LANDER

Wilderness Supplement
Draft Resource Management Plan/EIS

WILDERNESS SUPPLEMENT
to the
DRAFT RESOURCE MANAGEMENT PLAN/ ENVIRONMENTAL IMPACT STATEMENT
for the
Lander Resource Area
Lander, Wyoming

Prepared by:
U.S. Department of the Interior
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Wyoming State Director

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SUMMARY

This EIS is an analysis of the effects of designation or nondesignation as wilderness of 48,089 acres of public land in six wilderness study areas (WSAs). Those areas, Sweetwater Canyon, the Sweetwater Rocks complex and Copper Mountain are located in central Wyoming. This environmental impact statement (EIS) was written in response to section 603 of the Federal Land Policy and Management Act (FLPMA), which directs the Bureau of Land Management (BLM) to inventory, study and report to Congress, through the Secretary of Interior and the President, those public lands suitable for preservation.

MAJOR ISSUES AND CONCERNS

Before preparation of this EIS, a scoping process was conducted to identify significant issues. Based on contacts with industry, organizations, individuals, federal, state and local agencies, areas of concern and controversy were identified:

1. Wilderness designation would adversely affect mineral exploration and development.
2. Wilderness designation would adversely affect the livestock industry by reducing or eliminating livestock grazing, limiting motor vehicle access, disrupting traditional use patterns, and increasing visitor use with resultant problems of vandalism, litter and fire. Livestock operators could be displaced or be put out of business.
3. Wilderness designation would limit recreational use through eliminating access by motor vehicles.
4. Wilderness designation would cause overuse of the area and decrease the quality of recreation.
5. Wilderness designation would preserve values such as primitive recreation, scenic values and cultural resources.
6. Wilderness designation would assure preservation of wildlife habitat, fisheries and water quality.
7. Wilderness designation would add ecosystems, and thus, diversity to the National Wilderness Preservation System (NWPS).

These issues were considered in the development of the Proposed Action and alternatives and in the analysis of the environmental consequences of these actions.

PROPOSED ACTION AND ALTERNATIVES

Sweetwater Canyon WSA

Proposed Action - Partial Wilderness - Conflict Resolution

The objective of the Proposed Action is to designate the Sweetwater Canyon proper (5,760 acres) as wilderness. Motorized equipment would be prohibited and mineral exploration for development restricted. Wilderness values and associated wildland uses and recreation would thus be preserved. The remaining 3,200 acres would be released from the restrictions of interim management and managed in the same manner as adjacent public land; it would be open to commodity development with management to protect the resources from undue disturbance.

Alternative 1 - No Action - Continuation of Present Management

Under this alternative the entire WSA would be released from interim management. There would be no specific management for wilderness values. Resources would be managed under current laws and regulations, which would minimize disturbance and preserve existing natural values.

Alternative 2 - All Wilderness Designation

Designation of the entire area as wilderness would prohibit motorized equipment, thereby preventing vehicular access to the edge of the canyon. Mineral exploration and development would be prohibited unless valid mining claims existed. Because of the restrictions on commodity and vehicular use, the wilderness values and associated wildland uses would be preserved.

Alternative 3 - Implementation of the Existing Management Proposal

This alternative is based on a proposed management framework plan decision. It would result in designation of about 5,000 acres as an Area of Critical Environmental Concern (ACEC). The ACEC provides the focus to implement special management actions to protect resources

important and unique to the area such as historical, cultural, wildlife, fisheries, scenic, and recreational values.

The ACEC differs from wilderness designation primarily because actions are not predisposed but must be tailored to the concern being addressed. Motorized vehicles could be used on existing roads. Resources would be managed more intensely than under normal multiple use to prevent overuse or destruction of critical or unique values.

Sweetwater Rocks WSAs

There are four WSAs having the same characteristics in the Sweetwater Rocks complex. The impacts from a given alternative would be the same for each WSA.

Proposed Action - No Action - Continuation of Present Management

The Sweetwater Rocks complex would be managed under existing multiple-use policies. The overall objectives would be to manage the area for multiple use while preventing unnecessary and undue degradation of the lands and resources. The complex would be released from restrictions of interim management.

Alternative - All Wilderness Designation

Wilderness designation would prohibit motorized equipment use in the complex. Mineral exploration and development would be prohibited unless there were valid existing rights. Because of the restriction on commodity and vehicular use, the wilderness and associated wildland values would be preserved.

Copper Mountain WSA

Proposed Action - No Action - Continuation of Present Management

Copper Mountain would be managed under existing multiple-use policies. The overall objectives would be to manage the area for multiple use while preventing unnecessary and undue degradation of the lands and resources. The WSA would be released from restrictions of interim management.

Alternative - All Wilderness Designation

Wilderness designation would prohibit motorized equipment use in the WSA. Mineral exploration and development would be prohibited unless there were valid existing rights. Because of the restriction on commodity and vehicular use, the wilderness and associated wildland values would be preserved.

PREFERRED ALTERNATIVE

For each WSA the Proposed Action is the preferred alternative.

LONG-TERM ENVIRONMENTAL CONSEQUENCES

In tables S-1, S-2 and S-3, the projected long-term environmental consequences of the Proposed Actions and alternatives are compared. This summary provides a basis for choice among the options for the decisionmaker and the public. For more detailed descriptions of the environmental consequences of the Proposed Actions and alternatives, refer to Chapter IV.

TABLE S-1

COMPARATIVE ANALYSIS OF IMPACTS OF THE ALTERNATIVES SWEETWATER CANYON

Resource	Partial Wilderness Proposed Action (5,760 acres)	Alternative 1 No Action	Alternative 2 All Wilderness (9,056 acres)	Alternative 3 Implementation of the Existing Management Proposal
Wilderness Values	Areas inside boundary is affected the same as in the All Wilderness Alternative area. Outside the boundary is affected the same as the No Action Alternative. Preserve opportunities for primitive recreation and solitude. Protect wildlife habitat, soils, vegetation, fishery, cultural sites from damage due to commodity development. Preclude mining development unless valid existing rights were present. Adds to diversity of NWPS. Impacts would be cumulatively positive.	No management - there would be negative impacts in the long term.	Preserve opportunities for primitive recreation and solitude. Protect wildlife habitat, soils, vegetation, fishery, cultural sites from damage due to commodity development. Preclude mining development unless valid existing rights were present. Adds to diversity of NWPS. Impacts would be cumulatively positive.	No management - Effects would be similar to All Wilderness Alternative because of restrictions on commodity development and vehicular use. Area of Critical Environmental Concern (ACEC) designation is not as permanent as wilderness designation. Primarily differs from Alternative 1 because there would be a mineral withdrawal.
Recreational Resources	Enhance long-term opportunities for primitive, unconfined recreation for fishing, hunting, hiking, sightseeing, backpacking and natural study. Restricted vehicle use would be positive-negative for vehicle-dependent recreationists. Impacts would be cumulatively positive.	If commodity development occurred, there would be increased recreational use and negative impacts on the quality of non-mineral recreation.	Enhance long-term opportunities for primitive, unconfined recreation for fishing, hunting, hiking, sightseeing, backpacking and natural study. Restricted vehicle use would be positive-negative for vehicle-dependent recreationalists. Impacts would be cumulatively positive.	Same as partial wilderness alternative.
Livestock Grazing	Restricted vehicle use would adversely affect herding and gathering of livestock because it would be more time consuming. The cumulative impact would be negative only because of vehicular restrictions but grazing would remain basically unchanged.	No change from current situation.	Restricted vehicle use would adversely affect herding and gathering of livestock because it would be more time consuming. The cumulative impact would be negative only because of vehicular restrictions but grazing would remain basically unchanged.	No change from current situation.
Geology	Mineral appropriation would be withdrawn. Valid existing rights associated with mining claims. Further study for geology and mineral potential are not allowed except for aerial and non-impairing ground surveys. Cumulative impacts are negative. Oil and gas potential is none, but locatable minerals are present.	No negative impacts. Mineral development would occur upon demand, subject to laws and regulations.	Mineral appropriation would be withdrawn. Valid existing rights associated with mining claims. Further study for geology and mineral potential not allowed except for aerial and non-impairing ground surveys. Cumulative impacts are negative. Oil and gas potential is none, but locatable minerals are present.	Same as Partial Wilderness Alternative.
Wildlife	Existing habitat would be maintained or improved and not degraded by commodity development and vehicular use. Wildlife populations would be maintained and perhaps increased with some species.	Conditions would remain unchanged unless mineral development occurred. In that event, the potential for habitat destruction exists and together with human disturbance, the result would be a negative impact.	Existing habitat would be maintained or improved and not degraded by commodity development and vehicular use. Wildlife populations would be maintained and perhaps increased with some species.	Same as Partial Wilderness for the short term. Long-term effects not as favorable because ACEC designation is not as permanent as wilderness designation.
Fisheries	Fishery would be maintained by natural reproduction. Habitat would be preserved and improved, and protected from dam building and placer mining.	Possible degradation of habitat due to mineral development. Fishing pressure would be mostly dependent on changes in local human populations.	Fishery would be maintained by natural reproduction. Habitat would be preserved and improved, and protected from dam building and placer mining.	Same as Partial Wilderness Alternative, except that there would be more flexibility in managing the use, habitat, and trout populations. Habitat improvement actions would be slower because funding priority would probably be lower than for a wilderness area.

TABLE S-1 (CONTINUED)

Resource	Partial Wilderness Proposed Action (5,760 acres)	Alternative 1 No Action	Alternative 2 All Wilderness (9,056 acres)	Alternative 3 Implementation of the Existing Management Proposal
Socioeconomics	The sociological impacts would be positive for recreationalists, except for vehicle users. There would be negative impacts on mineral development. The effects on livestock operators would be minor. The cumulative negative impacts would be minor. The positive impacts would be significant.	Impacts would be associated with mineral development. Some impacts would be positive for the local economy through mineral development. Such development would be negative from the recreational standpoint and could produce negative impacts on local ranchers.	The sociological impacts would be positive for recreationalists, except for vehicle users. There would be negative impacts on mineral development. The effects on livestock operators would be minor. The cumulative negative impacts would be minor. The positive impacts would be significant.	Scenic, aesthetic, and social values augmented. No change to livestock operators and recreationalists. Mineral resources negatively impacted unless there are valid existing rights.
Cultural Resources	Impacts would be positive because cultural sites would not be disturbed by commodity development, the slow erosional rate would continue, and the original historical and prehistorical character of the area would be preserved. If visitor use were to increase, artifact collection and vandalism might result. The postive impacts outweigh the negative ones.	If mineral development were to occur, there would be adverse impacts because of road construction, mining, rights-of-way and artifact collecting. Positive impact because of knowledge gained from required inventories.	Impacts would be positive because cultural sites would not be disturbed by commodity development, the slow erosional rate would continue, and the original historical and prehistorical character of the area would be preserved. If visitor use were to increase, artifact collection and vandalism might result. The positive impacts outweigh the negative ones.	Impacts within the boundary would be the same as the All Wilderness Alternative. Impacts outside the boundary would be the same as the No Action Alternative.
	The area would be manageable as wilderness.	The area would not be manageable as wilderness.	The area would be manageable as wilderness.	The area would not be manageable as wilderness.

TABLE S-2

COMPARATIVE ANALYSIS OF IMPACTS OF THE ALTERNATIVES SWEETWATER ROCKS COMPLEX

Resource	Proposed Action Continuation of Present Management	Alternative 1 All Wilderness
Wilderness Values	No management for wilderness values. Commodity development would impair wilderness values. Probability is low. No diversity added to NWPS.	Designation would provide short- and long-term protection to the wilderness values. It would preserve primitive recreation and solitude and would protect special features such as Lankin Dome. Would prohibit wilderness impairing activities such as road building. Would add diversity to NWPS.
Recreational Resources	Recreational use would depend on local population change. Commodity development could cause primitive-type recreation to be replaced by motorized recreation.	Enhance primitive, unconfined recreation. Adverse impact to recreationists dependent on motor vehicles.
Livestock Grazing	No change from present situation.	Grazing would remain basically the same. Restriction on motor vehicle use.
Geology	No change from present situation.	There would be no oil and gas development. Mining would be allowed where there were valid existing rights. Only nonimpairing scientific survey would be allowed.
Wildlife	Commodity development would degrade habitat and cause disturbance. Bighorn sheep most adversely impacted. Probability of commodity development is low.	Designation would assure long-term protection to habitat. High potential habitat for bighorn sheep and peregrine falcons would remain undisturbed.
Socioeconomics	No change from present situation.	Benefits from recreation, education, personal development. Slight increase in operating costs to livestock owners. Possible nuisance to local ranchers if visitor use increased.
Cultural Resources	Overall impacts neutral. Commodity development would generally compromise historical character of area and cause loss of prehistoric artifacts, but probability of development is low. The area would not be manageable as wilderness.	Mostly positive impacts through preservation of historical and prehistoric sites. Minor adverse impact if visitor use increased and artifact collecting and vandalism occurred. The area would be manageable as wilderness.

TABLE S-3

COMPARATIVE ANALYSIS OF IMPACT OF THE ALTERNATIVES COPPER MOUNTAIN

Resource	Proposed Action Continuation of Present Management	Alternative 1 All Wilderness
Wilderness Values	No management for wilderness values so commodity development could impair them. No added diversity to NWPS.	Designation would preserve opportunities for primitive recreation and solitude; preserve wildlife habitat, soils and vegetation, and protect and enhance watershed.
Recreational Resources	Commodity development would result in road building, which could increase activities such as photography and sightseeing by 50 percent. Motorized recreation could replace primitive-type recreation.	Recreational use would remain primitive. Hunting quality and quantity would determine the hunting use.
Livestock Grazing	No change from current situation.	Livestock grazing would remain the same. Since there are no roads in the WSA, vehicular use would not be an issue.
Geology	No change from current situation.	Mining would not be restricted where there are valid existing rights. Oil and gas development would be prohibited on all the area if wilderness value were impaired.
Wildlife	Commodity development has the potential for degrading wildlife habitat and disturbing animals, particularly on mule deer crucial winter range.	Wildlife resources would be protected.
Socioeconomics	No change from current situation.	Social values associated with wilderness would mostly be impacted positively. Commodity users would be negatively impacted.
Cultural Resources	Adverse and positive impact about equal and balance each other. While these would be more artifact collecting and vandalism associated with commodity development, the archeological clearance required.	
	The area would not be manageable as wilderness.	The area would be manageable as wilderness.

CHAPTER I

INTRODUCTION

PURPOSE AND NEED FOR ACTION

The Lander Resource Area Wilderness Environmental Impact Statement (EIS) is being prepared in response to Section 603 of the Federal Land Policy and Management Act (FLPMA), October 21, 1976. This law directs the Bureau of Land Management (BLM) to inventory, study and report to Congress, through the Secretary of the Interior and the President, the public lands preliminarily suitable for inclusion in the National Wilderness Preservation System (NWPS).

BLM has established the end of fiscal year 1986 as its goal for completing wilderness studies and reporting wilderness suitability to the Secretary of the Interior. This EIS satisfies the study requirements for six of the 35 BLM wilderness study areas in Wyoming. According to FLPMA, the Secretary must report his recommendations to the President by October 21, 1991. The President has until October 21, 1993, to send his recommendations to Congress; only Congress has the authority to designate any of the study areas as wilderness.

The purpose of this EIS is to analyze the effects on present or potential resource uses of including six WSAs in central Wyoming in the NWPS.

PLANNING CRITERIA

BLM planning regulations provide the means by which the District Manager can guide the development of the Resource Management Plan (RMP) and provide parameters for analysis and decision making. Criteria are developed for each resource element (such as wilderness) that represents an issue in the planning effort. The planning regulations also provide for national and state director guidance to district managers. For the wilderness program, national planning criteria have been developed by BLM that will be used in the wilderness study process. All BLM wilderness recommendations, both suitable and nonsuitable for preservation as wilderness, will be developed on the basis of the two planning criteria and six quality standards listed below.

Criterion Number 1, Evaluation of Wilderness Values

Consider the extent that each of the following contributes to the overall value of an area for wilderness purposes.

1. Mandatory wilderness characteristics: size, naturalness and outstanding opportunities for solitude or primitive, unconfined recreation.
2. Special features: presence or absence and quality of ecological, geological or other features of scientific, educational, scenic, or historical value.
3. Multiple-resource benefits: benefits to other multiple-resource values and uses that only wilderness designation of the area could ensure.
4. The extent that wilderness designation of the area under study would contribute to expanding the diversity of the NWPS from the standpoint of the factors listed below:

a) Expanding the diversity of natural systems and features, as represented by ecosystems and landforms.

b) Assessing the opportunities for solitude or primitive recreation within a day's driving time of major population centers.

c) Balancing the geographic distribution of wilderness areas.

Criterion Number 2, Manageability

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

Quality Standards for Analysis and Documentation

Standard Number 1, Energy Mineral Resource Values - Recommendations as to an area's suitability or nonsuitability for wilderness designation will reflect a thorough consideration of any identified or potential energy and mineral resource values.

Standard Number 2, Impacts on Other Resources - Consider the extent that other resource values or uses of the area would be forgone or adversely affected as a result of wilderness designation.

Standard Number 3, Impact of Nondesignation on Wilderness Values - Consider the alternative use of land under study if the area were not designated as wilderness, and the extent that the wilderness values of the area would be forgone or adversely affected as a result of this use.

Standard Number 4, Public Comment - In determining whether an area is suitable or nonsuitable for wilderness designation, the BLM wilderness study process will consider comments received from interested and affected public groups at all levels--local, state, regional, and national. BLM will develop its recommendations by considering public comment in conjunction with its analysis of a wilderness study area's multiple resource and social and economic values and uses.

Standard Number 5, Local Social and Economic Effects - In determining whether an area is suitable or nonsuitable for wilderness designation, BLM will give special attention to adverse or favorable social and economic effects, as identified through the wilderness study process, that wilderness designation will have on local areas.

Standard Number 6, Consistency with Other Plans - In determining whether an area is suitable or nonsuitable for wilderness designation, BLM will consider the extent to which the recommendation is consistent with officially approved and adopted resource-related plans of other federal agencies, state and local governments, and Indian tribes (and the policies and programs contained in such plans), as required by FLPMA and BLM planning regulations.

WILDERNESS STUDY

The BLM's intensive wilderness inventory was completed in November of 1980. It identified eight wilderness study areas (WSAs) in the Lander Resource Area: Whiskey Mountain (WY-030-110), Dubois Badlands (WY-030-109), Copper Mountain (WY-030-111), Sweetwater Canyon (WY-030-101), and four areas in the Sweetwater Rocks (WY-030-120, 122, 123a, and 123b).

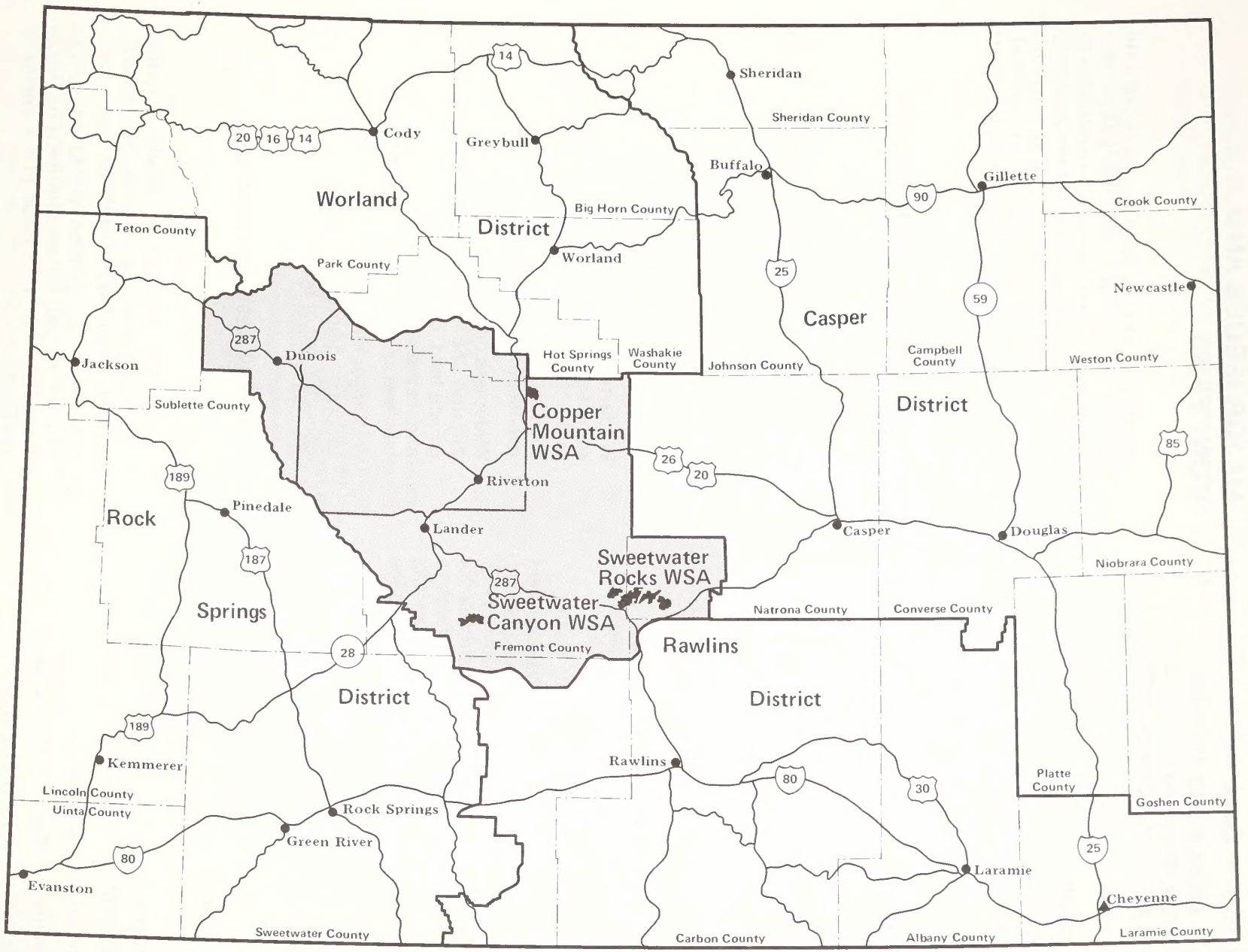
The RMP process began in late 1983. The Management Situation Analysis was completed in the summer of 1984. This EIS, in conjunction with congressional action, will complete the recommendations listed in the RMP. It will not include a management plan if any area is designated as wilderness. Instead, a wilderness management plan will be developed, based on any special wilderness management considerations incorporated by Congress. Areas not designated as wilderness and released by Congress will be returned to normal multiple-use management without the constraints of BLM's Wilderness Interim Management Policy (see the Standard Operating Procedures section for a discussion of this policy).

As a result of a decision by the Secretary of Interior on December 30, 1982, changes were made in the wilderness study procedures (Instruction Memorandum WO-83-138). Two WSAs were dropped from further consideration because they contained less than 5,000 acres: the Dubois Badlands (4,520 acres) and Whiskey Mountain (487 acres). The remaining six WSAs are being considered in this EIS for designation as wilderness (see map 1).

Split-estate lands in the Sweetwater Rocks were also eliminated from study. Split-estate lands are those lands where the surface is owned by the federal government and the mineral estate is owned by the State of Wyoming. Eliminating these lands reduced the acreage of the Sweetwater Rocks Unit 120 from 6,316 acres to 5,956 and reduced the acreage of the Sweetwater Rocks Unit 122 from 12,789 acres to 12,749. Even if these split-estate lands had been included in the analysis appearing in this EIS, there would have been no change in the affect on manageability or final judgement on the suitability of the WSA's for wilderness designation.

The six areas being studied are located in Fremont and Natrona counties. The topographic and natural features in these areas are quite diverse, ranging from mountains of granite that are nearly barren of vegetation, to sagebrush-grassland prairies, to juniper woodlands, to a deep and rugged canyon. Elevations range from a low of approximately 6,000 feet on the Sweetwater River near Devil's Gate to over 8,000 feet on the summit of McIntosh Peak, the highest point in the Sweetwater Rocks WSAs(WY-030-122).

These WSAs constitute approximately 2 percent of the public land in the Lander Resource Area and cover a total of 48,089 acres. Table 1-1 lists the areas and acreages under wilderness study in the Lander Resource Area.



Map 1
General Location
Wilderness Study Areas

TABLE 1-1

AREAS BEING STUDIED FOR WILDERNESS IN THE LANDER RESOURCE AREA

Study Area	Acres
Sweetwater Canyon	
WY-030-101	9,056
Sweetwater Rocks	
WY-030-120	5,956
WY-030-122	12,749
WY-030-123a	7,041
WY-030-123b	6,429
Copper Mountain	
WY-030-111	6,858
Total	**48,089**

CONSISTENCY WITH OTHER PLANS

FLPMA requires that BLM plans be as consistent with state and local plans as federal laws, policies, and regulations will allow. A decision to recommend a WSA as suitable or nonsuitable for designation as wilderness will reflect a consideration of other federal, state, local, and Indian plans governing lands in or adjacent to the Lander Resource Area.

All federal, state, local, and Indian agencies have been notified of BLM's RMP effort and asked to point out any inconsistencies so that they may be analyzed.

Steps used in the preparation of the RMP were:

1. Issue identification
2. Planning criteria
3. Inventory data and information collection
4. Analysis of the management situation
5. Formulation of alternatives
6. Estimation of effects of alternatives
7. Selection of preferred alternative
8. Selection of resource management plan

MAJOR ISSUES AND CONCERNS

Throughout the inventory stage of the wilderness review process, the public had opportunities to attend meetings, open-houses or other informal meetings, as well as the opportunity to provide written information to BLM. From this process, a number of issues have been identified. The issues and a summary of opinions on effects of wilderness designation follows.

Mineral Exploration and Production

It was an expressed concern that:

Wilderness designation would adversely affect mineral exploration and development in all the WSAs with a resultant loss of revenue.

Livestock Production

It was an expressed concern that:

1. Wilderness designation might result in reduction or elimination of grazing, limit motor vehicle use for moving and feeding livestock and for constructing and maintaining range improvements.
2. Wilderness designation would prohibit access through the area to adjacent public and private land, disrupt traditional use patterns, and increase vistor use with the resultant increase in litter, vandalism and fire.
3. Wilderness designation would cause loss of income, displace operators and force operators out of business.

Recreational Resources and Use

It was an expressed concern that:

1. Wilderness designation would eliminate vehicular access and would be detrimental for hunting and other recreation.
2. Wilderness designation would cause use beyond the optimal level for the area, which would result in a decrease in the quality of the area.
3. Wilderness designation would preserve the outstanding opportunities for primitive

recreation and solitude and preserve high-quality scenic values and significant cultural resources.

Wildlife/Wildland Values and Needs

It was an expressed concern that:

1. Wilderness designation might be the only way to ensure long-term protection for wildlife habitat and primitive recreational opportunities.
2. Wilderness designation in the Sweetwater Canyon and Sweetwater Rocks, which have high-quality opportunities for recreation, particularly fishing and solitude, would be lost because of increased visitor use.
3. Wilderness designation would ensure that water quality in the Sweetwater River would remain high and there would be a positive impact on the trout fishery.
4. Wilderness designation for the WSAs would add ecosystems to the NWPS, thereby increasing diversity.

STANDARD OPERATING PROCEDURES

Interim Management Policy

During the period of the wilderness review process and until Congress acts on the President's recommendations, the Secretary of the Interior is required to manage wilderness study areas so as not to impair their suitability for preservation as wilderness, subject to certain exceptions and conditions. The policy and guidelines under which BLM will manage the lands during the wilderness review process is known as the Interim Management Policy.

There are two goals of the Interim Management Policy: (1) to ensure that WSAs, which now satisfy the wilderness definition in Section 2(c) of the Wilderness Act, will satisfy that definition when the Secretary sends his wilderness recommendation to the President and until Congress acts on that recommendation; and (2) to ensure that, by the time the Secretary sends his recommendation to the President, the area's wilderness values have not been degraded, relative to other uses and values for other purposes, so that the Secretary's recommendation concerning the area's suitability or nonsuitability for wilderness will not be constrained.

There are two exceptions to this policy. The first is that existing uses may continue in the same manner and degree as on the date that FLPMA was approved. Such uses are referred to as "grandfathered."

The second exception involves leases that were issued before October 21, 1976, the date FLPMA was passed. If oil and gas leases were issued before the passage of FLPMA, it would be considered a valid existing right, and the owner of such a lease would be entitled to exercise his right to explore and produce oil and gas, even if that activity were to impair the area's wilderness values. For a further explanation of these rights, copies of the complete Interim Management Policy and Guidelines for Lands under Wilderness Review are available at any BLM office or may be obtained by writing or calling the Rawlins District office.

If an area were not designated wilderness, it would be released from interim management.

Wilderness Management Policy

BLM's Wilderness Management Policy was published in September 1981. It details BLM's management of wilderness areas. The wilderness management policy regulates use of designated wilderness and contains information about specific programs, such as livestock grazing, and how they will be affected by a wilderness designation (see Appendix 1).

DEVELOPMENT OF ALTERNATIVES

To adequately analyze the Sweetwater Canyon, Sweetwater Rocks and Copper Mountain WSAs for wilderness suitability, an array of alternatives were developed. In each case two required alternatives, All Wilderness and No Action, were analyzed.

In Sweetwater Canyon, two additional alternatives were analyzed, Partial Wilderness and Implementation of the Existing Management proposal. The Partial Wilderness Alternative resolved some of the conflicts of access because a smaller area was involved. The other alternative provided an additional option of resource

protection to the Sweetwater Canyon that exceeded present management. No other alternatives were considered viable.

In the Copper Mountain WSA, only the two alternatives, All Wilderness and Continuation of Present Management, were considered reasonable.

The alternatives considered for the Sweetwater Rocks WSA were All Wilderness, Continuation of Present Management and a combination of units 120 (Lankin Dome) and 122 (Split Rock).

In all cases, the alternatives were presented to the EIS team for analysis of impact without the bias of a proposed action. After the alternatives were analyzed, the Lander Area Manager chose the Proposed Actions for each WSA. In the Sweetwater Canyon WSA, it was the Partial Wilderness Alternative; for the Sweetwater Rocks complex, Continuation of Present Management Alternative; and for the Copper Mountain WSA, it was the Continuation of Present Management Alternative.

ALTERNATIVES CONSIDERED BUT DROPPED

Of the alternatives considered for all WSAs, only one, the combination of units 120 (Lankin Dome) and 122 (Split Rocks) was dropped. This combination was first considered because these two units encompassed the most unique and manageable features of the four WSAs. After further consideration, however, the concensus was that there was no advantage to such a combination, since the option of All Wilderness and Continuation of Present Management were adequately covered in the individual WSAs.

CHAPTER II

ALTERNATIVES INCLUDING THE PROPOSED ACTION

SWEETWATER CANYON WSA (WY 030-101)

Proposed Action - Partial Wilderness - Conflict Resolution

Under this alternative, a portion of the Sweetwater Canyon (about 5,760 acres) would be designated wilderness (see map 2). The area would include the "core area" or the canyon itself and would eliminate conflicts with any resource that required motorized access on a routine basis. Examples of such use are hunting; fishing; livestock management; and development of leaseable, locatable, and saleable minerals. The remainder of the area (about 3,300 acres) would be managed without the restrictions of interim management. A summation of present management actions follows the description of the actions for the portion recommended for wilderness designation.

The specific management guidelines for the portion of the Sweetwater Canyon being recommended under this alternative for wilderness designation would be:

Wilderness Values

Management of the area would be accomplished according to the guidelines in BLM's Wilderness Management Policy, issued September 24, 1981. Those guidelines indicate that once an area has been designated as wilderness, the provisions of the Wilderness Act of 1964 shall direct its administration and use. According to the Wilderness Act, wilderness areas will be managed to provide for their protection and for the preservation of their natural conditions and wilderness character. It further provides that wilderness areas are to be devoted to the public purposes of recreational, scenic, scientific, educational, conservational, and historical use.

Protection of that portion of the Sweetwater Canyon proposed for designation would be accomplished through prohibition of activities that would impair wilderness values. Examples of "impairing" activities that would not be allowed are road building, the use of motor vehicles in the area, mining and mineral exploration, and other activities that would alter soils, vegetation, and landforms.

A wilderness management plan would be written for the area outlining specific protective measures. Among other things, the plan would address visitor-use management in the Sweetwater Canyon. The plan would be written according to the guidelines in BLM's Wilderness Management Policy and BLM Manual Section 8561 - Wilderness Management Plans.

Congress also provided for certain activities and existing uses to be excepted from the general management provisions of the Wilderness Act. Examples are:

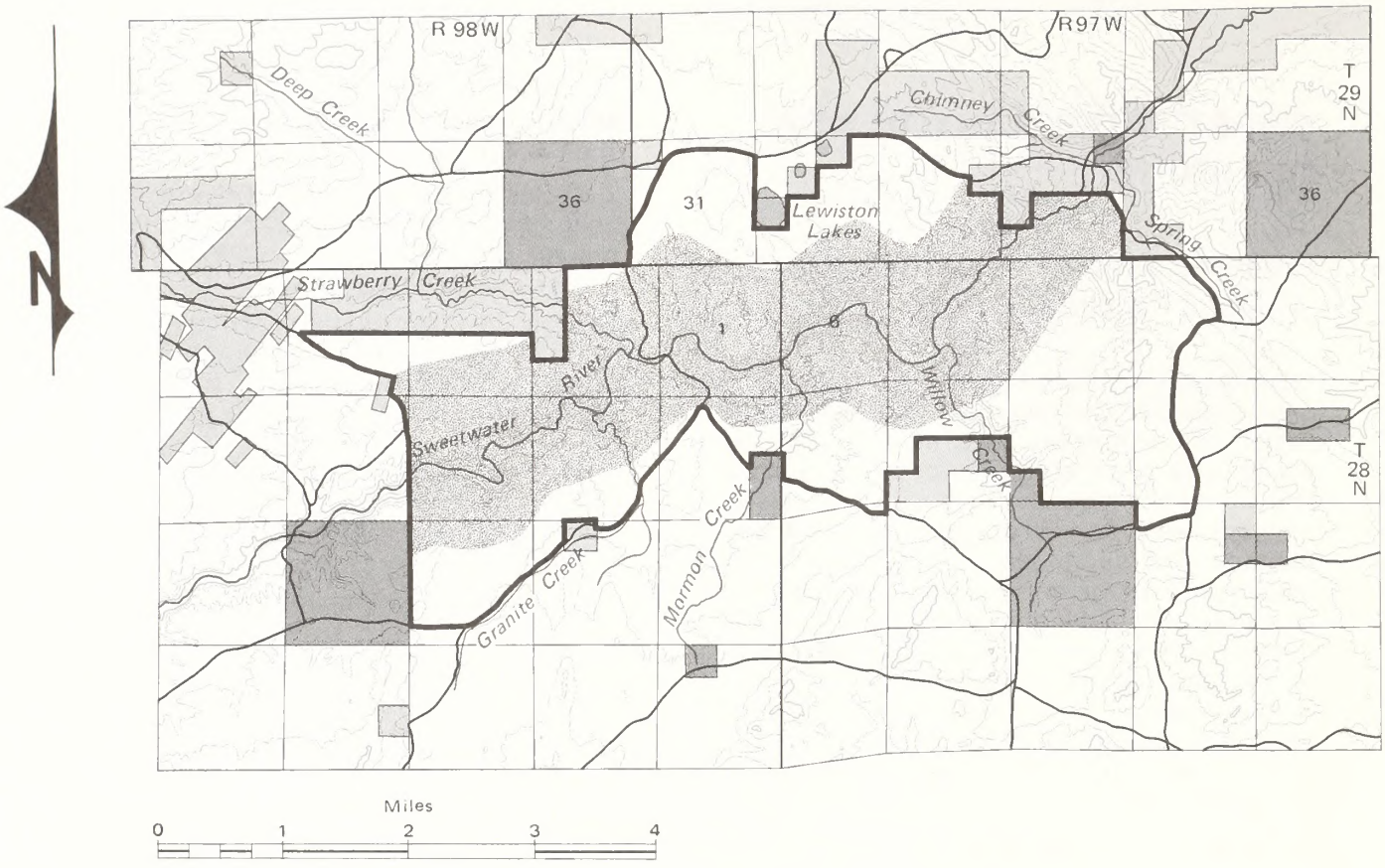
- Valid existing rights (oil and gas leases, etc.)
- Measures required in emergencies involving the health and safety of persons within the area (search and rescue, etc.).
- Livestock grazing, where already established (see the Livestock Grazing section).
- Measures necessary in the control of fire, insects and diseases.
- Commercial services necessary for realizing the recreational or other wilderness purposes of the area (commercial hunting outfitters, etc.).

Recreation Management

The WSA would be managed to provide only primitive forms of recreation such as hunting, fishing and backpacking. Motorized forms of recreation would be excluded. Visitor use would be regulated where necessary. Commercial use would be permitted.

Wildlife

The WSA would be managed to provide a natural distribution, number and interaction of native wildlife species and domestic livestock. There would be minimum habitat management. Management actions would be taken only if problems occurred. For example, if livestock/wildlife competition caused deterioration of crucial winter habitat, the season of use for livestock could be changed or the area could be fenced temporarily.



Map 2
Partial Wilderness Alternative
Sweetwater Canyon

Although sensitive, rare, threatened, and endangered species have not been documented in the WSA, wintering bald eagles and migrating peregrine falcons probably use the canyon on occasion. Management actions that preserve the naturalness of the canyon would benefit these species.

Hunting would continue to be the main management tool for manipulating big game populations. Adjustments in the number of big game hunting licenses issued and the length of the hunting season would be made annually to manage the big game herds at Wyoming Game and Fish Department's (WGFD) population objective level. Management of the wildlife habitat would be closely coordinated with WGFD to ensure that adequate cover and forage would be available to support wildlife populations and that degradation of the vegetative resources would not occur.

Fisheries

The WSA would be managed to provide the habitat requirements for a naturally reproducing population of rainbow and brown trout. Management actions would protect the conditions that allow natural processes to occur with minimum human interference.

Fishing would continue (subject to applicable state regulations) and management of the river would be coordinated with WGFD to ensure maintenance of the wilderness resource. Use of motorized equipment, such as a generator for shocking fish, would not be allowed on a routine basis but could be allowed for specific projects. Certain permanent structures such as small dams constructed of natural material to maintain habitat conditions for fish, after consideration of design, placement, duration and use, might be permitted if the resultant change were compatible with the preservation of wilderness character and were consistent with wilderness management objectives in the area. Where streambanks have deteriorated because of overuse by livestock in the narrow parts of the canyon, temporary fencing to exclude livestock from the stream and to allow natural recovery of the bank vegetation could be used. Take-down fences could be used to exclude cattle from entering or crossing spawning areas.

Fisheries management activities would be permitted as long as their purpose was to protect natural conditions, restore deteriorated habitat, and maintain wilderness values.

Livestock Grazing

Livestock would generally continue to be managed as described in the Green Mountain Range Program Summary (see Appendix 2, Lander RMP). Grazing allotments in the area have been grouped into three categories, M, I, or C, based on a BLM policy called selective management. Selective management involves the identification of allotments or areas sharing similar resource characteristics, management needs, and resource and economic potential for improvement. Livestock grazing, however, would be regulated further by the Wilderness Act. (See Appendix 1, pages 21 through 25 for details.)

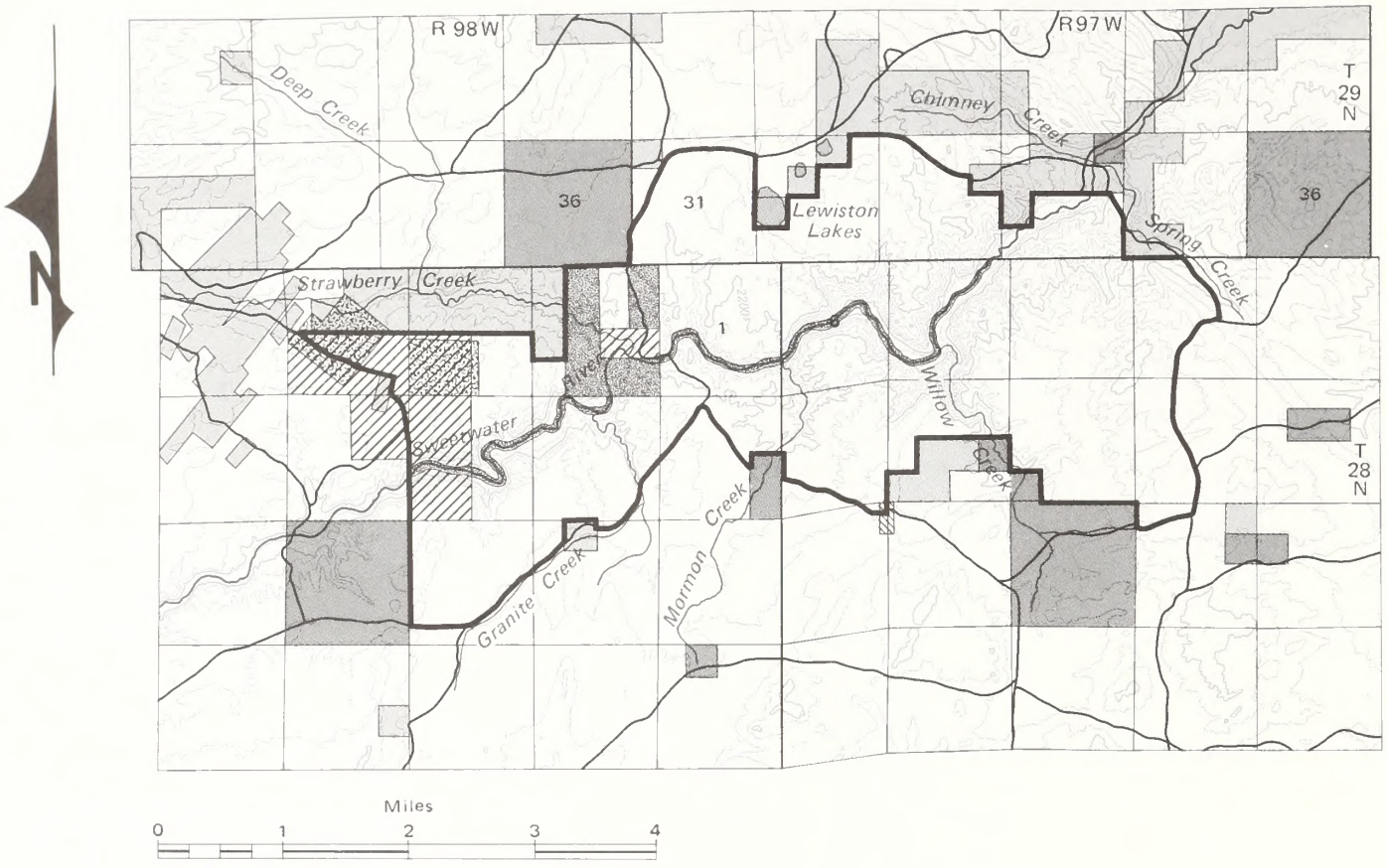
There are two grazing allotments in the Sweetwater Canyon WSA; both are in the I category. These allotments will be managed with no change in class or numbers of livestock or season of use unless monitoring indicates otherwise or problems are recognized before monitoring is complete. Adjustments in livestock use would then be made to correct those problems.

Oil, Gas and Minerals

There are no pre-FLPMA oil and gas leases in the WSA. Although such leases have valid existing rights, the post-FLPMA leases do not and are subject to the Wilderness Protection Stipulation (see Appendix 2). The potential for oil and gas is low to none. No new leasing would be allowed.

Development work, mining and patenting would be allowed only on valid mining claims located before October 21, 1976. These occur in the western part of the WSA (see map 3). BLM would require the claimant to submit a plan of operation for work on any claim in a designated wilderness area. Before approving plans of operation, the BLM District Manager would require an examination of the unpatented claim(s) by a BLM minerals examiner to verify whether or not a valid claim existed. The minerals examination and subsequent mineral report must confirm minerals had been found and the evidence indicated that a person of ordinary prudence would be justified in the further expenditure of his labor with a reasonable prospect of developing a valuable mine. In addition, the District Manager must be satisfied—

1. that there would be no unnecessary or undue degradation of wilderness character;
2. that if motorized equipment were used there would be no reasonable alternative;



Federal Land

State Land

Private Land

Placer Claims

Pre-F.L.P.M.A.

Post-F.L.P.M.A.

Lode Claims

Pre-F.L.P.M.A.

Post-F.L.P.M.A.

Map 3
Mining Claims
Sweetwater Canyon

3. that reclamation measures included in the plan are adequate to restore the surface to near natural condition.

The post-FLPMA claims occur in the eastern part of the WSA and are subject to the Wilderness Protection Stipulation.

Cultural Resources

Under this alternative, there would be no specific management guidelines outlined for cultural resources. Wilderness designation, however, would change how cultural resources affected by small mining operations would be managed. In the portion that is not proposed for wilderness designation, management of small mining operations (less than 5 acres disturbance) would entail only filing a limited Notice of Intent under the 43 CFR 3809 BLM management authority. This requirement allows few cultural resource protection measures. Thus, there would be a potential for loss of cultural resources. Under the portion proposed for wilderness designation, a plan of operations would be required under 43 CFR 3802 regulations and National Historic Preservation Act management authority, and cultural resources affected by small mining operations would be given full consideration before BLM made a final decision on the mining operations. Significant cultural resources could be avoided, salvaged, or otherwise protected as part of BLM's decision.

Nonimpairing mineral surveys or studies such as surface examinations would be allowed. The Oregon/Mormon Pioneer Trail protective corridor is partially within the WSA. Regulations applying to this corridor limit impairing activities such as oil and gas exploration to no-surface-occupancy.

The remaining 3,300 acres will be managed as in the No Action - Continuation of Present Management. The following is a brief summation of the management actions. For details, refer to Alternative 1.

Wilderness Values

The area would not be specifically managed to preserve wilderness values.

Recreation Management

- There would be ORV designation.

- Management would be for dispersed recreation.

- The area would be classified as scenic-primitive motorized/non-motorized.

- Commercial use would be under a permit system.

Wildlife

- Wildlife habitat and populations would be monitored.

- If problems were identified, BLM would react as necessary.

- Cooperate with WGFD on population objectives.

Fisheries

- There would be no new habitat management projects.

- If problems were identified, BLM would react as necessary.

Livestock

- Manage livestock as described in Green Mountain Range Program Summary.

- Management actions to problems would be reactionary.

Oil, Gas and Minerals

- Continue to manage under standard operating procedures (SOP).

- The area would be open to mining.

- Land surface would be reclaimed where disturbed.

Cultural Resources

- There would be no specific guidelines.

- It would be managed under SOP.

Alternative 1 - No Action - Continuation of Present Management

Under this alternative, management would be accomplished as follows:

The Sweetwater Canyon would be managed under the existing multiple-use framework. The overall objective of this alternative would be to manage the area under a multiple-use management framework, while preventing unnecessary and undue degradation of the lands and resources. There would be no special designations.

Wilderness Values

The area would not be specifically managed to preserve wilderness values.

Recreation Management

The off-road vehicle (ORV) designation would remain in effect for the Sweetwater Canyon, and ORV travel would be limited to existing roads and trails. The area would be managed for dispersed recreation—hunting, fishing, hiking, etc. The public would continue to have access to the area, but only primitive camping would be available. The area would remain classified as semi-primitive motorized/nonmotorized. Commercial use would continue to be managed under a permit system.

Wildlife

Monitoring of habitat conditions and animal populations would continue in cooperation with the WGFD. Recommendations would be made to the WGFD concerning herd objectives for big game species. Management actions would be taken if problems arose. For example, if crucial winter habitat were deteriorating because of livestock use, temporary fencing or change in season of use might be required.

Fisheries

Fisheries would continue to be managed according to WGFD's regulations and management concepts. There would be no new habitat management projects. If it were determined that stream banks were deteriorating or spawning areas were being damaged by livestock, temporary fencing could be utilized as a management tool.

Livestock Grazing

Livestock would continue to be managed as described in the Green Mountain Range Program Summary. Grazing allotments have been grouped into three categories, M, I, or C, based on a BLM policy called selective management. Selective management involves the identification of allotments or areas sharing similar resource characteristics, management needs, and resource and economic potential for improvement. The two allotments affected by the WSA (2001 and 1903) are in the I category. Management would continue unchanged in terms of class and number of livestock and season of use, unless problems were recognized. Changes would be made as needed.

Oil, Gas and Minerals

Oil and gas leasing would continue under the standard operating procedures (SOP) available at the Lander Resource Area office. The area would remain open to mining under existing mining laws. Oil and gas exploration would continue to be authorized on a case-by-case basis—no specific plan would be written to guide an exploration and/or development program. The likelihood of oil and gas development is low. Based on information currently available, the area has no potential for oil and gas.

Reclamation would continue to be required for any areas where resource use/development caused surface disturbance. The land surface would be returned to near natural contours and reseeded with native plant species.

Cultural Resources

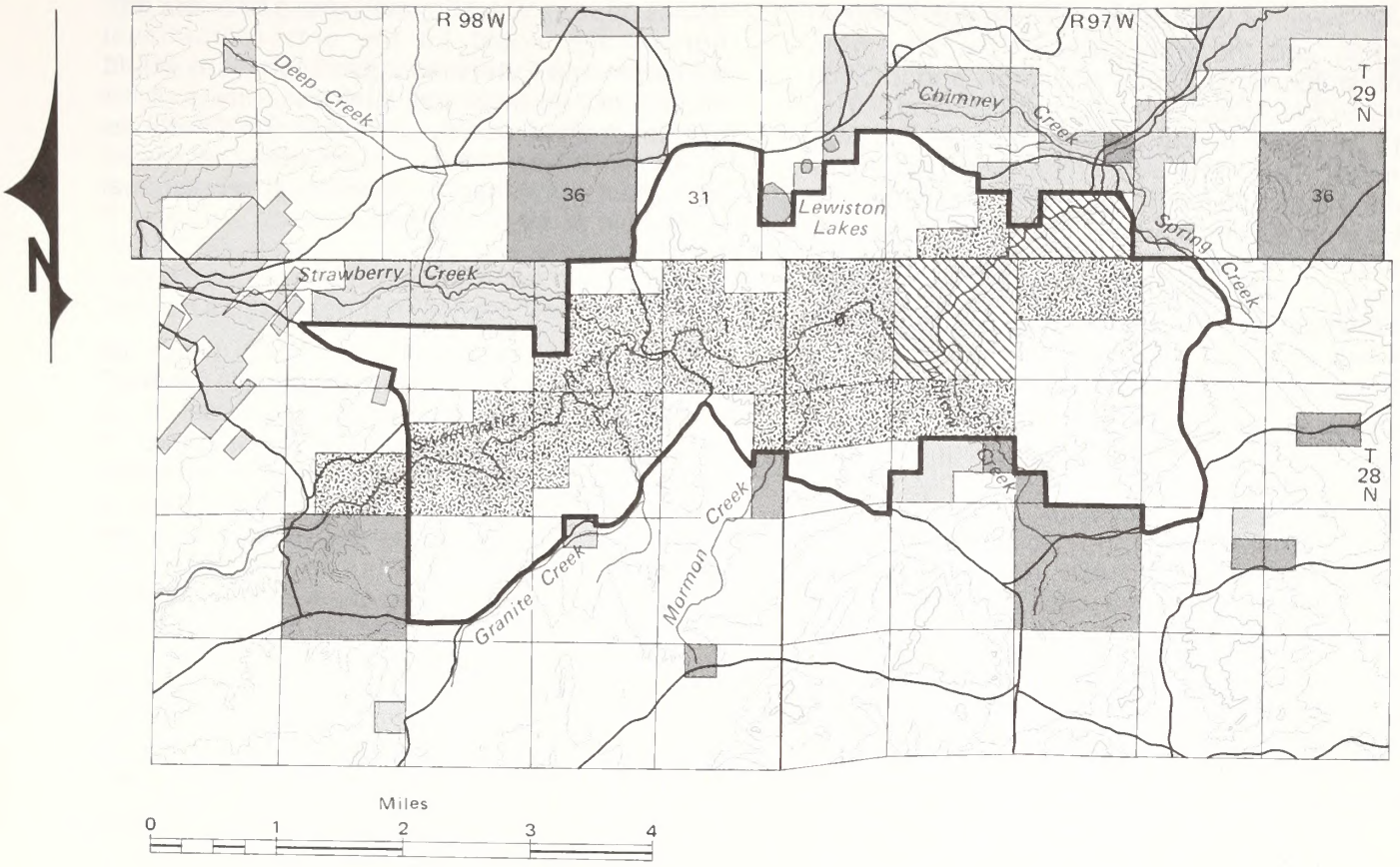
Under this alternative, there would be no specific management guidelines outlined for cultural resources. Management of small mining operations (less than 5 acres disturbance) would only entail filing a limited Notice of Intent under the 43 CFR 3809 BLM management authority. The Oregon/Mormon Pioneer Trail is in a protective corridor partially within the WSA. Regulations applying to this corridor limits impairing activities such as oil and gas exploration to no-surface-occupancy.

Alternative 2 - All Wilderness Designation

Under this alternative, the entire wilderness study area would be recommended for designation as wilderness (see map 2). Management objectives would include preservation of wilderness values and protection of natural wildlife habitat, visual resources and cultural resources. The management actions would be the same as the partial wilderness alternative (Proposed Action), but an additional 3,300 acres above the canyon rim would be designated as wilderness (see Proposed Action).

Alternative 3 - Implementation of the Existing Management Proposal

This alternative is based on a proposed management framework plan decision. This alternative would result in designation of the area



Federal Land

State Land

Private Land

Existing Oregon Trail Withdrawal within ACEC

Implementation of Existing Management Proposal

Map 4
Implementation of the Existing Management Proposal
Sweetwater Canyon

as an Area of Critical Environmental Concern (ACEC) and the withdrawal of the area from mineral location. There would be about 5,000 acres in the ACEC (see map 4), including a 918-acre protective withdrawal for the Oregon-Mormon Trail. The ACEC provides the focus needed to implement the special management actions necessary to protect or prevent irreparable damage to important historical, cultural, or scenic values; to fish and wildlife resources; to other natural systems or processes; or to protect the life and safety of people from natural hazards. Designation as an ACEC is not a substitute for wilderness designation, because actions are not predisposed as a result of the designation, but must be tailored specifically to the concern being addressed. Also the designation is implemented by the District Manager, not Congress. An ACEC designation can be changed through a planning action and is therefore less permanent than wilderness designation.

The resources in the area would be managed as described in the Draft Sweetwater Canyon Recreation Activity Plan, 1977, available at the Lander Resource Area office. This plan was never implemented, because the Sweetwater Canyon was identified as a wilderness study area and proposed for further study.

The activity plan called for the following management actions:

Wilderness Values

The area would not be managed specifically for wilderness values, but many of the protective actions such as limiting surface disturbance would protect wilderness values.

Off-Road Vehicles

There would be an ORV designation for the area that would limit access to existing roads and vehicle routes. The Strawberry Creek access and Overlook roads would be closed.

Recreation Management

Public use of the Sweetwater Canyon for recreational purposes would be encouraged only to the extent consistent with the maintenance of the natural environment. Acceptable uses are hunting, fishing, hiking, camping, rockclimbing, horseback riding, backpacking, wagon train trekking, sightseeing, canoeing, kayaking, swimming, floating, rock collecting, nature study, and any other uses that the authorized officer deems appropriate. Minimal signing and foot and horse trails would be the only recreational developments. Future management actions would be confined to measures such as limiting visitor use to prevent deterioration. Sanitary facilities would be limited (one or two) to those necessary to protect the canyon. Commercial recreational use would be by permit only.

Wildlife

A habitat management plan (HMP) would be written for the area. The first objective in the HMP would be to compile a complete wildlife data base (species and numbers) for the ACEC, which would be used to guide the proposals for wildlife habitat improvement projects. An ecosystem approach to habitat management, where all species are considered, would be emphasized instead of concentrating solely on big game species. Special consideration would be given to maintaining and improving high-quality habitats through management actions such as fencing, vegetative manipulation, or changing season of use. Big game population objectives, as established by the WGFD, BLM, and the public, would be maintained.

Within BLM's wildlife programs, areas covered by an HMP receive a higher priority for habitat improvements than areas without an HMP, and thus, habitat improvements are more likely to be approved and funded.

Fishery Resources

Aquatic and riparian habitat would be managed to maintain the natural environment and improve the habitat where it has deteriorated. Population determinations (species and number) would be coordinated with WGFD activities. Fishing would be regulated by the WGFD. Where stream banks have deteriorated, actions such as changing season of use for livestock or temporary fences may be instituted. Small dams would be constructed to provide more pools. Cattle would be excluded from spawning areas by take-down fences.

Livestock Grazing

Livestock grazing would continue to be managed in the same manner, except there would be more restrictions. There would no change in class and numbers of livestock or season of use. Motor vehicles would be allowed to use existing roads open to travel in the ACEC. Other motorized equipment would be prohibited in the ACEC (tractors, drills, chain saws, and generators).

Oil, Gas and Minerals

There would be a protective withdrawal from all forms of appropriation, including mining. The pre-FLPMA claims have valid existing rights and could be developed. Oil and gas would be leased subject to "no-surface-occupancy" restrictions. Directional drilling would be allowed from outside the ACEC. Nine hundred eighteen acres have been withdrawn from all mineral entry for protection of the Oregon/Mormon Pioneer Trail.

Cultural Resources

Under this alternative, there would be no specific management guidelines outlined for cultural resources. They would be protected by standard operating procedures. Nonimpairing cultural surveys or studies, such as surface examinations, would be allowed.

Manageability of the WSA as Wilderness

The Sweetwater Canyon is manageable as wilderness under the Partial and All Wilderness alternatives. However, the Partial Wilderness Alternative would be more manageable because the conflicts with other activities that use motor vehicles for access would be greatly reduced. There are no pre-FLPMA oil and gas leases, and the potential for oil and gas is low to none. Although there are mining claims in the canyon, large-scale mining with significant surface disturbance is unlikely.

Wilderness management would not be an objective under the No Action Alternative.

Most of the wilderness values would be preserved under the Alternative 3, Implementation of the Existing Management Proposal, because the area would be designated as an ACEC and withdrawn from mineral entry. Oil and gas leases would contain no-surface occupancy stipulations. Although not as permanent as wilderness designation nor as protective, the ACEC designation with the associated restrictions on development activities would provide more protection to the wilderness values than would the existing management.

SWEETWATER ROCKS (WY 030-120, 122, 123a, 123b)

Within the Sweetwater Rocks complex there are four separate and distinct WSAs, each having the same characteristics and impact topics from the same alternatives—the impacts from a given alternative would be the same for each WSA. Therefore, the Proposed Action and All Wilderness Alternative will be given for unit WY-030-120, and minor differences occurring in units 122 and 123b, will be discussed.

Proposed Action - No Action - Continuation of Present Management

The Sweetwater Rocks would be managed under the existing multiple-use policies. The overall objective of this alternative would be to manage the area for multiple-use, while preventing unnecessary and undue degradation of the lands and resources.

Management would be accomplished as follows:

Wilderness Values

The area would not be managed specifically to preserve wilderness values.

Recreation Management

An off-road vehicle designation would be placed on the Sweetwater Rocks before 1987. ORV travel would be limited to existing roads and trails. New roads would be authorized as needed for permitted activities such as oil and gas exploration, mineral exploration, or to construct and maintain range improvements.

The Sweetwater Rocks area would be managed as an extensive recreation management area. Management actions would protect the wildland character by dispersing human activities. Recreational developments such as signing of roads and special features would be limited to those needed to protect other resources in the area. Negotiations would be initiated to acquire public access easements in the Beef Gap area, but roads would not be upgraded. User-landowner conflicts would be minimized through signing, recreational land-use agreements, and BLM patrols. Commercial recreational uses could be authorized, but the number of commercial hunting camps would be limited. Recreational use would be monitored in the area to keep abreast of use trends. If major use problems were to develop, they would be dealt with as they were identified through issuing use permits or restricting specific areas from use.

as an Area of Critical Environmental Concern (ACEC) and the withdrawal of the area from mineral location. There would be about 5,000 acres in the ACEC (see map 4), including a 918-acre protective withdrawal for the Oregon-Mormon Trail. The ACEC provides the focus needed to implement the special management actions necessary to protect or prevent irreparable damage to important historical, cultural, or scenic values; to fish and wildlife resources; to other natural systems or processes; or to protect the life and safety of people from natural hazards. Designation as an ACEC is not a substitute for wilderness designation, because actions are not predisposed as a result of the designation, but must be tailored specifically to the concern being addressed. Also the designation is implemented by the District Manager, not Congress. An ACEC designation can be changed through a planning action and is therefore less permanent than wilderness designation.

The resources in the area would be managed as described in the Draft Sweetwater Canyon Recreation Activity Plan, 1977, available at the Lander Resource Area office. This plan was never implemented, because the Sweetwater Canyon was identified as a wilderness study area and proposed for further study.

The activity plan called for the following management actions:

Wilderness Values

The area would not be managed specifically for wilderness values, but many of the protective actions such as limiting surface disturbance would protect wilderness values.

Off-Road Vehicles

There would be an ORV designation for the area that would limit access to existing roads and vehicle routes. The Strawberry Creek access and Overlook roads would be closed.

Recreation Management

Public use of the Sweetwater Canyon for recreational purposes would be encouraged only to the extent consistent with the maintenance of the natural environment. Acceptable uses are hunting, fishing, hiking, camping, rockclimbing, horseback riding, backpacking, wagon train trekking, sightseeing, canoeing, kayaking, swimming, floating, rock collecting, nature study, and any other uses that the authorized officer deems appropriate. Minimal signing and foot and horse trails would be the only recreational developments. Future management actions would be confined to measures such as limiting visitor use to prevent deterioration. Sanitary facilities would be limited (one or two) to those necessary to protect the canyon. Commercial recreational use would be by permit only.

Wildlife

A habitat management plan (HMP) would be written for the area. The first objective in the HMP would be to compile a complete wildlife data base (species and numbers) for the ACEC, which would be used to guide the proposals for wildlife habitat improvement projects. An ecosystem approach to habitat management, where all species are considered, would be emphasized instead of concentrating solely on big game species. Special consideration would be given to maintaining and improving high-quality habitats through management actions such as fencing, vegetative manipulation, or changing season of use. Big game population objectives, as established by the WGFD, BLM, and the public, would be maintained.

Within BLM's wildlife programs, areas covered by an HMP receive a higher priority for habitat improvements than areas without an HMP, and thus, habitat improvements are more likely to be approved and funded.

Fishery Resources

Aquatic and riparian habitat would be managed to maintain the natural environment and improve the habitat where it has deteriorated. Population determinations (species and number) would be coordinated with WGFD activities. Fishing would be regulated by the WGFD. Where stream banks have deteriorated, actions such as changing season of use for livestock or temporary fences may be instituted. Small dams would be constructed to provide more pools. Cattle would be excluded from spawning areas by take-down fences.

Livestock Grazing

Livestock grazing would continue to be managed in the same manner, except there would be more restrictions. There would no change in class and numbers of livestock or season of use. Motor vehicles would be allowed to use existing roads open to travel in the ACEC. Other motorized equipment would be prohibited in the ACEC (tractors, drills, chain saws, and generators).

Oil, Gas and Minerals

There would be a protective withdrawal from all forms of appropriation, including mining. The pre-FLPMA claims have valid existing rights and could be developed. Oil and gas would be leased subject to "no-surface-occupancy" restrictions. Directional drilling would be allowed from outside the ACEC. Nine hundred eighteen acres have been withdrawn from all mineral entry for protection of the Oregon/Mormon Pioneer Trail.

Cultural Resources

Under this alternative, there would be no specific management guidelines outlined for cultural resources. They would be protected by standard operating procedures. Nonimpairing cultural surveys or studies, such as surface examinations, would be allowed.

Manageability of the WSA as Wilderness

The Sweetwater Canyon is manageable as wilderness under the Partial and All Wilderness alternatives. However, the Partial Wilderness Alternative would be more manageable because the conflicts with other activities that use motor vehicles for access would be greatly reduced. There are no pre-FLPMA oil and gas leases, and the potential for oil and gas is low to none. Although there are mining claims in the canyon, large-scale mining with significant surface disturbance is unlikely.

Wilderness management would not be an objective under the No Action Alternative.

Most of the wilderness values would be preserved under the Alternative 3, Implementation of the Existing Management Proposal, because the area would be designated as an ACEC and withdrawn from mineral entry. Oil and gas leases would contain no-surface occupancy stipulations. Although not as permanent as wilderness designation nor as protective, the ACEC designation with the associated restrictions on development activities would provide more protection to the wilderness values than would the existing management.

SWEETWATER ROCKS (WY 030-120, 122, 123a, 123b)

Within the Sweetwater Rocks complex there are four separate and distinct WSAs, each having the same characteristics and impact topics from the same alternatives—the impacts from a given alternative would be the same for each WSA. Therefore, the Proposed Action and All Wilderness Alternative will be given for unit WY-030-120, and minor differences occurring in units 122 and 123b, will be discussed.

Proposed Action - No Action - Continuation of Present Management

The Sweetwater Rocks would be managed under the existing multiple-use policies. The overall objective of this alternative would be to manage the area for multiple-use, while preventing unnecessary and undue degradation of the lands and resources.

Management would be accomplished as follows:

Wilderness Values

The area would not be managed specifically to preserve wilderness values.

Recreation Management

An off-road vehicle designation would be placed on the Sweetwater Rocks before 1987. ORV travel would be limited to existing roads and trails. New roads would be authorized as needed for permitted activities such as oil and gas exploration, mineral exploration, or to construct and maintain range improvements.

The Sweetwater Rocks area would be managed as an extensive recreation management area. Management actions would protect the wildland character by dispersing human activities. Recreational developments such as signing of roads and special features would be limited to those needed to protect other resources in the area. Negotiations would be initiated to acquire public access easements in the Beef Gap area, but roads would not be upgraded. User-landowner conflicts would be minimized through signing, recreational land-use agreements, and BLM patrols. Commercial recreational uses could be authorized, but the number of commercial hunting camps would be limited. Recreational use would be monitored in the area to keep abreast of use trends. If major use problems were to develop, they would be dealt with as they were identified through issuing use permits or restricting specific areas from use.

Wildlife

Monitoring of habitat conditions and animals would continue unchanged. Recommendations would be made to the WGFD concerning herd objectives for big game. Management actions would be to maintain and improve habitat for big game species (elk, mule deer and bighorn sheep) and to maintain and improve riparian habitat within and adjacent to the WSA. However, habitat management projects would have a low priority for funding, since an HMP has not been written. Reintroduction of bighorn sheep in the Sweetwater Rocks is under consideration. If wildlife habitat problems developed, BLM would react as the situation required. For example, if crucial winter habitat were deteriorating through competition with livestock, management actions might be to limit season of use or erect temporary fences.

Livestock Grazing

There are six grazing allotments in the Green Mountain EIS and three in the Gas Hills EIS that are associated with the Sweetwater Rocks WSAs. All six of the grazing allotments in the Green Mountain EIS area (0205 Devil's Gate, 1503 Winter Pastures, 1625 Jamerman Pastures, 1627 Individual, 1632 North Hat Pasture, and 1660 Home) are in the M category. The three allotments in the Gas Hills EIS area (1622 Lankin Creek, 1623 Murphree Pastures and 1639 Ordway Pocket) are in the I category (see the Livestock Grazing section for Sweetwater Canyon for a discussion of the three management categories and how allotments are categorized). Allotments 1622 and 1623 were given high-priority ratings for monitoring/management actions, and 1639 was given a low-priority rating. On the implementation schedule, 1622 ranked 43, and 1623 ranked 27. Allotment 1639 has not been numerically ranked.

There would be no change in management, class and numbers of livestock or season of use, unless monitoring indicates the need or if specific problems are known.

Oil, Gas and Minerals

Oil and gas leasing would continue. Oil and gas exploration would be authorized on a case-by-case basis—no specific plan would be written to guide an exploration and/or development program. The likelihood of development is low, based on information currently available. The area would be open to mining under the present mining laws.

Reclamation would be required for any areas where resource use/development caused surface disturbance. The land surface would be returned to near natural contours and reseeded with native plant species indigenous to the Sweetwater Rocks.

Cultural Resources

Cultural Resources would be managed under existing laws and regulations/BLM policy. There is a withdrawal for the Split Rock Historic Landmark for the Oregon/Mormon Pioneer Trail in unit 122. No cultural resources management plan would be written.

Under 43 CFR 3809 regulations, if an area of disturbance were less than 5 acres, the operator would only be required to file a notice of intent, not a mining plan.

Alternative - All Wilderness Designation

Under this alternative, the four wilderness study units (48,039 acres) would be recommended for designation as wilderness (see map 5). Other than that, management of the areas would be based on the same provisions described in the Proposed Action - Partial Wilderness for the Sweetwater Canyon. In addition, BLM has developed specific management guidelines for the Sweetwater Rocks complex. They are:

Wilderness Values

BLM would attempt to negotiate acquisition of the NE¼SE¼ of section 13, T. 29 N., R. 90 W., 6th P.M., in unit 122.

Recreation Management

The Sweetwater Rocks WSA would be closed to all off-road vehicle use, except as allowed under BLM's Wilderness Management Policy. The WSA would be managed to provide only nonmotorized forms of recreation such as hunting and backpacking. Motorized forms of recreation would be excluded. The amount of use could be controlled by permits or even excluded from areas if adverse impacts occurred. Commercial use would be regulated under a permit system.

Wildlife

The WSA would be managed to provide a natural distribution, number and interaction of native wildlife species and domestic livestock.

R90W
R89W
R88W
R87W
T 30 N
T 29 N
Fremont County
Natrona County
Sage Hen Creek
Lankin Creek
Cottonwood Creek
789
287
Crane Reservoir
Soda Lake
Soda Lakes
Sweetwater River
Jackson Lake
36
6
1
31

Miles
0 1 2 3 4

Federal Land
State Land
Private Land
Private Inholding-Exchange or Acquisition Option

Map 5
Wilderness Alternative
Sweetwater Rocks

There would be minimum habitat management, actions would only be taken if problems arose. For example, if livestock/wildlife competition resulted in deterioration of crucial winter range, the season of use could be adjusted, the area could be fenced; or, in cooperation with the WGFD, the number of big game animals could be reduced.

Although sensitive, rare, threatened, and endangered species have not been documented in the area, wintering bald eagles and migrating peregrine falcons probably use the Sweetwater Rocks on occasion. Management actions that preserve the naturalness of the area would benefit these species.

Hunting would continue to be the main management tool for manipulating big game populations. Adjustments in the number of big game hunting licenses issued and the length of the hunting season would be made annually to manage the big game herds at WGFD's population objective level. Management of the wildlife habitat would be closely coordinated with the WGFD to ensure that adequate cover and forage would be available to support wildlife populations and that degradation of the vegetative resources would not occur.

Livestock Grazing

Livestock would be managed as described in the Proposed Action, Continuation of Present Management, except it would be further regulated by the Wilderness Act (see Appendix 1, pp. 21-25). Class and numbers of livestock and season of use would not change unless problems were known or if later monitoring indicated the need for change.

Oil, Gas and Minerals

There are no pre-FLPMA oil and gas leases in the WSAs. Although such leases have valid, existing rights, the post-FLPMA leases in the WSA do not and are subject to the Wilderness Protection Stipulation (see Appendix 2). No new mineral leases would be allowed. Oil and gas potential is considered low to none.

Development work, mining and patenting would be allowed only on valid mining claims located on or before October 21, 1976. There is only one pre-FLPMA claim with valid existing rights. BLM would require the claimant to submit a plan of operation for work on any claim in a designated wilderness area. Before approving plans of operation, the District Manager would require an examination of the unpatented claim(s) by a BLM minerals examiner to verify whether or not a valid claim existed. The minerals examination and subsequent mineral report must confirm that minerals had been found and the evidence indicated that a person of ordinary prudence would be justified in the further expenditure of his labor and means with a reasonable prospect of developing a valuable mine.

Before approving a plan of operations the District Manager must be satisfied—

1. that there would be no unnecessary or undue degradation of wilderness character;
2. that if motorized equipment were used, there would be no reasonable alternative;
3. that reclamation measures included in the plan would be adequate to restore the surface to near natural condition.

Cultural Resources

Under this alternative, there would be no specific management guidelines outlined for cultural resources. Nonimpairing cultural surveys or studies would be allowed.

Manageability of the WSAs as Wilderness

Under the Proposed Action, the Sweetwater Rocks complex would not result in specific management for wilderness values.

The rocky areas of the complex would be manageable under the All Wilderness Alternative because the mineral potential is low. There are no pre-FLPMA leases nor roads in the WSA. However, many of the "pockets" or small drainages out of the rocks contain ways. Since there are few topographic features to block the roads and the areas are bounded by private lands in many places (see map 6), it would be difficult to prevent vehicular use. Since the major features that qualified the WSAs for further study are in the rocky areas, the WSAs are considered manageable as wilderness.

COPPER MOUNTAIN (WY 030-111)

Proposed Action - No Action - Continuation of Present Management

Under this alternative, Copper Mountain would be managed under the existing multiple-use framework without the restrictions of interim management. The overall objective of this alternative would be to manage the area for multiple-use, while preventing unnecessary and undue degradation of the lands and resources. There would be no special designations.

Management would be accomplished as follows:

Wilderness Values

The area would not be managed to specifically preserve wilderness values.

Recreation Management

There is no ORV management plan for the area. An off-road vehicle designation would be placed on the Copper Mountain WSA before 1987. ORV travel would be limited to existing roads and trails. New roads would be authorized as needed for permitted activities such as oil and gas exploration, mineral exploration, or to construct and maintain range improvements.

Other than ORV designation, no specific recreation management actions would be outlined. Management would consist of monitoring recreational use in the area to keep abreast of use trends. If major use problems were to develop, they would be dealt with as they were identified through use permits or restricting specific areas from use.

Wildlife

A wildlife habitat management plan has not been written for Copper Mountain. Management actions would be to maintain and improve habitat for big game species (elk, mule deer and bighorn sheep) and to maintain and improve riparian habitat within and adjacent to the WSA. If wildlife habitat problems developed, BLM would react as the situation required. For example, if crucial winter range were deteriorating through competition with livestock, management actions might be to limit season of use or erect temporary fences.

Livestock Grazing

There are two grazing allotments in the Copper Mountain WSA. One, 1348 John Herbst summer allotment, was placed in the M category, and the other, 1343 Tuff Creek Pasture, was placed in the C category. For a discussion of the three management categories and how allotments are categorized, see the Livestock Grazing section for the Sweetwater Canyon, No Action Alternative. Present management would continue for class and numbers of livestock and season of use unless problems were known or monitoring indicated a need for change.

Oil, Gas and Minerals

Oil and gas leasing would continue on demand. Oil and gas exploration would be authorized on a case-by-case basis—no specific plan would be written to guide an exploration and/or development program. It is probable that the area will be developed because there is moderate to high potential for occurrence of oil and gas resources. The area would be open to mining subject to the existing mining laws.

Reclamation would be required for any areas where resource use/development caused surface disturbance. The land surface would be returned to near natural contours and reseeded with native plant species.

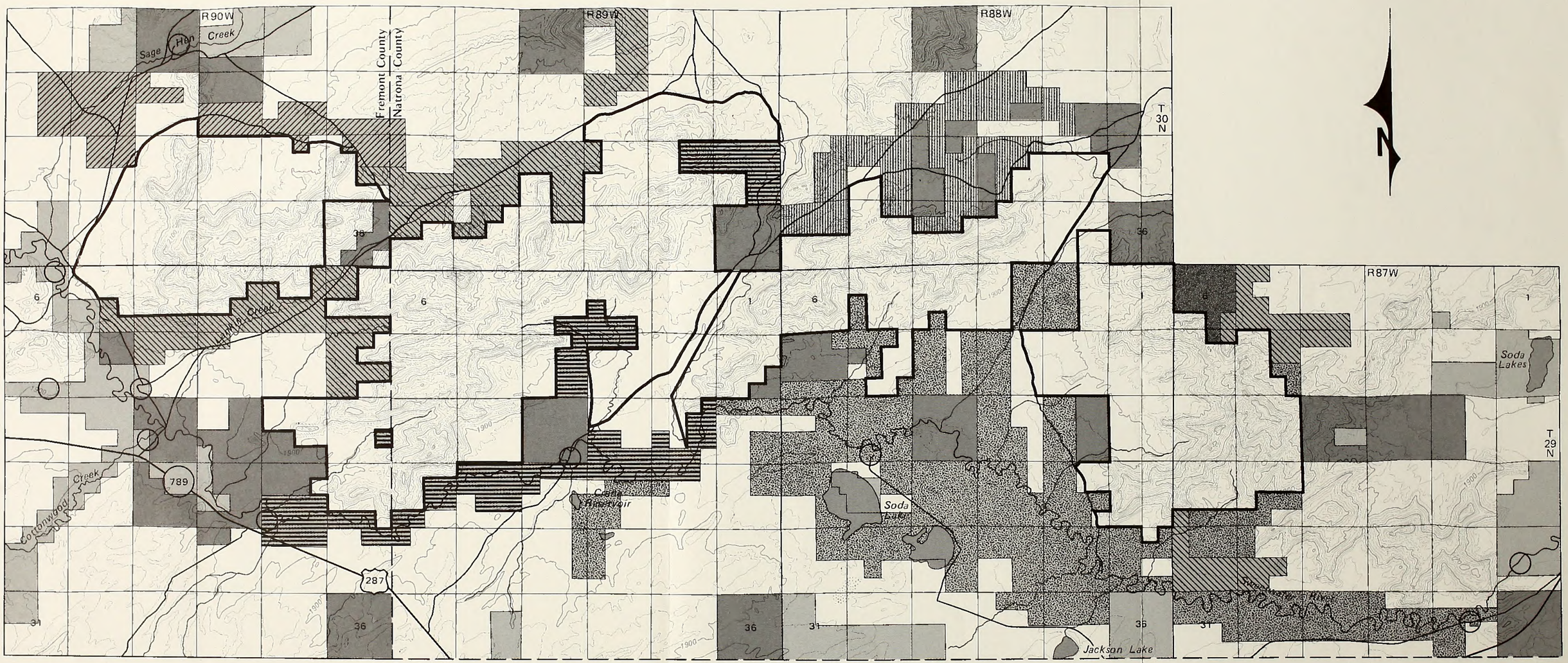
Cultural Resources

Cultural Resources would be managed under existing laws, regulations and BLM policy.

Alternative - All Wilderness Designation

Under this alternative, the entire wilderness study area (6,858 acres) would be recommended for designation as wilderness (see map 7). Management objectives would include preservation of wilderness values, protection of natural wildlife habitat, visual resources, and cultural resources.

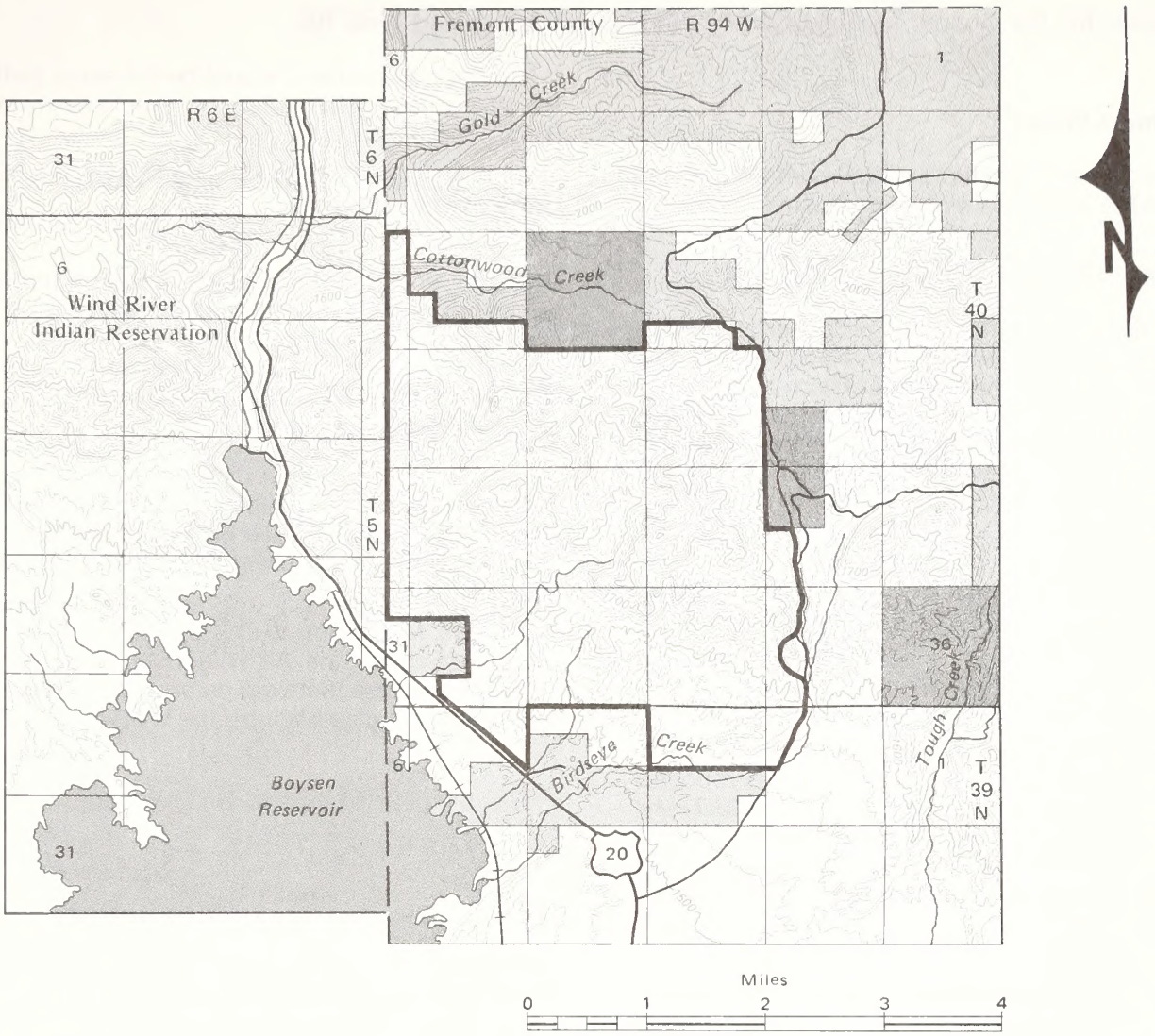
Management of the area would be based on the provisions of the Wilderness Act of 1964 described in the Proposed Action, Partial Wilderness, for the Sweetwater Canyon. In addition, BLM has developed management



Miles
0 1 2 3 4

- Federal Land
- State Land
- Private Land
- Private Land 1
- Private Land 2
- Private Land 3
- Private Land 4
- Private Land 5
- Private Land 6
- Residence/Ranch Headquarters

Map 6
Landownership Pattern
Sweetwater Rocks



Map 7
Wilderness Alternative
Copper Mountain

guidelines for the Copper Mountain WSA. They are:

Wilderness Values

There are no specific management actions for wilderness values under this alternative.

Recreation Management

The WSA would be managed to provide only primitive forms of recreation such as hunting and backpacking. Motorized forms of recreation would be excluded. Visitor use would be regulated where necessary. Commercial use would be regulated under a permit system.

Wildlife

See Proposed Action, Partial Wilderness, for the Sweetwater Canyon.

Livestock Grazing

Livestock would continue to be managed based on the provisions described in the Proposed Action for the Sweetwater Canyon WSA. There would be no change in class or number of livestock or season of use unless problems were known or later monitoring indicated a need for change.

Oil, Gas and Minerals

Management actions would be the same as the All Wilderness Alternative for the Sweetwater Rocks WSAs.

Cultural Resources

There would be no specific management guidelines outlined for cultural resources.

Manageability of the Copper Mountain WSA as Wilderness

There would be no specific management actions for wilderness values under the Proposed Action - No Action - Continuation of Present Management.

Copper Mountain WSA is manageable as wilderness under the All Wilderness Alternative, primarily because there are no pre-FLPMA oil and gas leases, but also because the WSA is roadless.

CHAPTER III

AFFECTED ENVIRONMENT

UNAFFECTED ASPECTS OF THE ENVIRONMENT

The following resources were determined not to be impacted by the Proposed Action or any of the alternatives within the six WSAs.

Forests

Air quality

Climate

Wild or scenic rivers (designated or recommended)

Soils

Vegetation

Topography

Floodplains, wetlands, prime or unique farmlands

Water quality, prime or sole source of drinking water

Visual resources

Water resources

Lands and realty

There are no fisheries in the Sweetwater Rocks or Copper Mountain WSAs.

AFFECTED ENVIRONMENT

Sweetwater Canyon

Wilderness

Geographical Description.

Sweetwater Canyon is located in Fremont County, approximately 15 miles east of South Pass City, Wyoming, on the Sweetwater River. Map 1 (general location) shows the wilderness study area location in relation to cities and towns and other major features of Fremont County in the state of Wyoming.

Access to the WSA during the summer months from either side of the canyon is by unimproved two-track roads or ways, some of which cross private lands. These roads run into the BLM Hudson-Atlantic City road, State Highway 28 at South Pass, and U.S. Highway 287 on Beaver Rim. During most of the winter, the WSA is inaccessible by any of these roads because of drifted snow.

Sweetwater Canyon is located along the southeastern flank of the Wind River Range in the high plains desert. The WSA begins on the west near Wilson Bar, at an elevation of 7,150 feet. It ends on the east near Spring Creek and Chimney Creek at an elevation of 6,720 feet. The river drops 430 feet, or about 45 feet per mile, as it passes through the WSA.

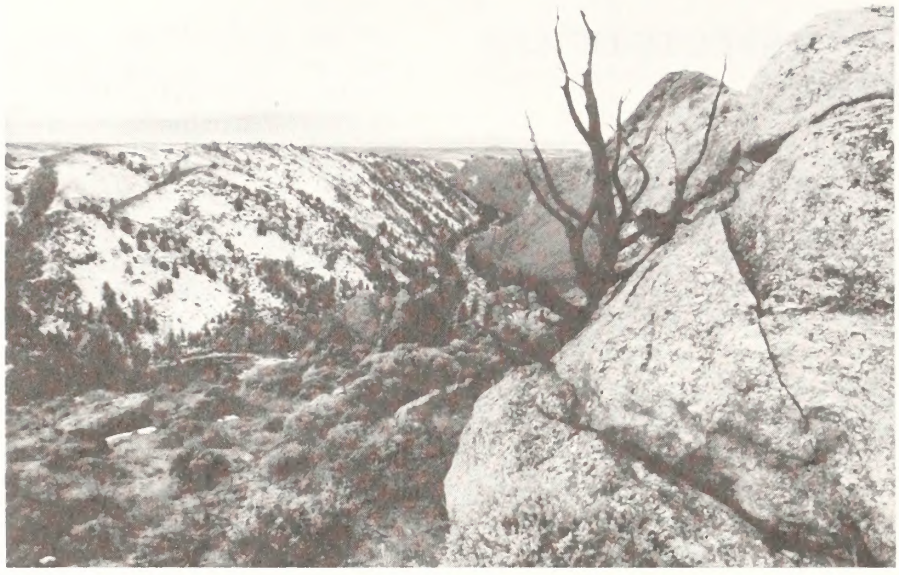
Wilderness Values

Size. The Sweetwater Canyon WSA contains 9,056 acres of public land. No private or state inholdings and no split-estate lands are located within the WSA boundary. The boundary is defined by roads, state and private lands.

Naturalness. Man's influence is, for the most part, unnoticeable. This is particularly true in the river canyon itself. The only intrusions are two-track trails (map 2) and an abandoned mineral exploration site near the river at the western edge of the WSA.

There are two basic types of topography in the WSA: the canyon and its tributary draws, and the gently rolling hills that surround it. The canyon, which is 6-7 miles long, is a water carved trough nearly 500 feet deep. In places, the walls are almost vertical. Bare rock outcrops exist throughout the canyon. Outcrops along the canyon walls are interspersed with sagebrush, grasses, other shrubs, and pockets of aspen and willow, all of which provide considerable variety in the landscape (photographs 1 and 2). Vegetation in the canyon bottom and along the river tributaries consists of willow, limber pine, aspen, cottonwoods, and juniper. The topography and vegetation of the canyon are unique relative to the surroundings. The contrast between the WSA and surrounding hills is abrupt and striking. These hills are low and rolling, with a few small rock outcrops.

Outstanding Opportunities for Solitude and/or a Primitive, Unconfined Type of Recreation. The deep canyon, coupled with dense, riparian vegetation and numerous tributary draws, provides a high degree of solitude. The canyon



PHOTOGRAPH 1. Sweetwater Canyon in late fall.

PHOTOGRAPH 2. Sweetwater Canyon looking downstream to the east.

follows the meanders of the Sweetwater River, creating numerous secluded places for camping or recreational activities. The vegetation along the floor of the canyon and the topography of the canyon screen visitors from one another.

There are no developed recreational sites in or adjacent to the WSA. A limited amount of camping and picnicking takes place via four-wheel drive access roads. Use is concentrated at both ends of the canyon (Wilson Bar and Chimney Creek) and in the center of the canyon near Strawberry Creek. Hiking and backpacking activities occur during the summer months, but levels of use are low.

The river offers high-quality brown and rainbow trout fishing. The Wyoming Game and Fish Department (WGFD) has classified the river as an important trout water of regional importance. This high-quality fishing opportunity attracts recreationists from Wyoming and the neighboring states of Colorado and Utah. One commercial fishing outfitter has operated in the canyon.

According to visitor counts and traffic counter readings, the WSA receives its heaviest use during the fall hunting seasons and during the summer weekends. BLM recreation specialists estimated use at 1,500 visitor days in the canyon during 1977. Use has declined, however, since the population of nearby Jeffrey City has dropped from an estimated 4,000 people to 700 because of the cessation of uranium mining. Visitor days were estimated at 1,000 in 1984.

Mule deer are hunted within the canyon, and the principal small game species is the cottontail rabbit. Sage grouse are also hunted, and antelope are hunted on the flat, rolling areas above the canyon.

Of all the opportunities for recreation, the river itself is by far the most important. Typically, fishing opportunities attract visitors to the area. While fishing, the visitor usually takes advantage of other benefits such as the outstanding solitude, scenery and camping opportunities along the river.

The National Park Service studied the Sweetwater Canyon segment of the river for possible inclusion in the National Wild and Scenic River System (NPS 1979). The study was published in June 1979. The purpose of the system is to preserve selected rivers that "possess outstanding remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values . . . in their free-flowing condition . . . for the benefit and enjoyment of present and future generations." (Wild and Scenic River Act, P.L. 90-542, October 2, 1968).

The conclusion of the study was that the river segment was ineligible for inclusion in the Wild and Scenic River System because it failed to meet the minimum length criterion of 25 miles. Although the river is free-flowing, has excellent wildlife values and water quality, and possesses outstanding, historical values, these criteria were not sufficient to meet the requirement necessary for a river segment under 25 miles in length.

The study made some additional recommendations for future management of the canyon. The first was that the canyon be protected by designation and management as wilderness under the 1964 Wilderness Act. Designation, according to the study, would provide long-term preservation of the canyon's natural and historical values. The study further recommended that if Sweetwater Canyon did not qualify for wilderness, it should receive some other form of special recognition, designation, and management that would guarantee long-term protection.

Special Features. The canyon has several special features, which include the Oregon/Mormon Pioneer Trail sites associated with westward migration and fur trapping in the early 1800s (see the Cultural and Recreational Resources sections for additional information).

The canyon also has high-scenic values, including the feeling of uncluttered, open space, isolation, and peacefulness.

The canyon provides an outstanding wilderness area. It sharply contrasts with the color and texture of the surrounding desert environment, providing bright green and blue hues to the landscape in summer, and blue, gold, and brown in the fall. Steep rock walls also contrast with the nearby smooth, rolling hills.

Diversity in the National Wilderness Preservation System. An objective of the wilderness study policy is to determine the extent that wilderness designation of the area under study would contribute to expanding the diversity of the National Wilderness Preservation System from the standpoint of the following factors:

Ecosystems and Landforms

The classification of ecosystems is based on an integration of the natural factors of climate, vegetation, soils, and landforms. Wilderness designation presents an opportunity to preserve examples of the basic ecosystems and landforms present in the region in an unimpaired condition for future generations. Although there are other land-classification systems available, BLM has

selected the Bailey-Kuchler Ecosystems classification of the United States; a system that was utilized by the U.S. Forest Service in its RARE II and further planning wilderness studies (Bailey 1976 and Kuchler 1966).

Parts of three ecosystems recognized by the Bailey-Kuchler classification system exist in the Sweetwater WSA: Wyoming Basin/Wheatgrass - Neddlegrass Shrub Steppe, Wyoming Basin/ Douglas Fir Forest, and Wyoming Basin/Grama - Needlegrass-Wheatgrass. None of these ecosystems is presently represented in the National Wilderness Preservation System.

Opportunities for Solitude or Primitive Recreation

The Sweetwater Canyon offers excellent opportunities for solitude and primitive recreation because it is remote and consists of rugged terrain.

Balancing the Geographic Distribution of Wilderness Areas

Considerable wilderness opportunities exist in Wyoming and the adjacent states of Colorado, Idaho and Montana. Wyoming has six designated U.S. Forest Service wilderness areas that date back to the 1964 Wilderness Act. The 1984 Wyoming Wilderness Act added 14 new areas. At present, three other areas managed by the Forest Service are under consideration for designation in addition to the existing National Park Service and BLM WSAs.

Tables 2-1 and 2-2 show acreages of other Forest Service study areas in Wyoming.

TABLE 2-1

EXISTING WILDERNESS IN WYOMING

Wilderness Areas	Acres
Medicine Bow National Forest	
Savage Run Wilderness	15,260
Bridger - Teton National Forest	
Teton Wilderness	557,312
Bridger Wilderness	392,169
Shoshoni National Forest	
Fitzpatrick Wilderness	191,103
Washakie Wilderness	687,132
North Absaroka Wilderness	351,104
Total Gross Acres Designated Wilderness	**2,194,090**
Wyoming Wilderness Bill	884,049
Total as of October 31, 1984	**3,078,129**

TABLE 2-2

WILDERNESS AREAS AND STUDY AREAS DESIGNATED BY THE WYOMING WILDERNESS ACT

Areas	Acres
Wilderness Areas	
Cloud Peak Wilderness	195,500
Popo Agie Wilderness	101,991
Gros Ventre Wilderness	287,080
Jedediah Smith Wilderness (West Slope of Tetons)	116,535
Huston Park Wilderness	31,300
Encampment River	10,400
Platte River Wilderness	23,000
Winegar Hole Wilderness	14,000
Corridor Addition to Teton Wilderness	28,156
Silver Creek Addition to Bridger Wilderness	14,880
Newfork Lake Addition to Bridger Wilderness	20,960
Glacier Addition to Fitzpatrick Wilderness	6,497
South Fork Addition to Washakie Wilderness	10,000
High Lakes Addition to Beartooth-Absaroka Wilderness	23,750
Total Wilderness Areas	**884,049**
Wilderness Study Areas	
Palisades Wilderness Study Area	135,840
High Lakes Wilderness Study Area	14,700
Shoal Creek	30,000
Total Wilderness Study Areas	**180,540**

Recreational Resources

The Sweetwater Canyon provides a variety of recreational activities, including fishing, hunting, sightseeing, hiking, camping, and historic trail use. Use is primarily by local residents and is largely dispersed. In the canyon, the Sweetwater River provides high-quality trout fishing. Many of the 1,500 annual estimated visitor days are attributable to fishing and occur during the months of June, July and August. Sweetwater Fishing Expeditions, a commercial guide service, has been issued a special recreation-use permit for the area in past years. The fishing is rated as Class III by the Wyoming Game and Fish Department. (A Class III designation is given to fisheries of regional importance.) The area receives hunting use in the fall; antelope, mule deer and sage grouse are the principal game species hunted. Sightseeing and camping use are largely associated with other recreational activities.

There are two vehicle access points to the river in the WSA, the Wilson Bar area on the North end and Strawberry Creek in the center of the canyon (see map 2). Hiking or horseback are the only means of travel to more remote canyon areas from those starting points. ORV-use problems

have occurred in other areas of the WSA, and minor road closures have been initiated on roads that have been damaged. ORV designations were completed in 1981, which limit use to existing roads and vehicular routes.

Livestock Grazing

Twelve operators graze livestock within the boundaries of the Sweetwater Canyon WSA. The majority of the area is used for grazing cattle, although sheep occasionally use the southeast portion of the WSA. Livestock graze most of the WSA, except for the steep canyon walls. Cattle tend to concentrate along the river and its associated riparian zone. Livestock grazing occurs during the months of May through December on the portion south of the river.

There are no structural range improvements in the WSA. Herding of livestock has been done by horseback and four-wheel drive vehicle on the existing two-track trails that cross the interior of the WSA.

There are two grazing allotments in the area that are made up in part by lands in the Sweetwater Canyon WSA. Only a small portion of each allotment is contained within the boundaries of the WSA, both in terms of acreage and livestock forage. The current erosion condition class is rated as slight.

Table 2-3 lists and describes the grazing allotments, including a breakdown of federal acres and animal unit months in the WSA and in the allotments as a whole.

TABLE 2-3

LIVESTOCK GRAZING ALLOTMENTS IN THE SWEETWATER CANYON WSA

Allot No.	Allotment Name	Season of Use	Kind of Livestock	Total Fed. Acres	No. of Federal Acres in WSA	% of Federal Acres in WSA	Total Federal AUMs	No. of Federal AUMs in WSA	% of Federal AUMs in WSA
1903	Silver Creek Common	Spring-Summer Fall	Cattle	31,953	3,830	12%	3,552	426	12%
2001	Green Mountain	Spring-Summer-	Cattle,	468,379	5,226	1%	47,729	533	1%

Map 8 shows the two allotments in the WSA.

Geology and Mineralization

Geology

The Sweetwater Canyon WSA is located along the southeastern flank of the Wind River Range. The Wind River Range was uplifted during the Laramide Revolution, which began in late Cretaceous time (see Appendix 3).

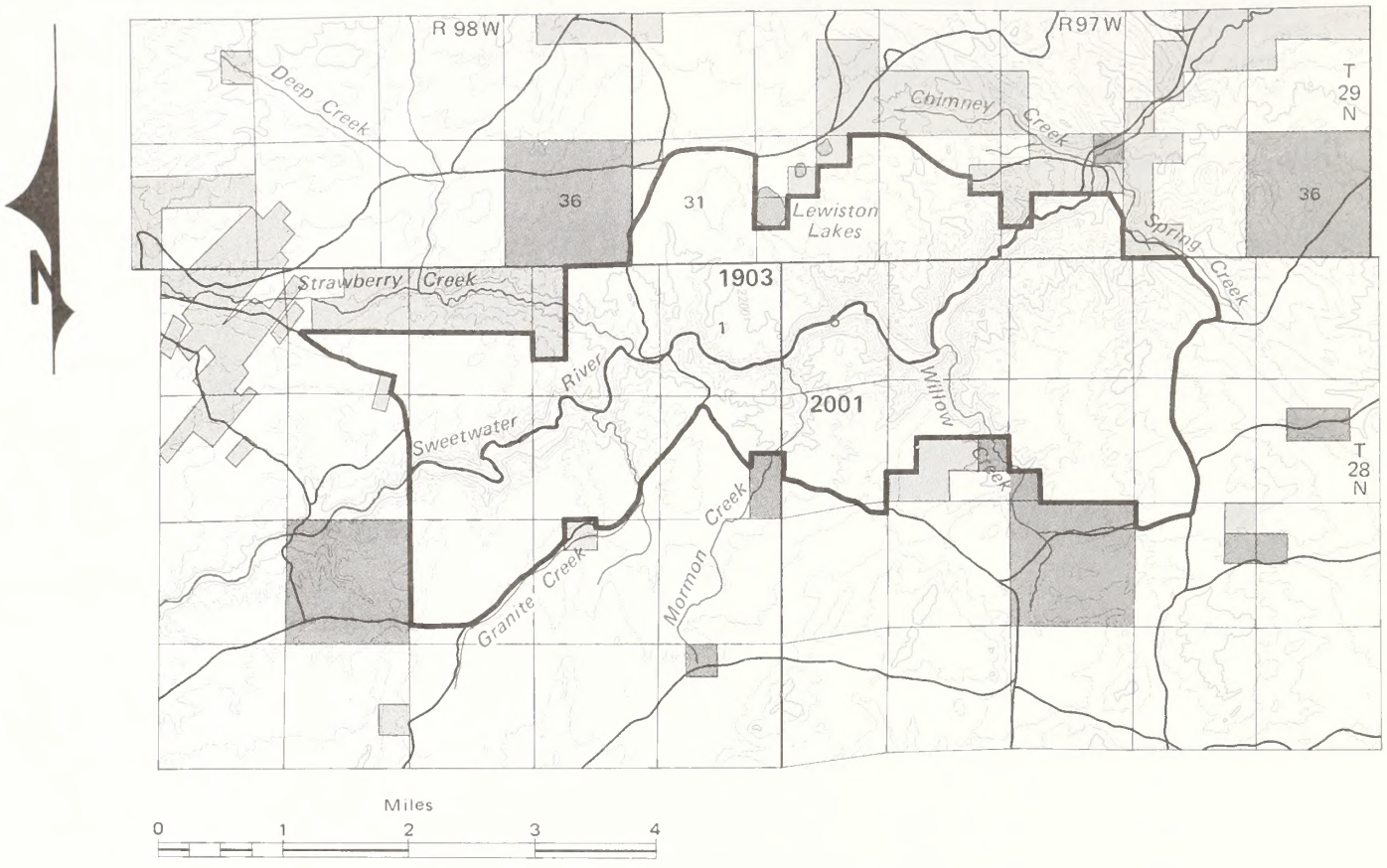
Most of the WSA contains Precambrian metamorphosed sedimentary and granitic rocks as the surface bedrock unit. The Tertiary South Pass Formation overlies these Precambrian rocks in a few isolated areas. The Precambrian outcrops in the eastern two-thirds of the WSA and consists mainly of pink and gray unaltered granite. The Precambrian metasediments outcrop in the western one-third of the area consist of biotite-chlorite schists, garnet schists, and microcrystalline hornfels intruded by mafic dikes. These metasediments are highly deformed and sheared in a north to northwest trend (Holsheimer 1976).

The Tertiary South Pass Formation consists of conglomerates and sandstones cemented with volcanic ash and some beds of volcanic ash (Denson and Pipiringas 1974).

Tertiary alluvium and colluvium deposits are scattered throughout the area. The alluvium consists of boulders, gravel, sand, silt, and clay deposited by the Sweetwater River and its tributaries.

Mineralization

The Lewiston Mining District was organized in 1879 and includes a grouping of gold mines to the northeast of the head of Sweetwater Canyon. Placer gold was discovered along Strawberry Creek in 1842, and gold mining began in earnest in 1867 with the discovery of the Carissa Lode. Many discoveries followed, but the mining boom was short-lived and most of the mines were shut down by 1895. Intermittent production continued until 1956 when the Duncan Mine closed (Holsheimer 1976). There is no accurate record of the amount of gold produced from mining districts in this area.



Federal Land

State Land

Private Land

River- Allotment Boundary

1903 Silver Creek Common

2001 Green Mountain Common

Map 8
Grazing Allotments
Sweetwater Canyon

The lode gold is found in quartz veins associated with hydrothermally altered metasediments and with silver, copper, arsenic, and tungsten. The placer gold is associated with medium to coarse grained Quaternary gravels. A gold dredging operation once took place at Wilson Bar just upstream from the WSA, but it closed in 1943 (Holsheimer 1976). The Quaternary river gravels of the Sweetwater River and Strawberry Creek canyons are considered moderately favorable for the occurrence of placer gold. The composition of placer gold would probably be graded as fine in the WSA, making recovery difficult (Tetra Tech 1983). The western one-third of the WSA should be considered moderately favorable for the occurrence of lode gold in the Precambrian metasediments (Tetra Tech 1983). Lode gold deposits discovered in the Lewiston Mining District have, so far, been relatively small. Since this gold was not recovered when it was worth over $700 per ounce, it probably will not be mined at its present value of about $300 per ounce.

During 1974 the Atomic Energy Commission conducted an airborne radiometric survey that identified some small anomalous areas near Sweetwater Canyon. The Precambrian granitic rocks have been intruded by pegmatites that are considered moderately favorable for the occurrence of uranium and thorium (Tetra Tech 1983). The base of the Flathead Formation in the extreme eastern end of the WSA has a low favorability for the occurrence of uranium (Tetra Tech 1983). During field work conducted by Tetra Tech, Inc., in 1983, a small radiometric anomaly with measurements two times as high as the background count was identified in the lower 40 feet of the Flathead Formation along the eastern edge of the WSA. There are no known uranium deposits or mines in or near the WSA.

Tungsten in the form of scheelite was found in the Burr Mine about 1½ miles west of the WSA and is associated with quartz veins and hematiferous biotite schists (Wilson 1951). Nephrite jade has been reported in the vicinity of the WSA near amphibolite rocks. No commercial quantities of either tungsten or jade have been reported in the vicinity of the WSA.

According to Spencer and Powers (1983), there is no potential for oil and gas accumulation in this WSA. The current leases contain the Wilderness Protection Stipulation.

The Sweetwater Canyon contains sand and gravel deposits; however, the location makes them presently unfavorable for development. Other commercially valuable mineral deposits probably do not occur in the WSA.

Tables 2-4 and 2-5 list oil and gas lease and mining claim abstracts for the Sweetwater Canyon WSA (see map 3).

TABLE 2-4

SWEETWATER CANYON
OIL AND GAS LEASE ABSTRACT

Lease No.	Acreage	Effective Date
W-69634	2,047.00*	02/01/80
W-69635	900.00	02/01/80
W-69636	800.00*	02/01/80
W-57180	30.00*	01/01/77
W-74448	85.00*	06/01/81
W-69109	780.00*	08/01/80
W-70296	320.00*	08/01/80
W-69637	1,556.00	02/01/80
W-69638	1,620.00	02/01/80
W-72539	445.00*	04/01/81
Unleased	490.00	
Total	**9,074.00**	

* Approximate

Wildlife

Habitat

Sweetwater Canyon contains a diverse mixture of vegetation that provides a variety of habitat types for several wildlife species. Along the top of the canyon rim and on the south-facing canyon slopes, the sagebrush/grass community is the dominant habitat type. On the north facing slopes and in the deepest part of the canyon, small stands of limber pine, lodgepole pine, and aspen provide structural diversity that increase the number of reproduction, feeding, and hiding sites for wildlife. The riparian vegetation, which roughly parallels the river, consists of such water-loving species as willow, water birch, and cottonwood.

Based on vegetative composition and structure, five standard habitat types have been identified in the WSA: subirrigated meadow, willow floodplain, aspen-conifer woodland, mixed-shrub steppe, and big sagebrush/mixed grass steppe.

A detailed description of these standard habitat types is available at the Lander Resource Area office.

TABLE 2-5

SWEETWATER CANYON MINING CLAIM ABSTRACT

Location (6th P.M.)	Claim Name	Type	Claimant	Location Date
T. 28 N., R. 97 W. Sec. 6, All	Pioneer	Placers	Donald A. Yancheson	02/10/80
T. 28 N., R. 98 W. Sec. I, S½				
T. 28 N., R. 98 W. Sec. 10, S½, NE¼ Sec. II, N½				
T. 28 N., R. 98 W. Sec. 2, SE¼	JMD	Placer	Gene G. Whitaker Johnnie Whitaker	08/15/74
T. 28 N., R. 98 W. Sec. 2, All	Amanda	Placers	James Rutter Janet Rutter Lynette Rutter Lesa Marsh John Marsh George Byrne Perry Byrne Taura Bryne Al Richardson Beulah Richardson Hal Rogers	07/20/81
T. 28 N., R. 98 W. Sec. 3, SW¼ Sec. 4, S½ Sec. 9, NE¼ Sec. I0, W½	Gold Strike	Placers	General Nuclear Corp.	04/02/71
T. 28 N., R. 98 W. Sec. 3, SW¼	Beverly Joe	Lodes	Dorothy M. Kane Clyde E. Kane Terry L. Bright	05/20/75
T. 28 N., R. 98 W. Sec. 4, All	NL	Lodes	Lander Energy Co. Adobe Oil and Gas Co.	09/04/69

Big Game

Moose. Sweetwater Canyon is crucial winter range for moose. Heavy accumulations of snow in the Wind River Range cause moose to move out of the mountains and feed on the willow stands along the Sweetwater River and its tributaries. In February 1983, 55 moose were counted along the Sweetwater River east of Highway 28 (WGFD 1983).

Elk. Under extremely severe winter conditions, elk move off their normal winter range on the upper Sweetwater and Oregon Buttes country into the Sweetwater Canyon. Consequently, the WSA is classified as severe winter relief range for elk.

Mule Deer. The WSA is yearlong range for about 60 mule deer. The wet meadows provide important summer forage, and the numerous shrub species provide winter browse. Deer use the pockets of aspen and conifer as bedding sites. These pockets also provide hiding cover and shade from the hot summer sun.

Pronghorn Antelope. About 50 to 75 antelope inhabit the sagebrush/grass habitat along the canyon rim and south facing slopes during the summer. Springs and seeps throughout the canyon provide drinking water during the summer. Most of the pronghorn that use the canyon migrate to the south or east for the winter.

Small Game and Game Birds

Cottontail rabbits, sage grouse and many species of waterfowl are numerous throughout the canyon. Occasionally chukar-partridge and blue grouse are present.

Furbearers

Beavers are common throughout the WSA. Many of the tributaries to the Sweetwater River contain beaver dams and lodges. Red foxes, coyotes, bobcats, and muskrats also inhabit the WSA.

Nongame

Golden eagles, ferruginous hawks, prairie falcons, red-tailed hawks, and several other species of raptors are common residents during the summer in the WSA. Cliffs and rock outcrops provide suitable raptor nest sites, and the diverse vegetative structure provides habitat for mice, shrews, voles, and other nongame species on which raptors prey.

Threatened and Endangered Species

The Sweetwater Canyon WSA is within the range of the bald eagle, peregrine falcon and black-footed ferret. However, no documented sightings of these three species have been made in the WSA. Bald eagles may occasionally use the area during the winter for hunting, and peregrines are believed to migrate through the area in late fall and early spring. The area does not contain any prairie dog towns; consequently, black-footed ferrets are not likely to live there.

Fisheries

A major recreational attraction of Sweetwater Canyon is the fishery. Rainbow, brown and brook trout are present in the Sweetwater River and in two tributary creeks in the study area. Trout are not stocked in the canyon area.

WGFD management concept for the canyon section of the Sweetwater is geared primarily to the harvest of trout, but it does not preclude the possibility of supplemental stocking of trout should the need arise. Sweetwater Canyon could sustain additional fishing pressure without greatly affecting the trout population or requiring supplemental stocking. Additional fishing pressure, however, could reduce the quality of fishing by reducing the numbers of larger fish. The Wyoming Department of Environmental Quality has designated the upper Sweetwater River, including the Sweetwater in the study area, as a Class I water; a designation reserved for waters of the highest quality and importance to the state.

The WGFD Stream Fisheries Classification for this section of the Sweetwater River describes it as an important trout water of regional importance (Class III).

The stream is described by WGFD as one of considerable natural beauty; the type that is favored by tourists. Vehicular access is fairly good (there is one road to the river at Strawberry Creek and several roads to the canyon edge), and streambank vegetation does not restrict use by fishermen. The river is not floatable during fishing season (July through October). The Sweetwater River is not large in the canyon (about 40 feet wide), but it is moderately productive.

Sweetwater Canyon contains the most important BLM-administered trout fishing in the Lander Resource Area.

Habitat

There are about 10 miles of brown and rainbow trout habitat in the study area (Sweetwater River) and 2 miles of brook trout habitat (tributaries). Habitat in the canyon part of the Sweetwater River, as shown by fish sampling and habitat surveys, is better than that found in adjacent portions of the Sweetwater River. Stream gradient is steeper, large boulders are present, streambanks are mostly stable, and the quality and frequency of pools is near optimum for this type of stream. Spawning gravels have variously been described as good to poor. It is possible that spawning habitat quality varies from year to year in the canyon, depending on the amount of gravel entering, deposited and leaving the canyon each year.

One trout habitat problem within the study area is localized damage to streams by livestock. The portion of the canyon bottom upstream from the confluence of Strawberry Creek is the most heavily used by livestock. Below Strawberry Creek, the use is lighter and the problem is less severe. Above Strawberry Creek, streambank cover has been overused in places, and stream widening and bank sloughing have occurred. The condition of this section of the river could be improved from the fisheries standpoint.

Population

Both trout and nongame fish are present in the canyon. Brown trout are more numerous than rainbow trout, but rainbows make up more of the total trout population in the canyon than they do either above or below the canyon. This may indicate a preference for bouldery, pocket-water type of stream habitat. Rainbow trout up to 16 inches and brown trout up to 20 inches have been electroshocked by the WGFD in the canyon. Trout are moderately abundant in the canyon and WGFD population estimates (using single pass techniques) have ranged from 229 to 960 trout per mile. Trout over 7 inches in length are estimated to range between 176 and 295 trout per mile. The canyon contains more trout per mile than those sections of the Sweetwater River above or below the canyon.

Nongame fish present in the canyon are longnose, white and mountain suckers; lake chubs; creek chubs; longnose dace; Iowa darters; and carp. These fish are not abundant.

Trout reproduction in the canyon is favored by mild winters and low spring runoff. Years of harsh winter and heavy spring flooding reduce reproductive success and numbers of larger trout present in the canyon.

Tributaries

Tributaries to the Sweetwater River in the WSA are Strawberry, Willow, Mormon, and Granite creeks. Mormon and Willow creeks contain brook trout in their lower reaches. The lower portions of these streams may be important as spawning areas for rainbow and brown trout from the Sweetwater River, but this has not been determined. Tributary streams above and below the study area may also be important contributors of young brown and rainbow trout that will occupy the canyon portion of the river later in their life cycle. Both Chimney Creek and Spring Creek, which enter the Sweetwater just below the study area, may fall into this category. The lower reaches of both these streams are mostly on private land.

Mormon and Willow creeks are major livestock travel routes between the uplands and the canyon

bottom. Consequently, livestock damage to the banks of these streams can be high and fishery potential reduced. Silt resulting from bank damage may also reduce trout habitat quality downstream.

Use and Harvest

There is a lack of data on fishing use and harvest in the Sweetwater Canyon. Presently, the use is estimated at 100 angler days per year.

Fish harvest in the canyon can only be estimated. With a legal limit of six trout per day, an estimated 600 trout per year could be harvested in 100-angler days. This would represent a harvest of about one-fourth of the total, or most of the trout population over 7 inches in the canyon, each year. Longtime users of Sweetwater Canyon noted that during the boom years for Jeffrey City, the average size of fish caught in the canyon appeared to be smaller, suggesting that heavy fishing in the canyon can at least affect the quality of the fishery.

According to Connell of WGFD (1983), "The canyon section of the [Sweetwater] River is an important natural fishery that is entirely on BLM lands. Management efforts should be directed at enhancing and protecting this fishery."

Socioeconomics

Since all of the WSAs are within the same general geographic area, this section discusses the baseline socioeconomic conditions prevailing in and around Fremont County, Wyoming. Discussion for each WSA will focus on its relationship to the economy of the county and the state and will also include detailed characteristics surrounding the predominant economic uses of the WSA.

Fremont County's economy is diverse, but its industrial base is in agriculture, tourism and mining. Agriculture and tourism serve as the stable economic sector. Table 2-6 shows a recent breakdown of the county's economy by sector.

From 1976 to 1981, total personal income in the county rose by 120 percent. Most of this increase was directly or indirectly attributable to growth in the mining sector. Since 1981, however, personal income and employment levels in the county have dropped significantly, as have population levels. County population has dropped by 4.3 percent since 1981. This decrease has resulted mainly from slumps in minerals activity and mine closures. Future drops in population levels and personal income will probably continue as unemployment benefits become exhausted.

TABLE 2-6

FREMONT COUNTY LABOR ANALYSIS*

	Number Firms	Number Employees	Average Weekly Wage
Agriculture, forestry & fisheries	28	115	$160.25
Mining	82	1,913	$498.95
Construction	189	982	$349.66
Manufacturing	41	572	$301.88
Transportation, communication, & utilities	79	706	$357.38
Wholesale trade	78	531	$315.56
Retail trade	292	2,515	$188.18
Finance, insurance, & real estate	75	435	$252.83
Services	341	4,444	$320.77
Public administration	28	717	$306.50

* 1983 Figures

In 1980, Bureau of Census figures estimated population levels for Fremont County at 38,992. Since the county has a strong economic base in energy and mineral exploration and development, current population trends indicate a downward direction as a result of mining layoffs and mine closures associated with the energy industries. Although this trend is not expected to continue, precise estimates are not available to indicate when a recovery may occur; however, conditions should improve over the next few years. For a further explanation of population and employment trends, see the Socioeconomic section of the Lander Draft RMP/EIS (BLM 1985).

The Sweetwater Canyon WSA lies entirely within Fremont County, Wyoming. It provides recreational opportunities such as camping, fishing, hiking, and hunting. Livestock grazing occurs in the vicinity and mineral activity of differing levels also occurs.

Recreation

Fishing in the Sweetwater Canyon has regional significance, offering high-quality brown and rainbow trout. During the summer months, fishermen in the area contribute to the local economy in the form of fishing equipment, camping supplies, food, lodging and transportation needs. Commercial outfitters also guide fishermen to and through the area.

Local expenditures made by anglers and hunters amount to approximately $15,463: angler days ($3,363), mule deer hunter days ($5,522), antelope hunter days ($5,952), and moose hunter days ($626).

Agriculture

Livestock grazing occurs throughout the WSA. Cattle and sheep production is carried out on private, state, and federal lands. Grazing privileges on public land contribute to a portion of the livestock operators livelihood by providing forage. They also contribute significantly to the loan value of a ranch. The loan or capitalized value of public land animal unit months (AUMs), although not recognized by BLM, can be quite significant, depending on the proximity of the leased land to the base property and the type of land involved. Recent ranch sales in the area show these capitalized values to range from $50 to $60 per AUM.

Minerals

No reserve estimates are available to date. Therefore, an economic estimate of value cannot be determined.

Gold exploration and mining has occurred in the area. There are no estimates of the amount of gold that has been extracted or that is in reserve to determine its value.

Cultural Resources

Prehistoric Resources

A search of the files of the cultural resources in the Sweetwater Canyon WSA was conducted. During a low-intensity reconnaissance inventory in 1975, a number of topographic features in Sweetwater Canyon were sampled by a BLM staff archeologist. Thirteen prehistoric sites were identified that were believed to be one-time occupation sites that had been used for a very short period. No information is available as to the age or significance of the sites. The inventory indicated that a good probability exists for finding additional sites.

Local individuals have also reported a small site along the river floodplain consisting of several stone circles. These stone circles are commonly thought to be the result of Native American campsites where teepees were used for shelter. The stones were used to weigh down the fabric of the teepees. Frison (1978) states that stone circle sites began appearing in this region during the Middle Plains Archaic Period (5000 B.P. -2500 B.P.) and continued up to historical times.

Other inventories conducted in the general region around the Sweetwater Canyon indicate that the general area, and in all probability the WSA, have been occupied by prehistoric Native Americans for at least 12,000 years. The prehistoric people who occupied the area were hunters and gatherers whose movements were, to a large degree, determined by seasonal changes in resource availability. These people generally traveled in small bands, spending only a limited amount of time in any one location. A particular cultural resource site might represent a one-time use of a location, or repeated use of the location over thousands of years.

Historical Resources

The first white men known to have visited the canyon were a party of 11 fur trappers led by Jedediah Smith. They had been given directions by the Crow Indians and were headed toward Green River, over South Pass, to trap for Ashley and Henry's Rocky Mountain Fur Company. Other well-known members of the party included William Sublette, Tom Fitzpatrick and James Clyman. A severe winter storm prevented the party from crossing South Pass; therefore, they turned eastward and proceeded down the Sweetwater River. They found shelter in a grove of aspen in the canyon and stayed there for 2-3 weeks during February and March of 1824. A cache containing powder and lead was left, and the party agreed to reassemble there by June 1. After a successful season of trapping, the men returned to dig up the cache, build two bullboats, load their furs, and float down the Sweetwater. This historical aspen grove was located in section 34, T. 29 N., R. 97 W. Archeological evidence supports this as the correct area, and careful reading of the trappers journals and other authoritative sources also substantiate this location for the historical aspen grove (Camp 1960).

As a result of the explorations of the 1824 trappers' party and other early trappers, a transcontinental trail corridor was established near Sweetwater Canyon. Historical transportation routes such as the Oregon/Mormon/California Emigrant Trail form part of the northern boundary of the WSA. A major cut-off route of the trail, the Seminoe Cut-Off, ran just south of the WSA. Historical uses of the trails included emigrant transportation, military protection and transportation, the Pony Express, the early Overland Stage Line and Telegraph, and later, early mining and livestock transportation. This major historical transportation corridor was used by thousands of people during the westward expansion and gold rush days to traverse the Sweetwater Valley and cross the Continental Divide at South Pass. The area where these historical trails border the WSA is an area where persons interested in history can view the trails and the countryside very much as it appeared in the early 1800s.

The Overland Stage Line was established in 1851. The stage line followed the Oregon/Mormon Pioneer Trail route until 1862, when it was moved to the new Overland Trail route in southern Wyoming.

The Pony Express was established in 1860 and the Overland Telegraph in 1861. Both used the Oregon/Mormon Pioneer Trail, but neither lasted very long. The Pony Express ended in 1861 because of the new telegraph line, and the telegraph line was moved south to the new Overland Trail route in 1865.

Exploration for gold in the general vicinity began in 1842 with the discovery of placer gold along Strawberry Creek. Later gold exploration at nearby Lewiston in the 1800s was extensive and resulted in several large operations. However, there is no record of any gold ever having been placer-mined from within the WSA itself, though there has been prospecting.

Other historical activities in the area have been stock grazing and recreation. Stock grazing has probably been the most common activity in the area. Recreational use of the study area has increased in the second half of the 20th century as a result of population increases in the surrounding area, improved access and vehicles.

Sweetwater Rocks WSA

Wilderness

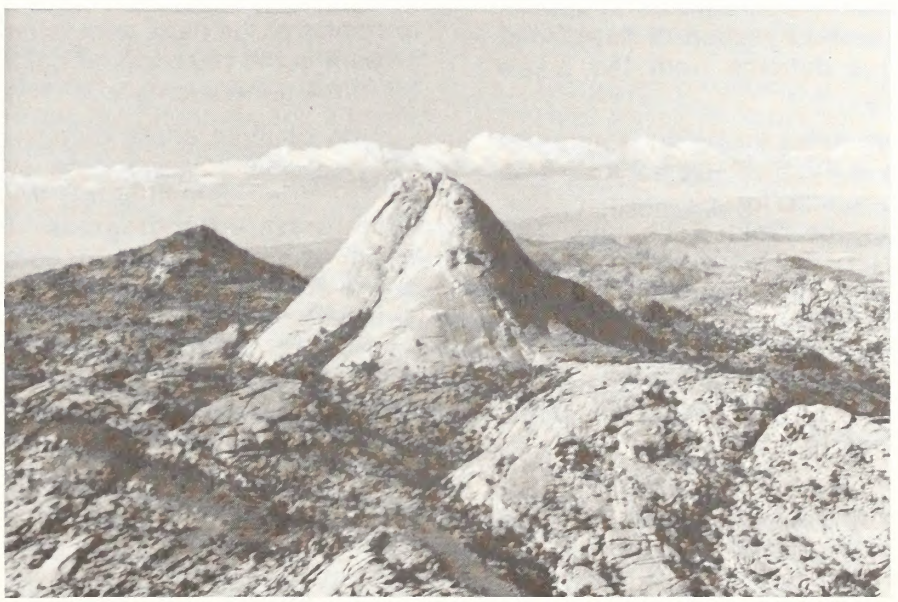
Geographical Description

The four wilderness study units in the Sweetwater Rocks WSA—Lankin Dome, Split Rock, Savage Peak, and Miller Springs—have similar characteristics, are adjacent to each other, and can thus be described under one narrative.

These four units of the Sweetwater Rocks are part of the Granite Mountains in south-central Wyoming. The area is located in portions of Fremont and Natrona counties, 10 miles north of the junction of U.S. Highway 287 and State Highway 220 (Muddy Gap Junction). It includes lands 5 to 10 miles north of the Sweetwater River, from Devil's Gate on the east to the Agate Flats Road on the west. The area is about 50 miles north of Rawlins, 65 miles southwest of Casper, and 75 miles east of Lander, Wyoming. The WSAs are primarily mountainous, rugged blocks of public land surrounded by flat, undulating private and state lands at the base of the rocks.

The term Sweetwater Rocks describes the huge, exposed granitic rock domes and boulders that appear to rise from the flat or rolling plain of the Sweetwater Valley (photographs 3 and 4). The rock complex is very impressive, rising 300-1,200 feet above the valley floor. The four WSAs are separated by gaps or passes through the rocks, including Lankin Gap, Beef Gap, and UT Pass (local names).

PHOTOGRAPH 3. Split Rock, an historical landmark for the Oregon Trail.



PHOTOGRAPH 4. Lankin Dome, a large granite intrusion, is one of the most spectacular features of the Granite Mountains.

Wilderness Values

This section describes the wilderness values of the Sweetwater Rocks WSA.

Size. Acreages for the four Sweetwater Units are:

WY-030-120 Lankin Dome -	5,956 acres
WY-030-122 Split Rock -	12,749 acres
WY-030-123a Savage Peak -	7,041 acres
WY-030-123b Miller Springs -	6,429 acres
	32,175 Total Acres

Unit 122 contains a 40-acre private land inholding. Private and state lands and roads form the boundaries of the WSAs.

Naturalness. The Sweetwater Rocks units are largely free of man-made intrusions. There are several two-track roads that come to a dead end in the pockets that surround the base of the rocks. Although these roads are noticeable from within the area, the vegetative and/or topographic screening, and the primitive, unused nature of the roads cause little or no effect on the naturalness of the units. Large segments of the granitic outcrops are completely roadless.

Minor intrusions include two fence lines in 120 and 123a, an abandoned jade mine and trapper's cabin in 122, and a short section of flat-bladed road in 123b. None detracts from the area's apparent naturalness.

Outstanding Opportunities for Solitude and/or a Primitive Unconfined Type of Recreation There are numerous opportunities for solitude in the four units, especially in the Split Rock unit. The topography is diverse, the areas are incised by numerous draws and small canyons, and the vegetation provides some screening. However, solitude is not readily available on the flat, open areas at the base of the rocks. Neither vegetation nor topography protect visitors from the sights and sounds of others in this area.

The Sweetwater Rocks offer a variety of opportunities for nonmotorized, unconfined recreation, including primitive camping, backpacking, rock climbing, hiking, hunting, and a host of related activities such as nature study, photography, environmental education, and bird watching. These opportunities range from high to outstanding quality, depending on the particular locale.

The area is used on a regular basis for rock climbing and outdoor educational courses.

Special Features The Granite Mountains are exceptionally scenic, containing reddish granitic boulders, slabs, and exfoliating domes interlaced with green wooded pockets. Lankin Dome and Split Rock are outstanding climbing areas.

These large expanses of bare granite, which are not found elsewhere in central Wyoming, form a natural and highly scenic backdrop for the Sweetwater River Valley, an area that played an important role in the history of the exploration and early settlement of the West. Significant cultural and historical aspects of this area include: Split Rock, a historical landmark and National Register Site for the Oregon-Mormon Pioneer National Historic Trail corridor on the Sweetwater River, numerous artifacts and Indian rock cairns, and old trapper cabins.

Diversity in the National Wilderness Preservation System An objective of the wilderness study policy is to determine the extent to which wilderness designation of the area under study would contribute to expanding the diversity of the National Wilderness Preservation System from the standpoint of the following factors:

Ecosystems and Landforms

The classification of ecosystems is based on an integration of the natural factors of climate, vegetation, soils, and landforms. Wilderness designation presents an opportunity to preserve examples of the basic ecosystems and landforms present in the region in an unimpaired condition for future generations.

Parts of three ecosystems recognized by the Bailey-Kuchler classification system are found along the Sweetwater: Wyoming Basin/ Wheatgrass - Neddlegrass Shrub Steppe, Wyoming Basin/Douglas Fir Forest, and Wyoming Basin/Grama - Needlegrass-Wheatgrass. None of these ecosystems is presently represented in the National Wilderness Preservation System.

Opportunities for Solitude or Primitive Recreation

As mentioned earlier, there is a 40-acre private land inholding in unit 122 (NE¼NE¼ section 13, T. 29 N., R. 90 W., 6th P.M.). The WSAs are mostly surrounded by private and state lands that are controlled by four, long-established ranch operations.

Balancing the Geographic Distribution of Wilderness Areas

There are 3,078,129 acres of designated national forest wilderness in the state of Wyoming. Table 2-2 shows three wilderness study areas in the national forest system of Wyoming. In summary, there is substantial acreage of designated and potential wilderness in close proximity to the WSA.

Recreational Resources

The Sweetwater Rocks have significant recreational value. Extremely rough topography and rock outcrops allow for only primitive forms of recreation. Most activities involve rock climbing, hiking, hunting, sightseeing, camping, and rock collecting. Although use levels are quite low, the Sweetwater Rocks attract users from many parts of the country (an estimated 3,000 visitor days annually). Use is largely dependent on the population fluctuations of nearby Jeffrey City.

The National Outdoor Leadership School offers rock climbing, instruction and outdoor educational courses in the Split Rock area. They have operated under a BLM special recreation-use permit since 1972. In 1984, 1,345 user days were reported during spring, summer and fall courses. Rock climbing opportunities are considered world class, especially on Lankin Dome, Split Rock, Moonstone, and the Great Stone Face.

Several other use permits have been issued in the area for outfitter and guide hunting operations. The WSA offers mule deer hunting, and a limited number of antelope licenses are issued each year for a hunt unit encompassing the area. Other forms of visitor use are low.

Winter sports such as cross-country skiing and snowmobiling have minimal potential because of poor access and low snowpack; rugged terrain; and strong, nearly continual winter winds. Key access to the Sweetwater Rocks involves crossing private lands owned by area ranchers. Access is possible by crossing contiguous public land, but it is limited to nonmotorized travel and requires accurate map reading ability to stay on public lands. Recreational users cause occasional problems for adjacent landowners. Some users fail to obtain permission to cross private lands, leave gates open and/or drive off of existing roads. Landowners are always concerned about littering, vandalism and harassment of livestock by visitors.

Recreational management actions in the Sweetwater Rocks have been directed toward management of the area to preserve primitive recreational values and the high-quality scenery of the area.

The Sweetwater Rocks provide an impressive natural setting for over 25 miles of Oregon/Mormon Pioneer National Trail corridor. BLM administers two trail interpretive sites for the Split Rock and Devil's Gate landmarks. The Split Rock site is less than 1 mile from the Split Rock WSA and averages over 30,000 visits each year. Devil's Gate is 3 miles from the Savage Peak WSA. It received 19,705 visitors in 1983 during the 7-month summer season count. These trail corridors also include the Pony Express and California Emmigrant trails. Recreational use and interest in these historical trails has been increasing.

Livestock Grazing

Grazing in the four units of this WSA is basically the same and can be discussed in one narrative. The only variable is the number of operators and allotments in each unit. Table 2-7 lists and describes the grazing allotments, including a breakdown of federal acres and AUMs in the WSA. In all four units, the granitic rocks form natural barriers for livestock and are used as allotment boundaries. They are not part of the grazing allotment. The public land between the base of the rocks and the WSA boundaries shown on map 9 is used for grazing cattle. Grazing occurs yearlong within the WSA, depending on the allotments that have various seasons of use.

Range improvements are limited to fences that restrict livestock movement among the rocks. Herding livestock and fence maintenance within the WSA has been done by horseback and four-wheel drive vehicle.

Only a small portion of each grazing allotment is contained within the boundaries of the WSA, both in terms of acreage and in terms of livestock forage. The area does not have a high value for watershed. The current erosion condition class varies from slight to moderate, depending on the unit.

Geology and Mineralization

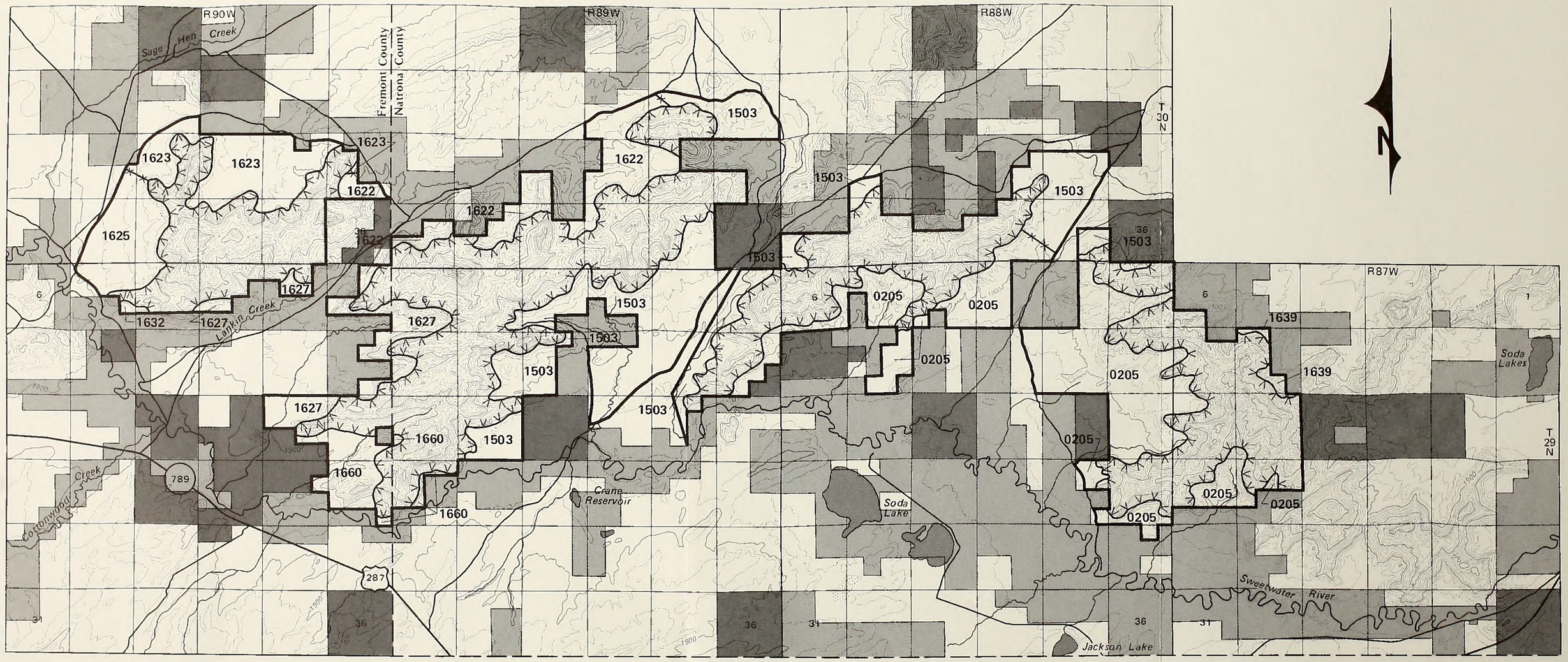
Geology

The Sweetwater Rocks WSA is within the Granite Mountain Uplift. This large east-west trending uplift separates the greater Green River Basin from the Wind River Basin. The Granite Mountains have generally been a structural high since earliest Paleocene time (see Appendix 3),

TABLE 2-7

LIVESTOCK GRAZING ALLOTMENTS IN THE SWEETWATER ROCKS WSA

No.	Allot. Allotment Name	Season of Use	Kind of Livestock	Total Fed. Acres	No. of Federal Acres in WSA	% of Federal Acres in WSA	Total Federal AUMs	No. of Federal AUMs in WSA	% of Federal AUMs in WSA
Lankin Dome									
1622	Lankin Creek	Winter-Spring	Cattle	2,612	213	8%	248	20	8%
1623	Murphree Pastures	Spring-Summer-Fall	Cattle	9,113	1,836	20%	1,061	214	20%
1625	Jamerman Pastures	Spring-Summer-Fall-Winter	Cattle	6,790	808	12%	478	57	12%
1627	Individual	Fall-Winter	Cattle	2,880	526	18%	301	55	18%
1632	North Hat Pastures	Spring-Summer	Cattle	1,040	155	15%	180	27	15%
1503	Winter Pastures	Winter-Spring	Cattle	51,808	5,154	10%	8,076	803	10%
1622	Lankin Creek	Winter-Spring	Cattle	2,162	1,535	59%	248	146	59%
1627	Individual	Fall-Winter	Cattle	2,880	853	30%	301	89	30%
1660	Highway	Winter-Spring	Cattle	1,353	681	50%	205	103	50%
Savage Rocks									
1503	Winter Pastures	Fall-Winter-Spring	Cattle	51,808	25	.05%	8,076	4	.05%
1639	Ordway Pocket	Spring	Cattle	2,049	89	4%	592	26	4%
0205	Devils Gate	Spring-Summer-Fall-Winter	Cattle	83,076	3,281	4%	18,617	735	4%
Miller Springs									
1503	Winter Pastures	Fall-Winter-Spring	Cattle	51,808	1,611	3%	8,076	251	3%
0205	Devils Gate	Spring-Summer-Winter-Fall	Cattle	83,076	2,253	3%	18,617	505	3%



Miles
0 1 2 3 4

Federal Land
State Land
Private Land
Rock-Allotment Boundary
Allotment Boundary Fence
1503 Winter Pastures
1622 Lankin Creek

1623 Murphee Pastures
1625 Jamerman Pastures
1627 Individual
1632 North Hat Pasture
1639 Ordway Pocket
1660 Home, North of Highway
0205 Devils Gate

Map 9
Grazing Allotments
Sweetwater Rocks

although the area has undergone repeated structural adjustment since that time. During Miocene and Pliocene times, portions of the area were topographically low and were the sites of deposition.

The predominate bedrock units exposed in the Sweetwater Rocks WSA are a medium to coarse grained biotite granite and a granitic gneiss (Tetra Tech 1983). These Precambrian granites and gneisses outcrop in the central parts of the WSA and contain intrusive dikes of basalt and pegmatites.

During Miocene time, the Split Rock Formation was deposited in the topographically low, probably undrained, portions of the Granite Mountains. The Split Rock Formation is generally less than 1,000 feet thick and consists of white to tan, fine to coarse grained sandstones and conglomerates (Love 1970). The Split Rock Formation is referred to as the Arikaree Formation in the eastern portion of Wyoming. During Pliocene time, the Moonstone Formation was deposited in many of the same areas and is now found overlying the Split Rock Formation. The Moonstone reaches a maximum thickness of 1,350 feet and consists of interlayered sandstones, limestones, tuffs, conglomerates, and claystones (Love 1970). The Split Rock and Moonstone formation outcrops surround the Precambrian on the fringes of the WSA.

Mineralization

There is one known occurrence of pumicite within the WSA in sections 34 and 35, T. 30 N., R. 89 W., 6th P.M. The area surrounding the WSA contains occurrences of uranium, thorium, pumicite, sodium carbonate-sulfate, and vermiculite.

The uranium and thorium occurrences are associated with pegmatites in the Precambrian rocks and with the Tertiary sedimentary rocks of the Split Rock and Moonstone formations. Occurrences of uranium and thorium in pegmatite dikes are probably very restricted and have low potential for development.

Uranium occurrences in the Split Rock Formation appear small and localized, and little source material (volcanic ash) is present in the formation (Love 1970). For these reasons, this formation is given a low to moderate favorability for the occurrence of uranium. The Moonstone Formation has widespread uraniferous beds and contains more volcanic tuff beds, which could serve as a source of uranium (Love 1970). For these reasons, the Moonstone Formation has a moderate to high favorability for the occurrence of uranium.

The pumicite occurrences in and near the WSA probably have a low potential for development because of their small, restricted nature.

Some lakes occupying depressions in the exposed Split Rock Formation contain sodium carbonates and sodium sulfates; however, there are no known soda lakes within the WSA.

Jade occurs in veins or dikes in the Precambrian rock or as place concentrations in the Tertiary sediments (Tetra Tech 1983). There is one jade mine located adjacent to the Sweetwater Rocks WSA that has been worked in recent years (NW¼SE¼, section 3, T. 29 N., R. 90 W., 6th P.M.). The Sweetwater Rocks WSA has a low to moderate favorability for the occurrence of jade.

According to Spencer and Powers (1983), there is no potential for oil and gas accumulation in this WSA.

The Tertiary Moonstone and Wagon Bed formations contain zeolite minerals in certain locations. Phillipsite is found near the top of the type section of the Moonstone Formation in section 17, T. 30 N., R. 89 W., 6th P.M., and many clay samples from the Moonstone contain clinoptilolite (Love 1970). Heulandite, clinoptilolite, and erionite are found in the Wagon Bed Formation in section 26, T. 32 N., R. 95 W., 6th P.M., (Love 1970). In the vicinity of the Sweetwater Rocks WSA the Wagon Bed Formation was apparently well drained during deposition and without saline/alkaline lakes (Boles and Surdam, 1979). This would reduce the probability of zeolite mineral deposits in the Wagon Bed Formation in this area. The Moonstone Formation does contain the sediments of saline lakes in the WSA (Love 1970), thus would increasing the possibility of finding significant zeolite minerals in the Moonstone in this area.

Other economically valuable mineral resources do not occur in the Sweetwater Rocks WSA.

Tables 2-8 and 2-9 list oil and gas lease and mining claim abstracts for the Sweetwater Rocks WSA. These are post-FLPMA leases and contain the Wilderness Stipulation.

TABLE 2-8

SWEETWATER ROCKS
OIL AND GAS LEASE ABSTRACT

Lease No.	Acreage	Effective Date
W-77823	734.00	03/01/82
W-77729	966.00*	02/01/82
W-74457	560.00	06/01/81
Unleased:		
Under Application	27,635.00*	
Other	2,614.00*	

* Approximate

TABLE 2-9

SWEETWATER ROCKS
MINING CLAIM ABSTRACT

Location (6th P.M.)	Claim Name	Type	Claimant	Location Date
T. 29 N., R. 90 W. S. 3, NE¼	Charlie	Lodes	Lewis P. Vondrasek	03/15/84
T. 30 N., R. 89 W. S. 34, SW¼	Overlook	Lode	Lewis P. Vondrasek Alice G. Vondrasek	12/08/80
T. 30 N., R. 88 W. S. 32, NE¼	Christy	Lode	Eugene F. Clark Agnes L. Clark	07/15/73

Wildlife

Habitat

The Sweetwater Rocks contain a complex intertwining of rock and vegetation. Since many wildlife species appear to use a combination of different sites within these rock lands, the area has been classified as one standard habitat site, which is described below.

The steep, bare rock slopes, cliffs, and huge boulder fields are laced with cracks and canyons that form distinct and indistinct drainages. This has resulted in an interspersion of many small, disjunct pockets, basins, slopes, benches, and ravines with shallow remnants or accumulations of soil. Virtually all degrees of slope and exposure are represented. The extensive bare rock, along with the varied combinations of slope and exposure, greatly influence the effective moisture on a site-by-site basis. Vegetative cover and composition respond to variations in these abiotic factors. This results in the overall aspect of the rocklands as being large mountains of fractured bare rock and boulders interlaced with vegetative communities concentrated in irregular patches and interconnecting stringers. Woodland, shrubland, grassland, and riparian vegetative types are represented on sites varying from a few hundred square feet to 15 or 20 acres in size.

Tree cover varies from scattered limber pines 5 to 50 feet tall, or a few Rocky Mountain or Utah junipers, to small stands that may also contain a few Douglas fir or small aspen clones.

Herbaceous cover varies greatly between sites. Bluebunch wheatgrass, needleandthread, and Sandberg's bluegrass are a few of the principal grass species. Sagebrush, rabbitbrush, rockspirea, wax current, and Wood's rose comprise the major shrub species. Narrowleaf cottonwood, snowberry, gooseberry, chokecherry, basin wild rye, and Nebraska sedge are common on the mesic sites.

Big Game

Mule Deer. The large boulders and pockets of limber pine and aspen in the units provide cover and foraging areas for mule deer during the summer. Most of the WSA is classified as mule deer winter-yearlong range. During the winter, mule deer are often found in juniper stands. Shrubs, particularly sagebrush, rabbitbrush, and bitterbrush, are the primary food of mule deer in the winter.

The mule deer that inhabit the Sweetwater Rocks are part of the Beaver Rim Herd Unit. Their population appears to be stablizing near WGFD's objective of 3,100 deer. Hunt area 97, which includes the Sweetwater Rocks, has experienced an increase in deer hunters over the past few years, with an increase in harvest success due to the "any deer" season initiated in 1983.

Pronghorn Antelope. Pronghorn antelope inhabit the rocklands in the meadows and grasslands that surround the rocks.

Bighorn Sheep. The Sweetwater Rocks are historical bighorn habitat and still contain adequate habitat to support a bighorn population. The granitic rock formations provide escape cover, and the small pockets of grasses and forbs provide enough forage to support a fairly large bighorn population.

A recent BLM study determined forage production by unit and assessed potential escape cover and lambing areas. The Split Rock-McIntosh Peak Unit (WY-030-122) and the Savage Peak Unit (WY-030-123a) offer the best bighorn sheep habitat of the four units. These two units provide a good mixture of rugged escape cover and forage.

The area received two small transplants of bighorns in the 1940s, and survivors of the transplants were sporadically reported until recently (WGFD 1982). A helicopter survey in August 1983 failed to locate any bighorns.

The WGFD, BLM, and adjacent landowners have been discussing the possibilty of transplanting bighorns back into the Sweetwater Rocks. Small water developments, designed to catch and store spring runoff and rainfall, have also been proposed. The transplant and water developments would be designed and carried out in a manner that would not detract from the naturalness of the area.

Small Game and Game Birds

Cottontail rabbits, sage grouse and mourning doves are plentiful in the WSA. These species use a variety of habitats. Information on population trends is scarce.

Nongame

Coyotes, bobcats, jackrabbits, and several species of raptors are common throughout the area. The steep cliffs and rock outcrops provide nesting habitat for golden eagles, prairie falcons, and red-tailed hawks, as well as prime hunting habitat for bobcats and coyotes.

Numerous songbirds such as Clark's nutcrackers, violet-green swallows, black-capped and mountain chickadees, and nuthatches are found in the WSA. Reptiles such as northern sagebrush lizards and prairie rattlesnakes use the area.

Threatened and Endangered Species

The Sweetwater Rocks are within the range of the bald eagle, peregrine falcon, and black-footed ferret. No bald eagle nests, roosts, or perches are known to exist within the WSA. Although no peregrine aeries have been found in the Sweetwater Rocks, the area has high potential as peregrine habitat. No ferret searches have been conducted in and around the WSA, but prairie dogs, ferrets main prey, are plentiful on the rangelands surrounding the rocks.

Socioeconomics

The four units in the Sweetwater Rocks WSA are located in Fremont and Natrona counties, Wyoming. (See Socioeconomics section in Affected Environment-Chapter III of Sweetwater Canyon for discussion of economic conditions and activities in Fremont County.)

Within the adjacent to the WSA, three predominant economic activities occur: recreation, including hunting; agriculture; and mining. Each of these activities provides employment, income and revenues to the local economy and the state.

Recreation

Although little documented information is available regarding specific visitor use in these areas, BLM recreation specialists have observed light use in camping, hiking, hunting, sightseeing, collecting, and ORV activities during the summer months. Hunting in the WSA involves primarily two big game species: antelope and mule deer. Local revenues that accrue to communities in the vicinity amount to approximately $27,356. These revenues are based on food, lodging, goods and services, etc.

Agriculture

Agriculture, predominantly livestock grazing and native hay production, forms a primary economic base in the area adjacent to the WSA and contributes to the economic stability of the area. Livestock production is carried out on private, state, and federal lands, with ranchers having grazing privileges on the public land. As an integral part of a livestock operator's livelihood, not only does the public land provide forage on which to graze livestock, it also contributes significantly to the loan or value of a ranch. Depending on the proximity of the leased land to the base property and the type of land involved,

the capitalized value of a public land AUM can be quite significant. Unofficial studies in the area show that these values ($50 to $60/AUM) are characteristic of ranch operations in the Sweetwater Rocks area of the district (BLM 1979).

Minerals

There is low to moderate potential for uranium occurrence in the WSA. Reserve estimates are unknown at this time, making economic value estimates undeterminable. Reserve estimates of other minerals are also undetermined. The uranium mines in the adjacent areas are closed because of poor market conditions.

Cultural Resources

A search of the cultural resources files for the Sweetwater Rocks units was conducted for this EIS. Although very few inventories have been conducted in or near the WSA lands, both historical and prehistoric cultural resources are known to be common in the four Sweetwater Rocks units. Prehistoric resources range from short-term lithic worksites to long-term habitations. Historical resources include Oregon/Mormon Pioneer Trail related sites, trappers' cabins and early range improvements. The known cultural resources for the four units are similar in nature; therefore, a general discussion covering all four units will be presented.

Prehistoric Resources

Although there has been little inventory work done in the WSA, some information is available on the types of prehistoric resources present in the general area. Prehistoric hunting camps and habitations are common around the Sweetwater Rocks, especially near water sources. Typical site types include surface chipped stone scatters, buried campsites with firepits, and stone circle sites. A possible drive line and butchering site has been located in the Split Rock unit. It consists of stone cairns, stone rings and logs that were apparently used to block escape routes. A large assortment of butchering tools such as choppers and bifaces were also located on the site. One projectile point or knife was found that dates to the Late Archaic Period (1500 B.P. to 3000 B.P.). Based on diagnostic artifacts found in and near the Sweetwater Rocks, prehistoric Native Americans frequented this region for at least 12,000 years. The prehistoric people who produced those sites were hunters and gatherers whose movements were, to a large degree, determined by seasonal changes in resource availability. These people generally traveled in small bands, spending only a limited amount of time in any one location. A particular cultural resource site might represent a one-time use of a location or repeated use of the location for thousands of years. A recently discovered site along the Sweetwater River (just southwest of unit 122) indicates that there were prehistoric groups who inhabited the area on a more permanent basis. Several pithouse-style, semi-subterranean dwellings were excavated or tested, and these features indicate habitation of Early Archaic Period peoples (circa 5700 years B.P.) in one spot for an extended period of time. It is possible that other sites of this type will be found along or near the Sweetwater River in the vicinity of the Sweetwater Rocks WSA.

Historical Resources

Because of the proximity of the Sweetwater Rocks to the Sweetwater River, the rocks were prominent in the early history of this region. The Oregon/Mormon/California Trail corridor used in the 1840s-1870s ran along the Sweetwater River just south of the four units. Diary accounts of the trail emigrants commonly mention the Sweetwater Rocks. The emigrants were impressed with the unusual granitic formations and used them as landmarks along the trail. Split Rock (in unit 122) was one of the best known landmarks in the Granite Mountains. Many emigrant campsites, stage stations, army outposts, and supply stations were also set up along the trail near the WSA. The closest was probably Split Rock Station, which served as a Pony Express station, stage station, military outpost, and emigrant campsite. The WSA was exploited by the emigrants and inhabitants of this and other installations for game, wood supplies, and building stone. Over 640 acres around and including the Split Rock landmark have been withdrawn from all forms of appropriation to protect historical values.

Trapping also occurred periodically in the area along the Sweetwater River and the rocks. Some of the trappers built cabins in or near the WSA, and at least two are still standing.

Ranching near and in the WSA began in the 1870s and continues to the present day. Many ranches were established in the Sweetwater Valley, and range improvements were made in the WSA. These improvements included spring developments, corrals, roads, fences, etc., and continue to be used today.

Recreational use of the study area has increased in the second half of the 20th century as a result of population increases in the surrounding area, improved access and vehicles, and renewed interest in the history of the Oregon/Mormon Pioneer Trail.

COPPER MOUNTAIN

Wilderness

Geographical Description

The Copper Mountain WSA is located in Fremont County, approximately 10 miles north of Shoshoni, Wyoming. It is east of Boysen Dam, at the upper end of the Wind River Canyon, and is bounded on the west by the Wind River Indian Reservation, on the south and north by private and state lands on Birdseye and Cottonwood Creek, and on the east by the Birdseye Pass County Road and ranch (see map 7). U.S. Highway 789 and the Thermopolis to Alcova transmission line cross the southwest corner of the unit. The Copper Mountain WSA is part of the Copper Birdseye Pass area of the Copper Mountain Range, also known as the Bridger Mountains.

The topography of the entire unit is mountainous. Steep canyons and rocky slopes dominate the unit. Rugged mountains rise from 5,000 feet to 6,400 feet. Total relief in the unit is 1,400 feet (photographs 5 and 6).

Wilderness Values

Size. The Copper Mountain WSA contains 6,858 acres of contiguous public land. Total land area is over 10 square miles.

Naturalness. The WSA is, for all practical purposes, entirely natural. A small fenceline and some rundown drift fences are located in two mountain passes, but they do not affect the naturalness of the area. These intrusions blend into the overall view.

Outstanding Opportunities for Solitude and/or Primitive Unconfined Type of Recreation. There are outstanding opportunities for solitude except for noise emanating from truck traffic on Highway 20/789. The rough topography, steep drainages, rocky outcrops, and tree cover in some areas screen visitors from one another, making it easy to find seclusion. The potential for recreation is outstanding; it includes hiking, backpacking, hunting, trapping, and sightseeing for zoological and geological features. From the tops of the mountain and ridges, Boysen Reservoir, a man-made lake, is visible.

The topography offers a challenge and a strenuous walk for the day hiker or backpacker, as well as for the nontechnical rock climber. Both large and small game species inhabit the area.

Special Features. The Wind River Basin and Boysen Reservoir to the south and west of the WSA offer spectacular views for the visitor. From the mountain peaks one can see for 10 to 50 miles, including the Wind River Mountains and Beaver Rim.

Good opportunities exist for the educational and scientific study of the ecological communities within the area. A variety of geological formations can be studied in the WSA.

Diversity in the National Wilderness Preservation System. An objective of the wilderness study policy is to determine the extent to which wilderness designation of the area under study would contribute to expanding the diversity of the National Wilderness Preservation System from the standpoint of the following factors.

Ecosystems and Landforms

The classification of ecosystems is based on an integration of the natural factors of climate, vegetation, soils, and landforms. Wilderness designation presents an opportunity to preserve examples of the basic ecosystems and landforms present in the region in an unimpaired condition for future generations.

Under this system, the Copper Mountain WSA is classified as saltbush-greasewood and sagebrush steppe vegetative types within the Wyoming Basin ecoregion. This ecosystem in the Wyoming Basin has been included in the NWPS or recommended to Congress by the President for wilderness designation.

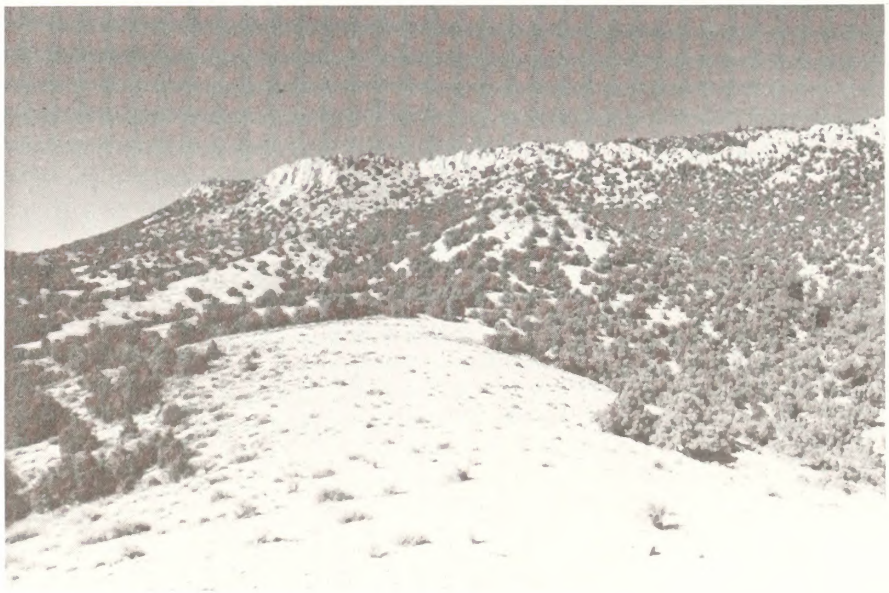
Opportunities for Solitude or Primitive Recreation

Although the opportunity for primitive recreation exists in the WSA, the noise level coming from trucks downshifting in the Wind River Canyon (Highway 20/789) disrupts the solitude of the area.

Balancing the Geographic Distribution of Wilderness Areas

There are six designated national forest wilderness areas in the state of Wyoming that date

PHOTOGRAPH 5. Cooper Mountain WSA looking eastward along a sedimentary outcrop



PHOTOGRAPH 6. Juniper covered slopes in a northerward view in Copper Mountain WSA

back to the 1964 Wilderness Act: Bridger and Fitzpatrick in the Wind River Range; Savage Run in the Medicine Bow Range; and Teton, Washakie, and North Absaroka in the Absaroka Range.

Table 2-2 shows acreage of other study areas in Wyoming. Wyoming has a very high concentration of designated wilderness areas.

Recreational Resources

The primary recreational activities in the Copper Mountain WSA are hunting for mule deer and trapping for predators, such as coyotes and bobcats; sightseeing; and some rock collecting. The area provides average quality deer hunting in central Wyoming. The lack of water in the area limits the distribution of hunting and trapping opportunities. Visitor use is estimated to be quite low because the area is remote and dry.

Livestock Grazing

Two operators graze livestock within the boundaries of the Copper Mountain WSA. Because of the steepness and ruggedness of the mountains, cattle graze only the lower portions of the WSA. During the grazing season, cattle frequently use the drainages. Livestock grazing occurs during the months of December through June on the southwest portion, and June through October on the northeast portion.

Range improvements are limited to fences that restrict livestock movement between the natural barriers. Herding livestock and fence maintenance within the core of the WSA have been done on horseback.

There are two grazing allotments in the area that contain lands in the Copper Mountain WSA. Major portions of each allotment are contained within the boundaries of the WSA, both in terms of acreage and in terms of livestock forage. The area does not have a high value for watershed. The current erosion condition class is rated as moderate.

Table 2-10 lists and describes the grazing allotments, including a breakdown of federal acres and animal unit months in the WSA and in the allotments as a whole.

Map 10 shows the two allotments in the WSA.

Geology and Mineralization

Geology

The Copper Mountain WSA is located on the north edge of the Wind River Basin and the south flank of the Bridger Mountains. The area has been extensively faulted parallel to the Bridger Mountains and is thrust faulted at depth.

Paleozoic sedimentary rocks ranging from Cambrian to Pennsylvanian in addition to the Tertiary Wind River Formation and Quaternary alluvium and colluvium are exposed in the WSA.

The Flathead sandstone of middle Cambrian age (see Appendix 3) is the basal sedimentary unit in this area and the oldest unit exposed. The Flathead consists of sandstone with minor siltstone and some conglomerate. The Gros Ventre formation overlies the Flathead and consists of siltstone, fine-grained sandstone, and some local beds of limestone in the upper part. The Gallatin Limestone of late Cambrian age unconformably overlies the Gros Ventre and consists of thin-bedded silty and sandy limestone, with some limestone pebble conglomerates (Tetra Tech 1983).

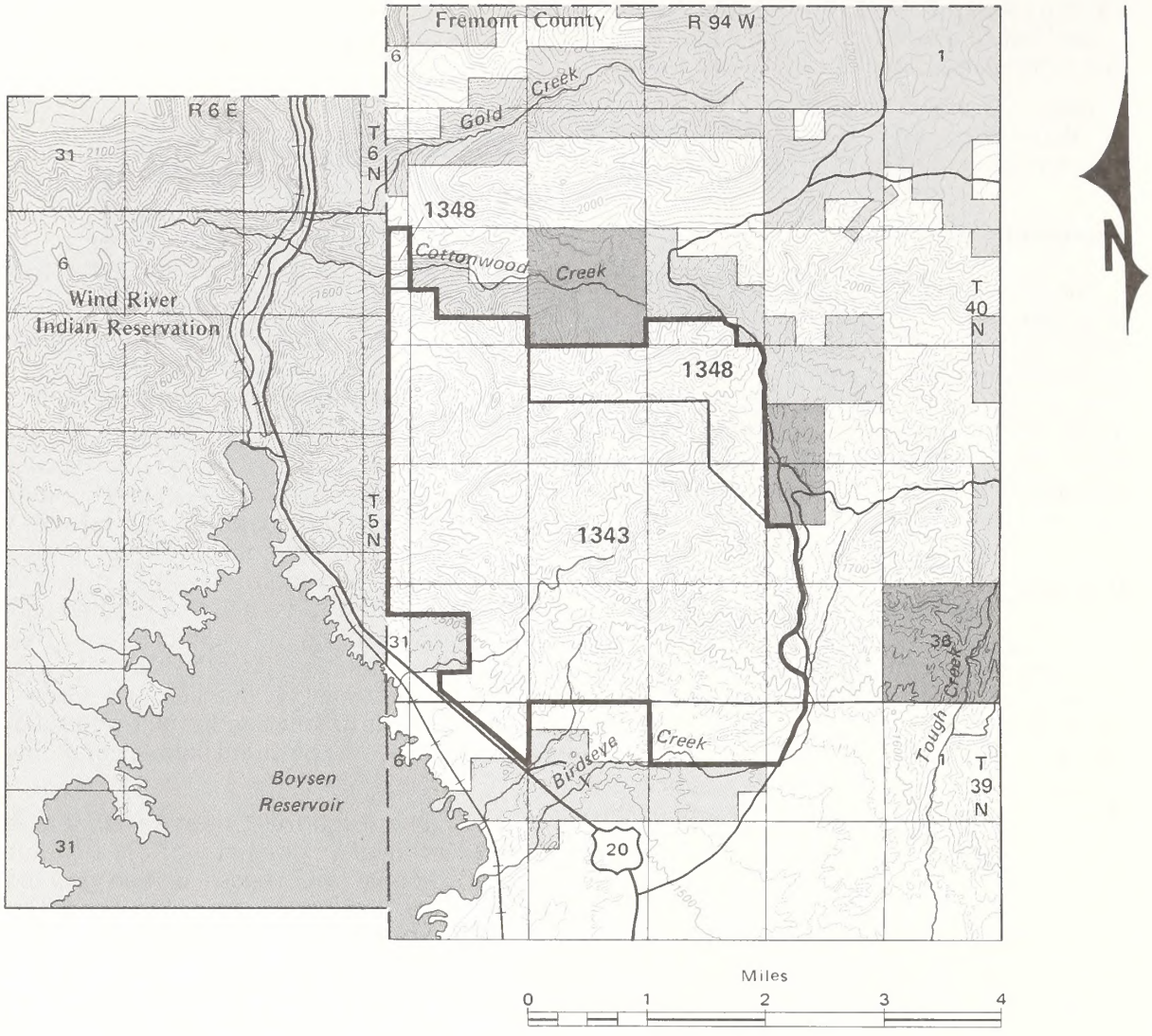
The Bighorn Dolomite of late and middle Ordovician consists of fine grained massive dolomite with lenses of fine grained sandstone near the base. The Madison Limestone of Mississippian age unconformably overlies the Bighorn and consists of fine grained argillaceous limestone and dolomite and sporadic lenses of sandstones. The Amsden Formation of early to middle Pennsylvanian and late Mississippian age consists of a lower, thin-bedded, clayey siltstone; a middle-fine to medium grained friable sandstone; and an upper dolomite. The Ten Sleep Sandstone of middle Pennsylvanian consists of slightly dolomitic and clayey-fine to medium-grained sandstone (Tetra Tech 1983).

The Wind River Formation of early Eocene unconformably overlies the Paleozoic sediments and consists of beds of sandstone, siltstone, claystone, conglomerate, and local coal beds.

TABLE 2-10

LIVESTOCK GRAZING ALLOTMENTS IN THE COPPER MOUNTAIN WSA

Allot No.	Allotment Name	Season of Use	Kind of Livestock	Total Fed. Acres	No. of Federal Acres in WSA	% of Federal Acres in WSA	Total Federal AUMs	No. of Federal AUMs in WSA	% of Federal AUMs in WSA
1343	Tuff Creek Pasture	Winter-Spring	Cattle	16,690	5,752	34%	1,270	437	34%
1348	John Herbst	Summer-Fall	Cattle	1,720	1,106	64%	308	198	64%



Federal Land

State Land

Private Land

Allotment Boundary

1343 Tuff Creek Pasture

1348 John Herbst Summer

Map 10
Grazing Allotments
Copper Mountain

Mineralization

Colorado Interstate Gas Exploration (CIGE) well number 1-4-39-94 is located adjacent to the WSA in NW¼NE¼, section 4, T. 39 N., R. 94 W., 6th P.M. (see map 11). This well was drilled to a depth of 17,550 feet, and was completed in April 1980 in the Mesaverde Formation at 12,874-13,749 feet for an initial production of 59 thousand cubic feet of gas per day (MCFGPD). The Cody-Niobrara formations were drill stem tested at rates varying from 1,100 to 1,300 MCFGPD. The Frontier Formation was production tested at 200 MCFGPD for 17 hours. The well was temporarily abandoned in January 1982.

The CIGE well is the only one that has penetrated a thrust fault in this area, at 6,140 feet. It was drilled based on information indicating a structural closure beneath the thrust. However, the well may have missed the crest of the structure, so there may be a potential for future gas discovery. Other wells have been drilled in the area, but all of them have been dry. None of them were drilled deep enough to penetrate the thrust.

Two relative rating systems for hydrocarbon potential are given in Appendix 3. According to Spencer and Powers (1983), the lands in the Copper Mountain WSA have a low potential for oil and gas. Based on the CIGE No. 1-4-39-94 well, these lands should probably be rated moderate. This well is the only one to have penetrated the thrust fault in this area, so subsurface control can be considered sparse. The well tests from the Cody and Mesaverde formations show that the environment is highly favorable for the occurrence of gas. The area is not in line with existing production from similar traps and, therefore, cannot be put into the high-potential category.

The Lander Resource Area RMP rates the oil and gas potential for the area as high, based on the presence of formations highly favorable for the accumulation of gas.

There are no pre-FLPMA leases in the area. The post-FLPMA leases contain the Wilderness Protection Stipulation (see Appendix 2 and Map 11).

Paleozoic limestone from the Madison formation is suitable for cement or industrial and agricultural lime, but availability of the limestone elsewhere, distance to potential markets, and inaccessibility in this area make the development potential low.

Inactive uranium prospects and mines are found in both Eocene sediments and Precambrian rocks to the east of the WSA in T. 40 N., R. 92 W., 6th P.M. Uranium in the Teepee Trail Formation is associated with hematitic alteration halos and carbon trash (Yellich, Cramer, and Kendall 1978). Uranium occurrences in the Precambrian rocks are found at geochemical interfaces between descending uranium-carrying oxidized water systems and underlying reducing systems (Yellich, Cramer, and Kendall 1978).

Hesse (1982) considers the Wind River Formation along the north edge of the Wind River Basin as favorable for uranium deposits for the following reasons:

1. A potential uranium source in the granitic highlands of the Owl Creek Mountains and/or previously overlying tuffaceous sediments.
2. A host rock of permeable arkosic sandstone interbedded with siltstone and mudstones.
3. Reducing agents are available in the form of organic materials in the sedimentary rock of petroleum fields to the south and southeast. Also there are indications of hydrocarbon occurrence in the nearby sediments.
4. Traces of pyrite and kaolinization of feldspars in the subsurface.

Other mineral occurrences are given a low favorability classification in the Copper Mountain WSA.

Tables 2-11 and 2-12 list oil and gas lease and mining claim abstracts for the Copper Mountain WSA.

TABLE 2-11

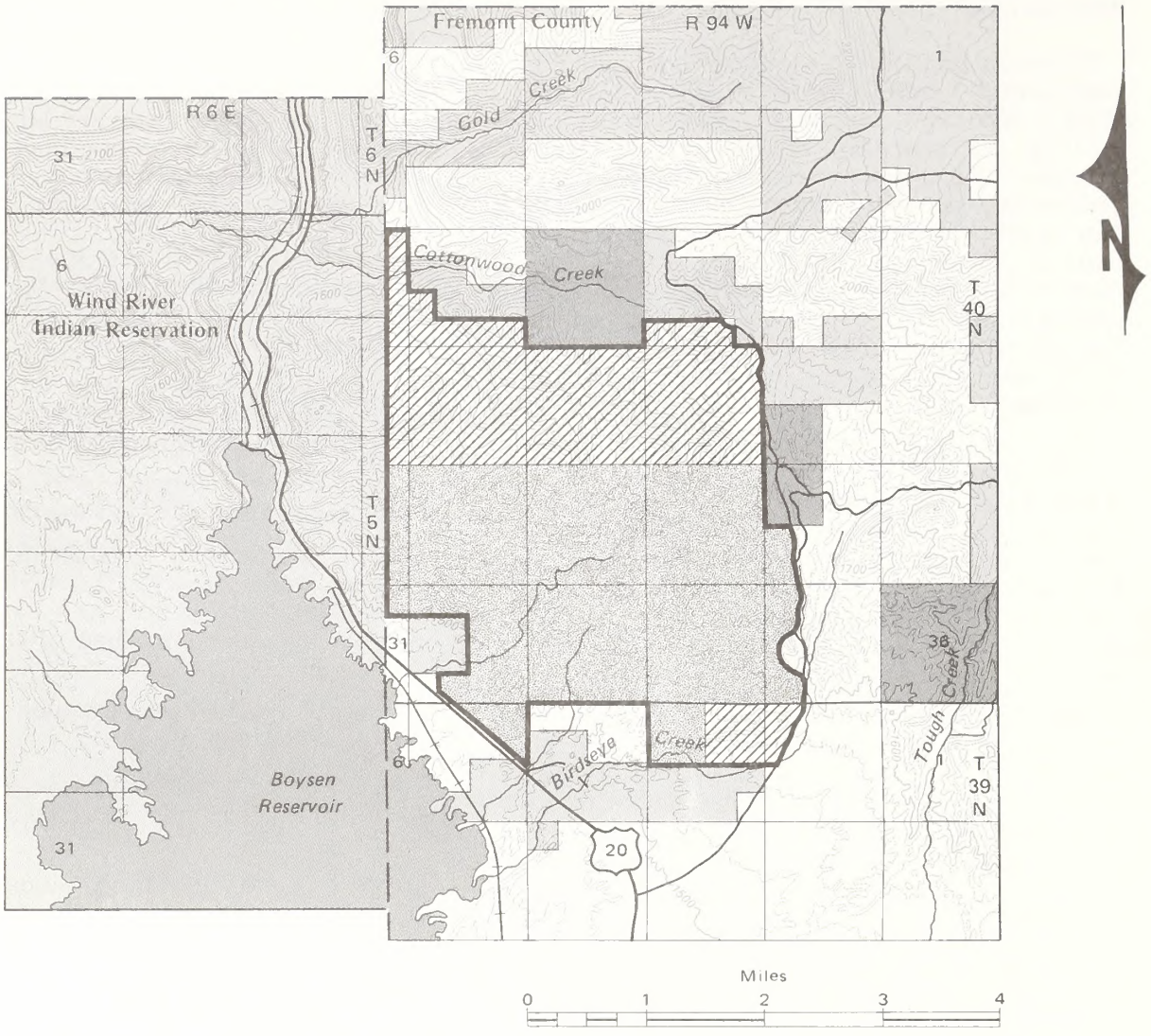
COPPER MOUNTAIN
MINING CLAIM ABSTRACT

Location (6th P.M.)	Claim Name	Type	Claimant	Location Date	Year
T. 40 N., R. 94 W. Sec. 26, SW¼ Sec. 30, N½	'PL'	Lodes	Timberline Mins.	06/27/75	1983

Wildlife

Habitat

Wildlife habitat on the Copper Mountain WSA can be classified as a Utah Juniper Woodland Standard Habitat Site. Tall, open stands (7-15 feet tall) of Utah juniper usually associated with saltbush, sagebrush, rabbitbrush, and several grass species are characteristic of this habitat.



Map 11
Oil and Gas Leases
Copper Mountain

TABLE 2-12

COPPER MOUNTAIN
OIL AND GAS LEASE ABSTRACT

Lease Number	Acreage	Effective Date
W-65325	326.00	01/01/79
W-63870	2,047.00	09/01/78
Not leased	4,087.00	
Total	**6,460.00***	

* Approximate

Big Game

Mule deer. Mule deer that inhabit the WSA are part of the Badwater Herd Unit. The northern portion of the WSA is classified as crucial winter range, and the remainder of the WSA is yearlong winter range (see map 12). The Badwater mule deer herd population is about 2,000 animals below WGFD's objective level of 7,500 (WGFD 1983).

Pronghorn Antelope. The majority of the WSA is yearlong habitat for a portion of the Badwater antelope herd. The southern portion of the WSA along Birdseye Creek is crucial winter range, and the northern edge is spring, summer and fall range. The current population level is slightly above WGFD's objective level.

Elk. The WSA receives only occasional elk use during the summer. These elk are part of the Upper Nowood-Copper Mountain herd unit.

Small Game and Game Birds

The WSA supports cottontail rabbits and chukars. These two species use a variety of habitat types, preferring the rock outcrops and rocky cliffs interspersed with grasses and sagebrush.

Nongame

Jackrabbits, coyotes, bobcats, red foxes, and several other species of small mammals, and raptors are common throughout the WSA.

Threatened and Endangered Species

Although the WSA is within the range of bald eagles, peregrine falcons and black-footed ferrets, no documented sightings of these species have occurred, and the area is not considered to be prime habitat for these endangered species.

Socioeconomics

The Copper Mountain WSA is located in the northeastern portion of Fremont County. The economic activity characterizing the area includes recreation, agriculture and minerals. (See the Affected Environment section in Chapter III for a discussion of economic conditions and activities in Fremont County.)

Recreation

Although estimates of visitor use are not available, BLM recreation specialists report backpacking, hiking, hunting, trapping, and sightseeing in the area. Hunting represents a viable economic industry. 1983 estimates indicate the following revenues generated from this pastime: antelope, $3,430; mule deer, $9,680; and elk, $420. These values do not reflect the nonconsumptive values that are a significant part of wildlife values.

Agriculture

Cattle and sheep graze on public lands within and adjacent to the Copper Mountain WSA. Two BLM grazing allotments used by two operators lie within the WSA. Because of the rugged terrain, range improvements are limited to fences that are maintained by means other than motor vehicle. Although BLM does not recognize capitalized values of public land AUMs, recent sales in Fremont County have indicated this value to range from $50 to $60.

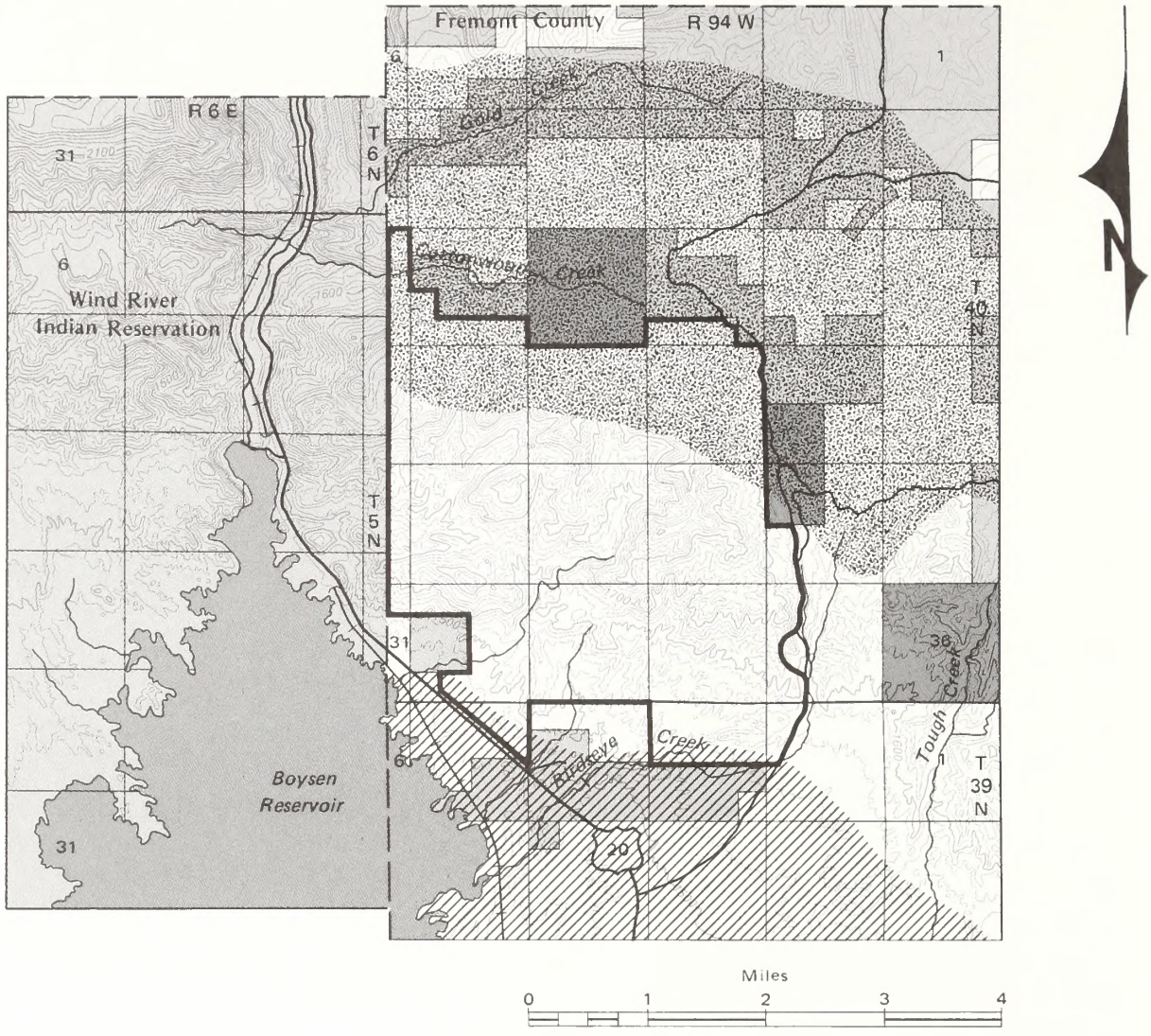
Minerals

Although reports show the potential for oil and gas occurrences to be moderate, no reserve estimates are available to determine the economic value of the commodity. No other information is available on estimates of mineral commodities.

Cultural Resources

Prehistoric Resources

Information concerning cultural resources in the Copper Mountain WSA has been obtained from a literature review. No cultural resource field inventories have been conducted within the Copper Mountain WSA, and no sites are known to be located within the WSA. A few inventories have been conducted near the WSA, and the cultural resources found have been small historical and prehistoric sites. Most of these sites have been considered to be noneligible for



Federal Land

State Land

Private Land

Mule Deer Crucial Winter Range

Pronghorn Antelope Crucial Winter/Yearlong Range

Map 12
Important Big Game Seasonal Ranges
Copper Mountain

nomination to the National Register of Historic Places. Based on the types of sites found, it appears that the prehistoric peoples who occupied the WSA were hunters and gatherers whose movements were, to a large degree, determined by seasonal changes in resource availability. These people generally traveled in small bands, spending only a limited amount of time in any one location. A particular cultural resource site might represent a one-time use of a location or repeated use of the location for thousands of years. Diagnostic projectile points indicate nearly continuous use of the general area for the last 12,000 years.

The lack of inventories and sites within and close to the Copper Mountain WSA precludes any accurate determinations of cultural resource site density. However, some observations can be made. Other areas in the mountain chain, which include the Copper Mountain WSA, have been extensively inventoried for cultural resources. These inventories indicate that there are locales in the mountains that were highly favored by prehistoric populations. Some parts of the Copper Mountain WSA have characteristics similar to those locales and this may indicate a good potential for finding prehistoric cultural resources in the WSA.

Historical Resources

Historical use of the area included stock grazing, mineral exploration, and recreational activities. The route of the Birdseye Pass Stage Line, in operation from the 1880s to early 1900s, runs along the east boundary of the WSA (this is now an upgraded road). Cattle and sheep ranches were established in the late 1800s - early 1900s which ran livestock in the WSA as they continue to do today. Hunting has been a popular recreational activity, and recreational activities in general have increased as a result of improved access and mobility.

CHAPTER IV

ENVIRONMENTAL CONSEQUENCES

Mitigative measures, unavoidable adverse impacts, short-term use verses long-term productivity, and irreversible and irretrievable commitment of resources were evaluated for each resource. If a factor applied to a resource, it has been discussed in this chapter. If it does not, it has not been discussed.

SWEETWATER CANYON

Proposed Action - Partial Wilderness - Conflict Resolution (5,760 acres)

Wilderness Values

Designation of Sweetwater Canyon as wilderness would have both short- and long-term beneficial impacts to the wilderness resource. This alternative would protect the wilderness resources (5,760 acres) of the WSA.

As a result of limiting vehicular use and mineral development, there would be long-term benefits to Sweetwater Canyon, including the preservation of wild and scenic river values and opportunities for high-quality recreation and solitude in a nonalpine setting. These opportunities include stream fishing for brown and rainbow trout; hunting for mule deer, sage grouse, and antelope; backpacking and a host of related activities (photography, hiking, camping, sightseeing, nature study); and the opportunity to enjoy the solitude and tranquility of a peaceful river canyon. Approximately 1,500 visitor days-use are expected to occur annually in the short term. Long-term use would increase or decrease, depending on local or regional population trends and with the national popularity of using wilderness areas. (If interest in wilderness increased substantially, the visitor use data from Sweetwater Canyon would probably reflect that.)

A wilderness designation would restrict mineral development, ORV use, and facility construction and, thus provide protection for the Oregon/ Mormon Pioneer National Historic Trails' corridor along the north side of the WSA. Protective restrictions on development and surface disturbing activities would preserve the area in a natural condition for persons interested in National Historic Trail trekking. It would enhance the experience of traveling near the Rocky Ridges/ Lewiston Lakes segment of the trail.

It is not known whether any of the mining claims in Sweetwater Canyon have valid existing rights. If so, they could be developed, and that would limit the ability to manage the area for the protection of wilderness values. However, the likelihood of development, based on the expected economic return, is low.

Ecological Diversity in the NWPS would be enhanced by adding Sweetwater Canyon to the system.

That portion of the WSA not designated as wilderness would be released and returned to normal management with resultant public uses.

Conclusion: Wilderness designation would ensure long-term protection of the wilderness values in Sweetwater Canyon, except where valid existing rights on mining claims occurred. Development would probably not occur.

Recreational Resources

Wilderness designation would enhance long-term opportunities for high-quality, unconfined recreation. Resource values receiving at least some protection would include trout fishing, canoeing, hunting, sightseeing, hiking, backpacking, and nature study. These activities would be protected and enhanced because a wilderness designation would prohibit certain activities that could degrade or displace them. A wilderness designation would allocate Sweetwater Canyon almost exclusively to primitive recreational uses.

Designation would close 1½ miles of vehicle roads leading to the edge of the canyon. These are located at Strawberry Creek, Lewiston Lakes, and near Radium Springs. Closing the roads would require visitors to walk greater distances to the river or to go to different access points such as Chimney Creek or Wilson Bar. This could discourage some recreationists, causing them to go elsewhere on the Sweetwater or to choose other recreational opportunities. This could affect as much as 10 percent of current users, or 150 visitor days annually. If overuse occurred in specific areas, retrictions on amount of use would be enacted that would protect the resource. These restrictions would inconvenience some recreationists.

A wilderness designation would eliminate off-road vehicle problems by excluding motor vehicles from a portion of the WSA.

Conclusion: The overall effect of this alternative would be that it would preserve existing primitive recreational uses.

Livestock Grazing

The only effect on livestock grazing from this alternative would be as a result of restrictions on motor vehicle use. Since the WSA is not used as winter range for sheep and cattle, this restriction would not be hazardous, and the risk of weather-related loss of livestock would be minimal. Herding and gathering livestock would be a little more time consuming without motor vehicle access to the river at Strawberry Creek. The present AUMs of use would continue to be allowed.

Livestock grazing in the remainder of the WSA would not change. Much of the WSA, such as the canyon walls, are unsuitable for grazing because of the rough, rocky and steep terrain (see Affected Environment).

Conclusion: Under this alternative, livestock grazing would remain basically the same as it is today. The restriction on motor vehicle access would have little effect on livestock management.

Geology and Mineral Development

Under this alternative, the minerals in lands in that portion of the WSA designated as wilderness would be withdrawn from all forms of appropriation under the mining and mineral leasing laws. Therefore, no new mineral leases would be issued. However, mining claims could be located until Congress acts on the WSA. Valid existing rights associated with mining claims would be honored.

Mining claims located or discovered before the passage of FLPMA constitute a valid existing right, which would allow development regardless of whether the development would impair wilderness character. For claims located or discovered after October 21, 1976, only exploration that does not impair wilderness character would be allowed, thereby possibly limiting new discoveries. However, if a discovery were made before actual designation as wilderness, the claimant would have a right to patent, and there would be no negative effect to mineral development on those areas. After designation as wilderness, the lands would no longer be subject to appropriation under the mining laws, which could result in mineral values not being discovered or developed. It is not known whether there were any discoveries as of October 21, 1976.

(See the Affected Environment section, Mineralization, for a mining claim abstract.) Lode and placer claims are located in sections 3 and 4, T. 28 N., R. 98 W., 6th P.M., and placer claims are located all along the Sweetwater River and Strawberry Creek (see map 3). It is not known whether there are any valid discoveries on these claims.

Oil and gas leases issued before the passage of FLPMA, October 21, 1976, constitute valid existing rights, and development would be allowed whether or not the area was designated wilderness. However, there are no leases in this WSA that were issued before that date. All but approximately 490 acres is leased for oil and gas. All of the leased area would be available for oil and gas development but would be restricted by the Wilderness Protection Stipulation (see Appendix 2).

Withdrawal from the mining and mineral leasing laws and from development of salable minerals would result in a negative impact by precluding future development.

Study of the WSA for mineral potential and deposits would not be allowed, except for aerial surveys and nonimpairing ground surveys conducted according to an approved plan. Washington Office Instruction Memorandum 84-381 further details the types of permitted studies (see Appendix 4).

Conclusion: Any valid existing rights associated with mining claims would be honored. Future development would be precluded on areas withdrawn from mining location and mineral development. Only nonimpairing scientific studies would be allowed; therefore opportunity for discovery would be reduced. Overall, there would be an adverse impact on mineral development.

Wildlife

Under this alternative, a natural distribution, number and interaction of indigenous wildlife species would be achieved. Natural processes would be allowed to occur in wilderness ecosystems, which includes fish and wildlife populations, as much as possible without human influences. The Wyoming Game and Fish Department (WGFD) would maintain management objectives for big game species.

Habitat

The wilderness management plan would include specific measures to protect important wildlife habitat. The small stands of limber pine lodgepole pine, and aspen, as well as the riparian vegetation, would not be used or altered by human influences, and a positive impact on habitat would result. Natural processes such as flooding or fires would not significantly affect wildlife use of the canyon. Flooding might actually stimulate cottonwood regeneration and fires would promote aspen suckering.

Wilderness designation would ensure the long-term protection of important wildlife habitat by not allowing any new roads, utility corridors, oil and gas exploration, or ORV use. If the existing placer claims were mined, the riparian habitat along the entire river would be adversely affected.

Big Game

This alternative would ensure the long-term protection of habitat in the canyon for use by moose, elk, mule deer, and antelope. Exclusion of activities such as road building and oil and gas development would minimize disturbance to big game and their habitat. The motorized equipment restrictions would prohibit snowmobiles from entering the canyon and possibly disturbing moose and elk in the winter.

Although human activities (backpacking, hiking, photography) might initially increase in the WSA, the increase is not expected to be large or to occur during the winter when moose and elk use is concentrated in the area.

Vehicular access into the canyon would be closed in three places, but this would not significantly affect hunter access and big game harvest. The overall result would be a positive effect on herd population.

Small Game and Game Birds

Habitat diversity would not decline under this alternative; therefore, populations of small game and game birds would be positively affected. Protection of riparian habitat from mineral development would provide important nesting and brood-rearing habitat for water fowl. Chuckar partridge, blue grouse and sage grouse would continue to inhabit the sagebrush and shrubs along the sides of the canyon.

Furbearers

Wilderness designation would protect the beaver complexes from disturbance caused by mineral development. Other furbearers would not be significantly affected.

Nongame

There would be positive impacts to nongame wildlife since the diverse vegetative mosaic would not be disturbed by mineral development under this alternative.

Threatened and Endangered Species

Wilderness designation would not have any significant effects on bald eagles, peregrine falcons, or black-footed ferrets. A detailed analysis of potential effects on endangered species will be presented in the biological assessment (BLM 1985).

That portion of the WSA not designated as wilderness would be open to mineral development and other surface disturbing activities.

Conclusion: Restrictions on ORV use, road building and mineral development would benefit wildlife by reducing habitat disturbance and by providing a secure area for moose and elk during the winter.

Fisheries

The current management concept in the Sweetwater Canyon section of the river is to provide fishermen with the opportunity to harvest trout, "wild" or stocked (basic yield management concept). After wilderness designation, the Wyoming Game and Fish Department's fisheries management concept for Sweetwater Canyon would probably be changed to one of providing fishermen with the opportunity to catch trout from a fishery supported by natural reproduction (wild trout management concept). Supplemental stocking would not be an option as it would under the basic yield concept.

Increased harvest could reduce the quality of the fishery, perhaps to the point of requiring special fishing regulations or restrictions. Opportunities to harvest trout might eventually be restricted. The fishery would need to be closely monitored by WGFD under this alternative. However, routine inventory by WGFD, using "fish shockers", would be restricted and would require coordination with BLM.

Trout habitat preservation and improvement would be emphasized. Localized habitat improvements designed to be consistent with maintenance of wilderness values would be undertaken (for example, small dams constructed of natural material used to create more pool area). Chances of habitat damage as a result of gold dredging or placer mining would be minimized under this alternative. Water diversion and storage in Sweetwater Canyon has been proposed in the recent part. Wilderness designation would eliminate this danger to the river fishery.

Conclusion: The 10 miles of the Sweetwater River in the canyon would receive maximum protection from habitat damage and would remain a stream fishery. The opportunity to catch "wild" trout would be preserved, and habitat in localized areas would be improved. The overall impacts would be positive.

Socioeconomics

There are a number of socioeconomic benefits that would be preserved from designation of the WSA as wilderness: public recreation, commercial recreation, indirect recreation (reading, viewing pictures, etc.), and education. Other values include: therapeutic, personal development, "bequest values," and existence of option values (Hendee, et al. 1978).

Commodity Uses: Several different types of commodity uses are allowed in wilderness. Two examples are livestock grazing and mining, both under limited circumstances. (For more information on the effects of wilderness on mineral development see the Geology and Mineralization section.)

Locally, the agricultural sector would be little affected by a wilderness designation. Impacts would probably not occur. First, a wilderness designation would not affect the livestock operator's AUMs, nor would it eliminate livestock grazing from the area. Both the congressional intent and the BLM Wilderness Management Policy are clear on this point.

Locally, loan officers at commercial banks indicated that short-term operating loans would not be affected by wilderness designation. Local commercial banks do not make long-term real estate loans. The Production Credit Association in the area also made short-term operating loans and did not believe that designation would affect these loans.

Problems of litter or vandalism probably would not significantly increase. For example, in spite of very heavy use and an international reputation, the problems of litter and vandalism in Wyoming's Bridger Wilderness area are relatively minor. Any problems involving litter and vandalism in the Sweetwater Canyon would most likely occur whether or not the area were designated as wilderness (Appendix 5). Gold mining would be restricted, but the potential for development is low. Therefore, the impact would be minimal. The area not designated wilderness would be opened to development and surface disturbance.

Conclusion: Designating Sweetwater Canyon as wilderness would have few socioeconomic impacts. Any impacts to the local economy would be in the form of some increases in operating costs to gold miners who have claims in the canyon.

Cultural Resources

Under this alternative, the management objectives for Sweetwater Canyon would be oriented toward preserving cultural and other resource values. The environmental consequences of this alternative on cultural resources generally would be beneficial because the alternative would: 1) not allow surface disturbances (other than existing valid claim activities) by man in the WSA; 2) maintain the slow rate of natural erosion in the area; and 3) maintain the original historical and natural character of the area.

The lack of man-made surface disturbances in the area would benefit cultural resources. Impacts from mining, oil and gas exploration, road construction, etc., would be avoided, unless valid rights existed (see Appendix I, page 26). Cultural resources would be largely preserved in place rather than salvaged or destroyed. Vandalism to local sites, because of increased development activity, would be avoided. Disruption of the Sweetwater River channel and the possibility of flood damage on low-lying cultural sites would be minimized. Vehiclular traffic would be prevented in the canyon portion of the WSA, which would minimize damage to cultural resources, especially the Oregon/Mormon Pioneer National Trail.

Introduction of surface disturbing activites in the portion of the area outside the wilderness recommendation would result in a change in erosion rates and could cause adverse effects on some cultural resources. These effects could include damage to the Oregon/Mormon Pioneer Trail and displacement of prehistoric remains.

Maintaining the area's original historical and natural character would be beneficial to cultural resources. Lack of man-made developments and disturbances contribute to the area's historical setting, which is necessary to the continued appreciation of several sites. For example, much of the importance of the Oregon/Mormon Pioneer Trail in this area is derived from the pristine character of the trail and its surroundings. Maintenance of the original natural setting would also benefit the sense of history found at the 1824 Aspen Grove campsite (see Affected Environment for a description of this site). The natural setting is an important aspect of the site's integrity because it enables the visitor to experience the canyon as the early trappers did. Maintaining the natural setting of the prehistoric sites would allow visitors to see the area much as the earliest inhabitants saw it.

Conclusion: The cumulative environmental consequences of wilderness designation for Sweetwater Canyon would be beneficial to the area's cultural resources. Although increased visitor use could cause an increase in impacts on cultural resources, no large increase would be expected. The beneficial effects of this alternative outweigh the possible adverse effects of increased use. The prevention of most surface disturbances would ensure that cultural resources would not be directly affected. Erosion rates would remain at the present low levels, which would not affect most cultural resources in the WSA. The area's historical and natural character would be preserved, which would in turn preserve the historical associations of the varied cultural sites in the WSA.

The 3,300 acres that are not proposed for wilderness designation would be released from the restrictions of interim management and managed under the same provisions as Alternative 1, No Action, Continuation of Present Management.

There is no mineral activity at this time. Oil and gas potential is low to none, and locatable minerals, while occurring in the area, do not appear to have great value. It is not expected that large scale mineral development will occur. There is minimal withdrawal along part of the Oregon/Mormon Pioneer Trail. ORV restriction will be in effect in the area.

The overall impacts to the area are not expected to be significant. Little change from current conditions is expected.

Alternative 1 - No Action - Continuation of Present Management

Wilderness Values

Under this alternative there would be no specific management to protect wilderness. Development of commodities could occur under the existing laws or regulations. Since protection of wilderness values would not be a management objective under this alternative, those values could suffer long-term adverse impacts. Primitive recreational opportunities could be displaced by mining or future water developments. Placer claims cover the river and damming of the Sweetwater Canyon has been proposed. Opportunities for solitude would be adversely impacted by multiple-use resource management and development. Existing laws and regulations would not be sufficient to protect some of the unique features such as cultural sites, trout fishery, or primitive recreation and solitude because of mineral exploration and development. However, there is no potential for oil and gas and the possibility of extensive mining is tenuous at best.

Ecological Diversity: There would be no increase in diversity in the NWPS under this alternative.

Conclusion: Implementation of this alternative would have detrimental effects in the long term, if mineral development such as placer mining occurred.

Recreational Resources

Under this alternative, the quality and volume of use would remain largely unchanged in the short term. The volume of recreational use would be a reflection of local population trends. If population in the area were to increase, recreational use of Sweetwater Canyon would increase.

In the long term, wilderness related recreation could be severely impacted. Additional access roads would be developed into the canyon or could be created through off-road vehicle travel. Development of water resources or mineral exploration could alter or displace existing forms of recreation. Water diversion and damming of the Sweetwater Canyon could occur.

The net result of all activity over the long term could be that the wild character of the canyon and the predominately nonmotorized recreational opportunities could gradually be replaced by motorized recreation. Existing laws and regulations would not protect existing recreational opportunities. On the other hand, visitor use could increase with more vehicular access. For those persons who rely on vehicular access, the impact would be positive.

Conclusion: Implementation of this alternative would have detrimental effects on the quality of recreation in the long term. However, the quantity of the use would not be restricted by exclusion of motorized vehicles.

Livestock Grazing

There would be no change from the current situation in class and number of livestock or season of use. Livestock grazing would be managed as outlined in the Green Mountain Range Program Summary (see Affected Environment).

Geology and Mineral Development

Under this alternative, mineral leasing would occur in the area and development would be allowed on both existing and future mineral leases, subject to standard operating procedures (see Lander RMP, Oil and Gas section). The area would be subject to the mining laws, and both location and development of locatable minerals would be allowed.

The likelihood of mineral development ranges from moderate for placer and lode gold and uranium, to low potential for other mineral resources.

Conclusion: There would be no impacts on mineral resources under this alternative.

Wildlife

Habitat

Under this alternative, the long-term protection of the important wildlife habitat is not ensured. Building of new roads, oil and gas exploration, and mineral exploration would disturb wildlife habitat. The amount of habitat disturbance associated with oil and gas exploration would probably not be significant since the oil and gas potential is low. Major disturbances to the riparian vegetation would occur, if the existing placer claims were developed.

Big Game

During the winter, moose and elk could be displaced if human activities such as oil and gas exploration, snowmobiling, and road building were permitted. These animals might move to adjacent areas, possibly causing damage, such as eating hay, to private property. Moose habitat would be significantly disturbed if the existing placer claims were developed, but mule deer and antelope habitat would not be significantly affected. Big game habitat improvements such as prescribed burns and aspen treatments would be a low priority, since an HMP has not been written. Hunter access would remain open on three roads leading into the canyon, making it easier to harvest mule deer.

Small Game and Game Birds

Game birds (i.e., chuckar partridge, blue grouse, and sage grouse) that primarily use the canyon slopes would not be significantly affected by habitat disturbances associated with new road building, mineral development, and ORV use. However, waterfowl nesting and brood-rearing habitat could be adversely affected if the placer claims along the river were developed.

Furbearers

Beaver habitat could be severely altered if the placer claims were developed.

Nongame

Habitat disturbances associated with new roads, mineral development, and ORV use might cause localized shifts in nongame populations. However, no significant population declines would occur. Powerlines would be designed to alleviate raptor electrocutions, and raptor nests would be protected with a buffer zone and seasonal stipulation.

Threatened and Endangered Species

Since endangered species use of the WSA is limited to occasional resting or feeding by peregrine falcons and bald eagles during migration, no adverse impacts would occur.

Conclusion: Habitat disturbance associated with new roads, pipelines, oil and gas development, and ORV use would not significantly affect wildlife populations. Development of the placer claims, however, could adversely affect moose, beavers, game fish, and waterfowl. Mineral

development could displace 50-60 moose and 50-200 elk to adjacent areas during the winter, possibly resulting in damage to private property. However, since large scale mineral development seems unlikely, no significant impacts are anticipated.

Fisheries

The basic yield management concept would remain unchanged (see Proposed Action). Supplemental stocking of trout would be the most probable response to overfishing. Fishing pressure would change, mainly in response to changes in regional population. The fishery would not be as closely monitored by the WGFD as it would be in the Proposed Action, so changes would not be detected as rapidly.

The chances of degrading the habitat would be highest under this alternative since water projects would be considered and mining would be governed under less stringent regulations. The amount and degree of impacts from mining or water projects under this alternative are not known. The entire floodplain in Sweetwater Canyon is covered by placer mine claims. Transbasin diversion and storage in Sweetwater Canyon has been proposed in the past.

Conclusion: In the best case, there would be no adverse impact. The Sweetwater Canyon section of the river would remain in a stable, slightly degraded state and continue to provide a fishery based mainly on natural reproduction. Habitat would not improve. Additional habitat impacts because of mining, or loss of the stream fishery because of a dam, would be possibilities under this alternative. Compared to the All Wilderness Alternative and Proposed Action, options for fisheries management and preservation would be more limited, and the potential for loss or damage to the fisheries would be greater under this alternative.

Socioeconomics

No noticeable change in the regional or local socioeconomic conditions would be expected under this alternative.

Cultural Resources

Under the No Action Alternative, the Sweetwater Canyon would be managed under existing multiple-use framework plans, which provide few restrictions on all uses.

Mining operations in the WSA could affect cultural resources. For small scale operations (the most likely ones), the 43 CFR 3809 Regulations (Surface Management of the Public Lands) and the U.S. Mining Laws give BLM only limited authority to protect cultural resources, even those that qualify for or are listed on the National Register of Historic Places. Without any mitigative measures, cultural resources such as the Oregon/Mormon National Historic Trail could be directly affected by small-scale mining operations. Large-scale mining operations do allow for more cultural resource protection under BLM's surface regulations, but even nationally significant resources such as the Oregon/Mormon Pioneer Trail could eventually be adversely affected by these operations. Indirect impacts of mining operations in the Sweetwater River channel could increase erosion and flood levels in the floodplain and destroy the floodplain-level sites. Effects to cultural resources in the area could include disruption of the Aspen Grove Site and displacement of prehistoric remains. The likelihood of extensive mining activities is small.

Conclusion: The overall effects of the No Action, Continuation of Present Management Alternative, would be somewhat detrimental to cultural resources if mineral development took place, except where additional inventories add knowledge.

Alternative 2 - Wilderness Designation (9,056 acres)

Designation of the entire WSA as wilderness would have the same impacts as the Proposed Action, except that about 4,000 additional acres would be involved.

Wilderness values would be protected from the effects on mineral development. Recreational resources would benefit in quality. Users of motorized vehicles and livestock grazing management would be adversely affected since more roads would be closed. Mineral exploration and development would be restricted in more acreage. Wildlife would have more habitat protected and would be subjected to less human disturbance. Fisheries would be affected the same as under the Proposed Action. Socioeconomics would remain the same as the in Proposed Action. Cultural resources would receive protection over a greater area.

Alternative 3 - Implementation of Existing Management Proposal

Wilderness Values

A wilderness designation would virtually exclude all activities that could impair wilderness values. Furthermore, this designation could only be changed through congressional action. This is not the case with an Area of Critical Environmental Concern (ACEC) designation, however. Such a designation would not necessarily prevent all activities that do not conform to the concept of preservation of the wilderness values. For example, the mining claims that had valid, existing rights could be developed because the proposed withdrawal would only preclude location of new mining claims. In addition, the area outside the ACEC would be managed under multiple use and wilderness values would not be emphasized.

Conclusion: There could be adverse impacts to the wilderness values under this alternative because an ACEC designation would not necessarily protect all wilderness values.

Recreational Resources

The impacts would be the same as those outlined in the Partial Wilderness Alternative, except motorized access would be allowed. Opportunities for solitude and wilderness type recreation would be reduced because of vehicles.

Livestock Grazing

There would be minimal effects on the current situation (see Affected Environment). Very little motorized equipment would be used; generators used for camp trailers during roundups would not be allowed in the ACEC.

Geology and Mineral Development

If existing mining claims contained valid discoveries, development would be allowed. Validity examinations would be conducted on all claims not relinquished, and if they contained no discoveries, the claims would be determined invalid. No further exploration would be allowed.

Oil and gas would be leased subject to no-surface-occupancy stipulations. Development, at increased cost, could take place on the lands involved.

Conclusion: If this alternative were adopted, there would be adverse impacts to a small segment of the mineral industry that wants to placer mine for gold in the ACEC. An exception occurs where claims have valid existing rights. The magnitude of the impact is unknown. The remainder of the WSA would be open to mineral exploration and development and therefore unaffected.

Wildlife

Habitat

Under this alternative, the important willow and riparian habitat would be protected from major disturbances. Some aspen pockets, conifer stands, and shrubs occurring outside the ACEC boundary might be disturbed during road building, mineral development, and ORV use.

Big game

A primary objective of the ACEC would be to protect the willow and riparian habitat that is important to the 50-60 moose that winter in the canyon. Much of the antelope habitat and some of the mule deer habitat would remain outside the ACEC boundary and would not receive the same protection. Disturbance to the big game habitat outside the ACEC boundary would not be significant.

The area would continue to be a safe winter refuge for moose and elk because winter recreational use would remain low. Habitat improvement projects such as prescribed burns, aspen and willow treatments, fencing, and spring developments would be beneficial to all wildlife.

Small Game and Game Birds

Disturbance to small game and game bird habitat would not be significant. Important waterfowl habitat along the Sweetwater River would be protected.

Furbearers

The beaver dams and lodges along the Sweetwater River would receive special management considerations to ensure that the beaver population remained stable. However, beaver habitat in the tributaries outside the ACEC boundary might be disturbed during road building, mineral development, and QRV use.

Nongame

No significant adverse impacts would occur to nongame wildlife.

Threatened and Endangered Species

Since there would be no increased disturbance or habitat destruction, no adverse impacts would occur to endangered species.

Conclusion: The ACEC designation would protect the willow and riparian habitat important to moose, beavers, and waterfowl, at least for the short term. The ACEC designation is not as permanent as a wilderness designation, and management priorities might change to favor mineral development over habitat protection. The ACEC activity plan would allow greater flexibility in the implementation of habitat improvement projects. The area outside the ACEC would be subject to mineral development and possible disturbance to big game animals.

Fisheries

Consequences to the fishery are similar to those in the Proposed Action. However, there would be less restriction on the manner in which habitat could be improved under this alternative. Habitat modifications that are highly visible could be constructed. Protection from potential habitat damage under this alternative is the same as the Proposed Action.

Conclusion: Compared to the Proposed Action, this alternative would allow more control and flexibility in managing use, habitat, and trout populations in the canyon. Some habitat improvement would occur, although perhaps less rapidly than compared to the Proposed Action, since wilderness areas would probably receive higher priority for funding than an ACEC.

Socioeconomics

As an ACEC, many of the scenic, aesthetic, and social values would be retained; however, wilderness values would not accrue to the area. Effects to livestock operators, hunters, and recreationists would be negligible. Mining claimants might be affected if validity determinations proved the existence of uneconomical quantities of a commodity. The withdrawal would preclude location of new mining claims, which would restrict development to some extent. Development on existing claims could occur if there are valid discoveries.

Cultural Resources

Under this alternative, the management objectives for Sweetwater Canyon would be to preserve the natural and historical values of the canyon, but in a less restrictive manner than the Proposed Action. The environmental consequences of this alternative on cultural resources would be somewhat beneficial. There would be a minimum of surface disturbing activities and erosion, the natural character of the area would be retained, and a complete cultural resource inventory and evaluation of the area's resources would be encouraged. These beneficial effects could be nearly offset, however, by possible impacts to resources outside of the ACEC area. These impacts would include mining operations, oil and gas exploration, utility rights-of-way developments, and probably increased collection and vandalism of cultural sites.

The area within the proposed ACEC would be managed for minimal surface disturbance, and this would be beneficial. Utility rights-of-way would not be allowed, enabling preservation of cultural resources rather than salvage or destruction. Mining and oil and gas operations (other than valid existing right holdings) would also be avoided, preserving cultural resources. Vehicle use would be retricted to existing trails, which would help avoid disruption of sites. BLM developments in the ACEC would be confined to low-impact foot trails, limited interpretive signs, minor sanitary facilities, small wildlife habitat improvements, and minor range improvements. All of these developments would be designed to protect the cultural and natural resources of the canyon, thus preserving the original historical and natural character of the canyon. All of these measures would help to maintain the present low levels of erosion in the canyon, which would especially benefit the resources along the river floodplain in the proposed ACEC.

Inventories and evaluation of the proposed ACEC area would be beneficial for cultural resources: management of the area would be enhanced by detailed knowledge of the resources present; proposed developments and actions would be better planned to preserve the cultural and natural values of the canyon; and ongoing impacts to cultural resources could be better monitored, and if necessary, mitigated.

Impacts to the WSA outside of the ACEC would be the same as under the No Action Alternative.

Conclusion: The cumulative effect of this alternative would be somewhat benefical. The proposed ACEC would be protected. The most

significant resource outside the canyon, the Oregon/Mormon Pioneer Trail, would be open to impacts from mining on the nonwithdrawn portions, and impacts from oil and gas and rights-of-way developments could occur in the general area, although the no-surface-occupancy corridor around the trail would prevent most direct impacts. However, protecting the ACEC does lend a degree of protection to the general area, and this would be benefical to most cultural resources in the area.

Cummulative Impacts Discussion:

It would not appear that significant differences in environmental consequences exist between the alternatives proposed for this WSA. The major differences are in those alternatives where vehicle use is restricted. More of the resource values (with the exception of livestock management and certain types of recreation) are protected. Also, in those alternatives where wilderness designation is not recommended, there is a greater chance that adverse impacts could occur at some point in the future, although it is not very evident at this point in time. The more significant resource values (including wilderness) are located in the core area of the canyon and are not very accessible by vehicles for tending livestock, and on which mineral values would not appear very high. Also vehicle oriented recreation is not significant.

SWEETWATER ROCKS COMPLEX

Because of the similarity of the physical and biological features of the four WSAs, the management actions stated in the Proposed Action and alternatives will produce the same results throughout, except for one proposal of land acquisition and a mineral withdrawal in Unit 122 (Split Rock). Therefore, the environmental consequences will be applicable to all units, and they will be referred to as the Sweetwater Rocks Complex.

Proposed Action - No Action - Continuation of Present Management

Wilderness Values

Under this alternative, the Sweetwater Rocks Complex would not be managed to preserve wilderness values. If commodity development occurred, the wilderness values would be impaired by roads, rights-of-way, mines, etc. The Sweetwater Rocks' landmarks (Split Rock, Great Stone Face, and Lankin Dome) would not be preserved in perpetuity. Cultural sites and wildlife resources could be displaced by development and other land uses. There would be no added diversity to the NWPS. However, the probability of development occurring would be low. Therefore, wilderness values would probably remain as they now exist.

Ecological Diversity. There would be no contribution to the ecological diversity of the NWPS under this alternative.

There is a great deal of designated wilderness within 250 miles (a day's drive) of the Sweetwater Rocks and within 250 miles of the nearest major population centers. The state of Wyoming presently has in excess of 3 million acres of designated wilderness in 14 areas. The Sweetwater Rocks do have a long-use season and are accessible for a much greater part of the year than most of Wyoming's existing wilderness.

Conclusion: In the long-term, although protection is not assured, implementation of this alternative would have few adverse effects on wilderness values.

Recreational Resources

Recreational use would not change in the short term, unless the local population increased. If uranium mining were to resume, there would be a local increase in population. In that event, there would be increased recreational pressure on the Sweetwater Rocks. In the long term, if commodity development occurred, the primitive-type recreation could be degraded in quality or displaced by recreation dependent on motor vehicles.

Livestock Grazing

There would be no change in the current situation. Livestock grazing would be managed as listed in the Affected Environment section.

Geology and Mineral Development

Under this alternative, mineral leasing would occur in this area and development would be allowed on both existing and future mineral leases, subject to normal surface management considerations. The area would be subject to the mining law, and both location and development of locatable minerals would be allowed. The

likelihood of mineral development ranges from moderate for uranium and jade to low for other mineral resources, including oil and gas.

Conclusion: There would be no impact on mineral resources under this alternative. There will probably be little increase in mineral exploration and development.

Wildlife

Habitat

Under this alternative, habitat disturbance from mineral exploration, various types of rights-of-way, and oil and gas development could occur. The mineral potential is low, and future mineral demands are uncertain; therefore, the extent of mineral activity and its effect on wildlife habitat cannot be quantified. However, the effect would probably be minimal.

Big Game

The worst case, under this alternative, would be extensive mineral activity over the entire WSA, causing mule deer to be displaced to other ranges and long-term disruption of habitat. The area would become unsuitable for bighorn sheep because of the large amount of human activity and the loss of important bighorn habitat (i.e., escape areas and lambing areas). Antelope would not be significantly affected since the adjacent sagebrush mixed grass habitat has been used more extensively than the rocklands.

From a wildlife viewpoint, the best case under this alternative would be that additional mineral information would prove that the WSA has low potential. No additional mineral exploration and development would occur; consequently, no wildlife habitat would be disturbed.

The most probable future situation would be something between these two extremes, probably closer to the best case. There would probably be little change, however, from the present situation.

Small Game and Game Birds

There would be no change.

Nongame

Raptor nest sites would be protected with a buffer zone and seasonal stipulation to reduce disturbance during the nesting season.

Threatened and Endangered Species

Before any major surface disturbance, the area should be surveyed for raptor nests, including potential peregrine nesting sites. Any nesting sites would be protected with a buffer zone and seasonal stipulation. No impacts to endangered species are anticipated.

Conclusion: The significance of the habitat loss and wildlife displacement would depend on the extent and duration of mineral development. Bighorn sheep would be the most likely species to be adversely affected by this alternative. However, they are not in the Sweetwater Rocks at this time. Because of the low mineral potential, impacts would be minimal under this alternative.

Socioeconomics

If valuable mineral deposits were identified, oil and gas leasing and other mineral-related activities could occur. In general, this alternative would pose little change to the current social and economic situation.

Cultural Resources

Under this alternative, the Sweetwater Rocks would be managed under existing multiple-use framework plans. The environmental consequences of this alternative on individual cultural resources generally would be balanced between beneficial and adverse; the effects on the historical character of the general region would, however, be adverse in some cases.

The potential for oil and gas development is low and few adverse impacts are anticipated. Oil and gas exploration and development would both adversely and beneficially affect specific cultural resources. Increased access and use of the area would result in more collection and vandalism of cultural sites, which would adversely affect the data potential and integrity of some of the area's sites. Salvage of sites to be impacted by oil and gas activities would be beneficial in terms of increasing our understanding of the area's cultural history.

Mining operations could adversely affect cultural resources. For small scale mining operations, the 43 CFR 3809 Regulations (Surface Management of the Public Lands) and the U.S. Mining Laws give BLM only limited authority to protect cultural resources, even those that qualify or are listed on the National Register of Historic Places. Without any mitigative measures, cultural resources could be directly and indirectly

impacted by mining operations. Because mineral potential for mining is considered low, impacts would be about the same as they are now.

Utility rights-of-way developments in the WSA would affect cultural resources in both beneficial and adverse ways. Salvage of specific affected resources would beneficially affect our understanding of the area's cultural history. However, developments could detract from the area's historical and natural setting. Utility developments could intrude on the historical qualities of the Oregon/Mormon Pioneer Trail corridor and the adjacent landmarks. Utility developments would improve access and probably encourage more use.

If recreation use increased, there would probably be adverse impacts on cultural resources from increased collection and vandalism, which would lead to a loss of data potential and integrity on many of the sites.

Conclusion: There would be little change in the cultural resource situation under the Proposed Action.

Alternative - All Wilderness (32,175 acres)

Wilderness Values

Designation of the Sweetwater Rocks as wilderness would have both short- and long-term beneficial impacts to the wilderness resource. Impacts would be considered beneficial because they would provide maximum protection for wilderness values. Protection would be accomplished through prohibition of activities that would impair wilderness values (road building, motorized travel, mining, or the construction of powerlines).

Uses that are permitted in designated wilderness are those that are in harmony with the concept of wilderness; a place where man is a visitor and does not remain, and where the works of man are substantially unnoticeable. Examples of permitted uses include travel by foot, horseback, and other forms of nonmotorized recreation. Activites allowed in designated wilderness areas would not destroy soils and vegetation or otherwise cause surface disturbance. The effect of excluding certain uses from wilderness is to devote the areas exclusively and permanently to recreational, scientific, educational, and historical preservation uses. This constitutes a significant beneficial impact to those values. Thus, long-term benefits would include preserving opportunities for high-quality primitive recreation and solitude in a nonalpine setting. Unique features such as Lankin Dome, Split Rock, and the Great Stone Face would be preserved. Wildlife habitat and numerous prehistoric and historical cultural sites would be protected. The Sweetwater Rocks are a scenic and natural backdrop to the Oregon/Mormon Pioneer National Historic Trails and would be preserved as such.

There are approximately 3,000 visitor days occurring annually. This use consists primarily of hikers and climbers near Split Rock, outdoor education classes in the Miller Pocket and Split Rock area, and hunting for mule deer and antelope in the fall. The use would not significantly increase as a result of wilderness designation but would primarily reflect local population trends. Increases in recreational use attributable to wilderness designation would probably not exceed 10 percent over present levels.

If any of the mining claims in the Sweetwater Rocks prove to have valid existing rights, they could be developed, and that development would impair wilderness values.

Ecological Diversity. This alternative would contribute to ecological diversity of the NWPS by adding a juniper woodland, a Douglas fir forest in the Wyoming basin, and ecosystems not presently represented.

Conclusion: Wilderness designation would provide maximum protection for wilderness values. This would be accomplished by prohibiting activities (other than valid existing mining claims) that would impair wilderness.

Recreational Resources

Wilderness designation would enhance opportunities for primitive, unconfined recreation in a natural setting for activities such as rock climbing, hiking, hunting, backpacking, nature study, and photography. Motor vehicle access to certain parts of the WSA would be eliminated. This would be a negative impact on motorized recreation, but not a major impact. Approximately seven short segments of two-track road (averaging about ½ mile each) would be closed, affecting a total of about 3 miles.

Livestock Grazing

A wilderness designation would not result in the removal or reduction in the number of livestock in the WSA (see Affected Environment). Existing range improvements could be maintained and new

ones could be constructed, as long as they conformed with the Wilderness Management Policy and the management plan written for the area. Properly designed improvements would not impair wilderness values and would benefit livestock grazing. The guidelines in the wilderness policy indicate that Congress intends for livestock grazing to continue as a viable and legitimate use of designated wilderness.

In general, motor vehicle access would only be allowed in emergencies and on special occasions, not for routine feeding, moving, or checking of livestock and maintenance of range improvements. Herding and gathering livestock and maintenance of range improvements would be more time consuming without motor vehicle access. Therefore, the impacts of wilderness designation would be adverse in those parts of the WSA that are normally served by using motor vehicles. These impacts would be long term, but would not represent an irreversible or irretrievable commitment of resources.

Conclusion: Livestock grazing would remain basically the same as it is today.

Geology and Mineral Development

Under this alternative, the minerals in lands designated as wilderness would be withdrawn from all forms of appropriation under the mining and mineral leasing laws. Therefore, no new mineral leases would be issued. Mining claims would be allowed until Congress acts on the WSA. Valid existing rights associated with mining claims and mineral leases would be honored.

Mining claims located or discovered before the passage of FLPMA constitute a valid existing right, which would allow development regardless of whether the development would impair wilderness character. It is not known whether there were any discoveries as of October 21, 1976. For claims located or discovered after October 21, 1976, only exploration that does not impair wilderness character would be allowed. If such a discovery were made before actual designation as wilderness, the claimant would have a right to patent. After designation as wilderness, the lands would no longer be subject to appropriation under the mining laws.

See the Affected Environment section (table 2-9) for a mining claim abstract. It is not known whether there are any discoveries on these claims.

There are presently about 2,614 acres under the post-FLPMA oil and gas leases and about 27,635 acres not leased but presently under application (see table 2-8). None of the area would, therefore, be available for oil and gas development.

Study of the WSA for geology and mineral potential would not be allowed, except for aerial surveys and nonimpairing ground surveys conducted according to an approved plan, since such studies could not degrade the wilderness character of the area.

The area would be withdrawn from the mining and mineral leasing laws and from development of salable minerals. Development would only be allowed on mining claims with valid existing rights. None of the oil and gas leases would be available for development.

Conclusion: There is a potential for adverse impacts to the mineral industry under this alternative, but large-scale mineral development appears unlikely.

Wildlife

Under this alternative, a natural distribution, number and interaction of indigenous wildlife species would be sought. Natural processes would be allowed to occur in wilderness ecosystems, which includes fish and wildlife populations, as much as possible without human influences. The Wyoming Game and Fish Department would maintain management objectives for big game species that would be compatible with wilderness management.

Habitat

Wilderness designation would ensure the long-term protection of this priority standard habitat site, which contains a complex intertwining of rock and vegetation.

Big Game

Under this alternative, mule deer habitat and historical bighorn sheep habitat would be protected from ORV use, oil and gas exploration and mineral development. If bighorns were transplanted into the WSA, sufficient habitat would be protected to allow the herd to survive, and about 3 miles of road near Miller Springs would be closed and unavailable for hunting access. However, no significant effects on mule deer harvest levels would occur because of these closed roads, and population objectives would still be obtainable.

Although human activities (backpacking, hiking, photography) might initially increase in the

WSA, the increase would not cause a significant disturbance or stress to big game.

Small Game and Game Birds

Wilderness designation would protect small game and game bird habitat, which would be beneficial.

Nongame

Under this alternative, habitat diversity would not decline, and suitable habitat for the numerous nongame species would remain undisturbed. The wilderness management plan would direct visitor use, particularly mountain climbing, away from important raptor nesting areas.

Threatened and Endangered Species

Potential nesting sites for peregrine falcons would be protected from disturbance under wilderness designation. No adverse impacts would occur to bald eagles or black-footed ferrets, since their use of the area has not been documented.

Conclusions: Wilderness designation would provide long-term protection of the unique rockland habitat that supports a variety of wildlife species. High-potential habitat for bighorn sheep and peregrine falcons would remain undisturbed.

Socioeconomics

If the Sweetwater Rocks were designated as wilderness, little change would be expected in the regional economy in terms of employment, income, and population. Potential for mining hardrock minerals and recovery of oil and gas is low.

There are a number of socioeconomic benefits that would be preserved from designation of the WSAs as wilderness: public recreation, commercial recreation, indirect recreation (reading, viewing pictures, etc.), and education. Other values include: therapeutic, personal development, "bequest values," and existence of option values (Hendee, et al. 1978).

Commodity Uses

Several different types of commodity uses are allowed in wilderness. Two examples are livestock grazing and mining, under limited circumstances. (For more information on the effects of wilderness on mineral development see the Geology and Mineralization section.)

Locally, the agricultural sector would be little affected by a wilderness designation. In the case of the Sweetwater Rocks, the adverse impacts would probably not occur. First, a wilderness designation would not reduce the livestock operator's AUMs, nor would it eliminate livestock grazing from the area. Both the congressional intent and the BLM Wilderness Management Policy are clear on this point.

Second, the Sweetwater Rocks WSAs are virtually roadless. Livestock operators have access on primitive roads to the boundary and a short distance within the WSA. Present operations involve very little vehiclular use inside the WSA. Therefore, under a wilderness designation it appears that livestock operations would be conducted in virtually the same manner as they are today. Adverse impacts on the livestock operations appear to be minor.

Locally, loan officers at commercial banks indicated that short-term operating loans would not be affected by wilderness designation. Local commercial banks do not make long-term real estate loans. Production Credit Association in the area also made short-term operating loans and did not believe that designation would affect these loans.

Social Impacts

Since wilderness designation would probably not cause a significant increase in visitor use to the area for recreational purposes, it is unlikely that there would be additional problems for livestock operators. Most recreational use would continue to be hunting and related recreational activities. If conflicts between recreational use and other uses such as livestock grazing were to increase in frequency, those increases would occur with or without wilderness designation. In the event that visitor use did increase appreciably, additional problems such as gates being left open or damage to roads during wet periods might occur. In general terms, recreational use has the potential of becoming a nuisance for area ranchers. Recreationists seeking information or permission to cross private lands, littering, or damaging range improvements are an unwelcome burden on ranchers. Large increases in such annoyances could be an obstacle to the smooth day-to-day operation of a ranch unit. Area ranchers fear this occurrence if the Sweetwater Rocks were designated as wilderness. The Sweetwater Rocks WSAs are "islands" of public land largely surrounded by private and state lands. Six private landowners adjoin the four WSA boundaries and numerous residences or ranch

headquarters are in the immediate area. This landownership pattern is illustrated on map 6.

The neighboring private landowners have identified the following social impacts of wilderness designation of the Sweetwater Rocks.

1. Wilderness designation in their "backyards" would adversely affect their lifestyle.
2. Wilderness designation would attract a large number of people to the area and would require additional time and effort to manage the people (e.g. requests for permission to use or cross private lands, controlling trespass, etc.).
3. BLM could not manage the area as wilderness without encouraging or forcing trespass onto their private lands.
4. The area has high natural and wildland values; however, wilderness management would not be the best alternative to select for managing and protecting these values because of the potentially adverse effects of increased use of the area. The values would be protected under the multiple-use alternative just because of the "nature" of the area, i.e., the low potential for any type of development.

However, one of the reasons people travel to wilderness is to spend time in a clean, pristine environment free of litter and other influences of man, not to create those problems. It is impractical to carry canned or bottled goods because of their excessive weight and bulk. Problems of litter or vandalism probably would not increase. For example, in spite of very heavy use and an international reputation, the problems of litter and vandalism in Wyoming's Bridger Wilderness area are relatively minor. Any problems involving litter and vandalism in the Sweetwater Rocks would most likely occur whether or not the area were designated as wilderness (see Appendix 5).

Conclusion: Designating the Sweetwater Rocks as wilderness would have few economic impacts. Any impacts to the local economy would be in the form of slight increases in operating costs to ranch operators grazing livestock on allotments in the designated area. There are, however, certain social impacts of wilderness designation on surrounding private landowners who object to having a wilderness area on their "doorstep."

Cultural Resources

Under the Wilderness Designation Alternative, the management objectives for the Sweetwater Rocks would be oriented toward preservation of cultural and other resource values. The environmental consequences of this alternative on cultural resources generally would be beneficial because the alternative would: 1) prohibit surface disturbances (other than existing valid claim and lease activities) by man, 2) maintain the presently slow rate of natural erosion, and 3) maintain the original historical and natural character within the area.

The lack of man-made surface disturbances would benefit cultural resources. Impacts from mining, oil and gas exploration, road construction, etc., would be avoided, unless valid rights existed. Cultural resources would be largely preserved in place rather than salvaged or destroyed. Vandalism to local sites because of increased development activity would be avoided. Vehiclular traffic would be prevented, thereby helping to minimize disruption of cultural resources, especially to the numerous trappers' cabins in the WSA.

Continuation of the present rate of erosion in the area would also benefit cultural resources. The WSA is experiencing minimal erosion rates and, therefore, most local cultural resources are not being damaged. Introduction of numerous surface disturbing activites would cause a change in erosion rates and could cause adverse effects on some cultural resources. These effects could include damage to significant prehistoric remains.

Maintaining the WSA's original historical and natural character would be beneficial to cultural resources. Lack of man-made developments and disturbances contribute to the area's historical setting, which is necessary to the continued appreciation of several sites in the WSA. For example, much of the significance of the Oregon Trail in this area is derived from the pristine character of the trail and its surroundings. Maintenance of the original natural setting would also benefit the sense of history found at the trappers' cabins. The natural setting is an important aspect of the sites' integrity because it enables the modern visitor to experience the area as the early trappers did. Maintaining the natural setting of the prehistoric sites would allow visitors to see the area much as the earliest inhabitants saw it.

Wilderness designation, however, could have a detrimental effect on cultural resources. If a significant increase in visitor use occurred, collection and/or vandalism of sites could increase. Currently, this problem is not major, but high-use of the area could increase such activity. The resultant loss of artifacts from both prehistoric and historical sites would diminish the data potential and integrity of the sites. Also, the

knowledge of cultural remains in the area would not increase appreciably. Most of the cultural information now obtained is through clearance prior to development projects. Development projects would be minimal in this alternative.

Conclusion: The cumulative environmental consequences of wilderness designation for the Sweetwater Rocks would be beneficial to the area's cultural resources. Although increased visitor use could cause an increase in impacts on cultural resources, the beneficial effects of this alternative outweigh the possible adverse effects of increased use.

Cummulative Impact Assessment:

Regardless of the alternative selected, there is very little difference in the environmental consequences anticipated. This is due to the character of the area and the fact that little mineral potential is known to exist. The major difference is the perceptions held by individuals in the area about what could occur if wilderness designation was made. The wilderness character of the area is not anticipated to change even if the area were not designated.

COPPER MOUNTAIN

Proposed Action - No Action - Continuation of Present Management

Wilderness Values

The potential for oil and gas occurrence is moderate. If requested, commodity development would be allowed in all of the WSA. Although this development would be subject to laws and BLM regulations, there would be no management for wilderness values, and, therefore, the potential for their loss would be high.

Conclusion: This alternative would cause adverse impacts to wilderness values because of oil and gas development.

Recreational Resources

If the oil and gas leases were developed, the resultant roads would provide vehicular access to the area. Recreational use would increase as a result of additional access. Activities such as sightseeing and photography might increase over 50 percent. Hunting levels would probably not increase, since the number of animals taken is regulated by the Wyoming Game and Fish Department, and hunting pressure is largely dependent on quantity and quality of the herd.

The quality of nonmotorized recreation would probably decrease if access were improved and ORV problems increased.

Conclusion: The type of recreation now available would probably be replaced with that associated with motor vehicles.

Livestock Grazing

There would be no change in the current situation (see Affected Environment). Livestock grazing would be managed as currently listed in the Affected Environment.

Geology and Mineral Development

Under this alternative, mineral leasing would occur in this area and development would be allowed on both existing and future mineral leases, subject to normal surface management considerations. The area would be subject to the mining law and both location and development of locatable minerals would be allowed.

The likelihood of mineral development ranges from moderate to high for oil and gas and uranium, to low for other mineral resources.

Conclusion: There would be no impacts on mineral resources under this alternative.

Wildlife

Habitat

Under this alternative, some wildlife habitat would be disturbed by mineral exploration and development, rights-of-way, and other multiple uses. Although current information indicates that oil and gas potential is moderate to high, the extent of future mineral activities and their effect on wildlife habitat cannot be quantified. Spring developments, prescribed burns, and other habitat improvements could be employed to improve wildlife distributions and increase wildlife populations.

Big Game

Standard operating procedures would not allow surface disturbance and mineral activities on the

mule deer crucial winter range during the winter. This stipulation would ensure that mule deer would not be disturbed during the most stressful time of year. Habitat disturbance could occur on the crucial winter range during the spring, summer, and fall, causing a loss of winter habitat.

No stipulations would be enforced on the antelope crucial winter range. Antelope could be displaced to adjacent crucial winter range and some habitat could be lost.

Small Game and Game Birds

Localized shifts in the cottontail rabbit and chukar partridge distributions might occur, but population levels would not be significantly affected.

Nongame

Raptor nesting sites would be protected from habitat disturbances by buffer zones and seasonal stipulations. No significant adverse impacts to nongame wildlife would be anticipated.

Threatened and Endangered Species

No adverse impacts to bald eagles, peregrine falcons or black-footed ferrets would be anticipated.

Conclusion: The extent of habitat disturbance depends on future mineral activities. The potential for extensive disturbance of mule deer crucial winter range would be the major wildlife concern.

Socioeconomics

Oil and gas exploration and development and other energy or mineral-related activities could occur, as market conditions dictated and current stipulations and regulations allowed. However, the eventual loss or reduction in wildlife values or scenic resource values through possible mineral development would constitute an unavoidable adverse impact to the resource users.

Conclusion: In general, this alternative would not result in a significant change to the current overall social and economic situation. However, the moderate to high-potential oil and gas areas would be available for exploration and development.

Cultural Resources

Under the Proposed Action, the Copper Mountain area would be managed under existing multiple-use framework plans. The environmental consequences of this alternative on cultural resources generally would be balanced between beneficial and adverse. Under this alternative, disturbances from oil and gas exploration and development, mineral location and mining activities, and utility rights-of-way would be allowed. Because of increased use, collecting and vandalism activities could occur. However, the majority of these uses would enable scientific study of some of the WSA's cultural resources. Some cultural sites that would be in danger of destruction because of natural forces could be salvaged if development threatened them, providing better understanding of local and regional cultural history that might otherwise be lost.

Oil and gas exploration and development in the WSA would both benefit and adversely affect cultural resources. Activities would disturb cultural resources, but significant resources would be studied through scientific means before disturbances would be allowed. In most cases, the studies would adequately mitigate the disturbance to the sites.

Mining operations in the WSA would also have the potential for both beneficial and adverse impacts on cultural resources. For small scale mining operations, the 43 CFR 3809 Regulations (Surface Management of the Public Lands) and the U.S. Mining Laws give BLM only limited authority to protect cultural resources, even those that qualify for or are listed on the National Register of Historic Places. Large-scale mining operations, on the other hand, would allow for scientific data recovery prior to surface disturbing activities. In most cases recovery of these data would negate the adverse effects of mining.

Utility rights-of-way developments in the WSA would both benefit and adversely affect cultural resources. These developments would disturb cultural resources, but in most cases, required scientific data recovery on significant sites would negate the disturbances. These uses would improve access into the WSA and probably encourage heavier use.

Increased use of the WSA would probably cause adverse impacts on cultural resources from increased collection and vandalism, which would cause a loss of data potential and integrity on some of the WSA's sites.

Conclusion: The overall effects of the No Action, Continuation of Present Management Alternative, would be detrimental if cultural objects were lost and beneficial if knowledge of cultural resources were enchanced through mitigation. Activities and development allowed

under this alternative could directly and indirectly affect cultural resources, but in most cases, studies would be required to mitigate impacts from the activities. Therefore, the effects appear to balance each other under this alternative.

Alternative - Wilderness Designation (6,858 acres)

Wilderness Values

Designation of the Copper Mountain WSA as wilderness would have both shortand long-term beneficial impacts to the wilderness resource. Impacts from this alternative would be beneficial because they would protect wilderness resources.

Uses that are permitted in designated wilderness are those that are in harmony with the concept of wilderness (a place where man is a visitor and does not remain, and where the works of man are substantially unnoticeable). Examples of permitted uses include travel by foot, horseback or other forms of nonmotorized recreation. Activities allowed in designated wilderness areas would not destroy soils and vegetation or otherwise cause surface disturbance. Long-term benefits would include preserving opportunities for high-quality primitive recreation and solitude in a nonalpine setting. These opportunities primarily include hunting for mule deer and related activities, hiking, camping, and sightseeing.

Since Copper Mountain has a moderate potential for the existence of oil and gas, there is a strong possibility that development would occur. However, the leases in Copper Mountain contain the wilderness protection stipulation (see Appendix 2), which would protect wilderness values.

There are no records of visitor use in the area, but because the area has no outstanding features such as fishing or unique geological formations, the use would not be expected to increase. There could be an initial surge of wilderness visitors, but it would probably be less than a 10 percent increase, and that increase would lessen in the long term (see Appendix 5).

Including Copper Mountain in the NWPS would add diversity be representing a new ecosystem (sagebrush - juniper woodland) in an arid mountain setting.

Conclusion: Wilderness designation would have favorable impacts on the wilderness values of the area because of the protection afforded from limiting mineral development.

Recreational Resources

Recreational use would continue to consist primarily of mule deer hunting in October, and would be preserved in the long term. The number of hunters would remain about the same (150 estimated hunter days), and would be determined by the quantity and quality of mule deer in the area.

Conclusion: Wilderness designation would have minimal impact on recreational numbers and patterns, but would preserve the opportunities in the long term. Motorized recreation would continue to be available along the boundary.

Livestock Grazing

A wilderness designation would not result in a change in the number or class of livestock or season of use in the area (see Affected Environment). Existing range improvements could be maintained and new ones could be constructed as long as they conformed with the Wilderness Management Policy and the management plan written for the area. Properly designed improvements would not impair wilderness values and would benefit livestock grazing. The wilderness policy guidelines indicate that Congress intends for livestock grazing to continue as a viable and legitimate use of designated wilderness.

Since there are no roads in the WSA, the exclusion of motorized vehicles would have no effect.

Conclusion: Under this alternative, livestock grazing would remain basically the same as it is today.

Geology and Mineral Development

The minerals in lands designated as wilderness would be withdrawn from all forms of appropriation under the mining and mineral leasing laws. Therefore, no new mineral leases would be issued and no mining claims would be allowed after Congress acts on the WSA. Valid existing rights associated with mining claims and mineral leases would be honored.

Mining claims located and having a discovery before the passage of FLPMA constitute a valid existing right, which would allow development regardless of whether the development would impair wilderness character. It is not known whether there were any discoveries as of October 21, 1976. For claims located or discovered after October 21, 1976, only exploration that does not

impair wilderness character would be allowed. If such a discovery were made before actual designation as wilderness, the claimant would have a right to patent. After designation as wilderness, the lands would no longer be subject to appropriation under the mining laws.

There are lode claims in the SW¼, section 26 and the N½, section 30, T. 40 N., R. 94 W., 6th P.M., that were located on June 27, 1975, by Timberline Minerals. However, it is not known whether there are any discoveries on these claims.

There are approximately 2,494 acres under oil and gas leases issued after the passage of FLPMA, and 4,087 acres not leased in the WSA. The portion of the WSA under oil and gas lease would be available for development only under nonimpairment criteria (see map 11 and Appendix 2).

Study of the WSA for geology and mineral potential would not be allowed, except for aerial surveys and nonimpairing ground surveys conducted according to an approved plan. Such studies could not degrade the wilderness character of the area.

Conclusion: The area would be withdrawn from the mining and mineral leasing laws and from development of salable minerals. Development would only be allowed on mining claims with valid existing rights. The 2,494 acres of oil and gas leases would be available for development under nonimpairment criteria.

Wildlife

Under this alternative, natural distribution, number and interaction of indigenous wildlife species would be sought. Natural processes would be allowed to occur in wilderness ecosystems, which include fish and wildlife populations, as much as possible without human influences. The Wyoming Game and Fish Department would maintain management objectives for big game species that would be compatible with wilderness management.

The preservation of sensitive, rare, threatened, and endangered species dependent on wilderness conditions would be favored.

Management actions would be geared to the maintenance of natural ecosystems. Habitat improvement projects could not impair wilderness values.

Wildlife Habitat

Wilderness designation would ensure the long-term protection of the Utah juniper habitat. The wilderness management plan would include specific measures to improve the habitat without detracting from the naturalness of the area. Some disturbance might occur from development of pre-FLPMA leases, but this disturbance would not be significant.

Big Game

The mule deer crucial winter range on the north and the antelope crucial winter range on the south would be protected from disturbances associated with mineral exploration and development. Protection of this crucial habitat is important to maintaining healthy big game populations, since crucial winter range condition is a limiting factor. Big game would benefit from wilderness designation.

Small Game and Game Birds

Chukars and cottontails would benefit from wilderness designation by the long-term protection of their habitat.

Nongame

Habitat diversity would not be altered, thus providing beneficial impacts to nongame.

Threatened and Endangered Species

No impacts to endangered species would occur, since no habitat use has been documented.

Conclusion: Wilderness would provide long-term protection to wildlife habitat, particularly mule deer and antelope crucial winter range.

Socioeconomics

If Copper Mountain were designated as wilderness, certain impacts would occur to the local or regional economy.

There are a number of socioeconomic benefits that would be derived from designation of the WSA as wilderness: public recreation, commercial recreation, indirect recreation (reading, viewing pictures, etc.), and education. Other values include: therapeutic, personal development, "bequest values," and existence of option values (Hendee, et al. 1978).

Commodity Uses. Several different types of commodity uses are allowed in wilderness. Examples are livestock grazing, mining, and oil and gas development under limited

circumstances. (For more information on the effects of wilderness on mineral development see the Geology and Mineralization section.)

There is not enough information to quantify oil and gas and mineral commodities in the WSA, and without this information the socioeconomic impacts cannot be projected. However, the impacts would be adverse because the oil and gas probably could not be obtained because of the no-surface-occupancy stipulations and the difficulty associated with drainage of oil and gas.

In the case of Copper Mountain, the adverse impacts to the livestock industry would probably not occur. First, a wilderness designation would not reduce the livestock operator's AUMs, nor would it eliminate livestock grazing from the area. Both the congressional intent and the BLM Wilderness Management Manual are clear on this point.

Second, the Copper Mountain WSA is virtually roadless. Livestock operators have access on primitive roads to the boundary. Present operations involve very little vehicular use, if any, inside the WSA. Therefore, under a wilderness designation, it appears that livestock operations would be conducted in virtually the same manner as they are today. Adverse impacts on the livestock operators appear to be minor.

Locally, loan officers at commercial banks indicated that short-term operating loans would not be affected by wilderness designation. Local commercial banks do not make long-term real estate loans. Production Credit Associations in the area also made short-term operating loans and did not believe that designation would affect these loans.

Since wilderness designation would probably not cause a significant increase in visitor use to the area for recreational purposes, it is unlikely that there would be additional problems for livestock operators.

Conclusion: Designating the Copper Mountain WSA as wilderness would have few socioeconomic impacts for the livestock industry. The loss of the opportunity to explore for and develop oil and gas resources would be an adverse impact.

Cultural Resources

Under the Wilderness Designation Alternative, the management objectives for Copper Mountain would be oriented toward preservation of wilderness values, cultural resource values and other resource values. The environmental consequences of this alternative on cultural resources would appear to be balanced equally between beneficial and adverse effects.

The lack of man-made surface disturbances in the WSA would benefit cultural resources. Impacts from mining, oil and gas exploration, road construction, etc., would be avoided unless valid rights existed. Cultural resources would be largely preserved in place rather than salvaged or destroyed. Vandalism to local sites because of increased development activity would be avoided. Cultural resources would be protected from increased erosion rates that would result from development.

Wilderness designation, however, could also have a detrimental effect on cultural resources. If a significant increase in visitor use occurred, collection and/or vandalism of sites could increase. Currently, this problem is minor, but high-use of the area could increase such activities. The resultant loss of artifacts from both prehistoric and historical sites would diminish the data potential and integrity of some of the sites.

Despite the maintenance of present erosion rates, continued loss of cultural resources from natural erosion is a possible adverse effect of this alternative. Present erosion rates in some parts of the Copper Mountain WSA could be high, especially during times of flashflood or snow run-off. Possible cultural sites located along drainages would be especially vulnerable. As a result, heavy loss of data potential and site integrity could occur if the sites were not salvaged. Wilderness designation would deter salvage work because of access and funding restraints.

Conclusion: The cumulative environmental consequences of wilderness designation for Copper Mountain would be balanced equally between beneficial and adverse. Adverse effects would include higher recreational use, which could cause an increase in impacts, and natural erosion, which might continue to damage some unknown cultural resources. On the other hand, the prevention of most man-made surface disturbances would ensure that cultural resources were not directly affected by development. Erosion that affects cultural resources would be maintained at current levels and would not increase because development would be prohibited.

CHAPTER V

CONSULTATION AND COORDINATION

INTRODUCTION

The Lander Resource Area Wilderness Preliminary Draft Environmental Impact Statement (DEIS) was prepared by specialists from BLM's Lander Resource Area, with assistance from the Rawlins District Office and the Wyoming State Office. Disciplines and skills used to develop this EIS were: livestock grazing, soils, recreation, geology, economics, cultural resources, public affairs, wildlife, and word processing. The writing of the EIS began in September 1984; research began in 1978, with the wilderness review required by FLPMA. The process included inventories of resources, public participation and coordination with other agencies, organizations, and individuals. Care has been exercised to ensure that the public was consulted and informed throughout the wilderness review process.

An active public involvement process aided in developing this EIS. Public opinion was elicited through public meetings in Atlantic City, Jeffrey City, Lander, and Dubois; mailings to an extensive list of groups and individuals; personal interviews; and a notice in the *Federal Register*.

Agencies and Organizations Consulted

The Lander Resource Area Wilderness EIS team consulted and/or received comments from the following during the scoping period of this EIS.

Business and Industry

Monsanto Company
Exxon Company, USA
Numex
Colorado Interstate Gas Exploration, Inc.
Hugh Jones Agency
American Nuclear Corp.

State Agencies and Organizations

Wyoming State Clearing House, which distributed the DEIS to:
Wyoming Department of Environmental Quality
Wyoming Game and Fish Department
The Governor's Office
Geologic Survey of Wyoming
Wyoming Department of Agriculture
Wyoming Oil and Gas Conservation Commission
Wyoming State Engineer
Wyoming Recreation Commission
Wyoming State Historic Preservation Office
Wyoming Commission of Public Lands & Farm Loans

Federal Agencies

National Park Service
U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service
U.S. Bureau of Mines
U.S. Forest Service

Organizations

National Outdoor Leadership School
The Wilderness Society
Continental Divide Trail Society
Sierra Club
Friends of the Earth, Inc.
Wyoming Wilderness Association
Fremont County Audubon Society

Individuals

Larry DiBritto
Bruce B. King III
O. W. MacFarland
William H. Homme
Barton Marston
Orphia Boatman
G. D. Boatman
Roy Boatman
Lou Boatman
D. A. Culver
Bernard Sun
George Sun
Dennis Sun
Noeline Sun
Tom Sun
Tina Sun
C. A. Hutchinson
Thomas Murphree
Harvey Stevenson
James Stevenson
Otis Stevenson
Joe and Eva France
Charlie MacIntosh

Mr. and Mrs. Joe E. MacIntosh
W. Rodney Parker
Dick Cooper
Douglas M. Crowe
Eddie and Sarah Appleby
DeWayne S. Appleby
Judith D. Carey
Carol Sims
Humphrey's Ranch
William F. Herbst
John F. and Lorraine Herbst
John Thessen
Mike Klein
Phillip White
Dave Peterson
Ronald K. Smith
J. D. Kelly
James Harrison
Charles Smith
Myra Ciennel
Harvey Woolery
Yellowstone Ranch
L. D. Frederick
Richard B. Moore
Norman and Gaylene Park
Ted Racgek
Richard F. and Sue A. Narberg
Hannah Hinchman
William Almas
August Dailer
Gaynell Park
Ruth Stevenson
D. A. Culver
W. Rodney Parker
Wilma S. Davis
Steve Wiles
Roger W. Power
Jeff and Judy Goodwin
Dan Goble
Michael J. Atherton
Don Kortes
Gerald Kortes
Leonard Hay
Jeffrey Sweet
Elza Eversole
Kathleen Sun
Becky Darbee
Bart Koehler
Ross Titus
Allen L. Hammmer
Jesse L. Himmelreich
S. Henry Hall
Norman Johnson
Dick Wilson
Milton L. Allen
Martie Crone
Reid Secord
Ronald Hocking
Tom Walsh
Douglas L. Thompson
Richard Boulette
Mary Reynolds
Kenneth R. Olson
Wilma L. Davis
Doug Tarbit
Dallin Tarbit
Henry Hudspeth
Mryia Connell
C. M. Peterson
Bruce Cambell
Mr. and Mrs. William J. Thompson
James L. Wetzel, Jr.
Darrell Johnson
L. D. Federick
Roger W. Powers
Jeff and Judy Goodwin
Dan Gobel
Douglas Young
Mike Sullivan
James O. Rose
Kathryn Kokke Wood
Charles H. Natroies
L. D. Frederic
Scott Schumaker
Joan Schumaker
Toni Hardy
Brian Wood
Jim Harrison
Harry Allen
Mrs. Robert Kier
George H. Hunker
Jack A. Smith
Mrs. L. D. Frederick
David Crosson
Alice Lou Fuller
Harold E. Meier
Cy L. Wilsey
Jim Jamison
William F. Cooper
Joyce Cooper
Richard E. Cooper
William T. Brown
J. R. Simmons
Peter Dvorak
James L. Braman
Delwin M. Hunt
Larry Ammunoson
Bertha Ward
John Crace
Terry Kightlinger
Terry Pearl
Richard Furniss
Ed Ward
James E. Lawson
Linda McCoy
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Comments Requested

The Rawlins District Office maintains a lengthy wilderness mailing list. At each point in the overall wilderness review/EIS process, when public input is necessary or when some tentative decision regarding the WSA is reached, materials and/or information are sent to all groups, organizations and individuals on the mailing list.

Consistency with Other Plans

FLPMA requires that BLM plans be as consistent as possible with other agency plans, while considering federal laws, policies and regulations.

Other federal agency, city, county, and state plans in the EIS area were considered in the preparation of this report. No inconsistencies were found with any of those plans.

Summary of Scoping Process

The public scoping process started in 1978, when BLM began its wilderness review. Public meetings were held in Rawlins and Lander, Wyoming, where the proposals were scrutinized. Following the designation of the Sweetwater Canyon, Sweetwater Rocks, and Copper Mountain, the proposed wilderness designation and alternatives were presented to the public in four scoping meetings, November 5, 6, 7, and 8, 1984.

The major issues and concerns were:

Antiwilderness

Economic loss in the minerals and livestock industries.

Inconvenience to adjacent landowners because of increased visitor use.

Disruption of local life-styles because of increased visitor use.

Degradation of the WSA through increased visitor use.

Prowilderness

Resources (wildlife habitat, fisheries, cultural, soil, water) would be protected by wilderness designation.

Solitude and primitive recreation could be maintained only by wilderness designation.

The WSAs would add diversity to the NWPS.

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APPENDIX I

WILDERNESS MANAGEMENT POLICY

WILDERNESS MANAGEMENT POLICY

U.S. Department of the Interior

Bureau of Land Management

September 24, 1981

Chapter I. Introduction

I. A. The Purpose of This Document

The purpose of this document is to describe how the Bureau of Land Management (BLM) will manage lands administered by the BLM which are designated by Congress as part of the National Wilderness Preservation System. At present, the Bureau of Land Management administers no wilderness areas. The Bureau has developed a Wilderness Management Policy at this time for the following reasons: (1) to inform BLM field officials, Congress, and the public as to how BLM will manage wilderness areas, so this can be taken into account during BLM wilderness studies and during deliberations on wilderness recommendations affecting BLM public lands, and (2) to provide guidance for BLM personnel to use in managing future BLM wilderness areas at such time as Congress designates them.

The BLM's Wilderness Management Policy will apply to public lands administered by BLM that have been specifically designated as wilderness by an Act of Congress. The Wilderness Management Policy has a different purpose than BLM's *Interim Management Policy and Guidelines for Lands under Wilderness Review*. The *Interim* Management Policy is an interim measure governing lands under wilderness review. The Wilderness Management Policy governs lands designated by Congress as wilderness. (Appendix C of this document summarizes BLM's wilderness review process.) If Congress designates a wilderness study area as wilderness, the Interim Management Policy ceases to apply, and instead the Wilderness Management Policy applies thereafter. If Congress decides that a particular wilderness study area will *not* be designated as wilderness, the Interim Management Policy ceases to apply, and the area is managed for the uses and activities indicated in the pertinent BLM planning documents for the area.

This policy document does not apply to BLM-administered public lands in Alaska. If public lands in Alaska are designated as wilderness in the future, they will be managed under applicable provisions of the Wilderness Act of 1964 and in accordance with additional congressional guidance in the Alaska National Interest Lands Conservation Act of 1980 (ANILCA). The ANILCA recognized special conditions in Alaska in connection with such activities as subsistence uses, access and transportation.

I. B. Mandate from Congress

The BLM wilderness review program stems from Section 603 of the Federal Land Policy and Management Act of 1976 (FLPMA). In FLPMA, Congress gave BLM its first unified, comprehensive mandate on how the public lands should be managed. The law establishes a policy of generally retaining the public lands in Federal ownership, and it directs the BLM to manage them under principles of multiple use and sustained yield. The BLM is to prepare an inventory of the public lands and their resources, including identification of areas having wilderness characteristics. Management decisions for the public lands are to be made through a land-use planning process that considers all potential uses of each land area. All public lands are to be managed so as to

prevent unnecessary or undue degradation of the lands.

Under FLPMA, wilderness preservation is part of BLM's multiple-use mandate, and wilderness values are recognized as part of the spectrum of resource values and uses to be considered in the inventory and in the land-use planning process. Section 603 of FLPMA specifically directs the BLM, for the first time, to carry out a wilderness review of the public lands. (The complete text of section 603 appears in Appendix A of this document. The BLM's wilderness review process implementing section 603 is summarized in Appendix C.)

Section 603(c) of FLPMA tells the BLM how to manage public lands designated as wilderness, in these words:

> "Once an area has been designated for preservation as wilderness, the provisions of the Wilderness Act which apply to national forest wilderness areas shall apply with respect to the administration and use of such designated area, including mineral surveys required by section 4(d)(2) of the Wilderness Act, and mineral development, access, exchange of lands, and ingress and egress for mining claimants and occupants."

The Wilderness Act of 1964 contains a number of provisions addressing the administration and use of national forest wilderness areas. Those most pertinent to BLM wilderness management are cited in the following paragraphs. Section 2(a) says:

> "...it is hereby declared to be the policy of the Congress to secure for the American people of present and future generations the benefits of an enduring resource of wilderness. For this purpose there is hereby established a National Wilderness Preservation System to be composed of federally owned areas designated by Congress as 'wilderness areas', and these shall be administered for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness...."

Section 4 of the Wilderness Act is devoted to the use of wilderness areas. Section 4(b) says:

> "Except as otherwise provided in this Act, each agency administering any area designated as wilderness shall be responsible for preserving the wilderness character of the area and shall so administer such area for such other purposes for which it may have been established as also to preserve its wilderness character. Except as otherwise provided in this Act, wilderness areas shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use."

Section 4(c) prohibits certain activities, in these words:

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

Sections 4(c), 4(d), and 5 provide special exceptions to the prohibitions in section 4(c) by providing for the following activities:

- existing private rights.
- measures required in emergencies involving the health and safety of persons within the area.
- activities and structures that are the minimum necessary for the administration of the area as wilderness.
- use of aircraft and motorboats, where already established, may be permitted to continue.
- measures necessary in the control of fire, insects, and diseases.
- any activity, including prospecting, for the purpose of gathering information about mineral or other resources, if carried on in a manner compatible with the preservation of the wilderness environment. (This includes mineral surveys conducted on a planned, recurring basis by the Geological Survey and Bureau of Mines.)
- continued application of the U.S. mining and mineral leasing laws until December 31, 1983.
- water resource developments may be authorized by the President where he determines that such use will better serve the interests of the United States and the people thereof than will its denial.
- livestock grazing, where already established, shall be permitted to continue.
- commercial services necessary for activities which are proper for realizing the recreational or other wilderness purposes of the areas.
- adequate access to surrounded State-owned and privately-owned lands, or such lands shall be exchanged for Federally-owned land.
- ingress and egress to surrounded valid mining claims and other valid occupancies.

Section 5(c) provides land acquisition authority, in these words:

> "Subject to the appropriation of funds by Congress, the Secretary of Agriculture is authorized

to acquire privately owned land within the perimeter of any area designated by this Act as Wilderness if (1) the owner concurs in such acquisition or (2) the acquisition is specifically authorized by Congress."

In addition to the basic management authority in the Wilderness Act, management provisions may appear in the legislation establishing each wilderness area. Standard provisions included in most wilderness legislation make clear that the effective date of the new law will apply wherever the Wilderness Act's management provisions mentioned the effective date of the Wilderness Act, and, for areas administered by the Department of the Interior, make clear that the Secretary of the Interior will continue to administer the areas.

In some cases, special provisions have been incorporated into the legislation (e.g., special mining area in the River of No Return Wilderness in Idaho). These provisions override the general management provisions of the Wilderness Act and must be regarded as specific direction for management of the area in question.

Congress has subsequently commented on wilderness management in House and Senate committee reports and conference reports accompanying wilderness legislation. These reports are part of the legislative history of the laws they accompany and can be helpful in determining the intent of Congress where the language in the law itself is unclear. Although reports on wilderness laws passed after 1964 do not become part of the legislative history of the Wilderness Act, they nonetheless indicate the interpretation given to the Wilderness Act by the congressional committees during their consideration of the subsequent legislation. Such report language addresses a variety of subjects. For example, guidelines for administering grazing use in wilderness areas appear in the Conference Report (House Report 96-1126) on the Central Idaho Wilderness Act of 1980 (P.L. 96-312). House Report 95-540 on the Endangered American Wilderness Act of 1978 discusses the interpretation of the Wilderness Act as it relates to such uses and activities as: hunting and fishing; trails, bridges, and trail signs; control of fire, insects, and diseases; cabins and sanitary facilities; shelters and campsite facilities; and weather modification and special equipment.

The provisions of FLPMA, the Wilderness Act, and future Acts of Congress designating specific BLM areas as wilderness are BLM's mandates on the management of wilderness areas. All activities in wilderness areas must be carried out in conformance with these mandates.

I. C. Meaning of the Congressional Mandate

The congressional mandate contains three basic concepts which form the basis for BLM's Wilderness Management Policy.

— *Wilderness Preservation Concept:*

Congress has directed the BLM to perpetuate the wilderness resource by managing designated wilderness areas so that their wilderness character is preserved unimpaired.

— *Wilderness Use Concept:*

Congress has directed the BLM to provide opportunities for the public to use designated wilderness areas for recreational, scenic, scientific, educational, conservation, and historical purposes in a manner so as to leave the wilderness area unimpaired for future use and enjoyment as wilderness.

— *Nonconforming Use Concept:*

Congress has directed the BLM to accommodate in wilderness areas certain activities, existing uses, and private rights which are generally nonconforming to wilderness preservation and wilderness use.

The meaning of each of these concepts is discussed below.

1. **Wilderness Preservation Concept**

The Wilderness Act directs that wilderness areas be managed to provide for their protection, the preservation of their natural conditions, and the preservation of their wilderness character. The factors which make up an area's wilderness character are spelled out in the Wilderness Act's definition of wilderness (section 2(c)). These factors are referred to in FLPMA collectively as "wilderness characteristics," and they fall into three broad categories:

a. Naturalness—A wilderness area "generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable." Wilderness areas must be managed to ensure that this description remains accurate.

b. Outstanding Opportunities for Solitude or a Primitive and Unconfined Type of Recreation—A wilderness area "has outstanding opportunities for solitude or a primitive and unconfined type of recreation." Solitude is defined as (1) the state of being alone or remote from habitations; isolation; (2) a lonely, unfrequented or secluded place. The emphasis is on the opportunities a person has to avoid the sights, sounds, and evidence of other people within a particular area. Primitive and unconfined types of recreation are defined as those activities that provide dispersed, undeveloped recreation which do not require facilities or motorized equipment. In most cases, opportunities for solitude and primitive recreation go hand-in-hand, and both are dependent on naturalness. Wilderness areas must be managed to ensure that these opportunities are not degraded.

c. Special Features—Congress specified that wilderness areas "may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value." These are optional wilderness characteristics; an area may meet the Wilderness Act's definition of wilderness without having these special features, but they are usually present in wilderness areas, and in some cases they may be a prime reason for wilderness designation. Also, these features contribute to an area's opportu-

nities for primitive recreation. Wilderness areas must be managed to ensure that these opportunities are not degraded.

In order to preserve these wilderness characteristics as Congress directed, the management of BLM-administered wilderness must be based on a *principle of nondegradation*. Under this principle, the central thrust of BLM wilderness management is to prevent degradation of natural conditions, opportunities for solitude or primitive recreation and special features.

It is recognized that there is often variation in the level of naturalness, solitude, types of primitive recreation, and special features, present within a wilderness—or between different wilderness areas. Also, different lands have different capabilities to sustain types and amounts of use. The principle of nondegradation means that wilderness areas will be managed to provide for the protection and perpetuation of the values of the wilderness resource and prevent deterioration caused by other resource activities or by visitor use, and, when necessary, to restore deteriorated sites to an acceptable condition.

Most uses will result in some changes in the condition of the wilderness resource. Some uses cause little or no change, while others have the potential for serious change. Therefore, it is necessary to define limits of acceptable change. This must be established using the conditions *generally* prevailing in each wilderness at the time of congressional designation as a benchmark unless there is unacceptable biological, physical, or social degradation present. This does not mean that existing human-caused impacts in some areas will set a standard, or a sort of "lowest common denominator", which other more natural areas will be allowed to reach. Managers must determine what human-caused changes can be allowed without causing degradation and what measures can be taken to bring situations below the limit of acceptable change back to an acceptable level. This may influence the ways in which recreational, scenic, scientific, educational, conservation, and historical uses, as well as nonconforming uses, are done in the area, so their impact on the wilderness resource can be kept within the limits of acceptable change.

In the case of some of the nonconforming uses, such as mining, provided for by Congress in the Wilderness Act and subsequent legislation, the condition of the wilderness resource may be degraded as a result of an allowed use. However, in such cases, the principle of nondegradation and the limits of acceptable change should be used as an analysis tool for the reasonable mitigation of impacts, consistent with the applicant's conduct of the allowed use, and as a standard for determining the condition to which the area will be returned where and when rehabilitation is appropriate.

In this document, the principle of nondegradation is reflected in the policies and guidelines for specific activities.

Two equivalent terms used many times in this document reflect the wilderness preservation concept—"preservation of wilderness character" and "protection of the wilderness resource."

2. **Wilderness Use Concept**

Section 4(b) of the Wilderness Act provides fundamental guidance on how wilderness areas shall be used, in these words:

> "Except as otherwise provided in this Act, each agency administering any area designated as wilderness shall be responsible for preserving the wilderness character of the area and shall so administer such area for such other purposes for which it may have been established as also to preserve its wilderness character. Except as otherwise provided in this Act, wilderness areas shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use."

Wilderness areas are thus open to use and provide a variety of benefits to society. Use might be "on-site," taking direct advantage of the multiple resources of the area. Or the use and benefits may be derived "off-site," such as through enjoyment of the scenery at a distance from a nearby highway, through indirect benefits from the area's resources (i.e., water quality, wildlife, etc.), or just the knowledge that the area exists.

There is a limit to the extent to which such uses as recreation and education may take place within wilderness, because the Wilderness Act also says that they must occur in a manner so as to leave the wilderness unimpaired for future use and enjoyment as wilderness. Provision may be made for recreational, scenic, scientific, educational, conservation, and historical use of wilderness areas in ways that do not jeopardize the conditions of naturalness, the opportunities for solitude or a primitive and unconfined type of recreation, or the special features that existed at the time an area was designated as wilderness by Congress. All public use will be administered to ensure that the wilderness resource is kept unimpaired.

Public use for recreation purposes is generally a prevalent use of wilderness. However, the Wilderness Act makes it clear that recreation is only one of the purposes of the National Wilderness Preservation System. Sometimes there are places within wilderness where particularly sensitive values—such as colonial bird nesting sites—may dictate that recreation activities be restricted or entirely excluded.

Use capacity (recreational, historic, educational, etc.), based on social and ecological elements, will be established for each wilderness area, and will be considered in determining how much use to allow.

A second factor which may limit the use of wilderness has to do with the nonconforming use provisions of the Wilderness Act and subsequent legislation. In portions of a wilderness area where nonconforming activities such as mining and grazing are permitted, there may be instances when the public purposes listed in section 4(b) may be displaced either temporarily or permanently.

3. **Nonconforming But Accepted Use Concept** Congress specially provided for certain activities and existing uses which otherwise would have been prohibited in wilderness areas under the general management provisions of sections 2(a), 4(b) and 4(c). For a complete list of these nonconforming but accepted activities, refer to section I.B.; generally they are: existing private rights; aircraft and motorboats; control of fire, insects, and diseases; gathering of resource information; mining; grazing; water resource development; commercial recreation services; and access to non-Federal inholdings.

The FLPMA directs that all uses of the public lands be conducted so as to prevent unnecessary or undue degradation of the lands. In wilderness areas, this means that the BLM must manage the nonconforming but accepted uses described above so as to prevent unnecessary or undue degradation of the area's wilderness character. As on nonwilderness public lands, some of the nonconforming but accepted uses may be restricted or entirely excluded where particularly sensitive resource values occur or where the public interest would be better served by restricting or excluding them.

Chapter II. Management Policy for BLM-Administered Wilderness

The policy guidance in this chapter is followed in Chapter III by guidelines for specific activities, based on these policies and on their interaction with other applicable policies for the management of public lands. No policy document can address every potential situation. Managers must use their best judgment in applying these policies and guidelines to particular situations. In cases not covered by specific guidance, managers will resolve questions by testing alternative courses of action against the policies in this chapter to arrive at the alternative that is most consistent with the policy as a whole.

Uses and values will vary between wilderness areas and frequently vary among different parts of an individual wilderness. There may be wide differences in terrain and other geographic characteristics, climate, vegetation, and wildlife. Historical patterns of use, local customs, and the traditional attitudes of visitors also differ between and within wilderness areas. Consequently, activities that are accepted and management practices that are necessary and appropriate on one wilderness may be either unnecessary or unacceptable on others. While this may require some flexibility in the management and administration of the individual units of wilderness, all are part of one National Wilderness Preservation System and shall be consistently managed within the intent of the Wilderness Act.

This policy document prescribes the general objectives, policies, and specific activity guidance applicable to all BLM wilderness areas. Specific management objectives, requirements, and decisions implementing administrative practices and visitor activities in individual wilderness areas are developed and described in the wilderness management plan for each unit.

II. A. General Policy

1. The Department of the Interior's policy is to manage wilderness areas under the administration of the Bureau of Land Management so as to preserve their wilderness character, and to manage them for the use and enjoyment of the American people in a manner that will leave them unimpaired for future use and enjoyment as wilderness. The wilderness areas will be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use.

2. The Department's policy is to allow the nonconforming but accepted uses specifically permitted in wilderness areas by the Wilderness Act and subsequent laws in a manner that will prevent unnecessary or undue degradation of the area's wilderness character.

3. The Department's policy is to manage BLM wilderness areas consistent with the policies above so as to augment multiple use management of adjacent and nearby lands through protection of watersheds and water yield, wildlife habitat, natural plant communities, and similar natural values.

II. B. Specific Policy Guidance

1. **Preservation of Wilderness Character.** BLM wilderness areas will be managed so as to be affected primarily by the forces of nature, with the imprint of human work substantially unnoticeable; so as to maintain the area's outstanding opportunities for solitude or primitive and unconfined recreation; and so as to protect any ecological, geological, or other features of scientific, educational, scenic, or historical value which the area may contain.

a. **Naturalness.** BLM will foster a natural distribution of native species of wildlife, fish, and plants by ensuring that natural ecosystems and ecological processes continue to function naturally. The BLM will minimize human influence on wildlife populations and work to prevent the extinction by human causes of plants and animals found in the areas. Hunting, fishing, and trapping will continue as authorized by State law, when carried out in a manner consistent with preservation of an area's wilderness character.

The BLM will allow fire, insects, and diseases to play a natural role in the wilderness ecosystem, except where these activities threaten human life, property, or high value resources on adjacent nonwilderness lands, or where these would result in unacceptable change to the wilderness resource. (The guidelines in Chapter III will indicate some types of unacceptable change.)

The BLM will keep watersheds, water bodies, water quality, and soils in a natural condition and will allow associated ecological processes previously altered by human influences to return to their natural condition.

The limits of acceptable change will be defined in the wilderness management plan for each wilderness area, and the BLM will endeavor to restore those sites which have dropped below this level.

b. **Solitude.** BLM will maintain and enhance the area's outstanding opportunities for solitude by providing natural settings with few reminders of human activity or civilization and by providing opportunities for relatively few contacts with other visitors.

c. **Special Features.** BLM will maintain unimpaired the ecological, geological, and other features of scientific, educational, scenic, or historical value found in BLM wilderness areas.

2. **Prohibition of Certain Uses**

Except where subject to existing private rights, where necessary to meet minimum requirements for the administration of the wilderness area for the purposes of the Act or as specifically provided for elsewhere in these policies, there shall be no temporary road, no use of motor vehicles, motorized equipment, or motor boats, no landing of aircraft, no other form of mechanical transport and no structure or installation within wilderness areas. There shall be no commercial enterprise or permanent road, except where subject to existing private rights or as specifically provided for in this policy.

3. **Minimum Tool**

Tools, equipment, or structures may be used for managment when they are the minimum necessary for protection of the wilderness resource or when necessary in emergency situations for the health and safety of the visitor. Management will use the *minimum* tool, equipment, or structure necessary to successfully, safely, and economically accomplish the objective. The chosen tool, equipment, or structure should be the one that least degrades wilderness values temporarily or permanently.

For the purpose of the above paragraph, accepted tools, equipment, and structures may include but are not limited to: fire towers, patrol cabins, pit toilets, temporary roads, spraying equipment, hand tools, fire-fighting equipment caches, fencing, and controlled burning. In special or emergency cases involving the health and safety of wilderness visitors, or the protection of wilderness values, aircraft, motorboats, and motorized vehicles may be used.

4. **Visitor Use.** BLM wilderness areas will be managed to provide for their use and enjoyment in ways that are consistent with preservation of their wilderness character and that will leave them unimpaired for future use and enjoyment as wilderness.

Visitor use may be related to any of the following public purposes: recreation, scenic, scientific, educational, conservation, and historical use.

Visitor use facilities may be installed if they are the minimum necessary for the health and safety of wilderness visitors, or for the protection of the wilderness resource. (See also "minimum tool," in section B.3. above.) Facilities that are solely for the convenience of the visitor are not compatible with preservation of wilderness character and therefore will not be provided in wilderness areas.

The use capacity of the wilderness area will be determined, and will be used by managers to anticipate and avert degradation of the area's wilderness character and as a basis for mitigating the impacts caused by various uses.

If visitor use threatens to impair the area's wilderness character, managers will take action to prevent impairment. Indirect methods of reducing visitors' impact, such as trail design, information, and education, will be preferred over direct (regulatory) methods, such as limits on party size, length of stay, or number of parties. In case of conflict between visitor uses that depend upon a wilderness setting and those that do not, the uses dependent upon a wilderness setting will be favored.

Visitor use in wilderness involves certain risks to the visitor as a consequence of isolation from the conveniences of a technological world. The visitor must accept these risks in entering a wilderness area. In emergencies involving the health and safety of persons within the area, managers will take appropriate measures, such as search and rescue operations.

5. **Nonconforming Uses.**

a. **Valid Existing Rights.** Private rights existing as of the date an area was designated as wilderness will be recognized. In some cases, such rights may involve activities addressed elsewhere in this document under standards prescribed by the Wilderness Act. (One example of this is valid mining claims, addressed in section (h).) Valid existing rights in situations not covered by these policies will be considered by the BLM on a case-by-case basis, in consultation with the Regional Solicitor, to determine the nature of the rights and the extent to which the BLM must regulate the exercise of those rights pursuant to the Wilderness Act and other laws.

b. **Aircraft and Motorboats.** Use of aircraft or motorboats may be permitted to continue in wilderness areas where such uses were established prior to the date the area entered the National Wilderness Preservation System. Such use, when permitted to continue, will be monitored on a regular basis to determine if its continuation is appropriate. Use may be regulated or discontinued as necessary to protect resources in the area or to preserve the area's wilderness character.

c. **Control of Fires, Insects, and Diseases.** Where fire, insects and diseases threaten human life, property, or high value resources on adjacent nonwilderness lands, or where they would cause unacceptable change to the wilderness resource, measures may be taken as necessary to control them. Allowable actions will be specified in the wilderness management plan for each wilderness area.

d. **Gathering Information About Resources.** Any activity, including mineral prospecting, for the purpose of gathering information about natural resources in wilderness, will be permitted provided it is carried on in a manner compatible with the

preservation of the wilderness resource. (This section does not affect mineral prospecting activities conducted under the mining laws, which are covered in section (h) below. The Wilderness Act provides for these activities in wilderness areas until midnight December 31, 1983.)

(1) No form of overland mechanical transport may be used in connection with prospecting for minerals or any activity for the purpose of gathering information about individual resources, unless approved by the BLM in accordance with the regulations 43 CFR 2920 - Leases, Permits, and Easements (effective April 15, 1981) (published in 46 FR 5772).

(2) Any person desiring to use motor vehicles, motorized equipment, mechanized transport, or to land aircraft, for mineral prospecting or for gathering information about resources is required to notify the BLM in writing. Approval documents will assure activities are conducted in a manner compatible with the preservation of the wilderness resource. No degradation of wilderness resources or values will be allowed. Restoration of disturbed areas is required and must take place as soon as possible once activities terminate. Performance bonds may be required.

e. **Proposed Water Resource Facilities.** If the President authorizes new water resource facilities or activities, pursuant to section 4(d)(4)(1) of the Wilderness Act, the BLM will manage those authorized operations to prevent unnecessary or undue degradation of the area's wilderness character. (Existing water resource facilities are discussed in (f) below, and water facilities for livestock grazing are discussed in (g) below.)

f. **Existing Water Resource Facilities.** Some wilderness areas may contain minor water resource facilities that were found to be substantially unnoticeable in the area. If such structures are present and were explicitly recognized by Congress as being acceptable in a specific wilderness, they may be operated and maintained to keep them in an effective, usable condition. Maintenance may not change the location, size, or type of the facility, or increase the storage capacity of a reservoir.

g. **Livestock Grazing.** Grazing of livestock, where established prior to the effective date of the Act designating the area as wilderness, shall be permitted to continue subject to this policy and the BLM grazing regulations 43 CFR 4100. Existing grazing may include not only the utilization of the forage resource, but also the use and maintenance of livestock management improvements and facilities associated with the grazing activity at the time of designation and which are in compliance with an approved Allotment Management Plan.

Congressional guidelines regarding "Grazing in National Forest Wilderness Areas," published in House Report 96-1126, dated June 24, 1980, will be implemented in all BLM-administered wilderness with pre-existing grazing. These guidelines will be applied using the normal planning and environmental assessment process and will be integrated into all management plans for the wilderness area.

h. **Minerals Management.** Until midnight December 31, 1983, the United States mining laws and all laws pertaining to mineral leasing shall extend to BLM-administered wilderness areas to the same extent as applicable prior to the date the wilderness was incorporated into the National Wilderness Preservation System.

(1) **Mining Law Administration.** Holders of unpatented mining claims validly established on any BLM-administered wilderness prior to inclusion of such unit in the National Wilderness Preservation System are accorded the rights provided by the United States mining laws as then applicable to public land involved. Persons prospecting or locating mining claims in BLM-administered wilderness on or after the date on which the said unit was included in the National Wilderness Preservation System are accorded similar rights subject to the provisions of the Wilderness Act and subsequent establishing legislation. All claimants must comply with reasonable conditions for the protection of resources in accordance with the general purposes of maintaining the National Wilderness Preservation System unimpaired for future use and enjoyment of its wilderness character.

Timber on mining claims within BLM-administered wilderness may be cut only for the actual development of the claim or uses reasonably incident thereto. Any severance or removal of timber, other than that necessary to provide clearance, on the claim shall be in accordance with sound principles of forest management and shall be done in such a manner as to minimize adverse effects on the wilderness resource. In the development and operation of mining claims, claimants will be required to prevent erosion and the obstruction, pollution, or siltation of streams, lakes, or springs or deterioration of the land.

A bond as prescribed in 43 CFR 3809.1-9 may be required. All reasonable measures will be required of the operator to reclaim disturbed lands as soon as feasible after operations cease. Ordinarily, needed work will be accomplished within one year after operations cease, unless provided otherwise by the BLM. Whenever possible and feasible the objectives of reclamation shall be to restore the surface to a contour which appears to be natural, although this may not be the original contour. Where such measures are impractical or impossible, the objective shall be to provide for the maximum achievable slope stability. Reclamation shall in all cases include revegetation where feasible and practical. If revegetation by natural means will not occur in time to prevent serious soil loss or other damage to wilderness values, revegetation by planting may be required, with preference given to the use of native species, where practical and reasonable.

If an application for patent has been filed but not acted upon when the requirements of the immediately preceding paragraph would normally be invoked, the requirements will be suspended while the patent application is under consideration. However, those requirements for the prevention of erosion and pollution, siltation or obstruction of

streams, lakes, or springs or deterioration of the land will continue to be observed.

The title to timber on patented mining claims validly established after the land was included in the National Wilderness Preservation System will remain in the United States, subject to a right of the patentee to cut and use timber. The patentee may cut and use as much of the mature timber as is needed in the extraction, removal and beneficiation of the mineral deposits, if needed timber is not otherwise reasonably available. The cutting shall comply with the requirements for sound principles of forest management as set forth in stipulations issued by the BLM.

In the development and operation of mining claims, claimants will be required to prevent unnecessary or undue degradation of the land.

(2) **Mineral Leasing.** Until January 1, 1984, all laws pertaining to mineral leasing will continue to apply in wilderness areas to the same extent they applied before the area was designated.

State Directors will make decisions on whether or not to issue mineral leases, permits, and licenses in wilderness areas. The State Director's decision to issue mineral leases will be made through the environmental assessment process and after consideration of what will best serve the public interest.

Reasonable stipulations for the protection of the wilderness character of the land will be incorporated into mineral leases, permits, and licenses covering lands within BLM-administered wilderness. Stipulations will be consistent with the use of the land for purposes for which they are leased, permitted, or licensed.

(3) **Common Varieties.** Permits shall not be issued for the removal of mineral materials commonly known as common varieties under the Materials Act of July 31, 1947, as amended and supplemented.

(4) **Withdrawal.** Subject to valid rights then existing, effective January 1, 1984, the minerals in lands designated as wilderness are withdrawn from all forms of appropriation under the mining laws and from disposition under all laws pertaining to mineral leasing, unless Congress specifically provides otherwise in the law designating the area as part of the National Wilderness Preservation System or in subsequent legislation.

i. **Commercial Services.** Commercial services such as those provided by packers, outfitters, and guides may be provided within wilderness areas to the extent necessary for activities which are proper for realizing the recreational or other wilderness purposes of the areas.

j. **Access to Non-Federal Lands.** States or persons, and their successors in interest, who own land completely surrounded by a wilderness area shall be given such rights as may be necessary to assure adequate access to that land. Adequate access is defined as the combination of routes and modes of travel which will, as determined by the BLM, cause the least lasting impact on the wilderness resource, and at the same time serve the reasonable purposes for which the State or private land is held or used.

No road shall be constructed across wilderness until authorized by the BLM. Access by routes or modes of travel not available to the general public may, when fully justified, be permitted by written authorization. The authorization will prescribe routes and modes of travel which will result in the least lasting impact on wilderness values and, at the same time, serve the reasonable purposes for which the land is held or used. A performance bond will usually be required (in accordance with Title V of the Federal Land Policy and Management Act).

Where the exercise of rights of access to surrounded State or private land would be detrimental to wilderness values, the BLM shall, before granting access, attempt to acquire such land by purchase or by exchange.

6. **Existing Structures and Installations**

After Congress has designated a wilderness area, an inventory will be made of existing structures and installations, critically evaluating the purposes and need for each, and its historical significance, if any. If a structure or installation has historical significance, it may be retained as a historic feature of the area. If it does not have historical significance, it may be maintained for continued use if it meets the "minimum tool" policy in paragraph 3 above, or if it is necessary for a use specifically permitted by the Wilderness Act or by the law designating the affected wilderness area. Any structure or installation that does not qualify for retention under the above criteria will be removed.

In maintaining or modifying existing structures and installations, the manager should consider the potential for using native materials and alternative technological approaches to make them as unobtrusive as possible.

7. **Acquisition of Non-Federal Lands**

Acquisition of non-Federal lands within wilderness areas is authorized by purchase or exchange. When such lands are to be acquired, the BLM will seek to acquire the mineral rights as well as the surface rights. Acquisition of privately-owned lands will occur only if the private owner concurs with the acquisition, or if the acquisition is specifically authorized by Congress to be accomplished by eminent domain.

8. **Research and Collection of Management Information**

Wilderness areas administered by BLM will provide opportunities for research and scientific activities that use wilderness areas for study of natural environments and ecosystems. Information collection activities by resource managers for wilderness and other purposes may also be conducted in wilderness. All research and collection of management information within the wilderness area will be conducted in an unobtrusive manner, by methods compatible with the preservation of the area's wilderness character. (Refer to section II. B. 5. d. for policy on gathering information about resources and section III. L. for specific policies on research.)

9. **Buffer Zones and Adjacent Lands**

No buffer zones will be created around wilderness areas to protect them from the influence of activities on adjacent land. The fact that nonwilderness activities or uses can be seen or heard from areas within the wilderness shall not, of itself, preclude such activities or uses up to the boundary of the wilderness area.

When activities on adjacent lands are proposed, the specific impacts on those activities upon the wilderness resource and upon public use of the wilderness area will be addressed in environmental assessments or environmental impact statements, as appropriate. Mitigation of impacts from outside wilderness will not be so restrictive as to preclude or seriously impede such activities.

10. **Visitor Information and Education**

Part of the wilderness experience valued by many visitors is the freedom from rules and regulations. Visitor education will be used to achieve management objectives where feasible. Only the minimum amount of regulation necessary to achieve desired objectives will be used.

To protect the natural appearance of wilderness areas, visitor informational and educational programs, signs, and poster boards will normally be located outside the wilderness boundary. An exception to this general rule is that informational or regulatory signs may be placed within wilderness areas as a management tool to correct specific problems and protect the wilderness resource or for the health and safety of visitors when these signs meet the "minimum tool" standard (see section II. B. 3.)

Informational and educational materials pertaining to the management of BLM-administered wilderness in general or to specific wilderness areas will be readily available to the wilderness user at BLM offices. Such materials will inform visitors of the responsibilities and risks involved in visiting a wilderness area.

11. **Administration**

a. **Wilderness Management Plans.** A wilderness management plan will be developed for each BLM-administered wilderness area as a means of applying the Wilderness Management Policy to that specific area. The plan will be tailored to the local conditions of each wilderness by prescribing any specific objectives appropriate to the area, consistent with the Wilderness Management Policy. Plans should consider the different kinds of environmental settings, history of use, and management situations pertaining to the individual wilderness area. The wilderness management plan will describe the strategy to be used to implement both the Wilderness Management Policy and the specific objectives prescribed for the area.

Management plans for individual wilderness areas should be flexible and must be updated periodically to reflect changes in conditions and use. New inventory data, use patterns, demand trends, supply conditions, management concerns, etc., may change over a period of time, and some goals and objectives applicable soon after a wilderness area is designated may not be appropriate further in the future. Managers should use the land management planning process to analyze all available options, so as to respond to changing conditions.

In developing wilderness management plans, the concept of stratification or zoning between wilderness areas or within individual areas should be considered as a means of achieving management objectives or providing different experiences and opportunities. For example, it may be desirable to manage one wilderness or a portion of an area within a wilderness primarily for protection of an endangered wildlife species. In another wilderness, managers may want to establish different zones of experience, providing recreational opportunities ranging from (1) high concentrations of use to (2) a series of more natural areas as one penetrates into the inner core, to (3) a pristine area which may have no trails or signs. Stratification or zoning can help the wilderness manager achieve objectives, protect resources, and satisfy user demands and expectations.

b. **Coordination.** When a wilderness area's boundaries overlap BLM administrative boundaries, management will be coordinated between District and State Offices to ensure uniformity in management practices.

When a wilderness area involves contiguous lands administered by BLM and by another Federal agency, the BLM will remain an active manager of lands under its administration, unless it has been determined that more effective wilderness management can be achieved by transferring the land to the other agency or by some form of cooperative management. State Directors have the option of approving cooperative management agreements with other Federal agencies on a case-by-case basis. Wherever appropriate, a joint management plan by all agencies involved will be encouraged.

Coordinated planning efforts will also involve State fish and wildlife agencies and all other Federal, State, county, and local agencies, Indian tribal governments, and organizations that may be affected by wilderness management activities.

c. **Wilderness Management Personnel.** Wilderness management personnel may be employed to help implement the provisions of a wilderness management plan. They can facilitate protecting the wilderness resource by assisting visitors with suggestions, advice, and information; enforcing regulations; performing minor trail repairs; and removing trash. Wilderness management personnel can reduce site-specific problems, such as the overuse of popular camp areas, by relocating camp sites and performing rehabilitation work. The manager may also use wilderness management personnel to gather information about resource trends and visitor use. The decision to employ wilderness management personnel should be made on a case-by-case basis. Their use may or may not be required, depending on local conditions. In cases where personnel are not employed specifically for wilderness management,

the BLM will assign appropriate personnel as needed to monitor the condition of the wilderness resource.

Chapter III. Guidelines for Specific Activities

The guidelines in this chapter are an application of the policies set forth in Chapter II to various activities that may or may not take place in BLM-administered wilderness areas. These guidelines are also based on other applicable laws and on other policies and regulations of the Department of the Interior.

These guidelines will be used in developing a Wilderness Management Plan for each BLM-administered wilderness area, containing guidance on how specific activities will be treated in that area. Until such time as a Wilderness Management Plan is approved by the State Director, interim decisions on specific activities in a wilderness area will be made by BLM field officials based on these guidelines.

Decisions on any activities not addressed in these guidelines will be made on the basis of the policies in Chapter II.

III. A. Recreation and Visitor Use

Wilderness areas administered by the BLM shall provide a variety of uses including, but not limited to, recreational, scenic, scientific, educational, conservation, and historical.

The wilderness resource will be dominant in all management decisions where a choice must be made between preservation of wilderness character and visitor use. There are places and times within wilderness where unique values may require that recreation and visitor use activities be restricted or entirely prohibited in order to preserve an enduring resource of wilderness. The highest priority among various kinds of visitor use will be accorded those activities which (1) are most dependent upon the wilderness environment and cannot be reasonably accommodated outside of wilderness, (2) least affect the wilderness environment.

Consideration must be given to the ability of the wilderness resource to sustain visitor use without loss or degradation of the wilderness resource itself. Carrying capacity—social, biological, and physical—may vary widely within and between wilderness areas due to variations in types and amounts of uses, resource characteristics, and the capabilities of the resources to sustain different types and amounts of uses. The leading management tool and document to consider these factors and set guidelines for managing visitor use will be the Wilderness Management Plan. These plans will describe the level at which an area is able to absorb use and impacts and will describe measures needed to protect wilderness values.

The following specific guidance applies to visitor use within BLM wilderness:

1. **Visitor Management**

Visitor management techniques will be utilized in wilderness when necessary to preserve both the wilderness resource and the visitor's wilderness experience and opportunities. Management of visitor use will be the minimum necessary to provide for use of the area as wilderness, and to preserve the wilderness character of the area.

Visitor management should be planned to maintain a high-quality wilderness resource and to protect the quality of the wilderness experience. The Wilderness Management Plan will consider all appropriate and compatible methods to manage levels of use that are within the capacity of the wilderness. Visitor management may be carried out by both direct and indirect methods.

a. **Indirect Methods.** Visitor use may be managed through such indirect efforts as:

(1) Wilderness rangers informing visitors about less congested areas.

(2) Obliteration of improvements at overcrowded or undesirable sites.

(3) Improved access to tributary, lightly used areas.

(4) Information to (a) encourage use of lightly used or relatively unknown areas, or to (b) stress the experiences and value to be found outside the peak use period.

(5) Minimize the promotion of an outdoor experience in wilderness and emphasize such uses of undeveloped areas outside wilderness.

(6) Reroute primary transportation away from major destination areas. Have spur trails to vistas or camp areas.

(7) Design and management of trail-head areas, including access roads and parking areas.

(8) Education of visitors about good wilderness manners and ethics.

(9) Use of built-in frictions or obstacles, such as low-standard access roads.

(10) Removal of trail-head improvements and/or restriction of travel into areas already overused or where capacity use already occurs.

b. **Direct Methods.** More direct methods to achieve visitor management may include:

(1) Regulating the use of saddle horses and/or pack stock.

(2) Managing areas strictly for foot or horse use only, to protect sensitive sites and resources, or to provide different recreation opportunities or experiences within the wilderness.

(3) Requiring permits for specific areas or time periods. A permit or registration system can be an important tool for both the wilderness manager and wilderness visitor. Both systems provide visitor use data on the number and distribution of visitors. In addition, a permit or registration system can give the visitor site-specific information helpful in preplanning a trip. A permit system can be utilized also to limit or redistribute and disperse visitor use.

(4) Limiting the number of people in parties or the number permitted to stay overnight at specific locations.

(5) Limiting numbers of users. The Wilderness

Management Plan will analyze needed methods and identify necessary measures.

(6) Stock grazing or canoe/boat-beaching restrictions, both private and commercial, on overused or concentration areas.

2. **Improvements and Facilities**

Facilities and improvements such as trails, bridges, signs, and campsites, will be provided only where they are the minimum necessary for protection of the wilderness resource and for the health and safety of persons within the area. No facilities or improvements will be provided for the comfort and convenience of the visitor. The need for proposed facilities, such as latrines, fire circles, and fences will be justified in the Wilderness Management Plan. Improvements and facilities when approved will be constructed of materials which harmonize with the natural environment.

Existing improvements or facilities not specifically provided for in these guidelines—those having no historical value and not necessary for preservation of an area's wilderness character or for the health and safety of persons within the area—will be removed.

Construction, maintenance, and removal of facilities and improvements will be by primitive means. Exceptions to this policy, such as using handpowered portable tools and aircraft, may be approved by the State Director if no other alternatives exist, the mechanized or mechanical equipment is the minimum necessary, and they will not degrade or impair the area's wilderness character.

a. **Trail Systems**

(1) New trails will be constructed only if they are needed to preserve wilderness values and resources and they will not significantly degrade the degree of naturalness or solitude in the area. Trails are an acceptable improvement provided they are constructed and maintained so they have an insignificant impact on wilderness values. Wilderness management plans will address where trails and related facilities are appropriate.

(2) Existing trails and trail systems will be evaluated to determine if they are the minimum necessary to meet wilderness management objectives. Trails may be expanded, relocated, restored, or closed as a result of the evaluation. Wilderness Management Plans will address the present situation and evaluate future needs. Trailhead access points will be evaluated at this time. Trailhead locations should be carefully chosen as they have a profound influence over management of visitor use. It may be desirable to locate trailhead access points well outside the wilderness boundary to reduce their impact upon the wilderness area.

(3) Trail routes shall be selected to provide scenic vistas and, where possible, a varied scene. Heavily used areas should generally be served by spur trails and should be bypassed by primary trails. Trails will not be constructed with treads of more than 24 inches in width except where a wider trail is justified for protection of the wilderness resource. Trails should follow natural contours where possible and result in minimum disturbance to soil and ground cover.

(4) Bridges will be designed and constructed so as to harmonize with the environment and will be the minimum size and complexity necessary to allow foot or stock use. Besides adhering to the basic standards set out for improvements and facilities above, bridges will be provided only:

(a) When no other route or crossing is reasonably available.

(b) Where the crossing, during the primary season of public use:

—Cannot be safely negotiated on foot.

—Cannot be safely forded by horses.

(c) Where less formal devices are frequently destroyed or damaged by flood water.

b. **Signing**

Only a minimum of signs will be provided for the visitor, in combination with availability of accurate maps, route descriptions, brochures, etc. Signs will be provided primarily for visitor safety and resource protection. Signs will not be placed within the wilderness for the convenience of the user.

(1) Signs may be erected at trail junctions, showing directions with arrows.

(2) Informational or interpretive signs will not be used to mark streams, lakes, mountain peaks, passes, or points of interest.

(3) Regulatory signs will be kept to the minimum necessary, and may be of materials other than wood. When regulatory signs are posted within a wilderness, notice pertaining to these regulations will also be posted at trailheads or major access points and published where feasible on brochures or maps or othewise made available to the user prior to entry into the wilderness.

c. **Use of Campsites**

(1) Campsites or camping areas may be designated if necessary for the purpose of wilderness resource protection. They will be located sufficiently distant from lakes, streams, trails, or other natural attractions as to allow appropriate use without unacceptable degradation of the focal point of public interest. Space between sites should be sufficient to ensure a reasonable degree of solitude and quiet. A "no-trace" camping concept will be promoted.

(2) Shelters or lean-tos will not be constructed, and existing shelters will be removed from within wilderness. Shelters or lean-tos determined to have historical value may remain, and their protection and use will be addressed in the Wilderness Management Plan.

(3) Garbage pits will not be permitted, and existing garbage pits will be closed. A "pack-it-in, pack-it-out" philosophy will be encouraged with visitors. Every practicable medium will be used to educate and inform the visitor on this point.

(4) Improvised camp structures constructed by visitors will not be permitted. They will be dismantled and obliterated when and where found.

(5) Hitchracks or corrals and other improvements to facilitate stock use may be used as necessary to prevent damage to the wilderness resource. They will be located away from main-traveled trails, streams, lakes, camping areas, and focal points of in-

terest, and will be constructed of materials which harmonize with the environment.

d. **Outfitter Camps**

The Wilderness Management Plan will carefully analyze the role of the outfitter-guide in a particular wilderness. Some wilderness areas may not be particularly suited to this kind of service due to size, shape, location, etc., or to the objectives for management of a particular wilderness. Also, the visitor-use capacity of the wilderness as well as public needs must be considered in making a decision to permit or not permit outfitter-guide services. If allowed, these services will be planned and administered to meet public needs while maintaining the wilderness resource. Operations will be so administered as to be harmonious with those of wilderness visitors who do not employ such services.

Outfitter-guide camps will be located off the primary trails or scenic spur trails and at sufficient distance from attractions to avoid conflicts with other visitors. The BLM will select the location of outfitter-guide campsites as necessary to protect wilderness resources and the wilderness experience of other visitors. Outfitter-guides will operate under special recreation permits, which will include stipulations for management of the use. The Wilderness Management Plan shall evaluate the need for temporary caches not involving erection of structures and shall designate their locations, if caches are to be approved.

3. **Fuelwood**

If campsites or cooking fires are permitted, fuelwood cutting should be limited to dead and down material. The use of portable cookstoves will be encouraged whenever possible. The Wilderness Management Plan will define any regulations or restrictions needed for wilderness resource protection.

4. **Contests**

Contests, such as physical or mental endurance of a person or animal; foot races; canoe or boat races; competitive trail rides; survival contests or exercises (including military); and other activities of this nature shall not be permitted in wilderness areas. These activities do not depend on a wilderness setting, and they cause impacts that degrade the wilderness character of the area, thus adversely affecting wilderness-dependent uses.

5. **Recreational or Hobby Mineral Collecting**

Recreational or hobby collecting of mineral specimens (rockhounding) will be allowed in wilderness. Such use will be limited to hand methods or detection equipment that does not cause surface disturbance, such as a metal detector or Geiger counter. In addition, methods shall not be permitted that in any way adversely affect or degrade the wilderness resource or the experiences of visitors in the area. (This paragraph does not cover mining claims, which are addressed in section III. I below.)

III. B. Cultural and Historic Resources

Archeological and historical sites and values are a unique and nonrenewable part of the wilderness resource. They are protected by provisions of the Uniform Rules and Regulations (43 CFR Part 3) to carry out the Antiquities Act of 1906, the Historic Sites Act of 1935, Executive Order 11593, the National Historic Preservation Act of 1966, as amended, and the Archeological Resources Protection Act of 1979. To the extent not inconsistent with the concept of wilderness preservation and the intent of the Wilderness Act, and objectives for cultural resource management, these resources are available for recreational, scenic, scientific, educational, conservation, and historical uses (including ceremonial or religious use by Native Americans).

Cultural resources, in most instances, will be subject to the forces of nature in the same manner as other wilderness resources. Study or management will not normally include any excavation, stabilization, or interpretation activities. Salvage, rehabilitation, stabilization, reconstruction, and restoration work on archeological and historic sites; excavation; and intensive inventories may be permitted on a case-by-case basis where the project will not degrade the overall wilderness character of the area and such activity is needed to preserve the particular resource. State Director approval is required for all such projects.

The National Historic Preservation Act and Executive Order 11593 require an inventory and evaluation of cultural resources. The evaluation study for National Register of Historic Places eligibility is made using criteria in 36 CFR 1202.6 and in consultation with the State Historic Preservation Officer (SHPO). Those cultural resources found to qualify are nominated to the National Register of Historic Places.

Those sites or structures that do not qualify for the National Register may be allowed to deteriorate naturally, or be removed or obliterated. However, some structures may qualify for retention as historic features or under the "minimum tool" policy (refer to section II. B. 3), or as facilities necessary for a use specifically permitted by the Wilderness Act or by the law designating the affected wilderness area.

Management direction for cultural resources that qualify for nomination to the National Register is subject to compliance with Section 106 of the National Historic Preservation Act and 36 CFR 800. A decision to remove, maintain, or allow historic or prehistoric structures to deteriorate naturally is a Federal undertaking which will affect the resources. In working through the compliance processes, a determination will be made as to what feasible and prudent alternatives exist to satisfactorily mitigate adverse effects of the proposed decision on the cultural resources. A Memorandum of Understanding will be developed with all consulting parties whenever an adverse effect determination is made (36 CFR 800). The range of alternatives might include recording to established standards (by drawings and photographs), salvage (by removing or dismantling), stabilizing, or restoration. Stabilization or restoration and subsequent maintenance may be considered for administrative struc-

tures that meet the "minimum tool" policy (refer to secton II. B. 3).

III. C. Forestry Resources

1. **Cutting of Trees and Shrubs**

Management of the forest cover will be directed toward retaining the primeval character of the environment and allowing natural ecological processes to operate freely. Trees, shrubs, and other vegetative products will not be sold or cut for nonwilderness purposes except under specified conditions set forth in these guidelines for valid mining claims and under emergency conditions such as fire, insect, and disease control.

2. **Cutting of Trees for Administrative Purposes**

Trees may be cut for use in the construction and maintenance of authorized improvements that are located within the wilderness when the necessary material cannot be reasonably obtained or brought in from outside the wilderness. Such cutting within the wilderness shall be done away from trails or campsites, and all evidence of the cutting shall be disposed of insofar as possible.

3. **Cutting of Trees for Fuelwood**

(Refer to section III. A. 3., Fuelwood, for specific guidance.)

4. **Reforestation**

Reforestation, in the absence of natural revegetation, will generally be prohibited, but in rare cases may be authorized by the Director to prevent deterioration or loss of the wilderness resource when the cause of the damage or loss is due to human activities and there is no reasonable expectation of natural reforestation. The natural processes of ecological succession will be the preferred method of site-restoration. When reforestation action is necessary, only native species and only primitive methods, such as hand planting, will be used.

III. D. Fish and Wildlife

Management will seek a natural distribution, number, and interaction of indigenous species of fish and wildlife. Natural processes will be allowed to occur in wilderness ecosystems, which include fish and wildlife populations, as far as possible without human influences. Management will protect the conditions that allow natural processes a maximum degree of freedom.

To the extent possible, wildlife species in BLM wilderness should be allowed to maintain a natural balance with their habitat and with each other. Wildlife may be harvested under State regulations, fisheries management will be consistent with preservation of the area's wilderness character, and direct fish and wildlife control measures will be applied only upon a showing of need under standards described below.

The BLM, in cooperation with State and Federal public health and fish and game officials, may make special exceptions, where necessary to control disease epidemics or other health hazards in which wildlife species are involved as carriers.

The basic responsibilities of the BLM and other cooperating State and Federal agencies in the management of fish and wildlife are not altered by the Wilderness Act. However, the constraints of the Act and the intent of the Congress articulated in the Act and in subsequent legislation will guide the management of wildlife in wilderness. Memoranda of Understanding will be developed with appropriate State game and fish agencies to clarify wildlife management jurisdictions. Wilderness Management Plans will specify wildlife habitat conditions to be maintained. Development of management plans will fully involve all Federal, State, and local agencies and organizations in the formation of management direction.

The preservation of sensitive, rare, threatened, and endangered species dependent on wilderness conditions will be favored.

The killing of native birds and mammals which are a natural component of the biotic community, but are not provided protection by State or Federal law, will be discouraged or controlled if necessary through public education and Memoranda of Understanding with State game and fish agencies.

1. **Hunting and Fishing**

Hunting and fishing are permitted in BLM-administered wilderness, subject to applicable State and Federal laws and regulations. Coordination with State game and fish agencies for the management of resident wildlife and fish species will be sought in order to ensure maintenance of the wilderness resource. Specific management criteria may be cited in Memoranda of Understanding and the Wilderness Management Plan.

2. **Fish and Wildlife Habitat**

The proper balance of fish and game animals with their habitat may be achieved by managing public hunting and fishing. Objectives for the management of fish and wildlife habitat are normally compatible with the objectives for maintaining general wilderness character, or careful planning usually can make them so. Where incompatible, the requirements for maintenance of wilderness values will be overriding.

Vegetative manipulation projects for fish and wildlife purposes may be approved by the State Director on a project-by-project basis if they do not degrade wilderness character, or if they correct conditions which are a result of human influence, or if the project will promote the perpetuation of a threatened or endangered species.

Habitat manipulation by chemical or mechanical means may only be approved on a project-by-project basis where necessary for threatened or endangered species, or to correct unnatural conditions resulting from human influence. Such activities will be allowed only where manipulation would enhance the wilderness resource and where natural processes have been unsuccessful. Hand or aerial seeding of native

vegetation species may be permitted after disturbances, such as wildfire, to restore essential food plants to a wilderness where the natural process of healing is not expected to occur. Actions of this type will be allowed only to enhance wilderness values and not to optimize habitat needs of any single wildlife species to the detriment of wildlife diversity in an untrammeled environment.

Wildfire or prescribed burning may be used as a wildlife management tool if carefully designed to maintain or enhance the wilderness resource. Wildfire or prescribed burning is to be used only when the project can be accomplished without serious or long-lasting damage to watershed or the area's wilderness character. Prescribed burning will not be permitted to improve wildlife utilization. It may be done only for the following purposes:

a. It is needed to maintain the natural condition of a fire-dependent ecosystem or to re-introduce fire where past strict wildfire control measures have interfered with natural ecological processes.

b. A primary value of a given wilderness will be sustained as a result of the burning.

c. It will promote the perpetuation of a threatened or endangered species.

Additional specific guidelines on prescribed burning appear in section III. E, Fire Management.

The BLM may authorize State and Federal agencies to use temporary enclosures and facilities to trap or transplant wildlife as long as they are the minimum necessary to protect or maintain the wilderness resource.

Although construction of facilities to enhance an area's value for wildlife or fish is not consistent with the free operation of natural processes, there are situations where such measures may be necessary for the continued existence or welfare of wildlife or fish living in wilderness. This is particularly true in the case of species adversely affected through human activities in such areas. Certain permanent installations to maintain conditions for wildlife and fish, upon consideration of their design, placement, duration, and use, may be permitted if the resulting change is compatible with preservation of wilderness character and is consistent with wilderness management objectives for the area, and if the installations are the minimum necessary to accomplish the task. Permissible actions under these criteria may include: installations to protect sources of water on which wildlife depend, such as enclosures; and water sources such as springs, wells, and guzzlers. Fisheries activities may be permitted as long as their purpose is to protect natural conditions, restore deteriorated habitat, and maintain wilderness values.

3. **Wildlife Manipulation**

In some instances, wildlife species once native to the wilderness have been forced from their original habitat by the encroachment of human beings and human activities. To the extent that these factors can be altered or managed within the intent of the Wilderness Act, native species no longer established in the wilderness area may be reintroduced and managed as a part of the wilderness resource. Care must be exercised to be certain that the species is native. Such programs will be addressed in the wilderness management plan.

Management of established exotic species (e.g., chukar partridge, pheasant) not natural to an area may continue where they enhance the wilderness character of a particular wilderness. Introduction of new exotics will not be permitted. Coordination with State and Federal agencies should be established for control of undesirable exotic populations.

4. **Fish Stocking**

Fish-stocking programs needed to meet wilderness management objectives shall be developed in cooperation with the State agencies or the Fish and Wildlife Service and shall be coordinated with overall wilderness management objectives. The probability of increased visitor use at stocked waters and the full impact and effect of such use on the wilderness resource will be recognized and considered.

Memoranda of Understanding with State agencies should be developed to establish a stocking policy for each wilderness where stocking is permitted, as a basis for a stocking plan. Basic decisions will be spelled out in the wilderness management plan for each wilderness. Aerial stocking of fish by State agencies or the Fish and Wildlife Service may continue where this was an established practice prior to designation. Authorization will be on a case-by-case basis. Aerial stocking should be done outside of general visitor use seasons when possible. Wilderness management plans should contain all necessary justification, mitigation, and definition of planting programs.

Some general guides for fish stocking in BLM wilderness units are:

a. Native species should be favored in waters with a history of supporting such species. Species native to the vicinity or region may be considered as an alternative. Exotic fish will not be considered, except where such practice existed prior to wilderness designation and it meets wilderness management objectives.

b. Waters with etablished undesirable fish or where overpopulations of fish have occurred should be managed for fish best suited to the water under natural conditions, and to meet wilderness management objectives. Barren waters may be stocked only if the wilderness management plan defines the desirability of such an action. The scientific value of barren lakes will be considered prior to approval to stock.

c. Presently nonstocked waters which at one time supported a native fish population, and which would provide suitable habitat for native fish species that would enhance the wilderness experience of visitors, may be considered for stocking on a case-by-case basis.

d. In all fish-stocking activities, threatened or endangered species shall receive primary consideration.

5. **Trapping**

Trapping of furbearers, such as mink, marten, beaver, and muskrat, is a compatible wilderness use and will be allowed under State laws and regulations. Commercial trapping will not be permitted. Incidental trapping, if it is not the trapper's sole source of livelihood, is permitted.

6. **Rodents**

Rodents in BLM-administered wilderness areas shall be exempt from control programs, except where overpopulations pose a serious threat to other wilderness values or resources and property outside the boundaries of the wilderness. Control projects must be approved on a case-by-case basis.

7. **Predators**

Predacious animals are an important part of natural life systems within wilderness. They play an important role in the natural selection and survival processes, helping to maintain critical population balances of wild species. They should be able to survive and compete with other species, free from unregulated human interference and the traditional pursuit of sport or bounty. Where control of predators is necessary to protect threatened or endangered wildlife species or on a case-by-case basis to prevent special and serious losses of domestic livestock, it will be accomplished by methods which are directed at eliminating the offending individuals while at the same time presenting the least possible hazard to other animals or to wilderness visitors. Poison baits or cyanide guns are not compatible. Control programs will be carried out by or under the direction of the U.S. Fish and Wildlife Service (FWS), the BLM, or State agencies, and will be consistent with the Secretary of the Interior's policies on animal damage control and with the Memorandum of Understanding between the BLM and FWS. Programs will comply with BLM Animal Damage Control plans where these have been previously adopted. The State Director will approve predator-control programs on a case-by-case basis, and under such conditions as to ensure minimum disturbance to the wilderness resource and visitors.

Approval of predator control actions must be contingent upon a clear showing that the removal of the offending predators will not diminish the wilderness values of the area, because this kind of wildlife is an integral part of the wilderness, as well as an adjunct to the visitor's experience.

III. E. Fire, Insect, and Disease Management

1. **Fire Management**

a. **Overriding Fire Guidance**

All fires will be controlled to prevent loss of human life or property within wilderness areas or to prevent the spread of fire to areas outside of the wilderness where life, resources, or property may be threatened. Human-caused wildfires will be prevented and/or controlled unless the fire meets wilderness fire management objectives.

b. **Natural Fire**

Natural fire (i.e., lightning-caused) is normally a part of the ecology of the wilderness, and human efforts to ban this agent may have resulted in significant ecological changes in the flora and fauna of some areas. In order to return some wilderness ecosystems to a more natural state, it may be appropriate to allow natural fire to burn, but only in conformance with an approved Fire Management Plan and the overriding fire guidance in section (a) above.

c. **Prescribed Burning**

Where natural fire under prescription does not meet wilderness fire management objectives, prescribed burning with ignition by Bureau personnel may be allowed on a case-by-case basis for the following purposes:

(1) To reintroduce or maintain the natural condition of a fire-dependent ecosystem.

(2) To restore fire where past strict fire control measures had interfered with natural, ecological processes.

(3) Where a primary value of a given wilderness will be perpetuated as a result of the burning, or

(4) Where it will perpetuate a threatened or endangered species.

Prescribed fires will be allowed only in conformance with an approved Fire Management Plan. State Director approval is required.

d. **Removal of Evidence of Fire Control Activities**

Temporary fire camps, helispots, and other sites used for fire suppression or control activities shall be removed upon completion of use and the site rehabilitated to as natural a state as possible.

e. **Fire Detection**

Fire detection methods necessary to meet wilderness objectives will be used. Structures such as lookouts may be maintained or constructed if they are the minimum necessary to achieve wilderness management objectives and there is no other alternative detection method. Preference will be given to detection methods which have the least permanent impact on wilderness values, such as aircraft overflights and lookouts located outside the wilderness boundary.

f. **Pre-Suppression**

Pre-suppression activities may be allowed to meet wilderness management objectives and where necessary for the protection of the public health or safety. All pre-suppression programs will be addressed in the Fire Management Plan.

g. **Suppression**

Fire-suppression measures and techniques shall be used which achieve the wilderness management objectives with the minimum adverse impact on the wilderness resource. Preference shall be given to the methods and equipment which least alter the landscape or disturb the land surface. Structures and improvements shall be located outside the wilderness boundary, except those that are the minimum necessary to achieve wilderness management objectives.

h. **Fire Management Plans**

The following considerations will be covered in each Fire Management Plan: wilderness management objectives for the area, historic fire occurrence, natural role of fire, proposed degree of suppression, ex-

pected fire behavior, acceptable suppression techniques, smoke management, and effects on adjacent landowners. The plan will conform to criteria established by the BLM defining the limits of acceptable fire weather, fire behavior, and fire effects. Each Fire Management Plan will be written to conform to the Wilderness Management Plan (WMP) for the area it addresses and will become an addendum to the WMP upon approval.

2. **Control of Insects and Diseases**

Insect and disease outbreaks will not be artificially controlled, unless it is necessary to protect timber or other valuable resources outside of the wilderness area, or in special instances when loss to resources within a wilderness is undesirable (e.g., absence of control would threaten rare or endangered plants or animals). Such control measures will consist of the effective combination of actions which have the least adverse impact on the wilderness resource.

Special care must be taken when using chemicals or other artificial methods to control insect and disease outbreaks because of their possible adverse effect on the total biological community.

Insect or disease suppression projects in BLM wilderness must be approved by the Director.

III. F. Water Resource Management

1. **Watershed Restoration**

Watershed restoration may be undertaken where deteriorated soil and hydrologic conditions caused by human beings or human influences create a serious threat or loss of wilderness values; or where, even though not human-caused, these conditions present a definite hazard to life or property, or where such conditions could cause serious depreciation of important environmental quality outside the wilderness. Where such dangers are not imminent or where natural vegetation may be expected to return in a reasonable time, restoration work will not be done.

Re-establishment of vegetation as a watershed-restoration measure, where there is no reasonable expectation of natural healing, will be accomplished using native or naturalized species. Overland motorized equipment will not be used where more primitive equipment can accomplish the restoration objectives. Exceptions must be fully justified, based upon serious imminent threat to high downstream values. Approval by the Director is required for all watershed restoration proposals.

2. **Water Improvements**

a. **Water-yield Improvements**

Protection of wilderness values and management objectives generally preclude use of water-yield improvement techniques. Water-yield improvement prescriptions, if contemplated, must be clearly compatible with maintenance of the wilderness resource. The Director's approval is required for project approval.

b. **New Water-Development Structures**

The establishment of new water-regulating structures, power installations, and related improvements is subject to approval by the President. (Range and wildlife water-development structures are discussed under separate subheadings and are not subject to Presidential approval.)

The BLM's conclusions and recommendations in connection with proposals for new water-resource developments will be based upon comprehensive, factual information developed by an environmental analysis, and draft and final environmental impact statements, as prescribed by the National Environmental Policy Act. The final environmental impact statement requires the Director's approval. Any recommendation in favor of the proposal must be based upon a clear showing that the public values to be gained exceed the values that would be lost, and that the need cannot be met outside the wilderness. When a proposed structure is thus found to be in the public interest, consideration should also be given to a recommendation to exclude the applicable area from wilderness.

c. **Existing Structures**

Reservoirs, ditches, catchments, and related facilities for the control or use of water may have existed within BLM wilderness under valid permits or other authority prior to the area's designation as wilderness. These may be maintained if they are needed in the public interest, or are a part of a valid existing right.

Routine maintenance and repair of an existing structure which does not change the location, size or type, or increase the original intended storage capacity of a reservoir may be approved by the State Director. The operation, maintenance and repair of such facilities may include occasional motorized access where no other reasonable or practical alternatives exist.

Reconstruction of any structure or restoration of a natural body of water to its original or historic level must be approved by the State Director. Primitive means of transport and hand tools will be used wherever and whenever feasible.

Any proposal to increase the storage capacity of a reservoir, or replace a reservoir, which was not under a valid permit at the time the unit was incorporated into the National Wilderness Preservation System, will be considered as a new structure and subject to approval by the President.

The wilderness management plan should carefully evaluate each improvement to determine if the continuation of the use is needed in the public interest, or is part of a valid existing right. Maintenance needs and methods must be specifically stated if the improvement is to remain. If not, the improvement should be allowed to deteriorate naturally. When natural processes themselves cannot effectively and safely return the abandoned improvement back to a natural condition, restoration by other means may be used. Only hand labor and tools, and seeding with native or naturalized species may be permitted. All restoration projects are subject to approval by the State Director.

d. **Snow Measurement**

The measurement of snow within BLM wilderness is permitted under the following conditions:

(1) Measurement of snow will be accomplished by primitive means. If use of a helicopter was an established practice in measuring snow within an area prior to wilderness designation, that same use may be permitted. However, ways and means of eliminating the need will be explored.

(2) No new data sites can be established unless they are parts of projects approved by the President under provisions of Section 4(d)(4) of the Wilderness Act. Use of existing data sites may continue until adequate correlation can be established with data sites outside the wilderness. Installation of automated equipment (sensing devices, data collection platforms, etc.) may be permitted on a temporary basis at existing data sites to accelerate the development of correlations with data sites outside the wilderness. Access will be by primitive means except as specifically provided for in (1) above.

(3) Only miniaturized and unobtrusive types of equipment may be installed, and must be camouflaged to blend with the terrain as much as possible. Practices such as burying equipment and using antennae which can be removed during nonuse periods, will be used to minimize the visual impacts of the data site.

e. **Water Quality**

Maintaining or enhancing water quality is of high priority in management of the wilderness resource. Water quality monitoring instruments and hydrometeorological devices may be permitted if these are the minimum necessary for protection of the wilderness resource. All instruments and devices must be miniaturized and unobtrusive. No motorized vehicles will be permitted for installation, maintenance, or monitoring and surveillance.

f. **Weather Modification Over Wilderness**

Use of lands within the National Wilderness Preservation System as target areas for weather modification activities will not be approved unless the following conditions are met:

(1) The proponent can provide reasonable, scientifically supportable assurance that the activities will not produce permanent, substantial changes in natural conditions.

(2) The proposal does not include any feature that might reasonably be expected to produce conditions incompatible in appearance with the wilderness environment or reduce its value for recreation, scenic, scientific, education, conservation, or historical use.

The effects of weather modification activities may be permanent or temporary depending upon the type, duration, and degree of change in weather brought about by that activity.

Generally, short-term weather-modification activities, which will produce only occasional, incidental, temporary, or transitory changes in the weather with carryover effects on the ground lasting only a few days beyond the actual seeding period, can be permitted over wilderness because little or no permanent, identifiable ecological or physical impact is likely. Conversely, long-term weather modification programs, which will produce a repeated or prolonged change in the weather during any part of successive years, are likely to have a direct and often substantial impact in terms of ecological and physical effects. Even though the human contribution to these impacts on the ecology and physical conditions on the ground may be obscured by the fact that the activities are carried on outside or above the wilderness, they nevertheless can be recognized to be the result of human activities and therefore cannot be permitted where they will directly affect wilderness areas.

State Directors will gather necessary information relative to items 1 and 2 and make recommendations to the Director on any activity or application. The Director will approve activities or installations relative to weather modification affecting wilderness.

III. G. Air Quality

Under the Clean Air Act (as amended, 1977), BLM-administered lands were given Class II air quality classification, which allows moderate deterioration associated with moderate, well-controlled industrial and population growth. The BLM will manage designated wilderness areas as Class II unless they are reclassified by the State as a result of the procedures prescribed in the Clean Air Act (as amended, 1977).

According to the Clean Air Act, air quality reclassification is the prerogative of the States. The States must follow a process mandated by the Clean Air Act Amendments of 1977, involving a study of health, environmental, economic, social, and energy effects, a public hearing, and a report to the Environmental Protection Agency.

Administrative actions within wilderness areas will comply with the air quality classification for that specific area.

III. H. Rangeland Management

1. **Livestock Grazing Operations**

Section 4(d)(4)(2) of the Wilderness Act provides for continued livestock grazing where established prior to designating the area as wilderness. The objective of livestock management in wilderness is:

> Utilize the forage resource in conformity with established wilderness objectives for each area and the BLM grazing regulations (43 CFR 4100), and through practical, reasonable, and uniform application of the congressional guidelines and policy.

Further insight on the subject is in the Conference Report on S.2009 (House Report 96-1126) under the heading "Grazing in National Forest Wilderness Areas." These congressional guidelines and policy are to be considered in the overall context of the purposes and direction of the Wilderness Act and will be applied nationwide. They are reprinted here verbatim as an excerpt from House Report 96-1126:

Grazing in National Forest Wilderness Areas

Section 4(d)(4)(2) of the Wilderness Act states: "the grazing of livestock, where established prior to the effective date of this Act, shall be permitted to continue subject to such reasonable regulations as are deemed necessary by the Secretary of Agriculture."

The legislative history of this language is very clear in its intent that livestock grazing, and activities and the necessary facilities to support a livestock grazing program, will be permitted to continue in National Forest wilderness areas, when such grazing was established prior to classification of an area as wilderness.

Including those areas established in the Wilderness Act of 1964, Congress has designated some 188 areas, covering lands administered by the Forest Service, Fish and Wildlife Service, National Park Service and Bureau of Land Management as components of the National Wilderness Preservation System. A number of these areas contain active grazing programs, which are conducted pursuant to existing authorities. In all such cases, when enacting legislation classifying an area as wilderness, it has been the intent of the Congress, based on solid evidence developed by testimony at public hearings, that the practical language of the Wilderness Act would apply to grazing within wilderness areas administered by all Federal agencies, not just the Forest Service. In fact, special language appears in all wilderness legislation, the intent of which is to assure that the applicable provisions of the Wilderness Act, including Section 4(d)(4)(2), will apply to all wilderness areas, regardless of agency jurisdiction.

Further, during the 95th Congress, Congressional committees became increasingly disturbed that, despite the language of section 4(d)(4)(2) of the Wilderness Act and despite a history of nearly 15 years in addressing and providing guidance to the wilderness management agencies for development of wilderness management policies, National Forest administrative regulations and policies were acting to discourage grazing in wilderness, or unduly restricting on-the-ground activities necessary for proper grazing management. To address this problem, two House Committee on Interior and Insular Affairs Reports (95-620 and 95-1321) specifically provided guidance as to how section 4(d)(4)(2) of the Wilderness Act should be interpreted. This guidance appeared in these reports as follows:

> Section 4(d)(4)(2) of the Wilderness Act states that grazing in wilderness areas, if established prior to designation of the area as wilderness, "shall be permitted to continue subject to such reasonable regulations as are deemed necessary by the Secretary of Agriculture". To clarify any lingering doubts, the committee wishes to stress that this language means that there shall be no curtailment of grazing permits or privileges in an area simply because it is designated as wilderness. As stated in the Forest Service regulations (36 CFR 293.7), grazing in wilderness areas ordinarily will be controlled under the general regulations governing grazing of livestock on National Forests. . . . This includes the establishment of normal range allotments and allotment management plans. Furthermore, wilderness designation should not prevent the maintenance of existing fences or other livestock management improvements, nor the construction and maintenance of new fences or improvements which are consistent with allotment management plans and/or which are necessary for the protection of the range.

Despite the language of these two reports, RARE II hearings and field inspection trips in the 96th Congress have revealed that National Forest administrative policies on grazing in wilderness are subject to varying interpretations in the field, and are fraught with pronouncements that simply are not in accordance with Section 4(d)(4)(2) of the Wilderness Act. This had led to demands on the part of grazing permittees that section 4(d)(4)(2) of the Wilderness Act be amended to clarify the intentions of Congress. However, because of the great diversity of conditions under which grazing uses (including different classes of livestock) are managed on the public lands, the Conferees feel that the original broad language of the Wilderness Act is best left unchanged. Any attempts to draft specific statutory language covering grazing in the entire wilderness system (presently administered by four separate agencies in two different Departments) might prove to be unduly rigid in a specific area, and deprive the land management agencies of flexible opportunities to manage grazing in a creative and realistic site specific fashion.

Therefore, the conferees declined to amend section 4(d)(4)(2) of the Wilderness Act, agreeing instead to reaffirm the existing language and to include the following nationwide guidelines and specific statements of legislative policy. It is the intention of the conferees that the guidelines and policies be considered in the overall context of the purposes and direction of the Wilderness Act of 1964 and this Act, and that they be promptly, fully, and diligently implemented and made available to Forest Service personnel at all levels and to all holders of permits for grazing in National Forest Wilderness areas:

1. There shall be no curtailments of grazing in wilderness areas simply because an area is, or has been designated as wilderness, nor should wilderness designations be used as an excuse by administrators to slowly "phase out" grazing. Any adjustments in the numbers of livestock permitted to graze in wilderness areas should be made as a result of revisions in the normal grazing and land management planning and policy setting process, giving consideration to legal mandates, range condition, and the protection of the range resource from deterioration.

It is anticipated that the numbers of livestock permitted to graze in wilderness would remain at the approximate levels existing at the time an area enters the wilderness system. If land management plans reveal conclusively that increased livestock numbers or animal unit months (AUMs) could be made available with no adverse impact on wilderness values such as plant communities, primitive recreation, and wildlife populations or habitat, some increases in AUMs may be permissible. This is not to imply, however, that wilderness lends itself to AUM or livestock increases and construction of substantial new facilities that might be appropriate for intensive grazing management in non-wilderness areas.

2. The maintenance of supporting facilities, existing in an area prior to its classification as wilderness (including fences, line cabins, water wells and lines, stock tanks, etc.), is permissible in wilderness.

Where practical alternatives do not exist, maintenance or other activities may be accomplished through the occasional use of motorized equipment. This may include, for example, the use of backhoes to maintain stock ponds, pickup trucks for major fence repairs, or specialized equipment to repair stock watering facilities. Such occasional use of motorized equipment should be expressly authorized in the grazing permits for the area involved. The use of motorized equipment should be based on a rule of practical necessity and reasonableness. For example, motorized equipment need not be allowed for the placement of small quantities of salt or other activities where such activities can reasonably and practically be accomplished on horseback or foot. On the other hand, it may be appropriate to permit

the occasional use of motorized equipment to haul large quantities of salt to distribution points. Moreover, under the rule of reasonableness, occasional use of motorized equipment should be permitted where practical alternatives are not available and such use would not have a significant adverse impact on the natural environment. Such motorized equipment uses will normally only be permitted to those portions of a wilderness area where they had occurred prior to the area's designation as wilderness or are established by prior agreement.

3. The replacement or reconstruction of deteriorated facilities or improvements should not be required to be accomplished using "natural materials", unless the material and labor costs of using natural materials are such that their use would not impose unreasonable additional costs on grazing permittees.

4. The construction of new improvements or replacement of deteriorated facilities in wilderness is permissible if in accordance with those guidelines and management plans governing the area involved. However, the construction of new improvements should be primarily for the purpose of resource protection and the more effective management of these resources rather than to accommodate increased numbers of livestock.

5. The use of motorized equipment for emergency purposes such as rescuing sick animals or the placement of feed in emergency situations is also permissible. This privilege is to be exercised only in true emergencies, and should not be abused by permittees.

In summary, subject to the conditions and policies outlined above, the general rule of thumb on grazing management in wilderness should be that activities or facilities established prior to the date of an area's designation as wilderness should be allowed to remain in place and may be replaced when necessary for the permittee to properly administer the grazing program. Thus, if livestock grazing activities and facilities were established in an area at the time Congress determined that the area was suitable for wilderness and placed the specific area in the wilderness system, they should be allowed to continue. With respect to areas designated as wilderness prior to the date of this Act, these guidelines shall not be considered as a direction to re-establish uses where such uses have been discontinued.

It is also the understanding of the conferees that the authorizing Committees intend to closely monitor the implementation of the guidelines through subsequent oversight hearings to insure that the spirit, as well as the letter, of the guidelines are adhered to by the Forest Service. Of course, the inclusion of these guidelines in this Joint Statement of Managers does not preclude the Congress from dealing with the issue of grazing in wilderness areas statutorily in the future.

This concludes the excerpt from House Report 96-1126.

a. **Management Plans**

The above congressional guidelines and policies will be applied in accordance with the environmental analysis process. Management prescriptions will be determined through the BLM resource management planning process and implemented by the allotment management plan.

Planning for livestock grazing operations in designated wilderness will be through the normal BLM resource management planning processes.

(1) Resource management plans establish:

(a) Objectives and prescriptions for management of wilderness. These are based on resource inventory data which includes, but is not limited to, ecosystem identification, rangeland conditions, existing uses, and areas of existing or potential conflict.

(b) Use levels of the rangeland resource and its relationship with other uses.

(2) Allotment management plans, within the direction established by the resource management plan, prescribe:

(a) The manner and extent to which livestock grazing will be conducted to meet wilderness objectives, rangeland resource needs, desired conditions of ecosystems, and other resource values.

(b) Direction and scheduling for accomplishing goals and objectives on individual allotments, including the development of rangeland improvement schedules and grazing system to be followed.

b. **Permits.**

Grazing operations within wilderness areas will be authorized by grazing permits. Permits for livestock operations will be issued only in areas where grazing was established at the time the wilderness was designated.

c. **Rangeland Analysis**

(1) Rangeland analysis in wilderness areas will follow the normal BLM standards.

(2) The development of the allotment management plan will determine the need for and standards of rangeland improvements and will prescribe the grazing system to be followed.

Where an approved allotment management plan exists at the time an area is designated as wilderness, it will be reviewed in context with the congressional guidelines and policy. Necessary modification will be integrated into the resource management plan and the allotment management plan.

Allotment management plans for allotments partially or entirely within designated wilderness will specifically identify the following:

(a) The use of motor vehicles, motorized equipment or other forms of mechanical equipment including: specific equipment, where it is to be used, when it is to be used, and what it is to be used for.

(b) Rangeland improvement structures and installations to be maintained, constructed, or reconstructed in achieving rangeland management objectives, including maintenance standards.

(c) The means to handle emergencies. In bonafide emergencies or urgent situations, decisions will be based on consideration of all relevant factors and use of good judgment.

d. **Rangeland Improvements.**

The following criteria should be considered in determining the use of motor vehicles, motorized equipment or mechanical transport in constructing, maintaining or applying rangeland improvements and practices.

(1) Minimizing threat to or loss of property.

(2) Minimum use of motorized equipment within wilderness.

(3) Develop and manage the rangeland resource in a cost-effective manner.

(4) Achieve least amount of impact by nonconforming uses on wilderness values through:

(a) Scheduling during periods of low use.

(b) Harmonizing improvements to surrounding landscape.

(c) Locate improvements to achieve maximum screening and fully utilize natural feature opportunities.

(5) Type of practice or construction material.

(6) Timeliness, including frequency and time of year.

(7) Need to deal with emergency or urgent situations that develop through acts of nature, such as drought, heavy snow.

(8) Location of nearest ranch facilities in relation to the project.

(9) Availability of primitive transport, e.g., team and wagon, saddle and pack stock, etc.

(10) Length of time to complete a project by alternative methods.

(11) Availability of temporary camp and feed sites.

(12) Age and health factors of permittee.

Documentation of the environmental analysis which considers the authorization of rangeland improvement construction and/or maintenance, and the use of motor vehicles, motorized equipment, and mechanical transport shall be made in an environmental assessment.

e. **Structural Rangeland Improvements**

Rangeland improvement alternatives will be developed and evaluated through the environmental analysis process, including consultation with grazing permittees and other interested publics. Alternatives which utilize a practical and reasonable approach to meet rangeland and wilderness management objectives will be selected.

Permit modifications for the construction of new rangeland improvements or replacement of existing rangeland improvements will be made in accordance with BLM grazing regulations. Special consideration will be given to construction standards and techniques to achieve the most practical and reasonable approach considering the wilderness resource. Specific consideration will be given to:

— Costs of using natural materials.

— Alternative means of construction which harmonize to the extent possible with the wilderness resource.

— Use of motor vehicles, motorized equipment or mechanical transport needed for construction of improvements.

All rangeland improvements will be listed in the allotment management plan along with maintenance schedules.

(1) **Maintenance.**

The maintenance of existing necessary rangeland improvements may be allowed to continue. Those determined unnecessary through an environmental analysis will be phased out and removed on an agreed upon schedule.

The techniques by which maintenance of rangeland improvements and other related grazing activities are performed will require careful study, consideration of options, and a practical and reasonable solution. Existing use and requests for new use of motor vehicles, motorized equipment or other forms of mechanical transport, including emergencies, will be reviewed and congressional grazing guidelines applied. The occasional use of motor vehicles, motorized equipment or mechanical transport may be permitted where practical alternatives are not available.

The guidelines address occasional use of motor vehicles, motorized equipment, or mechanical transport where practical alternatives do not exist, with application only to those portions of a wilderness where they occurred prior to wilderness designation. It is important to look at all options and their impacts. Good judgment will be necessary in the decisionmaking process.

(2) **New Improvements.**

The construction of new rangeland improvements is permissible if determined to be necessary for the purpose of resource protection (rangeland and/or wilderness) and the effective management of these resources, rather than to accommodate increased numbers of livestock. The rangeland analysis may indicate that a reduction of use is necessary for rangeland protection, or new rangeland improvements are necessary for improved management or protection of wilderness values. New improvements will not be justified solely on the basis that they will aid intensive management resulting in increased grazing.

(3) **Types of Materials.**

When permitted, new or existing improvements should be of materials which harmonize with the wilderness character of the area to reduce the impact of artificial objects on the natural environment. Natural (native) materials for improvements will be used unless costs are unreasonable or they do not harmonize with the wilderness.

When replacement of an existing range improvement is contemplated, the following will be considered:

(a) The necessity of the rangeland improvement for livestock grazing operations, resource protection, or enhancement of wilderness values. Some improvements may no longer be needed or should be relocated. Existing rangeland improvements may be necessary for management of the rangeland and wilderness resources. Other alternatives for meeting needs will be explored.

(d) Design, location, and type of materials feasible to serve the purpose and yet be harmonious with natural features of the wilderness will be considered. A steel post and wire fence may be less obtrusive than native pole fence. A redwood water trough may be less noticeable than a steel one. A windmill may better harmonize with wilderness values than an earthen stock pond.

(c) Material and labor costs for natural materials vs. artificial materials. Good judgment, in

consultation with permittees, will provide the basis for determining what is reasonable for the permittee's livestock grazing operation and the particular wilderness values involved.

f. **Non-Structural Rangeland Improvements**

Non-structural rangeland improvement practices can be approved where they were part of the management at the time the wilderness was established and where their continuance is necessary to maintain livestock grazing operations. The need for non-structural rangeland improvements and practices will be carefully analyzed using the following criteria:

(1) **Seeding.**

The need for seeding will be carefully analyzed. Seeding will be approved only for:

(a) Areas where human activities have caused the loss or threaten the existence of indigenous species.

(b) Areas where human activities have denuded or caused loss of soil, providing the actions or activities responsible for the deterioration have been corrected and natural vegetation is insufficient and ineffective.

(c) Maintenance of livestock grazing operations where seeding was practiced prior to the designation of wilderness. Species seeded will be those that are native or naturalized to the area. Seed will be broadcast, except in special situations where other seeding methods are necessary.

(2) **Plant Control.**

Plant control will be approved only for:

(a) Native plants when needed to maintain livestock grazing operations where practiced prior to the designation of wilderness.

(b) Noxious farm weeds by grubbing or with chemicals when they threaten lands outside wilderness or are spreading within the wilderness, provided the control can be effected without serious adverse impacts on wilderness values.

(3) **Irrigation.**

Artificial irrigation or water spreading will be done only to maintain livestock grazing operations where practiced prior to the designation of wilderness.

(4) **Fertilizing.**

Fertilization may be used only as an aid to revegetation of disturbed areas approved in item (1) or to maintan livestock grazing operations where practiced prior to the designation of wilderness. Liming will be considered a fertilization practice.

(5) **Prescribed Burning.**

Prescribed burning will be approved for rangeland management purposes only where it was practiced prior to the designation of wilderness and is necessary to achieve maintenance of livestock grazing operations; such use must be approved in a fire management plan. (Prescribed burning may be permitted for other purposes, under guidelines in section III. D. 2. and III. E. 1 of this document, such as in cases where reestablishment of natural fire regimes is desired. Rangeland management objectives may be achieved through such prescribed burns and through management of natural fire as prescribed in fire management plans.)

2. **Recreational Livestock**

Commercial recreational livestock, such as that used by packers and outfitters, will be grazed under permit. Noncommercial recreational livestock may also be subject to permit when necessary for the administration or protection of the wilderness. All recreational livestock users, including commercial outfitters, will be required to pack in feed for their domestic animals when it is determined that adequate forage is not available within the area to be visited. The Wilderness Management Plan will analyze the need for regulations or restrictions relating to recreational saddle and pack stock; including, but not limited to, hobbling rather than tethering of horses, restrictive zoning, horse-party size limits, and use of native feed or pellets.

3. **Wild Horses and Burros**

The Wild Free-Roaming Horse and Burro Act of 1971 declares that wild horses and burros "...are to be considered in the area where presently found, as an integral part of the natural system of the public lands."

Viable, healthy populations of wild horses and burros will be maintained in wilderness areas at levels determined appropriate by the BLM planning system. Herd numbers and management techniques will not degrade, and will be compatible with preservation of, the area's wilderness character.

Herd Management Area Plans (HMAP's) will be developed in wilderness areas containing wild horses or burros. The plans will detail the present condition and potential of the herd and herd management area. The plans will describe management actions required to meet the wilderness objectives as well as the herd needs. The HMAP's will establish the habitat requirements and any necessary improvements; herd structure (sex and age ratios, etc.); methods of population manipulation and control (including removal, if necessary); migratory habits; and projections of population changes over time. Monitoring studies for the herd and its habitat will be an integral part of the plan. The HMAP's will describe the physical improvements necessary for maintenance of healthy, viable herds and their habitat.

Use of motorized and mechanical equipment, including aircraft; use, maintenance and type of material, and equipment such as temporary corrals; and the location, frequency, and timing of such uses will be specified in HMAP's and wilderness management plans. Such uses will be allowed when no other alternatives exist, they are the minimum necessary to accomplish the task, and they are the least degrading of wilderness values temporarily or permanently. Use of these facilities and equipment require State Director approval.

Environmental assessments will analyze the impacts of the management prescribed by the HMAP's, and alternatives and mitigating measures to minimize those impacts upon the wilderness resource.

III. I. Minerals Management

1. Mining Law Administration

The Wilderness Act of 1964 provides the basis for the minerals management policy to be followed in approving minerals exploration and development in designated wilderness areas. The Act recognizes the rights of the mining claimant under the mining laws and provides for prospecting and mining in wilderness while providing for protection of the wilderness resource. Under the Wilderness Act, the mining laws shall, to the same extent as applicable prior to the designation of an area as wilderness, apply until midnight December 31, 1983. Thereafter, subject to valid rights then existing, the lands are withdrawn from all forms of appropriation under the mining laws. Therefore, BLM's policy on mining operations on unpatented mining claims will comprise two categories: those operations occurring on or before midnight December 31, 1983, and those operations occurring after midnight December 31, 1983, which may proceed because they qualify as valid existing rights as of that date.

a. **Plans of Operations**

(1) Whether or not the operations occur before or after midnight December 31, 1983, an approved plan of operations called for by 43 CFR 3809 is required in all BLM-administered wilderness areas. The plan of operations will include all access, functions, work, facilities, and activities in connection with prospecting, development, extraction, and processing of mineral deposits and all other uses related to these activities whether on or off a mining claim. All BLM officials involved must ensure that provisions approved in operating plans protect the rights of the operator while minimizing the impact on the wilderness resource. Operators must be allowed to carry out operations that are necessary and reasonably incidental to the mining operation, but may not, in any circumstance, cause unnecessary or undue degradation. District Managers may call for the expertise of all necessary specialists to ensure that both the wilderness and the rights of the operator are adequately and properly served.

Before approving the plan the BLM may assist the operator in selecting the most appropriate means and type of access and access route. The final approved access must be that which creates the least lasting impact on the wilderness resource, while still reasonably serving the needs of the operator.

Those activities otherwise generally prohibited in wilderness, including the use of mechanical transport, motorized equipment, or aircraft, shall be authorized only when there is no reasonable alternative. An approved operating plan will serve as authorization for such otherwise prohibited activities on mining claims within wilderness.

Casual use permissible in wilderness areas consists of operations resulting in only negligible disturbance to wilderness resources and not involving the use of mechanical or motorized equipment, landing of aircraft, or explosives. Examples of casual use would be: access by foot or horseback, or overflights to conduct magnetic surveys. Flights used to transport equipment or personnel into and out of the wilderness will not be considered as casual use. An approved plan of operations is not required for casual use.

(2) Contents of a plan of operations and plan approval procedures shall comply with the 43 CFR 3809 regulations. The following criteria shall also be satisfied:

(a) **Operations Prior to Midnight December 31, 1983.**

Until this deadline, lands within wilderness areas are open to appropriation under the mining laws to the same extent as before wilderness designation. In other words, claim staking, prospecting, exploration, development, and patenting may occur. Before approving operations submitted in a plan of operations during this time, the District Manager shall be satisfied that:

i. There will be no unnecessary or undue degradation of wilderness character.

ii. If mechanical or motorized equipment, including helicopter and fixed wing aircraft (beyond casual use), will be used, there is no reasonable alternative.

iii. The reclamation measures included in the plan of operations are adequate to provide for resotration as near as practicable of the surface of the land disturbed.

Any disapproval or denial of a plan of operations by the authorized officer is subject to appeal by the operator under the provisions of 43 CFR 3809.4.

(b) **Operations After December 31, 1983**

Development work, extraction, and patenting will be allowed to continue after midnight December 31, 1983, only on valid claims located on or before that date. After that date, prospecting and exploration work under the mining laws will not be allowed, as the right to continue those kinds of operations terminated on midnight December 31, 1983.

Prior to approving plans submitted after December 31, 1983, for operations on claims, or allowing operations to continue that had been approved prior to midnight December 31, 1983, the District Manager shall cause an examination of the unpatented claim(s) by a BLM minerals examiner to verify whether or not a valid claim exists. Operations on producing mines will be allowed to continue pending determination of valid existing rights. The minerals examination and subsequent minerals report must confirm that as of midnight December 31, 1983, minerals had been found and the evidence is of such a character that a person of ordinary prudence would be justified in the further expenditure of his labor and means, with a reasonable prospect of success in developing a valuable mine. Any disapproval or denial of a plan of operations by the authorized officer is subject to appeal by the operator under the provisions of 43 CFR 3809.4.

Before approving a plan of operations applicable after December 31, 1983, the District Manager shall be satisfied that:

i. There will be no unnecessary or undue degradation of wilderness character.

ii. If mechanical or motorized equipment, including helicopter and fixed wing aircraft (beyond casual use), will be used, there is no reasonable alternative.

iii. The reclamation measures included in the plan of operations are adequate to provide for restoration as near as practicable of the surface of the land disturbed.

(c) **Timber**—Timber determined necessary for removal to facilitate mining activities will be cut following principles of sound forest management and in such a manner as to minimize lasting evidence of its removal. Individual trees will be carefully selected so as not to make obvious artificial openings. Stumps will be cut as close to the ground as practical.

(d) **Fire**—The operator will be required to keep spark arresters and fire extinguishers on all internal combustion engines during periods of fire danger. The operator will generally be required to maintain caches of handtools in sufficient quantities to equip those personnel expected to be on the operation. The operator and his personnel will be expected to take initial action on any fire in the vicinity of the operation.

Slash and other flammable debris will generally require complete disposal to reduce fire hazard, prevent insect buildup, and more rapidly reduce evidence of the timber cutting. If burning is performed it will be in accordance with a prescribed burn plan that establishes fire and resource management objectives. Burning will be performed at a time approved by the BLM District Manager.

(e) **Site Reclamation**—The reclamation of the site and other disturbed areas will vary with the location, type of soil erosion hazard, type of vegetative cover, and type and extent of disturbance. As a minimum, all sites will be treated in such a manner that they will not cause accelerated erosion, siltation of streams, a hazard to wilderness visitors, or unnecessary or undue degradation of the land. Also, as a minimum, all excavations with vertical cuts in soil will be sloped to a stable angle of repose. Generally, hand-dug pits or shafts with the excavated material still at hand will be refilled. Here, as with timber cutting, the main objective will be to minimize remaining evidence of human activities. It may not be practical to return an area to its original contour, but it will generally be entirely reasonable to return it to a contour which might appear to be natural. An effort will be made when practical and reasonable to put topsoil equal in quality to that which was removed over disturbed soil surfaces to promote natural revegetation or to aid in seeding. Where native seed is available and its use is reasonable, disturbed areas will be seeded to native plant species provided the area originally supported such vegetation.

(f) **Structures and Improvements**—Plans of operations shall identify all structures and improvements planned as an adjunct to the operation. The plan will also show the ultimate disposition of the improvements and when this will occur. The objective will be to ensure the removal of all works or improvements when they are no longer needed for the prospect or future mining.

(g) **Unnecessary or Undue Degradation**—A plan of operations shall include measures to be taken to prevent unnecessary or undue degradation of the area resulting from the proposed operation. This may require measures to prevent water pollution through contamination or siltation of streams while the operation is in progress and to leave the site in such a condition that a vegetative cover can be reestablished when the operation is abandoned. Such measures may include trenching of disturbed slopes, placing retaining walls to prevent tailings from entering stream channels, etc. It may also require the scalping and stockpiling of the topsoil or sod from the area to be disturbed so that it might be spread over the surface to aid in reestablishing vegetation. Air and noise pollution are also critical elements. Plans shall identify mitigating measures to minimize noise and air pollution.

b. **Performance Bond**

No bond shall be required for operations considered as casual use. A bond may be required for any operator who conducts operations under an approved plan of operations. The primary purpose for a bond is to ensure compliance with the plan of operations. Requirement for posting a bond is at the discretion of the authorized officer.

c. **Environmental Assessment**

Operating plans for prospecting and mining activities will normally involve surface disturbance of the wilderness resource and will require an environmental assessment which considers the impact of the proposed operation on the lands and all feasible alternatives for complying with the rights of the claimant. Upon completion of the analysis, the District Manager will determine if no environmental impact statement is needed. The State Director's approval is required for preparation of an environmental impact statement.

2. **Mineral Leasing**

Section 4(d)(3) of the Wilderness Act of 1964 prescribes that mineral exploration and development will continue in designated wilderness areas by stating "until midnight December 31, 1983, the United States mining laws and all laws pertaining to mineral leasing shall, to the same extent as applicable prior to the effective date of this Act, extend to those . . . lands designated by this Act as 'wilderness areas'"

Designation of an area as wilderness may not be the basis for denying a mineral lease, permit, or license. Mineral leasing applications will be evaluated through the environmental assessment process. A State Director's determination to deny an application must be based upon background data and facts of record indicating the public interest would be better served by the rejection so as to protect other resource values. Wilderness character may be taken into account when making mineral leasing decisions, but leases or permits may not be denied solely on the basis of a desire to protect wilderness character. Leases, permits, or licenses issued after an area is designated as wilderness and prior to midnight December 31,

1983, must contain reasonable stipulations for the protection of the wilderness character of the land consistent with the use of the lands for the purposes for which they are leased, permitted, or licensed.

Mineral leases, permits, or licenses confer certain rights upon individuals to conduct certain activities upon the public lands. Regulations imposed on existing lessees, permittees, or licensees must be reasonable and consistent with the continued use of the lands for the purposes for which the leases, permits or licenses were issued.

Geothermal leasing is within the scope of the "laws pertaining to mineral leasing" in section 4(d)(3) of the Wilderness Act. Designated wilderness areas will remain available for geothermal leasing to the same extent they were at the time of designation, and the above guidelines on mineral leasing will apply.

3. **Mineral Patents**

A patent conveying both surface and mineral rights may be issued on a valid claim located *prior* to the date the area was included as a part of the National Wilderness Preservation System and prior to midnight December 31, 1983.

Mining locations shall be held and used solely for mining. For a valid claim located *after* the date an area is established as wilderness and prior to midnight December 31, 1983, the patent conveys title to mineral rights only. The patentee may cut and use so much of the mature timber from the claim as may be needed in the extraction, removal, and beneficiation of the mineral deposits, if the timber is not otherwise reasonably available. All timber shall be cut under sound principles of forest management. All surface rights are reserved to the United States. Except as specifically provided in the Wilderness Act or the act designating the area as wilderness, no use of the surface of the claim or its resources not reasonably required for carrying on mining or prospecting shall be allowed.

No patent shall issue after December 31, 1983, except for the valid claims existing on or before midnight December 31, 1983.

Once a claim has been patented it becomes private land or interest in lands. Access will then not be governed by a plan of operations, but under the policy in section III. B. 5. j.

4. **Common Varieties of Mineral Materials**

Permits to remove such materials will not be issued.

5. **Paleontological Resources**

To the extent not inconsistent with the concept of wilderness preservation and the intent of the Wilderness Act, paleontological resources are available for recreational, scenic, scientific, educational, conservation, and historical uses. Paleontological resources, in most instances, will be subject to the forces of nature in the same manner as other wilderness resources. Study or management will not normally include any excavation, stabilization, or interpretation activities. Salvage of paleontological sites, excavation, and collection of artifacts may be permitted on a case-by-case basis where the project will not degrade the overall wilderness character of the area and such activity is needed to preserve the particular resource. State Director approval is required for all such projects.

III. J. Administrative Structures and Facilities

1. **Administrative Sites**

Existing administrative sites will be limited to the existing structures or their replacement with similar structures of compatible design provided their continued use is necessary to meet minimum requirements for the administration of the area. Tents will usually be used to supplement housing and kitchen demands brought about by special projects and expanding workloads. As maintenance becomes impractical, first consideration will be given to eliminating the site. Replacement of facilities will require the Director's approval. The Wilderness Management Plan will address the need for existing sites. No new sites will be planned unless they are the minimum necessary for management of the area as wilderness.

2. **Fences**

Corrals and fences for the control of administrative pack and saddle stock may be built only at administrative sites where the animals are regularly used for periods of more than a few days' duration. New permanent fences shall be constructed of materials compatible with the particular wilderness. The Wilderness Management Plan will consider the need for, location of, and material to be used in administrative fence construction.

3. **Trails**

Trails for administrative purposes may be constructed when they are the minimum necessary for the preservation of the wilderness resource and have been authorized in the Wilderness Management Plan. (Trails and associated structures for visitor use are discussed as part of the specific guidance under Recreation and Visitor Use, section III. A. of this document.)

4. **Airfields**

New airfields, including emergency airstrips, shall not be located in BLM-administered wilderness. The Wilderness Management Plan shall review existing airstrips and determine whether or not to permit the continued use of existing airfields. Such use will be monitored on a regular basis to determine if its continuation is appropriate. Use may be restricted when necessary to protect wilderness resources, such as wildlife values during nesting season. If use is approved, maintenance will generally be by primitive, non-motorized equipment only.

5. **Heliports and Helispots**

a. **Heliports**

Heliports may be constructed and maintained at existing administrative sites where they are the minimum necessary for wilderness purposes. Complete justification for continuing heliports or constructing new ones will be required. Unless otherwise approved by the Director, other heliports shall not be located within wilderness areas. The Wilderness Management

Plan will fully evaluate the need for heliports. Only those heliports considered the minimum necessary for wilderness resource management will be continued.

b. **Helispots**

State Directors may approve construction of individual helispots or systems of helispots when they are the minimum necessary for administration or protection of the area as wilderness. The Wilderness Management Plan will fully evaluate helispot needs. Except for emergencies, helispot construction is prohibited if not specifically identified in the Wilderness Management Plan.

6. **Communication Facilities**

Communication facilities will be constructed and maintained only when they are the minimum necessary for administration and protection of the area as wilderness. The Wilderness Management Plan will fully evaluate the need for existing and proposed sites and their maintenance. Facilities should blend with the natural environment.

7. **Structures and Facilities Constructed, Used or Proposed by Other Agencies**

Other agencies conducting activities within BLM wilderness shall be equally constrained by provisions of the Wilderness Act that are applicable to the BLM. These guidelines will apply:

a. Authorized structures, installations, or facilities used by other agencies shall be reviewed periodically to determine whether their continued existence is essential for meeting the minimum requirements for administration of the area as wilderness. If it is not, the authorization shall be terminated and the improvement removed. The Wilderness Management Plan will assess and determine the disposition of all such improvements.

b. When existing improvements deteriorate to the point that normal maintenance will not suffice to keep them usable, the necessity for such improvements shall be critically analyzed. If they are not essential to meet the minimum requirements of administration of the wilderness, or essential to a continuing program that was established on the basis of the structure, they shall not be replaced. Permits for new improvements or replacement of existing improvements must be approved by the Director.

c. The maintenance or replacement of existing signs, instruments, and other improvements of a minor nature, used in connection with such projects as snow surveys, water measurement, game and fish management, and geological studies may be approved by the State Director. New installations may be approved if they are essential to meet the minimum requirements for administration of the wilderness for the purposes of the Wilderness Act.

III. K. Use of Motorized and Mechanical Equipment

Travel within a BLM-administered wilderness will normally be by non-motorized, non-mechanical means consistent with the preservation of wilderness character.

The wilderness management plan will specify the instances and places in which administrative use of mechanized equipment, mechanical transport, or aircraft is the minimum necessary to protect and administer the wilderness resource or is necessary as part of a nonconforming, but accepted, use. Where approved, that equipment which is the minimum necessary to accomplish the task with the least lasting and damaging impact on the wilderness resource will be selected. Such motorized and mechanical equipment use will be scheduled at times and locations which will have the least impact on the visitors' wilderness experience.

Conditions under which use may be allowed (unless otherwise stated, all use is subject to the standards spelled out in the preceding paragraph) are:

1. The public use of aircraft or motorboats, where these uses were established prior to the area's designation as wilderness, may be permitted to continue. Wilderness Management Plans will assure periodic review of such use to determine if its continuation is necessary and impacts on the area's wilderness character are minimized.

2. Motorized and mechanical equipment use may be authorized for mining or prospecting purposes if approved in a Plan of Operation or in association with valid existing rights. Refer to specific guidance for Minerals Management in section III. I.

3. The use of motor vehicles, motorized equipment, and mechanical transport may be approved for certain situations involving established livestock grazing operations. Refer to specific guidance for Rangeland Management in section III. H.

4. Motorized equipment and mechanical transport use may be allowed when an emergency condition exists which involves the health and safety of visitors. The District Manager (or Area Manager, if delegated) may approve such action.

5. Motorized equipment and mechanical transport may be permitted during a fire suppression emergency. Impacts resulting from overland vehicle travel (either cross-country travel or temporary road construction) and impacts from equipment use will be obliterated and rehabilitated in a manner which permits the wilderness resource an opportunity to heal rapidly. Motorized equipment and mechanical transport uses will be specifically addressed in a wilderness area's Fire Management Plan. The District Manager (or Area Manager, if delegated) may approve such action. Refer to specific guidance for Fire Management.

6. The use of aircraft may be allowed in nonemergency situations to deliver supplies or materials to construct or maintain improvements needed for administration of the area as wilderness when use of pack and saddle stock or other non-mechanized means is not feasible. Approval must be authorized by the State Director.

7. Powered hand-portable tools, such as chain saws or rock drills, may be approved by the State Director when they are the minimum necessary for administrative purposes where work cannot be accomplished with nonpowered tools. (In some cases, such tools

may be necessary in trail construction and maintenance, due to limitations of time, season, etc.)

8. Mechanized or motorized equipment may be used for wilderness research, other wilderness-enhancing purposes where no other alternatives exist and where such use is the minimum necessary for administration of the area as wilderness and will not degrade the area's wilderness character. Instances could include wildlife transplants or fish stocking by State Divisions of Wildlife. State Director approval is required. (Refer also to specific guidance for Research and Studies.)

9. Mechanized or motorized equipment may be used in gathering information about resources, so long as the use is compatible with preservation of the wilderness environment. Instances could include mineral surveys by the U.S. Geological Survey or water resource investigations. State Director approval is required.

10. Where feasible, control of insects and disease will be conducted without use of motorized equipment. Otherwise, aircraft use is permissible without landing of aircraft. Approval must be authorized by the State Director on a case-by-case basis.

11. Motorized equipment necessary to meet temporary emergencies involving violations of criminal law and/or including the pursuit of fugitives may be approved by the District Manager (or Area Manager, if delegated).

12. There is no specific prohibition of overflight of wilderness by aircraft. Low-flying aircraft cause disturbance of the solitude of an area. Except in bona fide emergencies, such as search and rescue efforts and essential military missions, low flight should be discouraged. Where low overflight is a problem, or expected to become a problem, wilderness management plans will provide for liaison with proper military authorities, the Federal Aviation Administration, and contact with pilots in the general area in an effort to reduce low flight.

III. L. Research and Studies

Research is a valid and important use of the wilderness resource. Research will be permitted and encouraged as long as all projects are conducted in such a manner as to preserve the area's wilderness character and they further the management, scientific, educational, historical, and conservation purposes of the area.

Research will be conducted or supported to evaluate the effectiveness in achieving objectives of ongoing wilderness management. Research will also be encouraged to identify problems and improve management techniques to increase efforts to further the purposes of the Wilderness Act.

Research and studies to investigate scientific values may also be conducted in wilderness provided that wilderness is essential to results of such research, and wilderness values would not be jeopardized.

Research and other studies will be conducted without use of motorized equipment or construction of temporary or permanent structures. Exceptions to this policy may be approved by the State Director in projects that are essential to management of the specific wilderness when no other feasible alternatives exist. Such use, when approved, must be the minimum necessary and must not degrade the area's wilderness character.

Chapter IV. Implementation of the Wilderness Management Policy

This chapter explains how the BLM will implement the Wilderness Management Policy through the process of developing a plan for each wilderness area under its administration.

The purpose of the Wilderness Management Plan (WMP) is to describe the management strategy that will be used to work toward attainment of the objectives of the Wilderness Management Policy. The plan must clearly show the actions that will be taken to preserve the wilderness resource, and the linkage between these actions and the objectives.

Each WMP will address the management situation present in an individual wilderness area or in two or more closely related areas. Plans should reflect the different kinds of environmental settings, history of use, and management situations found in individual areas within the framework of this policy.

Public involvement must be included in the development of each WMP. A minimum of at least one meeting or workshop must be open to the general public, and the public must be given at least 45 days to comment upon the proposed Wilderness Management Plan. Issues, questions, and problems raised by the public will be considered during the development of the final WMP. The WMP's will be updated on a regular basis or as conditions change. The public will be given the opportunity to be involved in plan changes.

The Wilderness Management Plan will include the general policy for all BLM wilderness areas. Additions may be made to tailor the policy to the current management situation for each area. Selected statements from the Wilderness Management Policy may be included to show the connection between actions proposed in the Plan and the objectives found in the management policy. Other policy statements may be included where appropriate, so long as they do not conflict with the Wilderness Management Policy.

During the time period before a WMP is prepared for a wilderness area, the Wilderness Management Policy will guide the conduct of day-to-day activities. The approval of activities, programs, or projects initiated by the Bureau of Land Management, other governmental bodies, or private individuals will be contingent upon the completion of an environmental assessment. Proposals determined to be inconsistent with the intent of the Wilderness Management Policy or other elements of the BLM's legislative and regulatory mandate will be modified or disapproved, as appropriate.

Upon completion of the WMP for an area, the viability of activities, programs, or projects will be determined through the BLM's environmental assessment process. If the proposed action is part of an approved WMP, the environmental assessment will consider if it is the best way to meet objectives of the plan from an on-the-ground perspective and if the action conforms to other applicable elements of the BLM's legislative and regulatory mandate. If the proposal is not part of the WMP, the environmental assessment will be used also to determine if it is in conformance with the WMP. Proposals found to be inconsistent with the WMP or other applicable BLM guidance will be modified or disapproved, as appropriate.

The BLM will issue any regulations necessary to manage visitor use and other problems peculiar to a particular wilderness area. Regulations might cover such topics as camping, river running, use of firewood, etc. Managers should use the minimum amount of regulation necessary, but should not hesitate when a problem calls for them.

Specific guidance regarding the procedure for developing Wilderness Management Plans will be issued to BLM field offices after issuance of the final Wilderness Management Policy.

APPENDIX A

Section 603 of THE FEDERAL LAND POLICY AND MANAGEMENT ACT OF 1976 (P.L. 94-579)

Sec. 603. (a) Within fifteen years after the date of approval of this Act, the Secretary shall review those roadless areas of five thousand acres or more and roadless islands of the public lands, identified during the inventory required by section 201(a) of this Act as having wilderness characteristics described in the Wilderness Act of September 3, 1964 (78 Stat. 890; 16 U.S.C. 1131 et seq.) and shall from time to time report to the President his recommendation as to the suitability or nonsuitability of each such area or island for preservation as wilderness: *Provided*, That prior to any recommendations for the designation of an area as wilderness the Secretary shall cause mineral surveys to be conducted by the Geological Survey and the Bureau of Mines to determine the mineral values, if any, that may be present in such areas: *Provided further*, That the Secretary shall report to the President by July 1, 1980, his recommendations on those areas which the Secretary has prior to November 1, 1975, formally identified as natural or primitive areas. The review required by this subsection shall be conducted in accordance with the procedures specified in section 3(d) of the Wilderness Act.

(b) The President shall advise the President of the Senate and the Speaker of the House of Representatives of his recommendations with respect to designation as wilderness of each such area, together with a map thereof and a definition of its boundaries. Such advice by the President shall be given within two years of the receipt of each report from the Secretary. A recommendation of the President for designation as wilderness shall become effective only if so provided by an Act of Congress.

(c) During the period of review of such areas and until Congress has determined otherwise, the Secretary shall continue to manage such lands according to his authority under this Act and other applicable law in a manner so as not to impair the suitability of such areas for preservation as wilderness, subject, however, to the continuation of existing mining and grazing uses and mineral leasing in the manner and degree in which the same was being conducted on the date of approval of this Act: *Provided*, That, in managing the public lands the Secretary shall by regulation or otherwise take any action required to prevent unnecessary or undue degradation of the lands and their resources or to afford environmental protection. Unless previously withdrawn from appropriation under the mining laws, such lands shall continue to be subject to such appropriation during the period of review unless withdrawn by the Secretary under the procedures of section 204 of this Act for reasons other than preservation of their wilderness character. Once an area has been designated for preservation as wilderness, the provisions of the Wilderness Act which apply to national forest wilderness areas shall apply with respect to the administration and use of such designated area, including mineral surveys required by section 4(d)(2) of the Wilderness Act, and mineral development, access, exchange of lands, and ingress and egress for mining claimants and occupants.

APPENDIX B

THE WILDERNESS ACT OF SEPTEMBER 3, 1964

Public Law 88-577
88th Congress, S. 4

AN ACT

To establish a National Wilderness Preservation System for the permanent good of the whole people, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SHORT TITLE

Section 1. This Act may be cited as the "Wilderness Act".

WILDERNESS SYSTEM ESTABLISHED—STATEMENT OF POLICY

Section 2.(a) In order to assure that an increasing population, accompanied by expanding settlement and growing mechanization, does not occupy and modify all areas within the United States and its possessions, leaving no lands designated for preservation and protection in their natural condition, it is hereby declared to be the policy of the Congress to secure for the American people of present and future generations the benefits of an enduring resource of wilderness. For this prupose there is hereby established a National Wilderness Preservation System to be composed of federally owned areas designated by Congress as "wilderness areas", and these shall be administered for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness; and no Federal lands shall be designated as "wilderness areas" except as provided for in this Act or by a subsequent Act.

(b) The inclusion of an area in the National Wilderness Preservation System notwithstanding, the area shall continue to be managed by the Department and agency have jurisdiction thereover immediately before its inclusion in the National Wilderness Preservation System unless otherwise provided by Act of Congress. No appropriation shall be available for the payment of expenses or salaries for the administration of the National Wilderness Preservation System as a separate unit nor shall any appropriations be available for additional personnel stated as being required solely for the purpose of managing or administering areas solely because they are included within the National Wilderness Preservation System.

DEFINITION OF WILDERNESS

(c) A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

NATIONAL WILDERNESS PRESERVATION SYSTEM—EXTENT OF SYSTEM

Section 3.(a) All areas within the national forests classified at least 30 days before the effective date of this Act by the Secretary of Agriculture or the Chief of the Forest Service as "wilderness", "wild", or "canoe" are hereby designated as wilderness areas. The Secretary of Agriculture shall—

(1) Within one year after the effective date of this Act, file a map and legal description of each wilderness area with the Interior and Insular Affairs Committees of the United States Senate and the House of Representatives, and such descriptions shall have the same force and effect as if included in this Act: *Provided, however,* That correction of clerical and typographical errors in such legal descriptions and maps may be made.

(2) Maintain, available to the public, records pertaining to said wilderness areas, including maps and legal descriptions, copies of regulations governing them, copies of public notices of, and reports submitted to Congress regarding pending additions, eliminations, or modifications. Maps, legal descriptions, and regulations pertaining to wilderness areas within their respective jurisdictions also shall be available to the public in the offices of regional foresters, national forest supervisors, and forest rangers.

Classification. (b) The Secretary of Agriculture shall, within ten years after the enactment of this Act, review, as to its suitability or nonsuitability for preservation as wilderness, each area in the national forests classified on the effective date of this Act by the Secretary of Agriculture or the Chief of the Forest Service as "primitive" and report his findings to the President.

Presidential recommendation to Congress. The President shall advise the United States Senate and House of Representatives of his recommendations with respect to the designation as "wilderness" or other reclassification of each area on which review has been completed, together with maps and a definition of boundaries. Such advice shall be given with respect to not less than one-third of all the areas now classified as "primitive" within three years after the enactment of this Act, not less than two-thirds within seven years after the enactment of this Act, and the remaining areas within ten years after the enactment of this Act.

Congressional approval. Each recommendation of the President for designation as "wilderness" shall become effective only if so provided by an Act of Congress. Areas classified as

"primitive" on the effective date of this Act shall continue to be administered under the rules and regulations affecting such areas on the effective date of this Act until Congress has determined otherwise. Any such area may be increased in size by the President at the time he submits his recommendations to the Congress by not more than five thousand acres with no more than one thousand two hundred and eighty acres of such increase in any one compact unit; if it is proposed to increase the size of any such area by more than five thousand acres or by more than one thousand two hundred and eighty acres in any one compact unit the increase in size shall not become effective until acted upon by Congress. Nothing herein contained shall limit the President in proposing, as part of his recommendations to Congress, the alteration of existing boundaries of primitive areas or recommending the addition of any contiguous area of national forest lands predominantly of wilderness value. Notwithstanding any other provisions of this Act, the Secretary of Agriculture may complete his review and delete such areas as may be necessary, but not to exceed seven thousand acres, from the southern tip of the Gore Range-Eagles Nest Primitive Area, Colorado, if the Secretary determines that such action is in the public interest.

Report to President. (c) Within ten years after the effective date of this Act the Secretary of the Interior shall review every roadless area of five thousand contiguous acres or more in the national parks, monuments and other units of the national park system and every such area of, and every roadless island within, the national wildlife refuges and game ranges, under his jurisdiction on the effective date of this Act and shall report to the President his recommendation as to the suitability or nonsuitability of each such area or island for preservation as wilderness.

Presidential recommendation to Congress. The President shall advise the President of the Senate and the Speaker of the House of Representatives of his recommendation with respect to the designation as wilderness of each such area or island on which review has been completed, together with a map thereof and a definition of its boundaries. Such advice shall be given with respect to not less than one-third of the areas and islands to be reviewed under this subsection within three years after enactment of this Act, not less than two-thirds within seven years of enactment of this Act, and the remainder within ten years of enactment of this Act.

Congressional approval. A recommendation of the President for designation as wilderness shall become effective only if so provided by an Act of Congress. Nothing contained herein shall, by implication or otherwise, be construed to lessen the present statutory authority of the Secretary of the Interior with respect to the maintenance of roadless areas within units of the national park system.

Suitability. (d)(1) The Secretary of Agriculture and the Secretary of the Interior shall, prior to submitting any recommendations to the President with respect to the suitability of any area for preservation as wilderness—

Publication in Federal Register. (A) give such public notice of the proposed action as they deem appropriate, including publication in the Federal Register and in a newspaper having general circulation in the area or areas in the vicinity of the affected land;

Hearings. (B) hold a public hearing or hearings at a location or locations convenient to the area affected. The hearings shall be announced through such means as the respective Secretaries involved deem appropriate, including notices in the Federal Register and in newspapers of general circulation in the area: *Provided*, That if the lands involved are located in more than one State, at least one hearing shall be held in each State in which a portion of the land lies;

(C) at least thirty days before the date of a hearing advise the Governor of each State and the governing board of each county, or in Alaska the borough, in which the lands are located, and Federal departments and agencies concerned, and invite such officials and Federal agencies to submit their views on the proposed action at the hearing or by no later than thirty days following the date of the hearing.

(2) Any views submitted to the appropriate Secretary under the provisions of (1) of this subsection with respect to any area shall be included with any recommendations to the President and to Congress with respect to such area.

Proposed modification. (e) Any modification or adjustment of boundaries of any wilderness area shall be recommended by the appropriate Secretary after public notice of such proposal and public hearing or hearings as provided in subsection (d) of this section. The proposed modification or adjustment shall then be recommended with map and description thereof to the President. The President shall advise the United States Senate and the House of Representatives of his recommendations with respect to such modification or adjustment and such recommendations shall become effective only in the same manner as provided for in subsections (b) and (c) of this section.

USE OF WILDERNESS AREAS

Section 4. (a) The purposes of this Act are hereby declared to be within and supplemental to the purposes for which national forests and units of the national park and national wildlife refuge systems are established and administered and—

(1) Nothing in this Act shall be deemed to be in interference with the purpose for which national forests are established as set forth in the Act of June 4, 1897 (30 Stat. 11), and the Multiple-Use Sustained-Yield Act of June 12, 1960 (74 Stat. 215).

(2) Nothing in this Act shall modify the restrictions and provisions of the Shipstead-Nolan Act (Public Law 539, Seventy-first Congress, July 10, 1930; 46 Stat. 1020), the Thye-Blatnik Act (Public Law 733, Eightieth Congress, June 22, 1948; 62 Stat. 568), and the Humphrey-Thye-Blatnik-Andresen Act (Public Law 607, Eighty-fourth Congress, June 22, 1956; 70 Stat. 326), as applying to the Superior National Forest or the regulations of the Secretary of Agriculture.

(3) Nothing in this Act shall modify the statutory authority under which units of the national park system are created. Further, the designation of any area of any park, monument, or other unit of the national park system as a wilderness area pursuant to this Act shall in no manner lower the standards evolved for the use and preservation of such park, monument, or other unit of the national park system in accordance with the Act of August 25, 1916, the statutory authority under which the area was created, or any other Act of Congress whichmight pertain to or affect such area, including, but not limited to, the Act of June 8, 1906 (34 Stat. 225; 16 U.S.C. 432 et seq.); section 3 (2) of the Federal Power Act (16 U.S.C. 796 (2)); and the Act of August 21, 1935 (49 Stat. 666; 16 U.S.C. 461 et seq.).

(b) Except as otherwise provided in this Act, each agency administering any area designated as wilderness shall he responsible for preserving the wilderness character of the area and shall so administer such area for such other purposes for which it may have been established as also to preserve its wilderness character. Except as otherwise provided in this Act, wilderness areas shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use.

PROHIBITION OF CERTAIN USES

(c) Except as specifically provided for in this Act, and subject to existing private rights, there shall be no commercial

enterprise and no permanent road within any wilderness area designated by this Act and, except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act (including measures required in emergencies involving the health and safety of persons within the area), there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such area.

SPECIAL PROVISIONS

(d) The following special provisions are hereby made:

(1) Within wilderness areas designated by this Act the use of aircraft or motorboats, where these uses have already become established, may be permitted to continue subject to such restrictions as the Secretary of Agriculture deems desirable. In addition, such measures may be taken as may be necessary in the control of fire, insects, and diseases, subject to such conditions as the Secretary deems desirable.

(2) Nothing in this Act shall prevent within national forest wilderness areas any activity, including prospecting, for the purpose of gathering information about mineral or other resources, if such activity is carried on in a manner compatible with the preservation of the wilderness environment. Furthermore, in accordance with such program as the Secretary of the Interior shall develop and conduct in consultation with the Secretary of Agriculture, such areas shall be surveyed on a planned, recurring basis consistent with the concept of wilderness preservation by the Geological Survey and the Bureau of Mines to determine the mineral values, if any, that may be present; and the results of such surveys shall be made available to the public and submitted to the President and Congress.

Mineral leases, claims, etc. (3) Notwithstanding any other provisions of this Act, until midnight December 31, 1983, the United States mining laws and all laws pertaining to mineral leasing shall, to the same extent as applicable prior to the effective date of this Act, extend to those national forest lands designated by this Act as "wilderness areas"; subject, however, to such reasonable regulations governing ingress and egress as may be prescribed by the Secretary of Agriculture consistent with the use of the land for mineral location and development and exploration, drilling, and production, and use of land for transmission lines, waterlines, telephone lines, or facilities necessary in exploring, drilling, producing, mining, and processing operations, including where essential the use of mechanized ground or air equipment and restoration as near as practicable of the surface of the land disturbed in performing prospecting, location, and, in oil and gas leasing, discovery work, exploration, drilling, and production, as soon as they have served their purpose. Mining locations lying within the boundaries of said wilderness areas shall be held and used solely for mining or processing operations and uses reasonably incident thereto; and hereafter, subject to valid existing rights, all patents issued under the mining laws of the United States affecting national forest lands designated by this Act as wilderness areas shall convey title to the mineral deposits within the claim, together with the right to cut and use so much of the mature timber therefrom as may be needed in the extraction removal and beneficiation of the mineral deposits, if needed timber is not otherwise reasonably available, and if the timber is cut under sound principles of forest management as defined by the national forest rules and regulations, but each such patent shall reserve to the United States all title in or to the surface of the lands and products thereof, and no use of the surface of the claim or the resources therefrom not reasonably required for carrying on mining or prospecting shall be allowed except as otherwise expressly provided in this Act: *Provided,* That, unless hereafter specifically authorized, no patent within wilderness areas designated by this Act shall issue after December 31, 1983, except for the valid claims existing on or before December 31, 1983. Mining claims located after the effective date of this Act within the boundaries of wilderness areas designated by this Act shall create no rights in excess of those rights which may be patented under the provisions of this subsection. Mineral leases, permits, and licenses covering lands within national forest wilderness areas designated by this Act shall contain such reasonable stipulations as may be prescribed by the Secretary of Agriculture for the protection of the wilderness character of the land consistent with the use of the land for the purposes for which they are leased, permitted, or licensed. Subject to valid rights then existing, effective January 1, 1984, the minerals in lands designated by this Act as wilderness areas are withdrawn from all forms of appropriation under the mining laws and from deposition under all laws pertaining to mineral leasing and all amendments thereto.

Water resources. (4) Within wilderness areas in the national forests designated by this Act, (1) the President may, within a specific area and in accordance with such regulations as he may deem desirable, authorize prospecting for water resources, the establishment and maintenance of reservoirs, water-conservation works, power projects, transmission lines, and other facilities needed in the public interest, including the road construction and maintenance essential to development and use thereof, upon his determination that such use or uses in the specific area will better serve the interests of the United States and the people thereof than will its denial; and (2) the grazing of livestock, where established prior to the effective date of this Act, shall be permitted to continue subject to such reasonable regulations as are deemed necessary by the Secretary of Agriculture.

(5) Other provisions of this Act to the contrary notwithstanding, the management of the Boundary Waters Canoe Area, formerly designated as the Superior, Little Indian Sioux, and Caribou Roadless Areas, in the Superior National Forest, Minnesota, shall be in accordance with regulations established by the Secretary of Agriculture in accordance with the general prupose of maintaining, without unnecessary restrictions on other uses, including that of timber, the primitive character of the area, particularly in the vicinity of lakes, streams, and portages: *Provided,* That nothing in this Act shall preclude the continuance within the area of any already established use of motorboats.

(6) Commercial services may be performed within the wilderness areas designated by this Act to the extent necessary for activities which are proper for realizing the recreational or other wilderness purposes of the areas.

(7) Nothing in this Act shall constitute an express or implied claim or denial on the part of the Federal Government as to exemption from State water laws.

(8) Nothing in this Act shall be construed as affecting the jurisdiction or responsibilities of the several States with respect to wildlife and fish in the national forests.

STATE AND PRIVATE LANDS WITHIN WILDERNESS AREAS

Section 5. (a) In any case where State-owned or privately owned land is completely surrounded by national forest lands within areas designated by this Act as wilderness, such State or private owner shall be given such rights as may be necessary to assure adequate access to such State-owned or privately owned land by such State or private owner and their successors in interest, or the State-owned land or privately owned land shall be exchanged for federally owned land in the same State of approximately equal value under authorities available to the Secretary of Agriculture:

Transfers, restriction. *Provided, however,* That the United States shall not transfer to a State or private owner any mineral interests unless the State or private owner relinquishes or causes to be relinquished to the United States the mineral interest in the surrounded land.

(b) In any case where valid mining claims or other valid occupancies are wholly within a designated national forest wilderness area, the Secretary of Agriculture shall, by reasonable regulations consistent with the preservation of the area as wilderness, permit ingress and egress to such surrounded areas by means which have been or are being customarily enjoyed with respect to other such areas similarly situated.

Acquisition. (c) Subject to the appropriation of funds by Congress, the Secretary of Agriculture is authorized to acquire privately owned land within the perimeter of any area designated by this Act as wilderness if (1) the owner concurs in such acquisition or (2) the acquisition is specifically authorized by Congress.

GIFTS, BEQUESTS, AND CONTRIBUTIONS

Section 6. (a) The Secretary of Agriculture may accept gifts or bequests of land within wilderness areas designated by this Act for preservation as wilderness. The Secretary of Agriculture may also accept gifts or bequests of land adjacent to wilderness areas designated by this Act for preservation as wilderness if he has given sixty days advance notice thereof to the President of the Senate and the Speaker of the House of Representatives. Land accepted by the Secretary of Agriculture under this section shall become part of the wilderness area involved. Regulations with regard to any such land may be in accordance with such agreements, consistent with the policy of this Act, as are made at the time of such gift, or such conditions, consistent with such policy, as may be included in, and accepted with, such bequest.

(b) The Secretary of Agriculture or the Secretary of the Interior is authorized to accept private contributions and gifts to be used to further the purposes of this Act.

ANNUAL REPORTS

Section 7. At the opening of each session of Congress, the Secretaries of Agriculture and Interior shall jointly report to the President for transmission to Congress on the status of the wilderness system, including a list and descriptions of the areas in the system, regulations in effect, and other pertinent information, together with any recommendations they may care to make.

APPENDIX C

THE BUREAU OF LAND MANAGEMENT WILDERNESS REVIEW PROCESS

To carry out the wilderness mandate of FLPMA, the Bureau of Land Management has developed a wilderness review process with three phases: inventory, study, and reporting to Congress.

Inventory: In the wilderness inventory, the BLM examined the public lands, with public participation, and identified those areas that meet the definition of wilderness established by Congress. These areas were identified as wilderness study areas (WSA's). The inventory was completed by November 14, 1980, in the contiguous Western States, resulting in identification of approximately 24 million acres as wilderness study areas and in elimination from further wilderness consideration of approximately 150 million acres.

Study: Each wilderness study area will be studied through the BLM resource management planning system to analyze all values, resources, and uses within the area. The findings of the study, including public participation, determine whether the area will be recommended as suitable or nonsuitable for designation as wilderness. In practice, determining an area's "suitability or nonsuitability . . . for preservation as wilderness," in the words of FLPMA, means determining whether the area is more suitable for wilderness designation or more suitable for other uses.

Reporting: When the study has been completed, a recommendation as to whether the wilderness study area is suitable or nonsuitable for designation as wilderness is submitted through the Secretary of the Interior and the President to Congress. A mineral survey will be conducted by the Geological Survey and Bureau of Mines for any area recommended as suitable. Reports on all wilderness study areas must reach the President no later than October 21, 1991, and reach Congress by October 21, 1993. Only Congress can designate an area as wilderness.

APPENDIX D

DEFINITIONS

Some of the terms used in this document have specific meanings and are defined as follows:

Domestic Livestock: Animals kept and managed for their products or for breeding purposes, not visitors' animals or administrative livestock.

FLPMA: The Federal Land Policy and Management

Act of 1976 (Public Law 94-579, 90 Stat. 2743, 43 USC 1701).

Livestock Grazing Operations: Those operations under permit where the primary purpose is the grazing of livestock for the production of food and fiber. Includes pack and saddle stock used in conjunction with such operations.

Mechanical Transport: "Mechanical transport" means any device for transporting personnel or material with wheels, tracks, skids, or by flotation for traveling over land, water, or snow and is propelled by a nonliving power source contained or carried on or within the device.

Motorized Equipment: "Motorized equipment" means any machine activated by a nonliving power source except small battery-powered, handcarried devices such as flashlights, shavers, Geiger counters, and cameras.

Motor Vehicle: "Motor vehicle" means any vehicle which is self-propelled or any vehicle which is propelled by electric power obtained from batteries.

Multiple Use: "...the management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; the use of some land for less than all of the resources; a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values; and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output." (From Section 103, FLPMA)

Naturalized: Refers to a non-native species of plant or animal which is well established in the area as a part of the wilderness ecosystem and which sustains its population without requiring human assistance (such as stocking or reseeding). Non-native species that are not in equilibrium with the wilderness ecosystem (such as those which are increasing their population and displacing native species) are not considered naturalized.

Naturalness: Refers to an area which "generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable." (From Section 2(c), Wilderness Act).

Outstanding: Standing out among others of its kind; conspicious; prominent. Superior to others of its kind; distinguished; excellent.

Permanent Improvement: A manmade structural or nonstructural improvement which will remain at a particular location for more than one field sesson—as differentiated from temporary structures; includes such items as toilet buildings, trails, cabins, signs, fences, vegetative cover manipulation, shelters, and fire grills.

Primitive and Unconfined Recreation: Nonmotorized and nondeveloped types of outdoor recreational activities.

Rangeland Improvements: Any structural or nonstructural improvement which directly affects or supports the use of the forage resource by domestic livestock, such as fences, line cabins, water lines, and stock tanks.

Recreational Livestock: Horses, mules, or burros used for recreational purposes to transport people and/or their supplies.

Solitude: The state of being alone or remote from habitations; isolation. A lonely, unfrequented, or secluded place.

Temporary Structure: Any structure which can be readily and completely dismantled and removed from the site between periods of actual use. It may or may not be authorized at the same site from season to season or from year to year.

Unnecessary or Undue Degradation: Surface disturbance greater than what would normally result when an activity is being accomplished by a prudent operator in usual, customary, and proficient operations of similar character and taking into consideration the effects of operations on other resources and land uses, including those resources and uses outside the area of operations. Failure to initiate and complete reasonable mitigation measures, including reclamation of disturbed areas, or creation of a nuisance may constitute unnecessary or undue degradation. Failure to comply with applicable environmental protection statutes and regulations thereunder will constitute unnecesary or undue degradation.

Visitor Use: Visitor use of the wilderness resource for inspiration, stimulation, solitude, relaxation, education, pleasure, or satisfaction.

Wilderness: The definition contained in Section 2(c) of the Wilderness Act of 1964 (78 Stat. 891). (See Appendix B for its full text.)

Wilderness Characteristics: The definition contained in Section 2(c) of the Wilderness Act of 1964 (78 Stat. 891. (See Appendix B for its full text.)

APPENDIX II

WILDERNESS PROTECTION STIPULATION

WILDERNESS PROTECTION STIPULATION

By accepting this lease, the lessee acknowledges that the lands contained in this lease are being inventoried or evaluated for their wilderness potential by the Bureau of Land Management (BLM) under section 603 of the Federal Land Policy and Management act of 1976, 90 Stat. 2743 (43 USC Sec. 1782), and that exploration or production activities which are not in conformity with section 603 may never be permitted. Expenditures in leases on which exploration drilling or production are not allowed will create no additional rights in the lease, and such leases will expire in accordance with law.

Activities will be permitted under the lease so long as BLM determines they will not impair wilderness suitability. This will be the case either until the BLM wilderness inventory process has resulted in final wilderness inventory decision that an area lacks wilderness characteristics, or in the case of a wilderness study area until Congress has decided not to designate the lands included within this lease as wilderness. Activities will be considered nonimpairing if the BLM determines that the meet each of the following three criteria:

(a) It is temporary. This means that the use or activity may continue until the time when it must be terminated in order to meet the reclamation requirement of paragraphs (b) and (c) below. A temporary use that creates no new surface disturbance may continue unless Congress designates the area as wilderness, so long as it can easily and immediately be terminated at that time, if necessary to management of the area as wilderness.

(b) Any temporary impacts caused by the activity must, at a minimum, be capable of being reclaimed to a condition of being substantially unnoticeable in the wilderness study area (or inventory unit) as a whole by the time the Secretary of the Interior is scheduled to send his recommendations on that area to the President, and the operator will be required to reclaim the impacts to that standard by that date. If the wilderness study is postponed, the reclamation deadline will be extended accordingly. If the wilderness study is accelerated, the reclamation deadline will not be changed. A full schedule of wilderness studies will be developed by the Department upon completion of the intensive wilderness inventory. In the meantime, in areas not yet scheduled for wilderness study, the reclamation will be scheduled for completion within 4 years after approval of the activity. (Obviously, if and when the Interim Management Policy ceases to apply to an inventory unit dropped from wilderness review following a final wilderness inventory decision of the BLM State Director, the reclamation deadline previously specified will cease to apply.) The Secretary's schedule for transmitting his recommendations to the President will not be changed as a result of any unexpected inability to complete the reclamation by the specified date, and such inability or nonsuitability for preservation as wilderness.

The reclamation will, to the extent practicable, be done while the activity is in progress. Reclamation will include the complete recontouring of all cuts and tills to blend with the natural topography, the replacement of topsoil, and the restoration of plant cover at least to the point where natural succession is occurring. Plant cover will be resorted by means of reseeding or replanting, using species previously occurring in the area. If necessary, irrigation will be required. The reclamation schedule will be based on conservative assumptions with regard to growing conditions so as to ensure that the reclamation will be complete, and the impacts will be substantially unnoticeable in the area as a whole, by the time the Secretary is scheduled to send his recommendations to the President. ("Substantially unnoticeable" is defined in Appendix F of the Interim Management Policy and Guidelines for Lands under Wilderness Review.)

(c) When the activity is terminated, and after any needed reclamation is complete, the area's wilderness values must not have been degraded so far, compared with the area's values for other purposes, as to significantly constrain the Secretary's recommendation with respect to the area's suitability or nonsuitability for preservation as wilderness. The wilderness values to be considered are those mentioned in section 2(c) of the Wilderness Act including naturalness, outstanding opportunities for solitude or for primitive and unconfined recreation, and ecological, geological or other features of scientific, educational, scenic, or historical value. If all or any part of the area included within the leasehold estate is normally designated by congress as wilderness , exploration and development operations taking place or to take place on that part of the lease will remain subject to the requirements of this stipulation, except as modified by the Act of Congress designating the land as wilderness. If Congress does not specify in such act how existing leases like this one will be managed, then the provisions of the Wilderness Act of 1964 will apply, as implemented by rules and regulations promulgated by the Department of the Interior.

APPENDIX III

GEOLOGIC TIME AND FORMATIONS

GEOLOGIC TIME SCALE

Era	Period	Epoch	Duration in Millions of Years (Approx.)	Millions of Years Ago (Approx.)
	Quaternary	Recent	Approx. last	5,000 years
		Pleistocene	2.5	= 2.5
		Pliocene	4.5	= 7
		Miocene	19	= 26
		Oligocene	12	= 38
		Eocene	16	= 54
Cenozoic	Tertiary	Paleocene	11	= 65
	Cretaceous		71	= 136
	Jurassic		54	= 190
Mesozoic	Triassic		35	= 225
	Permian		55	= 280
	Pennsylvanian		45	= 325
	Mississippian		20	= 345
	Devonian		50	= 395
	Silurian		35	= 430
Paleozoic	Cambrian		70	= 570
Precambrian			4,030	

APPENDIX IV

IM 84-381

IN REPLY REFER TO:

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
RAWLINS DISTRICT OFFICE
1300 Third Street
P.O. Box 670
Rawlins, Wyoming 82301

3101/3200
(620/650)
3400/3500
3900/8500

March 22, 1984 Affects
(Retyped March 12, 1985) Inst. Memo
84-11

Instruction Memorandum No. 84-381
Expires 9/30/85

Supersedes
Inst. Memo 83-120,
Chgs. 1, 2, 3, & 4
Inst. Memo 83-237
Chgs. 1, 2, & 3
Info. Memo 83-113

To: All State Directors

From: Director

Subject: Prohibition on Processing Permits and Leases for Oil, Gas, Geothermal, Coal, Oil Shale, Phosphate, Potassium, Sulphur and Gilsonite on Designated Wilderness Areas and Wilderness Study Areas - Fiscal Year 1984 Interior Appropriations Act, P.L. 09-146 (November 4, 1983).

The Department of the Interior and Related Agencies Appropriations Act of 1984 (P.S. 98-146) contains language which prohibits the obligation of funds for processing or issuing of permits or leases for oil, gas, geothermal, coal, oil shale, phosphate, potassium, sulphur, and gilsonite on the following five classes of lands (except for Alaksa):

1) Congressionally designated wilderness areas (DWA's);

2) Congressionally designated wilderness study areas (DWSA's);

3) Forest Service (FS) RARE II areas recommended for wilderness;

4) FS RARE II areas allocated to further planning; and

5) Bureau of Land Management (BLM) wilderness study areas (WSA's)

except where lands in categories 1 or 2 are adjacent to producing or prospectively valuable oil and gas resources, in which case a "no-surface occupancy" oil and gas lease can be issued. (Hereinafter, use of the term "wilderness candidate lands" will refer to classes 2 through 5 above.)

Section 308 of the Appropriations Act also contains language which allows exploration or development of mineral resources on such lands under valid existing rights, or under leases validly issued, or under valid mineral rights in existence prior to October 1, 1982, and allows the expenditure of funds for any aspect of the processing or issuance of permits pertaining thereto.

In addition, further provisions allow seismic activities and inventories on these five classes of lands by helicopter or other means not requiring road building or improvement, if such activities are compatible with preservation of the wilderness environment. Use of explosives in seismic work is specifically prohibited in DWA's. Recurring mineral surveys may be conducted by the Department of the Interior on five classes of lands in conjunction with the Department of Energy national laboratories or other Federal agencies, and if done in a manner compatible with the preservation of the wilderness environment, e.g., by helicopter, induced polarization, radar, magnetic/gravity survey, geochemical techniques (including stream sediment reconnaissance), X-ray diffraction analysis, satellite, etc. Contracts with private firms for the above also are allowed if such contracts would decrease Federal expenditures and would produce comparable or superior results. Any such surveys affecting surface resources on FS lands require consultation with FS.

Though the subject Act provides for leasing in DWA's under the aforementioned conditions, you are reminded that the Wilderness Act of 1964 mandated that mineral leasing of DWA's was to be prohibited after December 31, 1983. Therefore, under the provisions of the Wilderness Act no leasing under any circumstances is allowed in DWA's as of January 1, 1984. The subject Act also provides for leasing within DWSA's under the same conditions as leasing within DWA's. Notwithstanding this provision, the Secretary has determined that the Department will not issue any lease within any of the five categories of wilderness land. Hence, no lands falling within any of the five prohibited categories including the excepted areas of DWSA's, are to be leased until further notice.

The single exception to this prohibition on leasing is where drainage is occurring on DWA or DWSA lands. In such instances, the interests of the United States are to be secured by protective leasing, with no surface occupancy, by competitive bidding, where such leasing is appropriate. 43 CFR 3120.1(e). In instances where drainage of DWA's or wilderness candidate lands is occurring and protective leasing is not appropriate, compensatory royalty agreements with owners of adjacent lands may be executed. 43 CFR 3100.2. Entering into compensatory royalty agreements is not an action which is prohibited by the language in the Appropriations Act. Any instances of drainage involving RARE II areas recommended for wilderness designation, RARE II further planning areas, and BLM WSA's are to be reported promptly to Director (610). Accordingly, the following procedures will be followed for applications involving DWA's or any of the wilderness candidate lands.

--Treatment of DWA Lands:

All applications to lease oil and gas, whether simultaneous or over-the-counter, which consist entirely of DWA lands and which were pending on January 1, 1984, are to be summarily rejected in a single decision, with an appendix including all applications identified by serial number, prepared for the Director's signature with approval to be made by the Secretary. These decisions are to be forwarded to Director (610).

If such applications involve lands both within and outside a DWA, then the DWA area is to be excluded and rejected, and the non-DWA lands are to be adjudicated as appropriate. Filing fees are not to be returned where pre-January 1, 1984, applications are rejected.

Offers to lease consisting entirely of DWA lands and which have been filed after January 1, 1984, are to be returned, along with all submitted fees and advance rentals, as unacceptable, without right of appeal. If the post-January 1, 1984, offers also embrace non-DWA lands, the applicant should be advised of the unacceptability of the applications on DWA lands and the remainder of the lands will be adjudicated as appropriate. In these instances, fees will be retained because lands available for leasing have been applied for.

--Treatment of Wilderness Candidate Lands:

Applications for simultaneous oil and gas (SOG) parcels which were pending on the date of the Appropriations Act (November 4, 1983) and which are wholly within any of the wilderness candidate lands are to be suspended with no return of filing fees. That is, while these applications are on file under suspension the filing fees also have to be maintained on file. For applications for SOG parcels which involve lands partially within wilderness candidate lands, the wilderness candidate land is to be excluded and suspended. You may then continue with lease issuance on the non-wilderness candidate lands. Similarly, over-the-counter lease offers are to be suspended in whole or in part for those lands within any of the wilderness candidate lands, with the remainder of the non-wilderness candidate acreage adjudicated as appropriate.

For any application, whether SOG or over-the-counter, where the management status of the FS land is not known to you, you are to forward the application to the FS for its review. You may proceed to lease issuance only if the FS certifies in writing that the lands in the offer are not included in any of the prohibited land categories.

No lands within wilderness candidate lands are to be included in SOG parcels for any future posting until further notice. Identification of such parcels will continue to require your full coordination with the FS in writing to assure that all parcels exclude, prior to posting, any FS land described in categories 2, 3 and 4 above.

--Treatment of former WSA Lands:

The oil and gas leasing prohibitions of the Appropriations Act also include all the BLM lands under section 603 of the Federal Land Policy and Management Act of 1976 which were deleted from WSA status by the decisions of the Secretary on December 10, 1982 (47 FR 58372), or by subsequent decisions of the Secretary published in the Federal Register during 1983. Until the court

renders a decision, such "former" WSA lands cannot be leased even though they may be adjacent to producing oil and gas fields or areas that are prospectively valuable. Nor can such lands be included in any future SOG parcel postings. Should a court ruling be in favor of the Department of the Interior, the status of such "former" WSA lands would change. Note that this guidance changes that provided in Instruction Memorandum No. 84-11, dated October 6, 1983.

GEOTHERMAL

The same procedures outlined above for applications embracing DWA lands or wilderness candidate lands are applicable to geothermal lease applications.

COAL MORATORIUM

Section 112 of the FY 1984 Interior Appropriations Act prohibits the expenditure of funds for selling or leasing coal through the regional leasing process described at 43 CFR 3420 and through the lease-by-application processes described at 43 CFR 3425.1-5 and 43 CFR 3415.1-6. It also prohibits the issuance of coal preference right leases.

Section 308 of the Act provides that no coal leases or permits, including preference right lease applications, can be processed or issued for the five classes of lands previously listed. Further, no exploration licenses can be processed or issued on these lands.

Actions allowed under section 112 include selling and issuing coal leases under 43 CFR 3425.1-4, modifying coal leases, and accomplishing lease exchanges under 43 CFR 3435 or as specified in Public Law 96-401. Emergency leasing actions may be undertaken anywhere in the United States so long as the applicant can meet the criteria stated at 43 CFR 3425.1-4.

Two tracts originally scheduled for regional lease sales are also allowed to be offered for lease sale. The Colstrip C and Colstrip Maintenance tracts in the Powder River region may be offered for sale no earlier than August 1984.

This moratorium on coal leasing is expected to last unitl May 10, 1984. Your office will be notified of any further congressional actions relating to coal.

NONENERGY SOLID MINERALS

The legislative prohibition applies to phosphate, potassium, sulphur, and gilsonite. Sodium is omitted in the Appropriations Act and is not included in the legislative prohibition. Other nonenergy solid minerals, such as lead, zinc, copper, etc. (the hardrock leasables) subject to lease under such authorities as the Reorganization Plan No. 3 of 1946, are not included in the legislative prohibition.

Processing applications for prospecting permits and leases for the four nonenergy solid minerals listed above involving any of the five categories of lands mentioned earlier in this memorandum is prohibited. The statutory deadline provisions of the Wilderness Act recited above as to disposition of applications to lease which embrace DWA lands are also applicable to pending applications for prospecting permits; however, preference right lease applications involving DWA lands are covered under the prohibition provisions of the Appropriations Act against obligation of funds for processing or issuing of permits or leases.

Exceptions

I. Valid existing rights, or leases validly issued in accordance with all applicable Federal, State, and local laws, or valid mineral rights in existence prior to October 1, 1982, are exceptions.

II. Lease conversion pursuant to the Combined Hydrocarbon Leasing Act of November 16, 1981, is exempted from the prohibition (amendment No. 2173) to section 309 of the FY 1984 Appropriations Act. This pertains to the heavy oil and tar sands in the tar sands triangle area of southwestern Utah. There are Federal oil and gas leases under valid existing rights. The purpose of this exception is to permit the Secretary to expend funds to process any applications for combined hydrocarbon leases while filling the requirements of section 17(k)(1)(A) of the Mineral Leasing Act as amended by the Act of November 11, 1981, and its regulations.

/s/Robert F. Burford

APPENDIX V

EFFECTS OF WILDERNESS DESIGNATION

One of the major concerns of some local people, primarily ranchers in the Sweetwater Rocks area, is the possibility that designation as wilderness will create additional visitor use. They fear that increased use will negate any benefit that may be derived from wilderness designation. A large increase in visitation immediately following wilderness designation is known as the "designation effect," and although little scientific information is available to support it, the existence of the effect is a widely held belief. Because of this concern, the issue of visitor use in designated wilderness and the so-called designation effect were analyzed in relation to the Sweetwater Rocks WSA.

Both Colorado and Wyoming have a large number of designated wilderness areas. In Wyoming there are six congressionally designated U.S. Forest Service Wilderness areas. A number of other U.S. Forest Service and National Park Service areas, in addition to 35 BLM WSAs, are under consideration for designation in the state. Congressionally designated wilderness has existed in Wyoming since the passage of the Wilderness Act of 1964.

Neither the concept of wilderness preservation nor the long-term trend in wilderness visitor use originated with the passage of the 1964 Wilderness Act. Since the 1930s, certain areas in Wyoming and elsewhere in the west have been classified as wilderness by Secretary edict, although they were not formally designated as such by Congress (Hendee, et al. 1978). The Bridger Wilderness, for example, was classified as wilderness by the Secretary of Agriculture long before 1964.

The long-term trend in wilderness-type recreation was well documented and clearly presented in a study done for Congress by the Wildland Research Center (1962). Other topics included were wilderness concepts, a wilderness inventory, economic analysis of wilderness areas, administration and preservation problems. The study also included background material, which predicted the present day visitation patterns throughout the National Wilderness Preservation System. Pre-1964 use data included in the study show that between 1947 and 1959, man-days of wilderness use increased dramatically in the 11 states having lands classified as wilderness (table A-1).

The table shows that between 1947 and 1959 wilderness use increased by a factor of 4.5 in Wyoming and 16.4 in Colorado for certain wilderness areas. The trend in wilderness-type recreation was established long before the Wilderness Act of 1964 was passed. Predictions of future wilderness use were made in the Wildland Research Center study, based on the available data from the 1940s and 1950s. Total man-days of wilderness use for the Bridger and Teton Wilderness areas was projected to increase from 26,200 in 1947 to 592,500 in 1976 and to 1,577,800 by the year 2000. Actual use figures may vary but the conclusion—that a rapid and substantial increase in wilderness visitation would occur in the 1960s and 1970s—is valid.

That increase was most notable in wilderness areas that contained water-based recreational opportunities, high-scenic values and large expanses of alpine topography and vegetation. The study further indicated the inevitability of increased visitor use in wilderness, particularly the areas with high-value attractions.

Another comparison, of visitor use was made in the Medicine Bow National Forest. The Medicine Bow Mountains contain a small subdivision known as the Snowy Range. That area has never been classified as wilderness or as a primitive area. It offers high-value backpacking, fishing, hunting, mountaineering, rock climbing, and related activities in a primitive setting. It has not been placed "on a map" or otherwise flagged with a special designation, but visitor use is heavy. According to Paul McKillip (recreation and lands specialist, Laramie District, Medicine Bow National Forest), the physical capacity of trailhead facilities has been reached in recent years. Thus, in that part of the Medicine Bow National Forest, the type of recreation normally expected in wilderness is occurring in nonwilderness parts of the forest. The area classified as wilderness (Savage Run) receives little use. The reason for this difference is that people are attracted to an area on the basis of existing recreational attractions, not because of its name or governmental designation.

During the 20 years since the passage of the Wilderness Act, a considerable amount of information has been compiled about wilderness by U. S. Forest Service managers as they have gained experience with wilderness management and use. A review of current information and discussions with U. S. Forest Service personnel in Cody and Laramie, Wyoming, and Walden and

TABLE A-1

TOTAL WILDERNESS MAN-DAYS[1]
(1947 to 1959)

Areas[2]	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1959-1947
Arizona	2.7	16.9	21.4	27.7	25.6	8.5	8.5	9.0	9.5	9.7	9.0	10.5	11.2	4.15
California	81.6	93.4	118.0	112.1	208.8	248.8	266.8	224.4	231.3	270.4	310.0	306.5	293.5	3.60
Colorado	1.6	2.2	8.6	9.9	12.5	17.2	13.6	14.4	36.6	17.0	20.0	25.2	26.3	6.44
Idaho	21.3	26.5	28.0	31.6	32.2	35.4	36.2	37.0	38.7	40.2	88.6	102.0	108.9	5.11
Minnesota	69.1	201.9	235.9	221.4	93.4	114.0	121.4	191.2	147.3	298.0	353.0	364.0	525.0	7.60
Montana	39.8	51.4	53.2	46.8	58.7	64.3	65.7	63.7	67.0	80.3	87.2	103.2	103.6	2.60
New Mexico	14.4	16.1	22.0	20.2	16.8	14.9	19.0	22.2	22.9	28.3	24.3	32.3	33.9	2.35
Oregon	18.7	19.6	28.6	29.0	33.7	31.0	29.0	36.4	40.8	42.5	48.6	51.0	60.0	3.21
Utah	24.8	28.0	45.2	40.5	38.0	49.7	129.1	72.7	58.5	65.8	93.5	101.0	107.8	4.35
Washington	6.6	4.3	4.0	5.1	2.8	3.8	4.9	5.7	3.7	4.7	5.8	8.4	10.9	1.65
Wyoming	26.2	23.9	30.8	35.8	35.3	27.3	23.3	53.6	130.0	141.0	167.0	101.0	118.0	4.50
Total	306.8	484.2	595.7	572.0	559.9	631.9	717.5	730.3	786.3	997.9	1,207.0	1,205.1	1,399.1	4.56
Total, less California and Minnesota	**156.1**	**188.9**	**241.8**	**232.6**	**257.7**	**269.2**	**329.3**	**314.7**	**407.7**	**429.5**	**544.0**	**534.6**	**580.6**	**3.72**

[1]This column shows the increase in wilderness use between 1947 and 1959. For example, in Wyoming, wilderness use in 1959 was 4.5 times greater than it was in 1947.

[2]Areas include: Arizona—Blue Range, Mazatzal, Superstition; California—High Sierra, Salmon-Trinity Alps, Marble Mountains, Yolla Bolly-Middle Eel; Colorado—San Juan; Idaho—Sawtooth, Idaho; Minnesota—Boundary Waters; Montana—Selway, Anaconda, Marshall; New Mexico—Black Range, Gila (primitive), Gila (wilderness), Pecos; Oregon—Eagle Cap, Three Sisters; Utah—High Uintas; Washington—North Cascade; Wyoming—Bridger, Teton.

Ft. Collins, Colorado, suggest that a large influx of visitors following designation is not inevitable and that other factors may be the primary influences on visitation. Some examples of Wyoming wilderness areas illustrate this point. The nearest designated wilderness area to Rawlins is the Savage Run Wilderness Area. It is located in the Medicine Bow National Forest southeast of Saratoga, Wyoming, and was designated in the 1970s. There has been no perceptible increases in visitation since that time. According to McKillip, use is almost exclusively limited to hunting in the fall of the year. Hunting was the major recreational activity before designation and continues to be so today. Visitors are rarely encountered during the summer months; the parking lot at the trailhead is empty during the summer. If there is a designation effect, it is not apparent in the Savage Run Wilderness.

The North Absaroka Wilderness is another example of Wyoming Wilderness. This area is located west of Cody, Wyoming, in the Shoshone National Forest. It has been a designated wilderness area for 20 years, is large in size, is located near a major tourist route (Cody, Wyoming, to Yellowstone National Park), and has low-visitor use. This area, according to Forest Service personnel, has visitation levels that have not changed substantially since the mid-1960s (personal conversation with Bud Riggs, recreation, lands, and range specialist with the Shoshone National Forest, January 1984). The designation effect is not evident in the North Absaroka Wilderness.

The Bridger Wilderness, located in the Wind River Range of western Wyoming is a third example. This area was designated as wilderness in 1964 with the passage of the Wilderness Act. It had such a rapid increase in visitation in the 1960s and 1970s that some resource damage and other use problems have occurred. The Bridger Wilderness is an area where, according to popular opinion, the designation effect has increased visitation. However, a review of table A-1 and other information cited in the Wildland Research Center study indicates that the increase in visitation to the Bridger Wilderness was a continuation of the trend in visitation that became apparent in the late 1940s. Based on the degree of interest in primitive forms of outdoor recreation in America today, it was predictable that the many attractions of the Bridger Wilderness would be discovered, regardless of wilderness designation.

Other Wyoming wilderness areas show mixed results as they relate to the designation effect. The Teton Wilderness Area is heavily used, especially in the upper Yellowstone River area, but the Washakie Wilderness Area shows fairly light levels of use, with no large increases since the 1960s.

The information available for Wyoming wilderness areas does not support the existence of the designation effect. It suggests that other factors may be much more important influences on visitor use. Lyle Hancock, recreation specialist at the North Park Ranger District of the Routt National Forest, was also contacted. Hancock reported that large increases in visitor use have occurred in northern Colorado wilderness areas since the 1960s. Examples are the Rawah and Mount Zirkel Wilderness areas of the Roosevelt and Routt National forests. He believed that the designation process may have influenced visitor use but that other factors were more important. He said that the public "...would find the good areas whether or not they were wilderness." Other factors mentioned as being major influences on visitor use were proximity to major population centers and the attractions of the individual wilderness areas themselves.

The BLM study (contained in IM No. 83-228) produced results similar to the previous examples. The study showed that the designation effect is not inevitable but "...that there are other factors affecting visitation." The study reviewed visitor use data for 76 wilderness and primitive areas in the West. Some wilderness areas experienced long-term increased visitation following designation, and others experienced only short-term increases. Other wilderness areas exhibited long- and short-term losses in visitation. Many fluctuations in visitation have occurred in areas following wilderness designation, but no consistent pattern is evident.

In summary, general observations of the situation are:

1. An increase in visitation to an area following wilderness designation is not inevitable.
2. Wilderness area visitation seems to be related more to the individual attractions of the wilderness area than the governmental title of the area.
3. Areas with high-quality primitive recreational attractions that are not designated as wilderness or primitive areas will probably receive heavy use.
4. Designation of an area as wilderness does not create demand for wilderness. The demand for wilderness-type recreation is well documented and has been predicted for the last 25 years.
5. Visitor-use projections should be based on long-term use trends, regional population growth and other socioeconomic factors such as disposable income, trends in leisure time, and recreational preferences.

APPENDIX VI

VISUAL RESOURCE MANAGEMENT CLASSES

Visual Resource Management (VRM) classes describe the different degrees of modification allowed to the basic elements of the landscape. Class designations are derived from an overlay technique that combines the maps of scenic quality, sensitivity levels and distance zones. The overlays are used to identify areas with similar combinations of factors. These areas are assigned to one of five management classes according to predetermined criteria. The resultant map of contiguous areas sharing the same VRM class is an important document for all BLM land-use planning decisions, and it is also used to assess the visual impact of proposed development.

The five management classes are:

Class I: Natural ecological changes and very limited management activity are allowed. Any contrast created within the characteristic landscape must not attract attention. This classification is applied to wilderness areas, wild and scenic rivers, and other similar situations.

Class II: Changes in any of the basic elements (form, line, color, texture) caused by a management activity should not be evident in the characteristic landscape. Contrasts are seen, but must not attract attention.

Class III: Contrasts to the basic elements caused by a management activity are evident, but should remain subordinate to the existing landscape.

Class IV: Any contrast attracts attention and is a dominant feature of the landscape in terms of scale, but it should repeat the form, line, color, and texture of the characteristic landscape.

Class V: The classification is applied to areas where the natural character of the landscape has been disturbed to a point where rehabilitation is needed to bring it up to one of the four other classifications. There is potential to increase the landscape's visual quality. It would, for example be applied to areas where unacceptable cultural modification has lowered scenic quality; it is often used as an interim classification until objectives of another class can be reached.

Source: Visual Resource Management Program, BLM.

APPENDIX VII

OIL AND GAS POTENTIAL RATING SYSTEMS

Two oil and gas potential rating systems, one used in the Lander RMP and one used by Spencer and Powers in a 1983 publication, are presented below. Both rating systems were used in the text and in the Copper Mountain WSA. Each resulted in different potential ratings.

Source: Spencer and Powers, 1983.

High potential - Geologic environment highly favorable for occurrence of oil and gas accumulations. Area is within or on trend with existing production from structural and (or) stratigraphic traps.

Medium potential - Geologic environment favorable for the occurrence of oil and gas accumulations. Contains known reservoir rocks and hydrocarbon source beds. Includes some areas of sparse subsurface control or areas where expected field size will be small.

Low potential - Geologic environment interpreted to have low potential for the occurrence of oil and gas accumulations. Includes areas of poor or unknown hydrocarbon source bed and (or) reservoir quality. Generally includes areas of sparse or with no well control and (or) expected thin sequence of sedimentary rocks.

Zero potential - Areas generally with exposed Precambrian rocks or with very thin sedimentary section with no potential for occurrence of sealed structural or stratigraphic traps with hydrocarbons.

Unknown potential - Generally includes areas with no well control where Tertiary volcanic intrusions and volcaniclastic rocks are present on the surface. This cover, plus lack of subsurface control, makes prediction of hydrocarbon potential extremely difficult. Includes some areas where Precambrian igneous and metamorphic rocks are thrust over Phanerozoic (Cambrian and younger) sedimentary rocks of unknown potential. Lack of subsurface control does not mean that no oil and gas potential exists, but only that the hydrocarbon potential cannot reasonably be determined with present data.

Source: Lander RMP

High - Known geologic structures and formations highly favorable for the accumulation of oil and gas are known to exist.

Moderate - Many favorable nonproducing geologic structures and formations are present, but all potentially productive formations have not been drilled and tested.

Low - Geologic structures and formations are well defined and potentially productive formations have been drilled, tested, and failed to produce oil and gas.

No - Geologic structures and formations are well defined and the potential for oil and gas accumulations does not exist.

GLOSSARY

ABIOTIC. Characterized by the absence of life.

ALLUVIUM. Unconsolidated material deposited relatively recently in geologic time by a stream or other body of running water.

AMPHIBOLITE ROCKS. Metamorphic rock consisting essentially of amphiball, a group of minerals with essentially like crystal structures involving a silicate chain, OH (Si_4O_{11}).

ANTICLINE. An upfold or arch of stratified rock in which the beds or layers bend downward in opposite directions from the crest or axis of the fold.

ARGILLACEOUS. Of, relating to, or containing clay or clay minerals.

BIFACE. A stone tool usually of flint made from a core flattened on both sides.

BIOTITE - CHLORITE SCHISTS. Black or dark green metamorphic crystalline rock.

CHANNERY LOAM. Loam containing thin, flat coarse fragments of limestone, sandstone, or schist, having diameters as large as 6 inches.

CHUKAR. An Indian rock partridge that is gray with black and white bars on the sides and a red bill and legs.

COLLUVIUM. Loose incoherent deposits at the foot of a slope or cliff, brought there primarily by gravity.

COLOR. The property of reflecting light of a particular wavelength that enables the eye to differentiate otherwise indistinguishable objects.

CROWNED AND DITCHED ROAD. A constructed road graded to facilitate drainage.

CRUCIAL WINTER RANGE. An area of crucial importance to the survival of a local wildlife population during the periodic occurrence of severe winter conditions.

CULTURAL RESOURCES. Those fragile and nonrenewable remains of human activity, occupation, or endeavor reflected in districts, sites, structures, buildings, objects, artifacts, ruins, works of art, architecture, and natural features that were of importance in human events. These resources consist of: (1) physical remains; (2) areas where significant human events occurred, even though evidence of the event no longer remains; and (3) the environment immediately surrounding the actual resource. Cultural resources, including both prehistoric and historical remains, represent a part of the continuum of events from the earliest evidences of man to the present day.

DIAGNOSTIC PROJECTILE POINT. An arrowhead, spearhead, or dart point whose age and material cultural affiliation can be determined by comparison with others from previously excavated cultural resource sites.

DIKE. A thin, sheet-like intrusion of igneous rock cutting across the bedding or foliation of the country rock.

DIP. The angle between the bedding plane or fault plane and the horizontal plane.

DIRECTIONAL DRILLING. A method of drilling in which the direction of the hole is planned before.

DRILL-STEM TEST. Bottom-hole pressure information obtained and used to determine formation productivity.

ECOSYSTEM. A functional system that includes the organisms of a natural community together with their environment.

FORB. An herb other than grass; a broadleaf herb.

FORM. The mass or shape of an object, which appears unified, often defined by edge, outline, and surrounding space.

GNEISS. A laminated or foliated metamorphic rock.

GNEISSIC. Referring to gneiss, a foliated metamorphic rock corresponding in composition to granite.

HABITAT. The place where a plant or animal species naturally lives and grows.

HABITAT MANAGEMENT PLAN. BLM's plan for habitat maintenance and improvement. The primary vehicle used in BLM to fund habitat projects.

HEMATIFEROUS BIOTITE SCHISTS. A schist containing mostly biotite mica with an unusually high content of hematite (iron oxide).

HYDROTHERMAL. Pertaining to the action of hot aqueous fluids or solutions on rocks or mineral deposits.

IGNEOUS. Rock formed by solidification of a molten magma.

LINE. The path that the eye follows when preceiving abrupt differences in form, color, or texture. In the landscape, ridges, skylines, structures, changes in vegetation, or individual trees and branches may be perceived as line.

LITHIC WORKSHOP. An area where store tools were manufactured.

LIVESTOCK GRAZING OPERATIONS. Those operations under permit where the primary purpose is the grazing of livestock for the production of food and fiber. Includes pack and saddle stock used in conjunction with such operations.

LOAM. A fertile and humus-rich soil consisting of a friable mixture of 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand.

MAFIC. Containing abundant dark colored minerals such as amphibolis, pyroxenes, and certain feldspars.

MESIC SITE. An area characterized by a moderate amount of moisture.

METASEDIMENTS. A sediment of sedimentary rock which shows evidence of metamorphism.

MICROCRYSTALLINE HORNFELS. A fine-grained silicate rock (crystallinty is only visible under a microscope) that is produced by contact metamorphism.

MINERAL WITHDRAWAL. Removal of specific federal lands from availability for mineral development.

NEPHRITE JADE. Less valuable jade.

NO SURFACE OCCUPANCY STIPULATION. A stipulation placed on a lease that prohibits any surface disturbing activities in the lease area.

PEGMATITE. A very coarse-grained igneous rock with a composition similar to granite. It is usually found in veins or dikes.

PERMABILITY RATES. The capacity of a porous rock, soil, or sediment for transmitting a fluid without damage to the structure of the medium.

PRECAMBRAIN ROCKS. Igneous and metamorphic rocks formed during Precambrian time, which ended approximately 570 million years before present.

PREHISTORIC. Pertaining to that period of time before written history. In North America, prehistoric usually refers to the pre-Columbian period (before 1492).

PRIMITIVE AND UNCONFINED RECREATION. Nonmotorized and nondeveloped types of outdoor recreational activities.

PRODUCTION TEST. Test of a well's productive capacity for hydrocarbons in a particular formation or reservoir that is performed after the casing is set and through perforations in that casing.

PROSPECT. 1) To search for minerals or oil by looking for surface indications, by drilling boreholes, or both. 2) A plot of ground believed to be mineralized enough to be of economic importance.

PROTECTIVE CORRIDOR. Includes ¼ mile or the distance to the visual horizon on either side of the trail. Land uses that affect the surface are limited within this corridor.

RADIOMETRIC SURVEY. A survey conducted with a radiometer, an instrument that detects and measures the intensity of electromagnetic or acoustic radiation.

REACH. A straight, continuous, or extended part of a river stream, or restricted waterway.

RECREATION OPPORTUNITY SPECTRUM. For management and conceptual convenience, possible mixes or combinations of activities, settings, and probable experience opportunities have been arranged along a spectrum or continuum.

RESOURCE MANAGEMENT PLAN. A comprehensive plan that establishes land-use decisions based on the principles of multiple use and sustained yield.

RIPARIAN. Of or relating to or living or located on the bank of a watercourse.

SCENIC QUALITY CLASSES. Classes that are assigned to the land for the purpose of rating an area by landform, vegetation, water, color, influence of adjacent scenery, scarcity, and cultural modification. There are three classes.

SCHULITE. A calcium tungstate CaWO4?. Is a commercial source of tungsten and tungsten compounds.

SCHIST. A metamorphic rock consisting predominately of mica minerals with a parallel orientation of the mica plates.

SEEP. A spot where a fluid contained in the ground oozes slowly to the surface and often forms a pool.

SODIC. Of, relating to or containing sodium.

TUFF. Rock composed of material formed from volcanic debris ejected into the air.

URANIFEROUS. Containing uranium.

VISUAL MANAGEMENT CLASS. These describe the different degrees of modification allowed to the basic elements of the landscape. Class designations are derived from an overlay technique that combines the maps of scenic quality, sensitivity levels and distance zones. There are five management classes.

ZEOLITE. A large group of hydro-aluminosilicate minerals formed, especially in beds of tuff and sometimes valuable for chemical properties allowing them to be used in ion exchange and adsorption.

ACRONYMS

ACEC - Area of Critical Environmental Concern

AUM - Animal Unit Month

BLM - Bureau of Land Management

B.P. - Before present

EIS - Environmental Impact Statement

FLPMA - Federal Land Policy and Management Act

HMP - Habitat Management Plan

NPS - National Park Service

NWPS - National Wilderness Preservation System

R&PP - Recreation and Public Purposes

RPS - Rangeland Program Summary

RMP - Resource Management Plan

VRM - Visual Resource Management

WGFD - Wyoming Game and Fish Department

WSA - Wilderness Study Area

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