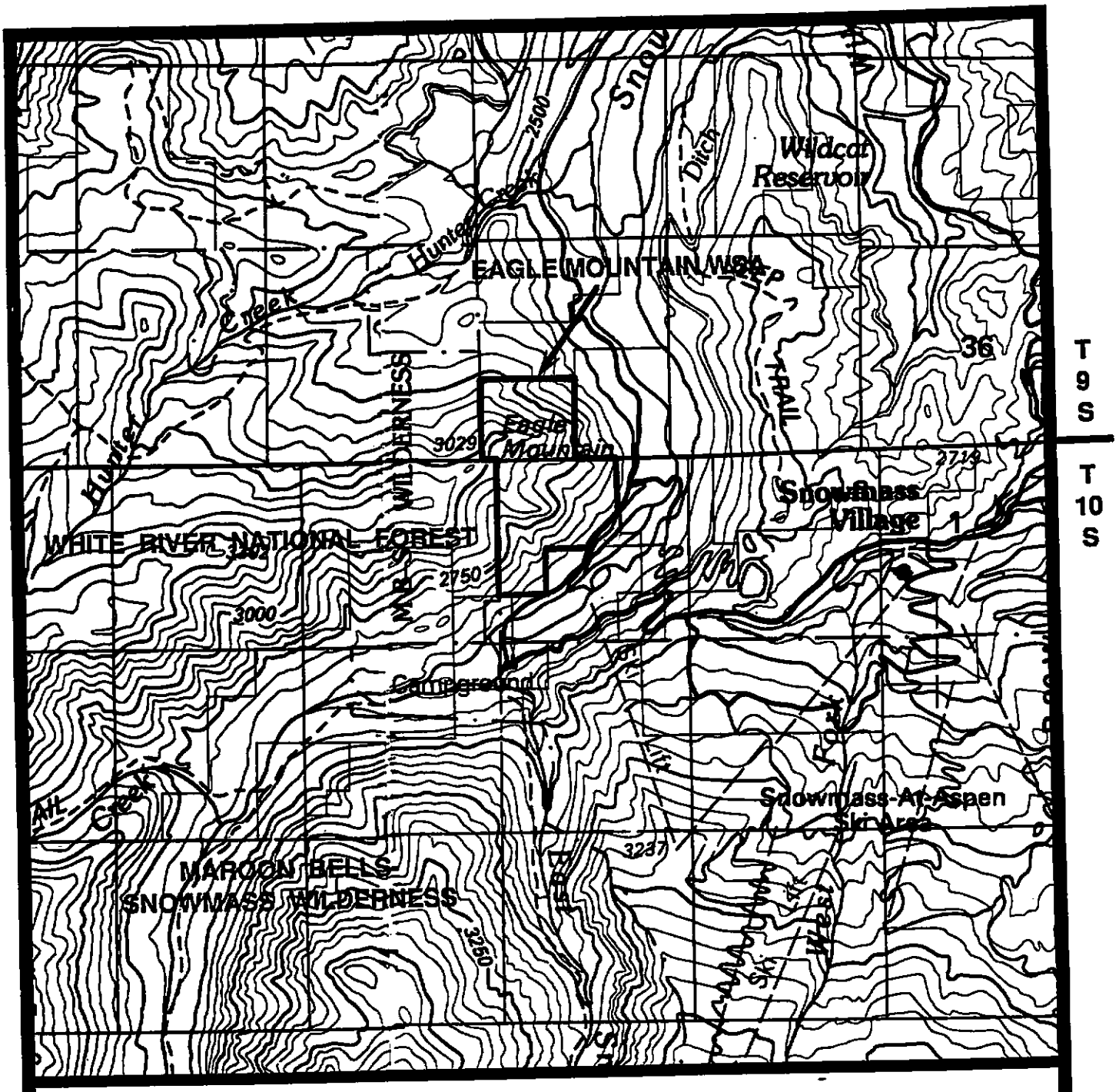
Designation of most of the Sewemup Mesa WSA as wilderness would probably result in the loss of the 72 unpatented mining claims in the WSA. However, there is only a low to moderate mineral potential. One post-FLPMA oil and gas lease would not be developed if most of the WSA was designated wilderness. This development potential is low based on a geologic assessment (U.S. Geological Survey 1988).

Summary of WSA Specific Public Comments

Public involvement has occurred throughout the wilderness review process. Comments received during the inventory process and early stages of the EIS were used to develop issues and alternatives for analysis.

During the formal review of the Draft EIS, a total of 42 comments were received specific to the Sewemup Mesa WSA. All of these comments were in favor of wilderness designation. Many of the commenters had visited this WSA and discussed its outstanding natural values and outstanding opportunities for solitude and primitive, unconfined recreation. Some commenters referred to the area as a "unique" wilderness resource that would significantly enhance the National Wilderness Preservation System.

The Mesa County Commission commented on the Draft EIS stating that the proposed action to designate the Sewemup Mesa WSA as "wilderness" seemed reasonable and consistent with the county's land use plans. No comments were received from Montrose County. Comments received from the state of Colorado's Department of Natural Resources supported the Draft EIS on wilderness recommendations but did not specifically reference Sewemup Mesa WSA. No other federal,state or local agency commented on the Draft EIS.



RECOMMENDED FOR WILDERNESS

RECOMMENDED FOR NONWILDERNESS (NONE)

LAND OUTSIDE WSA RECOMMENDED FOR WILDERNESS.

SPLIT ESTATE (NONE)

STATE (NONE)

PRIVATE (NONE WITHIN THE WSA)

Scale 1:50,000

1 inch equals Approximately 3/4 of a mile

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Eagle Mountain WSA Proposal CO-070-392

January 1991

EAGLE MOUNTAIN

WILDERNESS STUDY AREA

The Study Area -- 330 acres

The Eagle Mountain Wilderness Study Area (CO-070-392) is located in Pitkin County approximately 8 miles west of Aspen, Colorado. The WSA includes 330 acres of BLM lands, and there are no inholdings. (See Table 1) The boundaries and the WSA are adjacent to private land on the north, east and south sides (See Map). A 0.2 mile section of the boundary follows the Pitkin County Road 11 right-of-way. The boundary is adjacent to the Maroon Bells- Snowmass Wilderness on White River National Forest lands to the west.

The WSA is on rugged, steep mountain slopes and includes Eagle Mountain, a peak with an elevation of 9,937 feet. The elevation ranges from 8,280 feet up to the mountain peak. The vegetation is varied and includes spruce, fir, Ponderosa pine, aspen, oakbrush, and some sagebrush. The WSA includes several perennial springs.

This WSA was studied under Section 202 of the Federal Land Policy and Management Act (FLPMA) and was included in the Glenwood Springs Resource Management Plan (RMP) and Environmental Impact Statement (EIS). The Record of Decision (ROD) was signed in January, 1984. The Final EIS for the wilderness portion of the RMP was filed in October 1987. Two alternatives were analyzed in the Final EIS: all wilderness, which is the recommendation in this report, and no wilderness.

Recommendation and Rationale

330 acres recommended for wilderness

0 acres recommended for nonwilderness

The 330 acres in the Eagle Mountain WSA are recommended for wilderness designation. This is the environmentally preferred alternative, as it would result in the least change from the natural environment over the long-term.

The area is recommended for wilderness designation primarily because it is adjacent to the existing Maroon Bells-Snowmass Wilderness on national forest lands. Eagle Mountain is at the eastern terminus of a mountainous ridge extending from high peaks in the core of the existing wilderness. The WSA is a natural extension of the existing wilderness area but was not included in the wilderness designation because it is outside the jurisdiction of the Forest Service.

Designation of the Eagle Mountain WSA as wilderness would preserve a prominent scenic feature visible from the Snowmass Creek area, a developed recreational resort area. Additionally, the WSA includes a small representation of lower elevation Mountain Mahogany-oak scrub ecosystem which is not well represented in the existing wilderness. The WSA also provides opportunities for dispersing heavy use being experienced along access routes into the existing wilderness. Wilderness designation would also preserve diverse habitat for deer, elk, and a variety of other wildlife.

Table 1 - Land Status and Acreage Summary of the Study Area

	Acres
Within Wilderness Study Area	
BLM (surface and subsurface)	330
Split Estate (BLM surface only)	0
Inholdings (State, Private)	0
Total	330
Within the Recommended Wilderness Boundary	
BLM (within the WSA)	330
BLM (outside the WSA)	0
Split Estate (within the WSA)	0
Total BLM Land Recommended for Wilderness	330
Inholdings (State, Private)	0
Within the Area Not Recommended for Wilderness	
BLM	0
Split Estate	0
Total BLM land not recommended for wilderness	0
Inholdings (State, Private)	0

Criteria Considered in Developing the Wilderness Recommendations

Wilderness Characteristics

Naturalness

The Eagle Mountain WSA is essentially natural, with negligible human imprints. The study area includes Eagle Mountain peak and its steep, rugged side slopes. Eagle Mountain is at the terminus of a mountainous ridge which connects Haystack Mountain, Mount Daly, and Capitol Peak in the core of the existing Maroon Bells-Snowmass Wilderness Area on National Forest lands. The WSA is a natural extension of landforms in the existing wilderness and therefore makes a natural addition to the existing wilderness. The WSA includes several outcrop sandstone formations. These formations include the Maroon, State Bridge, Chinle, Entrada, Morrison, Dakota and Burro Canyon, and Mancos Shale. Colluvium and glacial deposits are also found in the WSA.

The vegetation is varied and includes spruce, Douglas fir, ponderosa pine and aspen, with gambel

oakbrush in the mid-slopes and sagebrush in the lower elevations. Narrow strips of riparian vegetation are found along several perennial gulches. Although small in size, the WSA provides habitat which supports deer and elk, black bear, bobcat, mountain lion, sage grouse, and a variety of other mammals, birds and reptiles.

The WSA is free of man's imprints, except for a small aspen post/rail corral in an aspen grove, old cedar post and barbed wire fencing along the public land boundary, and an old ditch grade used as a trail along the 8,440 foot contour on the slopes facing Snowmass Creek. A lightly used, steep graded vehicle way enters the WSA from the county road along Snowmass Creek to a campsite. These imprints have no effect on the perception of naturalness in the WSA. Eagle Mountain provides an overlook with outstanding panoramic views of forested mountains and peaks, rolling hills, and valleys. The views include patches of agricultural, residential and resort development which have little effect on the overall perception of naturalness.

Solitude

The Eagle Mountain WSA provides limited opportunities for solitude and primitive recreation due to its small size. However, because of the extensive forest lands in the adjacent Maroon Bells-Snowmass Wilderness, the WSA shares the outstanding opportunities for solitude found in that area. The steep, rugged topography and high relief in the WSA, combined with the dense vegetation, restrict visitor movement and provide screening and isolation. Presently, visitation is low and the probability of visitor encounters is very low. The ridge lands and several benches on the mountain sides offer well screened, secluded sites.

Primitive and Unconfined Recreation

The Eagle Mountain WSA provides limited opportunities for primitive recreation due to the its small size. However, because of the extensive opportunities for primitive and unconfined recreation in the adjacent Maroon Bells-Snowmass Wilderness, the

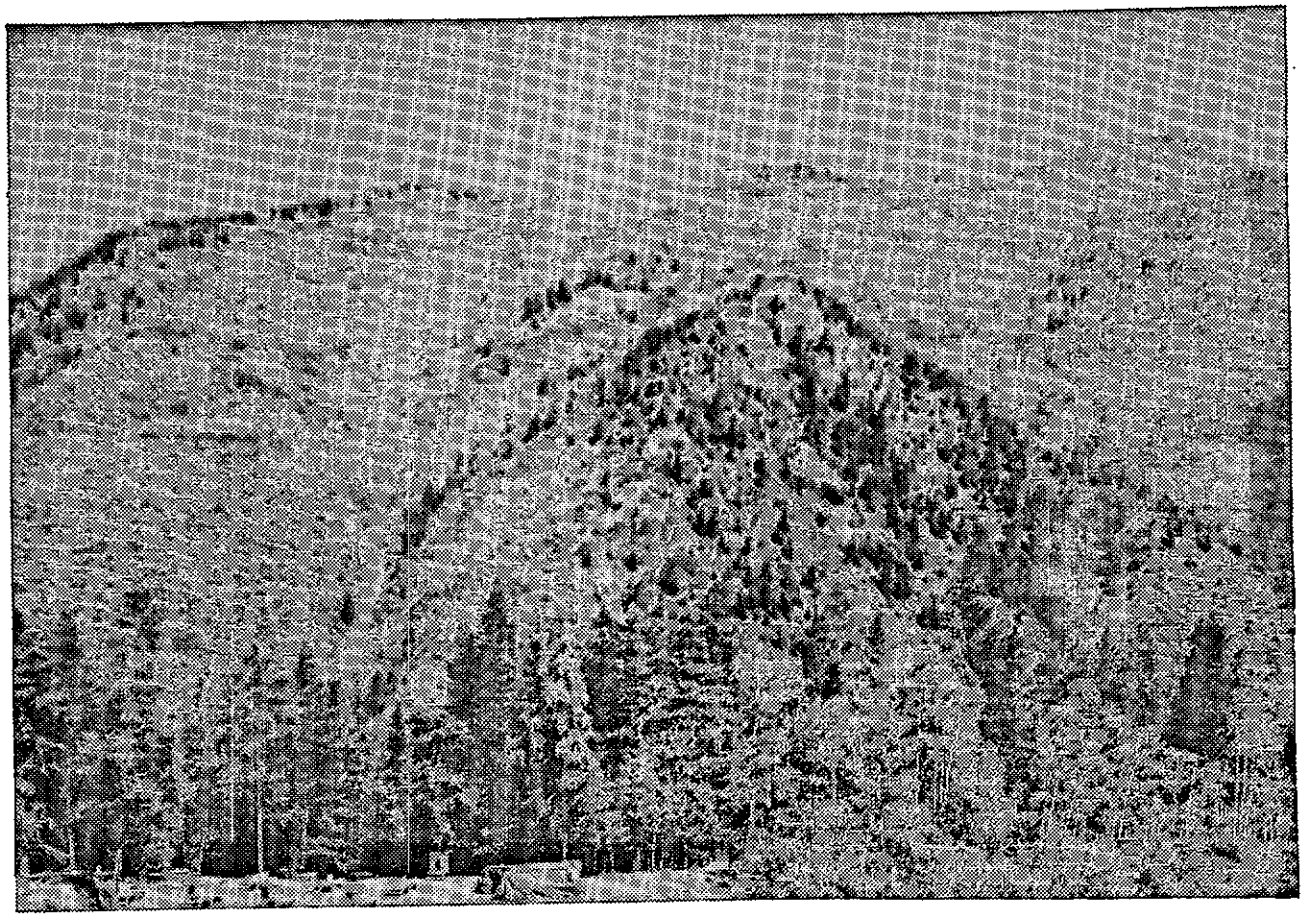


Photo 1. Eagle Mountain WSA. View from an overlook near the town of Snowmass Village, Colorado.

WSA shares the outstanding opportunities found in that area. The recreation opportunities in the area include hiking, primitive camping, climbing, hunting, photography, wildlife viewing and sightseeing. A primitive trail with a trailhead on the county road near the bridge over Snowmass Creek provides access into the WSA. Hiking routes up to Eagle Mountain are steep and strenuous, requiring much effort for the 1,700 foot climb. The WSA is away from the main trail routes into the existing wilderness, and current recreation use levels are very low.

Special Features

The WSA is an important scenic feature in the area around Snowmass Village and along Snowmass Creek.

Diversity in the National Wilderness Preservation System

Assessing the diversity of natural systems and features as represented by ecosystems

Wilderness designation of the Eagle Mountain WSA would not add a new landform or ecosystem type to the National Wilderness Preservation System (NWPS), but the presence of lower elevation ecosystems would enhance the diversity of the existing Maroon Bells-Snowmass Wilderness. The WSA is in the Rocky Mountain Forest Province, and is characterized by the western spruce-fir forest ecosystem (Bailey-Kuchler). Small patches representative of mountain mahogany-oak scrub, and the sagebrush steppe ecosystems are also found in the WSA. The study area also includes small riparian zones on gulches and springs. Table 2 summarizes the areas in the NWPS, and wilderness study areas, representing the ecosystems found in the Eagle Mountain WSA.

Table 2 - Ecosystem Representation

Bailey-KuchlerClassification Province/Potential Natural Vegetation	NWPS Areas	NWPS Acres	Other BLM Studies Areas	Other BLM Studies Acres
Nationwide				
Rocky Mountain Forest Province				
Western Spruce-Fir Forest	41	4,756,981	9	64,171
Colorado				
Western Spruce-Fir Forest	15	1,186,539	3	15,765

Expanding the opportunities for solitude or primitive recreation within a day's driving time (five hours) of major population centers

Wilderness designation of the Eagle Mountain WSA would not expand opportunities for solitude and primitive recreation because of the extensive existing wilderness and the area's small size. The WSA is within a day's driving time from six major population centers in Colorado. Table 3 summarizes the number of wilderness areas and WSA's within a day's driving time from these population centers. The current Census Bureau population estimate for the five population centers combined is 2.7 million.

Table 3 - Wilderness Opportunities for Residents of Major Population Centers

Population Centers	NWPS areas		Other BLM Studies	
	areas	acres	areas	acres
Denver	20	1,728,410	21	372,010
Colorado Springs	19	1,845,350	19	336,925
Pueblo	19	1,865,011	19	336,925
Boulder	20	1,728,410	21	372,010
Fort Collins	20	1,598.113	14	150,539
Greeley	20	1,598.113	14	150,539

Balancing the geographic distribution of wilderness areas

Wilderness designation of the Eagle Mountain WSA would not contribute towards balancing the geographic distribution of wilderness because of its small size and location in a region with extensive designated wilderness areas.

Manageability

The Eagle Mountain WSA can be managed to preserve its wilderness character. Because of its location adjacent to the existing Maroon Bells-Snowmass Wilderness, the area could only be managed as part of the existing wilderness by the Forest Service under a cooperative management agreement with the BLM. There are 11 unpatented lode claims and one unpatented mill site claim in the WSA. Several lode claims, and a mill site claim which existed during the wilderness study process are no longer valid. Possible ground disturbance related to these claims could cause localized impacts to wilderness values, primarily to the WSA's naturalness and scenic quality. However, no development of the remaining claims is anticipated because of the identified low potential for all minerals. The WSA is currently open to mineral location, but is closed to mineral sales. The WSA is also closed to oil and gas leasing, and there are no existing leases.

Energy and Mineral Resource Values

The U.S. Geological Survey and Bureau of Mines prepared a mineral assessment for the Eagle Mountain WSA in 1986. The lands in the WSA are identified as having low mineral resource potential for copper, lead, zinc, vanadium, uranium, and oil and gas. Sand and gravel, and industrial rock are present in the WSA, but sufficient quantities are available elsewhere to satisfy current local needs. Although unpatented mining claims are present in the WSA, development is not anticipated to occur due to the identified low potential for all minerals.

Impacts on Resources

Table 4 summarizes the comparative impacts on pertinent resources for the two alternatives considered in the Final Wilderness Environmental Impact Statement.

Table 4 - Comparative Summary of the Impacts by Alternative

Impact Topics	Recommendation: All Wilderness Alternative	No Wilderness Alternative
Impacts on Wilderness Values	*All wilderness values would receive long term statutory protection.*	*Although no development is anticipated, existing management and low mineral potential would be expected to protect all wilderness values in the long term. Although there is no statutory protection, no adverse impact to wilderness values would be anticipated in the foreseeable future.*
Impacts on Energy and Mineral Development	*Impacts would be insignificant because of low potential for all minerals. Exploration and development of potential, undiscovered energy and mineral resources would be prohibited, subject to valid existing rights. No valid rights are present.*	*No effect on energy and minerals because potential mineral resources would be available for exploration and development. However, no exploration and development is anticipated because of the low potential for all minerals.*

Local Social and Economic Considerations

Wilderness designation would have no effect on local social or economic factors in the area.

Summary of WSA Specific Public Comments

During the intensive wilderness inventory phase (concluded in November, 1980), 10 comments relating to this area were received. All of these comments were in favor of identifying the area as a WSA. Two comments noted that wilderness designation would preserve wildlife habitat. A comment noted that the area could help relieve recreation use pressure in the adjacent wilderness.

During public workshops held in May 1982 to identify resource management alternatives for consideration in the RMP, seven comments addressing this WSA were received; five comments supported wilderness designation, and two opposed wilderness designation.

The public comment period for the Draft EIS and RMP was from November 5, 1982 to February 2, 1983, and included three public hearings held on December 7, 8 and 14, 1982. These hearings were held in Glenwood Springs, Grand Junction and Denver, Colorado, respectively. During this comment period, 28 comments addressing this WSA were received; 14 were written and 14 were oral testimony at the public hearings. All of these comments supported wilderness designation.

County

The Pitkin County government supported wilderness designation for the WSA. Eagle County generally concurred with wilderness designation for the area.

State

The State Department of Natural Resources and the State Recreation Trails Commission concurred with the wilderness designation recommendation for this WSA. The Division of Water Resources had no problem with wilderness designation of the area because water rights are not affected. The State

Historic Preservation Officer commented that wilderness designation generally benefits cultural resources.

Federal

The White River National Forest supported wilderness designation for this WSA, and expressed interest in managing the area as part of the existing Maroon Bells-Snowmass Wilderness. The National Park Service supported wilderness designation as generally enhancing the overall setting for recreation use and aesthetics. The Environmental Protection Agency, Region VIII, generally concurred with wilderness designation for the WSA.

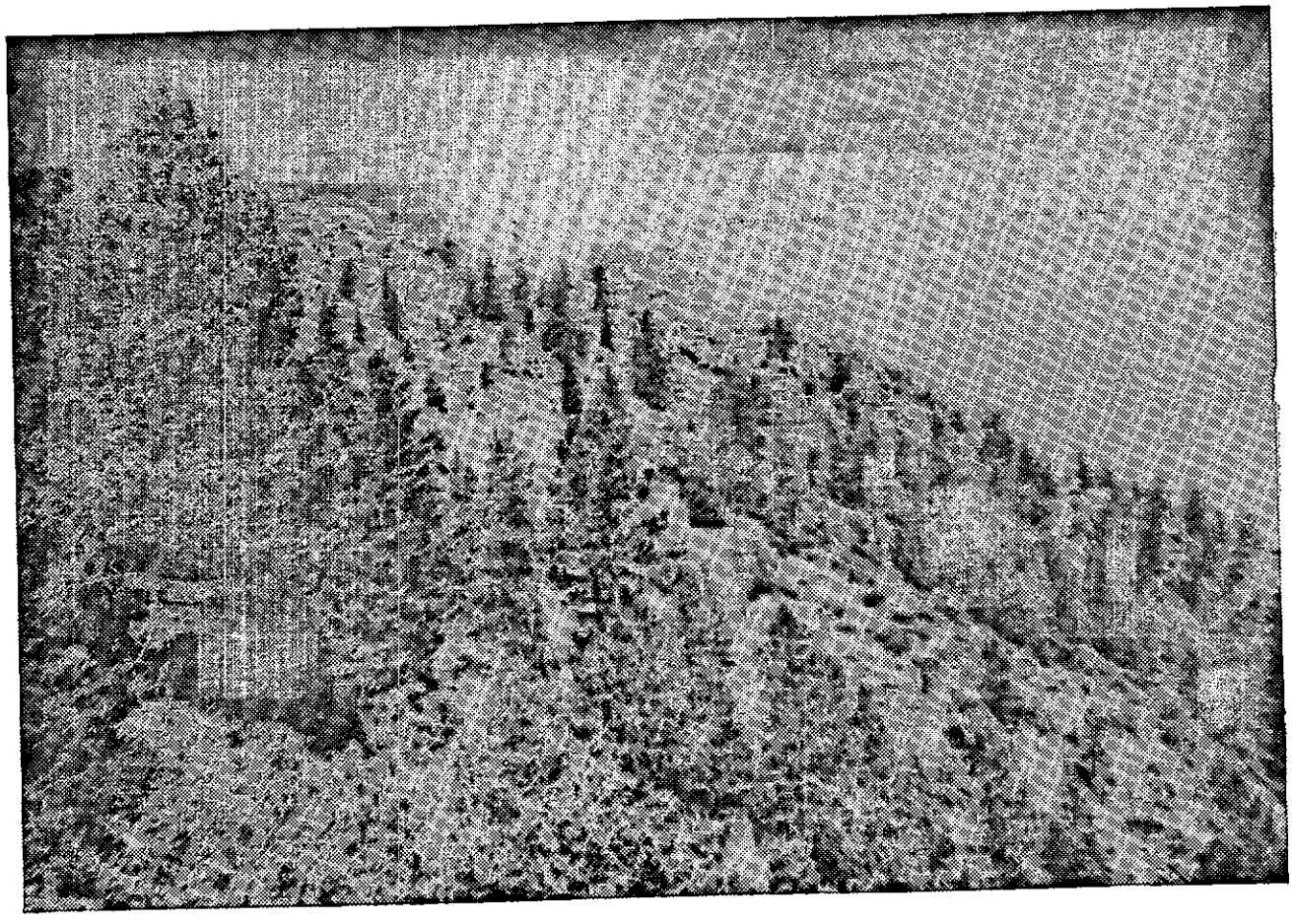
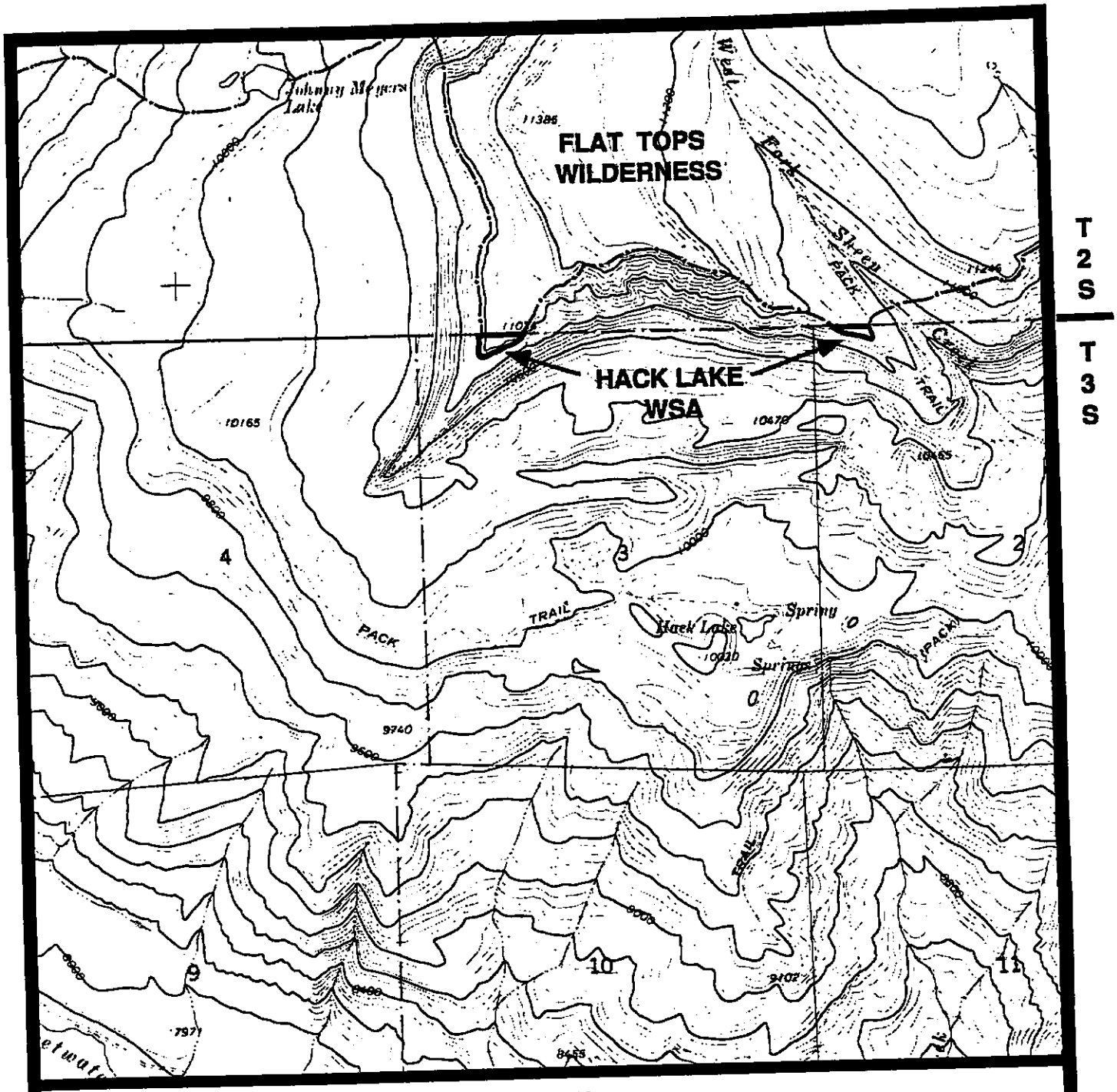


Photo 2. Eagle Mountain WSA has steep, rugged slopes with sandstone outcroppings.


FLAT TOPS
WILDERNESS
HACK LAKE
WSA
T 2 S
T 3 S
R 87 W
RECOMMENDED FOR WILDERNESS
RECOMMENDED FOR NONWILDERNESS
LAND OUTSIDE WSA RECOMMENDED FOR WILDERNESS
SPLIT ESTATE (NONE)
STATE (NONE)
PRIVATE (NONE)
Miles 0 1/2 1
N
Hack Lake WSA
Proposal
CO-070-425
January 1991

HACK LAKE

WILDERNESS STUDY AREA

The Study Area – 10 acres

The Hack Lake WSA (CO-070-425) is located in Garfield County, approximately 22 miles northeast of Glenwood Springs, Colorado. The WSA consists of 2 small parcels totalling approximately 10 acres of BLM lands and federal minerals (See Table 1). The boundary to the north adjoins the White River National Forest Flat Tops Wilderness Area. The southern boundary follows a sharp rim above cliffs and steep slopes, with Bureau of Land Management (BLM) administered public land below. The WSA is shown on the map.

The WSA is on the points of 2 flat to rolling ridges flanked by steep rugged cliffs with rocky outcrops and rock slides. (See Photo 1) The elevation is from 10,900 feet to 11,000 feet. The vegetation is characterized by alpine species and predominantly Engelmann spruce, fir and aspen trees with small open grassy areas.

This WSA was studied under Section 202 of the Federal Land Policy and Management Act (FLPMA) and was analyzed in the Glenwood Springs Resource Management Plan (RMP) and Environmental Impact Statement (EIS), with the Record of Decision (ROD) signed in January 1984. The final wilderness EIS was published in October 1987. Initially, the WSA included 3,360 acres. During the resource management planning process, 3,350 acres were found to be unsuitable for wilderness study and were released for uses other than wilderness. Two alternatives were analyzed for the remaining 10 acre WSA in the Final EIS: all wilderness, which is the recommendation of this report, and no wilderness.

Recommendation and Rationale

10 acres recommended for wilderness

0 acres recommended for nonwilderness

It is recommended that the 10 acres of the Hack Lake WSA be designated as wilderness as an addition to the existing Forest Service Flat Tops Wilderness. This is also the environmentally preferred alternative as it would result in the least change from the natural environment over the long-term.

Wilderness designation would provide continuity to the existing Flat Tops Wilderness boundary along the cliff edge, an easily identified topographic feature instead of along the administrative boundary between BLM and National Forest land. The two 5 acre parcels of the WSA are a natural part of the landform in existing wilderness, and therefore are a natural extensions of the Flat Tops Wilderness. The existing wilderness boundary follows the rim, and deviates from the rim at the two parcels because of the National Forest-BLM boundary.

No manageability problems or resource conflicts would result from wilderness designation. There are no private land inholdings, mining claims or grazing in the WSA. Administration of the area would be by the National Forest Service under a cooperative agreement with the Bureau of Land Management.

Table 1 - Land Status and Acreage Summary of the Study Area

	Acres
Within Wilderness Study Area	
BLM (surface and subsurface)	10
Split Estate (BLM surface only)	0
Inholdings (State, Private)	0
Total	10
Within the Recommended Wilderness Boundary	
BLM (within the WSA)	10
BLM (outside the WSA)	0
Split Estate (within the WSA)	0
Total BLM Land Recommended for Wilderness	10
Inholdings (State, Private)	0
Within the Area Not Recommended for Wilderness	
BLM	0
Split Estate	0
Total BLM land not recommended for wilderness	0
Inholdings (State, Private)	0

Criteria Considered in Developing the Wilderness Recommendations

Wilderness Characteristics

Naturalness

The Hack Lake WSA is completely natural and no human imprints are present. The WSA is on quaternary and tertiary basalt flows forming the cliffs and talus. The area is surrounded by glacial moraine and outwash deposits, and overlies sedimentary rocks several thousand feet below the surface. The WSA overlooks the forested rolling benches and slopes on public lands in the Hack Lake Special Recreation Management Area in the foreground, and forested mountains, peaks and valleys with agricultural fields and widely spaced rural residential developments and roads in the background. The influence of outside sights has minimal effect on the perception of naturalness in the WSA.

Solitude

The small size of the WSA by itself, restricts opportunities for solitude. However, because of the extensive public lands and forest lands surrounding the WSA and its inaccessibility, it does provide outstanding opportunities for solitude. The influence of outside sights and sounds has no effect on the perception of solitude within the WSA, and the background views of rural developments serve only as distant reminders of civilization.

Primitive and Unconfined Recreation

The small size of the WSA also restricts opportunities for primitive and unconfined recreation.

However, because of the extensive public lands and forest lands surrounding the WSA, it shares the outstanding opportunities for primitive and unconfined recreation provided by the adjacent Flat Tops Wilderness. The WSA provides outstanding overlooks with panoramic views to the south, with forested slopes, terraces, rolling hills and canyons in the foreground-middleground, and mountains and peaks of the Gore Range, Sawatch Range and Elk Mountains in the background up to 40 miles away. The Ute and "W" Mountain trails provide hiking and horseback access into the existing wilderness, and pass near the WSA.

Special Features

There are no special features within the WSA.

Diversity in the National Wilderness Preservation System

Assessing the diversity of natural systems an features as represented by ecosystems

Wilderness designation of the Hack Lake WSA would not add a new ecosystem or landform to the National Wilderness Preservation System (NWPS). The WSA is in the Rocky Mountain Forest Province, and is within the Western Spruce-fir ecosystem (Bailey-Kuchler). The same ecosystem in the WSA predominates the surrounding wilderness areas. Table 2 summarizes the designated wilderness areas in the NWPS, and wilderness study areas, which represent the ecosystem found in the WSA.

Table 2 - Ecosystem Representation

Bailey-Kuchler Classification Province/Potential Natural Vegetation	NWPS Areas	NWPS Acres	Other BLM Studies Areas	Other BLM Studies Acres
Nationwide				
Rocky Mountain Forest Province				
Western Spruce-Fir Forest	41	4,756,981	9	64,171
Colorado				
Rocky Mountain Forest Province				
Western Spruce-Fir Forest	15	1,186,539	3	15,765

Expanding the opportunities for solitude or primitive recreation within a day's driving time (five hours) of major population centers

Wilderness designation of this WSA would not expand opportunities for solitude and primitive recreation because of the extensive existing wilderness and the area's small size. The Hack Lake WSA is within a day's driving time of 6 major population centers in Colorado. Table 3 summarizes the number of wilderness areas and WSA's within a day's driving time from these population centers.

Table 3 - Wilderness Opportunities for Residents of Major Population Centers

Population Center	NWPS areas	NWPS acres	Other BLM Studies areas	Other BLM Studies acres
Denver	20	1,728,410	21	372,010
Boulder	20	1,728,410	21	372,010
Colorado Springs	19	1,845,350	19	336,925
Pueblo	19	1,865,011	19	336,925
Fort Collins	20	1,598,113	14	150,539
Greeley	20	1,598,113	14	150,539

Balancing the geographic distribution of wilderness areas

The Hack Lake WSA would not contribute to balancing the geographic distribution of wilderness areas within the National Wilderness Preservation System because of its location adjacent to the Flat Tops Wilderness, and the presence of other existing wilderness areas in the surrounding region.

MANAGEABILITY

The Hack Lake WSA can be managed to preserve its wilderness character. There are no inholdings, mining claims or resource conflicts. Because of its location adjacent to the existing Flat Tops Wilderness, the area could only be managed as part of the existing wilderness by the Forest Service under a cooperative management agreement with the BLM.

ENERGY AND MINERAL RESOURCE VALUES

The U.S. Geological Survey and U.S. Bureau of Mines prepared a mineral report for the Hack Lake WSA in 1985 which concluded the area has no identified mineral resources, and low potential for undiscovered mineral resources including oil, gas, or coal. No mines or prospects, or mineralized areas were found in or adjacent to the WSA. No patented or unpatented mining claims or mineral leases in or adjacent to the WSA were identified. Gypsum and anhydrite may be present in geologic formations found approximately 3,000 ft. beneath the WSA. Coal may be present in formations approximately 4,000 ft. below the WSA. Oil and gas, and uranium potential is low because the area lacks favorable host rocks and structural traps for these resources.

IMPACTS ON RESOURCES

Table 4 summarizes the comparative impacts on pertinent resources for the 2 alternatives considered in the Final Wilderness Environmental Impact Statement.

Table 4 - Comparative Summary of the Impacts by Alternative

Impact Topics	Recommendation: All Wilderness Alternative	No Wilderness Alternative
Impacts on Wilderness Values	*All wilderness values would receive long term statutory protection.*	*Although no development is anticipated, existing management and low mineral potential would be expected to protect all wilderness values in the long term. Although there is no statutory protection, no adverse impact to wilderness values would be anticipated.*
Impacts on Energy and Mineral Development	*Impacts would be insignificant because of low potential for all minerals. Exploration and development of potential, undiscovered energy and mineral resources would be prohibited, subject to valid existing rights. No valid rights are anticipated.*	*No effect on energy and mineral exploration and development because potential mineral resources would be available for development. No exploration and development is anticipated because of the low potential for all minerals.*

Local Social and Economic Considerations

Wilderness designation of the Hack Lake WSA would have no impact on local economic or social conditions. The overwhelming majority of public comments received addressing this WSA supported wilderness designation of the WSA including the 3,350 acres which were released for uses other than wilderness by decision in the RMP.

Summary of WSA Specific Public Comments

The public comments received for this area were on the initial 3,360 acre WSA. The 2 parcels comprising 10 acres above the rim were considered for wilderness under a partial wilderness alternative.

During the intensive wilderness inventory phase (concluded in November, 1980), 10 comments relating to the Hack Lake WSA were received. Six comments favored identifying the area for wilderness study, and four were opposed. The issues cited related to livestock use and potential mineral development. A concern with the impact of wilderness designation on the economic and social stability of Eagle County was also expressed.

During public workshops, held in May 1982 to identify resource management alternatives for consideration in the RMP being prepared at the time, 10 comments addressing this WSA were received. Seven comments supported wilderness designation for the entire 3,360 acre area, one comment suggested designation of the portion of the WSA above the rim, and two comments opposed wilderness designation. Comments favoring wilderness designation indicated the area has a diverse character, provides unique recreation opportunities, has outstanding wilderness, scenic, wildlife, and botanical values.

The public comment period for the Draft EIS and RMP was from November 5, 1982 to February 2, 1983, and included three public hearings held on December 7,8 and 14, 1982. These hearings were held in Glenwood Springs, Grand Junction and Denver, respectively. During the formal comment period, 59 comments addressing this WSA were received; 38 were written and 21 were oral testimony at the public hearings. The Draft EIS considered

three alternatives: all wilderness, wilderness designation for the 10 acres in the two parcels above the rim, and no wilderness. Of the comments received, 56 supported wilderness designation for the entire 3,360 acre WSA, 3 comments supported wilderness designation of only the parcels above the rim, and no comments were opposed.

County

Garfield County questioned the recommendation in the Draft EIS preferred alternative for releasing the 3,350 acres from further wilderness consideration, citing the importance of recreation opportunities provided by wilderness areas to the local tourism industry. Neighboring Eagle County supported wilderness designation for the 10 acre parcels only.

State

The Colorado Department of Natural Resources (CDNR) strongly urged the Bureau to recommend the entire 3,360 acre Hack Lake WSA for wilderness designation. The CDNR cited unique natural qualities and sub-economic mineral resource values and the absence of serious resource conflicts. The Division of Wildlife also supported wilderness designation for the entire WSA. The State Recreational Trails Committee supported the unsuitable recommendation in the Draft EIS for lands outside the 10 acres.

Federal

The National Park Service supported wilderness designation in general to enhance the overall setting for recreation use and aesthetics. The Forest Service agreed the entire area has wilderness values but supported wilderness designation for the 10 acre parcels only, primarily because of a concern over potential difficult manageability of the non-wilderness Forest land which would be surrounded by wilderness if the entire 3,360 acre WSA was designated.

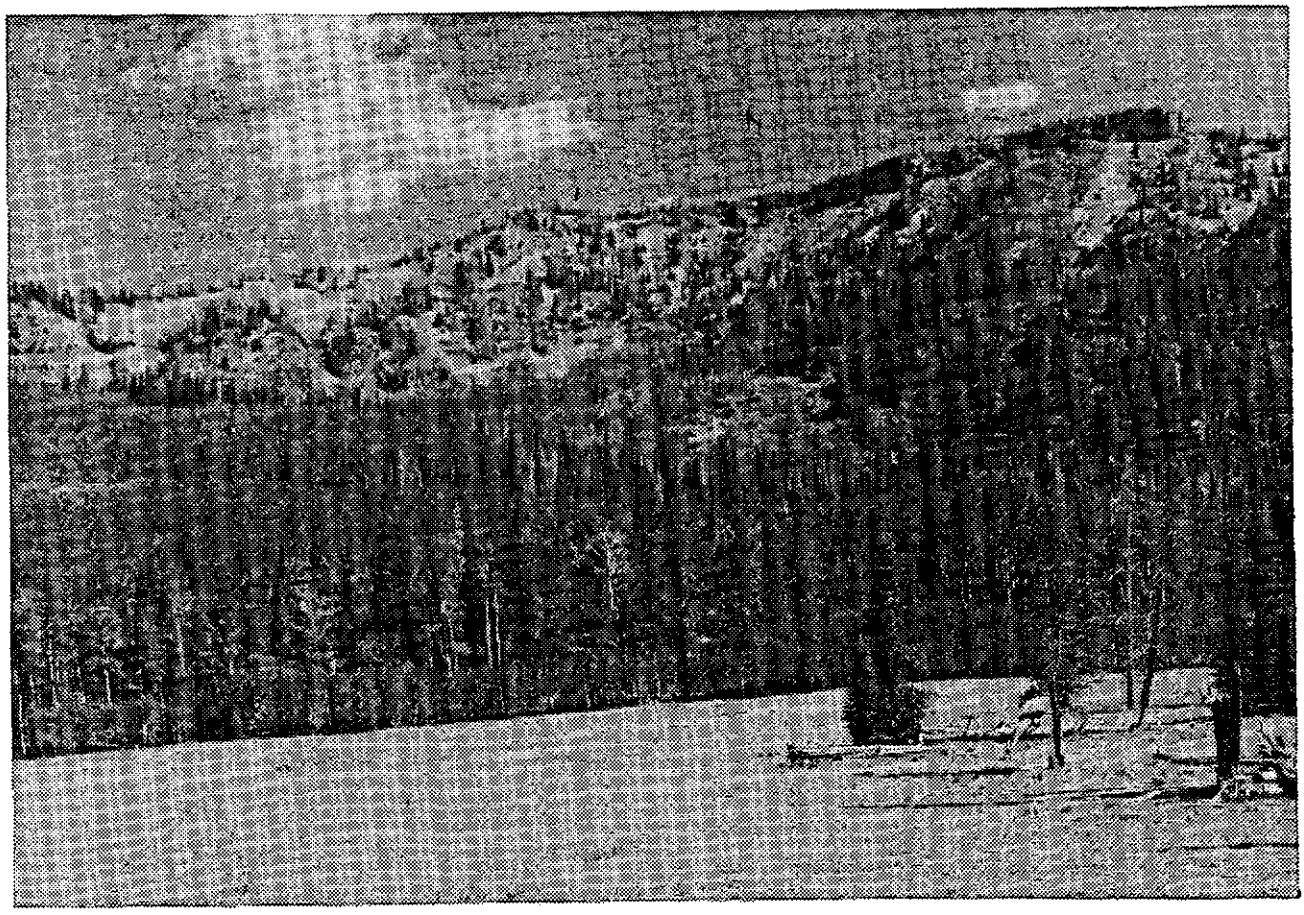
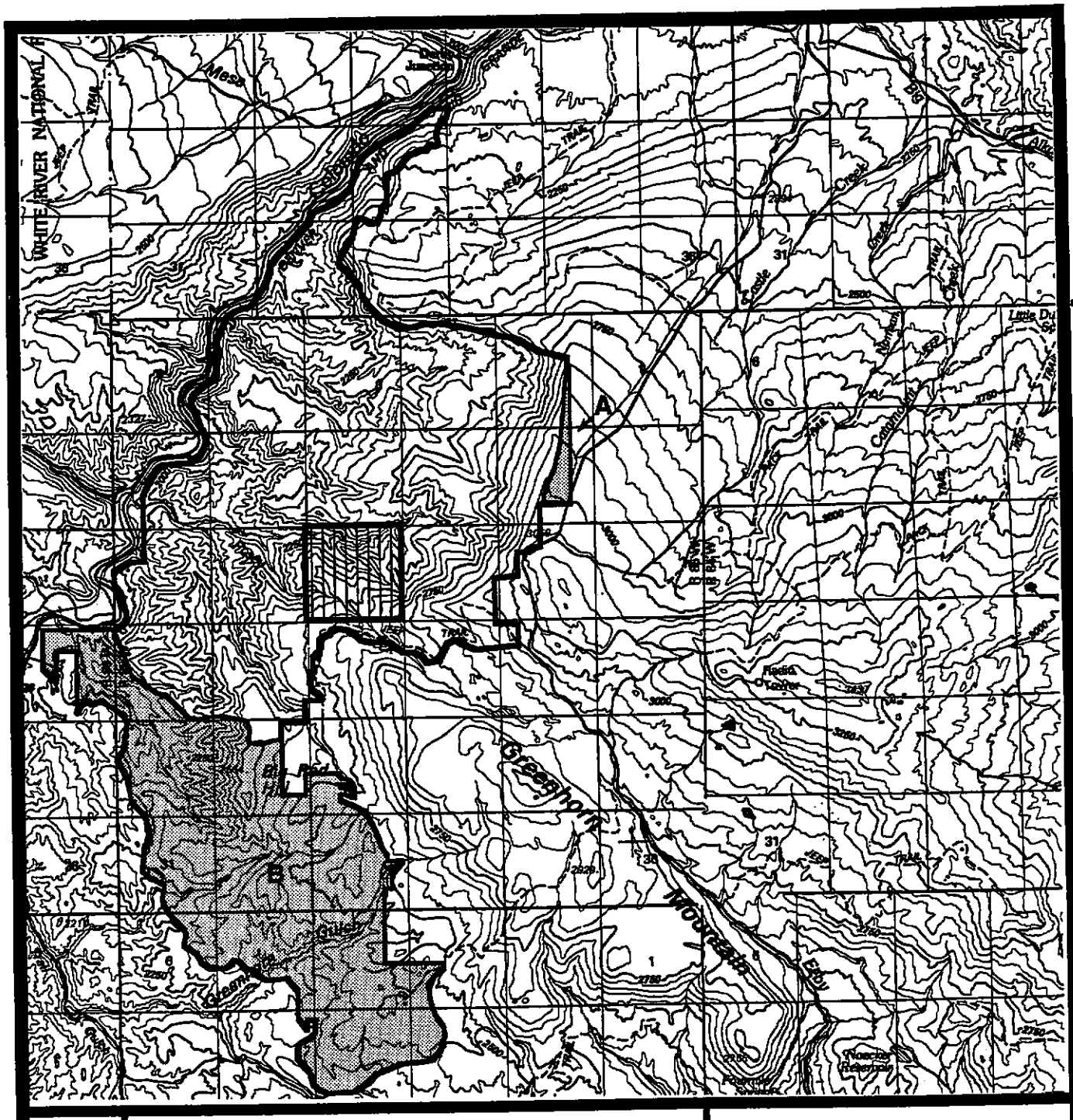


Photo 1. Hack Lake WSA. View of the steep slopes below the Flat Tops Wilderness Area along skyline. Top of rocky point is east point of WSA.



RECOMMENDED FOR WILDERNESS

RECOMMENDED FOR NONWILDERNESS

LAND OUTSIDE WSA RECOMMENDED FOR WILDERNESS.

SPLIT ESTATE

STATE (NONE)

PRIVATE (NONE WITHIN THE WSA)

SCALE 1:100000

Miles 1 0 1 2 3

N

Bull Gulch WSA
Proposal
CO-070-430

January 1991

BULL GULCH

WILDERNESS STUDY AREA

The Study Area -- 15,000 acres

The Bull Gulch Wilderness Study Area (CO-070-430) is located in Eagle County 10 miles northwest of Eagle, Colorado. The WSA includes 14,364 acres of BLM lands and 636 acres of split estate, where the surface is BLM land and the subsurface is owned by the State of Colorado. (See Table 1) The WSA adjoins private land in several places, including on the eastern boundary above Bull Gulch; in the Big Red Hill area, and along the western boundary where Alamo and Posey creeks meet the Colorado River. The northern boundary follows a prominent ridge bordering the Colorado River canyon. Part of the western boundary along the river follows the Denver and Rio Grande Railroad right-of-way, and the east shoreline of the river. The Garfield County Road 301 right-of-way adjoins the WSA near the mouth of Alamo Creek. The southern portion of the WSA is mostly bounded by existing roads and fences on public land. The WSA is shown on the map.

The terrain in the WSA is rugged, with steep sided canyons and gulches draining into the Colorado River. The WSA includes colorful sandstone cliff formations with outstanding stratification. (See Photo 1) Landslide deposits and volcanic intrusions are also found in the WSA. Elevations range from 6,400 ft. along the Colorado River, to 10,020 ft. along the rim in the Black Mountain area. Vegetation cover is diverse, and includes sagebrush, juniper-pinyon pine and mountain brush in the lower elevations; Douglas-fir, aspen, Englemann spruce, subalpine-fir and Ponderosa pine in the higher elevations. Riparian zones are present along the Colorado River, Alamo and Posey creeks.

This WSA was studied under Section 603 of the Federal Land Policy and Management Act (FLPMA), and was included in the Glenwood Springs Resource Management Plan (RMP) and Environmental Impact Statement (EIS). The Record of Decision (ROD) was signed in January 1984. The Final EIS for the wilderness portion of RMP was filed in October 1987. Three alternatives were analyzed in the Final EIS: all wilderness and no wilderness, and a partial wilderness alternative which is the recommendation of this report. The partial wilderness alternative would designate 10,414 acres as wilderness and release 4,586 acres for uses other than wilderness.

Recommendation and Rationale

10,414 acres recommended for wilderness

4,586 acres recommended for non-wilderness

It is recommended that part of the Bull Gulch WSA totalling 10,414 acres be designated as wilderness, and that a total of 4,586 acres be released for uses other than wilderness, as indicated on the map. The environmentally preferred alternative is to designate the entire 15,000 acres as wilderness, since this would result in the least change from the natural environment over the long-term.

The 10,414 acre portion of the WSA recommended for wilderness designation is along the east side of the Colorado River, on a narrow canyon stretch with steep cliffs and rugged side canyons including Bull Gulch, Posey Creek and Alamo creek. This portion of the WSA is recommended for wilderness primarily because of its naturalness and outstanding scenery, its outstanding landforms and ecosystem diversity, and its outstanding opportunities for solitude and for primitive and unconfined recreation.

The part of the WSA recommended for wilderness is remarkably natural, and includes representations of sagebrush steppe, juniper-pinyon woodland, and western spruce-fir forest ecosystems, displaying the influence of elevation and aspect changes in vegetation species associations as the canyon rises from the river to the upper mountain ridge. This part of the WSA also includes approximately 40 acres of an island-like, 225 acre relict Ponderosa pine stand on the northern slopes of Black Mountain. Wilderness designation would preserve the area's ecosystems and outstanding scenic features, fragile landforms, and the area's deciduous riparian zones along Alamo and Posey creeks.

The ecosystems in the area recommended for wilderness provide valuable wildlife habitat, including critical winter range for deer and elk, habitat for bald eagle, golden eagle, prairie falcon, red tailed hawk, black bear, mountain lion, red fox, bobcat, bighorn sheep, sage grouse, and a variety of small birds and other wildlife. Both Alamo and Posey creeks contain perennial water with aquatic habitat, which together with the Colorado River and several springs provide wildlife water sources which would also be preserved.

Wilderness designation would improve the diversity of the National Wilderness Preservation System in the surrounding region because existing wilderness areas are characterized by the higher elevation and alpine ecosystems. The part of the WSA recommended for wilderness includes landforms which display characteristics associated with volcanic, and sedimentary geologic processes. Landform features of alluvial and glacial origins are also found in this portion of the WSA.

Wilderness designation would also preserve the only roadless and undeveloped area of significant size along the Upper Colorado River, providing camping, picnicking, and other primitive recreation opportunities for river floaters. Wilderness designation of this part of the WSA would preserve outstanding opportunities for solitude, and for primitive and unconfined recreation. Several gulches provide year-round access routes into the area from the west for hiking, backpacking, hunting, wildlife viewing and nature study. Public access into the area is also available from the Black Mountain area to the north.

The partial wilderness recommendation enhances manageability by providing well-defined boundaries which follow easily recognizable topographic features. The extent of private lands bordering the recommended area is reduced and therefore the influence of human imprints and activities from these private lands is minimized. The recommended wilderness boundaries also minimize resource conflicts and exclude an area having a concentration of human imprints.

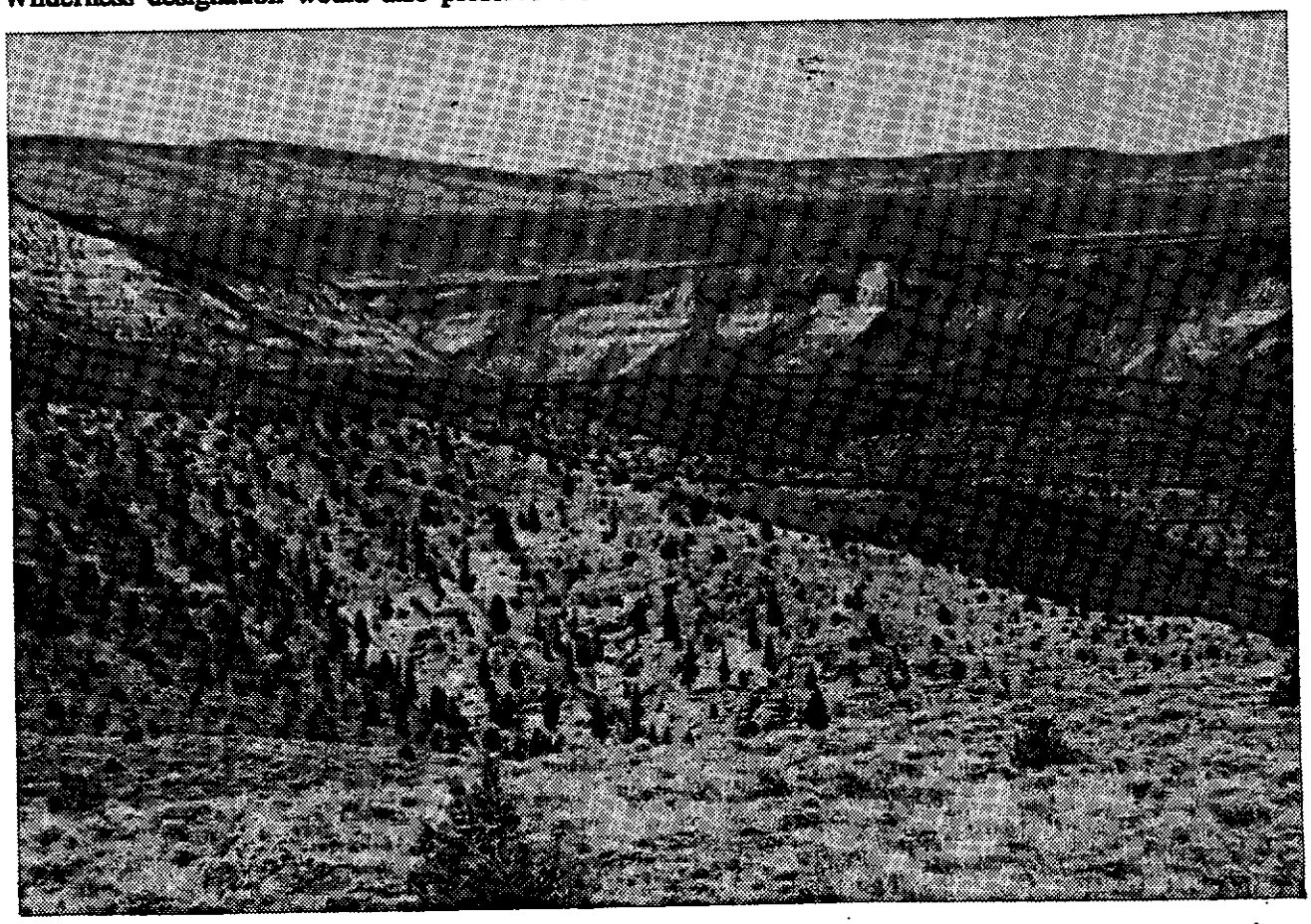


Photo 1. Bull Gulch WSA. The WSA displays scenic sandstone cliffs, rolling sagebrush parks and pinyon-juniper woodlands.

The portion of the WSA not recommended for wilderness consists of two parcels totalling 4,586 acres. Not recommending these parcels for wilderness would not lessen the high wilderness qualities of the remaining area recommended for wilderness.

Parcel A consists of 137 acres above the rim near Black Mountain (See Map); it is characterized by productive forest land planned to be managed to produce 8 thousand board fee (MBF) of timber annually.

Parcel B consists of 4,449 acres south of Alamo Creek. (See Map) It is characterized by pinyon-juniper woodland planned to be managed to produce 300 cords of fuelwood annually; and old, decadent sagebrush growth planned for treatment to provide 1,275 animal unit months (AUMs) of forage for wildlife. Possible sagebrush treatments include controlled fire, roto-chopping, fertilization, herbicides or other means to renovate sagebrush and increase its productivity. Parcel B is also characterized by an existing system of ways, fences, livestock water developments, and motorized vehicle use. These existing human imprints influence the perception of naturalness and solitude in this portion of the WSA, and impair the setting for primitive and unconfined recreation opportunities.

Major manageability problems and resource conflicts were resolved in the RMP by boundary adjustments which resulted in the partial wilderness recommendation. The 636 acres of State of Colorado minerals is planned for acquisition to ensure the area will retain its wilderness values.

Table 1 - Land Status and Acreage Summary of the Study Area

	Acres
Within Wilderness Study Area	
BLM (surface and subsurface)	14,364
Split Estate (BLM surface only)	636
Inholdings (State, Private)	0
Total	15,000
Within the Recommended Wilderness Boundary	
BLM (within the WSA)	**9,778**
BLM (outside the WSA)	**0**
Split Estate (within the WSA) *	**636**
Total BLM Land Recommended for Wilderness	**10,414**
Inholdings (State, Private) *	**0**
Within the Area Not Recommended for Wilderness	
BLM	4,586
Split Estate *	0
Total BLM Land Not Recommended for Wilderness	4,586
Inholdings (State, Private) *	0

** Table 5 is a detailed description of split estate tracts included within the study. For purposes of this report, split estate lands are defined only as those lands with Federal surface and non Federal subsurface (minerals). Lands that have Federal minerals but non Federal surface are classified in this report according to ownership of the surface estate.*

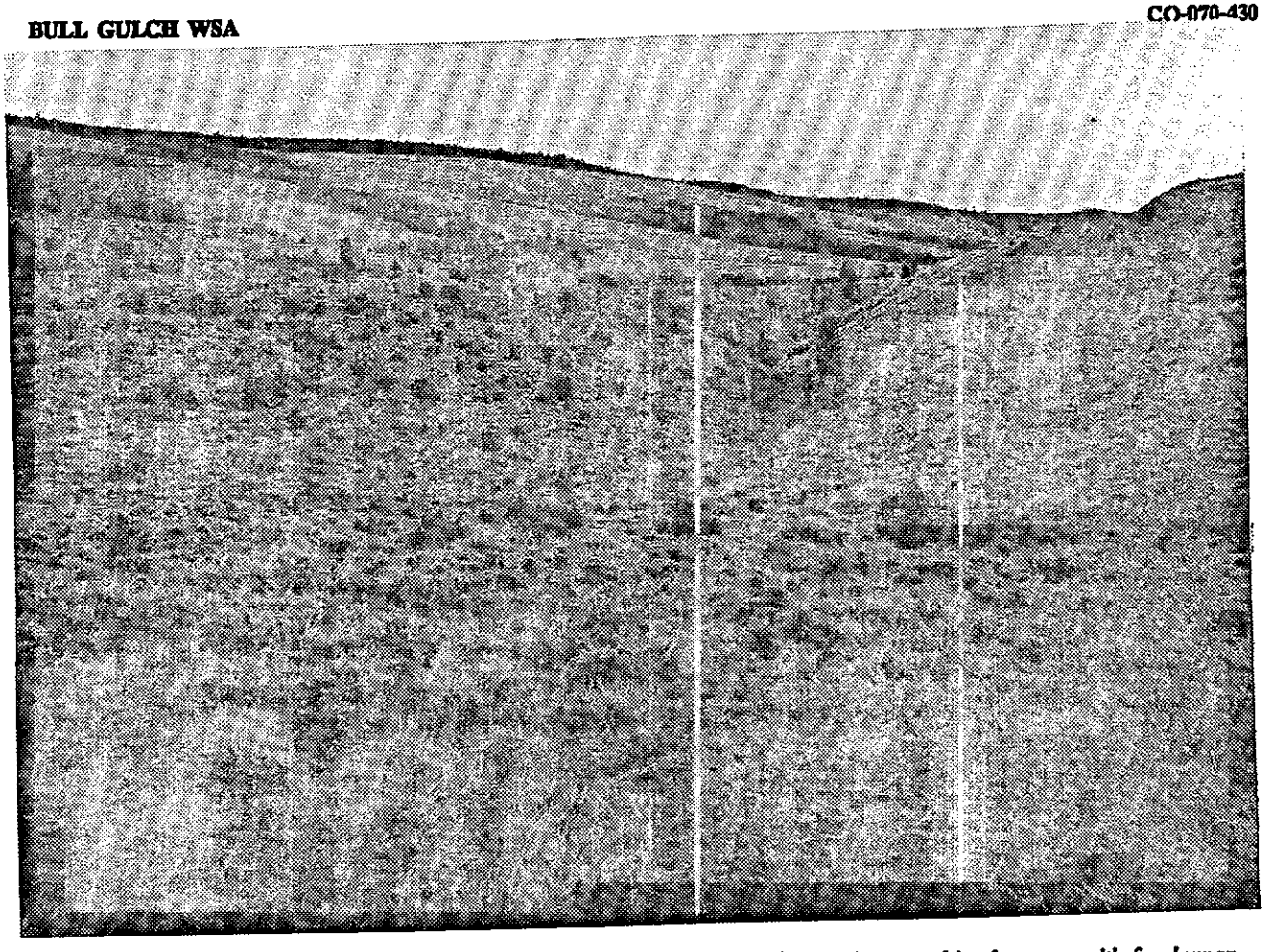


Photo 2. Bull Gulch WSA. That portion of the WSA recommended for wilderness is natural in character with few human imprints.

Criteria Considered in Developing the Wilderness Recommendation

Wilderness Characteristics

Naturalness

The part of the WSA recommended for wilderness is predominantly natural in character with negligible human imprints. The area includes colorful cliffs, pinnacles, canyons, gulches, benches and steep slopes; grasslands, sagebrush parks, juniper-pinyon woodland, spruce-fir, Douglas-fir, Ponderosa pine, aspen and deciduous riparian zones, all of which make up a scenic landscape of outstanding diversity. (See Photo 2)

The part of the WSA recommended for wilderness contains minimal human imprints. These imprints include approximately 0.3 mile of jeep trail, 3.5 miles of fences, 5 livestock watering facilities and 0.5 mile of irrigation ditches and an old cabin. The effect of these imprints on the overall naturalness of this part of the WSA is minimal due to their small size, scattered occurrence, and topographic and vegetative screening. The views from within this portion of the WSA are of an overall landscape of distant forested mountains, canyons, valleys and terraces with widely scattered human imprints. The distant agricultural fields and pastures, roads, fence lines and rural residences outside the WSA have minimal impact on the perception of naturalness within the area.

The part of the WSA not recommended for wilderness, Parcel A above the rim near Black Mountain, is predominantly natural gently sloping ridge land formed by weather resistant Dakota sandstone caprock. The ecosystem is spruce-fir forest, although it includes the remainder of the Ponderosa pine relict stand. Parcel B south of Alamo Creek is also predominantly natural but contains a concentration of human impacts. The area includes rolling hills, gulches and benches with a few cliffs, and the ecosystem is predominantly pinyon-juniper woodland and sagebrush steppe.

Parcel B exhibits fewer geologic formations than the area recommended for wilderness, including only the Maroon and Minturn formations. However, Parcel B includes the Eagle Valley Evaporite sedimentary formation, and volcanic basalt (Basalt of Bimodal Suite formation) which are not represented in the part of the WSA recommended for wilderness. The Eagle Valley Evaporite is largely composed of light colored gypsum, anhydrite and siltstones, while the basalt formation is composed of dense black lava flow.

The human imprints in Parcel B include approximately 10 miles of jeep trails, 8 miles of fences, 8 livestock watering facilities, and 2 miles of ditches. Impacts from these imprints noticeably diminish the degree of naturalness in this part of the WSA.

The WSA as a whole provides critical winter range for deer and elk, and habitat for black bear, Rocky Mountain bighorn sheep, bobcat, red fox, mountain lion, raptors, sage grouse, and a variety of other wildlife. The cliffs in the WSA provide concentration areas for red-tailed hawks, prairie falcons, golden and bald eagles.

Solitude

The part of the WSA recommended for wilderness provides outstanding opportunities for solitude. The rugged terrain restricts visitor use, and the probability of encounters among visitors is generally low. The steep, rugged topography combined with the woodland and forest cover provide screening and isolation between visitors in the area. The distant views from upper benches and ridge lands are dominated by a forested mountain landscape with foothills, canyons, valleys and terraces which dwarf human scale and instill a sense of vastness. The panoramic vistas include cultivated agricultural fields and pastures with widely-spaced roads and rural residences that serve as small reminders of

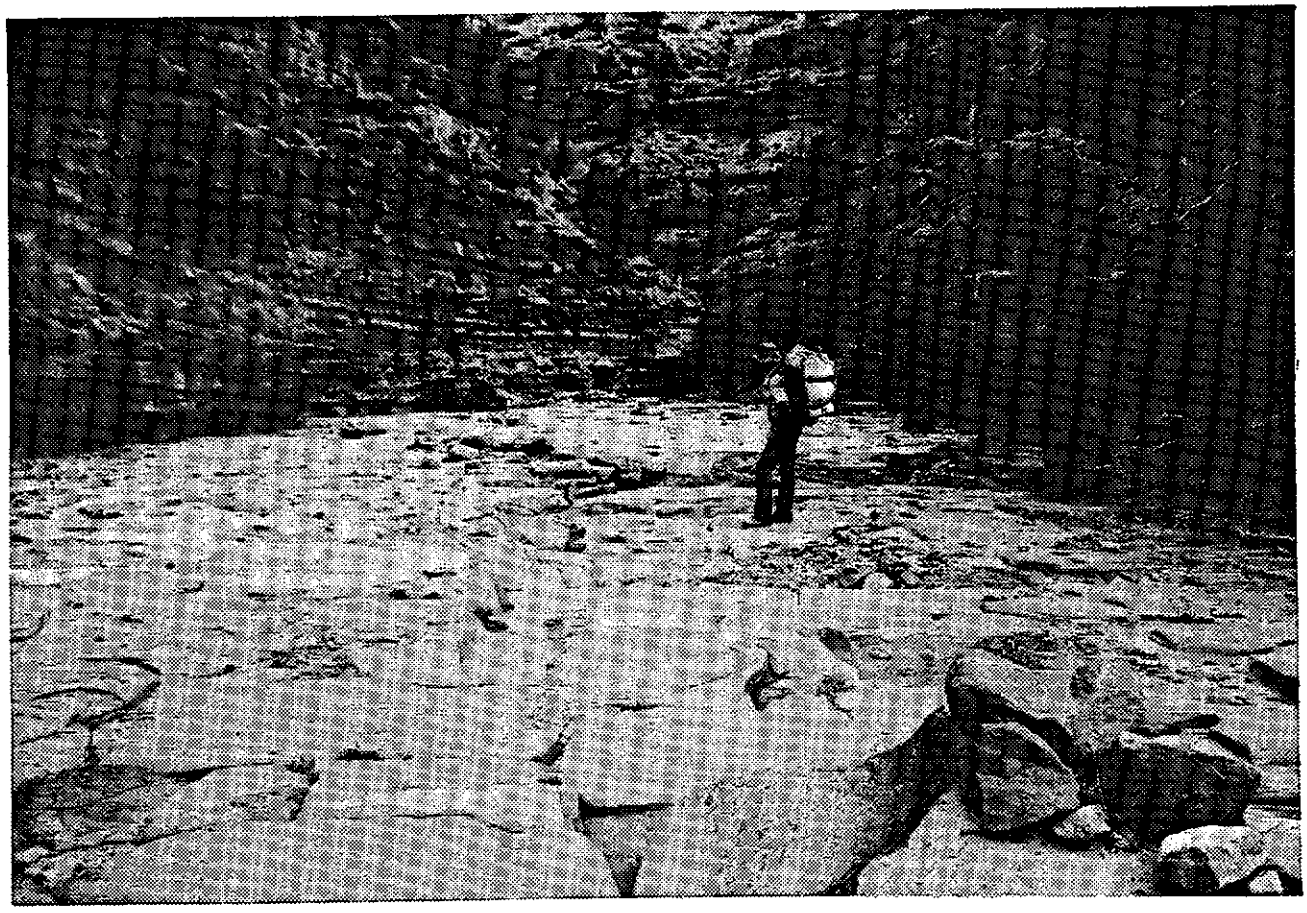


Photo 3. Bull Gulch WSA. This WSA provides outstanding hiking opportunities.

civilization, enhancing the perception of solitude within the area. Opportunities for solitude in the western portion of the area are at times interrupted by noise from the railroad along the Colorado River.

Parcels A and B, not recommended for wilderness, provide fewer opportunities for solitude than those opportunities found in the area recommended for wilderness. The fences, roadways, water developments, past firewood cutting, and motorized vehicle use also impair the sense of solitude.

Primitive and Unconfined Recreation

The part of the WSA recommended for wilderness provides outstanding opportunities for primitive and unconfined recreation. Four main canyons along Bull Gulch, Jack Flats, Posey and Alamo creeks provide outstanding hiking routes into the upland portion of the area. (See Photo 3) Access routes from the east and south which descend along steep slopes and cliffs are also available. The ridge lands, benches, slopes and rocky outcrops provide outstanding opportunities for primitive camping with scenic views. Recreation activities enjoyed in this part of the WSA include hiking, horseback riding, hunting, camping, nature study, boulder scrambling, wildlife viewing, and photography.

Several commercial outfitters use this part of the WSA during the big game hunting seasons. The Jack Flats area provides a stop-over for float-boaters on the Colorado River. Activities enjoyed by float-boaters include picnicking, camping, fishing and hiking into the upland area.

Parcels A and B also provide opportunities for primitive and unconfined recreation. However, the human imprints impair the primitive setting and the fences impose a sense of confinement.

Special Features

The part of the WSA recommended for wilderness exhibits outstanding geologic features of sedimentary and volcanic origins in Pennsylvanian to Cretaceous times. Exposed are seven sandstone formations with remarkable stratification. The formations represented include the Minturn, Weber Sandstone and Maroon, State Bridge, Chinle, Curtis and Entrada Sandstone, Morrison, and Dakota Sandstone. Some of these formations contain fossils which provide recreational rock hounding and educational opportunities. A large, sharply defined volcanic breccia pipe and a small dike from geologically recent volcanic activity are found intruding the sedimentary rocks in the Jack Flats area. These volcanic features contrast sharply with the surrounding sandstone formations due to their white kaolinite clays.

The ecosystem diversity, abundant variety of wildlife, and outstanding scenery, with its colorful rock formations, cliffs, canyons and varied vegetation, all contribute to the area's special qualities. The presence of bald eagles, a threatened and endangered species, and crucial winter range habitat for deer and elk also contribute to the area's special qualities. These special qualities enhance the setting for primitive recreation and provide scenic, scientific, educational, and ecological values.

Diversity in the National Wilderness Preservation System

Assessing the diversity of natural systems and features as represented by ecosystems

Wilderness designation of the Bull Gulch WSA would not add a new ecosystem or landform to the National Wilderness Preservation system, but would add sagebrush steppe, an ecosystem not currently represented in Colorado. This WSA is in the Rocky Mountain Forest Province, and is characterized by three ecosystem types (Bailey-Kuchler). The area contains juniper-pinyon woodland on approximately 8,850 acres, sagebrush steppe on approximately 4,200 acres, and western spruce-fir forest on approximately 1,950 acres. Aspen forest stands are included in the western spruce-fir forest and comprise approximately 450 acres. A 225 acre stand of Ponderosa pine, characteristic of the Western Ponderosa forest, is found just outside the WSA near Black Mountain; approximately 40 acres of this stand is within the WSA. This isolated stand of western Ponderosa forest is surrounded by more typical lower elevation sagebrush steppe and juniper-pinyon ecosystems.

The 10,414 acre part of the WSA recommended for wilderness includes juniper-pinyon woodland on approximately 6,350 acres, sagebrush steppe over approximately 2,290 acres, and western spruce-fir forest over 1,774 acres. All of the aspen stands, Ponderosa pine and riparian zones are found in

this portion of the WSA. Parcel A near Black Mountain is in the western spruce-fir ecosystem. Parcel B is predominantly juniper-pinyon woodland and sagebrush steppe. Table 2 summarizes the areas in the NWPS, and current study areas, representing the ecosystems found in the Bull Gulch WSA.

Table 2 - Ecosystem Representation

Bailey-Kuchler Classification Province/Potential Natural Vegetation	NWPS Areas	NWPS Acres	Other BLM Studies Areas	Other BLM Studies Acres
Nationwide				
Rocky Mountain Forest				
Western Spruce-Fir Forest	41	4,756,981	9	64,171
Sagebrush Steppe	4	76,129	22	241,526
Juniper-Pinyon Woodland	2	41,451	21	163,574
Colorado				
Rocky Mountain Forest				
Western Spruce-Fir Forest	15	1,186,539	3	15,765
Sagebrush Steppe	0	0	9	31,960
Juniper-Pinyon Woodland	1	11,181	16	115,134

Expanding the opportunities for solitude or primitive recreation within a day's driving time (five hours) of major population centers

The Bull Gulch WSA is within a day's driving time of 6 major population centers: Denver, Boulder, Colorado Springs, Fort Collins, Greeley, and Pueblo. The area would expand opportunities for primitive recreation and solitude. The area's lower elevation makes it accessible earlier and later in the year and would therefore expand the recreation opportunities. In the surrounding region, approximately one million acres of designated wilderness already provide extensive opportunities for solitude and primitive recreation for these population centers. However, the existing wilderness areas are characterized by western spruce-fir forest, alpine meadows, tundra and barren ecosystems, while this WSA includes juniper-pinyon woodland which provides a different setting for solitude and primitive recreation. Other wilderness areas providing pinyon-juniper woodland are more than a day's driving time from Colorado's major population centers.

Table 3 summarizes the number of wilderness areas and areas under wilderness study within a day's driving time from major population centers. The latest Census Bureau population estimate for the 6 population centers is 2.7 million people.

Table 3 - Wilderness Opportunities for Residents of Major Population Centers

Population Centers	NWPS Areas		Other BLM Studies	
	areas	acres	areas	acres
Denver	20	1,728,410	21	372,010
Boulder	20	1,728,410	21	372,010
Colorado Springs	19	1,845,350	19	336,925
Pueblo	19	1,865,011	19	336,925
Fort Collins	20	1,598,113	14	150,539
Greeley	20	1,598,113	14	150,539

Balancing the geographic distribution of wilderness areas

Because of the extent of existing designated wilderness areas in the surrounding region, the Bull Gulch WSA does not contribute significantly to the overall geographic distribution of wilderness. However, this WSA provides juniper-pinyon woodland ecosystem close to the State's major population centers on year-round basis due to lower elevations and a county maintained access road.

Manageability

The entire Bull Gulch WSA can be managed to maintain its wilderness values. The oil and gas leases which were present in the area have expired. Major oil and gas development is not expected to occur due to the low potential for mineral resources. Any oil and gas lease activity in the WSA would be subject to a no surface occupancy stipulation to protect recreational and scenic values, as provided for in the RMP. The only lease activity in the area has been geophysical exploration which took place in 1985. There are no mining claims or private land inholdings in the WSA. The WSA contains an irrigation pipeline intake structure related to an old ditch right-of-way used to deliver irrigation water to private land in the Alamo Creek area.

The 636 acres of State owned minerals in the split estate tract are presently open to mining and mineral leasing, and could pose a manageability problem. Mineral development would cause impacts to the area's roadless character, naturalness and outstanding opportunities for solitude. Development of the State minerals is not presently expected to pose a problem because of the absence of leases and the low potential for mineral resources identified by the U.S. Geological Survey, and because surface disturbing activities on the split estate lands would be subject to a no-surface occupancy stipulation imposed by the Bureau. Due to its low value to the State, a transfer of mineral ownership to the Federal government will be pursued by the Bureau.

Part of the WSA along the Colorado River is under a power site withdrawal. The Federal Energy Regulatory Commission (FERC) indicates that construction of a reservoir might be needed to develop approximately 120,000 kilowatts of hydroelectric capacity and to meet the water needs of the oil shale industry if commercial shale oil production becomes economically feasible. Unless specifically authorized in the wilderness legislation, construction of a dam inundating part of the WSA would not occur. The probability of a reservoir development project utilizing these power site lands in the foreseeable future is considered to be low.

Energy and Mineral Resource Values

The U.S. Geological Survey and Bureau of Mines prepared U.S. Geological Survey Bulletin 1717-C for the area recommended suitable for wilderness in 1986 entitled *Mineral Resources of the Bull Gulch Wilderness Studay Area, Eagle County, Colorado.* The Grand Juncion District, BLM prepared a similar

mineral report for the area recommended unsuitable in February 1986 entitled *Mineral Report: Bull Gulch WSA Unsuitable Portion.*. The area recommended for wilderness contains portions with potential for sand and gravel and industrial rock, and with moderate mineral resource potential for gypsum and anhydrite. Development of these resources is not anticipated because these minerals are available from more accessible and economical sources in the surrounding area. The majority of the recommended wilderness has low potential for occurence of all metals, uranium, coal, oil and gas, and geothermal resources.

The part of the WSA not recommended for wilderness has low potential for sodium, potassium, gypsum (anhydrite), and oil and gas. Sand and gravel deposits and industrial rock sources are present. Prospecting in the area has occurred, but production of any minerals has not taken place primarily because no minerals have been discovered, access is very difficult across the rugged terrain, and because other sources are readily available.

Impacts on Resources

Table 4 summarizes the comparative impacts on pertinent resources for the 3 wilderness designation alternatives considered in the Final Wilderness Environmental Impact Statement.

Table 4 - Comparative Summary of the Impacts by Alternative

Impact Topics	Recommendation: Partial Wilderness Alternative	All Wilderness Alternative	No Wilderness Alternative
Impacts on Wilderness Values	*Wilderness designation would provide long-term statutory protection. Preservation of all wilderness values would be assured on 9,778 acres and is anticipated on the remaining 636 acres of the suitable portion because development of state-owned minerals is not expected to occur. Timber harvesting and vegetation manipulation would cause loss of naturalness on 1,798 acres in the unsuitable portion over the long term. Timber harvesting, vegetation manipulation, and continued ORV use would cause localized reductions of opportunities for primitive recreation and solitude on 4,586 acres.*	*Wilderness values on 15,000 acres would receive long-term statutory protection. Preservation of all wilderness values would be assured on 14,364 acres and anticipated on 636 acres because development of state-owned minerals is not expected.*	*Wilderness values would not receive statutory protection. However, no short-term loss of wilderness values is expected on 10,414 acres because of existing restrictive management (e.g., mineral leasing restrictions, ORV closure) and lack of development potential. Timber harvesting, vegetation manipulations, and continued ORV use would cause localized reductions of opportunities for primitive recreation and solitude on a total of 4,586 acres.*

Table 4 - Comparative Summary of the Impacts by Alternative (continued)

Impact Topics	Recommendation: Partial Wilderness Alternative	All Wilderness Alternative	No Wilderness Alternative
Impacts on Big Game Habitat and Populations	*10,621 acres recommended suitable would be protected from habitat disruption by mineral exploration and development. No exploration or development would be anticipated. Projected population of 850 deer and 160 elk would be maintained. Habitat improvements on 1,798 acres would increase wildlife forage by 1,275 AUMs and improve critical winter range conditions.*	*Wilderness designation of the entire WSA would prevent habitat disruption on 15,000 acres. Projected populations of 850 deer and 160 elk would be maintained, although the forage quality and browse condition for these animals would not be improved.*	*10,621 acres recommended suitable would be protected from habitat disruption by mineral exploration and development. No exploration or development would be anticipated. Projected population of 850 deer and 160 elk would be maintained. Habitat improvements on 1,798 acres would increase wildlife forage by 1,275 AUMs and improve critical winter range conditions.*
Impacts on Timber and Fuelwood Production	*The annual average sustained yield would be 8 thousand board feet (MBF) of timber (2 acres) and 300 cords of fuelwood (22 acres).*	*Wilderness designation of the entire WSA (15,000 acres) would remove 137 acres of productive forest land (650 MBF of timber) and 1,048 acres of productive woodland (14,250 cords of fuelwood) from the current allowable harvest base. This would result in a loss of 8 MBF of timber (2 acres) and 300 cords of fuelwood (22 acres) annually.*	*The annual average sustained yield would be 8 thousand board feet (MBF) of timber (2 acres) and 300 cords of fuelwood (22 acres).*
Impacts on Erosion and Sedimentation	*Designation would prevent increases in erosion and sedimentation in the suitable portion of the WSA (10,414 acres). In the unsuitable portion, timber harvesting and vegetation manipulation on an average of 62 acres disturbed per year would cause short-term increases in erosion and sedimentation rates of up to 200 tons per year. In the long term, rates would decline to, or below, existing levels.*	*Erosion and sedimentation would remain at or near current levels.*	*Same as those described for the recommended partial wilderness designation. This is because timber harvesting and vegetation manipulation, the only activities that would affect erosion and sedimentation rates, are located in the unsuitable portion of the WSA.*

Table 4 - Comparative Summary of the Impacts by Alternative (continued)

Impact Topics	Recommendation: Partial Wilderness Alternative	All Wilderness Alternative	No Wilderness Alternative
Impacts on Energy and Mineral Development	*There would be no mineral development in the WSA because of the low potential for all minerals. Exploration and leasing could be allowed on 3,429 acres in the unsuitable portion and on 636 acres of state-owned minerals in the suitable portion. An additional 1,157 acres in the unsuitable portion would be available for leasing, subject to no surface occupancy or seasonal stipulations.*	*No significant impacts because of the low potential for all minerals. Exploration and development of potential energy and mineral resources prohibited on 14,364 acres, subject to valid existing rights. No valid rights are anticipated.*	*Potential energy and mineral resources would be available for development. No exploration or development is anticipated because of the low development potential for all minerals, including oil and gas.*
Impacts on Recreational Opportunities and Use	*Wilderness designation would maintain recreational opportunities or settings in the suitable portion of the WSA (10,414 acres). All recreational opportunities, including ORV use, would continue to be available in the nonsuitable portion (4,586 acres). Use levels in the WSA totalling about 700 visits annually are expected to remain at current levels.*	*Recreation settings and non-motorized uses would be maintained. An additional 5,148 acres would be closed to ORV use, resulting in a loss of 200 ORV visits annually with in the WSA. The impacts of shifting this use to other public lands would be negligible. Use levels for all other activities, totalling about 500 visits annually, are expected to remain at current levels.*	*Recreation management objectives for the Bull Gulch Special Recreation Management Area would maintain recreational opportunities or settings in the area recommended suitable for wilderness (10,414 acres). Other impacts are the same as under the partial wilderness designation.*

Local Social and Economic Considerations

Partial wilderness designation of the WSA would allow harvest of forest and woodland products in the area recommended unsuitable. Approximately 137 acres of forest with a volume of 650 MBF of timber and an annual yield of 8 MBF would contribute $3,014 to the local retail market. Approximately 1,048 acres of woodland with a volume of 14,250 cords of fuelwood and an annual yield of 300 cords would contribute $33,000 to the local retail market. There would be an annual loss in federal revenue of $120 from timber sales, and $2,250 from fuelwood sales. The losses represent less than 1 percent of the annual allowable harvest rate for timber and approximately 9 percent of the annual allowable harvest rate for fuelwood within the Glenwood Springs Resource Area. Wilderness designation is not expected to increase recreation use and consequently would have no effect on the local economy.

Based on the WSA-specific public comments received, the majority supported wilderness designation for the entire WSA. Local ranchers who graze livestock in the 3 allotments in the portion of

the WSA recommended suitable for wilderness are not particularly opposed to wilderness designation, although they have expressed some interest in increasing livestock rates in the portions of the allotments in the WSA.

Summary of WSA Specific Public Comments

During the intensive wilderness inventory phase (concluded in November, 1980), 12 comments relating to this area were received. Seven of these comments were in favor of identifying this area as a WSA, and 5 were opposed. The issues cited related to livestock use, oil and gas and mineral development, potential fuelwood harvest, and potential improvement of deer and elk winter range conditions. One concern addressed the impact of wilderness designation on the economic and social stability of Eagle County.

One comment received after the intensive inventory period supported wilderness designation of this WSA and cited unique geologic features, vegetation, and wildlife values.

During public workshops held in May 1982 to identify resource management alternatives for consideration in the RMP, 17 comments addressing this WSA were received. Of these comments, 12 supported wilderness designation for the entire area, 4 supported wilderness on part of the area, and 1 opposed wilderness designation. Issues cited in the comments included impacts on wilderness, recreation and natural values; big game habitat, populations and management; timber and fuelwood production; erosion and sedimentation, and on energy and mineral development.

The public comment period for the Draft EIS and RMP was from November 5, 1982 to February 2, 1983, and included three public hearings held on December 7,8 and 14, 1982; these hearings were held in Glenwood Springs, Grand Junction and Denver, Colorado, respectively. During this comment period, 73 comments addressing this WSA were received; 45 were written and 28 were oral testimony at the public hearings. Of these comments, 67 supported wilderness designation for the entire WSA. No favorable comments were received on partial wilderness designation of the area. Six comments supported no wilderness designation. Some local ranching interests were supportive of the no wilderness recommendation in the Draft EIS.

County

The Eagle County government expressed strong preference for multiple use in the WSA's, and essentially supported the No Wilderness alternative for all 15,000 acres in the Bull Gulch WSA. Garfield and Pitkin Counties essentially supported wilderness designation for the entire WSA, citing the importance of recreation opportunities provided by wilderness areas to the local tourism industry.

State

The Colorado Department of Natural Resources strongly urged the Bureau to recommend the Bull Gulch WSA as suitable for wilderness designation, citing unique natural qualities and sub-economic mineral resource values and the absence of serious resource conflicts. The Division of Water Resources had no problem with wilderness designation of the area if water rights are not affected. The State Recreational Trails Committee supported the unsuitable recommendation in the draft EIS. The State Historic Preservation Officer commented that wilderness designation generally benefits cultural resources.

Federal

The National Park Service supported wilderness designation for the area to enhance the overall setting for recreation use and aesthetics. The Environmental Protection Agency, Region VIII, was particularly concerned with the unsuitable recommendation for this area in the draft EIS and felt that the rationale given for such recommendation was insufficient and further explanation was needed. The Federal Energy Regulatory Commission suggested that the Bureau consider in its wilderness recommendation the possibility of a water project development on the Colorado River utilizing existing power site withdrawal lands within the WSA.

Table 5
Estimated Cost of Acquisition of Non Federal Holdings Within Areas Recommended for Designation1/

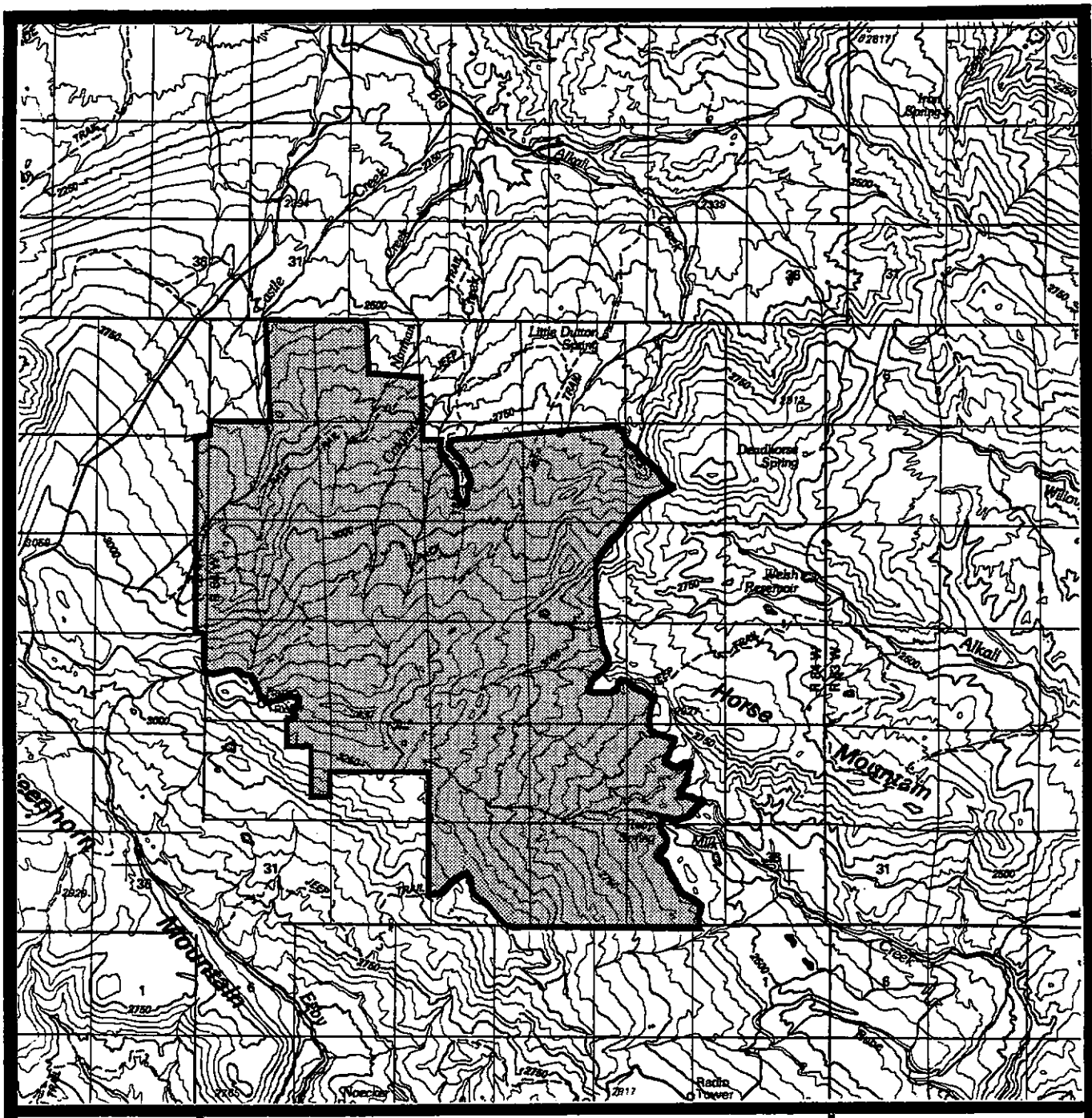
Legal Description	Total Acreage	Number of Owners 2/	Type of Ownership By Estate		Presently Proposed for Acquisition	Preferred Method of Acquisition	Estimated Cost of Acquisition 3/	
			Surface Estate	Subsurface Estate			Land Costs	Processing Costs
T.3.,R.85W., 6th PM Sec. 16	636	1	Federal	State	Yes	Exchange	N/A	$12,000

1/Standard Disclaimer: the estimated costs listed in this appendix in no way represents a formal appraisal value of the land or mineral estate, but are rough estimates based on sales or exchanges of lands or mineral estate with similar characteristics to those within the WSA. The estimates are for the purpose of establishing a range of potential costs to the government of acquiring non-federal holdings and in no way represent an offer to purchase or exchange at the cost estimate included in the appendix.

Processing costs are all miscellaneous expenses other than land costs including work month costs, appraisals, title work, escrow tests, etc.

2/If a larger parcel as shown in the first column has been recently subdivided or is jointly owned, this column represents the number of owners that could be involved in any acquisition negotiation.

3/Where exchange is the proposed acquisition method, only administrative costs of processing the exchange are shown. Land costs would not be applicable. Where direct purchase is proposed, an estimate of both the land costs and the processing costs are provided.



Castle Peak WSA
Proposal
CO-070-433

January 1991

CASTLE PEAK

WILDERNESS STUDY AREA

The Study Area -- 11,940 acres

The Castle Peak Wilderness Study Area (CO-070-433) is in Eagle County, Colorado approximately 8 miles north of the Town of Eagle. The WSA includes approximately 11,940 acres of BLM lands and no private or State inholdings. (See Table 1) The boundaries adjoin private lands on the south and west sides, with deviations from the public land boundary in two places to exclude an existing communication site and a cabin. On the east, the boundary follows the Leonard Horn Ditch, roadways and livestock fences on public land. On the north side the boundary follows fences on public land. A "cherry stem" excludes an existing road and fence in the Catamount Creek area.

The WSA includes Castle Peak, a prominent peak with steep rugged slopes, and rolling hills, basins and meadows. (See Photo 1) Elevations range from 8,400 feet to 11,275 feet on Castle Peak. Many springs, small lakes and perennial streams are found in the area; some streams provide aquatic habitat and support trout. (See Photo 2) The vegetation is diverse and includes expanses of Douglas fir, Englemann spruce, aspen and grass meadows, sagebrush, and mixed mountain brush.

The WSA was studied under Section 603 of the Federal Land Policy and Management Act (FLPMA), and was included in the Glenwood Springs Resource Management Plan (RMP) and Environmental Impact Statement (EIS), with the Record of Decision in January, 1984. The Final EIS for the wilderness portion of the RMP was filed in October, 1987. Two alternatives were analyzed in the Final EIS: all wilderness, and no wilderness which is the recommendation of this report.

Recommendation and Rationale

0 acres recommended for wilderness

11,940 acres recommended for nonwilderness

It is recommended that the Castle Peak WSA be released for uses other than wilderness. The environmentally preferred alternative is to designate the entire 11,940 acres as wilderness since this would result in the least change from the natural environment over the long term.

The no wilderness recommendation would allow management of timber resources which include approximately 5,450 acres of productive spruce-fir forest land with a total volume of 455 thousand board feet (MBF) of timber; 360 acres of Douglas fir with 27 MBF, and 3,640 acres of aspen with 108 MBF. This productive forest land represents 22 percent of all productive forest land in the Glenwood Springs Resource Area. The estimated total spruce-fir volume represents 56 percent of the spruce-fir in the Resource Area. The estimated sustained yield annual harvest rate is 105 acres providing 6.6 MBF. Although this production is significant for public lands in the Resource Area, it is insignificant compared to the annual harvest of 359 MBF on the surrounding White River National Forest.

Use of motorized vehicles would be allowed to continue on designated routes for recreation activities, livestock grazing operations, and other resource management activities in the area. Illegal motor vehicle use presently occurs off designated routes for access to primitive campsites in the WSA, primarily during the big game hunting season. Road construction for timber management would also be allowed.

The use of mechanized equipment is needed in the construction of aquatic habitat improvement projects on Castle, Norman and Catamount Creeks, and in Edges Lake. Aquatic habitat conditions are presently below average to poor, with a declining trend on Norman Creek and Edges Lake, and the projects are considered essential for maintaining and improving the existing trout fisheries.

Other than the resource conflicts described above, there are no major manageability problems with wilderness designation. There are no private land inholdings, no patented mine claims, and the mineral potential is low. The WSA contains all or portions of three grazing allotments; no range improvements are currently proposed.

Table 1 - Land Status and Acreage Summary of the Study Area

	Acres
Within Wilderness Study Area	
BLM (surface and subsurface)	11,940
Split Estate (BLM surface only)	0
Inholdings (State, Private)	0
Total	11,940
Within the Recommended Wilderness Boundary	
BLM (within WSA)	0
BLM (outside WSA)	0
Split Estate (within WSA)	0
Total BLM Land Recommended for Wilderness	0
Inholdings (State, Private)	0
Within the Area Not Recommended for Wilderness	
BLM	11,490
Split Estate	0
Total BLM Land Not Recommended for Wilderness	11,940
Inholdings (State, Private)	0

Criteria Considered in Developing the Wilderness Recommendations

Wilderness Characteristics

Naturalness

The Castle Peak WSA is predominantly natural, but contains some human imprints. Landform features ranging from rugged peaks and steep slopes to rolling hills, basins and parks are largely unimpaired by road construction or other surface disturbance. The existing ways in the WSA used by motorized vehicles have not been maintained with mechanized equipment in the recent past. The access road along Milk Creek to Coberly Gap, which is the WSA boundary for about 1.5 miles, is maintained by the BLM with mechanized equipment.

The vegetation cover is also free of noticeable human made clearings. The area contains stands of Douglas fir, Englemann spruce and aspen throughout the higher elevations, and mixed mountain mahogany, service berry, and sagebrush in the lower to middle elevations. Grass and forb meadows and glades are also found throughout the area.

Tall larkspur (*Delphinium barbeyi*), a plant extremely poisonous to cattle, is common in the area. The spruce-fir forest stands are generally over mature and contain a substantial amount of dead and down trees resulting from a spruce beetle infestation in the 1940's. The amount of dead growth poses a fire hazard. The forest stands are of mixed age, and the process of natural regeneration is evident.

Many of the area's numerous small basins retain runoff water, creating small lakes, ponds and

wetlands. The headwaters of several perennial creeks are found in the area, including Milk, Alkali, Big Alkali, Catamount, Norman and Castle Creeks. The Leonard Horn Ditch diverts water from Milk Creek. Many springs found in the area provide water for wildlife, livestock and recreation visitors; the springs are largely undeveloped.

The area's diverse habitat and abundance of water provide outstanding summer range for an estimated population of 400 elk and 1,000 deer. The area also supports a variety of other wildlife including black bear, bobcat, coyote, beaver, raptors, grouse, waterfowl, and many small mammals and birds. The aspen groves provide elk calving and deer fawning areas.

Four outstanding geologic formations of sedimentary and volcanic origins from Cretaceous to Pleistocene time are exposed in the area. The area also includes landslide deposits primarily composed of basalt talus in the parks and rolling hills in the Milk Creek basin, along Catamount Creek, and in the headwaters of Castle Creek and Alkali Creek.

Castle Peak itself is formed by remnant caprock basalt of the Bimodal Suite Formation, a dense black alkali basalt lava flow layer. The Colorado Group Formation (Upper and Lower Cretaceous), consisting of calcareous shale, marly limestone and benton shale with calcareous sandstone is found in the rolling ridges radiating from Castle Peak. Pierre Shale, composed of dark gray marine shale with some fine grained sandstone is exposed on the very steep slopes and ridge northeast of Castle Peak; this formation is highly erodible, resulting in landslides and slumping which are evident in the area.

The human imprints and modifications present in the WSA are substantially unnoticeable and do not impair the area's overall naturalness, although in localized areas the imprints are noticeable. The fences, ditches, ways and trails are small in scale, widely scattered and well screened by the topography and vegetation. The ways total approximately 7.9 miles, but because of the lack of legal access, only about 2.5 miles are used by the general public. Some of these ways are presently open for motor-

Photo 1. Castle Peak WSA. On the crest of Castle Peak WSA, characterized by rolling grassy meadow, aspen, Douglas fir, and Englemann Spruce and sub-alpine fir forests.

Photo 2. Castle Peak WSA. Man-made reservoirs and small lakes occur thoughout much of the WSA.

ized use under current OHV designations for the area. The presence of motorized vehicles on these ways affects the perception of naturalness, primarily during the big game hunting season. Fences total approximately 13 miles and ditches approximately 1 mile. A precipitation monitoring site is located in the WSA near Castle Peak. Several buildings and antenna towers are located on a mountain top communication site just outside the WSA; these structures are visible from within portions of the WSA, and although their visual impact is attenuated by the viewing distance, they do affect the perception of naturalness. The panoramic views from within the area are of distant forested mountains and peaks, valleys and basins. The widely scattered agricultural fields and pastures, roads and fence lines visible in the background have minimal effect on the perception of naturalness in the area.

Solitude

The WSA provides outstanding opportunities for solitude in many places which are isolated by topographic and vegetation features, and distance. Opportunities for solitude on the periphery of the WSA, especially in the Milk Creek basin area, are impaired by motorized vehicle traffic and visitor concentrations during the big game hunting season. The existing ways provide motorized vehicle access into portions of the WSA, with the heaviest use in the Milk Creek basin. Unimproved trails provide access to the interior of the WSA.

Primitive and Unconfined Recreation

The Castle Peak WSA provides outstanding opportunities for primitive and unconfined recreation, primarily in portions of the WSA away from the ways used by motorized vehicles. The areas along these ways provide outstanding opportunities for semi-primitive motorized recreation. The most popular activities include hunting, camping, picnicking, hiking, horseback riding, sightseeing, wildlife viewing, and photography. Several creeks and lakes in the area support trout which provide opportunities for fishing. The heaviest visitation period occurs during the fall big game hunting season. Several commercial outfitters are permitted

in the area for deer and elk hunting. The Milk Creek road to Coberly Gap is generally passable by high clearance or four wheel drive vehicle only.

Special Features

The Castle Peak WSA provides opportunities for educational and scientific study of the vegetation, landform and ecologic features. Vegetation cover displays the influence of elevation and aspect. Castle Peak is a prominent landmark visible from the surrounding area, and was used as a fire lookout by the Forest Service until several decades ago. (See Photo 3) The volcanic basalt caprock forming Castle Peak is different from the surrounding sedimentary geology. The presence of landslide deposits from recent ice age glacial drift and the marine shales both display erosional and land mass wasting processes.

DIVERSITY IN THE NATIONAL WILDERNESS PRESERVATION SYSTEM

Assessing the diversity of natural systems and features as represented by ecosystems

Wilderness designation of the Castle Peak WSA would not add a new ecosystem or landform type to the National Wilderness Preservation System (NWPS). The area is in the Rocky Mountain Forest Province and is characterized by one ecosystem (Bailey-Kuchler) although it contains representations of two others. The pine-douglas fir ecosystem is found on over 8,130 acres, including extensive aspen groves. The sagebrush steppe ecosystem is found over 1,044 acres, the mountain mahogany-oakscrub ecosystem over 482 acres, and about 2,284 acres in grass meadows or barren. See table 2 for a comparison of representative ecosystems found in this WSA.

Table 2 - Ecosystem Representation

Bailey-Kuchler Classification Province/Potential Natural Vegetation	NWPS Areas areas	NWPS Areas acres	Other BLM Studies areas	Other BLM Studies acres
Nationwide				
Rocky Mountain Forest Province				
Pine-Douglas Fir Forest	10	210,751	13	93,601
Colorado				
Rocky Mountain Forest Province				
Pine-Douglas Fir Forest	4	98,531	12	92,316

Expanding the opportunities for solitude or primitive recreation within a day's driving time (five hours) of major population centers

The Castle Peak WSA is within a day's driving time of six major population centers. Wilderness designation of this WSA would not have a significant effect on expanding opportunities within a day's drive from these population centers (standard metropolitan statistical areas of 100,000 or more). Table 3 summarizes the designated wilderness areas, and wilderness study areas, within a five hour drive from these population centers.

Table 3 - Wilderness Opportunities for Residents of Major Population Centers

Population Centers	NWPS Areas areas	NWPS Areas acres	Other BLM Studies areas	Other BLM Studies acres
Denver	20	1,728,410	21	372,010
Boulder	20	1,728,410	21	372,010
Colorado Springs	19	1,845,350	19	336,925
Pueblo	19	1,865,011	19	336,925
Fort Collins	20	1,598,113	14	150,539
Greeley	20	1,598,113	14	150,539

Balancing the geographic distribution of wilderness areas

Wilderness designation of the Castle Peak WSA would not contribute to balancing the geographic distribution of areas in the NWPS, primarily because of its location in a region with several designated wilderness areas. The wilderness areas within a 50 mile radius from the WSA include the Flat Tops, Eagles Nest, Holy Cross, Hunter-Frying Pan, Mount Massive, Collegiate Peaks and Maroon Bells-Snowmass Wilderness Areas on National Forest lands. Additionally, the Service Peak Further Planning Area and portion of the nearby Bull Gulch WSA are being recommended for wilderness designation by the Forest Service and BLM, respectively.

Manageability

The Castle Peak WSA could be managed as wilderness, but timber harvesting and motorized recreation use would be precluded. The use of motorized vehicles and mechanized equipment in livestock operations and aquatic habitat improvements would be prohibited, increasing operating and project costs. Use of motorized vehicles on existing ways would be difficult to stop due to ease of access. Closures would require physical barriers and continued enforcement which can not be provided with the Resource Area's current operations and staffing levels. There are no current plans to harvest timber. There are no private land inholdings. All minerals are owned by the federal government and there are no mining claims. The pre-FLPMA mineral lease which existed during the study process expired in May, 1986, and the post-FLPMA lease expired on August, 1989.

Energy and Mineral Resource Values

The Bureau of Land Management prepared a mineral report for the Castle Peak WSA in 1986. The lands in the entire WSA are classified as prospectively valuable for oil and gas due to the presence of favorable underlying geologic formations. However, two exploration holes were drilled near the WSA to 8,310 foot and 11,260 foot depths and yielded only water and showed no hydrocarbon deposits.

Other possible mineral resources associated with the underlying geologic formations are gypsum, sodium, potassium and evaporite salts (halite, sylvite, and anhydrite). The mineral report concluded that the resource potential for these minerals is low. There are no mining claims in this WSA.

The potential for development of oil and gas is low due to the lack of hydrocarbon shows or production in the area. The potential for development of other possible mineral resources is also low due to the great depth of deposits and the uncertainty of resource levels, as well as the existence of deposits

of known quality outside the WSA which are more accessible and easily exploited, and closer to existing markets. There are no oil and gas leases.

Impacts on Resources

Table 4 summarizes the comparative impacts on pertinent resources for the two alternatives considered in the Final Wilderness Environmental Impact Statement.

Table 4 - Comparative Summary of the Impacts by Alternative

Impact Topics	Recommendation: No Wilderness Alternative	All Wilderness Alternative
Impacts on Wilderness Values	*The overall effect would be the loss of wilderness characteristics throughout the WSA because of the widespread distribution of impacts from timber harvesting.*	*All wilderness values on 11,940 acres would receive long-term statutory protection.*
Impacts on Erosion and Sedimentation	*Timber harvesting and road construction on an average of 135 acres disturbed per year would cause short-term increases in erosion and sedimentation rates of up to 460 tons per year, but is not expected to exceed the threshold levels given in the Water Resources Plan. In the long-term, rates would return to or below preexisting levels.*	*Increases in erosion and sedimentation would be prevented because timber harvesting would be precluded.*
Impacts on Energy and Mineral Exploration and Development	*No exploration or development is anticipated because of the low potential for all minerals including oil and gas.*	*Exploration and development of mineral resources would be prohibited on 11,940 acres subject to valid existing rights, although there is low mineral potential. No valid rights are anticipated.*
Impacts on Aquatic Habitat and Populations	*Impacts from timber harvesting over the long-term would cause major but short-lived impacts on fisheries. Once disturbances are stabilized and stream sedimentation reduced, the aquatic habitat would rapidly improve. Aquatic habitat improvement projects would increase sediment levels. However, over the long-term (1-5 years), habitat improvements on 5.8 miles of streams and one lake (3 acres) would improve aquatic habitat conditions and increase fish productivity.*	*Over the long-term (1-5 years) habitat on 5.8 miles of streams and one lake (3 acres) would improve and increase fish productivity. Aquatic habitat quality could be reduced from habitat improvement projects in the short-term through increased sediment levels.*

Table 4 - Comparative Summary of the Impacts by Alternative (continued)

Impact Topics	Recommendation: No Wilderness Alternative	All Wilderness Alternative
Impacts on Big Game Habitat and Populations	*Projected populations of 1,225 deer and 375 elk would be maintained. In the long-term, timber harvesting would cause minor temporary habitat disruption and displacement of big game to other portions of the WSA.*	*Projected populations of 1,225 deer and 375 elk would be maintained. Habitat disruption and displacement of big game associated with timber harvesting would not occur.*
Impacts on Timber Production	*Timber production would be allowed on forest land in the current allowable harvest base. The annual sustained yield would be 660 MBF of timber.*	*Wilderness designation would remove 9,450 acres of productive forest land from the allowable harvest base. 59 MMBF of productive timber with an annual sustained yield of 660 MBF would be foregone. While these figures appear significant for the resource area, they become very insignificant when compared to the annual allowable harvest of 35.9 MMBF of merchantable timber on the surrounding White River National Forest.*
Impacts on Recreation Opportunities and Use	*Recreational settings and uses would be maintained in the WSA. Use levels, totaling about 2,050 visits per year, are expected to remain at current levels. Localized displacement of nonmotorized primitive recreation would occur (about 25 visits annually).*	*The existing recreational setting and nonmotorized use would be maintained. The entire WSA would be closed to OHV use, resulting in a loss of 150 OHV visits annually within the WSA. The impacts of shifting this use to other public lands would be negligible. Nonmotorized activities, totaling about 1,900 visits annually, are expected to remain at current levels.*

Local Social and Economic Considerations

The no wilderness recommendation would allow continuation of existing motorized use in the area, which has local support. The possible annual harvest of 6.6 MBF of timber could contribute an estimated $2,486 to the local retail market in current dollars, which is an insignificant contribution. However, based on WSA specific public comments, the majority public opinion supported wilderness designation for the Castle Peak WSA, and therefore the recommendation is contrary to the desires expressed in the majority of comments.

Summary of WSA Specific Public Comments

During the intensive wilderness inventory phase (concluded in November, 1980), 17 comments relating to this WSA were received. 10 comments favored identification for wilderness study, 6 comments opposed identification, and 1 comment did not take a position. One comment indicated wilderness designation would protect important deer fawning and elk calving areas. Issues cited were livestock use and maintenance of facilities, potential oil and gas exploration and development, wildlife use, timber harvesting, potential water development,

recreation use, and the economic and social stability of Eagle County. The Bureau's decision to identify the area as a WSA was appealed to the Interior Board of Land Appeals, who affirmed the Bureau's decision in a November 1981 ruling.

Public workshops held in May 1982 to identify resource management alternatives resulted in 18 comments relating to this area. All were general in nature, with 11 comments supporting wilderness designation and 7 comments opposed.

The formal comment period for the Draft Wilderness Environmental Impact Statement was from November 5, 1982 to February 2, 1983. Public hearings were held on December 7, 8 and 14, 1982, in Glenwood Springs, Grand Junction and Denver, respectively. A total of 69 comments were received; 42 were written and 27 were oral statements at the hearings. Thirty four of the written comments supported wilderness designation and eight were opposed. Twenty six of the oral comments supported wilderness designation and one was opposed. Comments favoring wilderness designation indicated that mineral and timber resources in the WSA are economically insignificant; that their development would destroy scenic and recreational opportunities, cause severe soil erosion and water quality problems, and that motorized recreation demands could be met in other areas. Comments opposed to wilderness designation came primarily from ranchers, who cited the abundance of existing wilderness in the region, livestock management problems from increased restrictions, possible trespass onto adjacent private property, a desire for continuation of multiple use management, and that the area does not meet the wilderness criteria.

County

The Eagle County government opposed wilderness designation, strongly supporting multiple use instead. Neighboring Pitkin County questioned the no wilderness recommendation for this area and urged the Bureau to recommend wilderness, citing the presence of valuable ecological, geological, recreational, scenic and wildlife resources and the vital importance of recreation opportunities provided by wilderness areas to the local tourism industry.

State

No comments were received from state agencies relating to this WSA.

Federal

The National Park Service supported wilderness designation in general to enhance the overall setting for recreation use and aesthetics. The Environmental Protection Agency, Region VIII, did not specifically address this WSA in the Draft EIS.

Photo 3. Castle Peak WSA. The basaltic landform feature named Castle Peak at the highest elevation of the WSA.