

COLORADO
PUBLIC LAND HEALTH
STANDARDS

This document contains the

Decision Record & Finding of No Significant Impact

and

Environmental Assessment

for

Standards
for Public Land Health
and
Guidelines
for Livestock Grazing Management

Bureau of Land Management

March 1997

**DECISION RECORD
AND
FINDING OF NO SIGNIFICANT
IMPACT**

FOR ADOPTION OF

STANDARDS

FOR PUBLIC LAND HEALTH

AND

GUIDELINES

FOR LIVESTOCK GRAZING MANAGEMENT

IN

COLORADO

JANUARY 1997

DECISION

It is my decision to adopt the attached standards for public land health and guidelines for livestock grazing management (standards and guidelines), dated November 1996. They are similar to those described in the Standards and Guidelines Environmental Assessment (EA), dated June 28, 1996, but with some minor changes resulting from public comments.

This decision amends the Colorado Resource Management Plans (RMPs). These standards and guidelines supplement (i.e. add to) the existing decisions in each RMP. Some of the decisions in certain RMPs will be modified or replaced as shown in the individual RMP attachments to this Decision Record. The RMPs amended are:

Glenwood Springs
Grand Junction
Gunnison
Kremmling
Little Snake
Northeast
Royal Gorge
San Juan/San Miguel
San Luis
Uncompahgre Basin
White River (Proposed)

This decision will be effective on February 12, 1997 following resolution of any protests, completion of the Governor's consistency review, and approval by the Secretary of the Interior.

ALTERNATIVES CONSIDERED

In addition to the proposed action, adoption of the fallback standards and guidelines as described in 43 CFR 4180.2 was considered. By regulation, this alternative will be in effect after February 12, 1997 if the proposed action is not approved prior to that date. If this occurs, the Fallback standards and guidelines will continue in effect until the Colorado standards and guidelines are approved. This alternative was not selected because there was strong support from virtually all public land users to develop standards and guidelines for Colorado.

The alternative of continuing present management was considered. This alternative, although not legally implementable, served as a baseline for describing and comparing implementation processes and impacts with other alternatives.

RATIONALE

These standards and guidelines were developed in partnership with the three Colorado Resource Advisory Councils, utilizing input received during numerous public workshops and meetings, consultations with academicians, and from public comments on the EA.. Correctly applied, they will assure public land health. I am hopeful that the open, collaborative implementation process will help in building mutual trust and respect with and between public land users. Similarly, the common terminology used in assessing rangeland health, should reduce misunderstandings. The focus on sustaining natural systems using a landscape perspective further encourages a collaborative approach using the best information and methods available.

FINDING OF NO SIGNIFICANT IMPACT

Based on the analysis of anticipated impacts described in the Standards and Guidelines EA., I have determined that no significant impacts will occur and an environmental impact statement is not required. Beneficial resource impacts will occur, including improved soil productivity, riparian function, water quality, plant density and diversity, and wildlife habitat. In a few isolated circumstances some grazing permittees and other public land users may be adversely impacted in the short term by increased costs, and/or reductions in authorized or allowable use. In the long term, grazing permittees should realize a gain, as more predictable, desirable forage is produced. Other public land users and local communities should benefit as well from the use and enjoyment of improved resource conditions on the public lands.

Recommended by:

Colorado BLM Area Managers (signatures on RMP attachments to this record)

Colorado BLM District Managers:

Mark T. Morse
Mark Morse, District Manager
Craig and Grand Junction Districts

11-1-96
Date

Mark Stiles
Mark Stiles, District Manager
Montrose District

11-8-96
Date

Donnie R. Sparks
Donnie Sparks, District Manager
Canon City District

11-7-96
Date

Approved by:

Robert V. Abbey
Robert V. Abbey, Acting State Director
Colorado

11-8-96
Date

Approved for Implementation by:

Bruce Babbitt
Bruce Babbitt, Secretary of the Interior

20 FEB 1997
Date

Ray Tomer

STANDARDS
FOR PUBLIC LAND HEALTH

AND

GUIDELINES
FOR LIVESTOCK GRAZING MANAGEMENT

IN COLORADO
November 1996

PREAMBLE

Humans use and derive benefits from public lands administered by BLM in Colorado in many ways: to earn a livelihood, to recreate, for education, for science, and to enjoy and appreciate open spaces and irreplaceable cultural heritage resources. Healthy public lands and the uses of those lands contribute to the health and economic well-being of Colorado communities. In turn, healthy human communities create healthy public lands by conserving, protecting, and properly utilizing public land resources and by effectively resolving conservation issues. Healthy public lands and healthy human communities are interrelated; therefore, social, economic, and environmental considerations must be properly balanced.

The interdependent relationship between human communities and their public land brings together people of diverse backgrounds and interests. Open, honest, and sincere interactions, in a spirit of trust and respect, are essential to achieving and maintaining healthy public lands. While all individuals have a voice in public land management goals, the responsibility to maintain healthy public lands ultimately falls with the users of those lands.

To help determine what constitutes healthy public lands, Standards for Public Land Health, by which the health of the land is measured, need to be established. This document defines such standards for BLM lands in Colorado. It also identifies Guidelines for Livestock Grazing Management, which are some of the tools that help achieve the standards.

INTERPRETATION

Standards and guidelines can be an effective communication tool, providing a common understanding of expected resource conditions and acceptable management practices. Although the standards are the measures by which health of the land will be assessed, the results of these assessments are not well-suited for direct reporting of accomplishments. Any reporting of progress associated with application of these standards will need to consider and address the following factors:

- Standards and guidelines for each state will be different.
- To be meaningful, public land health assessment must be determined based upon all standards and not solely upon each individual standard.
- It will be many years before a full assessment of public land health is completed. Initially, statistics concerning public land health may be skewed due to the priority setting process which directs management attention to lands where problems exist.

Standards describe conditions needed to sustain public land health, and relate to all uses of the public lands. The standards are written in a two-part format. The standard is first described in a statement. Then indicators which relate to the standard are identified. The indicators help define the standard and describe features which are observable on the land. Additional indicators may also be applicable to some sites, and some indicators may not apply to every specific site. While a site should match the indicators it is not necessary for each site to perfectly match all the indicators to comply with the standard.

The appropriate use of resources will be determined by the authorized officer on a case by case basis, in consultation, coordination and cooperation with local cooperators and the interested public and in accordance with law and regulation.

Standards are observed on a landscape scale. It is not possible for each acre to achieve every standard. For example, a mosaic of vegetation types and age classes may produce the diversity associated with a healthy landscape; however, some individual vegetation communities within the mosaic may lack diversity.

Standards always relate to the potential of the landscape. Climate, landform, geologic, and biologic characteristics are factors that affect potential. Each landscape has a specific ability to provide values important to humans such as timber, livestock forage, water, wildlife, and minerals. Therefore, the potential of a site can also be altered through a wide variety of human socio-economic factors. When this occurs, a new potential exists. The authorized officer, through the consultation process, will evaluate the site based on its new potential. Comparative analysis of nearby landscapes, (that appear to have similar climate, geology, landform, biologic and socio-economic characteristics), is considered the most reliable means to identify the potential landscape.

It is common for landscapes with nearly identical potential to differ, in their appearance, and in the values they provide. Variability results from both natural plant succession patterns, and human uses. While the climax plant community is significant as an indicator of potential, the climax community does not automatically provide the comparative basis for evaluating the standard. In many circumstances local goals will identify a different plant community which provides the most optimum values. When this occurs, the plant community identified in the local goal replaces the climax community as the foundation for evaluating the standard.

Often, existing information will be sufficient to determine public land health. It is not always necessary to collect measurable baseline data for each standard on each site to determine public land health. However, baseline data is important to establish so that changes can be observed and measured. The BLM's authorized officer will determine the amount and type of data each situation requires in consultation, coordination and cooperation with local cooperators and the interested public. In areas where the standards are not being achieved, current uses and management actions will be reviewed and modified if necessary to assure significant progress toward achieving a healthy ecosystem.

Guidelines are livestock grazing management tools, methods, strategies, and techniques (e.g., best management practices) designed to maintain or achieve healthy public lands as defined by the standards. Grazing by wildlife and wild horses, oil and gas activity, recreation, and logging can affect the health of the land. Guidelines for these and other uses may be developed as needed to conform with the new standards. Implementation of livestock grazing management guidelines must also be coordinated with other uses of the land; collectively, these uses should not detract from the goal of achieving healthy public lands.

STANDARDS FOR PUBLIC LAND HEALTH

STANDARD 1: *Upland soils* exhibit infiltration and permeability rates that are appropriate to soil type, climate, land form, and geologic processes. Adequate soil infiltration and permeability allows for the accumulation of soil moisture necessary for optimal plant growth and vigor, and minimizes surface runoff.

Indicators:

- Expression of rills and soil pedestals is minimal.
- Evidence of actively-eroding gullies (incised channels) is minimal.
- Canopy and ground cover are appropriate.
- There is litter accumulating in place and is not sorted by normal overland water flow.
- There is appropriate organic matter in soil.
- There is diversity of plant species with a variety of root depths.
- Upland swales have vegetation cover or density greater than that of adjacent uplands.
- There are vigorous, desirable plants.

STANDARD 2: *Riparian systems* associated with both running and standing water, function properly and have the ability to recover from major disturbance such as fire, severe grazing, or 100-year floods. Riparian vegetation captures sediment, and provides forage, habitat and bio-diversity. Water quality is improved or maintained. Stable soils store and release water slowly.

Indicators:

- Vegetation is dominated by an appropriate mix of native or desirable introduced species.
- Vigorous, desirable plants are present.
- There is vegetation with diverse age class structure, appropriate vertical structure, and adequate composition, cover, and density.
- Streambank vegetation is present and is comprised of species and communities that have root systems capable of withstanding high streamflow events.
- Plant species present indicate maintenance of riparian moisture characteristics.
- Stream is in balance with the water and sediment being supplied by the watershed (e.g., no headcutting, no excessive erosion or deposition).
- Vegetation and free water indicate high water tables.
- Vegetation colonizes point bars with a range of age classes and successional stages.
- An active floodplain is present.
- Residual floodplain vegetation is available to capture and retain sediment and dissipate flood energies.
- Stream channels have appropriate size and meander patterns for the streams' position in the landscape, and parent materials.
- Woody debris contributes to the character of the stream channel morphology.

STANDARD 3: Healthy, productive plant and animal communities of native and other desirable species are maintained at viable population levels commensurate with the species and habitat's potential. Plants and animals at both the community and population level are productive, resilient, diverse, vigorous, and able to reproduce and sustain natural fluctuations, and ecological processes.

Indicators:

- Noxious weeds and undesirable species are minimal in the overall plant community.
- Native plant and animal communities are spatially distributed across the landscape with a density, composition, and frequency of species suitable to ensure reproductive capability and sustainability.
- Plants and animals are present in mixed age classes sufficient to sustain recruitment and mortality fluctuations.
- Landscapes exhibit connectivity of habitat or presence of corridors to prevent habitat fragmentation.
- Photosynthetic activity is evident throughout the growing season.
- Diversity and density of plant and animal species are in balance with habitat/landscape potential and exhibit resilience to human activities.
- Appropriate plant litter accumulates and is evenly distributed across the landscape.
- Landscapes are composed of several plant communities that may be in a variety of successional stages and patterns.

STANDARD 4: Special status, threatened and endangered species (federal and state), and other plants and animals officially designated by the BLM, and their habitats are maintained or enhanced by sustaining healthy, native plant and animal communities.

Indicators:

- All the indicators associated with the plant and animal communities standard apply.
- There are stable and increasing populations of endemic and protected species in suitable habitat.
- Suitable habitat is available for recovery of endemic and protected species.

STANDARD 5: The water quality of all water bodies, including ground water where applicable, located on or influenced by BLM lands will achieve or exceed the Water Quality Standards established by the State of Colorado. Water Quality Standards for surface and ground waters include the designated beneficial uses, numeric criteria, narrative criteria, and antidegradation requirements set forth under State law as found in (5 CCR 1002-8), as required by Section 303(c) of the Clean Water Act.

Indicators:

- Appropriate populations of macroinvertebrates, vertebrates, and algae are present.
- Surface and ground waters only contain substances (e.g. sediment, scum, floating debris, odor, heavy metal precipitates on channel substrate) attributable to humans within the amounts, concentrations, or combinations as directed by the Water Quality Standards established by the State of Colorado (5 CCR 1002-8).

COLORADO LIVESTOCK GRAZING MANAGEMENT GUIDELINES

1. Grazing management practices promote plant health by providing for one or more of the following:
 - periodic rest or deferment from grazing during critical growth periods;
 - adequate recovery and regrowth periods;
 - opportunity for seed dissemination and seedling establishment.
2. Grazing management practices address the kind, numbers, and class of livestock, season, duration, distribution, frequency and intensity of grazing use and livestock health.
3. Grazing management practices maintain sufficient residual vegetation on both upland and riparian sites to protect the soil from wind and water erosion, to assist in maintaining appropriate soil infiltration and permeability, and to buffer temperature extremes. In riparian areas, vegetation dissipates energy, captures sediment, recharges ground water, and contributes to stream stability.
4. Native plant species and natural revegetation are emphasized in the support of sustaining ecological functions and site integrity. Where reseeding is required, on land treatment efforts, emphasis will be placed on using native plant species. Seeding of non-native plant species will be considered based on local goals, native seed availability and cost, persistence of non-native plants and annuals and noxious weeds on the site, and composition of non-natives in the seed mix.
5. Range improvement projects are designed consistent with overall ecological functions and processes with minimum adverse impacts to other resources or uses of riparian/wetland and upland sites.
6. Grazing management will occur in a manner that does not encourage the establishment or spread of noxious weeds. In addition to mechanical, chemical, and biological methods of weed control, livestock may be used where feasible as a tool to inhibit or stop the spread of noxious weeds.
7. Natural occurrences such as fire, drought, flooding, and prescribed land treatments should be combined with livestock management practices to move toward the sustainability of biological diversity across the landscape, including the maintenance, restoration, or enhancement of habitat to promote and assist the recovery and conservation of threatened, endangered, or other special status species, by helping to provide natural vegetation patterns, a mosaic of successional stages, and vegetation corridors, and thus minimizing habitat fragmentation.
8. Colorado Best Management Practices and other scientifically developed practices that enhance land and water quality should be used in the development of activity plans prepared for land use.

FLEXIBILITY

The standards are designed to maintain or achieve healthy public lands while allowing for the development of local goals and objectives. For example, on sites of similar potential a desired plant community designed to provide deer winter range would differ from one designed for cattle summer range, yet both could achieve the standards. Local goals and specific objectives consistent with standards will be developed by BLM in consultation, cooperation and coordination with local cooperators and the interested public.

Guidelines were designed to provide direction, yet offer flexibility for local implementation through grazing permits. Activity plans may add specificity to the guidelines based on local goals and objectives. A wide variety of grazing management strategies can produce healthy rangelands. One or more guidelines would be employed to achieve the standards.

IMPLEMENTATION

Recognizing that social and economic factors must be considered in achieving healthy public lands, the authorized officer will coordinate, consult and cooperate with the local cooperators and interested publics during all phases of implementing standards and guidelines, whether it be for an allotment, group of allotments, or watershed. BLM will strive to make use of collaborative approaches involving the various interested publics within an affected allotment, group of allotments, or watershed. The Resource Advisory Council (RAC) may be requested by any party to assist in reaching agreement in resolving disputes. As greater understanding of ecosystems, including socio-economic factors, becomes available, it will be applied to our management of public lands.

The section below describes the general process for applying the Colorado standards and guidelines in the field. If mutual agreement on a course of action is reached at any point during this process, such agreement may eliminate the need for some of the process steps described.

It is unreasonable to assume that standards and guidelines will be applied to all public lands immediately upon adoption. Therefore, it is imperative that a logical system for prioritizing work be adopted. Following are some criteria that the authorized officer uses to prioritize areas such as allotments, watersheds, or other landscapes:

- Are there situations where legal requirements must be met?
- Is there information to indicate resources at risk, or that the severity of resource damage demands immediate attention? (monitoring results, allotment categorization, professional judgement, results of ESI or other inventory data, etc.)
- Is use conflict present?
- Is there public concern or interest for possible resources at risk?
- What is scheduled for completion according to the RMP implementation schedule?
- Where can efficiencies with limited resources be realized?
- Where are the best opportunities to effect positive change toward public land health?
- Are there permits or other resource use authorizations that need to be acted upon (e.g. grazing, right-of-ways, timber sales, etc.)?

The following steps describe a typical sequence for assessing public land health and trend on established priority areas. The authorized officer will:

1. Using public scoping, identify issues and values in detail; identify existing management objectives from sources such as the Resource Management Plan (RMP), and activity plans.
2. Assess public land health and if possible determine the trend relating to public land health.
3. Determine the relationship between existing land uses and the assessed health of the land.
4. If needed, establish measurable objectives or redefine/modify existing management objectives that will result in desired conditions. (Note: If significant changes to RMP decisions are needed, an amendment to the RMP will be needed.)
5. Identify which land use actions will achieve the desired objectives and resource conditions.

NOTE: This document addresses the livestock grazing guidelines; guidelines that relate to other land uses will be consulted or developed as necessary to deal with the appropriate objectives.

6. Identify specific management practices, in conformance with the guidelines, and attach as terms and conditions on grazing permits, or as stipulations on specific projects or actions.
7. Establish an evaluation schedule to determine if the standard is being achieved or if significant progress is being made.

- If the evaluation indicates that objectives are being achieved or there is movement towards the objective, continue with management practices.

- If the evaluation indicates no movement or movement away from the objectives, reassess the objectives and management actions. Determine the objectives and management actions necessary to assure significant progress toward achieving the standards. Amend plans and permits as necessary.

The authorized officer will take immediate administrative action to implement appropriate guidelines upon a determination that the following three circumstances all apply:

1. Public land health is unacceptable;
2. Existing management is not likely to produce significant progress towards public land health; and
3. The consultation process has failed to yield a negotiated resolution.

If needed, future modifications to the Standards and Guidelines may be made. Typically, a proposal for modification is presented to the local Designated Field Official (DFO). The DFO then forwards the proposal for modification to other DFOs throughout the state for consideration in consultation with the RACs. (A copy of the proposal for modification is also submitted to the State Director). The DFOs considering advise from the RACs then submit to the State Director recommendations regarding the proposal for modification. The State Director decides if the proposal for modification has merit. If so, a determination is made whether the modification is a maintenance change to the Resource Management Plans or requires a plan amendment. Maintenance changes require no action except to make a notation in the RMPs (43 CFR 1610.5-4). Actions requiring a RMP amendment will require NEPA analysis and conformance with 43 CFR 1610.5.

GLOSSARY OF TERMS

Activity Plan - A more detailed and specific plan for management of a single resource program to achieve specific objectives undertaken only when needed to implement the more general resource management plan (RMP) decisions.

Allotment - An area of land designated and managed for the grazing of livestock by one or more livestock operators. It generally consists of public lands, but may include parcels of private or State-owned lands. The number of livestock and period of use are stipulated for each allotment.

Allotment Management Plan - A written plan for livestock grazing management, including supportive measures if required, designed to attain specific multiple-use management, sustained yield, economic and other goals in a grazing allotment.

Best Management Practices - Best Management Practices (BMPs) are methods, measures, or practices to prevent or reduce water pollution, including, but not limited to, structural and nonstructural controls and operation and maintenance procedures. Usually BMP's are applied as a system of practices rather than a single practice. BMPs are selected on the basis of site-specific conditions that reflect natural background conditions and political, social, economic, and technical feasibility.

Biodiversity or Diversity - The variety of plants and animals that occupy a landscape.

Climax - The natural plant community that occurs at the end of the plant successional path, in the absence of disturbances or physical site deterioration.

Desired Plant Community - A plant community that meets the goals established for a landscape.

Ecosystem - Living organisms and non-living substances, interacting to produce and exchange material between the living and non-living parts.

Endemic Species - A species or subspecies native to a particular location with narrow limits of habitat variability.

Goal - A general description of a desired future condition. (e.g. improve watershed conditions, achieve a desired plant community)

Grazing Permit - A document authorizing use of public lands within an established grazing district.

Habitat Management Plans - A type of activity plan relating to wildlife habitat.

Heritage Resources - Any prehistoric, historic, landscape, site, building, structure, or object, normally greater than 50 years of age and includes artifacts, records, and material remains associated therewith.

Interested Public - An individual, group or organization that has submitted a written request to the authorized officer to be provided an opportunity to be involved in the decision making process.

Landscape - A defined area that forms a management unit or basis of analysis.

Land Treatments - Controlled burning, mechanical, biological, or chemical manipulation of the land.

Local Cooperator - An individual who directly influences the management of public lands, and who's cooperation is needed to alter existing conditions. BLM permit holders are local cooperators.

Objective - A measurable description of a desired future condition that specifies, what is to be accomplished, location, and time frame.

Plant and Animal Communities - Those plant and animals which occur on public land; the definition excludes people, livestock, and crops.

Potential - The ecological condition of an area that is possible due to physical, biological, social, and economic factors.

Preliminary Assessment - An analysis of a tract of land that provides general information on the status of the land. This assessment does not provide in-depth issue analysis.

Public Lands - Those tracts of land owned by the people of the United States, that are administered by the Bureau of Land Management.

Riparian - An area of land directly influenced by permanent water. It has visible vegetation or physical characteristics reflective of permanent water influence. Lakeshores and streambanks are typical riparian areas. Excluded are such sites as ephemeral streams or washes that do not have vegetation dependent on free water in the soil.

Trend - The direction of change in health of the land, observed over time.

GLENWOOD SPRINGS RESOURCE MANAGEMENT PLAN

The Glenwood Springs RMP is amended to include the standards for public land health and guidelines for livestock grazing management dated November 1996. Existing RMP decisions modified or replaced by adoption of standards for public land health and guidelines for livestock grazing management are shown in the following table.

Page # in Approved RMP	Description of Change/Rationale <i>(modifications are shown in italics)</i>
11	Replace (remove) the water yield management objective, that reads, "To increase water yield throughout the resource area through forest management practices and through treatment of mountain brush vegetation types to improve livestock and big game forage." Rationale: This objective is inconsistent with the standards.
18	Modify the terrestrial habitat management objective by deleting, " <i>(the amount needed to meet Colorado Division of Wildlife goals in 1988)</i> " so that the objective reads, "To provide approximately 57,933 animal unit months (AUMs) of big game forage to improve existing wildlife habitat conditions, and to increase wildlife species diversity." Rationale: This reference to the Colorado Division of Wildlife's 1988 goals is out of date, and is not needed.
20	Modify the first sentence of the livestock grazing management objective to read, "To provide 56,885 animal unit months of livestock forage <i>commensurate with meeting public land health standards.</i> " Rationale: This objective is modified to be consistent with the regulations and to avoid a potential conflict with the standards.
31	Modify the forest management objective to read, "To manage all suitable commercial forest land and woodland to meet sawtimber and fuelwood demand and <i>to maintain stand productivity commensurate with meeting public land health standards.</i> " Rationale: This objective is modified to assure consistency with the standards.

Recommended by:

for Stephen A. Moore
Mike Mottice, Area Manager
Glenwood Springs Resource Area

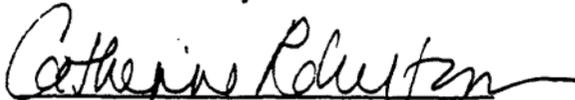
11/4/96
Date

GRAND JUNCTION RESOURCE MANAGEMENT PLAN

The Grand Junction RMP is amended to include the standards for public land health and guidelines for livestock grazing management dated November 1996. Existing RMP decisions modified or replaced by adoption of standards for public land health and guidelines for livestock grazing management:

Page # in Approved RMP	Description of Change/Rationale <i>(modifications are shown in italics)</i>
2-14	Modify the first sentence of the wildlife management objective to read, "To provide sufficient forage, cover, and protection from disturbance to maintain a population of 15,500 deer and 2,950 elk in winter, <i>commensurate with public land health standards.</i> " Rationale: This objective is modified to assure consistency with the standards.
2-17	Modify the first sentence of the livestock management objective to read, "To manage livestock grazing as described in the Grand Junction Grazing Environmental Statement, <i>commensurate with public land health standards.</i> " Rationale: This objective is modified to assure consistency with the standards.

Recommended by:



Catherine Robertson, Area Manager
Grand Junction Resource Area

10/31/96
Date

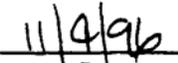
GUNNISON RESOURCE MANAGEMENT PLAN

The Gunnison RMP is amended to include the standards for public land health and guidelines for livestock grazing management dated November 1996. Existing RMP decisions modified or replaced by adoption of standards for public land health and guidelines for livestock grazing management:

Page # in Approved RMP	Description of Change/Rationale <i>(modifications are shown in italics)</i>
2-2	<p>Modify the vegetation objective by deleting, "<i>or achieve at least a late seral ecological status</i>" so it reads, "Vegetation resources will be managed to maintain or improve the vigor, production and diversity of desirable plants within alpine, sagebrush/mixed mountain shrub, and woodland types at a level to support a variety of resource uses, including, but not limited to livestock grazing, wildlife habitat and recreation."</p> <p>Rationale: Achieving late seral status is not always consistent with achieving public land health.</p>
2-5	<p>Modify the first sentence under Sage Grouse and Other Upland Game Bird Habitat to read, "Identified sage grouse brood-rearing habitat and nesting area, and winter habitat will be maintained or improved, such that approximately 9,000 sage grouse could be supported on public lands, <i>commensurate with achieving public land health standards.</i>"</p> <p>Rationale: This objective is modified to assure consistency with the standards.</p>
2-6	<p>Modify the first sentence of the livestock grazing management objective to read, "Allow grazing <i>if commensurate with public land health standards</i> on 470,460 acres (approximately 60,135 AUMs of which 45,539 are active and the balance are suspended)."</p> <p>Rationale: This objective is reworded for brevity and to assure that use is consistent with the standards.</p>

Recommended by:


 Barry Tollefson, Area Manager
 Gunnison Resource Area

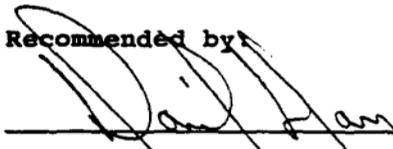

 Date

KREMMLING RESOURCE MANAGEMENT PLAN

The Kremmling RMP is amended to include the standards for public land health and guidelines for livestock grazing management dated November 1996. Existing RMP decisions modified or replaced by adoption of standards for public land health and guidelines for livestock grazing management:

Page # in Approved RMP	Description of Change/Rationale <i>(modifications are shown in italics)</i>
7	<p>Replace (remove) livestock grazing management objective 3 that reads, "To improve overall range condition on permitted lands from the current 20% in satisfactory condition to 70 %."</p> <p>Rationale: These percentages were expressed in terms of seral stages, and are not consistent with the standards.</p>
7	<p>Modify livestock grazing management objective 2 to read, "To increase sustained forage production in 20 years by 37% to an estimated level of 54,296 AUMs and intensify management on 76 large allotments representing 51% of the public land, <i>commensurate with public land health standards.</i>"</p> <p>Rationale: The referenced increases in forage levels, and intensified management may or may not be achieved or exceeded depending on the results achieved by applying the standards and guidelines.</p>
8	<p>Modify the first sentence of the wildlife habitat management objective to read, "Manage public land habitat to support optimum wildlife population levels as determined by the Colorado Division of Wildlife's Strategic Plan, <i>commensurate with public land health standards and other allocations.</i>"</p> <p>Rationale: This objective is modified to assure consistency with the standards.</p>

Recommended by:



11/1/96

 Linda Gross, Area Manager
Kremmling Resource Area

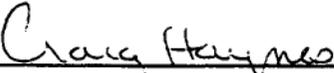
Date

LITTLE SNAKE RESOURCE MANAGEMENT PLAN

The Little Snake RMP is amended to include the standards for public land health and guidelines for livestock grazing management dated November 1996. Existing RMP decisions modified or replaced by adoption of standards for public land health and guidelines for livestock grazing management:

Page # in Approved RMP	Description of Change/Rationale <i>(modifications are shown in italics)</i>
11	<p>Modify the first sentence of planned action # 10 by deleting the word, "all" and adding the words, "if needed." so that it reads, "Allotment management plans will be developed for allotments within the Little Snake Resource Area if needed."</p> <p>Rationale: Attempting to implement allotment management plans on all allotments with the BLM's limited resources is unrealistic and inconsistent with the prioritization process described for implementing standards and guidelines.</p>

Recommended by:



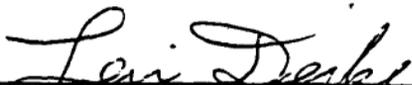
 John Husband, Area Manager
 Little Snake Resource Area

11-4-96
 Date

NORTHEAST RESOURCE MANAGEMENT PLAN

The Northeast RMP is amended to include the standards for public land health and guidelines for livestock grazing management dated November 1996.

Recommended by:


Levi Derke
Levi Derke, Area Manager
Royal Gorge Resource Area

11-4-96
Date

ROYAL GORGE RESOURCE MANAGEMENT PLAN

The Royal Gorge RMP is amended to include the standards for public land health and guidelines for livestock grazing management dated November 1996. Existing RMP decisions modified or replaced by adoption of standards for public land health and guidelines for livestock grazing management:

Page # in Approved RMP	Description of Change/Rationale <i>(modifications are shown in italics)</i>
2-2, referencing page 3-3 of the proposed RMP/Draft EIS	On page 3-3, in the last sentence of column 2, after "fire", insert, " and prescribed natural fire" so that the sentence reads, "Prescribed fire and prescribed natural fire could be used as a management tool to enhance other resources." Rationale: This is to clarify that fire prescriptions may be written for natural ignitions also.

Recommended by:


Levi Deike, Area Manager
Royal Gorge Resource Area

11-4-96
Date

SAN JUAN/SAN MIGUEL RESOURCE MANAGEMENT PLAN

The San Juan/San Miguel RMP is amended to include the standards for public land health and guidelines for livestock grazing management dated November 1996. Existing RMP decisions modified or replaced by adoption of standards for public land health and guidelines for livestock grazing management:

Page # in Approved RMP	Description of Change/Rationale <i>(modifications are shown in italics)</i>
6	<p>Modify the first sentence under Critical Grazing Period by replacing, "<i>select "I" category allotments</i>" with, "all allotments" so it reads, "Spring use by domestic livestock in <i>all allotments</i> will not be permitted on native ranges during the critical period of early growth unless a grazing system is implemented that provides critical period rest once every three years, or a spring use pasture is developed to absorb grazing use in meeting rest requirements.</p> <p>Rationale: This modification is required to be consistent with guideline one, which requires, "periodic rest or deferment from grazing during critical growth periods;"</p>
26	<p>Modify the second sentence under Management Guidance for Area A: by adding, "<i>contingent on meeting public health standards</i>" so it reads, "Emphasis is on increasing forage, red meat and animal fiber production, and improving forage composition and watershed conditions, <i>contingent on meeting public land health standards.</i>"</p> <p>Rationale: This objective is modified to assure consistency with public land health standards.</p>
27	<p>Modify livestock management, specific management direction by replacing, "71 AMPs(810,000 acres)" with "<i>where needed.</i>" so it reads, "Develop AMPs <i>where needed.</i>"</p> <p>Rationale: Developing 71 AMPs is probably not realistic considering BLM's limited resources, and setting a specific number of AMPs to be developed is inconsistent with the prioritization process described for implementing standards and guidelines.</p>
33	<p>Modify the second paragraph under Management Guidance for Area C: by adding, "<i>contingent on developments being able to meet public land health standards</i>" so it reads, "The primary management goal is to ensure the continued availability of outdoor recreation opportunities which the public seek and which are not readily available from other public or private entities, <i>contingent on developments being able to meet public land health standards.</i>"</p> <p>Rationale: This goal is modified to assure consistency with public land health standards.</p>

Recommended by:


 Cal Joyner, Area Manager

San Juan Resource Area

 11/1/96
 Allan Belt, Area Manager Date:

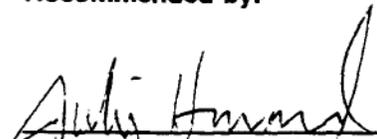
Uncompahgre Basin R.A.

SAN LUIS RESOURCE MANAGEMENT PLAN

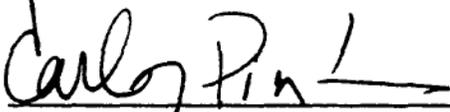
The San Luis RMP is amended to include the standards for public land health and guidelines for livestock grazing management dated November 1996. Existing RMP decisions modified or replaced by adoption of standards for public land health and guidelines for livestock grazing management:

Page # in Approved RMP	Description of Change/Rationale <i>(modifications are shown in italics)</i>
9	<p>Modify the first sentence under Vegetation, by deleting, "<i>late seral stage</i>" so it reads, "Overall objectives will be to move toward good condition based on site potential using grazing management." Rationale: This modification is needed because managing to achieve a late seral stage is not always consistent with achieving public land health.</p>

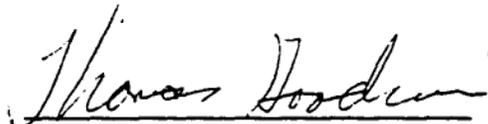
Recommended by:


 Julie Howard, Divide District Ranger/
 Area Manager

11/4/96
 Date


 Carlos Pinto, Conejos Peak District
 Ranger/ Area Manager

4 Nov 96
 Date


 Thomas Goodwin, Saguache District
 Ranger/ Area Manager

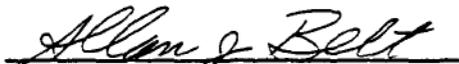
11/4/96
 Date

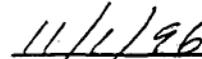
UNCOMPAHGRE BASIN RESOURCE MANAGEMENT PLAN

The Uncompahgre Basin RMP is amended to include the standards for public land health and guidelines for livestock grazing management dated November 1996. Existing RMP decisions modified or replaced by adoption of standards for public land health and guidelines for livestock grazing management:

Page # in Approved RMP	Description of Change/Rationale <i>(modifications are shown in italics)</i>
20	<p>Modify the first sentence under Livestock Grazing by adding, "<i>commensurate with public land health</i>" so it reads, "Livestock grazing and facility maintenance will be managed at levels and conditions established prior to wilderness designation <i>commensurate with public land health standards.</i>"</p> <p>Rationale: This modification is needed to assure consistency with the standards and guidelines.</p>
22	<p>Modify the first sentence of the second paragraph under Management Unit 8, by adding, "<i>commensurate with public land health standards</i>" so it reads, "The management unit will be managed as open to OHV use, <i>commensurate with public land health standards.</i>"</p> <p>Rationale: This modification is needed to assure consistency with the standards.</p>

Recommended by:


 Allan Belt, Area Manager
 Uncompahgre Basin Resource Area


 Date

WHITE RIVER RESOURCE MANAGEMENT PLAN (PROPOSED)

The White River RMP is amended to include the standards for public land health and guidelines for livestock grazing management dated November 1996.

Recommended by:

Rusty Robert Acting
John J. Mehlhoff, Area Manager
White River Resource Area

11/7/96
Date

D

FINDING OF NO SIGNIFICANT IMPACT

Based on the analysis of anticipated impacts described in the Standards and Guidelines EA, I have determined that no significant impacts will occur and an environmental impact statement is not required.

Beneficial resource impacts will occur, including improved soil productivity, riparian function, water quality, plant density and diversity, and wildlife habitat. In a few isolated circumstances some grazing permittees and other public land users may be adversely impacted in the short term by increased costs, and/or reductions in authorized or allowable use. In the long term, grazing permittees should realize a gain, as more predictable, desirable forage is produced. Other public land users and local communities should benefit as well from the use and enjoyment of improved resource conditions on the public lands.

Recommended by:

Colorado BLM Area Managers (signatures on RMP attachments to this record)

Colorado BLM District Managers:

Mark T. Morse

Mark Morse, District Manager
Craig and Grand Junction Districts

11-1-96

Date

Mark Stiles

Mark Stiles, District Manager
Montrose District

11-8-96

Date

Donnie R. Sparks

Donnie Sparks, District Manager
Canon City District

11-7-96

Date

Approved by:

Robert V. Abbey

Robert V. Abbey, Acting State Director
Colorado

11-8-96

Date

Approved for Implementation by:

Bruce Babbitt

Bruce Babbitt, Secretary of the Interior

NOV 20 1996

Date

Ray Tomer

STANDARDS

for Public Land Health

AND

GUIDELINES

for Livestock Grazing
Management in Colorado

environmental assessment

prepared by **The Bureau of Land Management**
in partnership with **The Resource Advisory Councils**

June 28, 1996

Dear Reader:

Enclosed for your review and comment is the Environmental Assessment (EA) for Standards for Public Land Health and Guidelines for Livestock Grazing Management in Colorado (standards and guidelines). The proposed action is to amend the Colorado BLM Resource Management Plans (RMP) by adopting the standards and guidelines.

This proposed RMP amendment is in accordance with rangeland reform regulations finalized on February 22, 1995. This EA was prepared in partnership with the three Resource Advisory Councils in Colorado--Front Range, Southwest, and Northwest.

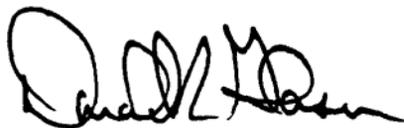
Numerous workshops have been held throughout the state to inform the public and gather comments on standards and guidelines. Now you have an opportunity to review the EA and provide comments. Please direct your written comments to Dennis Zachman, 2850 Youngfield, Lakewood, CO 80215, by close of business August 14, 1996.

Workshops to provide further information and receive additional comments will be held from July 8 through August 2, 1996. The workshops will be advertised in the local news media. You may also contact your local BLM office for a schedule of workshops.

All comments will be considered in the decision regarding standards and guidelines, which is tentatively scheduled for release by the end of September 1996.

Thank you for your interest.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Don Glaser", written in a cursive style.

Don Glaser
State Director

CHANGES TO THE
ENVIRONMENTAL ASSESSMENT
FOR
STANDARDS FOR PUBLIC LAND HEALTH
AND
GUIDELINES FOR LIVESTOCK GRAZING IN COLORADO

NOVEMBER, 1996

LOCATION	CHANGE												
Page 1 Col.2 Fig.1	Modify the description of Guidelines in Figure 1 to read as follows: "Guidelines are the tools that we use to achieve the standards, including acceptable grazing management practices and 7 land treatments, and types of monitoring procedures.												
Page 2 Col.1 Para.2	To the end of the second paragraph, add the following: "Plan amendments are authorized under the provisions of 43 CFR 1610.5-5."												
Page 3 Col.1	In reference to Resource Areas in the acreage chart, delete "...and San Miguel"												
Page 3 Col.1	In reference to the acreage chart make the following revisions: <table style="margin-left: 40px; border: none;"> <tr> <td>San Juan</td> <td style="text-align: right;">606,876</td> <td style="text-align: center;">-</td> <td style="text-align: right;">606,624</td> </tr> <tr> <td>Uncompahgre</td> <td style="text-align: right;">918,293</td> <td style="text-align: center;">-</td> <td style="text-align: right;">919,221</td> </tr> <tr> <td>Total</td> <td style="text-align: right;">8,292,225</td> <td style="text-align: center;">-</td> <td style="text-align: right;">8,292,901</td> </tr> </table>	San Juan	606,876	-	606,624	Uncompahgre	918,293	-	919,221	Total	8,292,225	-	8,292,901
San Juan	606,876	-	606,624										
Uncompahgre	918,293	-	919,221										
Total	8,292,225	-	8,292,901										
Page 8 Col.1 Para.2	Modify the second sentence to read as follows: "Uses of the public land resources will be made on a case-by-case basis in consultation with local cooperators and the interested public, and in accordance with existing federal law and regulation."												
Proposed Action p.7-12	Proposed modifications to the standards and guidelines are displayed on the attached strikeout/redline version of the standards and guidelines.												
Page 15 Col.1	Add the following sentence before the header "Biological and Physical Components": Physical and biological as well as social and economic components are key factors in describing and achieving healthy public lands. Existing conditions and trends of these components are described in this chapter.												
Page 18 Col.1 Climate for Unit 1	Modify paragraph on climate for Unit 1 to read: "...precipitation averages 24-28 inches annually ranges from about 10 inches to more than 30 inches depending on elevation with less than half received during the winter."												
Page 18 Col.1/2 Water Resources for Unit 1	Modify paragraph on water resources for Unit 1 to read: "... streams, lakes, and ground water are abundant however some temporal and spatial variations exist."												

LOCATION	CHANGE
Page 18 Col.2 Land Ownership and Use	Modify second sentence in Land Ownership and Use section to read: "Saw timber is scarce"
Page 25 Col.2 Riparian section	Modify the first sentence under Riparian resources as follows: "According to the 1995 riparian condition assessments for BLM riverine milage, the following conditions exist: 29 percent of the miles are functioning properly (up from 20 percent in 1992 and 25 percent in 1994), 28 percent are functioning at risk (up from 10 percent in 1994), 21 percent are not functioning properly (down from 22 percent in 1994), and 22 percent of the miles have not been evaluated (down from 60 percent in 1992 and 43% in 1994)."
Page 33 Col.1 Para.3	Add the following to the beginning of the third paragraph of the Introduction/Approach section and modify the first sentence to read: "Achieving healthy public lands is analgous to a journey. The final destination is healthy public lands. The direction or path that is taken is variable and dependent on the advice, decisions, and actions taken by managers, users, local communities, and interested publics. How then, will can impacts be described?"
Page 34 Col.2	Under Standard 2 modify as follows: "...fishery inventories benchmark sites, BLM Technical References 1735-9 and 11."
Page 37 Col.1 Para.6	Modify third sentence under #2 to read as follows: "In general, laterally migrating riparian areas stream channels repair quicker than riparian areas channels that migrate downcut vertically."
Page 51 Glossary	Delete "Capability" and definition.
Page 53 Glossary	Add the following: "Potential: The ecological condition of an area that is possible due to physical, social, and economic factors."
Page 53 Glossary	Add to the definition of Proper Functioning Condition the following: "Uplands function properly when the existing vegetation and ground cover maintain soil conditions capable of sustaining natural biotic communities. The functioning condition of uplands is influenced by geographic features, soil, water and vegetation."
Page 55	Insert the following after the Kittel reference entry: "National Research Council. Rangeland Health: (Washington, D.C.: National Academy Press, 1994)."

LOCATION	CHANGE
Page 64	<p>Modify the wildlife entry that begins "Big-game utilization...", to read as follows: "Big-game should not exceed moderate use (40-60%), commensurate with capability."</p> <p>Modify the wildlife entry that begins "Provide habitat...", to read as follows: "Provide habitat to support 9,000 sage grouse on public lands, commensurate with potential."</p>
Page 71	<p>In the last table entry insert, "Supplement" in both the Proposed S&G and the Fallback S&G columns.</p>
Page 78	<p>Under the fire management entry, modify as follows: "Enhance resource management through the use of fire and prescribed natural fire"</p> <p>In this same entry, change supplement to modify in the Proposed S&G column.</p>
Page 99	<p>In the last table entry insert, "supplement" in both the Proposed S&G and the Fallback S&G columns.</p>
Page 175	<p>Delete entry for Manco milkvetch on page 175 (it is already presented on page 174).</p>

SUMMARY

This environmental assessment (EA) analyzes the effect of adopting standards for public land health and guidelines for livestock grazing management (standards and guidelines) in Colorado. The standards and guidelines will be incorporated by plan amendment into the 11 Resource Management Plans (RMPs) that cover 8.29 million acres of BLM-administered land in Colorado.

This proposed RMP amendment is in accordance with rangeland reform regulations issued on February 22, 1995. The standards and guidelines (which is the proposed action in this EA) were developed in partnership with Colorado's three Resource Advisory Councils (RAC) and with other substantial public input. Each RAC, authorized by the same rangeland reform regulation, is comprised of 15 members of the public and elected officials, representing various uses and interests on BLM-administered lands.

Three alternatives were considered in this document. The proposed action is to adopt the standards and guidelines by amendment into Colorado BLM's RMPs. The Fallback standards and guidelines defined in the rangeland reform regulations is another alternative. If standards and guidelines are not completed and in effect by February 12, 1997, the Fallback standards and guidelines shall apply and be implemented. They will remain in effect until such time standards and guidelines are developed. The third alternative is present management. It is considered in this document to provide a baseline for comparison with the other alternatives.

The proposed standards are common to all public lands administered by BLM in Colorado. They describe conditions needed to sustain public land health. They relate to all uses of the public lands. Specifically, proposed standards describe standards for upland soils, riparian, plant and animal communities, special status species, and water quality. Indicators are provided to help define the standards and describe features

which are observable on the land. The indicators serve as starting points for collaborative discussions regarding public land health. The guidelines are specific to livestock grazing management and are "tools" that may be used to help meet the standards. Another key feature of the proposed standards and guidelines is the emphasis on collaboration between BLM, other agencies, affected users, and interested publics.

If approved, the standards and guidelines, in most cases, simply supplement existing decisions in the RMPs. This means that the standards and guidelines will work concurrent with the existing decisions. Certain decisions that allocate resources or use, such as off-highway vehicle decisions and forage allocations may need to be adjusted in the future if they conflict with public land health. There will, however, be some decisions in the present RMPs that will be modified or replaced by the standards and guidelines. Those decisions that will be modified or replaced are identified in the EA.

The anticipated effects of adopting the standards and guidelines are not major. It is expected that the standards and guidelines will allow managers to do their job better in several ways.

- * The standards and guidelines provide common state-wide terminology in assessing public land health.
- * The process associated with implementing standards and guidelines is based on effective and appropriate collaboration.
- * Standards and guidelines encourage ecosystem management and consider public land health on a landscape basis.
- * The attention given to standards and guidelines make the manager more accountable. More than ever, a priority system with defensible criteria must be used to direct limited resources.

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ACRONYMS

ACEC	Area of Critical Environmental Concern
AD	Administrative Determination
ARMP	Approved Resource Management Plan
AUM	Animal Unit Month
BLM	Bureau of Land Management
CEC	Colorado Environmental Coalition
CFR	Code of Federal Regulations
CRMAP	Coordinated Resource Management Activity Plan
CWA	Clean Water Act
DFO	Designated Field Official
DOW	Division of Wildlife (Colorado)
DPC	Desired Plant Community
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESI	Ecological Site Inventory
ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement
FLPMA	Federal Land Policy and Management Act
FMP	Forest Management Plan
FR	Federal Register
FS	Forest Service
HMA	Herd Management Area
HRM	Holistic Resource Management
IAP	Integrated Activity Plan
IWM	Integrated Weed Management
ID	Interdisciplinary
LU	Landscape Unit
NEPA	National Environmental Policy Act
NOI	Notice of Intent
NPS	National Park Service
NRHP	National Register of Historic Places
NRCS	National Resources Conservation Service
OHV	Off Highway Vehicle
PFC	Proper Functioning Condition
PJ	Pinyon Juniper
PNF	Prescribed Natural Fire
PRMP	Proposed Resource Management Plan
RA	Resource Area
RAC	Resource Advisory Council
RCA	Resource Conservation Area
RMP	Resource Management Plan
RPS	Rangeland Program Summary
S&G	Standards and Guidelines
SCS	Soil Conservation Service
SRMA	Special Recreation Management Area
SSF	Soil Surface Factor
T&E	Threatened and/or Endangered
TPCC	Timber Production Capability Classification
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
WSA	Wilderness Study Area

CHAPTER 1 - INTRODUCTION

This section describes:

- Why the Bureau of Land Management (BLM) is proposing to adopt standards for public land health and guidelines for grazing management (standards and guidelines);
- What are standards and guidelines;
- The process used to develop and adopt them; and
- The public lands affected.

PURPOSE AND NEED

Standards and guidelines have been developed to identify the characteristics of healthy ecosystems on public lands administered by BLM and the management actions that promote them. Healthy public lands are sustainable, thus insuring that natural resources and amenities are enjoyed by future generations. Healthy public lands also contribute to the social and economic well-being and health of many Colorado communities. In turn, healthy communities contribute to healthy public lands by conserving, protecting, and properly utilizing public land resources, and by effectively resolving conservation issues.

BACKGROUND

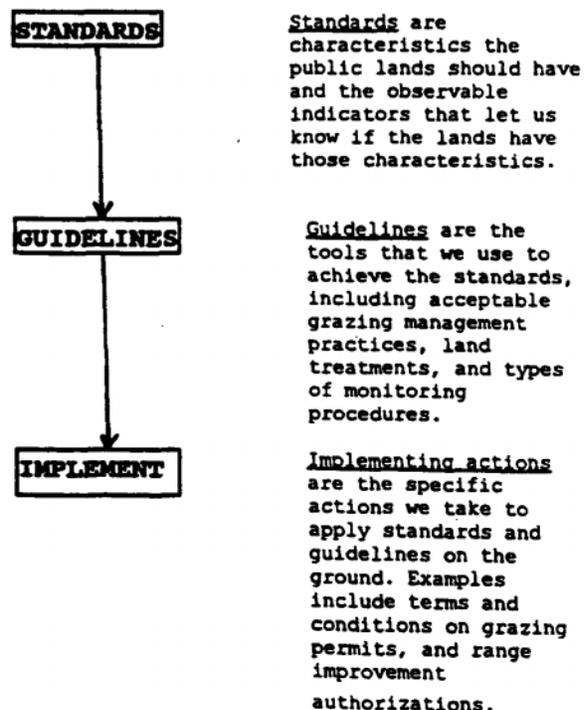
In response to public concern about management of livestock grazing on western public lands, BLM began developing new regulations for grazing administration, using an Environmental Impact Statement (EIS) process. This process, characterized by extensive public involvement, resulted in the adoption of new regulations for grazing administration (43 CFR Part 4100; 60 FR 9894), which became effective August 21, 1995.

Subpart 4180 of the new regulations (see Appendix A), provides that BLM State Directors will, in consultation with Resource Advisory Councils (RAC), develop standards and guidelines for approval by the Secretary of the Interior by February 21, 1997. If this does not occur, the fallback standards and guidelines described in Subpart 4180.2 of the regulations will apply. BLM in Colorado is committed to the development and implementation of locally adapted standards and guidelines. This will be accomplished in collaboration with the three RACs that were established for Colorado.

WHAT ARE STANDARDS & GUIDELINES?

Standards for public land health and guidelines for grazing management are described in Figure 1. Standards and guidelines are also defined in the Glossary.

Figure 1 - Standards, Guidelines and Implementing Actions



PROCESS FOR DEVELOPING STANDARDS AND GUIDELINES

When the regulations became effective, BLM Colorado convened the three RACs, initiated a series of public scoping meetings in September and October, 1995 (locations: Lakewood, Salida, Montrose, Grand Junction, and Craig), and conducted internal meetings with staff specialists to begin development of standards and guidelines. Existing Resource Management Plans (RMPs) were reviewed to determine if the fallback standards and guidelines and those being developed in consultation with the RACs conformed to each RMP.

The 4180 section of the regulations direct implementation of standards and guidelines subject to the National Environmental Policy Act (NEPA) and BLM planning regulations. Adoption of the proposed standards and guidelines will clarify many decisions in the RMPs and could be treated as plan maintenance for those decisions. However, it was decided to consider the action a plan amendment to our RMPs. This decision was made to lessen confusion and simplify the proposal. (See Appendix B).

The NEPA/RMP amendment process was initiated with a Notice of Intent (NOI) published in the Federal Register on November 8, 1995. The NOI requested public comment on the proposal to prepare one environmental document and to modify all Colorado RMPs. Using the information received during these scoping activities, BLM decided to prepare this environmental assessment (EA) to assess and display the environmental consequences of implementing standards and guidelines.

The proposed standards and guidelines analyzed in this EA were developed jointly by the BLM staff, the three RACs, and a subgroup of academicians using public comment and advice obtained from a series of workshops conducted from September 1995 through January 1996. In addition, current management direction in the RMPs is also analyzed and presented in this EA to provide a baseline from which process and possible impacts may be measured.

The alternative of taking no action and allowing the fallback standards and guidelines to take affect was presented and analyzed.

A team was formed, that included representatives from each Resource Area office (see List of Preparers in section IV) to arrange continued public involvement and to prepare this Environmental Assessment Resource Management Plan amendment. The team met in February 1996 to agree on procedures that would assure a consistent, interdisciplinary analysis.

Representatives from each Resource Area office coordinated the interdisciplinary analysis for their Resource Area. This information was then incorporated into this EA for public review and comment.

The BLM, in consultation with the three RACs, will consider received comments in the development of a proposed decision. Public notices containing the revised standards and guidelines will be issued, allowing an opportunity for the governor to review for consistency with state or local plans, policies, and programs. People who have participated in the process, and who are adversely affected may protest to the BLM Director. Following resolution of any protests, the standards and guidelines will be referred to the Secretary for approval.

After the standards and guidelines are approved for use in Colorado, each office will begin implementation. The Area Manager, in consultation with interested parties and the RAC, will begin assessing public land health. Because of funding and staffing limitations, it is unreasonable to assume that standards and guidelines will be assessed on all lands immediately upon adoption. Therefore, it is imperative that a logical system for prioritization be adopted. For those lands to which standards are applied, the Area Manager will determine which standards are not being met and whether grazing activities conform with the guidelines.

Where it appears that standards are not being met or where grazing related activities are not in conformance with the guidelines,

Area Managers will involve affected interests to develop remedial actions in a collaborative manner. How standards and guidelines will be implemented is presented in more detail in the description of the "Proposed Action" in Chapter 2.

PUBLIC LANDS AFFECTED (PHYSICAL SCOPE)

The area encompasses all surface acreage administered by BLM Resource Area offices in Colorado. The Resource Area boundaries are shown on Map 1. Lands covered by Resource Management Plans are shown on Map 2.

The acreage of public lands by Resource Area are:

Resource Area	Public Land Acreage
Kremmling	381,729
Little Snake	1,339,603
White River	1,430,471
Glenwood Springs	446,732
Grand Junction	1,354,725
Gunnison	605,415
San Juan and San Miguel	606,876
Uncompahgre	918,293
Royal Gorge	688,146
San Luis	<u>520,235</u>
Total	8,292,225

The majority of the lands in Colorado are managed under completed RMPs. RMPs and the date they were completed are as follows:

Kremmling RMP	- 12/19/84
Little Snake RMP	- 04/26/89
Glenwood Springs RMP	- 02/03/84
Grand Junction RMP	- 01/29/87
Gunnison RMP	- 02/05/93
San Juan/San Miguel RMP	- 09/05/85
Uncompahgre Basin RMP	- 07/26/89
Royal Gorge RMP	- 05/13/96
San Luis RMP	- 12/18/91
Northeast RMP	- 09/16/86

The White River RMP is expected to be finished in January 1997.

ASSUMPTIONS

To guide the assessment and analysis, certain assumptions are made:

- Standards apply to all public lands and all users of the land, such as livestock operators, recreational users, miners, etc.,

have a responsibility to meet the standards.

- Guidelines are "tools" that can be implemented to move resource conditions toward the standards; they are specific to livestock grazing. It is understood that guidelines or other actions not specific to livestock grazing will also be needed to effect healthy public lands.

- Much of the implementation will occur later. For example, planning for allotments, eco-regions, etc., will happen at some future date. If approved, the standards and guidelines addressed in this document will provide the basis for future assessments and corrective management actions.

- Healthy ecosystems contribute to the social and economic well-being of Colorado's communities. In turn, healthy human communities contribute to healthy public lands by conserving, protecting, and properly utilizing resources and by effectively resolving conservation issues.

- Appropriated funds for improvements are diminishing, and this trend will continue into the foreseeable future.

- BLM staffing will continue to decrease, affecting our ability to manage.

- Implementation will occur over time and will be constrained by physical and financial capability.

- Demands for use of public lands by a variety of publics will continue to increase.

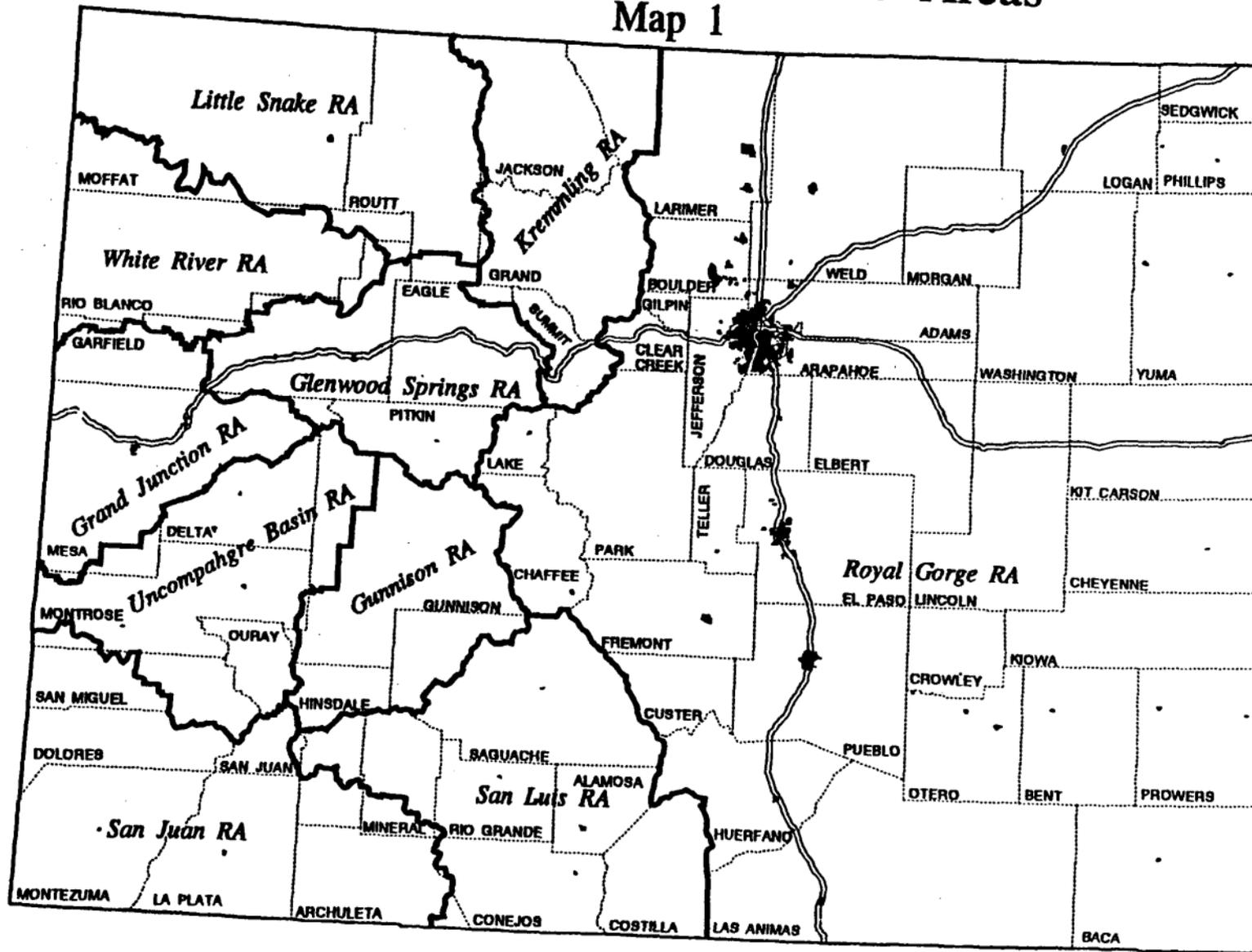
- The employment of sound, scientific principals is key to implementation of standards and guidelines. It is further understood that monitoring is key in determining the effectiveness of management actions.

- Implementation of standards and guidelines will be conducted in a collaborative manner, involving interested publics and affected users. The RACs will be key contributors to the process.

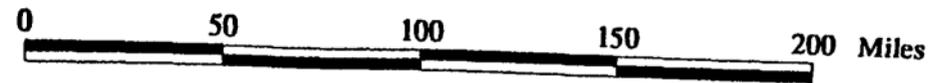
- Naturally occurring catastrophic events, such as severe drought or major flooding, may, for a period of time, make it impossible for standards to be met.

Colorado BLM Resource Areas

Map 1



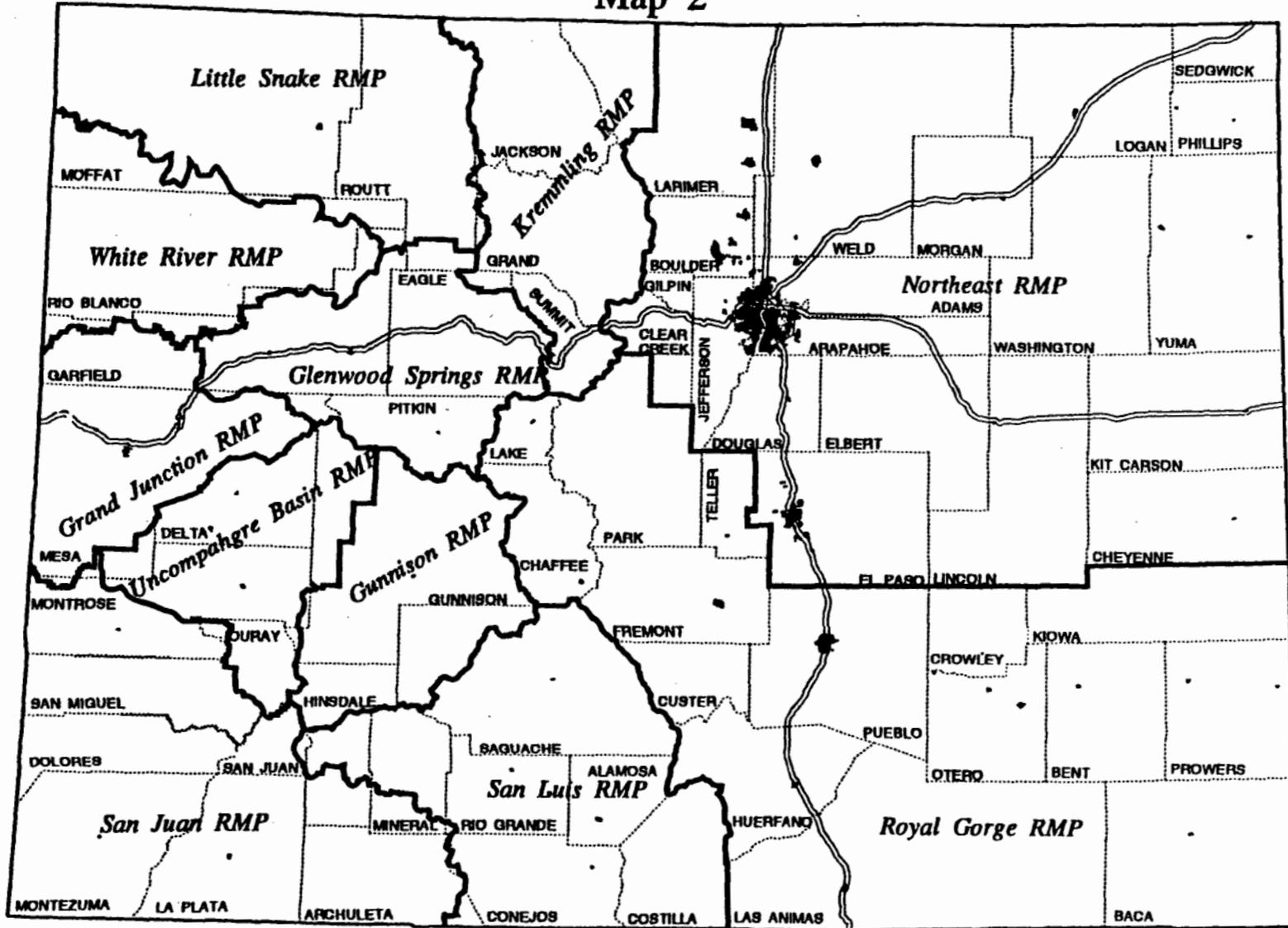
-  BLM Resource Areas
-  State Boundary
-  County Boundaries
-  Interstate Highways
-  Cities



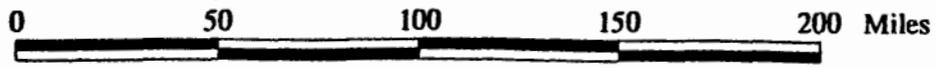
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Colorado BLM Resource Management Planning Areas

Map 2



- BLM RMP Boundaries
- State Boundary
- Countylines
- Interstate Highways
- Cities



CHAPTER 2 - PROPOSED ACTION AND ALTERNATIVES

Three alternatives are considered and analyzed in this document:

Proposed Standards for Public Land Health and Guidelines for Grazing Management in Colorado Alternative - (Proposed Action)

The proposed action amends the Resource Management Plans in Colorado by adopting the proposed standards and guidelines as described in this chapter. This proposal is the culmination of a collaborative effort between BLM and the Resource Advisory Councils (RAC) with input from a variety of interested publics.

With the exception of the glossary, the entire proposed standards and guidelines document is presented in this chapter. This includes the preamble, interpretation, standards, guidelines, flexibility, and implementation. The expanded glossary that is part of this document contains all the glossary items that were part of the proposed standards and guidelines.

Fallback Standards and Guidelines Alternative

The fallback standards and guidelines as described in 43 CFR Subpart 4180.2 is an alternative considered in this environmental assessment. If locally developed standards and guidelines are not developed and approved for Colorado, the fallback standards and guidelines go into affect. See Appendix A.

Present Management Alternative

The range reform regulations require that standards and guidelines be used for future management and continuing with present management is not an option. However, continuation of present management is analyzed in this document as an alternative to provide a baseline to compare impacts and implementation processes. Existing decisions in the RMPs that are affected by the Proposed Action Alternative and the

Fallback Standards and Guidelines Alternative are located in Appendix B. Appendix B also details if the decision will be supplemented, modified, or replaced.

PROPOSED ACTION

STANDARDS FOR PUBLIC LAND HEALTH AND GUIDELINES FOR LIVESTOCK GRAZING MANAGEMENT IN COLORADO

PREAMBLE

Humans use and derive benefits from public lands administered by BLM in Colorado in many ways: to earn a livelihood, to recreate, for education, for science, and to enjoy and appreciate open spaces and irreplaceable cultural heritage resources. Healthy public lands and the uses of those lands contribute to the health and economic well-being of Colorado communities. In turn, healthy human communities create healthy public lands by conserving, protecting, and properly utilizing public land resources and by effectively resolving conservation issues. Healthy public lands and healthy human communities are interrelated; therefore, social, economic, and environmental considerations must be properly balanced.

The interdependent relationship between human communities and their public land brings together people of diverse backgrounds and interests. Open, honest, and sincere interactions, in a spirit of trust and respect, are essential to achieving and maintaining healthy public lands. While all individuals have a voice in public land management goals, the responsibility to maintain healthy public lands ultimately falls with the users of those lands.

To help determine what constitutes healthy public lands, Standards for Public Land Health, by which the health of the land is measured, need to be established. This document

defines such standards for BLM lands in Colorado. It also identifies Guidelines for Livestock Grazing Management, which are some of the tools that help meet the standards.

INTERPRETATION

Standards:

Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. The standards are written in a two-part format. The standard is first described in a statement. Then indicators which relate to the standard are identified. The indicators help define the standard and describe features which are observable on the land. Additional indicators may also be applicable to some sites, and some indicators may not apply to every specific site. While a site should match the indicators, it is not necessary for each site to perfectly match all the indicators to comply with the standard.

The standards do not provide a model for utilization of resources. Uses of the public land resources will be made on a case-by-case basis, in consultation and coordination with local cooperators and the interested public.

Standards are observed on a landscape scale. It is not possible for each acre to meet every standard. For example, a mosaic of vegetation types and age classes may produce the diversity associated with a healthy landscape; however, some individual vegetation communities within the mosaic may lack diversity.

Standards always relate to the potential or capability of the landscape evaluated. Each landscape has a specific ability to provide values such as commodities, wildlife habitat, and water yield. Climate, landform and geologic characteristics are examples of factors that affect potential. The physical potential of a site can be altered through a wide variety of human socio-economic factors. When this occurs, the new potential of the site is referred to as the capability. The authorized officer, through the consultation process, will determine if a site should be

evaluated based on its natural potential or its existing capability. Comparative analysis of nearby landscapes (that appear to have similar climate, geology, landform, and socio-economic characteristics), is considered the most reliable means to identify the potential or capability of an individual landscape.

It is common for landscapes with nearly identical potential or capability to differ in their appearance and in the values they provide. Variability results from both natural plant succession patterns and human uses. While the climax plant community is significant as an indicator of potential or capability, the climax community does not automatically provide the comparative basis for evaluating the standard. In many circumstances local goals will identify a different plant community which provides the most optimum values. When this occurs, the plant community identified in the local goal replaces the climax community as the foundation for evaluating the standard.

Standards become measurable when baseline data are collected, and changes from baseline can be observed. It is not necessary to establish measurable baseline data for each standard on each site. BLM's authorized officer will determine the amount and type of monitoring information each situation requires in consultation and coordination with local cooperators and the interested public. In areas where the standards are not being met, current uses and management actions will be reviewed and modified if necessary to influence the trend toward achieving desired objectives of a healthy ecosystem.

Guidelines:

The guidelines being developed are livestock grazing management tools, methods, strategies, and techniques (e.g., best management practices) designed to maintain or achieve healthy public lands as defined by the standards. Grazing by wildlife and wild horses, oil and gas activity, recreation, and logging can affect the health of the land. Guidelines for these and other uses

may be developed as needed to conform with the new standards. Implementation of livestock grazing management guidelines must also be coordinated with other uses of the land; collectively, these uses should not detract from the goal of achieving healthy public lands.

STANDARDS OF PUBLIC LAND HEALTH

Standard 1: Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, land form, and geologic processes. Adequate soil infiltration and permeability allows for the accumulation of soil moisture necessary for optimal plant growth and vigor and minimizes surface runoff.

Indicators:

- Expression of rills, soil pedestals is minimal.
- Evidence of actively-eroding gullies (incised channels) is minimal.
- Canopy and ground cover are appropriate.
- There is litter accumulating in place and is not sorted by normal overland water flow.
- There is appropriate organic matter in soil.
- There is diversity of plant species with a variety of root depths.
- Upland swales have vegetation cover or density greater than that of adjacent uplands.
- There are vigorous, desirable plants.

Standard 2: Riparian systems, associated with both running and standing water, function properly and have the ability to recover from major disturbance. Riparian vegetation captures sediment, and provides forage, habitat, and bio-diversity. Water quality is improved or maintained. Stable soils store and release water slowly.

Indicators:

- Vegetation is dominated by an appropriate mix of native or desirable introduced species.
- Vigorous, desirable plants are present.
- There is vegetation with adequate age class structure, vertical structure, composition, cover, and density.
- Streambank vegetation is comprised of species and communities that have root systems capable of withstanding high streamflow events.
- Plant species present indicate maintenance of riparian moisture characteristics.
- Stream is in balance with the water and sediment being supplied by the watershed (i.e., no excessive erosion or deposition).
- Vegetation and free water indicate high water tables.
- Vegetation colonizes point bars with a range of age classes and successional stages.
- An active floodplain is present.
- Residual floodplain vegetation is available to capture and retain sediment.
- Stream channels with size and meander pattern appropriate for the stream's position in the landscape, and parent materials.
- Woody debris contributes to the character of the stream channel morphology.
- Straight channel reaches between meanders with stable banks, as evidenced by absence of shearing and sloughing and the presence of vegetation on banks.

Standard 3: Healthy, productive plant and animal communities of native and other desirable species are maintained at viable population levels commensurate with the species and habitat's potential. Plants and animals at both the community and population level are productive, resilient, diverse, vigorous, and able to reproduce and sustain natural fluctuations and ecological processes.

Indicators:

- Noxious weeds and undesirable species are minimal in the overall plant community.
- Native plant and animal communities are spatially distributed across the landscape with a density and frequency of species suitable to ensure reproductive capability and sustainability.
- Plants and animals exhibit a range of population age classes necessary to sustain recruitment and mortality fluctuations.
- Landscapes exhibit connectivity of habitat or presence of corridors to prevent habitat fragmentation.
- Photosynthetic activity is evident throughout the growing season.
- Diversity and density of plant and animal species are in balance with habitat/landscape potential and exhibit resilience to human activities.
- Appropriate plant litter accumulates and is evenly distributed across the landscape.
- Landscapes composed of several plant communities that may be in a variety of successional stages and patterns.

Standard 4: Special status, threatened and endangered species (federal and state), and other plants and animals officially designated by BLM are maintained and enhanced by sustaining healthy, native plant and animal communities.

Indicators:

- All the indicators associated with the plant and animal communities standard apply.
- There are stable and increasing populations of endemic species in suitable habitat.
- Suitable habitat is available for recovery of endemic species.

Standard 5: The water quality of all water bodies, including ground water where applicable, located on or

influenced by BLM lands will meet or exceed the Water Quality Standards established by the State of Colorado. Water Quality Standards for surface and ground waters include the designated beneficial uses, numeric criteria, narrative criteria, and antidegradation requirements set forth under state law as found in (5 CCR 1002-8), as required by Section 303(c) of the Clean Water Act.

Indicators:

- Appropriate populations of macroinvertebrates, vertebrates, and algae are present.
- Surface and ground waters contain substances (e.g., sediment, scum, floating debris, odor, heavy metal precipitates on channel substrate) attributable to humans within the amounts, concentrations, or combinations established in the Water Quality Standards of the State of Colorado (5 CCR 1002-8).

COLORADO LIVESTOCK GRAZING MANAGEMENT GUIDELINES

1. Grazing management practices promote plant health by providing for one or more of the following:
 - periodic rest or deferment from grazing during critical growth periods;
 - adequate recovery and regrowth periods; and
 - opportunity for seed dissemination and seedling establishment.
2. Grazing management practices address the kind and class of livestock, season, duration, distribution, frequency, and intensity of grazing use and livestock health.
3. Grazing management practices maintain sufficient residual vegetation on both upland and riparian sites to protect the soil from wind and water erosion and buffer temperature extremes.
4. Native plant species and natural revegetation are emphasized in the support of sustaining ecological functions and site integrity. Where reseeding is required, on land treatment efforts, emphasis will be

placed on using native plant species. Seeding of nonnative plant species will be considered, based on local goals, native seed availability and cost, persistence of nonnative plants and annuals and noxious weeds on the site, and composition of nonnatives in the seed mix.

5. Range improvement projects are designed consistent with overall ecological functions and processes with minimum adverse impacts to other resources or uses of riparian/wetland and upland sites.

6. Grazing management will occur in a manner that does not encourage the establishment or spread of noxious weeds. In addition to mechanical, chemical, and biological methods of weed control, livestock may be used where feasible as a tool to inhibit or stop the spread of noxious weeds.

7. Natural occurrences, such as fire, drought, flooding, and prescribed land treatments should be combined with livestock management practices to move toward the sustainability of biological diversity across the landscape by helping to provide natural vegetation patterns, a mosaic of successional stages, and vegetation corridors, thus minimizing habitat fragmentation.

8. Colorado Best Management Practices and other scientifically developed practices that enhance land and water quality should be used in the development of activity plans prepared for land use.

FLEXIBILITY

The standards are designed to maintain or achieve healthy public lands while allowing for the development of local goals and objectives. For example, on sites of similar potential, a desired plant community that provides deer winter range would differ from one for cattle summer range, yet both could meet the standards. Local goals and specific objectives consistent with standards will be developed by BLM in consultation and coordination with local cooperators and the interested public.

Guidelines were designed to provide direction, yet offer flexibility for

local implementation through grazing permits. Activity plans may add specificity to the guidelines based on local goals and objectives. A wide variety of grazing management strategies can produce healthy rangelands. One or more guidelines will be employed to meet the standards.

Monitoring or site specific evaluation will determine if the standards are being met, if significant progress is being made towards achieving the standards, and if the appropriate guidelines are being applied.

IMPLEMENTATION

The authorized officer will coordinate and consult with the local cooperators and interested publics during implementation of guidelines to achieve the standards. This communication is of utmost importance in all phases of the process. BLM will strive to make use of collaborative approaches involving the various interested publics within an affected allotment, group of allotments, or watershed. The Resource Advisory Council may be requested by any party to assist in reaching agreement in resolving disputes. As greater understanding of ecosystems, including socio-economic factors, becomes available, it will be applied to our management of public lands.

The section below describes the general process for applying the Colorado standards and guidelines in the field. If mutual agreement on a course of action is reached at any point during this process, such agreement may eliminate the need for some of the process steps described.

The authorized officer will periodically conduct a review of all existing information to determine which public lands are not meeting standards. The standards and indicators will serve as the basis to conduct preliminary field assessments.

The preliminary assessment identifies where standards are not being met, but does not necessarily identify the cause of the problem, potential solutions, or current

trends. From the preliminary assessment, the authorized officer will establish priorities among such allotments, watersheds or other landscapes for more specific evaluation. The establishment of these priorities will serve as an implementation schedule.

The following steps describe a typical sequence for resolving public land management issues on established priority areas. The authorized officer will:

1. Identify issues and values in detail;
 2. Determine the objectives and management actions necessary to achieve the standards;
 3. Reiterate existing goals and/or establish new goals for meeting the standards;
 4. Establish or review baseline data through inventory and monitoring, and establish measurable objectives that relate to goals;
 5. Identify which land use guidelines will result in achievement of desired objectives;
- NOTE: This document addresses the livestock grazing guidelines. Guidelines that relate to other land uses will be consulted or developed as necessary to deal with the appropriate objectives.
6. Identify specific management practices, in conformance with the guidelines, and attach as terms and conditions on grazing permits, or as stipulations on specific projects or actions; and
 7. Establish an evaluation schedule to determine if the standard is being met or if the trend is moving toward the standard.

- If the evaluation indicates that objectives are being met or there is movement toward the objective, continue with management practices.

- If the evaluation indicates no movement or movement away from the objectives, reassess the objectives and management actions. Determine the objectives and management actions necessary to achieve the standards. Amend plans and permits

as necessary.

The authorized officer will take immediate administrative action to implement appropriate guidelines upon a determination that the following three circumstances all apply:

1. An area of public land does not meet the standards;
2. Existing management is not likely to produce significant progress towards meeting the standards in a reasonable time frame relative to the values at risk; and
3. The consultation process has failed to yield a negotiated resolution.

If needed, future modifications to the standards and guidelines may be made. Typically, a proposal for modification is presented to the local Designated Field Official (DFO). The DFO then forwards the proposal for modification to other DFOs throughout the state for consideration in consultation with the RACs. (A copy of the proposal for modification is also submitted to the State Director). The DFOs and the RACs then submit to the State Director recommendations regarding the proposal for modification. The State Director decides if the proposal for modification has merit. If so, a determination is made whether the modification is a maintenance change to the Resource Management Plans or requires a plan amendment.

Maintenance changes require no other action except to make a notation in the RMPs (43CFR1610.5-4). Actions requiring an RMP amendment will require NEPA analysis and conformance with 43CFR1610.5.

**FALLBACK STANDARDS AND
GUIDELINES ALTERNATIVE**

In the event that state standards and guidelines are not completed and in effect by February 12, 1997, and until such time as state or regional standards and guidelines are developed and in effect, fallback standards and guidelines provided in 43 CFR 4180 (f)(1) and (f)(2) will apply and be implemented. The full

text of 43 CFR 4180, which includes the fallback standards and guidelines, are included as Appendix A.

The fallback standards and guidelines are similar to those found in the Proposed Action. Notable differences are:

- The fallback standards do not include a specific standard on water quality.
- The fallback standards regarding upland soils, riparian-wetlands, plant and animal communities, and special status species are not as definitive as the Proposed Action.
- The fallback standards include no indicators which help define the standards and describe features which are observable on the land.
- The fallback standards do not address scale of analysis and biodiversity concerns.
- The fallback guidelines are generally more specific than the proposed guidelines. However, the fallback guidelines are worded to allow for management flexibility as are the proposed guidelines.

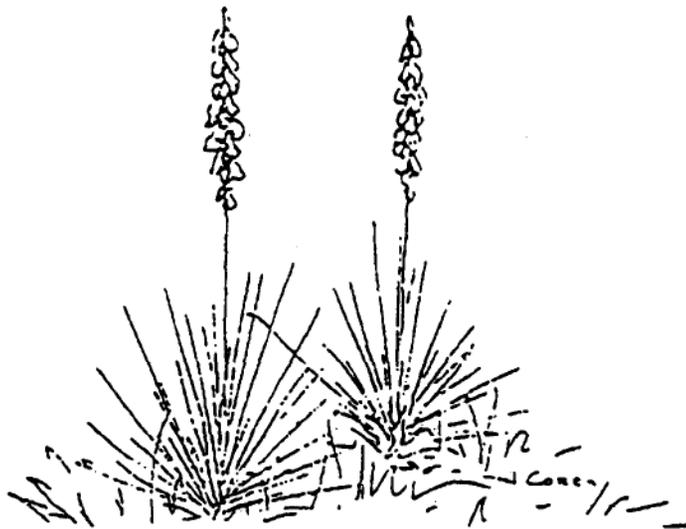
EXISTING MANAGEMENT ALTERNATIVE

According to the new regulations for grazing administration, continuation of present management is not an option. However, it is identified and analyzed in this document as baseline information to allow the reader to compare differences with the other alternatives.

Appendix B is a summary of the present decisions in the Resource Management Plans that are related to the Proposed Action and fallback standards and guidelines. They provide the reader with a sense of management direction for Resource Areas in Colorado. Some decisions will be replaced by the new standards and guidelines. Some decisions will be modified and others will be supplemented. Appendix B indicates how the existing decisions will be affected by adopting either the Proposed

Action or fallback standards and guidelines.

Implementation and application of existing decisions varies greatly among Resource Areas, the result of many variables. Variables include differences in management style, public demand, budget direction, interpretation of policy, and existing decisions in the RMPs. A factor considered constant is conformance with laws and regulations. All offices in varying degrees utilize the concepts of ecosystem management. The transition from a single resource program-oriented management to an integrated resource approach has evolved to varying degrees around the state.



CHAPTER 3 -AFFECTED ENVIRONMENT

BIOLOGICAL AND PHYSICAL COMPONENTS:

Description of bio-physical characteristics is organized by Landscape Units (LUs). LUs are tracts of land where the various biotic and abiotic characteristics (climate, physiography, soils, vegetation, wildlife, water, etc.) are similar.

The LU delineations have been adapted from the U.S. Forest Service's (FS) draft map of "Ecological Sub-sections of the Rocky Mountain Region." The descriptions that follow are summarized from the FS publication "Ecological Subregions of the United States: Section Descriptions (July 1994)" and other information.

Map 3 shows the LUs in relation to BLM Resource Area (RA) boundaries and the location of the public lands managed by BLM. Map 4 shows the LUs in relation to the boundaries, towns, and major highways.

The LU descriptions that follow generally begin in the south central part of the state and trend clockwise around the map. Only those LUs that contain 10,000 acres or more of BLM managed public land or comprise more than 10 percent of the total LU area are described.

Selected definitions for the major headings include the following:

Geology - characteristics, origin, and development of landform and mineral composition and structure of rocks as classified by geographic position and chronological order.

Key geologic terms:

Archaean - Age from formation of the earth until 2500 million years ago.

Proterozoic - Age ranging from 2500 to 570 million years ago.

Precambrian - Age that includes Archaean and Proterozoic.

Paleozoic - Age ranging from 570 to 245 million years ago.

Mesozoic - Age ranging from 245 to 66 million years ago.

Cenozoic - Age ranging from 66 million years ago to present.

Soil - characterization by phases of orders, suborders, or great groups that typify the LU.

Key soil terms:

Alfisol - high base supply and subsurface horizons of clay accumulations.

Andisol - high amount of volcanic ash.

Aridisol - distinct horizons, low in organic matter, and usually dry.

Entisol - no distinct horizons.

Histosol - Organic (peat and muck).

Inceptisol - weakly differentiated horizons.

Mollisol - nearly black organic rich surface horizon & high base supply.

Oxisol - mixtures of kaolin, hydrated oxides, & quartz.

Spodosol - accumulation of amorphous material in subsurface horizons.

Ultisol - horizons of clay accumulation and low base supply.

Vertisol - Clay soils that crack when dry.

Climate - Temperature regimes (mean annual soil temperatures):

Perqelic - lower than 32° F.

Cryic - 32°-50° F, cool summers.

Frigid - 32°-50° F, warm summers.

Mesic - 50°-60° F, seasonal differences less than 5°

Thermic - 60°-72° F, seasonal differences less than 5°.

Isothermic - 60°-72° F, seasonal differences greater than 5°.

Hyperthermic - 72° F and greater, seasonal differences greater than 5°.

Isohyperthermic - 72° F, seasonal differences less than 56°.

Moisture levels;

Aridic - dry for more than half the year.

Xeric - dry during the summer and moist during the winter.

Ustic - moisture available when conditions are suitable for plant growth.

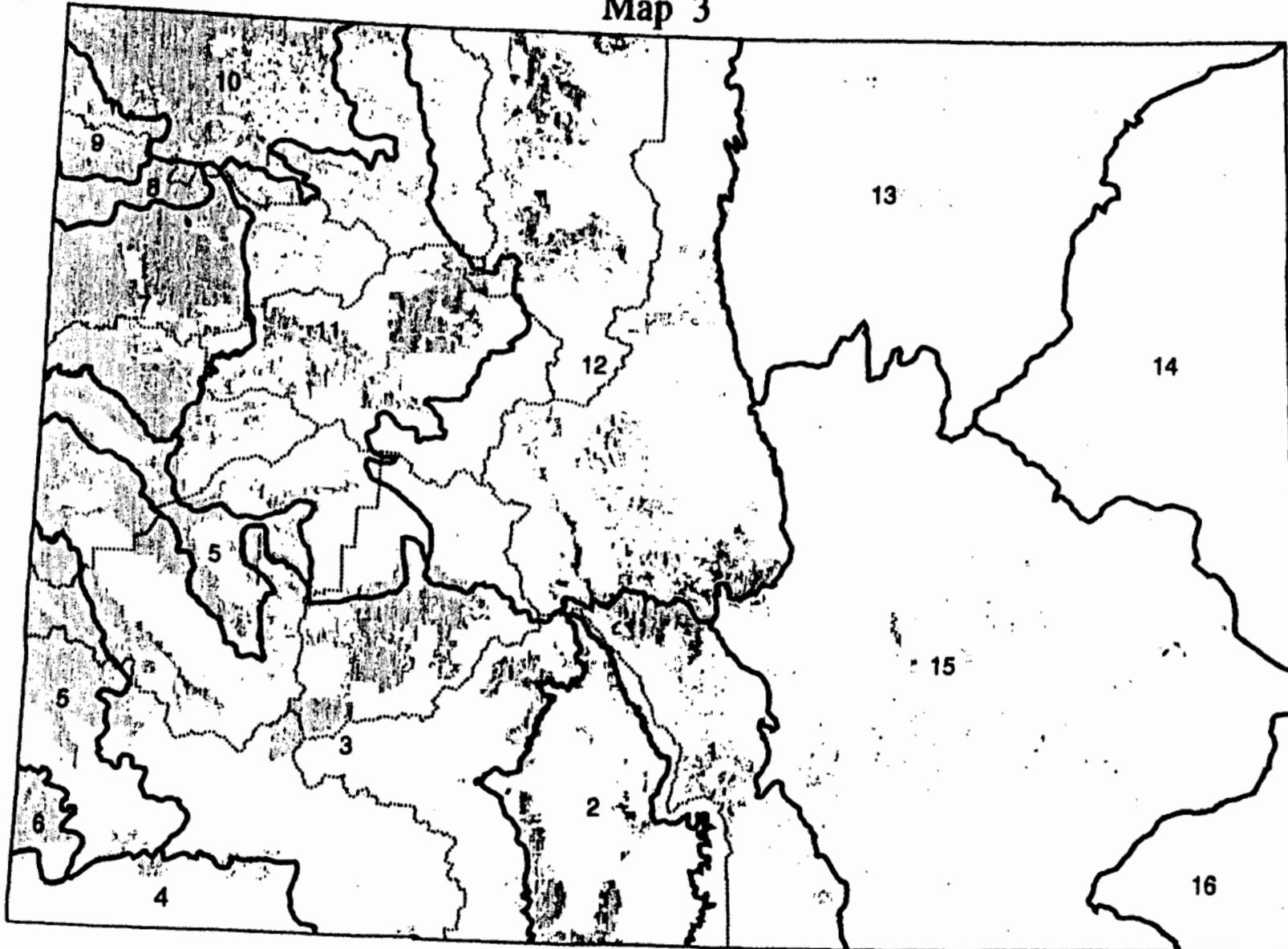
Udic - not dry for more than a quarter of the year.

Aquic - saturated by ground water.

Vegetation - existing and potential natural vegetative communities that could evolve without disturbance.

Landscape Units of Colorado

Map 3



-  Landscape Unit Boundaries
-  State Line
-  BLM Resource Areas
-  Public Lands Managed by BLM

Landscape Unit Codes

- 1 - Southern Parks and Rocky Mountain Ranges
- 2 - Rio Grande Basin
- 3 - South-Central Highlands
- 4 - Canyonlands
- 5 - Northern Canyonlands
- 6 - Abajo Fan
- 7 - Book/Roan Cliffs and Piceance Basin
- 8 - Uinta Basin
- 9 - Uinta Mountains
- 10 - Green River Basin
- 11 - North-Central Highlands and Rocky Mountains
- 12 - Northern Parks and Ranges
- 13 - Northeast Piedmont
- 14 - Northeast High Plains
- 15 - Southeast Piedmont
- 16 - Southeast High Plains

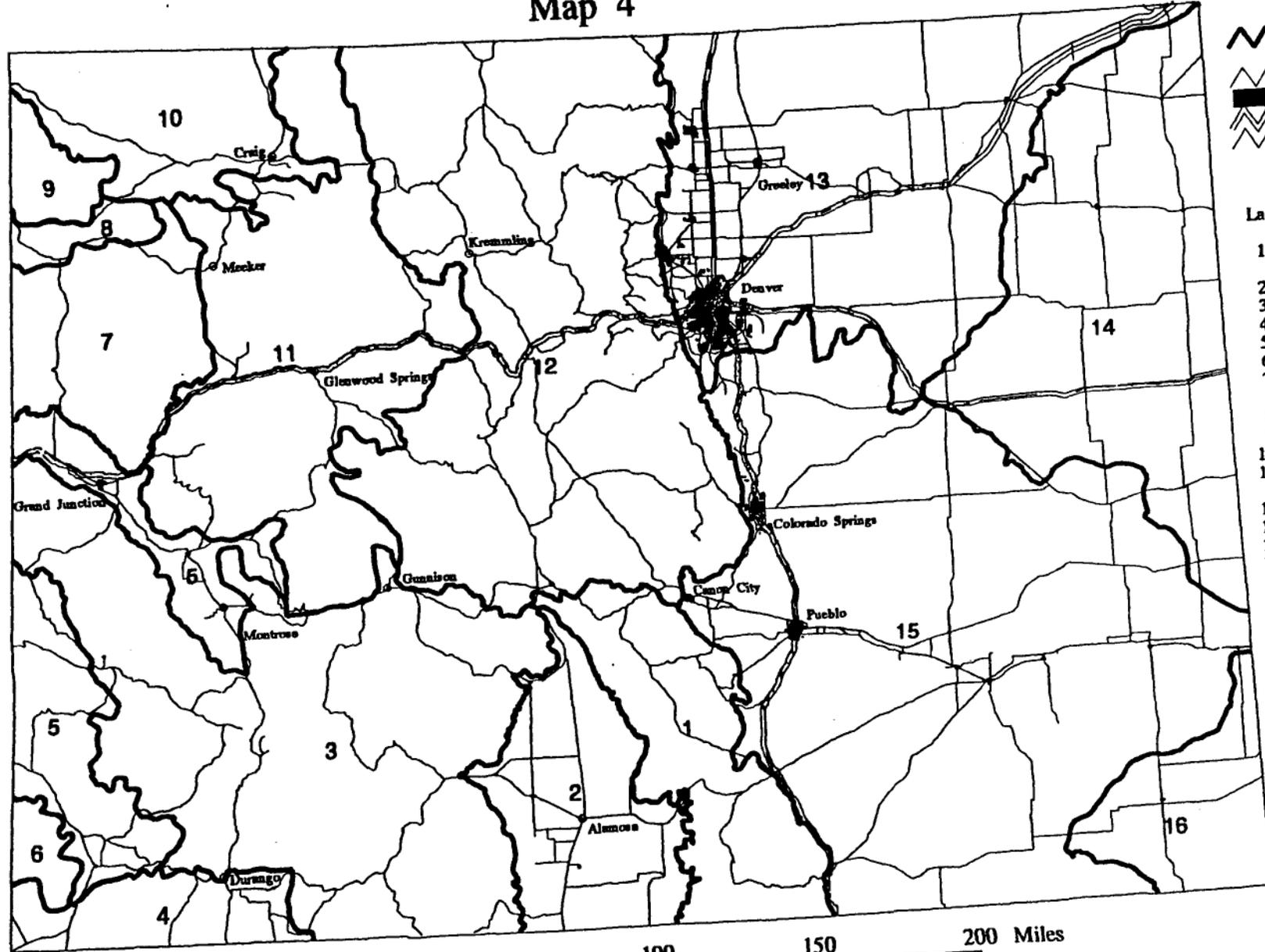


Derived from :
Draft Ecoregions of Region 2
USDA Forest Service, 1996

0 50 100 150 200 Miles

Landscape Units of Colorado

Map 4

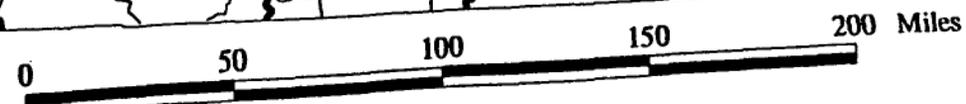


- Landscape Unit Boundaries
- State Line
- Cities
- Interstate Highways
- Other Highways

- Landscape Unit Codes**
- 1 - Southern Parks and Rocky Mountain Ranges
 - 2 - Rio Grande Basin
 - 3 - South-Central Highlands
 - 4 - Canyonlands
 - 5 - Northern Canyonlands
 - 6 - Abajo Fan
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 - 13 - Northeast Piedmont
 - 14 - Northeast High Plains
 - 15 - Southeast Piedmont
 - 16 - Southeast High Plains



Derived from :
Draft Ecoregions of Region 2
USDA Forest Service, 1996



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Wildlife - characteristic mammals, birds, reptiles, and amphibians.

Climate - mean annual precipitation, temperature, and growing season.

Water Resources - relative occurrence and distinguishing characteristics of rivers, streams, lakes, and wetlands.

Disturbance - natural factors and forces that significantly influence ecological dynamics.

Land Ownership and Use - total acreage of the LUs and the amount of land managed by BLM, along with major uses of the resources within the area.

SOUTHERN PARKS & ROCKY MOUNTAIN RANGE (UNIT CODE 1)

Geology - mountains and a few valley plains with the Sangre de Cristo Mountains being the major feature. Elevation ranges from over 5,800 to 13,800 feet. Precambrian igneous and metamorphic rocks, but predominately Paleozoic sedimentary, with few Cretaceous and mid-Tertiary volcanic and volcanoclastic rocks.

Soil - Mollisols and Alfisols occur in montane, or mountain zones, Alfisols in the foothill area.

Vegetation - predominantly Douglas-fir and ponderosa pine in frigid soil, Engelman spruce and subalpine fir in cryic temperatures.

Wildlife - deer, elk, bighorn sheep, mountain lion, beaver, porcupine, and black bear. Mice, squirrels, martens, chipmunks, mountain cottontails, and bushytail woodrats. Blue and ruffed grouse, hawks, and owls.

Climate - precipitation averages 24-28 inches annually with less than half received during the winter. Temperature averages 32-45° F with cold winters. Growing season is between 70-110 days.

Disturbance Regimes - fire, but rare with cryic soil temperature and udic moisture conditions.

Water Resources - streams, lakes,

and ground water are abundant.

Land Ownership and Use - 2.6 million acres with 270,000 acres of BLM managed lands (10 percent of total). Timber is scarce. Recreation, mining, and ranching are important uses.

RIO GRANDE BASIN (UNIT CODE 2)

Geology - landforms include valley, lowland, and elevated plains and hills with elevations from over 7,200 to nearly 11,000 feet. Major features are the San Luis Valley, Rio Grande River, and Great Sand Dunes. Rocks are Cenozoic sedimentary with tertiary volcanic rocks, primarily associated with the San Luis Hills, and terrestrial basin fill of late Tertiary and Quaternary age.

Soil - Inceptisols, Alfisols, Entisols, Aridisols, and Mollisols. Temperature ranges from mesic to frigid and moisture ustic to aridic.

Vegetation - cold, desert shrubland consisting mainly of sparse shrub grass, with some areas of big sagebrush grass, greasewood saltgrass, and open stands of pinon juniper grass. Grasses consist mainly of grammas, dropseeds, needlegrass, and wheatgrass. Cottonwood and willows are found along the riparian corridors.

Wildlife - elk, mule deer, bighorn sheep, antelope (pronghorn), and moose. Predators include cougar, black bear, and coyotes. Diverse bird populations, including abundant waterfowl, sandhill and whooping cranes, bald and golden eagles, and other raptors, including prairie and peregrine falcons. Fish include the rainbow, brown, brook, golden, mackinaw, hybrid trout, and arctic grayling.

Climate - precipitation is 6-20 inches with less than half falling during winter. Average temperatures are 39-57° F with cold winters. Growing season between 100-140 days.

Water Resources - limited precipitation with irrigation from the Rio Grande River and small reservoirs collecting mountain runoff. Wells tap water in deep

soils in valley plains. Geothermal springs in conjunction with volcanic features.

Disturbance Regimes - soil salinity.

Land Ownership and Use - 2.4 million acres with 500,000 acres BLM managed public land (nearly 15 percent of total). Fifty percent of the area is farmed or ranched. About 25 percent is irrigated. Some grazing on native rangeland occurs as does mining.

**SOUTH-CENTRAL HIGHLANDS
(UNIT CODE 3)**

Geology - steeply sloping to precipitous mountains dissected by many narrow, steep gradient stream valleys. Upper mountain slopes and crests may be covered by snowfields and glaciers. High plateaus and steep walled canyons are common, especially in the west. Elevation ranges from over 4,300 to 13,800 feet. The San Juan Mountains are Tertiary volcanic ash flows, lavas, and conglomerates with local porphyritic intrusives. The western half is mostly Pennsylvanian through Cretaceous sandstones, siltstones, shales, and conglomerates, with local carbonates near the San Juan Mountains. In the extreme southern part of the Section is a small area of Tertiary sandstones, shales, and conglomerates.

Soil - frigid, cryic and pergelic temperatures, and aridic, ustic, and udic moisture regimes. Mollisols, Alfisols, Inceptisols, and Entisols are most dominant on the uplands and at higher elevations would include Cryoborolls, Cryochrepts, Argiborolls, and Haplustalfs. Eutroboralfs dominant at lower elevations. Valley bottoms and riparian areas with moist versions (aquic) of Mollisols and Entisols, and certain amounts of Histisols. Valley bottoms often contain Fluvaquents, Cryaquents, Cryaquolls, Haplaquolls, and Borohemists.

Vegetation - from shrub, grasslands, and forests to alpine tundra; spruce-fir forest, pine-Douglas-fir forest, mountain mahogany-oak scrub, Great Basin sagebrush, juniper-pinyon woodland, and alpine meadows and barren.

Wildlife - elk, mule deer, black bear, and mountain lion are common. Rocky Mountain bighorn sheep inhabit higher elevations, and moose have been introduced. Beaver, marmot, snowshoe hare, pine marten, pika, and prairie dogs. Forest-dwelling birds are Steller's jay, grey jay, and Clark's nutcracker, and blue grouse. Mountain bluebird, broad-tailed hummingbird, and Swainson's hawk are typical summer residents. Herpetofauna present include western garter snake, chorus frog, and leopard frog. Native cutthroat trout have been displaced in parts of their former range by brook, rainbow, and brown trout.

Climate - precipitation ranges from 15 to 30 inches. Temperature averages 32 to 45° F and a growing season of less than 70 days.

Water Resources - lakes, streams and rivers (Rio Grande, Animas, Gunnison, and San Miguel Rivers) are abundant, ground water is plentiful.

Disturbance Regimes - fire, insects, and disease.

Land Ownership and Use - 8.3 million acres with 1.5 million acres managed by the BLM (over 18 percent of total). Half of the unit is federally owned, the remainder is in farms, ranches, and private holdings. Most of the grassland and much of the open woodland is grazed. Some small valleys are irrigated. Recreation, mining, and timber harvest are important uses.

ABAJO FAN (UNIT CODE 6)

Geology - alluvial flanking eastward from the Abajo Mountains in Utah. Elevation ranges from 5,000 to 9,500 feet. Gravel strath terraces in incised drainages, fine grained sand and silt forming the lower filled terraces, loess blanketing the uplands, and recent eolian deposits throughout the area. Complex system of canyons cut by fluvial erosion through uplifted sedimentary beds (sandstone, siltstone, shale) of Mesozoic age.

Soil - Entisols occur along floodplains of major streams, Aridisols cover plateau tops, older

terraces, and alluvial fans.

Vegetation - arid shortgrass sod seldom covering ground completely. Xeric shrubs grow in open stands among grasses. Open stands of pinyon and juniper ground sparsely covered by gramma and other grasses, herbs and various shrubs such as sagebrush. Cottonwoods, willows, boxelder and tamarisk along canyon bottoms.

Wildlife - deer, mountain lion, coyote, bobcat, blacktail jackrabbit, chipmunk, rock squirrel, porcupine skunk, and prairie dogs. Most abundant birds include bushtit, pinyon jay, red-tailed hawk, golden eagle. Horned and collared lizards and rattlesnake.

Climate - precipitation averages 8 to 20 inches. Temperature averages between 40-55° F, with cold winters and hot summer days.

Disturbance - summer thunderstorms and wind.

Water Resources - perennial streams with slight salinity. Mc Elmo Creek being the most obvious watercourse. The LU is part of the San Juan River Basin.

Land Ownership and Use - 296,000 acres with 148,00 of BLM managed lands (50 percent of total). Livestock grazing and irrigated cropland are agricultural uses. Recreational use especially around cultural resource values.

NORTHERN CANYON LANDS (UNIT CODE 5)

Geology - lands are eroded by Colorado River tributaries with deep sheer-walled canyons, canyonlands, lines of cliffs, low plateaus, mesas, buttes, and badlands. Elevation ranges from nearly 4,600 to over 11,000 feet. Shales from the Cretaceous period, sandstones from the Jurassic period, and shales and sandstones from the Triassic period. Some eolian deposits occur along with inclusions of diorites in the lacolithic mountains.

Soil - Entisols and Aridisols occur in combination with mesic, frigid, and cryic soil temperature regimes,

along with ustic and aridic soil moisture regimes. Some soils are saline-sodic affected. Areas of very sandy and shallow soils exist. Higher elevations have Mollisols, Alfisols, and Inceptisols.

Vegetation - desert shrub and woodland vegetation with some big sagebrush; blackbrush, pinyon-juniper woodlands, saltbush-greasewood, and galleta-three awn shrub steppe. Some areas of ponderosa pine occur.

Wildlife - elk, mule deer, black bear, cougar, bobcat, gray fox, coyote, pronghorn antelope, and beaver. In the canyons peregrine falcon, Mexican spotted owl, violet-green swallow, white-throated swift, woodrats, ringtailed cat, spotted bat, rattlesnakes, spadefoot toads, collared lizard, and canyon tree frog. Desert species prairie dogs, badger, kit fox, ferruginous hawk, turkey vulture, and burrowing owl. Native fish include razorback sucker, bonytail chub, humpback chub, and Colorado cutthroat trout.

Climate - precipitation ranges from 6 to 30 inches annually, mostly during spring and fall. Dry and hot in the summer and cold and dry in the winter. Temperature averages 45 to 55° F. Growing season ranges from 60 to 180 days.

Disturbance Regimes - low intensity, short duration burns occur due to lightning, plus water and wind erosion.

Water Resources - water is scarce. Unit drained by the Colorado and Green Rivers and their tributaries and ground water supplies are limited. Summer rainstorms cause flash flooding. Few lakes and reservoirs occur.

Land Ownership and Use - 2.6 million acres with 1.1 million acres managed by BLM (over 40 percent of total). Recreation and sheep and cattle grazing is important with limited hay and pasture.

Book/roan Cliff and Piceance Basin (UNIT CODE 7)

Geology - Cretaceous with Paleocene and Eocene sedimentary rocks occur,

which are mainly shales, sandstones, and siltstones. Elevation ranges over 5,200 to 14,000 feet. A system of erosional cliffs rise upward, are abruptly cut off, and descend in giant steps to the valleys. The Book Cliffs are separated from Roan Cliffs by a bench or valley up to 10 miles wide. Prominent too is the oil shale rich Piceance Basin. The Book Cliffs are carved from marine Cretaceous sandstone, the Roan Cliffs were formed with Paleocene and Eocene river and flood plain deposits.

Soil - Entisols and Aridisols occur in combination with mesic and frigid soil temperatures, along with aridic soil moisture regimes at lower elevations. Between 8,000 and 10,000 feet, Mollisols dominate with frigid and cryic temperatures. Most soils have concentrations of calcium.

Vegetation - pinyon-juniper, black sagebrush, big sagebrush, mountain brush, Salina wildrye grasslands, ponderosa pine, aspen, Douglas-fir, and spruce-fir.

Wildlife - elk, mule deer, moose, antelope, cougar, black bear, beaver. Sage grouse, great horned owl, golden eagle, red-tailed hawk, northern harrier, kestrel, and other birds including mountain bluebird, bluegray gnatcatcher, red breasted nuthatch.

Climate - Precipitation ranges from 8 to 35 inches annually, much as snow at higher elevations and summer afternoon thunderstorms. Lower elevations are dry and hot in summer and cold and moist in winter. Higher elevations are warm and wet during summer, and cold and wet during winter. Temperature averages 34 to 45° F. High elevation areas have approximately 40 frost free days, while lower elevations have about 120 frost free days.

Disturbance Regimes - fire.

Water Resources - Water is scarce over most of the area and is generally confined to steep canyons. Lakes and reservoirs are few, and many water developments have been

put on public lands to distribute livestock and to provide water for wildlife. Major water courses include Piceance Creek and White River.

Land Ownership and Use - 2 million acres with nearly 1.5 million acres managed by the BLM (70 percent of total). Grazing, mining, recreation, and wildlife habitat are the major land uses. Hay and pasture land also occur to a very limited extent along drainage ways.

Unita Basin (UNIT CODE 8)

Geology - a synclinal and topographical basin, with its east-west axis running near the south flank of the Unita Mountains. The central portion is gently rolling with eroded slopes. Elevation ranges from over 5,100 to 7,300 feet. Local relief ranges from 100 to 1,000 feet. Sedimentary rocks from the Cretaceous and Paleocene periods, dominantly shales, sandstones, and siltstones. Some glacial deposits occur on the northern portion and alluvial and colluvial deposits occur in the center.

Soil - Entisols and Aridisols occur in combination with mesic and frigid soil temperature regimes, along with aridic soil moisture regimes. Many soils are saline-sodic affected.

Vegetation - pinyon-juniper woodlands, saltbush-greasewood, and grasslands-shrub some big sagebrush. Series include juniper-pinyon and saltbushgreasewood.

Wildlife - dominated by species typical of high, cold deserts, including white-tailed prairie dog, black-tailed jackrabbit, coyote, beaver, red fox, porcupine, spotted skunk, and Townsend's big-eared bat. Year-round range for deer and antelope and winter range for elk and bald eagles and Golden eagles nest throughout. The Green River has been proposed as critical habitat for three endangered fishes endemic to the Colorado River system; Colorado squawfish,

razorback sucker, and bonytail chub.

Climate - precipitation averages 7 to 12 inches annually; mostly during spring and fall. Dry and hot in the summer with low humidity, and cold and dry in the winter, indicative of a desertic basin. Temperature averages 40 to 52° F. The growing season is 80 to 100 days.

Disturbance Regimes - mostly wind and water erosion with few low intensity short duration burns of sagebrush occurring due to summer thunderstorms.

Water Resources - Water is scarce, streams and rivers bring water in from adjoining mountains. Ground water supplies are limited. Major river is the Green. Few lakes and reservoirs occur.

Land Ownership and Use - 359,000 acres with 273,000 acres managed by the BLM (75 percent of the total area). Sheep and cattle grazing with limited hay and pasture along drainage ways.

Uinta Mountains (UNIT CODE 9)

Geology - mountains are an anticlinal uplift with an east-west orientation. Higher elevations, periglacial and glacial processes shape landforms through freezing and thawing. Lower elevations, erosion by water and wind are active land forming processes. Elevations range from approximately 5,200 to 8,600 feet. Precambrian quartzite forms the core of the mountains, with inclusions of red pine shale. At lower elevations, predominantly Mississippian and Madison limestone.

Soil - Entisols, Inceptisols, and Alfisols dominate the timbered land and Mollisols in the meadows, aspen, sagebrush and grass, and mountain brush sites. Temperature regimes range from mesic to pergelic, and soil moisture regimes are aridic, xeric, and udic.

Vegetation - from higher to lower elevations, alpine tundra, Engelmann spruce, spruce-fir, lodgepole pine,

subalpine meadow, Douglas-fir, ponderosa pine, aspen, mountain big sagebrush, oak and mountain brush, and pinyon-juniper

Wildlife - elk, mule deer, reintroduced bighorn sheep, moose, antelope, cougar, black bear, coyote, bobcat, red fox, ringtail, and pine marten. Small mammals include pika and yuma myotis. Breeding raptors include red-tailed, Cooper's, sharp-shinned, Swainson's, marsh, and ferruginous hawks; kestrel; northern goshawk; flammulated, great horned, short-eared, long-eared, sawwhet, and boreal owls; golden eagle; and prairie falcon. Bald eagle and rough-legged hawk over winter. White-tailed ptarmigan and pheasant have been introduced; blue, ruffed, and sage grouse are native. The three-toed woodpecker is common. Bonneville and Colorado River cutthroat trout are native species. The Green and Yampa Rivers contain proposed critical habitat for the Colorado squawfish, razorback sucker, humpback chub, and bonytail chub, plus, two candidate species, flannelmouth sucker and roundtail chub.

Climate - precipitation ranges from 8 to 35 inches annually, mostly in the form of snow above 9,000 ft. Summer afternoon storms are common in higher elevations. Temperature ranges from 28 to 45° F and growing season is 20 to 90 days.

Water Resources - There is a high frequency of rapidly flowing rivers and streams. Rivers flow from north to south on the south slope, and from south to north on the north slope. Predominant flows on the south slope join flows from the west and continue south to join the Colorado River. Rivers are glaciated or stream cut, with numerous lakes and wet meadows associated with glaciated areas above 9,500 feet.

Disturbance Regimes - fire and periodic flooding in spring with snow melt.

Land Use - 486,000 acres with 246,000 managed by the BLM (50

percent of total area). Much of the land is set aside for national parks, monuments, and primitive areas. Livestock grazing and timber production are important uses, along with recreation and mining.

Green River Basin (UNIT CODE 10)

Geology - rugged hills, and low mountains, and narrow valleys. Broad flood plains and fans are present on major rivers. Alluvial fans, piedmont plains and slopes from the surrounding mountains join to form broad intermountain basins. Elevation ranges from 5,300 to almost 9,500 feet. Most of the LU is Tertiary conglomerates, sandstones, siltstones, and shales, with local Quaternary dune sands and loess.

Soil - temperature regime is frigid. Soils include Mollisols, Aridisols, and Entisols, including Borolls, Orthents, Fluvents, and Argids.

Vegetation - grasses to grass-shrub to forests. Potential vegetation is sagebrush steppe (sagebrush-wheatgrass), saltbush-greasewood, and wheatgrass needlegrass shrub steppe.

Wildlife - antelope use the sagebrush areas throughout the year and mule deer during the winter. Other mammals include the coyote, black-tailed jackrabbit, pygmy cottontail, and kangaroo rats. Major birds include the marsh hawk, red-tailed hawk, Swainson's hawk, Cooper's hawk, golden eagle, bald eagle, prairie falcon, burrowing owl, and the long-eared owl. The sage grouse and chukar are the important game birds. Found in the desert shrub (saltbush-greasewood community) are the cactus mouse, long-tailed pocket mouse, desert kangaroo rat, black-tailed jackrabbit, and the antelope ground squirrel.

Climate - precipitation ranges from 7 to 20 inches. Temperature averages 39 to 52° F. Growing season ranges from 80 to 125 days.

Water Resources - water is scarce,

but major rivers (Yampa and Little Snake) plus small streams flow through the area. Ground water is meager or lacking in most areas, but it is abundant in the fill in some valleys. The Green and Lower Snake Rivers flow through here. Part of the Flaming Gorge Reservoir lies in this LU.

Disturbance Regimes - fire, insects, and disease.

Land Ownership and Use - 2 million acres with over one million (52 percent of total) managed by the BLM. About 80 percent of the area is in farms or ranches with 50 percent grazed by livestock. Many of the valleys and tracts along a few large streams are irrigated, but they make up no more than 5 percent of the area. About 20 percent of the area is dry farmed.

North-Central Highlands and Rocky Mountains (UNIT CODE 11)

Geology - steeply sloping to precipitous flat-topped mountains dissected by narrow steep gradient stream valleys. High plateaus have steep walled canyons. There are gently rolling mountain parks, mountain ridges, and foothills. Elevation ranges from about 4,800 to 12,800 feet. Northern third of LU is predominantly Cretaceous sandstones, siltstones, shales, and coals, with local porphyritic intrusives and includes the White River uplift; the northeastern part is Tertiary basalt. Remaining area includes Lower Paleozoic carbonates and shales and Upper Paleozoic conglomerates, sandstones, siltstones, shales, and evaporates. Central area is Precambrian granite and biotite gneiss. In the extreme south are volcanic rocks, including ash flow tuffs, andesitic lavas, breccias, and conglomerates. Lower elevations in the southern two-thirds of the unit are Cretaceous and Tertiary sandstones, siltstones, shales, and local coals, also, local glacial drift and morainal deposits.

Soil - mesic, frigid, and cryic temperature regimes and includes

Mollisols, Alfisols, Inceptisols, and Entisols.

Vegetation - western spruce-fir forest, pine-Douglas-fir forest, pinyon-juniper woodland, mountain mahogany-oak scrub, and sagebrush steppe. Above timberline, alpine tundra predominates. At higher elevations types include Engelmann spruce, subalpine fir, Douglas-fir, ponderosa pine-Douglas-fir, aspen, and meadows of grass and sedge. At lower elevations, there are pinyon pine, shrubs, grass, and shrub-grass vegetation.

Wildlife - elk, mule deer, black bear, and mountain lion with Rocky Mountain bighorn sheep at the higher elevations. Smaller mammals include marmot, beaver, snowshoe hare, pika, and pine marten. Forest-dwelling avifauna include Clark's nutcracker, grey jay, northern flicker, and Steller's jay. White-tailed ptarmigan inhabit the higher elevations. Mountain bluebirds are common summer nesters. Herpetofauna include chorus frogs, leopard frogs, and western garter snakes. Native cutthroat trout have been displaced in much of their former range by brook, rainbow, and brown trout.

Climate - precipitation ranges from 7 to 45 inches. Temperature averages 32 to 45° F. Growing season is 70 to 140 days.

Disturbance Regimes - fire, insects, and disease.

Water Resources - water from mountain streams and lakes is abundant, and ground water is plentiful. Snowfields exist on upper slopes and crests. Major rivers are the Yampa, White, Colorado, Eagle, Arkansas, Taylor, Gunnison, Crystal, Roaring Fork, and Frying Pan. Transbasin diversions occur.

Land Ownership and Use - 5.8 million acres with .9 million acres managed by the BLM (16 percent of total). Half the unit is federally owned and the remainder in farms and ranches. Extensive livestock grazing use, irrigation along some rivers and streams, and recreation use, mining,

and timber harvest.

Northern Parks and Ranges
(UNIT CODE 12)

Geology - steeply sloping to precipitous mountains dissected by many narrow stream valleys with steep gradients. Gently rolling mountain parks and valleys, with some mountain ridges. In narrow bands along the eastern slope of the Rocky Mountains are rugged hills and low mountains strongly dissected and in many places crossed by large streams flowing eastward from the mountains. Elevation ranges from 5,300 to over 14,000 feet. Precambrian granite and biotitic, felsic, and hornblende gneiss. North, south, and middle parks have local Pennsylvanian through Cretaceous sandstones, siltstones, and shales. Between middle and south parks are local Tertiary porphyritic intrusives.

Soil - mesic, frigid and cryic temperature regimes. Soils include Mollisols, Alfisols, Inceptisols, and Entisols.

Vegetation - alpine meadows and barren, fescue-mountain muhly prairie, sagebrush steppe, pinyon-juniper woodland, and Great Basin sagebrush.

Wildlife - elk, mule deer, black bear, beaver, marmot, pika, pine marten, bobcat and mountain lion. At higher elevations, Rocky Mountain bighorn sheep, isolated mountain goat populations, and white-tailed ptarmigan. Common forest-dwelling birds are Steller's jay, Clark's nutcracker, and grey jay. Wild turkeys are not numerous but are present. Western garter snakes and leopard frogs; and, prairie rattlesnakes live at lower elevations in the eastern part of the LU. Native cutthroat trout have been displaced to a large extent by introduced brook, rainbow, and brown trout.

Climate - precipitation averages from 5 to 50 inches. Mean temperatures are 32 to 50° F. The growing season ranges from less than

70 to 160 days.

Disturbance Regimes - fire, insects, and disease.

Water Resources - water from mountain streams and lakes is abundant, as is ground water. Snowfields occur on upper slopes and crests. Large reservoirs store water for domestic, power, and irrigation uses. Major rivers include the Arkansas, Fraser, Yampa, White, Crystal, Roaring Fork, Fryling Pan, and Colorado. Transbasin diversions occur.

Land Ownership and Use - 10 million acres with 750,000 acres (7 percent of the total) of public land managed by BLM. Most of the mountain area is federally owned. Farming and ranching are important uses with irrigation along some rivers and streams in park areas and in some small mountain valleys. Grazing use is extensive, occurring on open mountain woodlands and grasslands, on almost all of the park areas, and on the woodlands and grasslands of the foothills. Recreation, mining, and timber harvest are present and past uses.

Supplemental information related to the proposed standards:

Upland Soils: The physical properties and characteristics of

some soils on BLM lands in Colorado place severe limitations on management actions to effect change. For example, Mancos and Pierre shale do not respond well to most land treatments.

Mancos shale and Wasatch formations provide a significant amount of salt to the Colorado River. Through the past ten years, significant interagency attention has been devoted to ranking watersheds regarding salinity reduction. The salinity issue is considered in priority setting process.

Riparian resources: According to 1995 riparian condition assessments for BLM riverine milage, the following conditions exist: 29 percent of the miles are functioning properly, 28 percent are functioning at risk, 21 percent are not functioning properly, and 22 percent of the miles have not been evaluated. For non-riverine riparian areas the following conditions existed in 1995: 14 percent is functioning properly, 4 percent is functioning at risk, 44 percent is not functioning properly, and 37 percent of non-riverine areas have not been evaluated. Table 1 displays the estimated riparian and wetland acreage by District. Additional information on the status of riparian resources on BLM lands is found in Appendix E.

Table 1

Estimated Riparian-Wetland Acreage by Colorado BLM District 1995

OFFICE	BLM LAND (acres)	LENTIC RIPARIAN WETLAND (acres)	LOTIC RIPARIAN STREAM (miles)	LOTIC RIPARIAN STREAM (acres)	TOTAL RIPARIAN WETLAND (acres)	RIPARIAN WETLAND AREA (%)
Craig	3,151,613	593	798	4,428	5,021	0.16
Montrose	2,130,584	5,300	2,247	17,984	23,284	1.09
Canon City	1,218,249	640	801	6,281	6,921	0.57
Grand Junction	1,802,472	33	815	4,811	4,844	0.27
COLORADO TOTAL	8,302,918	6,566	4,661	33,504	40,070	0.48

Noxious Weeds: All of the LUs identified in this Environmental Assessment are impacted by the presence and expansion of non-native invasive and/or noxious weed species. "Noxious" is a legal description, meaning that some local, state or national law has designated the species as undesirable.

Non-native invasive species may or may not be designated by law as undesirable, but they have the following characteristics: (1) they are plants of foreign origin that have accidentally or intentionally been introduced into the United States; (2) they have come to the United States without the array of natural predators (insects and diseases) that help to keep them in balance with other plants in their area of origin; (3) non-native invasive plants are highly competitive species that displace native and desirable plants.

Often, populations get started in disturbed sites, such as roadsides or rights-of-way corridors but they are capable of moving into and taking over adjacent undisturbed sites. Once a non-native invasive plant takes over a site, the site cannot naturally rid itself of the species or keep the species from spreading. It takes intensive, often costly control work to restore a native plant community and contain an established non-native invasive species. Until recently, weeds were considered an agricultural problem rather than a natural resource problem. Consequently, most of the research on non-native invasives concentrated on how to control them in agricultural situations. Not much is known or understood about the biology and ecology of these plants. Sometimes a non-native invasive plant is present, but not problematic in a native community for years. Then, some unknown mechanism triggers rapid expansion of the species.

There are no current inventories of weed infestations in Colorado BLM. Estimates by weed experts indicate that between five and ten percent of

BLM managed lands in Colorado are currently infested with non-native invasive weed species. These estimates do not include acres infested with cheatgrass or downy brome which is one of the most widespread non-native invasive plants in the western United States.

The State of Colorado first passed a weed law in 1990. At that time four species were placed on the state wide noxious weed list requiring active management by land owners. These four species are: Russian Knapweed, Spotted Knapweed, Diffuse Knapweed, and Leafy Spurge.

Counties are given the option of adding more species to the list of weeds that must be managed in that county. Some of the species most commonly/and or recently added by counties include Canada Thistle, Musk Thistle, White Top or Hoary Cress, Yellow Toadflax, Dalmatian Toadflax, and Purple Loosestrife.

During the 1996 Legislative session the Colorado weed law was amended and directs the Colorado Department of Agriculture to survey the counties on their most troublesome species. After the survey is complete, the state may increase the number of state listed weeds to up to ten species.

Of the four currently listed species, BLM has the most acres infested with Russian Knapweed and Leafy Spurge. Both Spotted and Diffuse Knapweeds are currently more common on the Front Range in Colorado, but they are expanding their ranges on the West Slope. The rate of invasive weed spread averages about fourteen percent per year. The average rate of weed spread on western BLM lands was estimated to be 2300 acres per day in 1994, and 8.5 million acres of BLM managed lands in the west are thought to be infested. Estimates of the spread of weeds on all public lands in the west is 4600 acres per day.

Special Status Species: Proposed Standard 4 provides special recognition and management emphasis

to a variety of plant and animal species at risk or in peril. Some species have been recognized by federal law (i.e., Endangered Species Act of 1973) and afforded special listing and protection in 50 CFR Part 17. This proposal was discussed with the U.S. Fish and Wildlife Service (USFWS). It is determined that consultation with USFWS under Section 7 of the Endangered Species Act is not appropriate at this time. As specific implementation actions tied to a definable land base are initiated, Section 7 consultation will occur. Other species are of special concern to the Colorado Division Wildlife, the Colorado

Natural Heritage Program, and to BLM. Appendix F contains a detailed list of special status species and their occurrence on BLM lands in Colorado by District and Resource Area.

Water Quality: Most common contributors from BLM land to water quality problems are sediment and nutrients. Table 2 displays major river basins in Colorado and how many miles are affected by sediment and nutrients. Appendix G provides details on stream segments in Colorado that are affected by sediment and nutrients and the current severity of the problem.

Table 2

Miles of Streams in Colorado Affected by Sediment and Nutrients.

RIVER BASIN	SEDIMENT	NUTRIENTS
Platte	494	275
Arkansas	389	50
Rio Grande	146	53
San Juan	222	0
Colorado	668	125
Green	370	229

SOCIAL AND ECONOMIC COMPONENTS:

The movement of people into rural areas in Colorado is reflected on Map 5 which shows population changes by county for the period 1980-1994. This migration pattern is expected to continue into the 21st century as depicted on Map 6. The migration pattern reflects a reversal of the rural to urban migration pattern in most of the U.S. before the 1980s. The front range urban areas are continuing to grow in Colorado but the increase on the western slope communities, where most of the BLM lands are, is dramatic.

Many people are attracted to scenic areas, particularly those suitable for recreation. Some ranches are being sold for recreation uses or subdivided for homes. New people

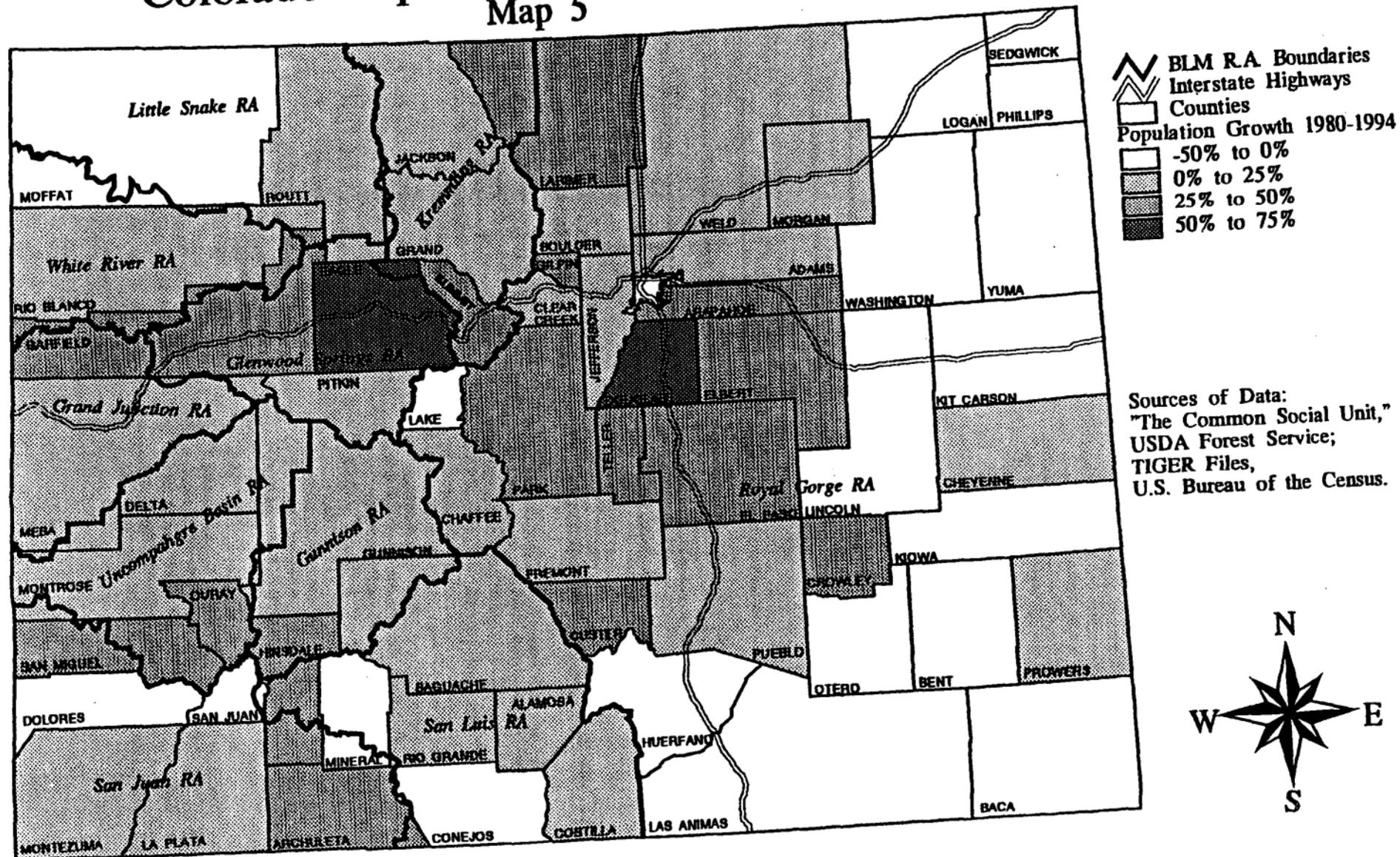
may buy lots and are not dependent on an economic return from the lot.

The population migration in the state has combined rural and urban values. Thus, newcomers may have differing beliefs and values from existing residents.

Most rural communities are moving from a long-term economic dependence on agriculture or mining to recreation and tourism. The community of Salida is illustrative of this trend. Historically, Salida relied on farming/ranching and mining to support the local economy. Then about 15 years ago, the Madonna mine on Monarch Pass, west of town virtually shut down and the Climax molybdenum mine near Leadville drastically scaled back operations.

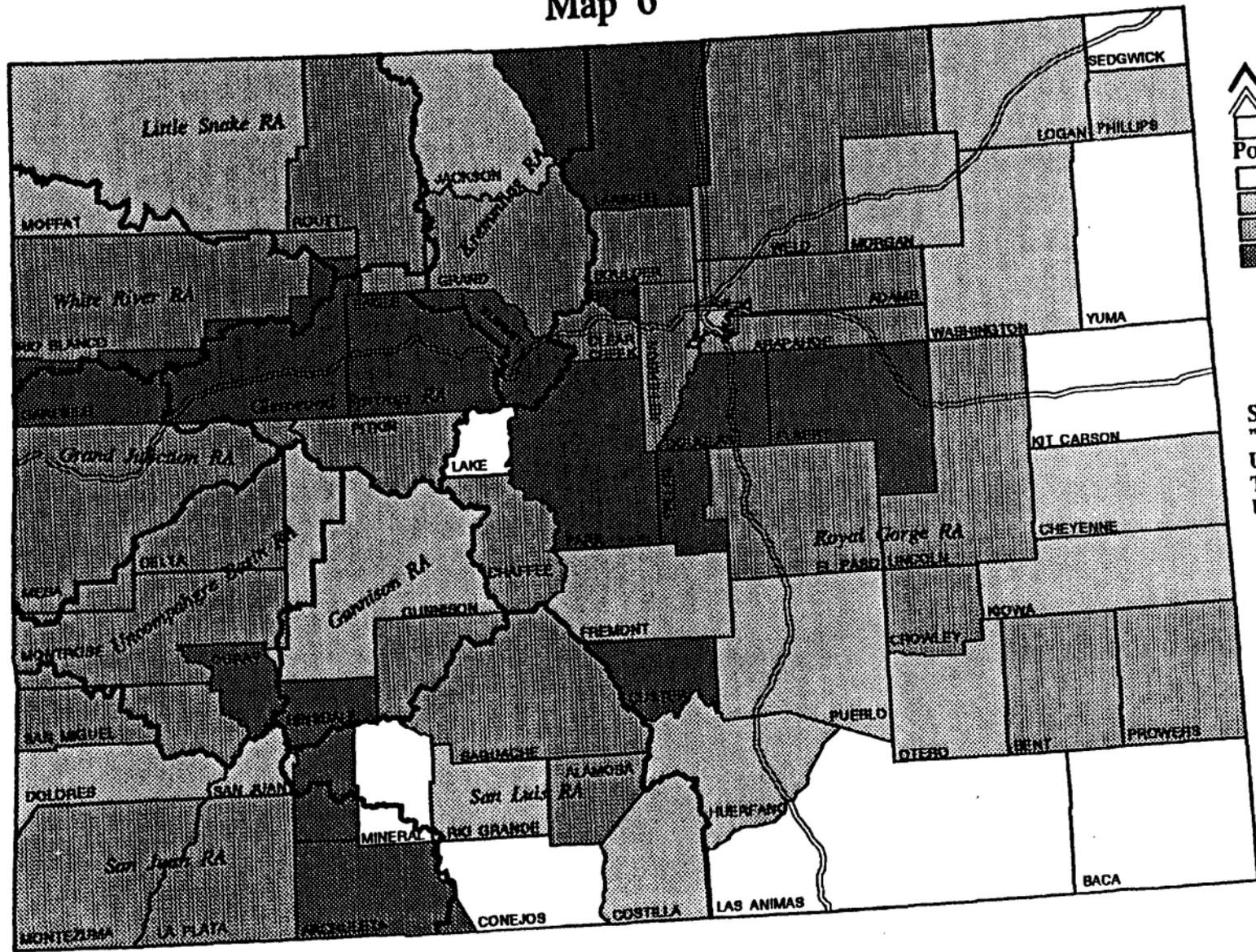
Colorado Population Growth 1980-1994

Map 5



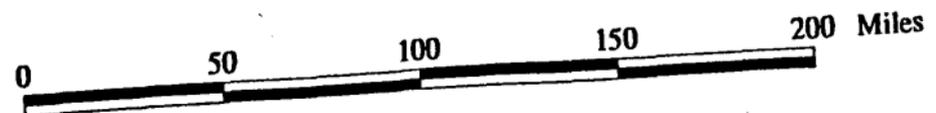
Colorado Population Growth 1980-2020

Map 6



BLM R.A. Boundaries
 Interstate Highways
 Counties
Population Growth 1980-2020
 -56% to 0%
 0% to 25%
 25% to 50%
 50% to 90%

Sources of Data:
 "The Common Social Unit,"
 USDA Forest Service;
 TIGER Files,
 U.S. Bureau of the Census.



This forced the community to explore alternatives to bolster the local economy.

About the same time as the southeast mine closures, rafting became popular. The commercial rafting industry grew enormously. Recreation, in general, along the Arkansas River increased significantly. The community opted to capitalize on these phenomena. They backed the formation of a partnership between BLM and Colorado State Parks, built boater access facilities, and took other supportive measures to support this emerging service industry and solidify economic conditions.

Specific economic data by region or county was not gathered for this document. However, statewide data will serve to provide some indication of economic trends in the state. As is the nation's, Colorado's economy is highly diversified.

Certain industries such as farming/ranching, mining, utilities, and some of the service industries rely on BLM lands directly or indirectly for support. Employment trends by industry are shown by the number of people employed and percentage of total employment in Appendix H. Over 1.6 million people were employed in 1981. This figure increased to 2.2 million in 1993. Employment in all industries grew except mining which declined significantly.

Industries in which employment increased as a percentage of total employment include agriculture, retail trade, and services. Industries that decreased as a percentage of total employment include mining, construction, manufacturing, wholesale trade, finance, insurance, and real estate, and government. Transportation, communications, utilities employment virtually stayed the same.

Employment in the service industry grew the most - from 382,000 jobs in 1991 to 678,000 jobs in 1993. The service industry increased its relative share of the rest of

Colorado's economy from 23 percent in 1981 to 31 percent in 1993.

Appendix H also shows income trends by industry and income trends as percentages of total income. Colorado had a 26.9 billion dollar economy in 1981. This number increased to 56.7 billion in 1993. All sectors except mining showed positive growth in income over the period.

Industries whose income has increased as a percentage of total income include agriculture, transportation, communications, and utilities, finance, insurance and real estate, services and government. Industries whose income has decreased as a percentage of total income include mining, construction, manufacturing, wholesale trade, and retail trade.

The Rangeland Reform '94 Environmental Impact Statement (EIS) discussed rancher attitudes and values that may apply to this EA. The EIS referenced Fowler and others (1993) who published research on 4,336 ranches in 11 western states. Although their research does not represent all ranches with federal permits, it generally describes the ranching lifestyle, employment and rancher interactions with the western public. The ranchers surveyed were members of livestock producer organizations. The survey included nearly 11 percent of all federal permittees, who account for 35 percent of all federally allocated forage.

Some of the findings of the research are that ranching is a way of life for many respondents. The average respondent was 55 years old and worked on the same ranch for 31 years. The average ranch had nearly seven people associated with it, not including children. An average of 23 percent of the household income came from work away from the ranch. Many small ranches would not remain economically viable without the ranch income. Respondents estimated that they spend about \$19,000 annually in local communities and that some local businesses depend on ranchers. Many ranchers believe that

livestock grazing on federal land is vital to the economic stability of rural communities. Over one-third of the respondents in Colorado reported that they would subdivide or develop their land.

The second Colorado Smart Growth Conference held November 1995 further reflects some of the beliefs of rural residents in the state. These beliefs represented their visions for their region. Common themes for those areas, including public lands, are the desire to maintain and enhance rural lifestyles, affordable housing, and protection of natural resources. Many have concerns about maintaining open spaces and balancing use of resources and economic growth. Many thought that public lands were critical to their areas for a variety of reasons.

Public Land Uses: In Colorado, there are 2670 permittees authorized to graze livestock on BLM and U.S. Forest Service land. Twenty-five (25) percent of cattle operators in the state are dependant on BLM/USFS forage; 35 percent of sheep operators are dependant on BLM/USFS forage. Overall, BLM accounts for approximately 36 percent of the total livestock forage on BLM and USFS lands in Colorado.

Timber harvest from BLM has steadily decreased over the past decade. In 1993, Colorado BLM sold the following timber products: 2.91 million board feet of firewood/posts/poles (a decrease of 60 percent from 1983), and .98 million board feet of sawtimber (a 87 percent decrease from 1983). The majority of sawtimber is in the Kremmling and Gunnison Resource Areas. Firewood and posts/poles are sold throughout all Resource Areas.

Recreation visitation to BLM in Colorado increased 30 percent from 1990 to 1993. Major activities include hunting, fishing, off-highway vehicle travel, floatboating. The number of commercial and other special recreation permits increased 37

percent and related visitation 15 percent from 1990 to 1993. Much of the BLM land in Colorado is lower elevation and accessible nearly year-round.

The number of authorizations and affected acreage for realty actions such rights-of-way, permits, and Recreation and Public Purposes leases, vary from year to year. During a typical year, Colorado grants 300 authorizations, most of which are linear (i.e., transmission lines, roads).

Oil and gas drilling activities vary from year to year depending on market conditions. Typically, 175 Applications for Permit to Drill are issued annually affecting approximately 700 acres.

Coal leasing on public lands has decreased in recent years. In 1993, two new coal leasing actions were authorized affecting 1,800 acres. In 1993, 134 permits were issued for 553,000 cubic yards of sand, gravel, moss rock, etc. affecting more than 1000 acres.



CHAPTER 4 - ANTICIPATED IMPACTS

INTRODUCTION/APPROACH

Standards will replace, modify, or supplement existing objectives in the RMPs. In some circumstances, the standards will be new to the RMP. Adoption of grazing management guidelines will supplement existing grazing management practices that are identified in the RMPs.

If adopted, standards and guidelines, together with the other decisions in Colorado's RMPs, provide a framework or base from which future decisions will be made. No decisions directly affecting any public land in Colorado will be made solely as a result of this environmental assessment.

How then will likely impacts be described? The following approach was taken. Each BLM Resource Area (RA) in the state was asked to participate in a simulation of how standards and guidelines would be applied. For each RA, an area of public land known to the staff was used as a sample area for demonstration purposes only. In most situations, the examples were developed with input from resource specialists, managers, and members from the Resource Advisory Councils (RAC). Several other hypothetical examples are also described. The examples, found in Appendix C, provide information on the processes used to implement standards and guidelines as well as possible impacts. It is impossible to display all possible implementation scenarios and to identify all possible impacts. However, this document will present a sufficient range of scenarios and assessments to allow the reader to come to some conclusions on what it will take to implement standards and guidelines and what the impacts may be. This chapter contains a summary of processes and impacts gleaned from the implementation examples in Appendix C.

PRIORITIZING WORK

Standards apply to all public lands, however, because resources and staffing are limited, it is essential to prioritize the areas to which standards and guidelines will be assessed. The example exercises described in Appendix C were subjected to a logical system of prioritization in the Resource Area. A logical system of prioritization for application of standards and guidelines considers several criteria such as:

- What is scheduled for completion according to the RMP implementation?
- Is there information to indicate that a problem exists or that resources are at risk? (monitoring results, allotment categorization, professional judgement, results of ESI or other inventory data, etc.)
- Is there public concern or interest for possible resources at risk? Is use conflict present?
- Where can efficiencies with limited resources be realized? Are there opportunities for public or user group participation?
- Where are the best opportunities to effect positive change toward public land health?
- Are there situations or areas where legal requirements must be met?
- Are there permits or other resource use authorizations that need to be acted upon (e.g., grazing, rights-of-way, timber sales, etc.)?

A manager weighs these criteria to determine priority areas, utilizing information from staff, the RAC, and interested publics. A decision matrix or similar tool is helpful in determining priorities.

FLEXIBILITY

The examples used for this EA demonstrate that there are a variety of ways to assess standards and apply guidelines. Flexibility is required to allow for variations in management styles, publics, and management situations. Flexibility also allows for experimentation in finding new and improved "ways of doing business."

IMPLEMENTATION THOUGHT PROCESS

Regardless of the variations in how standards and guidelines are applied, the thought process is the same:

1. Are the standards being met on the land? What is the trend? Which indicators tell us that the standards are not being met?
2. Where a problem exists, what is causing the problem (i.e., preventing the land from meeting the standards)?
3. What are the options that could be taken to correct the problem? What is the decision?
4. What actions or tasks will be taken to implement the decision? What will the impacts be?
5. How will the effectiveness of the decisions be monitored?

Figure 2 graphically portrays this thought process.

ASSESSING STANDARDS

Each standard has a corresponding set of indicators that would be collectively evaluated to make an assessment on achievement of the standard. They provide a starting point for collaborative discussions. It may be necessary to supplement the standards with additional indicators to determine if public land standards are being met. The following are possibilities: gather existing information, conduct research, test, consult with academicians, and interested publics, identify landscape goals, compare with benchmark areas, or

quantify thresholds.

The following are possible resources and processes that may be needed to answer the question, "Are the standards being met?"

Standard 1 (upland soils) - soils survey, photographs, vegetation classification, soils surface factor worksheets, benchmark sites.

Standard 2 (riparian vegetation) - riparian analysis, photo points, vegetative trend, riparian classification data, aerial photos, greenline transects, channel stability evaluations, fishery inventories benchmark sites.

Standard 3 (plant and animal communities) - vegetation classification, wildlife data bases, ESI data, satellite imagery, precipitation data, breeding bird transects, vegetative trend information.

Standard 4 (special status and threatened and endangered species) inventory, consultation with U.S. Fish and Wildlife Service, Colorado listed species list from the Colorado Division of Wildlife and Colorado Natural Heritage, and others.

Standard 5 (water quality) - Colorado Water Quality Standards, Status of Water Quality in Colorado (report) which is prepared in response to Clean Water Act (CWA) Section 305b. Colorado Nonpoint Source Assessment Report (CWA Section 319 report) which lists waterbodies known to be affected by nonpoint-source pollution; current CWA Section 208 Plans in Colorado. Appendix D displays the water quality compliance process. To demonstrate the process at work in a real situation, a detailed account of a water quality determination is provided for in Examples 4 and 8 in Appendix C.

Figure 2

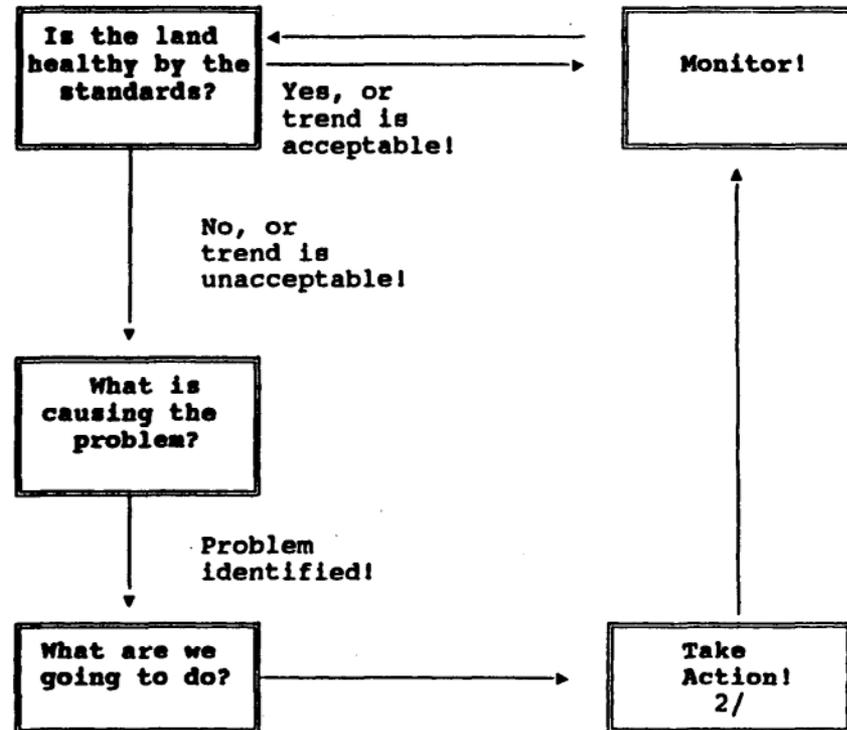
APPLYING STANDARDS AND GUIDELINES ON PUBLIC LANDS 1/

Examples of "Tools" that may be used during the process:

- * Preliminary Assessment by Authorized Officer
- * Review of management objectives for the area
- * Evaluation
- * ESI or other inventory
- * Trend Analysis
- * Field Visits
- * RAC Consultation

- * Analysis of current and historic use/events
- * Review of management objectives
- * RAC consultation

- * Review data and possible mgt. actions
- * Activity planning
- * Environmental Assessment
- * RAC consultation



1/ Collaboration among agencies, affected users, and interested publics is essential throughout the process.

2/ It is important to note that corrective action may or may not include the livestock grazing guidelines. Examples of other possible actions include (but are not limited to) limiting OHV use, realigning roads, or reducing wildlife numbers.

ASSUMPTIONS

In discussing impacts, the following is assumed:

- BLM labor costs are \$4,000 per month/person.
- "Short-term" is up to ten years following implementation. "Long-term" is considered 10-20 years.
- The ability to affect public land health is tempered by budget. As BLM's budget continues to fall or stay level, the ability for BLM to facilitate the processes needed to address public land health also decreases.
- The ability to affect public land health is also related to the effectiveness of coordination and consultation by the authorized officer, local cooperators, and interested publics.
- Some laws (e.g., Wild Horse and Burro Act, Threatened and Endangered Species Act, Mining Law of 1872) may place legal and regulatory constraints on management options.
- Responsibilities for wildlife lies jointly with the Colorado Division of Wildlife and BLM (DOW manages the animals and BLM manages the habitat). Cooperation between BLM and the Colorado Division is critical to public land health, especially relating to wildlife.
- BLM utilizes existing appropriations for labor. The labor costs identified for BLM in the examples displayed in Appendix C do not represent new costs.
- Management strategies and actions are planned and implemented using good scientific principles. Innovative practices are acceptable if grounded in good scientific principals.
- Land ownership patterns for BLM in Colorado vary widely. For example, lands near Craig are more concentrated than lands near Canon City. In many situations, this

constrains BLM's ability to improve public land health.

GENERAL IMPACTS

Developing standards and guidelines facilitates ecosystem management. The process associated with implementing standards and guidelines encourages collaboration by bringing together resource specialists, managers, and interested publics to evaluate public land health and determine causal factors where problems exist. The Resource Advisory Councils, authorized by the new regulations, assist in collaboration. The process also advocates a landscape perspective of land health that transcends administrative boundaries.

Statewide standards allow for common terminology throughout the state. Although interpretation of what constitutes public land health may vary, the indicators that are part of the standards provide a common starting point for discussion and analysis.

Education and information are critical. An understanding of the scientific principles behind the standards and indicators by all parties will make it easier to identify problems, causal factors, and possible corrective measures. BLM will need to spend time and effort up-front in training and education.

A description of estimated statewide effects of implementing standards and guidelines follows. By nature, the description of these impacts is somewhat general. Impacts related to specific applications of standards and guidelines for a variety of management scenarios are found in Appendix C.

RESOURCE IMPACTS

Rarely will public land health be accomplished by implementing only one single action that affects one resource or use. Strategies

consider a variety of management actions depending on the causal factors. Therefore, this analysis estimates the effects to public land health that occur by implementing grazing management guidelines and other management actions. Fairly broad categories are used for this analysis. More detailed actions and procedures may be found in such documents as Colorado Best Management Practices, Integrated Weed Management Policy, Surface Operating Standards for Oil and Gas Exploration and Development, and the Resource Management Plans.

Grazing Systems for livestock (HRM, deferred rotation, etc.) consider the appropriate intensity of use, duration, numbers of livestock, and season of use. Actions frequently are reflected as terms and conditions of grazing permits. The cost to implement grazing systems is normally low to medium.

• Upland soils: Proper grazing systems increase soil infiltration and permeability rates, leading to improved soil productivity, add organic matter to the soil, reduce accelerated erosion, improve basal watershed cover conditions and soil productivity in the short- and long-term. The length of time for impact varies with soil and climatic conditions (e.g. fine textured soils in arid conditions will respond slower than coarser textured soils in more moist climates).

• Riparian: Riparian classification data is critical in determining appropriate grazing systems. Here are two examples.

1. Riparian areas with willow can be grazed during certain growth periods when the willows emit tannens which cattle avoid.

2. Certain types of sedge-brush communities are more resistant to hoof action than others. Proper grazing systems can improve woody riparian habitat, improve vigor of plants, and increase plant density. In general, laterally migrating riparian areas repair quicker than riparian areas that migrate vertically. Most benefits are

realized in the short-term and long-term.

• Plant and Animal Communities: Proper grazing systems increase plant density and frequency, improve diversity, assist in manipulation of succession (plant communities and animal habitat), maintain or create desired wildlife habitat conditions, contribute to weed control when used with integrated weed management, increase efficiency of photosynthesis (i.e., more cool and warm season plant species), and increase ground cover and litter for soil protection and forage. Animal impact can contribute to plant age diversity. Generally these benefits are long-term; control of residual vegetation for other animal use occurs in the short-term.

• Special Status and Threatened and Endangered Species: The same basic benefits noted for plant and animal communities apply here. Special consideration is given to affected species requirements. For example, no livestock grazing may be needed to protect snow willows, a critical element to the endangered Uncompahgre fritillary butterfly. Trampling is a concern for ground nesting birds and disturbances to sensitive habitats (e.g., alpine tundra and riparian zones).

• Water Quality: Proper grazing systems reduce sediment and salinity, nutrient, and bacterial loads. Benefits are short and long-term.

Land Treatments - erosion control structures consist of installed structures with the primary purpose of stopping soil erosion. Examples are gully plugs and contour furrowing. The cost to implement is medium to high.

• Upland soils: Generally, watershed improvements slow runoff and reduce soil surface erosion. Impacts are highly variable, depending on the type of improvement. Many land treatments are short-lived, so impacts are positive in the short-term but negative in the long term (e.g., contour furrows retain sediment and

runoff until full, then frequently breach).

- **Riparian:** Structures compatible with the channel type can assist in holding water and sediment, preventing a head cut, and establishing riparian vegetation communities. Generally, structures, such as gully plugs in the upper reaches of a system, are effective. When constructed in lower segments of a system, or improper channel type, they can actually cause negative effects. Benefits of properly constructed structures are short-term.

- **Plant and Animal Communities:** Treatments improve water control for local vegetation enhancement, and lessens the amount of disturbed land that supports early successional plant communities, including weed species. Benefits are short-term (see upland soils narrative).

- **Special Status and Threatened and Endangered Species:** Improved water quality within riparian-wetland plant communities is important for those amphibians and fish special status species where habitat conditions depend on water quality. Special consideration may be required for designated "critical habitat" by the Endangered Species Act." See the discussion for plant and animal communities.

- **Water Quality:** Treatments change the timing and quantity of runoff and pollutants reaching streams. They lengthen the time for runoff to reach stream, decrease peak flow, erosion potential, and volume of runoff. Benefits are short- and long-term.

Integrated Weed Management (IWM) guidelines for the control of weeds consist of cultural, mechanical control, biological, and herbicides. Cultural guidelines include properly managing vehicles, grazing systems, and other actions that benefit humans. These are discussed elsewhere in the document. This section focuses on mechanical control, such as grubbing and mowing, biological control, such as introduction of biological control

agents, and herbicides. The cost to implement is low to high.

- **Upland soils:** Treatments slow runoff and contribute to vigorous desirable plants. Impacts are highly variable; if an annual weed is replaced by a perennial, a positive, long-term benefit is likely. Conversely, a perennial weed replaced by an annual may have the opposite impact.

- **Riparian:** Control of tamarisk and Russian olive improves the water table and improves diversity of desirable plant species. Benefits are long-term.

- **Plant and Animal Communities:** Treatments increase and encourage desirable plant diversity by controlling weeds. Some treatments such as spraying or hoeing are localized and impacts will be short-term. Other treatments, such as using certain biological control agents affect broader areas and benefits tend to be long-term.

- **Special Status and Threatened and Endangered Species:** Treatments remove undesirable animal and plant species such as tamarisk, Russian olive, cheatgrass that are competing with and invading special status species habitats. See the plant and animal communities and riparian narratives.

- **Water Quality:** Impacts to water quality are minor, assuming herbicides are applied properly.

Land Treatments - seedings/ plantings: includes seeding by hand, plantings/transplants, and plowing/seeding. The cost to implement is low to high.

- **Upland soils:** Treatments reduce accelerated erosion, improve watershed cover conditions, and improve soil productivity. Benefits are short and long-term as long as plant diversity is improved or maintained.

- **Riparian:** Plantings of appropriate species, such as willows, contribute to vigorous desirable plants, stabilize banks, catch sediment,

provide cover for wildlife, contribute to diversity and density of desirable species, and accelerate the successional processes to the desired state. Benefits are short-term.

• *Plant and Animal Communities:* Treatments (seedings) manipulate spacial distribution of plant communities, contribute to habitat connectivity, contribute to energy cycle by contributing to plant and animal diversity, contribute to litter accumulation and soil protection, increase forage production for livestock, wild horses, and wildlife, and strengthen the presence of native species within plant communities. Seedings can negatively impact biodiversity by diluting genetic integrity of ecotypes, possibly reducing fitness of specially adapted populations of native plants. Benefits are long-term when done properly.

• *Special Status and Threatened and Endangered Species:* Generally, seedings are non-beneficial to special status species. Species diversity and relative density for most special status plant and animal species may be adversely affected by non-native seeding mixtures.

• *Water Quality:* Impacts will be similar to those discussed for land treatments-water control structures.

Land Treatments - chaining, roller chopping, etc., require mechanical manipulation of the land. The cost to implement is normally high.

• *Upland soils:* Treatments increase soil organic matter and obstruction for overland flow, thus decreasing erosion and improving watershed cover conditions. Benefits are short and long-term if supported with proper grazing and seeding.

* *Riparian:* Not applicable.

* *Plant and Animal Communities:* Treatments contribute to spacial distribution of plant communities, control habitat connectivity, improve habitat quality for wildlife, increase forage production for livestock and wildlife, provide

a variety of successional stages, increase photosynthetic activity (high energy flow), contribute to plant and animal diversity and balance, and contribute to weed control when used with Integrated Weed Management (IWM). Treatments generally provide immediate response in localized areas. Benefits are short and long-term if supported with proper grazing and seeding.

• *Special Status and Threatened and Endangered Species:* Generally, most species will not be affected by these treatments; species requirements may constrain the use of these treatments.

• *Water Quality:* Impacts will be similar to those discussed for Land treatments-water control structures.

Land Treatments - prescribed fire - involve planned use of fire to effect ecological change. Implementation costs are medium to high.

• *Upland soils:* Treatments increase soil movement and contribute to vegetative cover during the first one to five years after treatment. Benefits are long-term.

• *Riparian:* Prescribed fire is not frequently used in riparian areas, but may be used in some degraded riparian areas to help achieve vegetation objectives.

• *Plant and Animal Communities:* Treatments allow natural disturbances to alter succession on landscapes, control weeds when used with other tools, and can increase effectiveness of photosynthesis and energy flow. Treatments have the potential to manipulate large landscapes quickly and long-term benefits accrue if supported with proper grazing.

• *Special Status and Threatened and Endangered Species:* Treatments will benefit most special status species (see the plant and animal narrative).

• *Water Quality:* Impacts are similar to those discussed for Land treatments-water control structures.

Animal Reductions - wildlife - (if needed due to overstocking) are accomplished by hunting and trapping and relocating animals. The cost to implement is low to high.

- *Upland soils*: Actions increase basal watershed cover, reduce erosion and increase soil infiltration and permeability rates, leading to improved soil productivity. Benefits are short-term and are sustained long-term as long as suitable populations are maintained.

- *Riparian*: See plant and animal communities discussion.

- *Plant and Animal Communities*: Actions allow for habitat recovery on upland and riparian vegetation sites, provide additional cover in riparian systems previously heavily impacted. Benefits are generally realized in the short-term, but may continue long-term.

- *Special Status and Threatened and Endangered Species*: Removal may relieve trampling which is a concern for ground nesting birds and disturbances to sensitive habitats (e.g., alpine tundra and riparian zones).

- *Water Quality*: Actions reduce sediment, nutrient, and bacterial loads. Benefits are short- and long-term.

Animal Reductions - wild horses and burros - (if needed due to overstocking) are accomplished by drive trapping and water trapping. The cost to implement is medium to high.

- *Upland soils*: Same as animal reductions - wildlife.

- *Riparian*: Actions improve residual vegetation, stabilize streambanks, and contribute to plant vigor. Benefits are short-term and long-term only if appropriate animal populations are maintained.

- *Plant and Animal Communities*: Actions allow for increased

opportunities to properly manipulate livestock for increased vegetation cover, density, frequency, and plant and animal diversity, allow plant litter to accumulate in areas heavily impacted by wild horses, and provide more opportunity to manipulate successional stages. Benefits are short-term and long-term only if appropriate animal populations are maintained.

- *Special Status and Threatened and Endangered Species*: Removal may relieve trampling which is a concern for ground nesting birds and disturbances to sensitive habitats (e.g. riparian zones). Benefits are short-term.

- *Water Quality*: Actions reduce sediment, nutrient, and bacterial loads. Benefits are short- and long-term.

Facility Developments - animal distribution - include water structures, fences, etc. to facilitate livestock manipulation (and wildlife to lesser extent). Implementation costs are low to high.

- *Upland soils*: Developments increase watershed cover, reduce erosion and increase soil infiltration and permeability rates, leading to improved soil productivity. Benefits are short- and long-term, as long as the developments are properly maintained. The impacts are based on the assumption that water developments will solve animal distribution problems. Developments are short-lived unless maintained. If not maintained, developments may actually have adverse long-term impacts (e.g., breaching).

- *Riparian*: See discussion for plant and animal communities.

- *Plant and Animal Communities*: Developments facilitate proper livestock grazing management (and wildlife to lesser extent) for timing, animal impact, and other desired management practices. Benefits are short- and long-term. See the discussion for upland soils.

• *Special Status and Threatened and Endangered Species*: Developments help control grazing animals to correct improper animal distribution and concentration problems in sensitive habitat types. Benefits are short- and long-term.

• *Water Quality*: Actions reduce sediment, nutrient, and bacterial loads. Benefits are short- and long-term.

Vehicle Management includes modifying decisions in the resource management plans, rehabilitating roads, and closing roads. Implementation costs are low to high.

• *Upland soils*: Management increases watershed cover and reduces erosion. Benefits are short-term and long-term as long as the ability to manage use continues. Designations can affect large areas and other actions are more site specific.

• *Riparian*: Proper vehicle management will decrease the sediment from eroding roads, and improve vegetative cover and vigor. Benefits from road rehabilitation are short-term. Benefits from designations are long-term.

• *Plant and Animal Communities*: Management minimizes weeds, reduces displacement of animals and assures their reproductive capability, improves diversity and density of plant and animal species by reducing habitat fragmentation and allows for resiliency to human activities and other disturbances. Benefits are short and long-term. See upland soils discussion.

• *Special Status and Threatened and Endangered Species*: Management directs vehicles away from occupied habitats. Benefits are realized in the short- and long-term.

• *Water Quality*: Actions reduce sediment loads. Benefits are short and long-term and can affect large areas.

Site Modification - recreation - includes barriers, closures, signs, rules, etc., that will modify human use patterns.

• *Upland soils*: Changes reduce soil compaction and improve watershed cover on a local area. Benefits are realized in the short-term.

• *Riparian*: Control measures at recreation sites will contribute to improved bank stability, vegetative cover. Benefits are short-term and generally local.

• *Plant and Animal Communities*: Modifications balance human use with plants and animals, increasing plant and animal communities' ability to recover from disturbances (resiliency). Benefits are short-term and generally local.

• *Special Status and Threatened and Endangered Species*: Proper design and regulations channel recreational activities away from breeding/nesting sites during sensitive life cycle periods. Destruction of occupied habitats is avoided. Benefits are generally local and short-term.

• *Water Quality*: Impacts are minor.

Use Authorization Stipulations - mineral, realty, recreation - includes provisions, requirements, and conditions for use and rehabilitation of areas subject to the requirement for permit issuance/renewal. They serve to allow human activity consistent with maintaining public land health standards. The following discussion assumes that stipulations are complied with.

• *Upland soils*: Conditions reduce soil erosion and improve watershed cover conditions on a local basis (such as drill pads or camp sites) or along corridors such as rights-of-way. Benefits are short- and long- term.

• *Riparian*: Conditions protect areas from vegetative disturbance, sediment load, and the introduction of noxious or other undesirable weeds. Benefits are short-term.

• *Plant and Animal Communities*: Conditions serve to minimize noxious weeds and restore diversity and density of plant and animal species

on disturbed sites. Benefits generally are local and are short- and long-term. Unless care is taken, seeding may negatively impact the genetic integrity of local native populations.

• *Special Status and Threatened and Endangered Species:* Conditions provide requirements for safeguarding species and related habitat from human activities. Benefits generally are local and are short- and long-term.

• *Water Quality:* Conditions emphasize compliance with state requirements and reduce sediment loads. Benefits are short- and long-term.

PUBLIC LAND USER IMPACTS

Grazing Permittee: Changes in grazing systems require modifications to the permittee's operation. An effort is made to take corrective actions that achieve public land health with the least financial burden to the operator. Typically, this means that the permittee spends additional time and/or money participating in the collaborative processes, construct fences, move water, herd cattle, monitor utilization, etc. Infrequently (5 percent or less), drastic measures (such as large reductions in AUMs) are taken that place heavy financial burdens on an operator. Very few (1 percent or less) situations arise that will cause an operator to go out of business. As public land health improves, the permittee realizes more predictable, desirable forage sustained in the long-term.

Permittees-Minerals/Realty: Permittees are presently subject to terms and conditions that are consistent with the standards. These are found in such documents as Colorado Best Management Practices, Oil and Gas Surface Operating Standards, Right-of-Way Handbooks, and Resource Management Plans. The proposed standards do not appreciably affect these permittees.

Mining (subject to the Mining Law of

1872): The standards supply additional criteria by which undue or unnecessary degradation is measured. Because of budget constraints very few cases of noncompliance on operations less than five acres are pursued. For those cases BLM chooses to pursue, standards provide BLM with some additional support to make changes. Adoption of standards does not appreciably impact operations greater than five acres that are subject to a plan of operation. Operators may find the standards helpful in devising their operating plans.

Permittees-Recreation: Some modifications to permits for recreational/competitive recreation (such as river guides, big game outfitters, and vehicle events) are likely to be needed. Typically, these changes result in changing use sites or times of use. These may cause inconvenience. On rare occasions, a permittee may not be allowed use of an area, and it may seriously disrupt the operation. As public land health improves, the permittee is afforded long-term use and enjoyment of the resources.

Recreation Users: Most recreational activities require the use of vehicles, either to access activities or to use in the activities. Vehicle management, such as changing OHV designations or closing badly eroding roads, affect recreationists the most. Changes in vehicle management lead to frustration, inconvenience, and at times anger on the part of some users. (Note: Very few BLM lands in Colorado are/will be totally closed to vehicle use). No significant adverse economic impacts to recreation users are expected. As public land improves, the user is afforded long-term use and enjoyment of the resources.

Those recreationists whose activities are more dependent on natural resources such as hunters, anglers, hikers, photographers and wildlife viewers will generally see gradual improvements in the resources that enhance their experiences.

SOCIO-ECONOMIC IMPACTS

Population: No significant impacts on human population are expected.

Employment and Income: Adverse impact on ranching or agricultural employment and income is expected to be insignificant and short term. Some livestock operators may quit rather than make the changes necessary to meet the standards on their allotment. Consultation, cooperation, and coordination will mitigate this situation to a large degree. Over the long term, agricultural employment and income is expected to be unaffected, or improve slightly, because the standards will assure a more reliable and sustained livestock forage resource.

In the short term, employment and income in service industries, such as commercial rafting, gas stations, etc., will likely experience modest increases, because of the more intensive management practices that are undertaken to achieve the standards. These increases are expected to continue, especially in service industries that are directly and indirectly related to recreation-tourism due to improvements in resources that have recreational appeal.

Employment and income in the minerals and transportation sectors will not likely be measurably affected.

Communities: Ranching and recreational activities associated with public lands are important socially and economically to western Colorado communities. Achieving and maintaining healthy public lands will provide long-term sustainability of the resources that these activities rely upon. A gradual improvement in social and economic conditions to industries dependent on healthy resources, is anticipated.

Along the I-70 corridor, and at many other locations in Western Colorado, private lands are being sub-divided and converted to residential and commercial uses. The public lands

are becoming more important to sustain the natural systems upon which these communities depend.

Bureau of Land Management: Loss of grazing revenues to BLM as the result of implementing either alternative would be insignificant.

Cumulative Impacts: Ultimately, using the proposed standards and guidelines in daily management will result in public land health. Under current funding levels, improvements in public land health will occur in the long-term. Priority will generally be given to those areas most at risk.

Some adverse impacts to users will likely occur as a result of implementing standards and guidelines. However, the emphasis on consultation, cooperation, and coordination in the proposed action may actually lessen this impact over present management. The cumulative effect of healthy public lands will benefit users and local communities by providing a resource that can be used and enjoyed over time.

B. FALLBACK STANDARDS AND GUIDELINES ALTERNATIVE (identify difference from Proposed Action Alternative)

Differences between this alternative and the proposed action are minor.

There is little latitude in the fallback standards and guidelines to utilize non-native species in achieving standards. This constrains management options, possibly increases costs, and contradict some present management objectives.

The fallback standards and guidelines place less emphasis on species diversity and do not directly mention larger scale diversity, plant community distribution, and successional stage mosaics. Consequently, landscape-scale disturbance and prescribed natural fire plans are not emphasized in this alternative.

The process of applying the Fallback standards and guidelines is not

clearly defined. The indicators for the standards in the proposed action help reduce ambiguity. While the indicators are not quantified, they provide a common basis for discussion.

C. PRESENT MANAGEMENT (identify difference from Proposed Action Alternative)

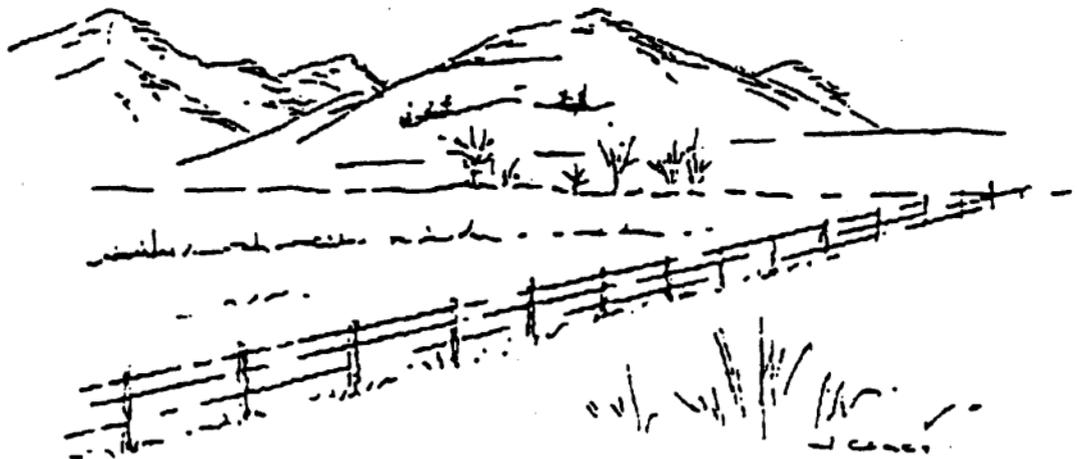
Overall, the proposed action does not present significant or revolutionary changes to present management.

For several years, BLM in Colorado has been moving toward integrated ecosystem management. Previously, individual programs such as range, wildlife, and recreation drove various actions. However, the transition to integrated ecosystem management has been slow and there still is a tendency to view management of resources from a program perspective. Therefore, the processes used to evaluate public land health and take needed corrective action are less integrated, less interdisciplinary, and less collaborative.

Also, there is less emphasis on evaluating public land health across landscapes. Users tend to look at their own operation. BLM staff processing use authorizations may not fully consider the inter-relationships between the area applied for and surrounding areas. Cooperation between agencies and individuals is less.

The interest in public land health is not as high in this alternative. While BLM has always encouraged public participation and involvement, the Proposed Action is creating an increased interest in public land management.

Standards and guidelines vary among RMPs under present management. Consequently, there is less continuity among BLM Resource Areas (RA) in defining and assessing public land health. This causes confusion for the public, especially for those concerned about conditions in more than one RA.



CHAPTER 5 - PUBLIC PARTICIPATION

Public participation for the implementation of standards and guidelines in Colorado began in August 1995. Four scoping meetings were held around the state. In September 1995, the three Resource Advisory Councils (RAC) were formed. The initial task of these citizen groups was to work with BLM in the development of the standards and guidelines. The councils met numerous times (most meetings were open to the public) working on several drafts that led to the document that is the proposed action in this EA. Input from academicians was also important in the development of the proposal. Members of the RACs and academicians are listed in this section.

On November 8, 1995, the NEPA/RMP amendment process was initiated with a Notice of Intent (NOI) published in the Federal Register. This notice requested public comment on the proposal to prepare one environmental document, and to modify all Colorado RMPs. No comments were received on the NOI.

After the current version of standards and guidelines was completed in April 1996, the RACs, supported by BLM, began meeting with the public to inform, educate, and listen to comments and concern. They used various methods to reach out to the public. They held meetings, addressed user groups and met one-on-one with individuals.

The RACs will continue to partner with BLM through the NEPA process. Their role is to:

- Continue to advise BLM on the standards and guidelines.
- Inform and educate constituents of the standards and guidelines.

- Serve as sounding boards and provide feedback to BLM concerning constituents' concerns and ideas
- Review and comment on draft copies of EA documents.
- Host or co-host public meetings and/or workshops to receive comments on the standards and guidelines.
- Assist with the analysis of public comments.
- Review and comment on advanced copies of the proposed Decision Record/Rationale statement.

Table 1 details the public participation plan that was created for the EA process. Included are tasks, rationale, and responsible parties.

Schedule for the process:

June 28, 1996	Complete and Distribute EA; begin 45-day Comment Period.
Sept. 25, 1996	Issue Decision Notices; Initiate Governor's Consistency Review and Plan Protest Periods.
Dec. 15, 1996	Complete resolution of any inconsistencies and protests
Jan. 15, 1997	Request Secretary's Approval of Proposed S&Gs.

Table 3

**COLORADO'S STANDARDS AND GUIDELINES
ENVIRONMENTAL ASSESSMENT
PUBLIC PARTICIPATION PLAN**

ACTION ITEM	PURPOSE	DATE(s)	RESPONSIBLE PARTNER
Complete National EIS - Rangeland Reform '94	<ul style="list-style-type: none"> • NEPA Document (national) for proposed range regulations - including S&Gs. • Provided for formal public comment. 	1993 through 1994	BLM
Publish Federal Register Notice	<ul style="list-style-type: none"> • Formal public notification of intent to modify Resource Management Plans through the NEPA process. • Invite participation and comment. 	November 8, 1995	BLM
Develop S&Gs with full and continuing involvement of RACs.	<ul style="list-style-type: none"> • Cooperative development of the S&Gs. 	October, 1995 through March 31, 1996	BLM, RACs
Conduct meetings with Educators and Scientists	<ul style="list-style-type: none"> • Assure that good science is reflected in the S&Gs. 	October, 1995 through March 18, 1996	BLM, RACs, Academia, Other Agencies
Conduct workshops/ information sessions on the proposed S&Gs.	<ul style="list-style-type: none"> • Inform constituents and interested publics about the S&Gs. • Receive comments on concerns, potential impacts, etc.; provide feedback to BLM on results. • Provide feedback to BLM on the need for additional meetings during the EA comment period. 	April 1 through June 21, 1996	RACs (lead), BLM (as needed).
Review of <u>draft</u> EA by staff and RACs.	<ul style="list-style-type: none"> • Provide comments on the content of the document. • Provide important missing data. • Correct errors. 	June 5 through June 21, 1996	BLM and RACs.
Publish notice of availability in local papers; send EA to interested publics.	<ul style="list-style-type: none"> • Notify public of the availability of the EA. • Invite comment (45 days) on the action, alternatives, and impacts. • Identify meetings/workshops that will be held (if any). 	June 28, 1996	BLM
Conduct meetings/workshops (if needed)	<ul style="list-style-type: none"> • Receive public comment on the EA 	July 14 through August 2, 1996	BLM and RACs
Analyze comments received during the comment period	<ul style="list-style-type: none"> • Assure that public comment is appropriately considered or used in the final decisions. • Determine if additional NEPA analysis is needed. 	August 14 through August 28, 1996	BLM and RACs
Review <u>draft</u> Decision Record/Rationale	<ul style="list-style-type: none"> • See how public comment was used in the final decision. 	September 6 through September 18, 1996	RACs
Issue Decision	<ul style="list-style-type: none"> • Notify public of decision • Initiate 45-day Governor's consistency review • Initiate 30-day protest period 	September 25, 1996	BLM

**PREPARERS AND CONTRIBUTORS OF COLORADO'S STANDARDS AND GUIDELINES
ENVIRONMENTAL ASSESSMENT**

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Royce Wheeler	Rangeland Mgt Specialist	San Luis Resource Area
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Amanda Clements	Ecologist	Uncompahgre Resource Area
Buddy Green	Rangeland Mgt Specialist	Gunnison Resource Area
David Stevens	Forester	Grand Junction Resource Area
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Jeanette Pranzo	Economist	Colorado State Office
Richard Watson	Geologist/GIS Specialist	Colorado State Office
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Adrian Neisius	Assistant District Manager, Resource Services	Canon City District
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• Dennis Murphy	Hydrologist	Montrose District
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Rick Athearn	Historian	Colorado State Office

• Member of Standards & Guidelines Team

Table 5

NORTHWEST RESOURCE ADVISORY COUNCIL

NAME	LOCATION	INTEREST
Group 1		
Penny Lewis	Kremmling, CO	Federal Grazing
John George Raftopoulos	Craig, CO	Federal Grazing
Angelo Theos	Meeker, CO	Federal Grazing
Walid Bou-Matar	Grand Junction, CO	Energy & Minerals
Thomas E. Steele	Glenwood Springs, CO	Dev./Comm. Recreation
Group 2		
William J. Schapley	Grand Junction, CO	Environmental
Cathie Zarlingo	Grand Junction, CO	Environmental
Toni Moore	Grand Junction, CO	Wild Horse & Burro
Donald C. Peach	Rangely, CO	Arch./Historical
James E. Majors	Grand Junction, CO	Dispersed Recreation
Group 3		
T. Wright Dickinson	Maybell, CO	Elected Officials
Marian Iona Smith	Glenwood Springs, CO	Elected Officials
James E. Ficke	Steamboat Springs, CO	Public
David B. Johnson	Glenwood Springs, CO	Public
William Kent Crowder	Walden, CO	Public

Table 6

SOUTHWEST RESOURCE ADVISORY COUNCIL

NAME	ADDRESS	INTEREST
Group 1		
Ross A. Allen	Hotchkiss, CO	Federal Grazing
Frank Garcia Jr.	Montrose, CO	Federal Grazing
Reece Malles	Cortez, CO	Federal Grazing
Jeff Spitzer	Durango, CO	Energy & Minerals
Ronald Kirk Brink	Powderhorn, CO	Dev./Comm. Rec.
Group 2		
Stephen Farwell Hinchman	Paonia, CO	Environmental
Gary Lowell Sprung	Crested Butte, CO	Environmental
Richard N. Ellis	Durango, CO	Archeo./Historical
Ray Edward Jenkins	Montrose, CO	Archeo./Historical
Vernon Ebert	Telluride, CO	Dispersed Recreation
Group 3		
David Leaman Gann	Montrose, CO	Elected Official
Jim D. Ventrello	Delta, CO	Elected Official
William H. Romme	Durango, CO	Academicians
Merk Brian LeValley	Hotchkiss, CO	Public
Robert Spears	Lake City, CO	Public

Table 7

FRONT RANGE RESOURCE ADVISORY COUNCIL

NAME	LOCATION	INTEREST
Group 1		
Skip Crowe	Villa Grove, CO	Federal Grazing
James W. Coleman	Saguache, CO	Federal Grazing
R.N. "Nate" Patton	Canon City, CO	Federal Grazing
Thomas W. Sylvester	Alamosa, CO	Energy & Mineral
David Secunda	Boulder, CO	Develop./Comm. Rec.
Group 2		
Cathy Carlson	Boulder, CO	Environmental
John H. Stansfield, Jr.	Monument, CO	Environmental
Virginia McConnell Simmons	Del Norte, CO	Archeo./Historical
Rodney Howard Munson	Westcliffe, CO	Dispersed Rec.
Fred Rasmussen	Salida, CO	Dispersed Rec.
Group 3		
Loren R. Whittemore	Rush, CO	Elected Official
Vern Rominger	Del Norte, CO	Elected Official
Max Vezzani	Castle Rock, CO	State Employee
Rob Feder	Boulder, CO	Public
Bruce Goforth	Colorado Springs, CO	Public

Table 8

ACADEMICIAN CONTRIBUTORS

Name	Department	Location
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Dr. Freeman Smith	Earth Resource	Colorado State University
Dr. Tom Hobbs	Colorado Division of Wildlife	Fort Collins
Dr. John Moore	University of Northern Colorado	Greeley

GLOSSARY

Administrative Determination (AD) - A determination that existing environmental documentation adequately discloses the impacts of a proposed action that is similar or the same as an action or actions previously analyzed.

Area of Critical Environmental Concern (ACEC) - An area established through the planning process where special management attention is required to protect and prevent irreparable damage to important natural systems or processes, or to protect life and afford safety from natural hazards.

Activity Plan. A more detailed and specific plan for management of a single resource program to achieve specific objectives undertaken only when needed to implement the more general resource management plan (RMP) decisions. Activity planning is now accomplished with Integrated Activity Plans (see IAP), or Coordinated Resource Management Plans (CRMP).

Allotment - An area of land designated and managed for the grazing of livestock by one or more livestock operators. It generally consists of public lands, but may include parcels of private or state-owned lands. The number of livestock and period of use are stipulated for each allotment.

Allotment Categorization. As an aid to prioritize grazing allotments for development of management plans all allotments have been placed into one of three categories: (M) Maintain, (I) Improve, or (C) Custodial.

Allotment Management Plan (AMP). A written plan for livestock grazing management, including supportive measures if required, designed to attain specific multiple-use management, sustained yield, economic and other goals in a grazing allotment.

Animal Unit Month (AUM) - The amount of forage necessary for the

sustenance of one cow and one calf or its equivalent for a period of one month.

Authorized Officer - The BLM official responsible for making decisions pursuant to the delegation of authority found in BLM Manual 1203. Most decisions related to implementing standards and guidelines will be made by the Resource Area Manager.

Best Management Practices - Best Management Practices (BMP) are methods, measures, or practices to prevent or reduce water pollution, including, but not limited to, structural and nonstructural controls and operation and maintenance procedures. Usually BMPs are applied as a system of practices rather than a single practice. BMPs are selected on the basis of site-specific conditions that reflect natural background conditions and political, social, economic, and technical feasibility.

Biodiversity or Diversity - The variety of plants and animals that occupy a landscape

Candidate Species - Any species not yet officially listed but which are undergoing a status review.

Capability - The highest ecological status an area can attain given political, social or economic constraints. For example, a flood control dam changes the capability of the riparian zone below the structure.

Climax - The natural plant community that occurs at the end of the plant successional path, in the absence of disturbances or physical site deterioration.

Coordinated Resource Management Plan (CRMP) - An activity level plan developed with an interdisciplinary approach containing decisions for all resources in a given area/site.

Designated Field Official (DFO) - A BLM management official who is

authorized to take an action. For most land management actions this is the Area Manager.

Desired Plant Community (DPC) - A plant community that meets the goals established for a landscape.

Ecological Site Inventory (ESI) - The inventory of distinctive geographic units that differ from other geographic units in its ability to produce a characteristic natural plant community.

Ecosystem - Living organisms and non living substances, interacting to produce and exchange material between the living and non living parts.

Endemic Species - a species or subspecies native to a particular location with narrow limits of habitat variability.

Environmental Assessment (EA) - A concise public document prepared to determine whether to prepare an environmental impact statement or a finding of no significant impact. It includes a brief discussion of the need for the proposal, alternatives considered, environmental impact of the proposed action and alternatives, and a list of agencies and individuals consulted.

Federal Land Policy and Management Act of 1976 (FLPMA) - Public Law 94-579, which establishes public land policy, and guidelines for the administration of the public lands.

Forest Management Plan (FMP) - An activity plan containing forest management actions for a geographic area typically of commercial forest land.

Goal - A general description of a desired future condition. (e.g., improve watershed conditions, achievement of a desired plant community)

Grazing Permit - A document authorizing use of public lands within an established grazing district.

Guidelines - Livestock grazing management tools, methods, strategies, and techniques designed to maintain or achieve healthy public lands, as defined by the Standards (also see Standards).

Habitat Management plan (HMP) - A type of activity plan relating to wildlife habitat.

Heritage Resources - Any prehistoric, historic, landscape, site, building, structure, or object, normally older than 50 years that includes artifacts, records, and material remains associated with it.

Integrated Weed Management (IWM) - Management of weeds, or other undesirable plants utilizing physical, chemical and biological means in an integrated manner.

Interested Public - An individual, group or organization that has submitted a written request to the authorized officer to be provided an opportunity to be involved in the decision making process for the management of livestock grazing on specific allotments or has submitted written comments to the authorized officer regarding the management of livestock grazing on a specific allotment.

Land Treatments - all methods of land improvement and soil stabilization such as reseeding, brush control, pitting, furrowing, water spreading, controlled burning, and other mechanical, biological, or chemical manipulation of the land.

Landscape - A defined area that forms a management unit or basis of analysis.

Lentic - In riparian management, refers to streams, creeks, and other linear features.

Lodic - In riparian management, refers to ponds, lakes, and other nonlinear features.

Local Cooperator - An individual who directly influences the management of public lands, and whose cooperation is needed to alter

existing conditions. BLM permit holders are local cooperators.

Mitigation - Alleviation or lessening of possible adverse effects on a resource by applying appropriate protective measures or adequate scientific study.

Multiple Spatial Scales - Analysis of an area using different frames of reference. For example, from the perspective of an individual animal, a herd, and the total population of animals within the area.

National Environmental Policy Act of 1969 (NEPA). Public Law 91-190. Establishes environmental policy for the nation. Among other items, NEPA requires federal agencies to consider environmental values in decision making processes.

Objective - A measurable description of a desired future condition that specifies, what is to be accomplished, location, and time frame.

Off Highway Vehicle (OHV) or Off Road Vehicle (ORV) - Any motorized vehicle capable of or designed for travel on land, water, or other natural terrain.

Plant and Animal Communities - Those plants and animals which occur on public land; the definition excludes people, livestock, and crops.

Potential Natural Vegetation (PNV) - The biotic community that would become established if all successional sequences were completed without interferences by humans under the present environmental conditions. Natural disturbances are inherent in development. Includes naturalized non-native species.

Preliminary Assessment - An analysis of a tract of land that provides general information on the status of the land. This assessment does not provide in depth issue analysis.

Prescribed Fire - (Prescribed Burning). Application of fire to natural fuels under specific conditions of weather, fuel

moisture, soil moisture, smoke, and other conditions intended to produce the intensity of heat and rate of spread required to accomplish certain objectives of wildlife habitat or livestock grazing management and/or hazard reduction.

Proper Functioning Condition (PFC) - Riparian-wetland areas are functioning properly when adequate vegetation, landform, or large woody debris is present to dissipate stream energy associated with high waterflows, thereby reducing erosion and improving water quality; filter sediment, capture bedload, and aid floodplain development; improve flood-water retention and ground-water recharge; develop root masses that stabilize streambanks against cutting action; develop diverse ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and support greater biodiversity.

Proposed Species - A species proposed for listing and published in the Federal Register by the Secretary of the Interior or the Secretary of Commerce; they need not be candidate species.

Public Lands - Those tracts of land owned by the people of the United States, that are administered by the Bureau of Land Management.

Rangeland Program Summary (RPS) - A report issued periodically by BLM that summarizes the progress made in implementing the actions described in a livestock grazing EIS.

Record of Decision (ROD) - A concise public record of an agency's decision on a proposal for which an environmental impact statement (EIS) was prepared.

Resource Advisory Council (RAC) - An advisory body established pursuant to 43 CFR 1780 and other authorities to advise BLM on resource management issues.

Resource Area - A geographic portion of a BLM District that is the smallest administrative

subdivision in the BLM.

Resource Management Plan (RMP) - A land use plan that establishes land use allocations, multiple-use guidelines and management objectives for a given planning area. The RMP planning system has been used by the BLM since about 1980.

Riparian - An area of land directly influenced by permanent water. It has visible vegetation or physical characteristics reflective of permanent water influence. Lake shores and stream banks are typical riparian areas. Excluded are such sites as ephemeral streams or washes that do not have vegetation dependent on free water in the soil.

Seral Stage - The present state of vegetation of an ecological site in relation to the potential natural community for the site. Vegetation status is the expression of the relative degree to which the kinds, proportions, and amounts of plants in a community resemble those of the potential natural community. The classes are potential natural community, late-seral, mid-seral, and early-seral.

Standards - A description of conditions needed to sustain public land health, and relates to all uses of the public lands (also see Guidelines).

Threatened & Endangered (T&E) - Any species or significant population of a species likely to become endangered throughout all or a significant portion of its range within the foreseeable future, or which is in danger of extinction. Usually includes only those species which have been recognized and listed as threatened or endangered by federal and state governments, but may include species categorized as rare, very rare, or depleted.

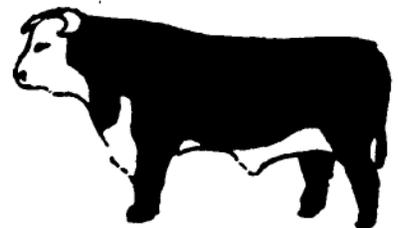
Trend - The direction of change in health of the land, observed over time.

Vegetation Manipulation - Planned alteration of vegetation communities through use of prescribed fire, plowing, herbicide spraying, or

other means to gain desired changes in forage availability, wildlife cover, etc.

Wetlands - Permanently wet or intermittently flooded areas where the water table (fresh, saline, or brackish) is at, near, or above the soil surface for extended intervals, where hydric wet soil conditions are normally exhibited, and where water depths generally do not exceed two meters. Vegetation is generally comprised of emergent water-loving forms (hydrophytes) which require at least a periodically saturated soil condition for growth and reproduction. In certain instances, vegetation may be completely lacking. Marshes, shallows, swamps, muskegs, lake bogs, and wet meadows are examples of wetlands.

Wilderness Study Area (WSA) - An area determined to have wilderness characteristics. Wilderness study areas will be subject to interdisciplinary analysis through the BLM land use planning system and public comment to determine wilderness suitability. Suitable areas will be recommended to the President and Congress for designation as wilderness.



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APPENDIX A

FUNDAMENTALS OF RANGELAND HEALTH AND STANDARDS AND GUIDELINES FOR GRAZING ADMINISTRATION 43 CFR 4180

§ 4180.1 Fundamentals of rangeland health.

The authorized officer shall take appropriate action under subparts 4110, 4120, 4130, and 4160 of this part as soon as practicable but not later than the start of the next grazing year upon determining that existing grazing management needs to be modified to ensure that the following conditions exist.

(a) Watersheds are in, or are making significant progress toward, properly functioning physical condition, including their upland, riparian-wetland, and aquatic components; soil and plant conditions support infiltration, soil moisture storage, and the release of water that are in balance with climate and landform and maintain or improve water quality, water quantity, and timing and duration of flow.

(b) Ecological processes, including the hydrologic cycle, nutrient cycle, and energy flow, are maintained, or there is significant progress toward their attainment, in order to support healthy biotic populations and communities.

(c) Water quality complies with State water quality standards and achieves, or is making significant progress toward achieving, established BLM management objectives such as meeting wildlife needs.

(d) Habitats are, or are making significant progress toward being, restored or maintained for Federal threatened and endangered species, Federal Proposed, Category 1 and 2 Federal candidate and other special status species.

§ 4180.2 Standards and guidelines for grazing administration.

(a) The Bureau of Land Management State Director, in consultation with the affected resource advisory councils where they exist, will identify the geographical area for which standards and guidelines are developed. Standards and guidelines will be developed for an entire state, or an area encompassing portions of more than 1 state, unless the Bureau of Land Management State Director, in consultation with the resource advisory councils, determines that the characteristics of an area are unique, and the rangelands within the area could not be adequately protected using standards and guidelines developed on a broader geographical scale.

(b) The Bureau of Land Management State Director, in consultation with affected Bureau of Land Management resource advisory councils, shall develop and amend State or regional standards and guidelines. The Bureau of Land Management State Director will also coordinate with Indian tribes, other State and Federal land management agencies responsible for the management of lands and resources within the region or area under consideration, and the public in the development of State or regional standards and guidelines. Standards and guidelines developed by the Bureau of Land Management State Director must provide for conformance with the fundamentals of § 4180.1. State or regional standards or guidelines developed by the Bureau of Land Management State Director may not be implemented prior to their approval by the Secretary. Standards and guidelines made effective under paragraph (f) of this section may be modified by the Bureau of Land Management State Director, with approval of the Secretary, to address local ecosystems and management practices.

(c) The authorized officer shall take appropriate action as soon as practicable but not later than the start of the next grazing year upon determining that existing grazing management practices or levels of grazing use on public lands are significant factors in failing to achieve the standards and conform with the guidelines that are made effective under this section. Appropriate action means implementing actions pursuant to subparts 4110, 4120, 4130, and 4160 of this part that will result in significant progress toward fulfillment of the standards and significant progress toward conformance with the guidelines. Practices and activities subject to standards and guidelines include the development of grazing-related portions of activity plans, establishment of terms and conditions of permits, leases and other grazing authorizations, and range improvement activities such as vegetation manipulation, fence construction and development of water.

(d) At a minimum, State or regional standards developed under paragraphs (a) and (b) of this section must address the following:

- (1) Watershed function;
- (2) Nutrient cycling and energy flow;
- (3) Water quality;
- (4) Habitat for endangered, threatened, proposed, Candidate 1 or 2, or special status species; and
- (5) Habitat quality for native plant and animal populations and communities.

(e) At a minimum, State or regional guidelines developed under paragraphs (a) and (b) of this section must address the following:

- (1) Maintaining or promoting adequate amounts of vegetative ground cover, including standing plant material and litter, to support infiltration, maintain soil moisture storage, and stabilize soils;
- (2) Maintaining or promoting subsurface soil conditions that support permeability rates appropriate to climate and soils;

- (3) Maintaining, improving or restoring riparian-wetland functions including energy dissipation, sediment capture, groundwater recharge, and stream bank stability;
- (4) Maintaining or promoting stream channel morphology (e.g., gradient, width/depth ratio, channel roughness and sinuosity) and functions appropriate to climate and landform;
- (5) Maintaining or promoting the appropriate kinds and amounts of soil organisms, plants and animals to support the hydrologic cycle, nutrient cycle, and energy flow;
- (6) Promoting the opportunity for seedling establishment of appropriate plant species when climatic conditions and space allow;
- (7) Maintaining, restoring or enhancing water quality to meet management objectives, such as meeting wildlife needs;
- (8) Restoring, maintaining or enhancing habitats to assist in the recovery of Federal threatened and endangered species;
- (9) Restoring, maintaining or enhancing habitats of Federal Proposed, Category 1 and 2 Federal candidate, and other special status species to promote their conservation;
- (10) Maintaining or promoting the physical and biological conditions to sustain native populations and communities;
- (11) Emphasizing native species in the support of ecological function; and
- (12) Incorporating the use of non-native plant species only in those situations in which native species are not available in sufficient quantities or are incapable of maintaining or achieving properly functioning conditions and biological health;
- (f) In the event that State or regional standards and guidelines are not completed and in effect by February 12, 1997, and until such time as State or regional standards and guidelines are developed and in effect, the following standards provided in paragraph (f)(1) of this section and guidelines provided in paragraph (f)(2) of this section shall apply and will be implemented in accordance with paragraph (c) of this section.
- (1) Fallback standards.
- (i) Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate and landform.
- (ii) Riparian-wetland areas are in properly functioning condition.
- (iii) Stream channel morphology (including but not limited to gradient, width/depth ratio, channel roughness and sinuosity) and functions are appropriate for the climate and landform.
- (iv) Healthy, productive and diverse populations of native species exist and are maintained.
- (2) Fallback guidelines.
- (i) Management practices maintain or promote adequate amounts of ground cover to support infiltration, maintain soil moisture storage, and stabilize soils;
- (ii) Management practices maintain or promote soil conditions that support permeability rates that are appropriate to climate and soils;
- (iii) Management practices maintain or promote sufficient residual vegetation to maintain, improve or restore riparian-wetland functions of energy dissipation, sediment capture, groundwater recharge and stream bank stability;
- (iv) Management practices maintain or promote stream channel morphology (e.g., gradient, width/depth ratio, channel roughness and sinuosity) and functions that are appropriate to climate and landform;
- (v) Management practices maintain or promote the appropriate kinds and amounts of soil organisms, plants and animals to support the hydrologic cycle, nutrient cycle, and energy flow;
- (vi) Management practices maintain or promote the physical and biological conditions necessary to sustain native populations and communities;
- (vii) Desired species are being allowed to complete seed dissemination in 1 out of every 3 years (Management actions will promote the opportunity for seedling establishment when climatic conditions and space allow.);
- (viii) Conservation of Federal threatened or endangered, Proposed, Category 1 and 2 candidate, and other special status species is promoted by the restoration and maintenance of their habitats;
- (ix) Native species are emphasized in the support of ecological function;
- (x) Non-native plant species are used only in those situations in which native species are not readily available in sufficient quantities or are incapable of maintaining or achieving properly functioning conditions and biological health;
- (xi) Periods of rest from disturbance or livestock use during times of critical plant growth or regrowth are provided when needed to achieve healthy, properly functioning conditions (The timing and duration of use periods shall be determined by the authorized officer.);
- (xii) Continuous, season-long livestock use is allowed to occur only when it has been demonstrated to be consistent with achieving healthy, properly functioning ecosystems;
- (xiii) Facilities are located away from riparian-wetland areas wherever they conflict with achieving or maintaining riparian-wetland function;
- (xiv) The development of springs and seeps or other projects affecting water and associated resources shall be designed to protect the ecological functions and processes of those sites; and
- (xv) Grazing on designated ephemeral (annual and perennial) rangeland is allowed to occur only if reliable estimates of production have been made, an identified level of annual growth or residue to remain on site at the end of the grazing season has been established, and adverse effects on perennial species are avoided.

APPENDIX B

Appendix B is a list of decisions from BLM's Resource Management Plans in Colorado that relate to the proposed and fallback standards and guidelines. They are presented to provide the reader with a sense of management direction for Resource Areas in Colorado.

The proposed action amends the RMP in Colorado to adopt standards and guidelines. The tables that follow include determinations on what happens to existing decisions in the RMPs if the proposed standards and guidelines are adopted. Three possible actions may occur:

1. Replace the current decision. The existing decision does not conform with the purpose and intent of the standards and guidelines and is removed from the RMP.
2. Modify the current decision. The wording of the existing decision needs to be modified to conform with the standards and guidelines. The modification to the existing decision is described as the end of the last table for each RMP.
3. Supplement the current decision. The existing decision conforms with the standards and guidelines. These decisions remain part of the RMP and are used with standards and guidelines during implementation.

Other decisions in the RMP are not shown, for they are not affected by adoption of standards and guidelines. During implementation, other decisions may need to be changed through the RMP plan modification process if it is determined they are in conflict with standards and guidelines. This may be particularly true for RMP decisions that allocate resources, such as ORV designations, allocated recreation use, or forage allocations. If decisions need to be changed through a plan amendment, they will be analyzed in an appropriate environmental document with the involvement of interested publics and the RAC.

APPENDIX B1.1

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

GRAND JUNCTION RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>Soils Management (p.2-3 of the ARMP/ROD)</p> <p>Objective: To reduce soil erosion and sediment yield, costs associated with unsuccessful land/vegetation treatment projects on unsuitable soils, hazards to life or property from soil failure due to the use of unsuitable soils; to maintain long-term soil productivity; and to provide for the safe and proper use of soils.</p>	Supplement	Supplement
<p>Water Resource Management (p. 2-4 of the ARMP/ROD)</p> <p>Objectives: Maintain or improve existing water quality in the resource area when possible. Protect the municipal watersheds providing domestic water for the cities of Palisade and Grand Junction.</p>	Supplement	Supplement
<p>Forest Management (p.2-12 of the ARMP/ROD)</p> <p>Objectives: To manage the suitable pinyon/juniper woodlands and commercial forest land to maintain stand productivity and to help meet fuelwood and sawtimber demands.</p>	Supplement	Supplement
<p>Wildlife Management (p.2-14 of the ARMP/Rod).</p> <p>Objectives: To provide sufficient forage to maintain a population of 15,500 deer and 670 elk in summer and 34,400 deer and 2,950 elk in winter, commensurate with public land health standards. To maintain the existing species in the resource area, and improve the habitat of each species of game and non-game primarily according to the species' susceptibility to BLM influence and secondarily to the evidence of human demand. To maintain the existing riparian acreage and manage it for the greatest diversity in plant heights and for the species appropriate (native) to each site. To increase fish production on the producing aquatic areas and improve the cool water fisheries potential on marginal streams.</p>	<p>Modify (1)</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p>	<p>Modify (1)</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p>
<p>Threatened and Endangered Species Management (p. 2-16 of the ARMP/ROD)</p> <p>Objective: To conserve plants and animals and their related habitats listed by federal and Colorado governments as threatened and endangered species, and to conserve plants and animals that are candidate for their lists. To maintain at least the present populations and their habitat and contribute to the overall objective of improving them so that they can be removed from the threatened or endangered status lists.</p>	Supplement	Supplement

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

GRAND JUNCTION RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>Livestock Management (p.2-17 of the ARMP/ROD).</p> <p>Objective: To manage livestock as described in the Grand Junction Grazing Environmental Statement, commensurate with public land health standards.</p> <p>Grazing Management Decisions:</p> <ul style="list-style-type: none"> • Manage livestock grazing as described in the Grand Junction Grazing Management Environmental Statement using the new priorities and general management categories established in this Plan (i.e., ARMP/ROD). • Revise allotment management plans to resolve conflicts between grazing and this plan's proposed actions for soils, riparian and water resources. 	<p>Modify (2)</p> <p>Supplement</p> <p>Supplement</p>	<p>Modify (2)</p> <p>Supplement</p> <p>Supplement</p>
<p>Wild Horse Management (p.2-16 of the ARMP/ROD).</p> <p>Objective: To maintain a viable wild horse herd and continue implementing the Little Book Cliffs Wild Horse Management Plan.</p>	<p>Supplement</p>	<p>Supplement</p>
<p>Fire Management (p.2-31 of the ARMP/ROD)</p> <p>Objectives: To minimize cost and loss, complement resource management objectives, and sustain the productivity of the biological ecosystems through fire management.</p>	<p>Supplement</p>	<p>Supplement</p>
<p>Off-Road Vehicle Management (p.2-22 of the ARMP/ROD)</p> <p>Objective: To designate all public land for off-road vehicle use and use restrictions by September 30, 1987.</p>	<p>Supplement</p>	<p>Supplement</p>
<p>Recreation Resource Management (p.2-20 of the ARMP/ROD)</p> <p>Objective: To ensure the continued availability of outdoor recreational opportunities which the public seeks and which are not readily available from other public or private entities. To protect resources, meet legal requirements for visitor health and safety, and mitigate resource user conflicts.</p>	<p>Supplement</p>	<p>Supplement</p>

(1) "add" commensurate with public land health standards

(2) "add" commensurate with public land health standards

APPENDIX B2.1

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

GLENWOOD SPRINGS RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>Water Quality Management (p.8 of the ARMP/ROD)</p> <p>Objective: To maintain or improve existing water quality in the resource area where possible.</p>	Supplement	Supplement
<p>Water Yield Management (p.11 of the ARMP/ROD.)</p> <p>Objective: To increase water yield throughout the resource area through forest management practices and through treatment of mountain brush vegetation types to improve livestock and big game forage.</p>	Replace	Replace
<p>Critical Watershed Areas (p.31 of the ARMP/ROD).</p> <p>Objective: To protect the municipal watersheds providing domestic water for the communities of Rifle and New Castle, to manage debris flow hazard zones adjacent to Glenwood Springs, and to protect watershed conditions in erosion hazard areas.</p>	Supplement	Supplement
<p>Aquatic Habitat Management (p.34 of the ARMP/ROD)</p> <p>Objective: To increase fish production and recreational fishing use on streams having more than one-half mile of continuous flow access across public land and on lakes surrounded by at least 40 acres of public land.</p>	Supplement	Supplement
<p>Terrestrial Habitat Management (p. 37 of the ARMP/ROD.)</p> <p>Objective: To provide approximately 57,933 AUMs of big game forage (the amount needed to meet Colorado Division of Wildlife goals in 1988) to improve existing wildlife habitat conditions, and to increase wildlife species diversity.</p>	Modify (1)	Modify (1)
<p>Livestock Grazing Management (p.20-31 of the ARMP/ROD).</p> <p>Objective: To provide AUMs of livestock forage to accommodate active livestock preference, commensurate with meeting standards. Active livestock preference is that portion of the total preference for which grazing use may be authorized</p> <p>Planned Management Actions:</p> <ul style="list-style-type: none"> • Intensively manage certain allotments identified on page 20 and using techniques described in Appendix A of the ARMP. • Construct facilities such as springs, reservoirs, corrals, and livestock trails where necessary to control and distribute livestock. 	<p>Modify (2)</p> <p>Supplement</p> <p>Supplement</p>	<p>Modify (2)</p> <p>Supplement</p> <p>Supplement</p>

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

GLENWOOD SPRINGS RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>Livestock Grazing Management (con't)</p> <p>Planned Management Actions (con't):</p> <p><i>(The following is paraphrased from a lengthy section of the ARMP) Additional forage that becomes available on allotments that are winter range for big game will be allotted to wild life but only within DOW goals; additional forage that becomes available on allotments with big game summer range will be allocated to livestock.</i></p> <ul style="list-style-type: none"> * Adjust the season of use on 53 allotments - changes are made when the allotment is transferred to a new permittee or when the current permittee volunteers to accept the changes. * Specific allotment preference, use and allocation are found on pp. 22-29 of the ARMP. 	<p>Supplement</p> <p>Supplement</p>	<p>Supplement</p> <p>Supplement</p>
<p>Forest Management (p.31 of the ARMP/ROD)</p> <p>Objective: To manage all suitable commercial forest land and woodland to meet sawtimber and fuelwood demand and maintain productivity.</p>	<p>Modify (3)</p>	<p>Modify (3)</p>
<p>Fire Management (p.44 of the ARMP/ROD)</p> <p>Objective: To reduce losses, complement resource management objectives, and sustain the productivity of the biological ecosystems through fire management. Commensurate with maintaining productivity.</p>	<p>Supplement</p>	<p>Supplement</p>
<p>Recreation Resource Management (p.30 of the ARMP/ROD)</p> <p>Objective: To ensure the continued availability of outdoor recreational opportunities which the public seeks and which are not readily available from other sources, to reduce the impacts of recreational use on fragile and unique resource values, and to provide for visitor safety.</p>	<p>Supplement</p>	<p>Supplement</p>
<p>Off-Road Vehicle Management (p. 36 of the ARMP/ROD)</p> <p>Objective: To prevent fragile and unique resource values from damage by off-road vehicle (ORV) use and to provide ORV use opportunities where appropriate.</p>	<p>Supplement</p>	<p>Supplement</p>

(1) "delete" the amount needed to meet Colorado Division of Wildlife goals in 1988

(2) "add" commensurate with meeting standards

(3) "add" commensurate with maintaining productivity

APPENDIX B3.1

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

GUNNISON RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>AREA-WIDE DECISIONS</p> <p>Soils and Water Resources (p.2-2 of the ARMP/ROD) Objectives: Manage resources to achieve target basal densities on upland ecological sites as defined in Table I-1 of Appendix I of the ARMP/ROD. * Additional forage generated from projects will go first to meet watershed needs.</p>	Supplement	Supplement
<p>Vegetation (p.2-2 of the ARMP/ROD) Objectives: Manage vegetation resources to achieve (at least in the near) ecological status by maintaining or improving the vigor, production, and diversity of desirable plants. Desired plant communities will be identified in activity plans.</p>	Modify (1)	Modify (1)
<p>Riparian Zones (pp.2-2 thru 2-4 of the ARMP/ROD) Objectives: Manage riparian areas to maintain, restore, or improve riparian conditions such that proper functioning conditions are achieved, and to enhance natural values.</p>	Supplement	Supplement
<p>Special Status Plant and Animal Species and Habitat (p.2-4 of the ARMP/ROD) Objective : Habitat supporting existing populations of USFWS listed threatened and endangered species, and USFWS candidate, and BLM sensitive species will be maintained and protected to ensure suitable habitat conditions and viable populations.</p>	Supplement	Supplement
<p>Wildlife (pp. 2-4 through 2-6 of the ARMP/ROD) Objectives: Implement methods to manage public lands to help meet within the carrying capacities of the habitat, CDOW long-range herd goals, maintain or improve vegetation communities to benefit both game and non-game wildlife, implement a program to increase to quality and quantity of crucial big game winter range, and cooperate with CDOW and other organizations to maintain or enhance big game and/or upland game habitats. * Big-game utilization should not exceed moderate use (40-60%), commensurate with capability. * Provide habitat to support 9,000 sage grouse on public lands. * Endemic non-game animal species habitat will be enhanced by improving and/or maintaining a variety of native plant species and vegetative structure in upland and riparian areas, improving the ecological condition of sagebrush communities, and improving of maintaining non-game habitat within forest lands. * Fishery streams and associated riparian areas will be managed to improve or maintain the existing ecological status (hydrological, soil, and vegetation).</p>	Supplement Supplement Modify (2) Supplement	Supplement Supplement Modify (2) Supplement
<p>Livestock Grazing Management (pp. 2-6 through 2-12 of the ARMP/ROD) Objectives: Allow grazing if commensurate with public land health on 470,460 acres (approximately 60,135 AUMs of which 45,539 are active and the balance are suspended). * Allotment categorization for M and C allotments will be that as defined in the 1987 RPS.</p>	Modify (3) Supplement	Modify (3) Supplement

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

GUNNISON RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>Grazing (Con't)</p> <p>Grazing Management Actions:</p> <ul style="list-style-type: none"> • For "I" allotments, the RMP identifies utilization levels for the upland areas and for riparian areas (including maximum use levels and minimum stubble heights for key species in riparian areas). • Continue to identify structural and non-structural improvements (including fences, water developments, weed and pest control, and land treatments such as burning, spraying and chaining) and prescribe them in activity plans or agreements. They must be designed and built to avoid conflicts with wildlife, scenic values, etc. • Activity plans will be developed within funding capability using collaborative input. They will incorporate allotment specific objectives for protecting, maintaining, or improving livestock forage, wildlife and fish habitat, and riparian areas. • Monitoring will consist of: actual use, utilization and trend data, use supervision, precipitation, ESI, soil erosion, and water quality and quantity. • Best management practices will be used to reduce soil erosion. • Public lands unsuitable or unavailable for livestock grazing will continue unavailable unless monitoring proves otherwise. 	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p>	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p>
<p>Forest Management (p.2-12 of the ARMP/ROD)</p> <p>Objectives: Suitable commercial forest lands will be managed for sustained yield production within the allowable cut restrictions and guidelines determined by TPCC. Special emphasis will be placed on over-mature and pest-killed trees.</p>	<p>Supplement</p>	<p>Supplement</p>
<p>Fire Management (p.2-15 of the ARMP/ROD)</p> <p>Objectives: "Conditionally" suppress wildfires on about 508,388 acres and "fully" suppress fire on 76,624 acres.</p> <ul style="list-style-type: none"> • Unit objectives will dictate the choice of fire suppression methods. • Allow for prescribed fire unit-wide for resource enhancement and fuel hazard reduction. 	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p>	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p>
<p>Unit #1 (p.2-20 of ARMP/ROD)</p> <p>Objectives: This unit, a Special Recreation Management Area, will be managed to protect scenic recreation resources and to protect fragile ecosystems.</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • Grazing allowed within the capabilities of the ecosystems. • No grazing along the north fork of Henson Creek to protect the fishery/stream conditions. 	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p>	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p>

APPENDIX B3.3

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

GUNNISON RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>Unit #2 (p.2-22 of ARMP/ROD) Objectives: This unit is now a designated Wilderness Area, managed for those values.</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • Actions must comply with wilderness laws. • No grazing in Allotment 8112 to prevent conflict with bighorn sheep. • Livestock grazing along certain creeks will maintain 4 inch stubble height for key forage species. <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • None identified. 	Supplement	Supplement
<p>Unit #3 (p. 2-23 of the ARMP/ROD) Objectives: Manage this SRMA to provide and improve the existing diversity of recreation opportunities.</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • Grazing is not permitted along Cochetopa Creek. • No sheep grazing allowed to prevent conflicts with bighorn sheep. 	Supplement	Supplement
<p>Unit #4 (p.2-24/25 of the ARMP/ROD) Objectives: Manage this ACEC for the protection and enhancement of visual and other natural resources and recreation opportunities.</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • Manage grazing to avoid conflicts with recreation. • Manage consistent with unit objectives. 	Supplement	Supplement
<p>Unit #5 (p.2-26 of the ARMP/ROD) Objectives: Manage this ACEC to protect the habitat of the Uncompahgre fritillary butterfly.</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • Control domestic sheep to protect habitat for the butterfly. • No grazing along Silver Creek to protect the butterfly. 	Supplement	Supplement
<p>Unit #6 (pp.2-26/27 of ARMP/ROD) Objectives: Manage this National Natural Landmark/ACEC to protect natural values within the earthflow.</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • None identified. 	Supplement	Supplement

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

GUNNISON RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>Unit #7 (p.2-27,28,and 29 of ARMP/ROD) Objectives: Manage this ACEC to improve the capabilities of the resources in the unit to support wintering elk.</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • No grazing along Stevens Creek and Allotment 6200. 	Supplement	Supplement
<p>Unit #8 (p.2-28/29 of the ARMP/ROD) Objectives: Manage this ACEC to protect USFWS Category 2 species - the skiff milkvetch.</p> <p>Livestock Management Actions:</p> <ul style="list-style-type: none"> • Domestic sheep grazing not allowed. • No vegetative treatments that would adversely effect milkvetch habitat. 	Supplement	Supplement
<p>Unit #9 (p.30 of the ARMP/ROD) Objectives: Manage this ACEC to protect scenic and recreational opportunities.</p> <p>Livestock Management Actions:</p> <ul style="list-style-type: none"> • No livestock grazing will be authorized to protect scenic values. 	Supplement	Supplement
<p>Unit #10 (p.2-31 of ARMP/ROD) Objectives: This unit will be managed to maintain or improve habitat for bighorn sheep.</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • No domestic sheep grazing to prevent conflict with bighorn sheep. • Range improvements allowed if compatible with unit objectives. 	Supplement	Supplement
<p>Unit #11 (p.2-32 of ARMP/ROD) Objectives: This unit will be managed to improve and maintain sagebrush vegetative communities in order to optimize sage grouse populations.</p> <p>Livestock Grazing Management:</p> <ul style="list-style-type: none"> • Range improvements allowed if compatible with unit objectives. • Additional forage, the result of livestock treatments will be allocated to livestock grazing. 	Supplement	Supplement

APPENDIX B3.6

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

GUNNISON RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>Unit #12 (pp.2-33/34 of ARMP/ROD) Objectives: This unit will be managed to improve habitat conditions and increase the production and diversity of shrub species in upland and riparian vegetative types to support wintering populations of deer and elk and to meet CDOW long-range herd goals.</p> <p>Livestock Grazing Actions: • Domestic sheep grazing will be seasonally excluded in Game Unit 64 to eliminate competition with big game forage.</p>	Supplement	Supplement
<p>Unit #13 (pp.2-34/35 of ARMP/ROD) Objectives: This unit will be managed to improve or maintain ecological conditions; suitable public land will be available for livestock grazing.</p> <p>Livestock Grazing Actions: • No livestock grazing along Los Pinos Creek until riparian conditions improve.</p>	Supplement	Supplement
<p>Unit #14 (pp.2-36/37 of ARMP/ROD) Objectives: This unit will be managed to protect, restore, and enhance riparian areas containing important sage grouse broodbearing areas.</p> <p>Livestock Grazing Actions: • Seasonally maintain 4 inch stubble height to improve cover for sage grouse chicks; maintain 2 ½ inch stubble height at other times.</p>	Supplement	Supplement

APPENDIX B3.6

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

GUNNISON RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>Unit #16 (pp.2-37/38 of ARMP/ROD) Objectives: This unit will be managed to restore and enhance the condition of fishery streams.</p> <p>Livestock Grazing Actions: • When grazing occurs, a minimum stubble height of 4 inches will be maintained. There is management flexibility with this standard. • No livestock grazing allowed along Henson Creek.</p>	Supplement	Supplement
<p>Unit #16 (pp.2-38/39 of ARMP/ROD) Objectives: This unit will be managed according to general management (these are somewhat fragmented lands).</p> <p>Livestock Grazing Actions: • No grazing along Wildcat Creek.</p>	Supplement	Supplement
<p>Recreation Resource Management (p.2-13 of the ARMP/ROD) Objective: Manage public lands to ensure the continued availability and diversity of resource-dependent outdoor recreation opportunities.</p>	Supplement	Supplement

- (1) "delete" at least late seral
- (2) "add" commensurate with capability
- (3) "add" if commensurate with public land health

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

KREMMLING RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>Water Resource Management (p.6 record of Decision) a. Objective - Protect and enhance groundwater and sensitive watersheds in association with actions of other resource programs and which meets state water quality standards. b. Planned actions:</p> <ul style="list-style-type: none"> • Maintain streams that meet or exceed state water quality standards through limited management • Protect ground water to maintain good quality • Restrict activities that would adversely affect sensitive watersheds. 	<p>Supplement</p> <p>Supplement Supplement Supplement</p>	<p>Supplement</p> <p>Supplement Supplement Supplement</p>
<p>Livestock Grazing Management (p.6,7) a. Objective -</p> <ul style="list-style-type: none"> • Allocate a base level of livestock forage at 39,726 AUMs and refine as monitoring data becomes available. • Increase forage production in 20 years by 37% to a level of 54,296 AUMs; intensify management on 76 large allotments representing 51 % of public land in the RA, commensurate with public land health standards. • Improve overall range condition from the current 20% in satisfactory to 70%. <p>b. Planned Actions:</p> <p>Provide intensive management for 76 of the 311 grazing allotment in the RA by:</p> <ul style="list-style-type: none"> • Adjust stocking rates to proper allocation levels in accordance with the range condition inventory and monitoring studies data. • Design grazing systems providing minimum rest requirements and/or adjusting seasons of use. • Conduct comprehensive use supervision and monitoring. • Consult with permittees concerning adjustments and other decisions affecting their allotments. • Invest in cost-effective range improvements to implement grazing systems.(Proposed are spring developments, stock ponds, wells, ditch, pipelines, fence, and land treatments). • Allocate additional forage made available through intensive management practices 	<p>Supplement Modify (1)</p> <p>Replace</p> <p>Supplement Supplement Supplement Supplement</p> <p>Supplement</p>	<p>Supplement Modify (1)</p> <p>Replace</p> <p>Supplement Supplement Supplement Supplement</p> <p>Supplement</p>
<p>Wildlife Management, including Threatened and Endangered Species (p.8 Record of Decision). a. Objective - manage public land habitat to support optimum wildlife populations as determined by the Colorado Division of Wildlife's Strategic Plan, commensurate with public land health standards and other allocations. Emphasis will be placed on intensively managing critical and important wildlife habitats including 328,000 acres of upland, 3 miles of riparian, 3,000 acres of wetlands, and 53 miles of stream.</p>	<p>Modify (2)</p>	<p>Modify (2)</p>

(1) "add" commensurate with public land health standards

(2) "add" commensurate with public land health standards and other allocations

APPENDIX B4.2

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

KREMMLING RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>Recreation Resource Management (p.11 of the ARMP/ROD)</p> <p>Objective: To ensure the continued availability of outdoor recreational opportunities which the public seeks and which are not readily available from other sources, to reduce the impacts of recreational use on fragile and unique resource values, and to provide for visitor safety, and resource interpretation.</p>	Supplement	Supplement
<p>Forest Management (p.10 of the ARMP/ROD)</p> <p>a. Objective: To manage all productive forest land that is suitable for producing a variety of forest products on a sustained yield basis. This action will create a healthy forest environment through continued forest management products.</p> <p>b. Planned actions:</p> <ul style="list-style-type: none"> • Provide intensive management for approximately 40,000 acres - maintain and protect the remaining forested lands. • Actions will emphasize improving forest vigor and growth, as well as minimizing losses caused by insects, diseases, or fire. 	Supplement Supplement Supplement	Supplement Supplement Supplement
<p>Off-Road Vehicle Management (p.12 of ARMP/ROD)</p> <p>Objective: To protect fragile and unique resource values from damage by off-road vehicle (ORV) use and to provide ORV use opportunities where appropriate.</p>		

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

LITTLE SNAKE RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>AREA-WIDE DECISIONS</p> <p>Livestock Grazing (p. 6 of the ARMP/ROD)</p> <p>Objectives: The Bureau's objective is to improve range conditions in terms of species diversity and abundance, as well as increasing carrying capacities for both livestock and wildlife. Estimates of stocking rates contained in the plan do not necessarily reflect the need for the intent to commensurately reduce livestock stocking levels. Monitoring studies will be conducted to more accurately determine carrying capacities and the condition and trend of plant communities in relation to the above stated objective. Decisions to increase/decrease livestock and/or wildlife numbers can only be made after this information has been determined and management techniques are developed so that livestock and wildlife utilization can be managed. If adjustments are determined to be necessary, every effort will be made to accomplish them through consultation with individual ranchers, the Colorado Division of Wildlife, and other interests, as appropriate. Consultation and coordination will also be sought during monitoring and other phases of the studies. The goal of the livestock management program is to improve the range land forage resource by managing toward a desired plant community.</p> <p>Planned Actions:</p> <ul style="list-style-type: none"> • Livestock grazing utilizing federal preference (166,895 AUMs) will be allowed until rangeland monitoring studies are completed. • BLM will immediately begin rangeland monitoring on M and I category allotments, including 13 conflict allotments. • Surveys done during 1981-1983 for 73% of the area and earlier survey's for the rest of the area, which estimated forage available to support a grazing level of 148,821 AUMs will be used as baseline inventory data. • Livestock use adjustments will be implemented in accordance with 43 CFR 4110.3-3 after acquiring a minimum of 2 years of rangeland monitoring data, in combination with baseline data. Decisions implementing changes in livestock use will be issued as soon as data are available to support that change. In no case will more than 5 years of rangeland monitoring data be required for adjustments. Any adjustments would result in consultation/coordination with the livestock operator. • BLM policy is to issue decisions or enter into agreements within 5 years of publication of a Range-land Program Summary (RPS) following completion of a Grazing Environmental Impact Statement Resource Management Plan (EIS/RMP). An RPS is issued within 5 years after the RMP is signed. A five year implementation period will be used. Decisions will be issued in the third and fifth years to modify the adjustments as necessary to reach estimated grazing updates. Mutual agreements may be entered into at any time during the five year period. These will also be documented in the RPS updates. • Grazing will be temporarily suspended in areas where key forage plants have been critically over-utilized. 	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p>	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p>

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

LITTLE SNAKE RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>Livestock Grazing (Con't)</p> <ul style="list-style-type: none"> • Vegetation land treatments will involve interseeding, spraying, plowing, and reseeded. In conducting these treatments, BLM will adhere to established procedures and design specifications to protect all resource uses and values. A benefit/cost analysis and environmental analysis will be completed before any treatments are implemented. • Range improvement projects will be completed on 69 allotments to control livestock use, improve distribution, and improve riparian/wetland habitat. A benefit/cost analysis and environmental analysis will be completed before any projects are implemented. • Management categorization will be updated as the result of rangeland condition change or as data changes becomes available through the monitoring program. • Allotment management plans will be developed <i>if needed</i> for allotments within the Little Snake Resource Area. Level of detail for each plan will be determined from the management category for that allotment. 	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Modify (1)</p>	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Modify (1)</p>
<p>Wildlife Habitat (p.12 of the ARMP/ROD).</p> <p>Objectives: Improve those rangelands that are key wildlife habitats and have the potential for increased forage production for wildlife grazing by improving soil and water resources. Maintain those rangelands that are at their desired plant communities.</p> <ul style="list-style-type: none"> • Determine stocking rates for wildlife and livestock that result in proper use of the public rangelands within the 13 conflict allotments. Issues decisions or enter into agreements to establish forage use and grazing capacity. The BLM will consult with the Colorado Division of Wildlife, affected grazing permittees, and other interested parties. 	<p>Supplement</p> <p>Supplement</p>	<p>Supplement</p> <p>Supplement</p>
<p>Threatened/Endangered, Candidate, and Sensitive Plants (p.14 of the ARMP/ROD)</p> <p>Objectives: Protect, conserve, and manage Colorado BLM sensitive plant species and locations with adjacent critical sites that affect their habitat. If any threatened/ endangered or candidate plant species is identified in the Little Snake Resource Area, it would be protected through no-surface occupancy stipulations and any other actions needed to prevent its deterioration and allow its recovery.</p>	<p>Supplement</p>	<p>Supplement</p>
<p>Wild Horses (p.15 of the ARMP/ROD)</p> <p>Objectives:</p> <ul style="list-style-type: none"> • Protect wild free-roaming horses in the Sand Wash Basin from un-authorized capture, branding, harassment, and destruction. • Manage herds of wild horses as an integral part of the public lands ecosystem under the principle of multiple use. • Manage wild horse habitat to achieve and maintain a thriving natural ecological balance. 	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p>	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p>

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

LITTLE SNAKE RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>Wild Horses (con't)</p> <ul style="list-style-type: none"> • Maintain correct data about wild horse populations and their habitats. • Remove excess wild horses periodically to maintain appropriate management levels on the herd management area. • Remove horses that stray from Sand Wash as soon as practical. 	<p>Supplement Supplement Supplement</p>	<p>Supplement Supplement Supplement</p>
<p>Soil and Water Resources (p.16 of the ARMP/ROD).</p> <p>Objectives: Prevent deterioration of soil conditions and stabilize and rehabilitate areas where accelerated erosion and runoff have resulted in unacceptable resource conditions.</p> <ul style="list-style-type: none"> • Prevent disturbance to fragile soil areas where resulting erosion could not be controlled. • Maintain the integrity of streams and their associated riparian values in public lands that meet state water quality standards and have acceptable channel stability. • Protect and maintain present groundwater quality and quantity. 	<p>Supplement Supplement Supplement Supplement</p>	<p>Supplement Supplement Supplement Supplement</p>
<p>Forest Lands and Woodlands (p.16 of the ARMP/ROD)</p> <p>Objective: Manage the suitable pinon/juniper woodlands and commercial forest lands to maintain stand productivity and to help meet fuelwood and saw timber demand on a sustained-yield basis.</p>	<p>Supplement</p>	<p>Supplement</p>
<p>Fire Management (pp.19-20 of the ARMP/ROD).</p> <p>Objective:</p> <p>In full suppression zones the objectives are:</p> <ul style="list-style-type: none"> • Give full priority to personal safety, life, or property. • Prevent wildfire from causing any tree mortality in current and proposed commercial timber sale and woodland product contract areas. • Prevent wildfire from destroying any perishable designated cultural resource sites. • Prevent wildfire from destroying areas with significant riparian values. <p>In conditional suppression zones:</p> <ul style="list-style-type: none"> • Suppress all wildfire by taking appropriate suppression action. Appropriate actions will be based upon preplanned analysis consistent with land management objectives including the threat of life and property, economic evaluations, and resource constraints. • Use suppression strategies which do not require unnecessary exposure of firefighters and equipment to threatening situations. • Until appropriate suppression actions which will avoid all unnecessary impairment of wilderness values and is consistent with Interim Management Policy. 	<p>Supplement Supplement Supplement Supplement Supplement Supplement Supplement</p>	<p>Supplement Supplement Supplement Supplement Supplement Supplement Supplement</p>

APPENDIX B5.4

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

LITTLE SNAKE RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>Fire Management (con't.)</p> <p>In prescribed fire zones, the objectives is to use planned and unplanned ignition meet the objectives of other resources, such as livestock and wildlife for the use of fire to improve vegetative conditions.</p>	Supplement	Supplement
<p>Natural History (Area of Critical Environmental Concern) (pp.24-25 of the ARMP/ROD)</p> <p>Objective: To protect identified areas that contain important historic, cultural, scenic, and natural values or to protect human life and safety from natural hazards, pursuant to the FLPMA and BLM regulations at 43 CFR 1810.</p>	Supplement	Supplement
<p>SPECIFIC UNIT OBJECTIVES AND ACTIONS</p> <p>#1 Eastern Yampa: The objectives for this unit are to realize the potential for development of coal,oil, and gas resources.</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • Public lands are open to grazing unless coal development is imminent. • Management practices are allowable consistent with unit objectives. 	Supplement	Supplement
<p>#2 Northern Central: The objectives for this unit are to provide for the oil and gas resource and management of the commercially valuable stands of lodgepole and ponderosa pine.</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • Lands are open to grazing and management practices permissible consistent with management objectives. 	Supplement	Supplement
<p>#3 Little Snake River: The management objectives of this unit are to improve soil and watershed values, increase forage production, and enhance livestock grazing.</p> <p>Livestock Grazing Actions:</p> <p>AMPs, rangeland improvements, and vegetative land treatments will be developed to improve the vegetation, soil, and watershed resources and values.</p>	Supplement	Supplement
<p>#4 Eastern Foothills: The management objectives for this unit are to provide for the development of oil, gas, and geothermal resources.</p> <p>Livestock Grazing Actions:</p> <p>Same as #2.</p>	Supplement	Supplement

HOW WILL STANDARDS AND GUIDELINE AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

LITTLE SNAKE RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>#6 Northern Great Divide: The management objectives for this unit are to maintain and improve critical habitat for sage grouse, mule deer, and pronghorn antelope.</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • Public Lands are open to livestock grazing. • BLM-funded or livestock operator funded projects or land treatments are allowed when authorized when compatible with the management objectives for this unit. 	Supplement	Supplement
<p>#7 Scattered Sands: The objectives for this unit are to 1) provide for the development of the locatable minerals and leasable minerals other than coal, oil and gas, and geothermal resources, and 2) make areas available to supply demand for sand, gravel, and other saleable mineral materials.</p> <p>Livestock Grazing Actions: Same as #2.</p>	Supplement	Supplement
<p>#8 Axial Basin: The management objectives for this unit are to maintain and improve critical habitats for mule deer, elk, and sage grouse.</p> <p>Livestock Grazing Actions: Same as #6</p>	Supplement	Supplement
<p>#9 Cold Spring: The management for these units are to maintain and improve the quality of 1) the habitat for elk, mule deer, big horn sheep, the fisheries in Beaver Creek, and 3) the recreational opportunities which exist here especially for hunting.</p> <p>Livestock Grazing Actions: Same as #6</p>	Supplement	Supplement
<p>#10 Cross Mountain and Diamond Breaks Wilderness Study Areas: The objectives are to manage these areas for their wilderness characteristics.</p> <p>Livestock Grazing Actions: Allow livestock grazing in manner consistent with the area's wilderness values and in accordance with interim management policy.</p>	Supplement	Supplement
<p>#11 Recreation Areas Little Yampa, Cedar Mountain, and Wild Mountain: The objectives are to manage these areas for their recreation values and for the outstandingly remarkable values of the Yampa River (Wild and Scenic River criteria)</p> <p>Livestock Grazing Actions: Same as #2.</p>	Supplement	Supplement

APPENDIX B5.6

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

LITTLE SNAKE RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>#12 Vermilion: The objectives are to prevent any increases in erosion and/or sediment yield.</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • Grazing is permitted. • Management practices or range improvement projects are subject to performance standards found on page 16 of the ARMP/ROD. 	Supplement	Supplement
<p>#13 Limestone Ridge, Fish Canyon, and Lookout Mountain ACECs: The management objectives for these areas are to protect and enhance remnant plant associations and Colorado BLM sensitive plant species, scenic qualities, and other natural values.</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • Same as #2 except that no range improvement projects or treatments are allowed in the Limestone ridge ACEC. 	Supplement	Supplement
<p>#14 Middle Mountain: The management objectives of this unit are to maintain and improve the quality of the habitat for the elk herd, mule deer, and raptors.</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • Same as #6. 	Supplement	Supplement
<p>#15 Cross Mountain Foothills: The management objectives for this unit are to maintain and improve the quality of the bighorn sheep, elk, and mule deer.</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • Same as #6. 	Supplement	Supplement
<p>#16 West Red Wash: The management objectives for this unit are to maintain and improve the quality of the habitat for bighorn sheep, elk and mule deer.</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • Same as #6. 	Supplement	Supplement
<p>#17 Willow Creek: The management objectives for this unit are to maintain and improve critical habitat for greater sandhill crane.</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • same as #6 	Supplement	Supplement
<p>Recreation Resource Management</p> <p>Objectives: Protect and maintain a diversity of outdoor recreation opportunities, activities, and experiences. Provide high-quality visitor services, including interpretive information. Maintain established recreation opportunity spectrum classes upon implementation of all planned management actions. Ensure maintenance and minimize degradation of existing visual resource management classes.</p>	Supplement	Supplement

(1) "deleted" all, "add" if needed

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

ROYAL GORGE RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
UNIT-WIDE DECISIONS		
Sensitive Soils (p.3-1 of the PRMP/FEIS) Objectives: Manage resources and actions to avoid soil loss erosion and loss of watershed values during the life of the plan.	Supplement	Supplement
Water Quality (p. 3-3 of the PRMP/FEIS) Objectives: Maintain or improve water quality in accordance with state and Federal standards.	Supplement	Supplement
Noxious Weeds (p.3-3 of the PRMP/FEIS) Objectives: Control weeds through-out the planning area according to the principles of integrated pest management and the Colorado Undesirable Plant Act.	Supplement	Supplement
Fire Management (p.3-3 through 3-4 of the PRMP/FEIS) Objectives: Protect property and interspersed lands, the entire area will be managed for full fire suppression. • Enhance resource management through the use of prescribed fire.	Supplement	Supplement
Vegetation Management (p. 3-5 of the PRMP/FEIS) Objectives: Attain healthy watershed and soil conditions based on site potential • site specific objectives, including specific Desired Plant Communities (DPC) will be identified in integrated activity plans, and in most cases will be a diverse community of grasses, shrubs, and trees that could be reasonably achieved.	Supplement	Supplement
Livestock Grazing Management (p.3-5) Objectives: Allow grazing according to the 1981 Grazing EIS with changes to address compatibility with other resource values identified in the plan. Livestock Grazing Actions: • Improvements and treatments are utilized if needed. • Allocation of any additional forage will be made after consultation with affected interests. • A rest standard for "I" and "M" allotments will be required to allow plants to regrow, retain vigor, and produce seeds and seedlings. • Maximum allowable utilization will be 80% for grasses and 60% for shrub species. • On single pasture allotments with season long spring/summer grazing, utilization will be held to the 40-60% range on forage species in lieu of a rest standard.	Supplement Supplement Supplement Supplement Supplement	Supplement Supplement Supplement Supplement Supplement
Riparian (extracted from unit descriptions): Objectives: 75% of all riparian areas will be in properly functioning condition by 1997.	Supplement	Supplement

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

ROYAL GORGE RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>Unit #1 - Arkansas River Subregion This unit generally encompasses the Arkansas River Corridor from Canon City to Leadville. Objectives: Protection and/or enhancement of water quality, fisheries, and recreation values are emphasized.</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • Exclude grazing in Mosquito Pass ACEC, restrict to portion of High Mesa Grassland ACEC; exclude grazing in developed recreation sites, and NRHP sites if needed. • Use BLM fencing, cooperative projects, or elimination of grazing to eliminate livestock drift onto uncontrolled private land. 	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p>	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p>
<p>Unit #2 - Collegiate/Sangre Subregion - This unit represents the valley floor and foothills adjacent to the aforementioned mountains. Objectives: Protection and/or enhancement of vegetation, special status plants and animals, wild- life, and wilderness values are emphasized.</p> <p>Livestock Grazing actions:</p> <ul style="list-style-type: none"> • Adjust season of use and stocking rates in the Droney Gulch ACEC. • Allotments re-categorized due to watershed and riparian conflicts. 	<p>Supplement</p> <p>Supplement Supplement</p>	<p>Supplement</p> <p>Supplement Supplement</p>
<p>Unit #3 - Badger Creek Sub-Region This area encompasses the Badger Creek area north of the Arkansas River. Objectives: The primary focus of this area is to improve the vegetation, watershed conditions, and riparian values.</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • Grazing will be excluded on potential NRHP sites if conflicts occur. • Stocking rates and season of use will be adjusted on 28,600 acres. • Categorization of some allotments will be modified to address riparian, wildlife, and watershed conflicts. 	<p>Supplement</p> <p>Supplement Supplement</p>	<p>Supplement</p> <p>Supplement Supplement</p>
<p>Unit #4 - South Park Sub-Region - This area encompasses south Park. Objectives: Improvement of vegetation and land ownership patterns are emphasized.</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • Use BLM fencing, cooperative projects, or elimination of grazing to eliminate livestock drift onto uncontrolled private land. • Categorization of some allotments will be modified to address riparian, wildlife, and watershed conflicts. 	<p>Supplement</p> <p>Supplement Supplement</p>	<p>Supplement</p> <p>Supplement Supplement</p>

APPENDIX B6.3

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

ROYAL GORGE RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>Unit #5 - Gold Belt Sub-region - This area encompasses the area north of Canon City to Cripple Creek. Objectives: Improvement and protection of backcountry and extensive recreation values/ opportunities, wilderness resources, wildlife habitat, and vegetation are emphasized.</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • Stocking rates and season of use will be adjusted in the Garden Park ACEC, if needed. • Use BLM fencing, cooperative projects, or elimination of grazing to eliminate livestock drift onto uncontrolled private land. • Categorization of some allotments will be modified to address riparian, wildlife, and watershed conflicts. 	<p>Supplement</p> <p>Supplement Supplement Supplement Supplement</p>	<p>Supplement</p> <p>Supplement Supplement Supplement Supplement</p>
<p>Unit #6 - Waugh Mountain/ Tallahassee Creek Sub-region. This high mountain and pinion/ juniper/oak-covered hill country is located north of the Arkansas River northwest of Canon City. Objectives: Protection/enhancement of vegetation, special status plants/animals, wildlife habitat, and natural values are emphasized.</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • Grazing on 56 acres (High Mesa Grasslands) will be limited. • Use BLM fencing, cooperative projects, or elimination of grazing to eliminate livestock drift onto uncontrolled private land. • Categorization of some allotments will be modified to address riparian, wildlife, and watershed conflicts. 	<p>Supplement</p> <p>Supplement Supplement Supplement</p>	<p>Supplement</p> <p>Supplement Supplement Supplement</p>
<p>Unit #7 - Grape Creek Sub-region. this is the Grape Creek corridor and surrounding watershed from DeWeese Reservoir to Canon City. Objectives: Improvement/protection of vegetation, water quality, riparian, wildlife habitat, and special status animals are emphasized.</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • Use BLM fencing, cooperative projects, or elimination of grazing to eliminate livestock drift onto uncontrolled private land. • Adjust season of use in 2 ACECs. • Categorization of some allotments will be modified to address riparian, wildlife, and watershed conflicts. 	<p>Supplement</p> <p>Supplement Supplement Supplement</p>	<p>Supplement</p> <p>Supplement Supplement Supplement</p>
<p>Unit #8 - Huerfano Sub-region. This area lies along the Huerfano River in southeast Colorado. Objectives: Improvement/protection of vegetation, riparian, and wildlife habitat are emphasized.</p>	<p>Supplement</p>	<p>Supplement</p>

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

ROYAL GORGE RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>Unit #9 - Cucharas Canyon Sub-region. This area lies along the Cucharas River Northeast of Walsenburg. Objectives: Protection/enhancement of vegetation, riparian, and cultural resources is emphasized.</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> * Grazing will be excluded on the potential NRHP district if it becomes designated. * Re-categorize allotments from "C" to "I". 	<p>Supplement</p> <p>Supplement Supplement</p>	<p>Supplement</p> <p>Supplement Supplement</p>
<p>Unit #10 - Other Lands Sub-region. This massive area is mainly private land; it is composed of mainly scattered public land south and east of Canon City to the Kansas border.</p> <p>Objectives: Maintaining leaseable mineral opportunities and protection of wildlife habitat (including special status species) are emphasized.</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> * No special provisions. 	<p>Supplement</p>	<p>Supplement</p>
<p>Recreation Resource Management (pp.3-10, 11 of the PRMP/FEIS)</p> <p>Objective: Manage lands along the Arkansas River and the Gold Belt Tour area for intensive recreation manage. Other lands will be managed to provide for a variety of dispersed recreation opportunities.</p>	<p>Supplement</p>	<p>Supplement</p>
<p>Off-Highway Vehicle Use</p> <p>Objective: All BLM-administered lands in all eco-subregions will be formally designated in the Federal Register as open, limited, or closed.</p>	<p>Supplement</p>	<p>Supplement</p>

APPENDIX B7.1

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

SAN JUAN RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>UNIT-WIDE DIRECTION</p> <p>Livestock Grazing Management (pp. 5-6 of the ARMP/ROD) Objectives: Maintain or improve the vegetation component of this ecosystem to permit a balanced mix of uses to ensure sustained yield. Grazing allotment have been categorized as "I" (improve resource conditions), "M" (maintain current satisfactory conditions, or "C" (custodial management).</p> <p>Grazing Management Actions:</p> <ul style="list-style-type: none"> • Appendix 9 of the Draft RMP identifies the allotments, their categorization, allotted AUMs, and potential range improvements specific to the allotment. • Future management actions including AMPs will be tailored to meet these objectives after consultation with livestock operators. • Continue monitoring and evaluation plan. • Adjust livestock use to meet objectives; includes class of livestock, season of use, stocking rate, or the grazing pattern. • Approximately 64,200 AUMs are authorized initially until agreements are reached or decisions made on grazing capacity. • If needed, range improvements are allowed (found in Appendix 9B of the Draft RMP). • Grazing systems (typical systems are identified in Appendix 9 of the Draft RMP) will be implemented in cooperation with the livestock operator. • Unallotted tracts are available for grazing except for those not currently authorized for grazing. • Spring use in select "I" allotments (Table 1 of the ARMP/ROD will not be allowed unless a suitable grazing system is implemented. 	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Modify (4)</p>	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Modify (4)</p>
<p>Wildlife Management (p.12 of the ARMP/ROD). Objectives: Protect, maintain, and enhance:</p> <ul style="list-style-type: none"> - crucial habitats for big game, upland birds, and waterfowl. - crucial habitats for non-game species of special interest and concern to state or other Federal agencies - wetland and riparian habitats. - habitat for state of federally listed T&E species. <p>Each objective is mandated and/or supported by specific federal regulation or legislation.</p>	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p>	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p>
<p>Wild Horse Management (p.21 of the ARMP/ROD). Objectives: Manage a wild horse herd with and average number of 50 horses on the Spring Creek Basin and remove all wild horses from the Naturita Ridge herd area.</p>	<p>Supplement</p>	<p>Supplement</p>
<p>Timber Management (p.21 of the ARMP/ROD). Objectives: Public lands within forest management areas will be available for a full range of forest management activities.</p>	<p>Supplement</p>	<p>Supplement</p>

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

SAN JUAN RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>Timber Management (Con't.)</p> <ul style="list-style-type: none"> • Forest management activities will also be available in other emphasis areas subject to the objectives of those areas. 	Supplement	Supplement
<p>Soil and Water Management (p.22 of the ARMP/RMP). Objectives: Soils will be managed to maintain productivity and to minimize erosion.</p> <ul style="list-style-type: none"> • Water quality will be maintained or improved in accordance with state and federal laws and approved standards. • Protect municipal watersheds. 	Supplement	Supplement
<p>ACEC - Anasazi Culture Multiple Use Area (p. 22-23 of the ARMP/ROD). Objectives: Through careful management, protect the important cultural, mineral, recreation, range, backcountry, and wildlife resources of this 156,000 acre area.</p>	Supplement	Supplement
<p>Area A Emphasis Area Objectives: This is a livestock emphasis area; it emphasizes increasing forage and livestock production on a sustained yield basis.</p> <ul style="list-style-type: none"> • Emphasis is on increasing forage, red meat and animal fiber production, and improving forage composition and watershed conditions, <i>contingent on meeting public land health standards.</i> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • Use improved systems such as rest-rotation and deferred rotation. • Invest in range improvements necessary to implement management systems. • Develop AMPs where needed. 	<p>Modify (1)</p> <p>Supplement Supplement Modify (2)</p>	<p>Modify (1)</p> <p>Supplement Supplement Modify (2)</p>
<p>Area B Emphasis Area Objectives: Emphasize achieving and maintaining the best possible habitat conditions for fisheries and wildlife.</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • Emphasis will be upon increasing aquatic and terrestrial wildlife numbers within habitat capability, improving stream and watershed conditions and providing a high degree of vegetation diversity . 	<p>Supplement</p> <p>Supplement</p>	<p>Supplement</p> <p>Supplement</p>
<p>Area C Emphasis Area Objectives: Emphasis on recreation; ensure the continued availability of outdoor recreation opportunities which the public seek and which are not readily available from other public or private entities, <i>contingent on developments being able to meet public land health standards.</i></p>	Modify (3)	Modify (3)

APPENDIX B7.3

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

SAN JUAN RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>Area C Emphasis Area (Con't)</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • No vegetation treatments to maintain or improve forage composition and production except prescribed fire where appropriate. • Any improvements near developed recreation sites should be rustic in appearance. 	<p>Supplement</p> <p>Supplement</p>	<p>Supplement</p> <p>Supplement</p>
<p>Area D Emphasis Area Objectives:</p> <p>Emphasis on wilderness values; manage the area so that natural processes are unimpeded by human activities.</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • Manage for improved range conditions. • No vegetative manipulations. • Improvements must be primitive and of natural material. 	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p>	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p>
<p>Area E Emphasis Area Objectives:</p> <p>Emphasis on mineral development; other resource uses allowed in manner that does not impede mineral development</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • Management must not interfere with development or rehabilitation of mineral activity. 	<p>Supplement</p> <p>Supplement</p>	<p>Supplement</p> <p>Supplement</p>
<p>Area F Emphasis Area Objectives:</p> <p>Emphasis on cultural resources; protect, manage, and use the cultural resources in the area.</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • Reduce or control livestock to protect cultural resources as necessary. 	<p>Supplement</p> <p>Supplement</p>	<p>Supplement</p> <p>Supplement</p>
<p>Area G Emphasis Area Objectives:</p> <p>Manage these areas for general multiple use.</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • Manage vegetation so that trend is upward. 	<p>Supplement</p> <p>Supplement</p>	<p>Supplement</p> <p>Supplement</p>

SAN JUAN RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>Area H Emphasis Area Objectives: Emphasize the disposal of tracts of public lands meeting FLPMA criteria.</p> <p>Livestock Grazing Options:</p> <ul style="list-style-type: none"> • No public monies on range improvements. • Notify grazing permittees. 	<p>Supplement</p> <p>Supplement Supplement</p>	<p>Supplement</p> <p>Supplement Supplement</p>
<p>Area I Emphasis Area Objectives: Emphasize managing wild horse herds providing necessary forage and water.</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • Manage livestock to reduce conflicts with wild horses. • Provide livestock waters year-round. • Reduce numbers and/or season of use to eliminate forage competition with wild horses. • Range projects must be compatible with wild horses. • No licensing of domestic horses in these areas. 	<p>Supplement</p> <p>Supplement Supplement Supplement Supplement Supplement</p>	<p>Supplement</p> <p>Supplement Supplement Supplement Supplement Supplement</p>
<p>Area J Emphasis Area Objectives: Increase the production and utilization of wood, fiber, firewood, posts, and poles.</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • Grazing practices will have no adverse effects on timber management operations and objectives. • Vegetation treatments generally not allowed. • Range improvements must minimize effects to forest management. 	<p>Supplement</p> <p>Supplement Supplement Supplement</p>	<p>Supplement</p> <p>Supplement Supplement Supplement</p>
<p>Area K Emphasis Area Objectives: Improve water quality and soil stability in these fragile watershed areas.</p> <p>Livestock Grazing Actions:</p> <ul style="list-style-type: none"> • Manage livestock at low to moderate levels to maintain plant vigor. • Reduce number or seasons of use to achieve soil and water objectives. • Utilize soil and water improvements to improve range condition and diversify vegetation. • Develop a grazing system for Disappointment Valley designed to meet soil, water, and salinity objectives. 	<p>Supplement</p> <p>Supplement Supplement Supplement Supplement</p>	<p>Supplement</p> <p>Supplement Supplement Supplement Supplement</p>
<p>Area L Emphasis Area Objectives: (See area decisions section).</p>		
<p>Recreation Resource Management (p. 13 of ARMP/ROD)</p> <p>Objective: A wide range of outdoor recreation opportunities will continue to be provided for all segments of the public, commensurate with demand.</p>	<p>Supplement</p>	<p>Supplement</p>

- (1) "add" contingent on meeting public land health standards
- (2) "delete" 71 AMPs (810,000), "add" AMPs where needed
- (3) "add" contingent on developments being able to meet public land health standards
- (4) "delete" category I allotments, "add" all allotments

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

SAN LUIS RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>AREA-WIDE DIRECTION (ARMP/ROD, p.7-12)</p> <p>BLM lands and resources will continue to be managed to provide a variety of needed commodities and uses (e.g. livestock grazing, mineral material sales, etc.) to assist in the support of local and regional economies. Generally, management practices and prescriptions will favor maintaining or enhancing the natural setting (wildlife habitat, visual resources, recreation areas, etc.). Specific emphasis will be to enhance dispersed recreation opportunities, wildlife habitats, and related values and uses. Necessary constraints, stipulations, and mitigating measures will be included to protect these resources from irreversible damage.</p>	Supplement	Supplement
<p>Vegetation</p> <ul style="list-style-type: none"> • Provide management that will move toward good condition based (<i>late seral</i>) on site potential using grazing management. • Allow vegetation manipulation and other practices to aid in accomplishing the above. • Define desired plant communities in activity plans (in most cases, it will be a diverse community of grasses, shrubs, and forbes). 	Modify (1)	Modify (1)
<p>Livestock Grazing Management</p> <ul style="list-style-type: none"> • Manage livestock on 149 allotments encompassing approx. 474,000 acres. • Adjustments to actual authorized AUMs will be authorized and made when climatic or other conditions warrant a temporary increase or decrease in livestock use. • Temporary livestock grazing will be allowed, pending and EA on any newly acquired lands. • Consider grazing on approximately 29,000 acres of suitable lands but presently unallotted for grazing. • Allow improvements as noted in appendix D of the proposed RMP/final EIS. • Manipulation of vegetation can be used if needed to meet management objectives. • Manage allotments according to assigned management categories: M - manage to maintain current satisfactory conditions, I - manage to improve resource conditions C - custodial management; adjust categories as new info becomes available, resource conditions change, or management activities are implemented. • Based on monitoring, make livestock changes if warranted; changes made with EA and activity plan revision, if applicable. Types of changes include but are not limited to class of livestock, season of use, stocking rate, or the grazing management system. • Utilize coordinated resource management plans if feasible; otherwise develop grazing systems by completing AMPs. 	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p>	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p>

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

SAN LUIS RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>Wildlife and Fish Habitat Management</p> <ul style="list-style-type: none"> All BLM-administered lands will be considered for protection and enhancement of wildlife habitat values. Continue monitoring HMAs, crucial big game range, birthing areas, and raptor sites. Maintain existing stream fisheries. Allow for reintroduction of native, or naturalized fish and wildlife species; authorized by the District Manager following environmental analysis. 	<p>Supplement Supplement Supplement Supplement</p>	<p>Supplement Supplement Supplement Supplement</p>
<p>Fire Management</p> <ul style="list-style-type: none"> All wildfire will be suppressed. Prescribed burns are permissible to meet management goals. 	<p>Supplement Supplement</p>	<p>Supplement Supplement</p>
<p>UNIT DECISIONS</p> <p>San Luis Area #1 Objectives: These are the lands in the Resource Area that are not designated as special areas.</p> <ul style="list-style-type: none"> Maintain approximately 1,400 acres of riparian and wetlands in good to excellent condition and improve 455 acres. Maintain present good to excellent range condition; move toward good condition (appropriate seral stage) on the fair to poor condition range based on site potential. Manage streams to maintain fishery potential. Provide management to enhance, recover, or re-establish special status plant and animal values. <p>Livestock Grazing Management Decisions:</p> <ul style="list-style-type: none"> Provide 40% of increased forage production to livestock grazing and 60% if needed to non-livestock uses (eg. wildlife, riparian, watershed, soils). Monitor all grazing areas and take appropriate methods to enhance riparian values, special status plant and animal habitat, and other RMP objectives. Avoid or mitigate conflicts with crucial wildlife use. Allow for early spring use (3/1 to 4/30) if consistent with allotment and management prescriptions. 	<p>Supplement Supplement Supplement</p> <p>Supplement Supplement</p> <p>Supplement Supplement Supplement</p>	<p>Supplement Supplement Supplement</p> <p>Supplement Supplement</p> <p>Supplement Supplement Supplement</p>
<p>Trickle Mountain Area #2</p> <p>Objectives: Provide special management to protect and enhance special wildlife values, other significant natural values, and special status plant values.</p> <p>Livestock Grazing Decisions:</p> <ul style="list-style-type: none"> No specific decisions except that grazing actions will be considered in the development of a CRMAP that will emphasize crucial winter and birthing habitat special status plants and animals. 	<p>Supplement</p> <p>Supplement</p>	<p>Supplement</p> <p>Supplement</p>

APPENDIX 88.3

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

SAN LUIS RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>Sand Castle Area #3 Objectives: Special management will be provided to protect cultural and ecological resources.</p> <p>Livestock Grazing Decisions: * No specific decisions except that grazing actions will be considered in the development of a CRMAP that will emphasize cultural resources, especially the "Folsom" site.</p>	Supplement	Supplement
<p>Blanca Area #4 Objectives: Provide special management to maintain wetlands for waterfowl production.</p> <p>Livestock Grazing Decisions: * No specific grazing actions.</p>	Supplement	Supplement
<p>Elephant Rocks #5 Objectives: Provide special management to protect unique geological, scenic, visual, special status plant values, recreation, heritage resources and other significant natural resource values.</p> <p>Livestock Grazing Decisions: * No specific decisions except that grazing actions will be considered in the development of a CRMAP that will emphasize special status plants.</p>	Supplement	Supplement
<p>Rajadero Canyon #6 Objectives: Provide special management to protect and enhance special status plants and other significant natural values.</p> <p>Livestock Grazing Decisions: * No specific decisions except that grazing actions will be considered in the development of a CRMAP that will emphasize special status plants.</p>	Supplement	Supplement
<p>Los Mogotes Area #7 Objectives: Objectives: Provide special management to protect and enhance special status plants and to protect big game crucial winter habitat and birthing habitat.</p> <p>Livestock Grazing Decisions: * Same as #3 (Trickle Mountain).</p>	Supplement	Supplement

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

SAN LUIS RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>San Luis Hills #8 Objectives: Provide special management to maintain and, if possible improve the condition on the existing acres of Flat Top Mountain wetlands, big game habitat, and special status plant values.</p> <p>Livestock Grazing Decisions: • Same as #3, Trickle Mountain.</p>	Supplement	Supplement
<p>Rio Grande River Corridor #9 Objectives: Provide special management for the significant natural, scenic, and recreational values along the 22-mile stretch of the Rio Grande River north of New Mexico.</p> <p>Livestock Grazing Decisions: • No specific decisions except that grazing management will be considered in the CRMAP developed for the area.</p>	Supplement	Supplement
<p>Cumbres and Toiyate Scenic Railroad Corridor #10 Objectives: Provide special management for the scenic and historical values along this old railroad line.</p> <p>Livestock Grazing Decisions: • No specific decisions except that grazing management will be considered in the CRMAP developed for the area.</p>	Supplement	Supplement

(1) "delete" late serial

APPENDIX B9.1

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

UNCOMPAGHRE RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>AREA-WIDE DIRECTION</p> <p>Soils and Water Resources (p.10 of the ARMP/ROD)</p> <ul style="list-style-type: none"> • Water quality and erosion conditions will be inventoried and monitored. • Measures designed to minimize erosion and water quality deterioration will be required in site specific plans for surface disturbing land use activities. • The area will be open to land treatments and development of in-channel structures and project facilities. 	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p>	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p>
<p>Riparian/Aquatic Systems (p.10 of the ARMP/ROD)</p> <ul style="list-style-type: none"> • Inventory and monitoring will occur for proper management. • Vegetative conditions and streambank cover will be maintained or improved. • Mitigation to protect riparian area will be required in surface-disturbing land use activities. 	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p>	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p>
<p>Threatened and Endangered Species (p.10 of the ARMP/ROD).</p> <ul style="list-style-type: none"> • Inventory and Monitoring will occur for proper management. • Clearances will occur and US Fish and wildlife Service consulted. • Measures to protect T&E species will be required in all land use activity plans. • After analysis, releases and reintroduction of federal and state listed species are permitted after proper analysis and consultation. 	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p>	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p>
<p>Wildlife Habitat (pp. 10-11 of the ARMP/ROD).</p> <ul style="list-style-type: none"> • Maintain wildlife forage allocations at current levels until studies determine adjustments are needed. • Additional forage divided equally between wildlife and livestock grazing. • Wildlife habitat monitoring will occur on crucial winter ranges. • Planning area is open to land treatments and project facility development; maintain existing facilities. • Supplemental releases of native or naturalized fish and wildlife species may be authorized following environmental analysis. 	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p>	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p>
<p>Livestock Grazing (p.11 of the ARMP/ROD).</p> <ul style="list-style-type: none"> • Suitable public lands will be available for livestock grazing. • Livestock use will continue at current allocation levels until studies indicate changes are needed to meet management objectives. 	<p>Supplement</p> <p>Supplement</p>	<p>Supplement</p> <p>Supplement</p>

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

UNCOMPAHGRE RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>Livestock Grazing (Con't)</p> <ul style="list-style-type: none"> • Maintain livestock facilities. • Update AMPs as needed. • New facilities or land treatments will be developed if needed to meet AMP objectives. • Maximum sustained utilization of key forage species will be 50%. • Allotment categorization will determine management and monitoring intensity. 	<p>Supplement Supplement Supplement Supplement</p>	<p>Supplement Supplement Supplement Supplement</p>
<p>Forestry (p.11 of the ARMP/ROD).</p> <ul style="list-style-type: none"> • Commercial forest lands and pinon/juniper woodlands will be managed for sustained yield production within allowable cut restrictions. 	<p>Supplement</p>	<p>Supplement</p>
<p>Cultural Resources (p.11 of the ARMP/ROD)</p> <ul style="list-style-type: none"> • Measures designed to protect cultural and historical resources will be developed in consultation with the Advisory Council on Historic Preservation and the State Historic Preservation Officer, and will be required in all activity plans. 	<p>Supplement</p>	<p>Supplement</p>
<p>Unit #1 Objectives: The objective of this unit is to improve vegetative conditions and forage availability for livestock grazing.</p> <p>Livestock Grazing Decisions:</p> <ul style="list-style-type: none"> • Facilities and land treatments will be developed to improve livestock forage and distribution will be developed. • AMPs will be updated and new AMPs developed where none exist. • New additional forage will be allocated to livestock. • Relinquished, cancelled, or expires livestock grazing permits will be reissued according to regulations. 	<p>Supplement Supplement Supplement Supplement</p>	<p>Supplement Supplement Supplement Supplement</p>
<p>Unit #2 Objectives: This unit will be managed to improve the areas' capability to support winter big game.</p> <p>Livestock Grazing Decisions:</p> <ul style="list-style-type: none"> • Livestock grazing will continue at current levels unless studies determine adjustments are needed. • New livestock forage generated from operator assisted improvements will be allocated to livestock. • Non-conflicting livestock management objectives will be incorporated into new wildlife HMPs. • Facility development and land treatment projects will be permitted if compatible with wildlife management objectives. 	<p>Supplement Supplement Supplement Supplement</p>	<p>Supplement Supplement Supplement Supplement</p>

APPENDIX B9.3

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

UNCOMPAHGRE RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>Unit #3 Objectives: Manage for sustained yield production of the woodland resource.</p> <p>Grazing Management Decisions:</p> <ul style="list-style-type: none"> • Non-conflicting grazing management objectives, projects, and mitigating measures will be incorporated into new FMPs. • Existing livestock projects will be maintained and new projects developed if they will not decrease the woodland base. 	<p>Supplement</p> <p>Supplement Supplement</p>	<p>Supplement</p> <p>Supplement Supplement</p>
<p>Unit #4 Objectives: This unit consists of the Gunnison Gorge; primary objectives are to protect recreation objectives, values, opportunities, and use.</p> <p>Grazing Management Decisions:</p> <ul style="list-style-type: none"> • Continue grazing at current levels and seasons of use unless studies indicate that adjustments are needed. • Gunnison Forks Habitat area will remain unallotted for grazing • If necessary, limit grazing use to 35% forage utilization in the Elephant Skin Wash area to protect soils. 	<p>Supplement</p> <p>Supplement Supplement Supplement</p>	<p>Supplement</p> <p>Supplement Supplement Supplement</p>
<p>Unit #5 Objectives: Management in this area (commonly known as the "abobes") will be to reduce salinity loads into the Upper Colorado River Basin.</p> <p>Livestock Grazing Decisions:</p> <ul style="list-style-type: none"> • Allow grazing except from March 20 to range readiness to protect plant species during spring growth period. • If basal ground cover is less than 10 % (7% on the salt flats), forage utilization will be managed at 35 % of key forage species to increase basal ground cover. 	<p>Supplement</p> <p>Supplement Supplement</p>	<p>Supplement</p> <p>Supplement Supplement</p>
<p>Unit #6 Objectives: Manage the areas wilderness characteristics until Congressional action.</p> <p>Livestock Grazing Decisions:</p> <ul style="list-style-type: none"> • Maintain grazing levels prior to wilderness designation, commensurate with public land health. • Allow rangeland improvements if determined to be necessary for rangeland and/or wilderness protection. 	<p>Supplement</p> <p>Modify (1) Supplement</p>	<p>Supplement</p> <p>Modify (1) Supplement</p>
<p>Unit #7 Objectives: Manage this area for both existing and potential coal development.</p> <p>There are no specific livestock grazing management decisions.</p>	<p>Supplement</p>	<p>Supplement</p>
<p>Unit #8 Objectives: This area (a Mancos shale "badland" area) will be managed to provide recreational OHV use, commensurate with public land health.</p>	<p>Modify (2)</p>	<p>Modify (2)</p>

UNCOMPAGRE RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>Unit #8 (Con't)</p> <p>Livestock Grazing Decisions:</p> <ul style="list-style-type: none"> • Allow grazing and facilities but in a manner not to impede OHV use. 	Supplement	Supplement
<p>Unit #9 Objectives: These are riparian zones in the planning area; the land will be managed to restore and enhance riparian vegetation along 40 miles of stream.</p> <p>Livestock Grazing Decisions:</p> <ul style="list-style-type: none"> • Allow grazing except from March 1 through range readiness. • Develop activity plans and develop management practices and principles. • General guide will be utilization of 35% by weight of key forage species, but may vary. • Trailing will be limited to roads as much as possible; no bedding of trailing livestock in riparian areas. 	Supplement	Supplement
<p>Unit #10 Objectives: Manage the area to enhance its use as an elk calving area.</p> <p>Livestock Grazing Decisions:</p> <ul style="list-style-type: none"> • Any disturbance during the calving season will be limited as much as possible. 	Supplement	Supplement
<p>Unit #11 Objectives: Manage this area as waterfowl habitat.</p> <p>Livestock Grazing Decisions:</p> <p>No specific although disturbance from March 15 through June 30 is minimized.</p>	Supplement	Supplement
<p>Unit #12 Objectives: Manage this ACEC to protect T&E plant species</p> <p>Livestock Grazing Decisions:</p> <ul style="list-style-type: none"> • Continue grazing at current levels until studies determine T&E species are being threatened. 	Supplement	Supplement
<p>Unit #13 Objectives: Manage this area as a research natural area and T&E species.</p> <p>Livestock Grazing Decisions:</p> <ul style="list-style-type: none"> • Graze at current levels until studies determine T&E species are being degraded. 	Supplement	Supplement
<p>Unit #14 Objectives: Manage this volcanic area as an outstanding natural area.</p> <p>Livestock Grazing Decisions:</p> <ul style="list-style-type: none"> • The allotment will remain unallotted for livestock grazing. 	Supplement	Supplement

APPENDIX B9.5

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

UNCOMPAHGRE RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>Unit #15 Objectives: This badland area will be managed as an outstanding natural area and will be protected from surface disturbing activities that degrade scenic qualities and accelerate erosion.</p> <p>Livestock Grazing Decisions:</p> <ul style="list-style-type: none"> • Grazing allowed at current levels unless studies determine T&E species or habitat are being degraded. • Utilization will be at 35% of key forage species if basal ground cover is less than 10%. • No additional forage allocations will be made. • No additional livestock improvements will be allowed. 	<p>Supplement</p> <p>Supplement Supplement Supplement Supplement</p>	<p>Supplement</p> <p>Supplement Supplement Supplement Supplement</p>
<p>Unit #16 Objectives: In general, operate according to general guidance and assumptions.</p> <p>Livestock Grazing Decisions: No specific decisions are identified.</p>	<p>Supplement</p>	<p>Supplement</p>
<p>Recreation Resource Management (p.11 of the ARMP/ROD)</p> <p>Objective: Public lands will be managed for extensive and diverse recreation use.</p>	<p>Supplement</p>	<p>Supplement</p>

- (1) "add" commensurate with public land health
- (2) "add" commensurate with public land health

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

WHITE RIVER RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>AREA-WIDE DECISIONS</p> <p>Soils Management (p.3-1 of the PRMP/FEIS)</p> <p>Objectives: Prevent impairment of soil productivity due to accelerated soil erosion and physical or chemical degradation resulting from surface use activities. Stabilize and rehabilitate watersheds where accelerated erosion and degradation have resulted in unacceptable resource conditions. State and federal laws as well as conditions of approval found in Appendix C will provide guidance.</p>	Supplement	Supplement
<p>Hydrology Management (p.3-2 of the PRMP/FEIS)</p> <p>Objectives:</p> <ul style="list-style-type: none"> • Surface Water - Maintain or improve both water quality and quantity in specific watersheds to be compatible with existing and anticipated uses and applicable state and federal water quality standards. Protect from further degradation fragile watersheds which are major BLM land contributors of sediment and salinity to the Colorado River System and protect and improve priority streams that lack channel stability and have been identified as not meeting state water quality standards. • Ground Water - Maintain and ensure the integrity of present aquifer system both in terms of quantity and quality throughout the resource area. utilize state standards. • Water Rights - Working with the state of Colorado, protect water sources in support of other resource programs by obtaining legal water rights as necessary. • Water Depletions - assure compliance with USFWS programmatic biological opinion for minor water depletions in the Colorado river Basin, from BLM administered projects. 	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p>	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p>
<p>Vegetation Management (pp. 3-6 thru 3-9 of PRMP/FEIS)</p> <p>Objectives:</p> <ul style="list-style-type: none"> • Plant Communities - Management and/or maintenance of healthy diverse and sustainable rangeland and woodland plant communities which provide food, fiber, and enjoyment for human use and well being commensurate with the lands capabilities to produce, and which conserve healthy, diverse, populations of native plant. Landscapes will be composed of a plant community mosaic representing successional stages and distribution patterns consistent with the natural disturbance and regeneration regimes. • Noxious Weeds - Manage such weeds so that they cause no further negative environmental, aesthetic, or economic impact. 	<p>Supplement</p> <p>Supplement</p>	<p>Supplement</p> <p>Supplement</p>

APPENDIX B10.2

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

WHITE RIVER RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>Vegetation (Con't)</p> <ul style="list-style-type: none"> • Riparian Areas - Achieve an advanced ecological condition on all high and medium priority riparian habitats, except where resource management objectives including proper functioning condition, require an earlier successional stage. • Sensitive Plants and Remnant Vegetation Associations - Provide for conservation, protection, management of plant species designated as BLM sensitive species. Ensure that land use is complimentary to the protection, maintenance, or enhancement of BLM sensitive plant species and their habitat so as to avoid the need for subsequent listing and protection under the Endangered species Act. 	<p>Supplement</p> <p>Supplement</p>	<p>Supplement</p> <p>Supplement</p>
<p>Forestry Management (pp. 3-10 thru 3-11 of PRMP/FEIS)</p> <p>Objectives: Manage all timberlands to maintain productivity, extent, forest structure, and for the enhancement of other resources. Provide for special management consideration for special or unique forest/woodland areas.</p>	<p>Supplement</p>	<p>Supplement</p>
<p>Livestock Grazing (p.3-12 of the PRMP/FEIS)</p> <p>Objectives: Provide a healthy public rangeland capable of supplying forage on a sustained yield basis to meet the demand for livestock grazing. Provide opportunity for adequate forage plant growth and/or regrowth necessary to: 1) replenish the plants food reserves; and 2) produce sufficient seed to meet the reproduction needs necessary to maintain an ecological presence in the plant community. Manage livestock grazing to maintain or enhance a healthy rangeland vegetative composition, species diversity, and other resource values.</p> <p>Management Actions: Livestock grazing would be managed as described in the 1981 Rangeland Program Summary (RPS), and the RPS updates issued in 1981 and 1984. These documents address five major actions: (1) allocation of forage among predominant grazing animals and other uses, (2) initiation of intensive grazing management, (3) continuation of existing intensive grazing management practices, (4) minimum period of rest for each allotment, and (5) range improvements to enhance rangeland productivity and management.</p> <ul style="list-style-type: none"> • The forage allocations made in the 1981 RPS for livestock would continue until sufficient data exists to require modification. • A total of 126,490 AUMs would be allocated to livestock in the short term (10 to 20 years). It is estimated a total of 146,060 AUMs could be allocated to livestock over the long-term (over 20 years) through increases in sustainable rangeland production resulting from vegetation manipulations, improved livestock distribution and management, and improved rangeland health. 	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p>	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p>

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

WHITE RIVER RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>Livestock Grazing (Con't)</p> <ul style="list-style-type: none"> • Livestock grazing use levels have been reduced from 160,310 AUMs authorized in 1980 to the present level of 126,490 AUMs. The current allocation of 126,490 AUMs would continue for the short term. • Monitoring studies would continue to be conducted on 81 grazing allotments to evaluate the effects of activity plan development, and if necessary, to further refine livestock grazing levels. • Adjustments in livestock grazing levels would follow procedures outlined in 43 CFR 4110. Increases in available forage would be apportioned among competing uses, by: 1) filling the suspended livestock grazing preferences for the allotment; 2) providing big game wildlife forage needs; and 3) increasing wild horse forage allocations. This process may be modified during development of integrated activity plans. Increases or decreases in available forage would be apportioned in proportion to the allocation levels developed in the integrated activity plan allocations. This process may be modified during development of integrated activity plans. Increases or decreases in available forage would be apportioned in proportion to the allocation levels developed in the integrated activity plan. • The 144 grazing allotments affected by this RMP have been placed in one of three management categories that define intensity of management: (1) Improve (I), Custodial (C), and (3) Maintain (M). • The 54 allotments placed in the "I" category were identified for development of allotment management plans (AMPs). The AMPs direct livestock management through decisions about grazing systems, season-of-use, number and kind of livestock, range developments or vegetative treatments required to meet resource objectives designed to improve and maintain healthy rangelands and to resolve conflicts with other public land uses. • AMPs have been developed for 19 "I" category allotments involving 664,690 acres of BLM land. These allotments authorize a livestock grazing use level of 58,650 AUMs. AMPs for the remaining 35 allotments in the "I" category would be developed as time and funding permit. Current grazing levels and management practices would continue to be authorized on the 36 "M" and 54 "C" category allotments. The "I" category allotments would receive highest priority for public funding, and the "C" category allotments would receive the lowest priority for public funding. • Allotments could be moved from one category to another as new information becomes available, resource conditions change, or management activities are implemented based on the category criteria listed in chapter 3 of the Draft RMP. • Development of integrated activity plans (IAPs) would include all allotments within the activity plan boundaries regardless of current management category. 	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p>	<p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p> <p>Supplement</p>

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

WHITE RIVER RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>Areas of Critical Environmental Concern (p.3-21) of the PRMP/FEIS. Objectives: Manage 89,020 acres with special emphasis on identified resources within a multiple use framework. Concern (p.3-21) of the PRMP/FEIS.</p>	Supplement	Supplement
<p>Motorized Vehicle Travel Management (p.3-23 of the PRMP/FEIS) Objectives: Manage motorized vehicle travel on public lands to provide for public needs and demands, protect natural resources and the safety of the public land users, and minimize conflicts among various uses of public lands.</p>	Supplement	Supplement
<p>Fire Management (p.3-29 of the PRMP/FEIS) Objectives: Manage fire to protect public health, safety, and property and allowing it to carry out important ecological functions.</p>	Supplement	Supplement
<p>Recreation (p.3-22 of the PRMP/FEIS) Objective: Provide a broad spectrum or diversity of resource-dependent recreation opportunities to meet public land visitors' needs and demands; provide services to the visiting public; maintain high-quality facilities to meet public needs and demand, and improve public understanding and support of BLM programs through communication and partnership.</p>	Supplement	Supplement
<p>Motorized Vehicle Travel Management (p.3-24 of the PRMP/FEIS) Objective: Manage motorized vehicle travel on public lands to provide for public needs and demands, protect natural resources and the safety of public land users, and minimize conflicts among various users of public lands.</p>		

APPENDIX B11.1

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

NORTHEAST RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
<p>Wildlife Habitat (p.8 of ROD)</p> <p>3a. Objective: Maintain or improve habitat on 33,910 acres of land. Management actions: <ul style="list-style-type: none"> Management provided through cooperative management agreements with an appropriate state or federal wildlife agency or the development of a BLM habitat management plan. </p> <p>3b. Objective: General wildlife habitat will be protected on 3,180 acres. Management Actions: <ul style="list-style-type: none"> Protect by considering wildlife concerns in environmental assessments of proposed actions. </p>	<p>Supplement</p> <p>Supplement</p>	<p>Supplement</p> <p>Supplement</p>
<p>Livestock Grazing (pp.9-10 of ROD)</p> <p>5a. Objective: Provide custodial-level management to 5,385 acres of land leased for livestock grazing. Management actions: <ul style="list-style-type: none"> Operator initiated improvements, such as stock water impoundments, spring developments, fences, etc. </p> <p>5c. Objective: These lands are not available for grazing. Management actions: <ul style="list-style-type: none"> Grazing applications for these lands will not be accepted. </p>	<p>Supplement</p> <p>Supplement</p>	<p>Supplement</p> <p>Supplement</p>
<p>Water Quality (p.10 of ROD)</p> <p>6a. Objective: Correct pollution or maintain quality on 23,880 acres. Management actions: <ul style="list-style-type: none"> Removal or modification of pollution sources, limitations on uses or actions that may result in pollution. </p> <p>6b. Objective: Impacts to water quality on these acres will be minimized by stipulations in project design. Management actions: <ul style="list-style-type: none"> Runoff control devices, proper logging practices, proper road location, maintenance of vegetative cover. </p>	<p>Supplement</p> <p>Supplement</p>	<p>Supplement</p> <p>Supplement</p>
<p>Soil Erosion (p.10 of ROD)</p> <p>8a. Objective: Provide special corrective management actions on 850 acres of land to arrest unacceptable soil loss, restore soil stability and return soil to productivity. Management actions: <ul style="list-style-type: none"> Vegetation establishment, soil additives, road construction limitations, mining controls, off-road vehicle restrictions. </p>	<p>Supplement</p>	<p>Supplement</p>

HOW WILL STANDARDS AND GUIDELINES AFFECT APPLICABLE RESOURCE MANAGEMENT PLAN DECISIONS?

NORTHEAST RESOURCE MANAGEMENT PLAN

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION	
	Proposed S&Gs	Fallback S&Gs
Wildfire (p.11 of ROD) 10a. Objective: Provide prevention and suppression of wildfire on 22,520 acres. Management actions: • Cooperative fire management agreements.	Supplement	Supplement
Prescribed Burning (p.11 of ROD) Objective: All acres are in "open" category of prescribed burning.	Supplement	Supplement

APPENDIX C

IMPLEMENTATION EXAMPLES

This appendix contains examples of how standards and guidelines may be implemented in Colorado. Most of the examples were developed by resource specialists and managers from each BLM Resource Area as well as members from the Resource Area Councils who participated in a simulation. The simulation used a real area familiar to the staff with the understanding that the area was used for demonstration purposes only. It is impossible to display all possible implementation scenarios. However, the examples will present a sufficient range of scenarios to allow the reader to come to some conclusions on the processes needed to implement standards and guidelines and what the impacts may be.

It is assumed that standards are assessed at various and appropriate landscape scales. For some issues/resources, health is assessed at rather small scales. For other issues/resources, it may be necessary to look beyond analysis areas to properly assess a standard. The following are some examples of issues/resources and appropriate assessment scales:

<u>Example Issue/Resource</u>	<u>Scale</u>
• Neo-tropical birds	International
• Salinity in the Colorado River Basin	Regional, major river basin
• Decline in sage grouse	Regional
• Wildlife habitat fragmentation	Watershed
• Decadent sage or pinon-juniper sites	Watershed
• Economic-grazing permittee's livestock operation	Administrative Unit (e.g., allotment)
• On-site soil loss	Administrative unit (e.g., allotment)

IMPLEMENTATION EXAMPLE 1

PRESENT SITUATION

The permit on a grazing allotment consisting of approximately 2,100 acres is scheduled for renewal. It lies within the northern reaches of the Northern Parks and Range Landscape Unit at an elevation of about 7,800 feet. See Chapter 3. The allotment adjoins U.S. Forest Service and the current permittee's private ranch. The area is within critical mule deer and elk winter range. A small creek in properly functioning condition with a brook trout fishery flowing through the land.

An AMP is in place for the area. The allotment is classified as "M" according to the Rangeland Program Summary completed in 1995. No conflicts have surfaced regarding the condition of public land health standards. The area was not identified for rangeland health analysis in the priorities the Area Manager established for the year.

A. PROPOSED ACTION

Preliminary Assessment

Process and Resources Needed:

During a staff meeting, the Rangeland Management Specialist advises the manager and staff of the permit renewal application. A discussion follows. No additional concerns are raised. The range staff is instructed to renew the permit under current conditions. An administrative determination is made and documented to the files that the existing environmental analysis prepared for the the RMP/EIS and AMP is sufficient. The permittee is advised informally and formally (i.e. a notation in the permit and AMP) of standards and guidelines requirements. The RAC is advised in regularly scheduled reports. BLM labor costs are \$500.

VI. What will be the Approach to Monitoring?

Existing monitoring is deemed sufficient.

B. FALLBACK STANDARDS AND GUIDELINES ALTERNATIVE (identify difference from Proposed Action Alternative)

There would be no difference.

C. PRESENT MANAGEMENT (identify difference from Proposed Action Alternative)

Only interdisciplinary discussions regarding the permit occurs. Consideration of the action during the prioritization process likely does not occur. Standards and guidelines and related responsibilities are not discussed with the permittee.

IMPLEMENTATION EXAMPLE 2

PRESENT SITUATION

The 8,000-acre area lies in the north end of a mountain valley. A major U.S. highway forms the east boundary. The area lies within the Northern Rio Grande Basin Landscape Unit. See Chapter 3. Elevation ranges from 8,200 to 9,200 feet. Soils are formed in Colluvium from igneous rock. Vegetation consists of sagebrush/grass (50 percent), gamble oakbrush/grass (20 percent) and sparse shrub/grass (20 percent) and pine/aspens woodland (10 percent). The area is within critical mule deer and elk winter range and antelope fawning grounds. Several intermittent drainages and springs provide the only surface water for the area. Five grazing allotments comprise 7,250 acres of public lands. Three of the allotments currently have Management Plans. One of these allotments has a coordinated plan with the Forest Service and one is managed using Holistic Resource Management (HRM) grazing techniques. Two of the allotments are small allotments and do not have a Management Plan. About 1,200 acres of one of the allotments were designated a Resource Conservation Area (RCA) in 1964. The RCA area was plowed and seeded back in 1953 and then was brushed sprayed, contoured, and check dams and reservoirs constructed after it became an RCA demonstration area. The three grazing permittees also graze on adjacent U.S. Forest Service (USFS) land. Adjacent private land is rapidly being subdivided for recreational homesites.

Grazing leases for two of the permittees involving four of the allotments are up for renewal. The lease on the HRM allotment was recently renewed with the condition that it is subject to the standards and guidelines. Major problems with public land standards have not surfaced. Efficiencies are realized by evaluating all three allotments at the same time. Assume all three allotments will be evaluated to determine public land health and possible corrective measures.

A. PROPOSED ACTION

I. Preliminary assessment

Process and Resources Needed:

All applicable RMP decisions are identified by staff. The standards and other applicable guidelines detailed in Chapter 2 apply. The area is designated "limited" to off-highway vehicles (seasonally closed during the wet season). Currently, 1,041 AUMs of available forage are allocated to livestock (cattle). The RMP stipulates that crucial winter ranges will be managed to sustain available winter forage for 17,600 animals in the entire resource area although no specific amount of AUMs was identified for wildlife allocation. Approximately 50 to 75 deer and 100 to 150 elk winter in the area, and 75 to 100 antelope use the area for fawning. At present no conflicts for available forage exist between livestock and wildlife. Any additional forage is allocated as follows: 40 percent to livestock; and 60 percent to other users. A major utility corridor parallels the highway through the area.

The Area Manager and staff (range management specialist, wildlife biologist, and ecologist) meet to develop a strategy. These employees become the interdisciplinary (ID) team. A full plan is not necessary. Notify the livestock permittees, DOW, and U.S. Forest Service informally. The livestock permittees are also notified by letter to document the files. The Resource Advisory Council (RAC) is notified through the normal notification process. Courtesy phone calls are made to local RAC members. At this point, no other members have expressed an interest in the area. Initial scoping and notification occurs over a two week period; BLM labor costs are approximately \$500.

II. What standards are not being met? What is the trend?

Process and Resources Needed:

The ID Team assembles needed, existing information: grazing case file review, trend data, Ecological Site Inventory (ESI), riparian assessments, soil survey, water quality data, critical winter range studies, climate data, and wildlife data (including T&E). One day is needed to compile this information; most of this data has already been analyzed. Conduct a field tour of the area involving the ID team, permittees, and DOW. Invite USFS although their attendance is not crucial. Also invite others who have expressed an interest in being involved in all phases of the process. The field tour will last approximately two days. BLM will spend approximately \$2,000 in labor costs during this phase of the process conducted during a one month period.

Findings :

Standard 1: Standard met. Some minor gullying is present, but overall upland soils meet the standard. Trend is slightly upward.
Standard 2: Standard met. Riparian systems are properly functioning and trend is static or slightly upward.
Standard 3: Standard not met on the HRM allotment. Native plants aren't in balance with desired plant communities. Plants don't exhibit a proper range of age classes. There is less frequency of key species (but plant litter has increased). Overall trend is down slightly.
Standard 4: Not applicable.
Standard 5: Standard met. Water quality is satisfactory. No stream segments lying in, bounding, or immediately downstream of the area are listed in the 305b report, or the non-point source assessment report. Available water quality data indicate compliance with state water quality standards.

III. What are the causes for the standards not being met?

Process and Resources Needed:

Re-analyze trend data. Meet on site with the ID Team, permittees, and DOW. Notify the RAC and DOW of findings. This occurs over a month period and BLM will spend \$1,000 in labor.

Findings:

Conditions in the two allotment up for renewal are satisfactory and the permits may be renewed under existing terms and conditions.

The other allotment needs improvement to meet standards. The allotment was converted to a HRM system in 1990. The goals of the HRM plan are to improve the health of the range: mineral and water cycles; energy flow; succession; range condition; reduce overgrazing; old growth, time plants are exposed to grazing and increase livestock density, convert permittee operation to yearling, shorten grazing period and increase production. To achieve the goals, BLM agreed to increase AUMs in a shorter season of use. Overstocking situation for the time period allowed is suspected to be a problem. Concerns are raised that it is too early to make changes in the HRM strategy.

IV. What options for remedy are there? What is the decision?

Process and Resources Needed:

Assuming cooperation, only the permittee needs to be actively involved further except possibly to help assess the situation. The permittee and ID team meet on-site. This occurs over a two week period and BLM spends \$1,000 in labor. (Note: This phase of the process may be combined with the previous step).

Options:

- * Reduce AUMs and numbers under existing system.
- * Wait for additional monitoring data with year-to-year evaluation.
- * Change rotation patterns.
- * Reduce AUMs, shorten season, leave numbers the same, and also change rotation patterns for first year.

Decision:

- * Shorten the grazing season (which will result in a reduction of AUMs) but leave numbers the same, and change rotation patterns for first year. This option is selected to see what effects this will have on the vegetation and to continue the HRM program.

V. How will the decision be implemented? What are the impacts?

Process:

Modify the permittee's grazing plan to reflect the changes. The permittee signs and dates the agreement. This occurs over a two-week period. BLM spends \$200 in labor.

Impacts:

Resource impacts: Some improvement in the occurrence of key species and other problem indicators are noticeable within a year. Sufficient change should be noticeable in five years to determine if the further modifications in grazing management practices are needed.

Public land user impacts: the livestock permittee is forced to shift about 100 AUMs to other lands. Assuming \$7.00/AUM for private pasture, this increases the permittee's costs by approximately \$700. However, when BLM accepted the HRM plan it was with the understanding that changes may be needed to meet goals and objectives.

Socio-economic impacts: no major impacts are anticipated.

VI. How will the corrective actions be monitored to determine effectiveness?

Monitor trend on three existing transects and document the file. This will take one day per year at a cost of \$200 to BLM.

B. FALLBACK STANDARDS AND GUIDELINES ALTERNATIVE (identify difference from Proposed Action Alternative)

Without indicators, it likely would have taken longer to arrive at the root of the problem.

C. PRESENT MANAGEMENT (identify difference from Proposed Action Alternative)

Without standards and guidelines, less attention and analysis is given to soils. Consultation especially early in the process is likely less. Corrective actions would not occur as quickly.

IMPLEMENTATION EXAMPLE 3

PRESENT SITUATION

This 10,700-acre area lies about 45 miles from a town of 10,000 population. It lies within the Green River Basin Landscape Unit. See Chapter 3. A river dissects the area. Elevation ranges from 5,900 to 7,500 feet. Soils on lands north of the area are clay and mildly erosive. Soils to the south of the river are sandy and sandy-loam. Sparsely populated pinon/juniper comprise 40 percent of the area and 60 percent is sagebrush. The area is critical mule deer, elk, and antelope winter range. Portions of the area are important sage grouse strutting grounds. The river, two wells, and two reservoirs supply year-round water in four of the five pastures, although the water sources are not evenly distributed. Approximately 20 percent of the area is a Wilderness Study Area (WSA) and the inner canyon of the river is designated an ACEC for threatened and endangered (T&E) plants and geologic features. The Colorado Environmental Coalition (CEC) has developed a wilderness proposal that would extend the boundary of the WSA. Both the existing WSA and the area proposed by CEC are very steep and rocky with relatively little forage for livestock. (Grazing is specifically allowed in both WSAs and designated wilderness.) The area is comprised of one livestock grazing allotment with five pastures. Four smaller pastures lie north of the river and one large pasture lies south of the river. The allotment has seen numerous operator changes, most recently in 1994. Current, active permitted use is 1,243 AUMs. Past vegetative treatments include seedings of 1,207 acres (crested wheat), and sagebrush sprayings on another 500 acres. The public also uses the area for rafting, fishing, hunting, hiking, and mountain biking.

BLM staff are concerned about utilization patterns in the allotment. The north pastures appear over-utilized and the south pasture is under-utilized. Noxious weeds along the river corridor have increased noticeably in recent years. The grazing allotment is ranked in the top ten by the allotment categorization process used by the resource area. Concern is growing over conflicts among users of the area and special status species and related habitat. Vehicle travel in the area is increasing especially during hunting season, creating user conflicts. Assume standards and guidelines will be assessed in response to these concerns and pending actions.

A. PROPOSED ACTION

I. Preliminary assessment

Approximately 80 percent of the area is BLM-managed public lands. Applicable RMP decisions for the public lands in the area are identified. The standards and guidelines detailed in Chapter 2 apply. Other decisions include: 80 percent of the area is designated open to vehicle travel while the 20 percent of the area inside the WSA is closed. The area is permitted for grazing cattle, with a small amount of sheep use. Actual use has ranged widely over the past 10 years, from no use, up to 1,241 AUMs, with use occurring in the spring, summer, and fall. In general, about 30 percent of the use has occurred in the spring, 60 percent has occurred in the summer, and 10 percent in the fall. Based on available monitoring information, the potential stocking level with 50 percent utilization is about 1,129 AUMs. No specific forage is allocated for wildlife but general direction in the RMP recognizes the need to sustain the local mule deer, elk, and antelope populations by sustaining critical winter habitat. Recreational trail development is encouraged and commercial floatboating on the river is permitted. The corridor along the river is designated as an ACEC and 20 percent of the area is within a WSA.

After RMP decisions are identified, the Area Manager and staff meet to develop a strategy. An interdisciplinary (ID) team consisting of an ecologist, range management specialist, wildlife biologist, and recreation specialist is formed. The overall strategy is to provide initial notification to interested and affected publics. However, not all parties need to be brought together in the initial phases while needed information is collected. Based upon initial scoping, it is determined that the following individuals and groups need to be notified at this time: the livestock permittee, local trail groups, DOW, the county weed board, commercial river outfitters, CEC, and the RAC. The parties are notified by letter to document the files. The letter is supplemented with phone calls to provide a personal touch and to afford BLM an opportunity to clarify the process. The RAC advises if others should be notified at this time. Development of the strategy and notification occurs over a one-week period and BLM spends \$1,000 in labor.

II. What standards are not being met? What is the trend?

Process and Resources Needed:

The ID Team reviews the area/situation and collects needed available data: utilization data, actual use data; wildlife information (ranges); soils survey; water quality data, threatened and endangered (T&E) species inventory; vegetation classification. BLM will spend approximately \$500 for labor in gathering this data. An ecologist or range management specialist re-reads trend plots. This occurs over a two-week period and costs BLM \$1,000 in labor costs. During this period, the county weed manager is invited by the ecologist to assess noxious weed situation and fill out county forms. The wildlife biologist, DOW, and ecologist (permittee is invited) to review the shrub component. The situation on adjacent lands, especially the burns that have occurred, is reviewed at this time. This occurs during the same time period the trend plots are read. BLM labor costs are \$1,000.

Findings :

Standard 1: Standard met on most of the area (7,500 acres), but not fully met on 3,200 acres. Indicators include rilling, active gullying, and lack of ground cover. The trend is static.

Standard 2: Standard not met. Lack of vigorous desirable plants such as willows and sedges along the river bank, the presence of undesirable plants (weeds), and the general lack of stream bank stabilizing vegetation are indicators. The trend is static.

Standard 3: Not met in part. The crested wheatgrass seedings lack vegetative diversity but they do provide ground cover. The biggest problem regarding noxious weeds lies along the river, particularly around recreation use areas. The shrub component needed for wintering wildlife in pastures north of the river is not vigorous. The absence of a range of shrub age classes and absence of plant litter is noticeable. Trend is static or up slightly. Declining sage grouse populations are a concern. This is a problem throughout the west and specific problems with this area are not readily identifiable.

Standard 4: Standard is met. Endangered fish in the river and peregrines in the canyon do not appear adversely affected by management. Future monitoring needs to consider the candidate plant species "Ute Lady Tresses."

Standard 5: Standard generally met. Runoff events may carry sediment and salt load to the river. Addressing the other standards serve to mitigate this situation to a small degree.

III. What are the Causes for the Standards Not Being Met?

Process and Resources Needed:

Staff gathers information and arrives at preliminary conclusions. In addition to the information that has already been gathered, historical use information is needed to properly assess causal factors. The livestock permittee, the previous livestock permittee, DOW, recreation users, the county extension agent, and adjoining private landowners are likely contacts. Contacts are made informally, many by phone. This occurs over a one-month period and BLM spends approximately \$1000 in labor.

Findings:

During a drought several years ago, livestock and wildlife numbers were not adjusted, although numbers have varied greatly and full preference has often not been used. Currently, livestock and wildlife are poorly distributed. Vehicle use south of river is creating an extensive road/trail network, thereby contributing to the soils problem. Fire suppression practices have contributed to establishment of a decadent sagebrush overstory. Stocking rates for livestock were raised to unrealistic levels after past seedings. Recreation use at river access points and livestock grazing have denuded riparian vegetation. Insufficient water has concentrated livestock and wildlife in riparian area creating overutilization of vegetation in riparian areas and lands north of the river, and under utilization elsewhere. This problem as a whole reflects a lack of appropriate distribution. Noxious weeds are deposited by the river, by livestock, and by recreation users. Human encroachment on wildlife habitat and fire on adjacent lands wildlife habitat is forcing more animals onto the area.

IV. What options for remedy are there? What is the decision?

Process and Resources Needed:

The ID team meets to consolidate the findings and discuss preliminary corrective options. This occurs over a one-week period and BLM labor costs are \$1,000. At this point, the publics originally notified are convened, preferably on site to discuss findings and to explore options. It is likely two meetings are needed to arrive at some consensus regarding the findings. BLM labor costs are \$2,000 and this occurs over a two-month period.

Options (in priority order):

- a. To better distribute livestock and wildlife, develop water repair existing well and develop one additional well (fix well \$10,000 and new well \$10,000 = \$20,000).
- b. Construct 1.5 miles of riparian fencing with cattle guard (\$10,000).
- c. To provide for better utilization of forage by livestock, modify the following aspects of the grazing system: rotation patterns, "on/off" dates, and utilization rates.
- d. Temporarily reduce numbers of livestock (50 AUMs) and wildlife (50 AUMs) in the area.
- e. Conduct direct weed control in the area. (\$100/acre x 10 acres = \$1,000 year)
- f. As part of a larger effort, educate landowners/users about weed prevention.
- g. Modify conditions of commercial recreation permits to better confine use to avoid vegetation trampling along the river.
- h. Improve roads used for recreational access to reduce run-off and improve drainage (\$50,000).
- i. To improve ground cover, vegetative age classes, and mosaic patterns, conduct a variety of prescribed burns and allow more natural fire. (\$15/acre x

- 700 acres = \$10,050; to accomplish the same objectives manipulate areas with brush beating (300 acres x \$30/acre = \$9,000)
- j. To promote vegetative diversity, interseed crested wheatgrass seedings (\$30/acre x 500 acres = \$15,000)
 - k. To mitigate gullying and sediment load into the river, install gully plugs (15 structures x \$3,000 each = \$15,000)
 - l. To reduce soil loss caused by roads amend RMP to limit vehicle use to designated roads and trails; install signs (\$500/year).
 - m. To improve the composition of forbs for grouse by seeding forbs for grouse - (\$20/Acre x 500 acres = \$10,000).
 - n. Educate county officials about the impacts zoning and associated land development have on critical wildlife winter ranges.

Decisions:

- * Implement a-e as priority actions, most of which will be completed during the first five years.
- Items f-n are implemented as priorities and resources allow.

V. How will the decision be implemented? What are the impacts?

Process:

Water developments and fencing: The projects are submitted as high priority items in the following year's budget. The permittee requests financial assistance from the District Board of Advisors (formerly District Grazing Boards). Because of wildlife benefits, financial assistance is also requested from DOW. An EA tiered to existing programmatic documents is prepared by staff. This occurs over a 1.5 year period.

Livestock grazing management: Assume the permittee agrees to the changes. Terms and conditions of the AMP and grazing permit are made to reflect changes. Assume the permittee agrees to the additional changes. An EA tiered to existing programmatic documents is prepared by staff and incorporated into the case files.

Wildlife big game numbers: BLM in partnership with DOW works with wildlife commissioners to modify big game goals for the area and/or conduct supplemental hunts for the area.

Weed control: In partnership with the county weed control officials and public land users share in cost of annual weed control. An EA is tiered to existing programmatic documents. The process takes approximately 1.5 years.

The rest of the corrective actions have merit and will be considered with other resource area priorities. Most likely, implementation will occur in five-10 years.

Impacts:

Resource Impacts: Improved utilization and vigor of riparian vegetation is observed within the first five years. Improvement in upland vegetation vigor north of the river is more gradual. The age class of shrubs on upland sites and plant litter north of the river improves gradually. Because of modified livestock and wildlife distribution, vegetative conditions south of the river diminish slightly but standards are still met. Concentrated efforts in priority areas eradicate noxious weeds on small acreage. Lower priority treatments and actions have a more immediate effect on vegetative vigor and composition and soils but on smaller acreage.

Public Land User Impacts - Livestock grazing management: The action is implemented within the first year. Terms and conditions are incorporated into the AMP/grazing permit. Labor costs to BLM are \$1,000. The livestock permittee shifts 50 AUMs to other land or reduces his herd by that amount. Assuming \$7.00/AUM for private pasture, this increases the permittee's costs by approximately \$350. Revenue to BLM is decreased by approximately \$100. Some initial irritation by recreationists will occur as certain roads are caused. Information and education will minimize this.

Socio-economic Impacts: The ranching operation may experience some additional costs or loss of revenue, associated with range improvements or changes in operation. While these changes may be noticeable, they are not expected to constitute a major change in the ranching operation, or be noticeable in the community. The primary cost to the operation is anticipated to be an increase in manpower to maintain water sources and possibly herd livestock.

VI. How will the corrective actions be monitored to determine effectiveness?

Conditions are monitored annually in conjunction with existing studies. This includes ongoing monitoring for range condition, wildlife habitat, recreation use, or noxious weeds within the Resource Area. However, no monitoring program specific to just this area is anticipated. The permittee may also assist in the monitoring program to see if strategies appear to be working. Monitoring may include sampling of vegetation, taking photographs, and ocular estimates. Periodically (every 2-3 years), the staff compiles the available data and evaluates progress in meeting standards.

B. FALLBACK STANDARDS AND GUIDELINES ALTERNATIVE (identify difference from Proposed Action Alternative)

The biggest differences lie in the process of applying the standards and guidelines. The specificity provided by the indicators reduces the ambiguity in the process of applying the standards. While the indicators are not quantified, they provide a common basis for discussion, and the process as a whole becomes a little more specific. Native species must be used in the fallbacks while the Proposed Action considers both native and desirable non-native species to achieve management objectives. Within the WSA, only native species would be used in either scenario. Outside of the WSA, non-native species would often be more cost-effective, and would probably be preferred for this reason under the Proposed Action.

C. PRESENT MANAGEMENT (identify difference from Proposed Action Alternative)

There are four primary differences from the Proposed Action: First is an increased level of public involvement in the process. While the process has always been open to public participation, the Proposed Action is creating an increased interest in public land management.

Second, common public land health standards with indicators do not exist under present management. The standards and guidelines provide more specificity overall, but are not empirical standards (e.g., 50 percent utilization). Although many of the same items have been looked at by the staff in developing proposals, the documented standards and specific indicators serve to help provide a "level playing field" between areas.

Third, there is expanded interest from the public in rangeland management to look at and evaluate landscapes, geographic areas, or ecosystems. This encourages a broader basis for evaluating effective management practices across the landscape as a whole, helps users look beyond their own operation,

and promotes a wider base of cooperation between agencies and individuals. The "down" side is that the Proposed Action process requires more time.

Fourth, standards and guidelines are discussed in an orderly and systematic manner. Consequently, actions for a variety of resources (rather than just livestock grazing) are identified that might otherwise be overlooked.

IMPLEMENTATION EXAMPLE 4

PRESENT SITUATION

The 12,000 acre area lies adjacent to a town of 4,000 population. It lies within the Uinta Basin Section of the National Hierarchal Ecological Unit. (See Chapter 3.) Elevation ranges from 5,600 to 7,400 feet. Soils are derived from sedimentary rocks formed from sandstone and shale. Pinon/juniper comprise 50 percent of the area and 40 percent is sagebrush and greasewood. Remainder is oakbrush or badlands. The area receives 12 inches of precipitation annually, which is fairly evenly distributed between the seasons. Two small creeks and two reservoirs provide year-round sources of water in the area, but these are not evenly distributed throughout the allotment. The area is critical mule deer range. Several small (<40 acres) naturally occurring burns have occurred in the pinon/juniper and sagebrush. However, in most of the area, fire suppression policies have interrupted natural disturbance events. There is a small wood-cutting area in the northern portion of the area. Currently, the area receives approximately 750 AUMs of livestock grazing use and 136 AUMs of deer use.

BLM staff, supported by some data and professional judgement, are concerned over the condition of browse and utilization patterns related to RMP allocations in this area. Presently, livestock grazing (sheep) use on the largest allotment far exceeds the estimated carrying capacity of the range. At present, the livestock permittee for this allotment is not receptive about reducing numbers. The area contains four allotments, of which two are up for renewal. Erosion in some locations is a concern. Especially evident is the scarring caused by off-highway vehicles (OHV). A major pipeline traverses the area; revegetation has not been successful along some portions of the right-of-way (ROW). Efficiencies can be realized by evaluating all allotments together, which are similar in nature. Assume the area will be evaluated to determine public land health and possible corrective measures.

A. PROPOSED ACTION

I. Preliminary Assessment

Process and Resources Needed:

Applicable RMP decisions are identified. The standards and guidelines detailed in Chapter 2 apply. Other decisions include: The area is designated "open" to OHV use; forage allocation is 248 AUMs for livestock grazing and 292 for big game, mostly mule deer; adjustments to livestock preference must be supported by a minimum of three years monitoring data; manage the pinon/juniper woodlands for forest products.

The Area Manager and staff meet to develop a strategy. A full plan is not considered necessary. Because several conflicts and uses are present, notify stakeholders at this time - livestock permittees, Division of Wildlife (DOW), local OHV user group, and ROW company. During this initial period, communication is rather informal, mainly in the form of phone calls. A site visit involving the livestock permittee and the DOW is likely. Initial scoping and notification occurs over a one-month period; BLM labor costs are approximately \$1,000. Ask the stakeholders to provide any information that may be helpful in the process. The RAC is notified, most likely through a periodic update (i.e., normal notification process).

II. What Standards are Not Being Met? What is the Trend?

Process and Resources Needed:

In addition to team meetings, the ecologist, wildlife biologist, range management specialist, and recreation specialist conduct field visits. A similar site in good condition is located to compare with the subject area. Team members gather existing data on climate, utilization, actual use, browse condition, big game populations, and site potential. There is very little existing data on vegetative cover and composition; and no trend data is available. Geographic Information System (GIS) is used to gather wildlife and soils data. Internal scoping by interdisciplinary team (staff) occurs over a two-month period; BLM labor costs are approximately \$2,000.

Findings :

Standard 1 - Not met. All identified indicators point to a problem, especially soil pedestalling and lack of appropriate ground cover. Trend is static or down.

Standard 2 - Not applicable

Standard 3 - Not met. The understory in the Pinon/Juniper stands consists largely of prickly pear cactus and dead or decadent sagebrush. The sagebrush stands are decadent and over-mature. Most browse species are over-utilized. Cheatgrass and other annuals dominate the understory. The diversity and age-class distribution of species is not in balance because of the dominance of old/decadent successional stages. Native perennial grasses and forbs are not spatially distributed. Mule deer populations have been declining, but this is likely more than a local or even regional problem. For all factors, the trend is static or down.

Standard 4 - Not applicable.

Standard 5 - Uncertain. Conditions may be contributing to off-site problems. (See analysis at end of this chapter.)

III. What are the causes for the standards not being met?

Process and Resources Needed:

Staff gathers information and arrives at preliminary conclusions. DOW, the permittee, and other individuals knowledgeable of the history of the area are consulted. Existing information in the form of grazing history, climate, human use, apparent trend, anecdotal data, and browse utilization and age/form class data, together with professional judgment, is sufficient to come to reliable conclusions regarding the cause. Much of the information gathered in the previous step is used for this step of the process. At this point, prepare a summary document that contains the information and preliminary findings. Mail the summary document and request comments. Notify the RAC, and advise of potential controversy. Arrange for another site visit. Use this meeting as an opportunity to begin discussing potential remedies. This step of the process occurs over a three-month period; BLM labor costs are approximately \$6,000.

Findings:

Domestic sheep use is excessive and out of balance, as determined by comparison of this area with other similar areas. Sheep use is significantly above allocated levels and wildlife use (mule deer) is significantly below allocated levels. In addition, seasons of use, length of use, and distribution of livestock and wildlife are all lesser contributors to the problem. A history of overgrazing with use from early winter through the end of spring has contributed to the general decline of desirable native vegetation and the increase in undesirable annuals. Unrestricted OHV use and

the expanding network of OHV trails contribute to loss of plant cover and soil erosion. Long-term fire suppression has enabled the area to become dominated by later successional stage vegetation. Unsuccessful revegetation associated with the pipeline has created problems with soil erosion and lack of plant cover.

IV. What options for remedy are there? What is the decision?

Process and Resources Needed:

Conduct an on-site visit with all affected stakeholders to disclose findings (mentioned in IV above). This meeting is a good opportunity to discuss possible options for resolution. The RAC is consulted because of the likelihood of controversy.

Options:

- * For livestock management, initially seek agreement on the part of the permittee of the largest allotment to change class of livestock to cattle, change distribution patterns, or reduce numbers. This will improve over-utilization of important browse species. Also, seek ways for other operators to improve distribution patterns.
- * If voluntary changes are not agreed upon, conduct utilization mapping at a cost of \$2,000 labor costs per year for three years to support eventual decision to reduce numbers. Exclosures were considered, but are expensive (\$6,000 for .25 mile) and additional supporting information that would be gained make this option cost prohibitive.
- * Negotiate with the pipeline company to reseed the pipeline. However, the degree of success may be minimized if OHV use is not controlled.
- * Address OHV use by first mapping the area. Work with locals to develop acceptable OHV trail system. A RMP amendment is needed to change designation from "open" to "closed," or "designated roads and trails only."
- * Look for opportunities to have fire affect the area, possibly through inclusion in a Prescribed Natural Fire Plan. Controlled burns may be cost-prohibitive due to the uncertainty of success. The potential for invasion by cheatgrass and other annuals is high. Any vegetation treatment would likely require reseeding due to the lack of desirable vegetation existing in the area to recolonize.
- * Work with the county on education of land stewardship.

Decisions:

- * Ask the livestock permittee to make operational changes, as noted above. It is unlikely that the permittee will agree and three years of utilization studies will be necessary.
- * Request DOW support in the form of flights to provide data on animal distribution and numbers. This may be accomplished with other work DOW is doing.
- * Begin mapping OHV use and consulting with the OHV community. Prepare vehicle plan, environmental assessment, and amendment with a one-year timeframe. Estimated BLM costs are \$8,000 for labor and \$1,000 for other needs.

* Consult with the pipeline company to devise a strategy for reseeding the ROW.

V. How will the decision be implemented? What are the impacts?

Process:

Livestock management actions: Request the livestock permittee make changes, including reductions. Convene permittees, DOW, and BLM to discuss other possible habitat improvement projects (water sources, fire, etc.). In advance of this meeting, staff completes some preliminary feasibility work. Assume the permittee does not agree to the changes. BLM puts the permittee on notice that supporting data will be gathered in anticipation of reducing preference. Initiate utilization studies and request support from DOW, as noted in VI. After three years, data has been gathered. Summarize the data and develop recommendations (approximately 1 workmonth). Visit on-site with the stakeholders (DOW, permittee); have the RAC present. Attempt to reach satisfactory agreements on future actions. Ask the RAC for a recommendation. Assume an agreement is not reached. Prepare an environmental assessment and issue the proposed decision, which would reduce AUMs over a 5-year period. Consider any protest to the proposed decision. Possibly conduct another tour of the area with stakeholders/affected interests (RAC, permittees, base property owners, and DOW) as a last attempt to work out differences. Prepare final decision in consideration of protest points. Assume the final decision involves a substantial cut in AUMs and an appeal is filed. Prepare appeal case files and appeal report addressing such things as: chronology of events leading to the appeal, our response to allegations in the appeal, rationale for the AM's decision, appeal transmittal, and supportive evidence. Participate in the Appeals Hearing. (The protest/appeal process could last two years.)

Travel management: Designate a system of motorcycle riding trails with a variety of riding experiences and a motorcross track, and mitigate impacts as much as possible to reduce the geographic extent of the areas not meeting the standards. (Closure of the area would be impossible to enforce due to the close proximity of the area to town and lack of natural barriers.) Local users and user groups, adjacent landowners, the town, and county need to be involved in changing the management of public use in the area. A community/user needs and preferences assessment, an area trails inventory, a plan and environmental assessment are prepared to document the process. Seek to enter into cooperative agreements with the town, the county, landowners, and user groups to adopt and help implement the planned actions.

Pipeline right-of-way: Work with company to revegetate the site, in conjunction with the vehicle management plan to keep vehicles off the pipeline ROW. Document the case file on agreement items.

Impacts:

Resource Impacts: The browse community improves gradually as sagebrush seedlings and young plants replace older, decadent and dead plants. Also, long-term improvement in ground cover and diversity and abundance of perennial grasses and forbs is expected. Noticeable reduction in sediment production and soil erosion will accompany improved vehicle management and ROW reclamation in the short term.

Impacts to Public Land Users - Livestock Grazing Administration: Utilization studies and consultation occur over three years and BLM spends \$8,000 in labor. To reduce AUMs on the grazing permit, BLM spends approximately \$12,000 in labor over a 5-year period. The permittee pays for his/her for legal fees. The livestock permittee is forced to shift about 450 AUM to other land or

reduce his herd by that amount. Assuming \$7.00/AUM for private pasture, this increases the permittee's costs by approximately \$3,200. Vehicle Management: Approximately \$8,000 in labor is needed to prepare an assessment; implementation costs depend on specific planned actions. Changing the OHV use designation and rules requires publishing legal notices at a cost of approximately \$1,000. Visitor information and signing costs are approximately \$2,500. Site improvements (trailheads and staging areas) costs are approximately \$12,000. Rehabilitation of disturbed areas costs approximately \$6,500. If a partnership is formed, these costs are shared. Right-of-Way Reclamation: The pipeline company reclamation (reseeding) costs are approximately \$5,000.

Socio-economic: The area is immediately adjacent to a local community and improvements to the health of the area encourage casual use of the area (horseback riding, mountain biking, etc.). The process will bring together individuals from the region to work collaboratively to make the health of the area better. Direct economic impacts to the community are not significant.

VI. How will the corrective actions be monitored to determine effectiveness?

Utilization studies: Assume that 40 percent is the maximum sustainable use and half of this "acceptable" use is left for wildlife. Conduct utilization transects or checks in areas grazed. Visit the allotment once every week or two (mid-December to end of April) for five years, or until the entire livestock reduction occurs. BLM gives the permittee the opportunity to demonstrate that he/she can maintain utilization at an acceptable limit with current livestock numbers or with partial reductions. Check on utilization (forbs, grasses, shrub seedlings) in the spring. This will take two days per year for three years. Conduct utilization mapping throughout allotment to determine if distribution is the problem. This will take 4-5 days/year for 2-3 years. Total labor costs for this phase of monitoring is approximately \$5,000.

Trend/Condition/Composition Studies: Establish baseline transects to measure trend in ground cover and forb/grass/seedling composition. Establishing 4-6 transects at a cost of \$1,000. Reread every 8-10 years.

Production Studies - on private (if landowner/permittee allow): This will help determine if private land seedings are still producing at same level as when stocking rates were initially determined (late '70s for RMP). This is done only once and costs approximately \$2,000.

Vehicle management: Visit the area several times a week throughout the season of use. The visits would be done with recreation staff and law enforcement. Monitoring would involve a "public land watch" system, with community partners and user groups. An annual evaluation of use and impacts would be done to identify corrected actions needed. Annual labor costs are approximately \$4,000.

Right-of-Way: Evaluate reseeding success annually; document file. Use site visits mentioned under vehicle management to supplement monitoring of the right-of-way. Labor costs for BLM are \$200.

Water quality: Requirements are identified with the ID team and done concurrently with other monitoring work.

B. FALLBACK STANDARDS AND GUIDELINES ALTERNATIVE (identify difference from Proposed Action Alternative)

Conclusions and decisions concerning grazing management and browse community condition are similar under the fallback standards. Regarding travel management, the standards are less conclusive. It is possible that under the fallback standards, considering OHV activity in this area would not be a priority.

C. PRESENT MANAGEMENT (identify difference from Proposed Action Alternative)

Present management would be very similar to the proposed action. Standards and guidelines serve to focus discussions and provide indicators with which to evaluate concerns.

The analysis and decision making process may be less interdisciplinary and involve fewer external stakeholders.

Actions likely occur on a program-by-program basis, resulting in less health over the entire area. For example, the pipeline company may be required to reseed the pipeline, but without a coordinated effort to minimize or eliminate OHV traffic on the pipeline, success would be marginal or short-lived. The decision to develop a travel management plan for the area might not occur because of a lack of emphasis on the cumulative impact of each activity and the overall health of the land.

THE FOLLOWING IS PROVIDED TO DEMONSTRATE HOW WATER QUALITY (STANDARD 5) WOULD BE EVALUATED IN THIS EXAMPLE:

1. Locate appropriate stream segment(s) or waterbodies flowing through, occurring on, or bounding area of interest. (Determined during preliminary assessment phase.)

FINDINGS:

The area of interest is covered by Water Quality Standards for the Lower River C Basin. Creek A flows into creek B which then flows into river C. The confluence of creek B and river C occurs in segment 4 of the Lower River C Basin. Segment 4 covers all tributaries to river C from the confluence with River D to a point immediately below the confluence with Creek E.

2. Determine antidegradation classification and designated beneficial use(s) from the State water-quality standards that apply to each segment and waterbody identified in step (1). (Determined during preliminary assessment phase.)

FINDINGS:

*Antidegradation classification: Unclassified. This means that these waters shall be maintained and protected at their existing quality unless it is determined that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. For these waters, no degradation is allowed unless deemed appropriate following an antidegradation review.

* Beneficial uses: Water-quality standards list the beneficial uses as Class 2 Cold Water Aquatic Life, Class 2 Recreation, and Agriculture.

3. Are any segments or waterbodies designated as Outstanding state or national resource waters? (Determined during preliminary assessment phase.)

FINDINGS:

No

4. Determine the current water quality conditions from:
- * Status of Water Quality in Colorado (Clean Water Act Section 305b report)
 - * Clean Water Act Section 303d list (published in 305b report)
- These two documents must be consulted because they contain descriptions of water-quality impaired and limited segments.
- * Colorado Nonpoint Source Assessment Report (Clean Water Act Section 319 report). Lists waterbodies known to be affected by nonpoint-source pollution.
 - * Additional information may be obtained from:
Current 208 Plans (upper Colorado, upper North Platte, and upper Yampa River basins only). This is determined during the preliminary assessment phase. If data is found, it will be analyzed to determine if the standards are being met.

FINDINGS:

Water Quality Reports: Creek A and Creek B are not mentioned in any of the water-quality reports or lists (305b, 303d, Nonpoint Source Assessment). Segment 4 of River C is listed as being water-quality limited due to sediment from streambank erosion and rangelands, but it has a low severity ranking and a low priority for TMDL analysis. "Water-Quality Limited" means that the designated beneficial uses are not measurably impaired due to water quality but assessment information or segment specified water-quality controls indicate the potential for impairment of the designated beneficial uses in the near future.

5. Are there any available data, or other pertinent reports for analysis?

No data are available to be analyzed for this example. The decision was made not collect additional data.

If data were available, it would be analyzed with respect to the following criteria: Numeric standards for segment 4 of River C that are relevant to grazing are:

- Dissolved Oxygen = 6.0 mg/l minimum except during spawning when the minimum is 7.0 mg/l; • pH = 6.5-9.0;
- Fecal Coliform = 2000/100ml.
- Nutrients: Colorado water-quality standards list numeric standards for nitrate, nitrite, and un-ionized ammonia, but there are no standards for phosphorus. The nitrate plus nitrite nitrogen content in drinking waters for livestock and poultry should be limited to 100 mg/l or less, and the nitrite nitrogen content alone be limited to 10 mg/l or less. These numeric values are "acute standards" which means that they are not to be exceeded by the concentration in a single sample or calculated as an average of all samples collected during a one-day period. The acute standard for un-ionized ammonia is a function of pH and temperature, and the chronic standard is 0.02 mg/L as N. A "chronic standard" is the value that is not to be exceeded by the concentration for either a single representative sample or calculated as an average of all samples collected during a thirty-day period. In lieu of state standards, it is generally recommended that the phosphorus content of total phosphate analyses be equal to or less than 0.10 mg/L for streams that do not discharge directly into lakes or impoundments.
- Sediment and dissolved solids: There are no numeric standards for dissolved solids or suspended sediment. These two parameters are covered by a very subjective narrative standard.

6. Are any segments identified in step (1) listed as being water-quality limited or impaired (305b report, 303d list)? This is determined during the preliminary assessment phase.

- 6a. Are any segments identified in step (1) listed as being affected by nonpoint-source pollution?
(Determined during preliminary assessment phase.)

FINDINGS:

No affected segments are identified. Specify and implement appropriate BMP's to protect and maintain the designated beneficial use(s) identified in (2). Implement compliance monitoring.

OTHER CONSIDERATIONS:

- * During early field visits, a field analysis of pathways for delivery of sediment from erosion sites to the drainage network should be conducted. Erosion sites should be ranked by the likelihood that eroded soil will be delivered to the drainage network. Sampling suspended sediment in the stream is not recommended.
- * Violation or compliance with the numeric criteria should be documented. Violations require further analysis of source areas. Once the major sources are identified appropriate management practices can be specified to reduce pollutant contributions. Since erosion has been identified as a problem the sediment-delivery pathway analysis can be used to specify management practices that reduce or prevent eroded soil from entering the drainage network.
- * Water-quality is considered in overall monitoring needs for the area.
- * Time and Cost Estimates: The preliminary office work associated with the steps listed above would take about one hour. Much more time would be required if the case had to be referred to an I.D. team (see attached flow chart). Searching for and obtaining available data would take two or three work days. The time required for data requests to be answered cannot be estimated. Time spent analyzing the data would be a function of the amount of data available, however one work week should be sufficient even for data rich areas. For most of BLM lands it is unlikely that data will be available from external sources. There will be notable exceptions, like the Animas Basin above Silverton. Specifying BMPs and drafting a compliance monitoring plan would be a team effort, but could probably be accomplished in one or two team-work days. The time required to make a discharge measurement and properly collect and preserve a water-quality sample is about two hours on site. Laboratory costs are about \$50/sample for nutrients, \$20/sample for bacteria, \$10/sample for suspended solids, and \$10 for total dissolved solids. For a site with little or no available data, between five and ten samples would be desirable to define variability related to season and use.

IMPLEMENTATION EXAMPLE 5

I. BACKGROUND

This 2,000-acre area serves as a "town park" for a community of 1,500 residents along the west slope. It lies within the South Central Highlands Landscape Unit. See Chapter 3. Elevation ranges from 6,200 to 7,400 feet. The north portion of the area is Mancos shale with large gullies. The balance of the area is sandstone over Mancos shale. The area is 85 percent pinon/juniper woodland and 15 percent sagebrush park. Some of the parks have been altered, plowed, seeded with crested wheat. The area receives 12 inches of annual precipitation, split evenly between cool and warm seasons. Less than .15 mile of a small creek with some riparian runs through the north portion of the area. Although not crucial habitat, deer and elk use the area. Due to adjacent alfalfa fields, mule deer now use the area year-round. Fire suppression policies have interrupted natural disturbance events. The area receives heavy human use: livestock grazing, mountain biking, all-terrain vehicles use, hiking (there is a hiking trail maintained by a local trail club and the Audubon Society), shooting, hunting, partying, illegal forest gathering (firewood, Christmas trees and posts), environmental education by local schools. A microwave communication site sits on top of the hill and a 245kV transmission line traverses the area.

This high-visibility area is under constant scrutiny by the public. Several members of the public have voiced concern over trash, erosion, and denuded vegetation in sage brush parks. The grazing permit is up for renewal. Similarly, a decision must be made on whether or not to establish a non-commercial wood cutting area. Trail development/enhancement is proposed. Assume standards and guidelines will be assessed in conjunction with these pending actions.

A. PROPOSED ACTION

I. Preliminary Assessment

Note: Prior to assessing this piece of land, it is assumed that a regional effort was conducted to: (1) identify goals and objectives on a large landscape basis, (2) identify public concerns, (3) pool together existing information and data about the region and (4) set the stage for applying standards and guidelines in future management efforts. The effort, initiated with an open house, brought together agencies (e.g., Division of Wildlife (DOW), Soil Conservation Service, National Park Service, Bureau of Reclamation, U.S. Forest Service, Colorado Water Resources Division), stakeholders (e.g., ranchers, recreation outfitters, etc.), the Resource Advisory Councils, and interested publics. Participants were contacted through news releases, letters, and phone calls. Two field trips subsequent to the open house were conducted to educate and provide a better understanding of what the vision for the region should be. Products of the process included data sharing, a consolidated vision for the region, and a preliminary list of interested publics. This effort lasted approximately one year and BLM labor costs were approximately \$8,000 (this effort will decrease costs for 10-20 different standard and guideline applications that will take place in this region.)

Applicable RMP decisions for the area are identified. The standards and guidelines detailed in Chapter 2 apply. Other decisions include: The area is designated "open" to OHV use. The area is permitted for grazing cattle (AUMs) in the spring. No specific forage is allocated for wildlife but general direction in the RMP recognizes the need to sustain the local mule deer

population. The pinon/juniper woodlands are to be managed for forest products.

Upon identification of RMP decisions, the Area Manager and staff meet to develop a strategy. An interdisciplinary (ID) team consisting of an ecologist, range management specialist, hydrologist, wildlife biologist, and recreation specialist is formed. Using the results of the visioning effort mentioned earlier, a list of interested publics is formed. For this site, the DOW, potential livestock permittees, the local trail club, the Audubon Society, and town officials are notified. The RAC is notified. Development of the strategy and notification occurs over a one-week period and BLM spends \$1,000 in labor.

II. What standards are not being met? What is the trend?

Process and Resources Needed:

The ID Team reviews the area/situation and collects needed available data: trend, climate, soils survey, threatened and endangered (T&E) species, vegetation classification, satellite images, neo-tropical migratory bird patterns, and wildlife ranges (much of this data is already accessible to the ID team because of the work done by the regional effort/partnership). A possible benchmark site is identified to compare conditions. Most data is located in grazing case files and wildlife data bases. This occurs over a one-week period and BLM labor costs are \$200 (this is less than normal because of regional effort). The ID team visits the site and the interested publics are invited to attend. Rapid assessment is conducted using the gathered information and other tools, such as a soils surface factor (SSF) form. They observe vegetation, animal, and soil indicators, especially in sagebrush parks which are known to have been highly impacted by past activities. The benchmark site is also visited to compare conditions. Evaluation requires two site visits, and BLM labor costs are \$500.

Findings:

Standard 1: Not met. In the sagebrush parks, active gullying and rilling are occurring with significant soil loss. Trend is down or static at best. For the pinon/juniper areas, gullying and rilling are also occurring. There is also loss of litter on canopied slopes, which is fairly typical for this site. The RMP decisions encourage harvest of the woodlands. Trend is static.

Standard 2: Not met. None of the indicators are being met in the short stretch of creek that runs through one corner of the allotment. Trend is static.

Standard 3: Not met. A large portion of the flats is dominated by a monoculture consisting of non-native crested wheatgrass. The pinon-juniper understory in many areas is dominated by non-native cheatgrass. A range of population age classes is not present because old trees, sagebrush, and crested wheat dominate the area. Photosynthetic activity is not evident throughout the hot portion of the summer and early fall - most warm season grasses are missing, and much of the area is dominated by short-lived annuals. Diversity and density of species is not in balance because of the dominance of old/decadent successional stages. The understory in the sage and dry pinon-juniper sites is degraded and probably not resilient to major disturbance. Litter distribution tends to be clumped around trees and shrubs, with eroding bare ground in between. Older successional stages dominate the area. Trend is static for most of the site. Where fire has occurred, trend is up slightly.

Standard 4: Standard met.

Standard 5: Uncertain. There are few on-site problems. However, sedimentation the result of significant bare ground and roads could be contributing to problems off-site.

III. What are the causes for the standards not being met?

Process and Resources Needed:

Staff gathers information/completes the following to arrive at preliminary conclusions: map major deer use areas - feeding, resting, and travel (DOW, BLM wildlife expertise needed); map human use areas, such as trails and roads (BLM recreation and lands specialists); assess seedbank (BLM ecologist); evaluate condition of pinon-juniper, crested wheat and sagebrush; map vegetative age classes and species composition (BLM ecologist); evaluate watershed capability for supporting water catchments; analyze Landsat vegetation map and aerial photos. This work, occurring over a one-month period, will require several site visits, along with office evaluation time. BLM labor costs will be approximately \$3,000.

Findings:

Soil, plant and litter ground cover problems are caused by a combination of factors: dominance of the area by late successional stage vegetation, which is in part a result of fire suppression; a history of heavy spring grazing by both cattle and deer; and the dense road network, OHV use, and other soil-baring human activities.

Riparian problems are caused by irregular flows in the creek, the result of irrigation tail-water dumping and water depletion upstream (this problem is outside of BLM control).

The problems with plant and community indicators are caused by a combination of factors: BLM's past range projects-plowing and seeding with crested wheat; long-term fire suppression and alteration of the natural disturbance regime; past overgrazing with constant use during all of growing seasons in the 1960s and 70s and repeated spring use during the 1980s; continuous heavy deer use due to allotment location neighboring large alfalfa fields; and insufficient native seed in seedbank to adequately recover from past mismanagement.

IV. What options for remedy are there? What is the decision?

Process and Resources Needed:

Utilize the same information that was collected to define the cause. Involve the permittees, user groups (trails, OHV, Audubon, etc.) and other interested parties. Note: Many of these options were probably discussed in earlier phases of the process.

Options in priority order (note: many of these actions are linked together):

- (a) Build one additional reservoir (\$1,000).
- (b) Permittee herds livestock, move salt and supplement more frequently to eliminate overgrazing/undergrazing problems, includes use of electric cross fencing .
- (c) Provide native seed to permittee to interseed crested wheat monocultures, decadent sage stands, and annual-dominated understory pinon/juniper; use livestock impact to incorporate seed into soil (\$100/yr for 10 years).
- (d) Permittee accepts 20 percent cut in AUMs (voluntary nonuse).
- (e) Delineate road system, identify, close, and rehabilitate unnecessary roads

(BLM labor costs are \$10,000, \$50 seed costs).

(f) Intensive signing and education effort followed up with increased enforcement (\$400 for signs, \$2,000 BLM labor for sign placement, enforcement, maintenance; annual replacement and maintenance costs \$150/yr and \$2,000 BLM labor costs).

(g) Develop regional landscape disturbance plan, including Prescribed Natural Fire plan (\$6,000 BLM labor costs, although benefits would extend to all other activities in the region).

(h) Use PNF whenever opportunity arises (\$1,000 annual BLM labor costs).

(i) Lay out fuelwood and post sales to help with fuel management for PNF (\$2,000 labor costs), \$200 revenue to BLM).

(j) Rollerchop and seed 300 acres to help in fuel management for PNF (\$5,000 and \$1,000 BLM labor costs).

(k) Conduct 3 prescribed burns over next 10 years (\$5,000/burn).

(l) Fence perimeter to eliminate trespass from outside and improve animal management inside (\$2,000 for materials and \$400 BLM labor).

(m) Install one bike cattleguard (\$100).

Decisions:

* Options a-g are highest priority and should be implemented within 3-5 years.

* Options h-k,m have merit but must be considered with other resource area priorities.

* Option l will likely not be implemented.

V. How will the decisions be implemented? What are the impacts?

Process:

Develop and document an integrated strategy accompanied by an EA. Livestock management actions: The permittee is required to herd livestock, move salt, and supplement more frequently to eliminate overgrazing/undergrazing problems. The permittee agrees to 20 percent cut in AUMS (voluntary nonuse). These are incorporated as term and conditions in the AMP and/or permit. BLM provides native seed to the permittee to interseed crested wheat monocultures, decadent sage stands, and annual-dominated understory pinon/juniper (using livestock impact to incorporate seed into soil). Build one additional reservoir in the first year of strategy implementation (costs are shared between BLM and permittee). Strategically place internal cross-fencing using electric fence to minimize livestock/recreation conflicts during grazing season of each year, implementing first year of strategy.

Recreation management actions: Delineate a road system. Identify, close, and rehabilitate unnecessary roads. Provide signing (directional and informational) supplemented with increased enforcement. It is important to develop partnerships to share costs. Road delineation completed first year of strategy, road closure and rehabilitation occurs in second and third years of strategy.

Other actions: Develop a regional landscape disturbance plan, including PNF (this action would cost BLM about \$10,000 but benefits would extend to all activities in the region). Once plan completed (year 1.5 in strategy implementation), we will be able to use Prescribed Natural Fire for the area; this will be recurring each fire season. Rollerchop and seed 300 acres to help in fuel management for PNF, if funding available through grants in years 3-5 of strategy. Establish fuelwood and post sales areas to help with fuel management for the PNF, initial work in sale layout begins in year one of strategy, area open to fuel harvest years two and beyond. Conduct three prescribed burns over the next 10 years (years 4-10), if grant moneys available.

Impacts:

Resource impacts:

Reduction in overgrazing and occasional spring rest reduces the amount of rills and gullies, and sediment production by half or more for the next 4 to 50 years or longer unless significant climate change occurs. It also increases the amount of groundcover and improves litter distribution by at least two times for this period or longer. Reseeding areas with native seed using livestock impact improves plant diversity among understory species by a factor of 3 and increases ground cover by a measurable amount over the next 50 years. The impact will be moderate over the 3-5 years, but high over the long-term. It also extends the period during which photosynthesis is occurring by two additional months for the long term. Reseeding also improves distribution of native plant communities by returning species to the crested wheat areas and to the drier pinon/juniper sites. Reintroduction of native seed into these areas will convert more than half of the acreage to native species assemblages for the long-term (50 years or more). The impact will be moderate over the short-term, but high over the long-term.

Vehicle management actions reduce sediment production and rills and gullies by more than half in former high-use areas for the next 20-50 years. The impact is moderate across the allotment, but high on a site-specific basis, and for the long-term. Vehicle management also increases the amount of groundcover and improves litter distribution by at least two times for the next 20-50 years. The impact is high on a site-specific basis and long-term.

Reintroduction of natural disturbance into the system by a series of well-planned woodcuts, rollerchops, prescribed burns, and finally prescribed natural fire reduces the amount of rills, gullies and sediment production by 50 percent across allotment over the next 50-100 years. The impact is high and self-sustaining. Natural disturbances also increase the amount of groundcover and improve litter distribution by at least two times for the next 50-100 years. The impact is high and long-term. They also improve plant community distribution and diversity on more than half of the acreage for the next 50-100 years. The impact is high and long-term. All of the above measures are designed to be as self-sustaining as possible and incorporate management adjustments, and or naturally occurring disturbances that will perpetuate them.

Public Land User Impacts: Assistance from the Board of District Advisors (formerly the Grazing Advisory Boards) is requested for the fencing and reservoir construction. Additional herding, salting and feeding costs the permittee \$150 annually. Loss of AUMs costs the operator \$400 annually and BLM \$40 annually in lost revenue. Some users, such as motorcyclists are frustrated when required to modify existing use patterns.

Socio-economic Impacts: Because the area is located very near a community, many of the local users are affected. As the health of the area improves, sustained use of the area is assured. Direct economic impacts to the community are not substantial.

VI. How will the corrective actions be monitored to determine effectiveness?

Monitoring becomes a shared responsibility with the permittee and other users of the area. Performance standards for the permittee and other users of this area is one tool used in monitoring.

* Baseline, small-scale conditions (collected in initial assessment of indicators, causes) is collected by BLM recreation, ecologist, range, wildlife staff every 10 years by BLM. Data is supplemented by the permittee and other

partners in the interim. This will require 2-3 site visits by BLM staff, and may cost \$500-1,000 every 10 years.

* Collect baseline and trend for large scale landscape patterns and plant/animal communities. BLM, with regional partners, collect every 3-5 years, cost may be \$100 for analysis of this particular area each time it is assessed.

* Project compliance and effectiveness data (burns, rollerchops, interseedings) is collected through 1-2 visits following project. BLM and the livestock permittee is involved, and costs maybe \$50-200 depending of level of evaluation needed, per assessment.

* Compile and report available data for the area every 3-5 years to enable management assess progress and if needed, take corrective actions if needed. report is shared with BLM staff, permittee, and interested publics (this may cost \$100 in labor each time it is done).

B. FALLBACK STANDARDS AND GUIDELINES ALTERNATIVE (identify difference from Proposed Action Alternative)

Differences between this alternative and the proposed action are minor. Except for the interseeding of crested wheat seedings, other actions occur. (There is no reference in the fallback about community dominance by non-native species, and less emphasis placed upon species diversity). The fallbacks do not directly mention larger scale diversity, plant community distribution, and successional stage mosaics are not directly mentioned. Consequently, it is very possible that the landscape-scale disturbance and PNF plans are likely not emphasized in this alternative.

C. PRESENT MANAGEMENT (identify difference from Proposed Action Alternative)

The process is likely less integrated, interdisciplinary, and collaborative. Individual programs drive various actions. Some of the fencing, salt placement, and possibly water development actions occur. Recreation actions are limited to erecting and maintaining directional road signs with little enforcement activity. The wildlife program pursues one burn in the area to improve critical winter range condition for deer and elk. Woodcutting in the area occurs on a fairly dispersed level, and not in a way that would help create the conditions needed for prescribed burns or prescribed natural fire. These actions either perpetuate the static trend for indicators of concern, or result in minimal improvement.

IMPLEMENTATION EXAMPLE 6

PRESENT SITUATION

This 55,100 acre area of public land includes a deeply incised river channel and adjacent uplands to the west. There are eight BLM grazing allotments within the area comprising approximately 35,400 acres. The northernmost allotment includes the river corridor itself, with the remainder of the river corridor (about 19,680 acres) not grazed by livestock.

To the east of the river lie National Forest lands, and to the west of the area, most of the land is privately owned. In recent years, irrigated alfalfa has replaced dry land beans as the most common use of these private lands.

The area lies within the Northern Canyon Lands Landscape Unit. See Chapter 3. Elevations range from 8,200 feet on the uplands at the southern end of the area to 6,200 feet where the river canyon exits the area to the north. Soils are primarily sandstone derived. Vegetation varies from scattered box elder and willows along the river's riparian zone to uplands characterized by scattered sagebrush parks within thick stands of Gambel's oak and pinyon/juniper trees. The higher elevations contain dense stands of small ponderosa pine trees. Less dense stands of larger ponderosa pine are scattered along the river bottom and in the deeper side drainages. Years ago, about 10,000 acres of the sagebrush was chained.

Mineral activities include some recreational placer mining along the river, some old uranium prospects, and three shut-in wells in the southern portion of the area. At the north end of the area mineral resources are under the jurisdiction of the Department of Energy (DOE).

Other uses of the area include some old pipeline rights-of-way that have received little or no rehabilitation or monitoring. The ungrazed portion of the river corridor receives heavy recreational use for camping, fishing, and boating. Considerable hunting use also occurs within the area. An active hunter information program is used to assist hunters and minimize resource damage. Some cultural resources are also found along the river corridor. The area provides a habitat for a wide variety of wildlife including the Gunnison sage grouse and Desert bighorn. Public lands provide important deer and elk winter range providing browse, hiding and thermal cover.

In addition to an eleven year old RMP, a River Recreation Management Plan is in use and a Prescribed Natural Fire Plan is being prepared jointly with the Forest Service, which includes provisions for management ignited fires (MIF) to improve resource conditions. The River has been recommended for a scenic designation under the Wild & Scenic River Act (W&SR Act).

This area was selected for assessing public land health because of the diversity of resources and related problems and the number of livestock operations.

A. PROPOSED ACTION

I. Preliminary Assessment

Process and Resources Needed:

Applicable RMP and activity plan decisions are identified by the staff. The standards and guidelines detailed in Chapter 2 apply. Five of the eight allotments have grazing rotation plans which provide some deferment from livestock use during the growing season. Compliance with deferment provisions is not consistent across these five allotments. Another allotment is only

grazed during the dormant period and no rotation is necessary to provide for plant rest and recovery. The remaining two allotments are grazed summer long and have no grazing rotation system in place.

Other decisions include: Improve range condition and productivity on native rangeland. Use fire to enhance forage production. Improve aquatic and riparian habitat along the River and its tributaries. Manage one portion of the river corridor for semiprimitive non-motorized recreation opportunities and the roaded portion for semiprimitive motorized recreation opportunities. Manage timber and woodland species with a combination of even and uneven-age systems. Close the river corridor to off-highway vehicles (OHV). The uplands are designated "open" to OHV use.

Prior to initiating actions in this area the Area Manager attends the County Commissioner's meetings to advise them of what is planned. This is followed by an informal scoping meeting. Persons known to have an interest in this area are invited. This includes the County Commissioners, livestock permittees, commercial river rafting & fishing guides, Department of Energy, Division of Wildlife and Native American representatives. The Resource Advisory Council (RAC) is notified and invited to attend. Notification is largely by telephone and by letter if needed. The purpose of the scoping meeting is to ask interested publics for information, inform them of BLM's intentions, and to invite their continued participation in our efforts to assess and maintain or achieve healthy public lands for this area. Compiling and displaying existing information, and making the needed contacts require about one month, and the expenditure of about \$ 4000 in BLM personnel costs.

II. What Standards are not being met? What is the trend?

Process and Resources Needed:

The staff is tasked with gathering and organizing information in preparation for an interdisciplinary (ID) team meeting on this area. Available information includes: personal knowledge of staff from field visits, watershed and vegetation trend data from frequency transects, county soil survey, T&E and SVIM inventory data, 1982 color and 1990 infrared aerial photo coverage, and surface geological and topographic map coverage. LANDSTAT information is ground truthed. Land status, surface transportation, and stream data is converted from the MOSS to ARC Info geographic information system (GIS). Relevant information from grazing case files is compiled. The Corps of Engineers (COE) is queried to see if they have additional aerial photo coverage, and the Forest Service and Native American Tribes are contacted for information. These efforts occur over about a 90 day period at a personnel cost of about \$2000. At the ID team meeting the staff analyze and interpret the information concluding with a field visit. A meeting is then arranged with those persons who may be affected and those that expressed interest in this area during scoping (Scoping Group). This meeting is to share information and to determine what future actions are appropriate.

Findings:

Standard 1 - The standard is met. The upland soils standard is being met. Though some localized gullying is occurring it is within the levels one would expect under natural conditions in this area. Trend is satisfactory. In isolated geographic instances erosion levels exceed natural or geologic rates and are attributed to poorly revegetated pipelines, concentrated livestock use, and OHV travel. These site-specific problems are addressed individually.

Standard 2 - The standard is met. Overall the riparian areas are properly functioning and close to climax ecological condition. The construction of a large impoundment upstream has changed the vegetative potential of the riparian and changes are becoming apparent: the establishment of Gamble's oak and other more xeric species in the historic floodplain and poor recruitment

of box elder seedlings to replace the large mature individuals along the river. Both of these conditions are attributed to the absence of occasional scouring floods as a result of water management practices associated with the dam.

Standard 3 - The standard is not met. Decadent sage brush and oak brush plant communities are present. Similarly, the Ponderosa Pine stands are all of the same (immature) age class. There is a lack of diversity within these areas. The trend for these conditions is static.

Standard 4 - The standard is met. No federal threatened, endangered, or candidate species are known to inhabit this area. The southwestern river otter, previously a Candidate 2 species, was reintroduced to the river area and appears to be thriving (Colorado lists the otter as state endangered)..

Standard 5 - The standard is met and the trend is static.

III. What are the Causes for the Standards Not Being Met?

Process and Resources Needed:

The assessment on standards and causal factors is developed jointly with the Scoping Group. As part of the assessment, fire history information is collected. A local college assists by developing a vegetation/fire model to better determine what fire results might be. It takes about two weeks to gather this information together. Then a public meeting and on-site tour is conducted to provide everyone with the information that has been gathered and to seek solutions.

Findings:

Lack of natural fire appears to be a contributing factor to the "dog hair" stands of ponderosa pine and decadent oak and sage brush. The lack of natural fire is caused by past fire suppression in combination with past grazing which removed the fine fuels needed for fires to carry. The chaining appears to have contributed to the gullying. Other causes of gullying include unreclaimed rights-of-way, and OHV use along right-of-way roads primarily during hunting season. Livestock and elk also use these open trails. Controlled water flow in the river has caused the loss of beach areas and point bars. Improved compliance in keeping livestock off during the scheduled deferment periods is needed for plant rest & recovery.

IV. What Options for Remedy are There? What is the Decision?

Process and Resources Needed:

The complexity of the issues and how different the suspected causes may be from those initially identified determines whether this next step is done with a letter or a meeting. Information already obtained will be used to negotiate possible resolutions as described below.

Options:

a) Complete a joint fire plan. Design and implement management ignited and prescribed natural fire projects in the decadent sage brush and oak brush areas, to improve plant diversity and increase ground cover. The fire plan is completed the first year. On average, individual management ignited fires take 24 months to design and implement, at an average cost of \$40/acre.

b) Diversity in the "dog-haired" stands of ponderosa pine is also achieved by management ignited fire or by commercial thinning projects. Each commercial

thinning contract will treat 30 -80 acres and cost about \$6000 to layout and administer.

c) In the short term, gullyng is addressed by contacting the right-of-way holders to have them rehabilitate roads where gullyng is occurring. This needs to be done in combination with water barring and road closures. These short term measures will cost the right-of-way holders approximately \$ 500 to \$1000 per site and the BLM \$500. Over the long term, rehabilitation success is checked before approving assignments or renewals.

d) Another action to reduce gullyng is to amend the RMP to change the OHV designation from open to limited. Amending the RMP will likely take about six months and cost approximately \$10,000, mostly in personnel costs.

e) Work with DOW and the Wildlife Commission to more closely manage the elk population. Once the DOW establishes a Habitat Partnership Program (HPP), work with the partnership to determine the feasibility of performing vegetative manipulations in other areas to disperse elk and deer populations. BLM costs are about \$800/project.

f) Greater plant diversity and increased ground cover is achieved by resting the two allotments that are grazed summer long, every third year. Alternatively, the permittee of the larger of the two allotments install additional fencing and water and use a rotation system. This is impractical on the smaller 40 acre allotment. The cost to BLM for additional monitoring and field visits to coordinate the necessary changes is approximately \$8,000. It will cost the permittee on the larger allotment about \$600 every third year in higher pasture rates and transportation costs, assuming that he chose not to install additional fencing and water. The cost to the permittee on the smaller allotment will be about \$100 every third year. BLM increases livestock use supervision in the other fire allotments.

g.) Re-establish beach areas and point bars along the river by negotiating with the water conservancy district to allow periodic floods.

h.) Enhance box elder recruitment by restricting campsites, and by planting trees. Campsites would be closed by signing and installing physical barriers.

Decisions:

* Options a,c,e,f and h will be continued or initiated immediately.

* Options b and d, must be considered with other resource area priorities.

* Option g is rejected. More intensive management of the recreation sites to protect resource values is adopted. Closure of the recreation sites is considered impractical. Tree planting is not considered cost effective.

V. How will Decisions be Implemented? What are the impacts?

Process:

a) In cooperation with the Forest Service, a Prescribed Natural Fire Plan, is completed. The decadent sage brush and oak brush stands in this area become a high priority for management initiated fire. Over a 15 year period, 15 management initiated fires are planned.

b) Ten commercial thinning projects are conducted in the ponderosa pine thickets, as funds and personnel become available.

c) Right-of-way holders are contacted and asked to rehabilitate the roads being lost to gullyng. This is coordinated with BLM so that water bars and unneeded roads can be closed with physical barriers. A high priority is

placed on performing compliance checks on future right-of-way assignments and renewals in this area.

d) Although desirable, amending the RMP to limit OHV use in the area to designated roads and trails is considered too expensive in terms of the limited realty and recreation resources available. Instead, the hunter information program receives increased emphasis.

e) BLM works with the DOW and Wildlife Commission to try and gain agreement on better managing elk populations in this area. BLM will also work with the HPP (if established) to determine the feasibility of performing vegetative manipulations in other areas to disperse elk and deer populations.

f) The exemption in the RMP for "M" (Maintain) and "C" (Custodial) allotments that does not require plant rest and recovery during the critical spring growing season is revoked. The two allotments that are not currently providing rest will be required to provide a rest period every third year.

Impacts:

Resource Impacts:

The reintroduction of fire reduces the amount of decadent sage brush and oak brush stands by 6000 acres over a 15 year period. This greatly increases plant diversity. Forage for livestock, deer and elk, as well as ground cover is also increased, which impedes further gullying. When funds become available, similar improvements are seen in those areas where ponderosa pine thinning has occurred.

Rehabilitating right-of-way roads, constructing water bars and closing the unneeded roads in concert with the hunting information program, eliminates the existing gullying and prevents further gullying in these specific areas.

Assuming that negotiations to reduce elk populations and the HPP program efforts are successful in dispersing elk. Considerable improvement in plant diversity, vigor, and ground cover occurs throughout the area over a five to ten year period.

Adding a rest requirement to the two allotments presently lacking this requirement improves plant diversity and increases ground cover on 1500 acres of public land.

Public Land User Impacts:

Users of the public lands are inconvenienced during the period that the management initiated fires are being conducted. During each fire, some people may object to the smoke, and for a short period following the fire, some persons may object to the blackened vegetation. There is always a risk that the fire may escape control and present a threat to lives and property. Following the next growing season, forage for livestock is improved, which may result in increased weight gains. Big game forage, and accessibility for hunting improves, resulting in improved hunting success.

Commercial thinning contracts provide additional work and income for local woodcutters.

Right-of-way holders incur additional expenses of approximately \$2500 to rehabilitate pipelines and other types of right-of-ways. If this work is not done now, greater rehabilitation costs occur in the future.

Hunters are inconvenienced slightly by roads that are closed to OHV use.

In the short term, reducing elk populations through supplemental hunts allow for more opportunities for hunters. In the long term, their chances for success diminish. If conflicts are resolved by changing the timing and location of elk use, it is likely no impacts to hunters occur.

The requirement to rest the allotment every third year will cost one permittee about \$600, and another permittee about \$100 for transportation costs and higher pasture fees.

Socio-economic Impacts:

Conducting management initiated fires likely requires mobilizing local fire departments and bringing in additional fire crews from outside the area. This increases revenues to local businesses for fuels, lodging, and meals. Again, property and lives may be at risk if a fire escapes.

Ponderosa pine thinnings bring in additional revenues to local woodcutters.

Rehabilitating, water barring and closing right-of-way roads results in some modest expenditures for equipment, fuels and other supplies.

If supplemental hunts occur, a temporary increase in expenditures by hunters occurs, followed by a decrease in expenditures. Neither the increase or the decrease is significant.

Owners of alfalfa fields to the west of the area experience fewer elk in their fields. Consequently, their hay production increases, and they will submit fewer and smaller damage claims to the DOW.

Vegetation manipulations conducted through the HPP result in local expenditures for equipment, fuel, and other supplies depending on the type of manipulation being conducted.

VI. How will the Corrective Actions be Monitored to Determine Effectiveness?

Transects are established to measure the effectiveness of the management initiated fires, and the ponderosa pine thinnings. These transects are read for two to three years following the fire.

Normal project compliance is performed on the right-of-way road rehabilitation to assure that it is properly done, and is effective.

The DOW monitors elk populations and shares that data with BLM, and the public.

Monitoring of range condition and trend on the "I" and "M" allotments is conducted every five or six years. Cover data is recorded as well. Forage/browse utilization studies are read annually each year after the livestock are removed. No wildlife browse or pellet count transects are conducted. Permittees are required to submit accurate records of the levels of livestock grazing use they have made at the end of each season. None of this information is collected on the 40 acre "C" allotment.

B. FALLBACK STANDARDS AND GUIDELINES ALTERNATIVE (identify difference from the proposed action)

There is not any significant difference between this alternative and the proposed action. The same management actions are undertaken. Seed mixtures used for rehabilitating the right-of-way roads and other disturbed sites

utilize only native species. This will increase costs slightly to public land users.

C. PRESENT MANAGEMENT (identify difference from the proposed action)

Only slight differences occur. The same management actions are undertaken, except that the two allotments that do not have a rest period during the critical spring growth period will continue to be exempted from this requirement until monitoring data shows that a change is necessary. These allotments are currently low priority and it is unlikely that BLM will monitor them for many years. The two permittees will be spared the expenses of transportation and higher pasture fees (\$600 and \$100) every third year. This might be somewhat offset by increased revenues from fatter cattle.

The management actions undertaken are likely accomplished using less of an interdisciplinary and collaborative approach.

IMPLEMENTATION EXAMPLE 7

PRESENT SITUATION

The area is approximately 48,000 acres in size. It lies about 15 miles west of a town of 18,000 population. It lies within the Southern Parks and Rocky Mountain Ranges Landscape Unit. (See Chapter 3.) Topography varies from open grasslands to rolling hills to steep, rugged, canyonlands. Elevation ranges from 6,000 to 8,500 feet. Pinon/Juniper is the dominant vegetation type. Other types include Ponderosa pine, white fir/Douglas fir, mountain shrub, and grassland. Soils are derived from decomposed granite. Precipitation ranges from 10 to 16 inches; most dependable precipitation comes in mid to late summer. Key animal species include mule deer, elk, turkey, brown trout, rainbow trout, brook trout, and cutthroat trout. Fires burn small areas most years. A 600-acre fire occurred in the north part of the area in 1981. Flash flooding is common. Although regulated, the creek also experiences springtime flooding. Two additional creeks (< 1cfs) also provide permanent water to the area. All are tributary to the Arkansas River. Grazing, mining, woodcutting, and most recently, recreational use have impacted the landscape. However, some portions of the area have characteristics to warrant Wilderness Study Area status (approximately 70 percent of the BLM lands) and is included in an Area of Critical Environmental Concern (ACEC) along the major creek. The ACEC is designated for scenic, wildlife, and riparian values. The area is bordered by rural subdivisions where there are cattle drift problems. The three grazing allotments are critical to the operations of three local operators. The water from the creek is an important supply for small farmers and homeowners in the town nearby.

The area is identified in the RMP as a subregion subject to development of an Integrated Activity Plan (IAP). According to the RMP implementation schedule, the IAP is now scheduled for development. The area consists of three major livestock grazing allotments, of which one is up for renewal, and several custodial allotments. Unauthorized grazing, mainly the result of cattle that stray off adjacent subdivided land, is a problem. A major, perennial creek parallels the east boundary portion of the area. Flows of the creek are regulated by an irrigation company who maintains a reservoir south of the area. Concerns by staff and the public have been raised over upland soil conditions and the riparian condition along the creek and some smaller feeder creeks. Vehicle use along the creek has increased significantly in recent years. Assume the area is a high enough priority for development of an IAP, which will consider standards and guidelines. (Note: It is not to be assumed that analysis of standards and guidelines must always culminate in a plan. However, this example will serve to illustrate the process and potential impacts when a major planning effort is undertaken.)

A. PROPOSED ACTION

I. Preliminary Assessment

Process and Resources Needed:

The standards and guidelines must now be considered in the development of the plan. Key decisions in the Resource Management Plan are: establish desired plant communities through the IAP, manage vegetation to accomplish other objectives, adjust the season of use in the ACEC. Vehicles will be limited to designated roads and trails except for the WSA which will be closed to vehicles. Grazing is allowed at current preference, but may be modified if needed through the IAP to resolve conflicts with riparian, critical wildlife habitat (including special status species), and allocations for the ACEC.

Harvesting of timber products is allowed in some areas.

An interdisciplinary (ID) team is assembled and a project manager is selected. Initially, the team consists of a rangeland management specialist, ecologist, wildlife biologist, riparian coordinator (who also has fishery expertise), recreation planner, and soils scientist. The team meets initially to scope out the project and develop a strategy. A press release is distributed to local papers informing the public of the effort. Stakeholders are notified individually by letter. In addition, some stakeholders, such as the livestock permittees, DOW, and the irrigation company are also given courtesy phone calls or visits. The RAC is notified through normal communication channels (most likely this will be through periodic updates).

II. WHAT STANDARDS ARE NOT BEING MET? WHAT IS THE TREND?

Process and Resources Needed:

The ID Team gathers the following existing information: riparian inventories, fisheries data, grazing files (actual use and utilization, climate, browse, and photos), historical uses, vegetation trend data, RMP decisions, and soil survey information. Historical use information is gathered from citizens (e.g., ranchers, historical society) that have a knowledge of the area through interviews or request letters. The ID team conducts field visits to assess the health of the area. Stakeholders (especially the livestock permittees and irrigation company) and RAC are invited. It is probable that additional discussions are needed to come to conclusions on how the area meets the health standards, using information collected during and prior to the field visits. During this period, potential causes of the problem will be discussed. Approximately \$16,000 in BLM labor costs will be needed for this phase of the process, occurring over a six-month period.

Findings :

Standard 1 - The standard is not met on large areas within two adjacent grazing allotments (approximately 20,000 acres). Indicators of the standard that point to a problem are: presence of active rills and gullies; inappropriate ground cover (lack of adequate basal cover, as evidenced by a high percent of bare ground); plant litter is not accumulating in place; absence of organic matter in soil; lack of plant species with a variety of root depths; lack of vigorous plants. Trend is static.

Standard 2 - Only about 40 percent of the riparian zones are in properly functioning condition. Riparian zones not meeting the standard do not withstand high stream flow events well; lack woody riparian vegetation, stream is not in balance with the water and sediment being supplied by the watershed; residual vegetation not always present to capture and retain sediment; lack of woody debris contributing to the character of stream channel morphology. Trend is upward, but resources are at risk.

Standard 3 - Approximately 35 percent of the upland vegetation does not meet the standard, as evidenced by: lack of spatial distribution with appropriate density and distribution of plants, lack of population age classes, and appropriate plant litter; within pinon-juniper woodland sites, successional diversity is lacking.

Standard 4 - Standard is met. (The USFWS, DOW, and Nature Conservancy concur.)

Standard 5 - Standard is met.

III. What are the causes for the Standards not being met?

Process and Resources Needed:

During initial investigations, camping and fishing uses at access points along the creek are suspected as a potential cause for riparian problems. It is suspected that livestock grazing (past and present practices), past fire management policy, and off-highway vehicle use are also contributors to the problems. The ID team meets and develops initial findings. The Area Manager, ID Team, the livestock permittees, DOW, and representatives from recreation and OHV interests meet on-site to discuss the initial findings. Due to anticipated controversy, the RAC is invited to be represented on site. In addition to causal factors, potential remedial actions are also discussed at this time. Most causal factors are agreed upon except for the issues related to woody riparian vegetation along the creek. The Rangeland Resource Team (RRT), formed by the local RAC, will provide opinions on the unresolved issues. (The RRT is composed of two grazing permittees, an academician with expertise in vegetation and ecology, and two representatives from the environmental and recreation communities.) This step of the process occurs over a three-month period; BLM labor costs are approximately \$6,000. Approximately six days will be expended by non-BLM participants and the RRT members.

Findings:

Fire suppression policy (past and present) has prevented interruption of successional stages in the pinon/juniper plant community. Interim management policy for the Wilderness Study Area prohibits forest management practices that promote successional diversity. Inappropriate livestock distribution has resulted in over-utilized riparian vegetation. (However, recently modified grazing practices, including drift fences and alternative pasturing, have lessened the impact along the creek.) Needed animal impact is lacking due to undeveloped and unmaintained springs. Off-highway vehicle use is funneled to creek bottoms resulting in damage to riparian resources.

V. What options for remedy are there? What is the decision?

Process and Resources Needed:

Reassemble the ID team, permittee, DOW, and other stakeholders that have been involved along the way, to discuss options. This meeting, possibly held on-site will be an extension of discussions that occurred during steps II and III of the process. Therefore, this phase of the process should proceed quickly. This will occur over a 1.5-month period and BLM labor costs will be \$2,000.

Options:

- * Intensify the development of drift fences and double the pastures along the creek. This should allow the riparian vegetation to become more vigorous, develop better root systems, and enhance willow growth.
- * Using drift fences, create additional pasture on upland areas in order to keep livestock on these sites. Animal impact in these areas will add needed organic matter to the soil and improve the vigor of desirable plants. The additional pastures are supplemented with development/redevelopment of six springs in the upland areas and strategic placement of salt.
- * Reducing livestock is also considered, but necessary only if the aforementioned livestock grazing actions are not successful.
- * Erosion abatement measures, such as gully plugs, trash collectors, etc., on upland drainages are considered.

* Identify the designated vehicle routes in the IAP. Initiate consultation and education through informational meetings and any additional meetings that are held for the IAP. Place barricades at unneeded access points to the area and sign strategic locations. Increase law enforcement and visitor information patrols in the area.

* Incorporate a prescribed fire strategy into the IAP. Fire is need to promote vegetative diversity identified as a problem.

* The option of amending the RMP to conditional suppression status is considered. However, because there is a significant amount of private land adjacent to the area, this option is not carried forward.

* Identify woodland areas for harvest in the IAP that will meet vegetative diversity objective.

Decisions:

• Except for changing the fire suppression classification and upland control measures, all of the options mentioned above will be adopted.

VI. How will the decision be implemented? What are the impacts?

Process and Resources Needed:

• All of the decisions noted above are included in the IAP. (Note: there likely are other actions in the IAP that are not related to the standards and guidelines analyzed in this document. Also, should there be a delay in completing the IAP, the grazing management actions may be implemented in advance of final approval of the IAP.)

* The prescribed fire portion of the plan and OHV decisions are subject to an environmental assessment in conjunction with the IAP. All grazing management actions are covered adequately under previous environmental documents and are documented through an administrative determination sheet. Timber harvest areas are identified, but cannot be acted upon at this time until Congress makes a decision on the WSA. Prescribed fire must conform to Wilderness interim management policy.

* The implementation plan for the IAP notes that the grazing management actions can be acted upon quickly. Once approved, the decisions pertaining to livestock grazing are documented in the AMP, which become terms and conditions of the permit. Other actions are dependent on available funding, partnerships, and or volunteer arrangements.

* Two additional meetings related to the IAP will be held. Labor costs to complete the plan, the EA, and conduct the meetings are \$6,000.

Impacts:

Livestock Grazing Administration: The cost of implementing the grazing systems and improvements is approximately \$7,200 and will be shared among three operators. Some financial assistance from DOW or the Board of District Advisors (formerly BLM's Grazing Advisory Board) may lessen the cost to the permittees. The permittees will need to spend additional time managing the livestock because there will be about twice as many pastures to move the livestock through during the use period.

Vehicle Management: The cost of implementing the OHV decisions are: using heavy equipment, construct barricades at 6 access points (12 days at \$100/hr.)

at a cost of \$9,600; erect/replace signs at a cost of \$1,000. Also, initiating consultation and education with homeowners and increasing law enforcement and resource patrols requires a redirecting of priorities of existing personnel. The use of volunteers or "adopt-an-area" are pursued.

Prescribed Fire and Woodcutting: Prescribed fire costs are approximately \$25 per acre. Pinon/juniper woodcutting areas cost approximately \$4,000 in labor to establish (assuming a 15-acre cut). Approximately \$1,000 is recuperated by charging for permits.

Other Impacts: Outside of burn and woodcutting areas, improvements to basal cover, plant litter, plant diversity, etc, will occur gradually over 20+ years. Areas subject to prescribed burns and woodcutting will experience noticeable improvement in most indicators within 5 years. The dependability of available forage for livestock and wildlife will increase. If fire and woodcuts are implemented, there will be a slight increase in available forage for livestock and wildlife.

VII. How will the corrective actions be monitored to determine effectiveness?

Utilization: Establish 12 streambank photo transects along the creek. Erect utilization cages in all pastures (10). BLM labor costs are \$4,000. Monitor and document file annually. Annual BLM labor costs are \$1,000. Establish five photo points for each burn and woodcutting area.

B. FALLBACK STANDARDS AND GUIDELINES ALTERNATIVE (identify difference from Proposed Action Alternative)

There is virtually no difference. Additional time may be needed during the standard analysis phase because of the absence of indicators.

C. PRESENT MANAGEMENT (identify difference from Proposed Action Alternative)

Without the standards and guidelines, the process would have likely focused on the riparian situation. Most likely, a strong analysis of upland soils and vegetation conditions would not have happened.

IMPLEMENTATION EXAMPLE 8

I. BACKGROUND

This 8,000 acre area lies adjacent to a small mountain park community of 1,200. It lies within the Northern Parks and Ranges Landscape Unit. (See Chapter 3.) Elevation ranges from 7,400 to 8,400 feet. Soils are predominantly deep, well-drained loams that were formed in alluvium from Pierre Shale. Vegetative communities are dominated by sagebrush parks. The area receives 10 to 14 inches of annual precipitation, split evenly between cold and warm seasons. Approximately 4 miles of riparian, comprised of 3 perennial streams, flow through the area. The sediment in one of the streams appears quite high. The area is critical deer and elk winter habitat. The area was identified as a Resource Conservation Area (RCA) in 1965, at which time an aggressive series of range improvement projects were implemented to manipulate the upland vegetation. These projects included 280 acres of crested wheatgrass seedings, 3,275 acres were chemically treated, and 100 acres were mechanically treated, to remove sagebrush. 3,550 acres remained untreated native range. Subsequent to the treatments, AUMs (cattle) associated with the grazing permit were increased by over 355 percent to 2,133 AUMs. Through the years, the AMP for the allotment was modified four times and AUMs were reduced with each modification. Current preference is 700 AUMs for livestock. The area receives heavy off-highway vehicle use (motorcycles and all-terrain vehicles). Other substantial human activities include target shooting, hunting, and partying.

This high-visibility area is under constant scrutiny by the local public. The grazing permit is up for renewal. Based on a cursory examination of monitoring data and ocular reconnaissance, some staff are concerned over riparian conditions and vegetative conditions. This is especially disturbing given the fact that substantial modifications to livestock grazing, including substantial reductions, have occurred. Assume the area is given priority status and standards and guidelines will be evaluated for the area. Although this area is the primary focal point for the analysis, the effects of surrounding BLM and private land are considered in the assessment.

A. PROPOSED ACTION

I. Preliminary Assessment

Process and Resources Needed:

Applicable RMP decisions are identified. The standards and guidelines detailed in Chapter 2 apply. Other decisions include: The area is designated "open" to OHV use. Forage allocation is 700 AUMs for livestock grazing and 200 AUMs (based on original AMP developed in 1970) for mule deer and elk. Also, an OHV Plan for the area prescribing designated routes and some road closures was prepared in 1988 but never implemented.

The Area Manager and staff meet to develop a strategy. An interdisciplinary (ID) team consisting of a range management specialist, ecologist, wildlife biologist, and recreation planner is selected. A full plan is not considered necessary. Because several conflicts and uses are present, notify potential stakeholders at this time - livestock permittees, Division of Wildlife (DOW), and the local OHV user group. During this initial period, communication is mostly informal, mainly in the form of phone calls. If the OHV club meets during this time, staff may wish to address the group. A press release is prepared for the local paper informing the public of the process. A site

visit involving the livestock permittee, the DOW, and a representative from the OHV club is likely. Ask the stakeholders to provide any information that may be helpful in the process. The RAC is notified, most likely through a periodic update (i.e., normal notification process). Initial scoping and notification occurs over a one-month period; BLM labor costs are approximately \$1,000.

II. What standards are not being met? What is the trend?

Process and Resources Needed:

Team members gather aerial photos and existing data on climate, utilization, actual use, browse condition, big game populations, site potential, and water quality. Staff reads trend data (greenlines in riparian and uplands), establishes photo points along two drainages, conduct ESI inventory, and gather appropriate water samples (see Example 4). The stakeholders are invited to attend any of the field sessions. Internal scoping by interdisciplinary team (staff) occurs over a two-month period. BLM labor costs are \$4,000 and other costs, such as lab fees are \$500.

Findings :

Standard 1 - Problems identified. Substantial rilling, active, incised channeling, soil blow-outs, lack of ground cover, and plant litter are indicators. Trend is static or slightly downward.

Standard 2 - Problems identified on one of the three riparian areas. Lack of desirable riparian vegetation, excessive sediment loads without ability to capture, an unstable stream channel, and shortened surface flows without appropriate meandering are indicators. Woody species recruitment is occurring but with consistently high utilization levels. Trend is stable at current nonfunctioning condition.

Standard 3 - Problems identified. Sage grouse populations are declining regionally; the effects of this particular area on the sage grouse population are uncertain. Sage brush communities do not exhibit a range of population age classes. Plant litter is not accumulating across the landscape. Upland vegetation is only producing 30 percent to 40 percent of its capability to meet desired objectives. Trend is down along trails and travel corridors, up slightly through the remainder of the area.

Standard 4 - Not applicable.

Standard 5 - Problems identified on the stream mentioned in Standard 2. The temperature of the water is high and the water carries abnormal sediment loads. Trend is static. The path taken to address water quality in this example is displayed at the end of this example. See Example 4 and Appendix 4 for additional information on the process used to determine compliance with the water quality standard.

III. What are the causes for the standards not being met?

Process and Resources Needed:

It is suspected that past management practices are a major contributor to problems on the site. Review past inventory data, case file data, and historic uses. Also, review the OHV plan and the process used to develop it. Interview users that have a knowledge of the past uses of the area. Because the area is classified as a "limited" area due to sediment, a team is formed

to assess the situation and make recommendations. Include the permittee and DOW in the staff analysis. Prepare a report on preliminary findings. BLM staff, the livestock permittee, OHV club representatives, and the DOW meet on-site to disclose the preliminary findings and to discuss potential remedies. This step of the process would occur over a two-week period and BLM labor costs are approximately \$2,000.

Findings:

Previous livestock grazing practices that included season-long use with excessive animal numbers reduced vegetative capability on the area. The condition is further exacerbated by current OHV use. Livestock use is determined now to be only a minor contributor to the area's inability to recover due to the intense management practices being applied under the current AMP. The area has been divided into five pastures where livestock are only grazed for a period of 30 days. The two pastures containing the affected riparian areas are grazed for five days and nine days respectively. Other water sources (wells, developed springs) were developed to help further diminish use on the riparian areas. Unrestricted OHV use in one of the drainages is the major contributor to the nonfunctioning condition in the riparian zone. OHV use is also a contributor to further depletion of upland vegetation and sediment into the drainage. Wildlife grazing distribution problems is also a minor contributor to the riparian problems.

IV. What options for remedy are there? What is the decision?

Process and Resources Needed:

Utilizing the information and ideas previously gathered, the Area Manager and staff develop a preferred action. The proposal and alternatives are discussed with the DOW, OHV club representatives, and the livestock permittee. The RAC is informed of progress but not directly involved at this time due to a perceived lack of conflict between user groups.

Options:

* For vehicle management, prepare a RMP plan amendment changing the existing designation from "open" to "limited to designated roads and trails." This occurs over a six-month period (\$500 for notices and \$3000 for labor). Note: designation on surrounding lands are also made part of the amendment process. Implement portions of the existing OHV Plan. Specifically: identify and close damaging roads and trails (\$1,000 for materials and \$6,000 labor); construct drift fences across riparian zones to impede off-road travel along subject trails (\$500 for materials and \$1,000 for labor). Installation costs could be reduced through the volunteer program. Develop an educational program with the local schools and OHV clubs to communicate resource issues and concerns.

* For livestock grazing, the current high intensity/short duration grazing system is supported as a good management tool to help with both the stream recovery process (although historical livestock use is considered to be a contributing factor to past degradation within the riparian area) as well as upland improvement.

* For riparian management, plant sedge plugs and willows within the riparian zone to collect upland sediment loads and to reduce channel erosion. Estimated costs to the BLM are \$2,000 for labor and material, but possibly reduced through cost-sharing with the Habitat Partnership Program (HPP) program. Alternatives to this action are drop structures and gabions, although these are considered cost prohibitive and unrealistic.

* To stop or slow sediment flows into the riparian area and to improve upland conditions, broadcast native seed onto sensitive areas adjacent to the riparian area in an effort to reduce surface runoff, stabilize upland soils, and to reduce erosional impacts. Other alternatives, such as recontouring upland areas and waterbar highly erosive areas are considered to be too cost prohibitive and unrealistic. Cost is \$8,300 (\$83/acre at 100 acres project size).

Decisions:

Implementation of the OHV Plan as noted above; prepare plan amendment for OHV designation. Establish "educational" programs with the local OHV club and school system to increase public awareness.

Construct drift fences within the riparian area to deter OHV use. Sign closed trails/roads within sensitive areas to further increase public awareness and to deter unauthorized OHV use within those areas. Monitor and cite OHV users found operating within closed areas.

Plant sedge plugs within stream to help start the recovery process and stabilize current stream channel conditions.

Reseed sensitive upland sites to reduce upland erosion and streambank sediment loads.

V. How will the decision be implemented? What are the impacts?

Process:

Vehicle management - Prepare the plan amendment. Research aerial photos to determine existing roads prior to 1986. Update the OHV plan in conjunction with the amendment. Local users, user groups, the town, and county need to be involved in the changing management of the area. Cooperation from each of the parties would better help achieve success and acceptance of the decision.

Riparian revegetation - Suitable sites for planting sedge plugs are identified. Plugs are purchased and volunteers organized for planting.

Upland revegetation - Sites susceptible to erosion are surveyed and mapped for potential reseeding. Project analysis is completed over a two-year period. This is contingent on the grazing permittee taking voluntary nonuse on two pastures for two years.

Impacts:

Resource Impacts: Improvement to the stream through revegetation occurs at a relatively rapid pace (two years) once OHV use is controlled and sedge plugs planted. The woody component would gradually appear over a longer period due to the heavy concentrations of wildlife during the winter. A functioning-at-risk status for the riparian zone is expected within five to seven years. Ground cover on upland sites would improve quickly once plants from the seeding are established, although the desired potential community (DPC) would not be expected for another 20 years. Heavy soil depositions would continue to burden the riparian recovery process until improved vehicle management is put in place and the upland seedlings achieve permanent establishment (5-10 years). Limiting OHV use may move the activity to other areas, resulting in damage to outlying areas. The degree to which this occurs is contingent on how successful public information and awareness is and on which lands are covered in the OHV designation amendment.

Public Land Users Impacts: The impact expected toward the OHV user is mainly inconvenience. Initially, the voluntary nonuse (two years) temporarily reduces the grazing permittee 500 AUMs through the closure of two pastures for two years. Assuming \$7.00/AUM for private pasture, this increases the permittee's costs by approximately \$3,500 per year.

Socio-economic Impacts: The actions do not affect population and cause no more than very minor impacts to the local economy. Some of the local residents experience frustration over control and management placed on vehicle use.

VI. How will the corrective actions be monitored to determine effectiveness?

Utilization studies: Both range and wildlife programs would establish these studies to further determine grazing impacts on this area by livestock and wildlife. Estimated cost to each program are two days/year at \$250 each.

Photopoints/Cross section studies: To monitor progress and development of the riparian system. Estimated cost to the BLM is \$1,000 per year.

Quadrat Frequency/Trend: These studies currently exist for livestock grazing and are currently being monitored. No additional cost would be associated with this method.

Browse study: To determine grazing impacts from both livestock and wildlife on the woody component within the riparian area. Approximate cost is \$2,000 to the BLM (two weeks/year).

Road/Trail monitoring: The trails would be visually monitored for condition and use. Monitoring would be done with recreation staff and law enforcement. A "public land watch" system, with community partners and user groups is encouraged. Annual labor costs are approximately \$400 for 2-3 days/year.

B. FALLBACK STANDARDS AND GUIDELINES ALTERNATIVE (identify difference from Proposed Action Alternative)

Without indicators, it takes longer to arrive at the root cause of the problem.

C. PRESENT MANAGEMENT (identify difference from Proposed Action Alternative)

Without the emphasis on overall public land health, it is likely that problems are likely addressed on a piecemeal basis.

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The following is provided to show the path taken in this example to determine conformance with water quality standards. See Appendix D that displays the flow chart for water quality compliance.

- 1- Locate appropriate stream segments during preliminary assessment
- 2- Determine antidegradation category and beneficial uses during preliminary assessment.

Findings ---->	Anti degradation : Undesignated
	Beneficial Uses : Cold Water Aquatic Life 1,

Recreation Class 2, water supply, agriculture

3- Determine if National or State Waters during Preliminary Assessment
Findings----→ No

4- Determined Water Quality during Preliminary Assessment and Step 2 and/or if
the area is classified as Limited or Impaired.
Findings----→ No existing data available; site testing
conducted

concluded sediment problems; the area is
classified as limited due to sediment (low
priority)

5- The situation is referred to a water quality ID Team.

PRESENT SITUATION

This 17,500-acre area is located in the South-Central Highlands Landscape Unit. (See Chapter 3.) It extends from the lower sagebrush country along a perennial stream to timber/park/sagebrush areas at the U.S. Forest Service (USFS) boundary on the south edge of the area. The elevation range is 7,800 to 9,750 feet. Average annual precipitation is approximately 11-12 inches.

Private lands are intermixed with public lands and the area is easily accessible from a major highway. Gates are sometimes left open resulting in livestock using unauthorized areas. The allotment is currently in its sixth year of rest from grazing as a result of the Department of Energy's Uranium Mill Tailings Removal Project (UMTRA). As part of the mitigation requirements for the UMTRA Project, grazing will not resume until a grazing plan is in place. Public lands within the area are permitted to one livestock operator. The permitted use is 318 AUMs, from May 15 to August 17. The permittee has requested that BLM evaluate his allotment and present recommendations to him.

A. PROPOSED ACTION**I. Preliminary Assessment**

All applicable RMP decisions are identified and described in a table that lists ten criteria or concerns for this area. These criteria/concerns are: Southwest Willow Fly Catcher, Gunnison Sage Grouse, riparian areas, crested wheatgrass seedings and burned areas, rehabilitated sites, big game, private land ownership, poisonous plants, and native uplands. In addition, the standards and guidelines in Chapter Two apply.

This is a high production area for the Gunnison Sage Grouse, which is at risk, and may become a listed species under the Endangered Species Act (ESA). A considerable number of antelope utilize the area. Deer and elk use is minimal. Before livestock were removed, riparian areas had a static to downward trend due to heavy and severe livestock use and roads. The concern over riparian areas and livestock is even more critical because this allotment has potential habitat for the Southwestern willow flycatcher, an endangered species.

The area has crested wheatgrass seedings associated with burned areas. These are traditional "sore spots" in terms of heavy or severe use by livestock. Upland areas are largely static in trend, however, they are also fragmented by powerlines, existing roads and new or upgraded roads resulting from UMTRA, recreation, and other uses. Poisonous plants occupy a portion of the allotment requiring careful planning of livestock movement (rotations, etc.). The primary poisonous plants are low and tall larkspur along with monkshood.

The RMP prescriptions for the area require that spring use by livestock is rotated. Generally, a 4-inch stubble height must be maintained. Physical disturbances are minimized in sage grouse nesting and brood-rearing habitat from April 15 to July 1.

The biological staff spends about one week, compiling, summarizing, reviewing, and analyzing monitoring (actual use and utilization) data that has been collected over several years. Use supervision data is also compiled and reviewed. Informal contact is made with adjoining permittees to find out what concerns and insights they may have. Then the biological staff and area manager meet with the permittee to explain the need for action, find out what the permittee's goals are and to define everyone's expectations. The RAC is

apprised through normal notification processes; most likely a summarized periodic update.

II. What standards are not being met? What is the trend?

Process and Resources Needed:

Existing livestock and wildlife utilization, actual use, and trend data along with soils and hydrology data is summarized. The homeowners association is contacted to get their input. Then a second meeting is held with the permittee to present the findings. To this point in the process, the BLM expends about \$4,000 in labor costs during a one-month period.

Findings:

Standard 1 - Upland Soils: This standard is not being met, however, there is an acceptable trend toward meeting the standard because the allotment has been rested for six years. Pedestals, rills, and cutting are all present. Low vigor plants are present in most pastures. Like the erosive forces noted above, canopy and ground cover have an improving trend.

Standard 2 - Riparian: This standard is not being met. There are some areas that are acceptable, but one area in particular is not. The indicators include undesirable species, which because they are shallow rooted, are not able to protect streambanks, etc., during peak flows. The only exception is the upper end of one area. For the most part, the trend is upward (acceptable) toward healthy public lands, however, a few areas do not have an acceptable trend.

Standard 3 - Plant and Animal Communities: The standard for both plants and animals is not being met. Regionally, populations of the Gunnison Sage Grouse and Southwestern Willow Flycatcher should be much higher. The populations have declined to a dangerously low point throughout their range. The landscape is fragmented because of land treatments. There would be better habitat diversity if riparian areas were in better condition. There is a noxious weed problem with a state listed species (Russian Knapweed) and other nonlisted species. The animal trend is not acceptable because Gunnison Sage Grouse numbers have not increased and production is less than expected. Actions taken under UMTRA decreased birds by 20 percent, and data shows only a slight upward trend. The plant or habitat trend is up at an acceptable rate except for noxious weeds which spread last year. Habitat fragmentation is unacceptable, but has not changed.

Standard 4 - Threatened & Endangered Species: This standard is being met. The standard for the Southwestern Willow Flycatcher (SWWF), a recently listed species, is being met. The upper end of the allotment may have potential habitat, but none is suitable at this time. Elevation and gradient are the primary criteria used in determining the SWWF habitat (riparian areas). If the riparian habitat is improved to meet the riparian habitat standard, it will be suitable. The fundamental requirement is to address U.S. Fish and Wildlife Service (USFWS) criteria for suitable and occupied habitats, not potential, therefore, the standard is being met. Due to a lack of data, the trend is uncertain at this time.

Standard 5 - Water Quality: This standard is not being met. There is too much erosion and sediment in the drainages, however, upland springs and/or ponds meet the standard. The trend is acceptable because of rest from livestock grazing.

III. What are the causes for the standards not being met?

Process and Resources Needed:

The biological staff, area manager, DOW representative and the permittee review the information that has been gathered and summarized, and through discussions determine the likely causes and appropriate solutions.

Findings:

The causes for not meeting the standards are determined to be: (1) improper livestock grazing in the past that was done in conjunction with the current grazing system; (2) existing roads and new and/or upgraded roads, along with the disposal cell associated with the UMTRA project (including vehicle traffic); and (3) rangeland treatments (burns and seedings).

IV. What options for remedy are there? What is the decision?

Process and Resources Needed:

Existing information is used to prepare an activity plan for the area, which incorporates an EA to analyze and disclose the impacts of the proposed action and alternatives. This is prepared by one lead person assisted by three others at a labor cost of about \$8,000.

Options:

Because a mitigation plan for the UMTRA Project is in place and efforts are already underway to address the Gunnison Sage Grouse and Southwestern Willow Flycatcher, it was determined that the most effective option was to address the basic components of livestock grazing in a manner that compliments these other ongoing efforts. The basic factors addressed include the timing, intensity, and duration of grazing.

Decision:

The decision is to move forward with changes in the timing, intensity and duration of livestock grazing. Permitted use is reduced to 250 AUMs. Utilization levels specified in the 1993 RMP will be used, and grazing duration will be reduced by half in most pastures.

V. How will the decision be implemented? What are the impacts?

Process:

Upon completion of the activity plan and EA, the new grazing permit (which references the activity plan as a term or condition) is offered along with a decision as per the new grazing regulations. The permittee is already aware of and indicated agreement with the provisions of the plan and permit. It is anticipated the permittee accepts the permit as offered.

To implement the proposed grazing system requires an expenditure of \$16,000 for three miles of fence to facilitate more intensive management. Approximately \$15,000 to reconstruct several springs to accommodate a larger herd size (but for 1/3 the duration of grazing). Approximately \$500 is required annually for noxious weed control. These costs will be paid for by the BLM from appropriated funds. Assistance from the District Board of Advisors are requested.

Impacts:

Resource Impacts: The concern with livestock grazing and the Southwestern

Willow Flycatcher is with the presence of cattle during the time the habitat is being utilized by the bird, and any effects that grazing may have on the willow plants. The corrective actions that are proposed are both positive and negative. The positive impact is that the period of grazing is reduced by 1/2 thus reducing the period of time that the bird is disturbed by the presence of cattle. In addition, the overall management of shortened duration, rotation of spring and summer pastures, and increased recovery time benefits the willow plants upon which the bird relies for habitat. The negative impact is that even with a larger number of livestock, this may result in "crowding" near areas with willows resulting in disturbance to the bird even if only for 1/2 the time. Overall, there would be a net gain to the bird.

The concern with the Gunnison Sage Grouse focuses on competition for habitat. The forage so valuable for livestock production is critical for nesting and early brood-rearing habitat for grouse. The corrective actions that are proposed result in more recovery time and thus improved vigor for the plants grouse rely on for cover. Disturbance to grouse by cattle during nesting and early brood-rearing would be reduced in terms of the amount of time livestock are present, however, with an increase in herd size, the likelihood of disturbance to the bird could increase but for a shorter period of time. Because of the benefits to the plants on which the bird relies for habitat and the shortened grazing period, there would be a net gain to this bird.

Riparian Areas are often grazed heavily or severely because of water availability, shading, quality and quantity of forage, forage stays greener longer in these areas, and topography. Corrective actions would reduce the amount of time cattle would graze these areas by 1/2 and increase the amount of time riparian plants have to recover from grazing. This combined with their resiliency results in an overall improvement in riparian conditions. With a greater number of livestock for a shorter period of time, use levels or riparian stubble heights will be difficult to meet. This could pose a problem for broods in these riparian areas if heights fall below the 4" stubble requirement. With inadequate cover, broods become vulnerable to predation. Adequate residue is also needed for watershed stability (stable banks, trapping sediment etc.) so if use levels become heavy or severe, the riparian area could degrade and become vulnerable to erosion. Overall, there is a net benefit to riparian areas from the corrective actions.

Crested Wheatgrass Seedings & burned areas - The primary concern with livestock grazing and seedings/burned areas is that these areas attract cattle because they are first to green up in the spring with palatable forage and are often grazed heavily or severely. The corrective actions shorten the duration of grazing and increase the amount of time these seeded areas have to recover from grazing. If use level requirements (4" residue) are not met, this could adversely effect the health of the seedings, however, this would be mitigated, at least in part, by a shortened duration, and an increased recovery period. The end result is a net benefit to these areas.

The primary concern with livestock and the rehabilitated UMTRA sites is that grazing and trampling in newly seeded/mulched areas could result in the uprooting of seedling grass plants and thus degrade the site resulting in weed infestations and/or erosion. Grazing will not resume for another few years so these sites should be stable by the time grazing resumes. At that time, existing management geared toward shortened duration and increased recovery time should help to maintain these areas. If grazing levels become heavy or severe, these sites may degrade and be vulnerable to erosion, however, this should be mitigated, at least in part, by increased recovery time and a shortened grazing period.

The primary impact to big game is to antelope. To facilitate more intensive management, a pasture division fence is required thus creating a barrier to these animals. The fence is designed to accomodate their needs (16-20" bottom

strand), however, effects of fences are cumulative and should be viewed in a bigger picture. Effects to deer and elk are the same, however, they generally go over fences instead of under so they are vulnerable to getting their hind legs trapped in the top two wires resulting in death or injury to these animals. The effects of a shortened duration and increased recovery period benefit the plants that are important big game forage species.

Although native uplands are less resilient than riparian areas, the reduction in duration of grazing combined with the increased recovery period should benefit these areas by improving the vigor of native upland plants.

Impacts to Public Land Users: The livestock operator incurs a 16 % reduction in permitted use, and the season of use is cut in half in most pastures. To fully utilize his permit the operator will need to increase his herd size to 500 head. The proposed action requires that cattle not be moved into areas with poisonous plants during the period when cattle would be attracted to them. This avoids cattle losses, however should gates be left open or fences cut/unmaintained, cattle could wander into infected pastures and be vulnerable to poisoning and death.

The proposed action involves the owners of adjacent lands by considering their concerns/expectations and shortening the amount of time cattle are in areas that effect them.

Socio-economic: Impacts to the social and economic health of the area are negligible.

VI. How will the Corrective Actions be Monitored to Determine Effectiveness?

Monitoring is generally done by seasonal employees or the staff ecologist. However, other resource specialists may collect this data based on funding and priorities. The resource specialists are involved with use supervision annually, or as budget and priorities allow.

B. FALLBACK STANDARDS AND GUIDELINES ALTERNATIVE (identify difference from Proposed Action Alternative)

No significant difference in impacts are likely to occur.

C. PRESENT MANAGEMENT (identify difference from Proposed Action Alternative)

Very little difference in impacts are likely, if present management continued. Most management actions in this example are already being implemented, thus moving resource conditions toward the standards at an acceptable pace.

IMPLEMENTATION EXAMPLE 10

PRESENT SITUATION

The area is approximately 40,000 acres in size, and lies approximately one-half way between two towns of approximately 2,500 population each. Most of the area is within the Book/Roan Cliffs landscape unit and a small portion of the northern edge is within the Uinta Basin landscape unit.

The dominant species associated with the pinyon/juniper type are pinyon and Utah juniper. The stand composition, site characteristics, and productivity are highly variable based on moisture relationships. On drier sites (lower precipitation or elevation or south and west aspects), Utah juniper becomes more dominant. As the moisture regimes increase pinyon increases in dominance, until at the upper limits of the vegetation type, stands tend to be entirely pinyon.

The dominant species associated with the sagebrush bottoms are Wyoming big sagebrush, greasewood, cheat grass, western wheatgrass, basin wildrye, rabbitbrush and a variety of forbs. At the lower elevations of these bottoms, greasewood is dominant, but becomes less dominant further up the drainages. At the upper drainages sagebrush and basin wildrye are the dominant species. Recently, about 1500 acres of bottom lands were burned and seeded. The results of these burns are not yet known.

The dominant species of the mountain shrub community are serviceberry, snowberry, mountain big sagebrush, oak brush, western wheatgrass, beardless bluebunch, elk sedge and a variety of forbs. This plant community is generally in good condition, producing 1200 to 1700 lbs/acre of forage annually.

Riparian vegetation is found along a major creek and at several upland springs. The creek above the intersection of a large gulch and spring to the allotment boundary is in non functioning condition. This appears to be the result of a combination of factors; livestock and wild horse use, and a poorly designed road which in many places is in the stream channel. This stream segment is characterized as lacking adequate vegetation to dissipate high flow events. Actively eroding stream banks, and poor water quality as evidenced by flies. Near the allotment boundary is a spring which produces water with high salt and sulfur content. Below the intersection of the large gulch, the creek functioning properly. There is adequate stream bank vegetation to dissipate high stream flow events, banks are stable and building, there is a functional flood plain, and water quality appears to be much improved, possibly by addition of good water from the spring, having a dilution effect. The upland springs are in non-functioning condition the result of heavy ungulate use.

This area contains an Area of Critical Environmental Concern (ACEC) for the enhanced management of several plant species of special concern. The area also contains two designated Remnant Vegetation areas. Objectives for these areas emphasize the maintenance of these vegetation types.

These allotments are a part of a Herd Management area where the horses are to be managed for retention. Horse numbers vary due to the wandering nature of the horses, although several bands can be considered to be resident. The herd management area currently contains approximately 400 horses with the average number on this allotment at approximately 90 head. The resource management plan for this HMA proposes a herd size of 95-140 horses.

Horse use on this allotment is very concentrated in certain areas due in part to limited water supplies.

Management of livestock is currently in transition. The permittee recently acquired additional properties which need to be included into the grazing program. Two of the properties are exclusively summer ranges. It is expected that summer use of the allotment will end, fall and winter use will be on the private lands and these allotments will be used primarily as spring range. These allotments are also large enough to allow for a grazing system to be prepared the primary goal of meeting forage plants needs for growth, reproduction and carbohydrate storage.

This allotment currently lacks sufficient reliable water sources. This area is designated as Critical Winter Range for big game. The Resource Management Plan (RMP) is concerned with the condition and distribution of browse, primarily serviceberry, mahogany and sagebrush. Levels of use of browse species are limited. Wildlife and other objectives in the RMP are shown in Appendix B.

A. PROPOSED ACTION

I. Preliminary Assessment

Process and Resources Needed.

Because of on-going resource management planning, the Resource Area staff has all the information needed to do a preliminary assessment of this area. This includes a review of resource conditions and trends on surrounding areas and the influences they have on this area and vice versa. The grazing permittee, wild horse groups and DOW are identified as interested public/agencies and directly contacted. The RAC is apprised if the situation but not directly involved at this time.

II. WHAT STANDARDS ARE NOT BEING MET? What is the trend?

Process and Resources Needed:

The resource area compiles existing data on vegetation trend and utilization (including use pattern mapping), riparian function analysis, big game population statistics and soil survey information. No field trips are proposed at this time as the staff is well acquainted with the area. The grazing permittee is cooperative and open to discussing different grazing systems. Others who are interested in this area are encouraged to participate, and wild horse groups advise that they are strongly concerned and will participate.

Findings:

Standard 1 - Upland Soils: This area does not meet the standard. Some soils are considered fragile based on erosion potential, These soils also have slopes greater than 35%. Approximately 5,000 acres of upland soils show the indicators of non-functioning soils (pedestaling, rills, and lack of ground cover.) On the bottoms, approximately 50% of the soils exhibit characteristics of non-functioning soils. Overall, trend is static.

Standard 2 - Riparian: This area does not meet the standard. The large creek above the large gulch exhibits actively eroding banks and lacks adequate stream side vegetation to withstand high flow events. Upland springs are also in a non-functioning condition. Overall, trend is static.

Standard 3 - Plant & Animal Communities: This area does not meet the standard for plant communities. The problems shown by the soils are directly tied to the vegetation resource. Range condition is poor on about 25%, or about 10,000 acres of uplands. There are concerns about the maintenance of

vegetation to support the wintering deer population. Several catastrophic wild fires significantly decreased pinyon and juniper to the point where there may not be adequate thermal cover for wintering deer. Although the amount of palatable forage usually increases following fires, in portions of this area, overuse by wild horses and wildlife have raised concerns about the availability of sufficient forage for wintering deer. On the bottoms, approximately 50% of the area is also in poor vegetation condition. For animal communities the area meets the standard.

Standard 4 - Threatened & Endangered Species: This standard is being met on the remnant vegetation areas and areas of critical environmental concern.

Standard 5 - Water Quality: The creek above the junction with the large gulch has huge algal blooms, low diversity of riparian plant species, high water temperature, shallow depths, salt cedars, and inappropriate populations of macroinvertebrates dominated by black fly which is indicative of poor water quality. The standard is met on the creek below the gulch and spring, although during high runoff events state standards for sediment are sometimes exceeded.

III. WHAT ARE THE CAUSES FOR THE STANDARDS NOT BEING MET?

Process and Resources Needed:

Existing information, including input from the permittee and representatives of the wild horse groups is compiled and considered to determine the causes and potential solutions.

Findings:

Non-functioning soils are the result of livestock overgrazing on approximately 500 acres and natural plant progression on approximately 4,500 acres (i.e. pinyon/juniper invasion onto sage and mountain browse sites, which decreases ground cover). On the ridge lines there are about 3,000 acres where horses congregate, resulting in soil compaction and over utilization of available forage. Unsatisfactory vegetative conditions on about 2,000 additional acres is also attributed to over-utilization by horses.

In general, the degraded vegetative conditions are the result of past grazing practices which altered the vegetation to the point where the vegetation does a poor job of providing soil protection. The properties of the brush species now prevent seedling establishment of desirable species.

On the bottoms, approximately 50% of the area is in poor vegetative condition primarily as a result of past poor livestock management practices. Even with proper livestock management practices it will be difficult to improve the condition of these bottoms without direct vegetation management techniques (mechanical, prescribed fire, seeding, herbicides).

The poor riparian conditions are the result of (in order of importance) wild horses, livestock, poor water quality (from natural sources) and poor road construction. The upland springs are in non-functioning condition because of overuse by livestock, wild horses and elk.

IV. What Options for Remedy are There? What is the decision.

Process and Resources Needed:

Before implementing any of the options, Resource Area staff will meet with the permittee, DOW, representatives of the Wild Horse groups, and other publics that have been involved to discuss options with them, and get their feedback.

Options:

Remove horses within the HMA to the proposed RMP levels. In this area remove 100 head of horses. Continue to maintain the herd at the target level which requires removing 20% of the horses every year. The removal costs approximately \$24,000, with yearly costs thereafter of about \$480.

Develop a livestock management program which meets the requirements for plant growth, reproduction and carbohydrate storage. Labor costs for BLM are approximately \$2,500 to assist the permittee in designing and implementing the new grazing system.

Develop additional water supplies to improve distribution of livestock and wild horses. To cost of developing two wells and pipelines for this area cost \$100,000 for design and construction, and \$1,000 annually for maintenance.

Improve forage conditions on sites not meeting potential. Primarily through manipulation of bottom vegetation by burning and seeding. Also, conduct prescribed burns in the mountain browse vegetation association. The prescribed burns and seedings cost about \$10,000, and about \$1,000 annually to maintain.

Close and reclaim the road that leads up the creek. This will cost about \$500.

Initiate studies to determine big game/wild horse competition for browse on Pinyon/Juniper burns. This involves a cost of \$300 per year for five years, or \$1,500.

Continue to monitor the plant species of concern within the ACEC and remnant vegetation area. Take corrective action if any problems are found.

Use riparian fencing on the creek and the upland springs as determined necessary. Approximately \$8,000 may be spent installing the fencing, with annual maintenance costs of \$200 thereafter.

Decisions:

All of the options are consistent with the proposed Resource Management Plan, and all will be adopted, budget permitting. Creative funding options including partnerships and volunteerism is likely needed to develop the water sources.

V. How will the Decisions be implemented? What are the impacts.

Process:

Implementation takes place as funding and work load allows. It is estimated that it will require about 10 years to complete all of the actions that have been identified. The first action taken in the first year is to change the

grazing system to conform to the livestock grazing guidelines and the needs of the permittee.

It is difficult to predict when the wild horse removal occurs because of falling budgets and possible higher priorities for removal within the Resource Area. However, it is estimated that a gather is conducted within three years. If delays occur in the horse gather, the populations increase creating additional resource damage.

Impacts:

Resource Impacts: Gradual improvement to soils, riparian conditions, plant and animal communities and water quality occur as the actions described above are taken. On the upland sites, the most dramatic improvements occur very soon following the wild horse gather, initiation of the new grazing system, and development of the additional water supplies. On riparian sites, improvement will be most noticeable as riparian areas are fenced and the road up the creek is closed and reclaimed.

Public Land User Impacts: In the short term, the permittee incurs additional expenses, and likely is required to manage his/her livestock more intensively. In the long term, livestock forage conditions improve. People who enjoy wild horses lament the reduction in the herd, however, over the long term, water and forage conditions for the horses improve, thereby improving the health of the remaining herd. With improved health, use of these public lands improves for hunters, and wildlife viewers.

Socio-economic Impacts: Construction of the wells, pipelines, and riparian fencing have a slightly beneficial impact to local suppliers and contractors. Similarly, wild horse removal and the prescribed burns also result in increased local expenditures that slightly benefit the local economy.

VII. How will the Corrective Actions be Monitored to Determine Effectiveness.

Continue rangeland vegetation studies on the existing trend plots. Over the next five years, establish three additional plots on vegetation treatment sites.

On a three year interval, conduct the riparian function analysis.

Monitoring of rare plants in remnant vegetation areas continues as in the past.

There is no change in the wild horse census method or frequency.

B. FALLBACK STANDARDS AND GUIDELINES ALTERNATIVE (identify differences from Proposed Action Alternative)

None

C. PRESENT MANAGEMENT (identify difference from Proposed Action Alternative)

Present management direction in the proposed RMP provides for the same (or similar) objectives to be met. No discernable difference are likely except that implementation may take slightly longer. Without the written standards it may take longer to gain acceptance among all the interested parties for the proposed actions.

IMPLEMENTATION EXAMPLE 11

PRESENT SITUATION

This 81,170 acre area is a year round allotment. Within the allotment there are 70,270 acres of public lands, 9,540 acres of private lands owned or leased by the permittee, and 1,360 acres of other privately owned land.

Most of the area lies within Book/Roan Cliffs Landscape Unit and the balance lies within the Abajo Fan Landscape Unit. See Chapter 3. Elevations range from 4,500 feet to 8,500 feet. Soils are Aridisols to Mollisols derived from shale and sandstones. Vegetation ranges from salt desert, desert shrub, sagebrush, pinyon-juniper, to mountain shrub, Douglas-fir and oak brush. Precipitation ranges from 8 inches on the desert to 16 inches on the top of the plateau. The allotment has an intermittent stream with deep incised banks. The potential to bring this stream back to a perennial flow is high.

The natural disturbance regime is lightning caused fires and thunderstorms which cause flash floods and soil slumping in the higher canyons. Man caused disturbances include agriculture in the canyon bottoms, oil and gas exploration, grazing, recreation trails and roads, and water diversions.

The uses on this allotment include a year-round cattle operation with 8500 active AUMs; oil and gas exploration, pumping stations and pipelines; small game hunting, big game hunting, and guide and outfitting; motorcycle trails and horseback trails; archaeology interpretive sites; dinosaur interpretive quarry; and general use by the local population of 100,000 which is only half and hour away.

In addition to the Resource Management Plan (RMP), an allotment management plan (AMP), an archaeology activity plan, and a watershed activity plan cover all or portions of the area. In response to rapidly increasing recreational use, an integrated activity plan is being prepared to consolidate and update these existing activity plans.

This area was selected for assessing public land health because of this increasing public use and related conflicts with resources. The rancher has also initiated a coordinated resource management plan for his ranch and the allotment. The rancher is also a new permittee and is willing to improve the ranch and the allotment.

A. PROPOSED ACTION

I. Preliminary Assessment

Process and Resources Needed:

The allotment management plan needs to be updated so this is a good time to include the new standards and guidelines. Other applicable resource objectives and grazing management decisions are identified. The allotment management plan concept is modified to a coordinated resource management plan (CRMP) to involve interested users of Public Land.

Other key decisions are to establish Desired Plant Communities for the allotment, develop a grazing system, resolve conflicts with OHV users, improve riparian habitat, resolve oil and gas conflicts within a Wilderness Study Area (WSA), develop a Prescribed Fire Plan, which may involve prescribed natural fire, and analyze harvesting of forest products.

An interdisciplinary (ID) team is assembled to start the CRMP. The team meets to scope out issues and develop a time line to accomplish its objectives. The

stakeholders include: permittee, BLM, Natural Resource Conservation Service (NRCS), Colorado State Forest Service, Jeep Club, Ducks Unlimited (DU), Historical Society, Guide and Outfitter, RAC member, Water Users Assoc., Oil and Gas Co., DOW, and Colorado Environmental Coalition (CEC). Others will be invited if issues come up that need their participation.

BLM's part is to help gather analyze this data and to write a management plan for the Public Land.

II. WHAT STANDARDS ARE NOT BEING MET? WHAT IS THE TREND?

Process and Resources Needed:

The ID Team gathers the following existing information: Site potential, soil survey, monitoring studies, Proper Functioning Condition (PFC) for streams, Riparian data, habitat type, historic grazing use, and watershed data. New information is needed on OHV use and erosion, wildlife/grazing forage allocation, timber inventory, non point source pollution and salinity control and fire effects. The ID team conducts field trips to assess healthy land problems and successes. During these field trips, potential causes of the problems are discussed. The approximate cost is six work months or \$24,000.00 occurring over a one year period.

Findings:

Standard 1 (Soils) - The standard is not met on small areas within the allotment. Indicators of the standard that point to a problem are: presence of active rills and pedestals; inappropriate ground cover - increased amounts of cheat grass, loss of perennial grasses. Trend is static.

Standard 2 (Riparian) - The standard is not met on the stream that runs through the allotment. 95% of the riparian zone is in nonfunctioning condition. The stream does not withstand high stream flow events well. There is lack of woody vegetation. The stream is not in balance with the water and sediment being supplied by the watershed. Undesirable species (tamarisk, cheat grass, and rabbitbrush) dominate the incised banks. Trend is downward.

Standard 3 (Plant and Animal Communities) - Approximately 33% of the upland vegetation does not meet the standard as evidenced by: lack of spatial distribution with appropriate density and distribution of plants, cheat grass invasion, loss of shrub cover. Within pinyon-juniper woodland sites, successional diversity is lacking. Mule deer populations are declining and antelope are experiencing poor fawn recruitment. Trend is static.

Standard 4 (T&E Species) - Uncertain at this time about human effects on prairie dog colonies that may be sites for the black-footed ferret. Other species of interest are the kit fox. Their mortality rates seem to be high. The Ferruginous hawk is experiencing problems which may be due to food availability. Regionally, the trend for the species is down.

Standard 5 (Water Quality) - This standard is not being met. Salinity and sediment problems are being caused by natural erosion. Small amounts of man induced causes include irrigation, grazing-loss of cover, oil and gas roads. However, overall trend is up.

III. WHAT ARE THE CAUSES FOR THE STANDARDS NOT BEING MET?

Process and Resources Needed:

The assessment on standards and the causal factors are developed jointly among the CRMP team. The CRMP team discuss the findings and brainstorm ideas at

their monthly meeting and then conduct field trips to verify problem areas. This step of the process occurs over the three month field season and BLM labor costs are \$4,000.00.

Findings:

Using the initial scoping sessions and field trips a list of causes were developed.

- A. Soils: Past grazing practices, increased OHV use, fire perpetuating an undesirable seed source (cheat grass).
- B. Riparian: Past grazing practices, road through the riparian area, and OHV use.
- C. Plant and Animal Communities: game management policies, fire frequency perpetuated by areas of cheat grass, past grazing practices plus historic severe forage utilization caused by sheep trailing through the area to get to the mountains, decreasing shrub communities, increase in coyote populations.
- D. T&E Species: causes unknown
- E. Water Quality: past grazing practices, trailing up and down the riparian corridor.

IV. WHAT OPTIONS FOR REMEDY ARE THERE? WHAT IS THE DECISION?

Process and Resources Needed:

The CRMP team is reassembled to discuss the overall objectives and options. If additional issues surface, the interested parties are invited to become members of the CRMP team. Labor costs for BLM are \$4,000.00

Options:

To address the Upland Soils, Riparian and Plant & Animal Communities Standards:

- *Revisit the fire management plan for the Resource Area and identify tighter suppression constraints (decrease the allowable burn acreage to decrease cheat grass invasion) on the desert portion of the allotment. Increase prescribed fire acreage in the plateau areas for critical deer and elk winter range. Utilize fire rehab practices to establish perennial grasses and increase the shrub component in the desert.
- *Develop a grazing system that incorporates the new standards and guidelines.
- *For OHV use, establish a designated trail system.
- *Define the riparian area and increase inventory studies.
- *Evaluate animal damage control.

To address the T&E Species Standard:

- *More inventory work is needed to identify options specific to this Standard.

To address the Riparian and Water Quality Standards:

- *Control tamarisk, increase willow and cottonwood plantings, re-introduce beaver.
- *Fence riparian areas, look at both private and public lands.
- *Evaluate the use of stream structures, may need demonstration areas.
- *Maintain standard design practices for oil and gas construction activities.

Decisions:

Depending on time and money all of the above options are attempted. Additional management actions may also be taken as more options are identified through the CRMP team meetings

V. HOW WILL THE DECISION BE IMPLEMENTED? WHAT ARE THE IMPACTS?

Process:

Develop and document a coordinated strategy through the CRMP. This is accompanied by or included in an Environmental Assessment(EA).

Management Actions are prioritized as follows:

Priority #1 - Improve Riparian Habitat

The permittee agrees to follow the grazing management plan to reduce overgrazing and improve riparian habitat. This is incorporated as terms and conditions of the new 10 year permit. Range improvements such as fencing, water developments, and vegetation treatments and plantings will be identified in the CRMP and financial assistance is requested from sources such as the Board of District Advisors (formerly the Grazing Advisory Board), DOW, and the Rocky Mountain Elk Foundation. Costs incurred by BLM for planning are about \$24,000.00. Construction and labor costs for each of the next five years is \$20,000.00 from BLM range improvement funds.

Resource Impacts:

Implementing the grazing system and upland vegetation treatments and plantings. This increases desirable plants, improves cover and density and returns the stream to proper functioning condition in 20 years.

Public Land User Impacts:

Implementing a grazing system that provides periodic rest during critical growth periods, with adequate recovery and regrowth periods. This requires more intensive and costly livestock management by the rancher. In the event that sufficient funding is not obtained from the sources identified above, the rancher makes up the shortfalls. In the long term, improved forage conditions may result in improved livestock weight gains.

Socio-economic Impacts:

The expenditures for construction of range improvements will result in very slight increases in revenues to local suppliers of these goods and services.

Priority #2 - Control erosion and prevent salinity & sediment problems.

In addition to on-going management actions, this problem is addressed primarily through the establishment of a designated trail system for OHV use, developed jointly with local OHV users. An initial cost of about \$45,000 is needed for coordinating the volunteer efforts, producing public notices and trail maps, signs and use supervision.

Resource Impacts:

Limiting OHV use in the area to the designated trail system. This decreases erosion, improves forage for livestock and wildlife and decreases salt and

sediment. The effectiveness is dependent on how successful BLM is in gaining public support for and compliance with the designated trail system.

Public Land User Impacts:

Some OHV users object to the loss of freedom that they now enjoy to operate their vehicles with few restrictions throughout this area. Other OHV users enjoy the opportunity to design and help construct the trail system.

Socio-economic Impacts:

No impacts are expected.

Priority #3 - Vegetation Manipulation

Develop and implement vegetation manipulation projects designed to decrease cheat grass, increase desirable perennials, re-establish riparian habitat, manipulate upland forests and woodlands for increased water production, increase wetlands, and remove decadent oak brush stands to improve deer and elk winter range. Fire rehabilitation practices, greenstripping, and grazing prescriptions are also be used to achieve these same purposes. Construction and labor costs are \$10,000.00 each year for five years. Other sources for funding have been mentioned.

Resource Impacts:

These vegetation manipulations increase spatial distribution and biodiversity by 20% over 20 years. Erosion decreases, desirable plants increase, and riparian habitat improves.

VI. HOW WILL THE CORRECTIVE ACTIONS BE MONITORED TO DETERMINE EFFECTIVENESS?

Grazing System

Utilization Studies: Conduct utilization transects. Map utilization areas to determine distribution and watch riparian areas. The BLM cost for use supervision (one visit/month) is about \$4,000.00.

*Frequency Studies: Continue frequency studies on the allotment.

*Wildlife Studies: Continue browse and pellet group transects.

*Riparian Studies: Establish photo points.

* Note: Studies can be done in conjunction with utilization checks.

OHV Management

Visit the area several times a week throughout the season of use. The visits are conducted with recreation staff and law enforcement. Monitoring also involves a "public land watch" system, with community partners and user groups, signing and education. Costs are approximately \$10,000 per year.

Vegetation Manipulation Management

Monitoring may include Frequency studies, Utilization studies, photo points,

and ocular estimates. Within the already established monitoring schedule, the staff compile and evaluate the progress in meeting standards. The cost is approximately \$4,000 per year.

B. FALLBACK STANDARDS AND GUIDELINES ALTERNATIVE (Identify difference from Proposed Action Alternative)

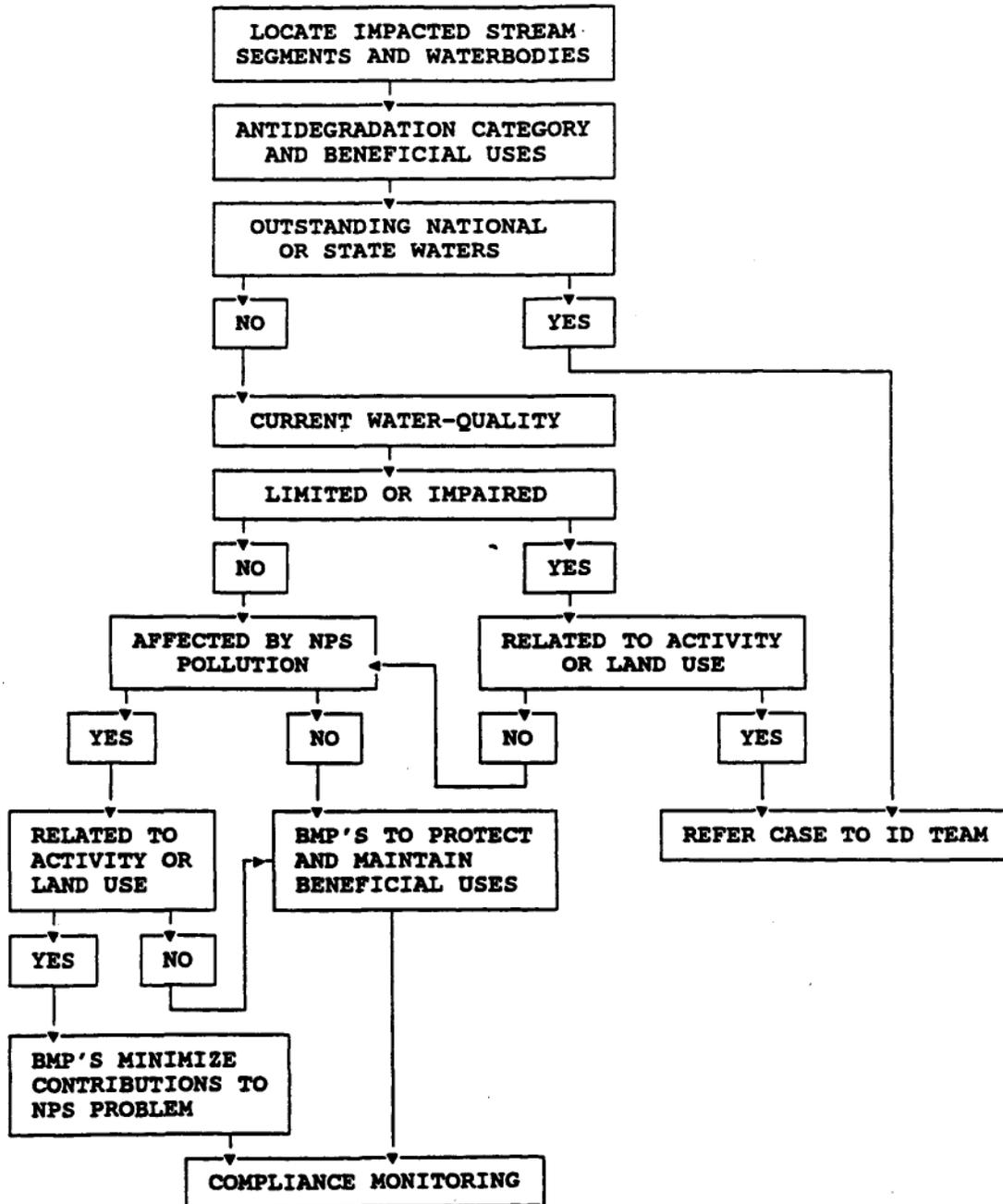
There is not any significant difference between this alternative and the proposed action. Most of the same management actions are undertaken. Additional time may be needed during the analysis phase because of the absence of indicators. Native species must be used in the Fallback standards, while the Proposed Action considers both native and desirable non-native species to achieve management objectives. Seed mixtures used for fire rehab and right of way rehab are more costly. The Fallback standards do not directly mention larger scale diversity and successional stage mosaics. It may mean that large scale vegetation manipulation projects and PNF are not emphasized.

C. PRESENT MANAGEMENT (Identify difference from Proposed Action Alternative)

The process is less integrated, interdisciplinary, and coordinated. Individual programs drive various actions. Without the standards and guidelines, the process likely focused on the riparian problems and OHV problems and not the overall health of the land. The standards and guidelines provide more specificity. Public land health problems and corrective actions are not as readily identified.

APPENDIX D

FLOW CHART FOR WATER-QUALITY COMPLIANCE



APPENDIX E

**RIPARIAN CONDITION ASSESSMENT - COLORADO BLM
1995**

FUNCTIONING CONDITION STATUS															
HABITAT TYPES BY OFFICE	PROPER FUNCTIONING CONDITION		FUNCTIONAL AT RISK						NOT PROPERLY FUNCTIONING		UNKNOWN		TOTAL		
			TREND UP		TREND NOT APPARENT		TREND DOWN								
Lotic Riparian	<i>mi</i>	<i>%</i>	<i>mi</i>	<i>%</i>	<i>mi</i>	<i>%</i>	<i>mi</i>	<i>%</i>	<i>mi</i>	<i>%</i>	<i>mi</i>	<i>%</i>	<i>mi</i>	<i>%</i>	
RIVERINE (miles)															
Craig*	182	23	51	6	151	19	4	1	105	13	305	38	798	17	
Montrose	476	21	75	3	188	8	52	2	687	31	769	34	2,247	49	
Canon City	139	19	2	0	490	65	6	1	148	20	18	2	801	17	
Grand Junction	526	65	59	7	166	20	10	1	38	5	18	2	815	18	
RIVERINE TOTAL	1,323	29	187	4	995	22	72	2	978	21	1,106	24	4,661	100	
NON-RIVERINE (acres)															
Lentic Riparian	<i>ac</i>	<i>%</i>	<i>ac</i>	<i>%</i>	<i>ac</i>	<i>%</i>	<i>ac</i>	<i>%</i>	<i>ac</i>	<i>%</i>	<i>ac</i>	<i>%</i>	<i>ac</i>	<i>%</i>	
Craig*	132	22	0	0	46	8	5	1	0	0	410	69	593	9	
Montrose	725	14	125	2	0	0	100	2	2,900	55	1450	27	5,300	81	
Canon City	50	8	0	0	0	0	0	0	0	0	590	92	640	10	
Grand Junction	32	97	0	0	0	0	1	3	0	0	0	0	33	1	
NON-RIVERINE TOTAL	939	14	125	2	46	1	106	2	2,900	44	2,450	37	6,566	100	

*Craig district based on 1995 data.

APPENDIX F

COLORADO BLM SPECIAL STATUS SPECIES
(Key is located at the end of the table)

June 20, 1996

Species Common Name	Scientific Name	Status ¹	Designation and Ranking of other Agencies and Groups ¹ (CDOW Regional Occurrences)	Species Code ²	Occurrence ³ BLM Districts and Resource Areas			
					Craig	Montrose	Canon City	Grand Junction
MAMMALS								
Bear, grizzly	<i>Ursus arctos</i>	FT, SE, EXP	Extirpated from the state G4, SX	URAR				
Ferret, black-footed	<i>Mustela nigripes</i>	FE, SE	G1, SH	MUNIG	LS', WR',	UN', GN', SJ'	SL', RG'	GJ'
Wolf, gray	<i>Canis lupus</i>	FE, SE	Extirpated from state G4, SX	CALU				
Fox, Kit	<i>Vulpes macrotis</i>	SC	G5,	VUMA		UN		GJ
BIRDS								
Crane, whooping	<i>Grus americana</i>	FE, SE	G1, SA	GRAM	LS, WR	UN, GN, SJ	SL	GJ, GS
Curlew, Eskimo	<i>Numenius borealis</i>	FE	accidental migrant, nearly extinct	NUMBO				
Eagle, bald	<i>Haliaeetus leucocephalus</i>	FE, ST	proposed rule to downlist to FT G4, S1B, S3N	HALE	LS, WR, KR	UN, GN, SJ	SL, RG	GJ, GS
Falcon, American Peregrine	<i>Falco peregrinus anatum</i>	FE, ST	G3, S2B, S2N	FAPEAN	LS, WR	UN, GN, SJ	SL, RG	GJ, GS
Falcon, Arctic Peregrine	<i>Falco peregrinus tundrius</i>	FT, ST	G4, T4, S2N	FAPETU				GJ'
Flycatcher, Southwestern willow	<i>Empidonax traillii extimus</i>	FE,	Proposed with critical habitat 7-23-93. G5, T2, SR	EMTRES		SJ'	SL'	GJ'
Owl, Mexican spotted	<i>Strix occidentalis lucida</i>	FT, ST	Proposed critical habitat designed G3, T3, S1B	STOC		UN', SJ	RG	
Plover, piping	<i>Charadrius melodus</i>	FT, ST	G3, S1B, S2N	CHMEL			RG	
Terrestrial, Interior least	<i>Sterna antillarum athalassos</i>	FE, SE	G4, T2Q, S1B	STALR			RG	

Species Common Name	Scientific Name	Status ¹	Designation and Ranking of other Agencies and Groups ¹ (COW Regional Occurrences)	Species Code ²	Occurrence ³ BLM Districts and Resource Areas			
					Craig	Montrose	Canon City	Grand Junction
Goldeneye, Barrow's	<i>Bucephala islandica</i>	SC	G5, S2B, SZN (NE, SE, NW regions)	BUIS	LS, WR, KR			GJ', GS
Hawk, ferruginous	<i>Buteo regalis</i>	SC	G4, S3B55N, FS	BUREG	LS, WR, KR	UN, SJ	SL, RG	GJ
American, white pelican	<i>Pelecanus erythrorhynchos</i>	SC	G3, S1B, SZN, (NE region)	PEERY			RG	GJ
Plover, mountain	<i>Charadrius montanus</i>	FC	SC, S3, S2B, SZN, FS (NE, SE, NW regions)	CHMO?	LS, WR, KR		SL, RG	
Plover, Western snowy	<i>Charadrius alexandrinus nivosus</i>	SC	G4T3, S1B, SZN (SE region)	CHALENI	WR		SL	GJ
FISH								
Chub, bonytail	<i>Gila elegans</i>	FE, SE	Critical habitat, G1, S1	GIEL	LS	UN'		GJ
Chub, humpback	<i>Gila cypha</i>	FE, SE	Critical habitat, G1, S1	GICY	LS			GJ
Sturgeon, Pallid	<i>Scaphirhynchus albus</i>	FT	Downstream Platte River				RG*	
Squawfish, Colorado	<i>Ptychocheilus lucius</i>	FE, SE	Critical habitat, G1, S1	PTLU	LS, WR	UN		GJ, GS
Sucker, razorback	<i>Xyrauchen texanus</i>	FE, SE	Critical habitat, G1, S1	XYTE		UN		GJ, GS
Trout, greenback cutthroat	<i>Oncorhynchus clarki stomias</i>	FT, ST	G5, T2, S2	SACLST			RG	
Chub, flathead	<i>Hybopsis gracilis</i>	SC	G5, S3, FS	PLGA?			RG?	
Chub, Rio Grande	<i>Gila pandora</i>	SC	G3, S1 (SW region)	GINI			SL'	
Chub, roundtail	<i>Gila robusta</i>	SC	G3, S2	GIRO	LS, WR	UN, SJ		GJ, GS
Minnow, brassy	<i>Hybognathus hankinsoni</i>	SC	G5, S3 (NE region)	HYHA			RG?	GJ
Sucker, bluehead	<i>Catostomus discobolus</i>	SC	(NW region)	CADI		UN		GJ
Sucker, flannelmouth	<i>Catostomus latipinnis</i>	SC	G3G4, S3S4, (NW region)	CALAT	LS, WR	UN, SJ		GJ, GS

Species Common Name	Scientific Name	Status ¹	Designation and Ranking of other Agencies and Groups ¹ (CDOW Regional Occurrences)	Species Code ²	Occurrence ² BLM Districts and Resource Areas			
					Craig	Montrose	Canon City	Grand Junction
Trout, Colorado River cutthroat	<i>Oncorhynchus clarki pleuriticus</i>	SC	G5T2T3, S2, FS	SACLPL	WR	GN		GJ, GS
Trout, Rio Grande cutthroat	<i>Oncorhynchus clarki virginalis</i>	SC	F5T2, S2, FS (SW region)	SACLVI			RG	
Topminnow, plains	<i>Fundulus sciadicus</i>	SC	G4, S2, FS (NE region)	FUSC				
REPTILES								
Lizard, Eastern short-horned	<i>Phrynosoma douglassii brevirostre</i>	SC		PHDO		SJ	RG	
Lizard, Texas horned	<i>Phrynosoma cornutum</i>	SC	G5,S2, FS	PHCOR		SJ	RG	
AMPHIBIANS								
Frog, Blanchard's cricket	<i>Acris crepitans blanchardi</i>	SC	G5T5, S2	ACCR				GJ
Toad, boreal western	<i>Bufo boreas boreas</i>	FC		BUBOBO	LS**, WR**, KR**	SJ**	RG**	GJ**, GS**
INVERTEBRATES								
Butterfly, Uncompahgre fritillary	<i>Boloris acronema</i>	FE	G1, S1	BOIMAC?		GN, SJ'		
Skipper, Pawnee montane	<i>Hesperia leonardus montana</i>	FT	G4, T1, S1	HELEMO?			RG	
SNAILS (MOLLUSKS, CLASS GASTROPODS)								
Capshell, Rocky Mountain	<i>Acroloxus coloradensis</i>	SC	SC, G7, S2, FS				RG?	

Species Common Name	Scientific Name	Status ¹	Designation and Ranking of other Agencies and Groups ⁷ (CDOW Regional Occurrences)	Species Code ²	Occurrence ³ BLM Districts and Resource Areas			
					Craig	Montrose	Canon City	Grand Junction
PLANTS								
Mancos milkvetch	<i>Astragalus humillimus</i>	FE	S. Montezuma county (Ute Mtn Reservation) G1, S1	ASHU		SJ		
Osterhout milkvetch	<i>Astragalus osterhoutii</i>	FE	Middle Park (Grand County) G1, S1	ASOS	KR			
Clay-loving wild buckwheat	<i>Eriogonum pelinophilum</i>	FE	Critical habitat designated Austin-Montrose, G5, S2	ERPE		UN		
Penland Alpine Fen Mustard	<i>Eutrema penlandii</i>	FT	Park County, Co. G1, S1	EUPE10			RG	
Dudley Bluffs bladderpod	<i>Lesquerella congesta</i>	FT	Piceance Basin, Rio Blanco County, G1, S1	LECO6?	WR			
Knowlton cactus	<i>Pedocactus knowltonii</i>	FE	SE LaPlata County (UTE Mtn. Reservation), G1, S1	PEKN		SJ		
Penland beardtongue	<i>Penstemon penlandii</i>	FE	Middle Park (Grand County) G1, S1	PEPE ?				
North Park phacelia	<i>Phacelia formosula</i>	FE	Walden (Jackson County) G1, S1	PHFO2 ?	KR			
Piceance (Dudley's Bluff) twinpod	<i>Physaria obcordata</i>	FT	Piceance Basin (Rio Blanco County), G2, S2	PHOB?	WR			
Unita Basin hookless cactus	<i>Sclerocactus glaucus</i>	FT	Mesa, Delta, Garfield County G3, S3	SCGL		UN		GJ, GS
Mesa Verde cactus	<i>Sclerocactus mesae-verdae</i>	FT	S. Montezuma County (UTE Mtn. Reservation), G2, S2	SCME		SJ		
Rydberg's columbine (Golden)	<i>Aquilegia chrysantha</i> var. <i>rydbergii</i>	BLMS	G4, T3, SH	AQCHRY			RG*	
Crandall rock-cress	<i>Arabis crandallii</i>	BLMS		ARCR5				
Gunnison milkvetch	<i>Astragalus anisus</i>	BLMS	G3, S2	ASAN4		GN		

Species Common Name	Scientific Name	Status ¹	Designation and Ranking of other Agencies and Groups ¹ (COW Regional Occurrences)	Species Code ²	Occurrence ³ BLM Districts and Resource Areas			
					Craig	Montrose	Canon City	Grand Junction
Cushion milkvetch	<i>Astragalus aretioides</i>	BLMS	G3, S2	ASAR3				
Brandegees milkvetch	<i>Astragalus brandegei</i>	BLMS	G5, S1, S2	ASBR5			SL*	
Debris milkvetch	<i>Astragalus detritalis</i>	BLMS	G3, S2	ASDET5				
Mancos milkvetch	<i>Astragalus humilimus</i>	FE	S. Montezuma county (Ute Mtn Reservation) G1, S1	ASHU		SJ		
Starveling milkvetch	<i>Astragalus jejunos</i>	BLMS	G3, S1	ASJE2				
Grand Junction milkvetch	<i>Astragalus linifolius</i>	BLMS	G2, S2	ASLI5		UN		GJ
Dragon milkvetch	<i>Astragalus lutosus</i>	BLMS	Not considered a rare plant G4, S3, S4	ASLU2				GJ, GS
Ferron milkvetch	<i>Astragalus musiniensis</i>	BLMS	G3, S1	ASMU3				GJ
Naturita milkvetch	<i>Astragalus naturitensis</i>	BLMS	G2, S2, S3	ASNA		UN, SJ		GS
Nelson milkvetch	<i>Astragalus nelsonianus</i>	BLMS	G3, S1	ASNE3				
Osterhout milkvetch	<i>Astragalus osterhoutii</i>	FE	Middle Park (Grand County) G1, S1	ASOS	KR			
Sandstone milkvetch	<i>Astragalus sesquiflorus</i>	BLMS	G3, S17	ASSE7				
Wetherill milkvetch	<i>Astragalus wetherillii</i>	BLMS	G3, S3	ASWE2		UN**		GJ, GS
Tufted cats-eye	<i>Cryptantha casepotosa</i>	BLMS	G3, S2	CRCA7				
Osterhout cats-eye	<i>Cryptantha osterhoutii</i>	BLMS	G3, S1, S2	CROS				GJ
Rollins cats-eye	<i>Cryptantha rollinsii</i>	BLMS	G4, S2	CRR05				
Uints Basin spring-parsley	<i>Cymopterus duchesnensis</i>	BLMS	G3, S1	CYDU				
Kat buckwheat	<i>Eriogonum acaule</i>	BLMS	G3, S1	ERAC3				
NCN	<i>Eriogonum coloradense</i>	BLMS	G3, S2	ERCO11				
Ephedra wild buckwheat	<i>Eriogonum ephedroides</i>	BLMS	G3, S1	EREP				

Species Common Name	Scientific Name	Status ¹	Designation and Ranking of other Agencies and Groups ¹ (COW Regional Occurrences)	Species Code ²	Occurrence ³ BLM Districts and Resource Areas			
					Craig	Montrose	Canon City	Grand Junction
Clay-loving wild buckwheat	<i>Eriogonum peltophyllum</i>	FE	Critical habitat designated Austin-Montrose, G5, S2	ERPE		UN		
Tumor buckwheat	<i>Eriogonum tumulosum</i>	BLMS	G3, S2	ERTU2				
Little green buckwheat	<i>Eriogonum viridulum</i>	BLMS	G4Q, S1	ERV11				
Snowy prairie gentian	<i>Eustoma grandiflorum</i>	FC-2	G5, S3	EUGR4				
Penland Alpine Fen Mustard	<i>Eutrema penlandii</i>	FT	Park County, Co. G1, S1	EUPE10			RG	
Colorado butterflyweed	<i>Geura neomexicana</i> esp. <i>coloradensis</i>	FC	population recently found near Ft Collins, G4, T2, S1	GANE2			RG	
Utah Gentian	<i>Gentianella tortuosa</i>	BLMS	G3, S1	GETO3				
Narrowstem gilia	<i>Gilia stenothyrsa</i>	BLMS	G3, S1	GIST2				GJ
Dudley Bluffs bladderpod	<i>Lesquerella congesta</i>	FT	Piceance Basin, Rio Blanco County, G1, S1	LECO67	WR			
Eastwood desert parsley	<i>Lomatium eastwoodiae</i>	BLMS	G3, S2, S3	LOEA				GJ, GS
Eastwood monkey flower	<i>Mimulus eastwoodiae</i>	BLMS	G3, S1, S2	MIEA		UN, SJ		GJ
Nuttall's sandwort	<i>Minuartia nuttallii</i>	BLMS	G5, S1	ARNU4				
Small-flowered name	<i>Nama densum</i> var. <i>parviflorum</i>	BLMS	G5, S1	NADEP				
Ligulate feverfew	<i>Parthenium ligulatum</i>	BLMS	G3, S2	PAL18				
Knowlton cactus	<i>Pediocactus knowltonii</i>	FE	SE LaPlata County (UTE Mtn. Reservation), G1, S1	PEKN		SJ		
Paradox scurf pea	<i>Pediomelum aromaticum</i>	BLMS	G3, S2	PSAR2		UN		GJ
Parachute penstemon	<i>Penstemon debilis</i>	FC	G1, S1	PEDE22				GS
Graham beardtongue	<i>Penstemon grahamii</i>	FC	G2, S2	PEGR6	WR			GJ'
White River penstemon	<i>Penstemon scarlosus</i> var. <i>albifluvis</i>	FC	G4, T2, S1	PESCA	WR			

Species Common Name	Scientific Name	Status ¹	Designation and Ranking of other Agencies and Groups ¹ (CDOV Regional Occurrences)	Species Code ²	Occurrence ³ BLM Districts and Resource Areas			
					Craig	Montrose	Canon City	Grand Junction
North Park phacelia	<i>Phacelia formosula</i>	FE	Walden (Jackson County) G1, S1	PHFO2 7	KR			
Debeque phacelia	<i>Phacelia submutica</i>	FC	G4, T2, ST	PHSU6				GJ, GS
Piceance (Dudley's Bluff) twinpod	<i>Physaria obcordata</i>	FT	Piceance Basin (Rio Blanco County), G2, S2	PHOB7	WR			
Mesa Verde cactus	<i>Sclerocactus mesa-verdae</i>	FT	S. Montezuma County (UTE Mtn. Reservation), G2, S2	SCME		SJ		
Capitate chicken-eye	<i>Sphaeromeria capitata</i>	BLMS	G3, S1	SPCA8				
Ute ladies'-tresses	<i>Spiranthes diluvialis</i>	FT	Boulder, Jefferson County G2, S2	SPDI6	WR'	UN', SJ'		GJ'
Hanging garden sullivantia	<i>Sullivantia hepemanii</i> var. <i>purpusii</i>	BLMS	G3, T3, S3	SUPU				GJ, GS
Strigose Eastern-daisy	<i>Townsendia strigosa</i>	BLMS	G4, S1	TOST				
Andy's clover	<i>Trifolium andinum</i>	BLMS	G3, S1	TRAN2				
Ute ladies'-tresses	<i>Spiranthes diluvialis</i>	FT	Boulder, Jefferson County G2, S2	SPDI6	WR'	UN', SJ'		GJ'

STATUS: The source used to assign status is from:

Colorado's Natural Heritage: Rare and Imperiled Animals, Plants, and Natural Communities; Vol. 1, No. 1, 5/1995.
Colorado's Threatened, Endangered, Special Concern, Undetermined Status List; 7/95. (Paper from J. Sheppard)

AGENCY: US Fish and Wildlife Service

FE - Federally Endangered
FT - Federally Threatened
FC - Federal Candidate, substantial information on hand to support the biological appropriateness of proposing to list as endangered or threatened.

AGENCY: Bureau of Land Management, Colorado

BLMS - Designated by BLM State Director, as species of special concern, as evidence by biological imperilment and downward trend in population abundance and distribution on BLM public lands within state.

STATE: Colorado Division of Wildlife

SE - Endangered
ST - Threatened
SC - Species of Special Concern

GROUP: Colorado Natural Heritage Program

CNHP - Global Rarity Ranking is based on the range-wide status of a species.

G1 - Critically imperiled globally because of extreme rarity (5 or fewer occurrences, or very few remaining individuals), or because of some factor of its biology making it especially vulnerable to extinction. (Critically endangered throughout its range).
G2 - Imperiled globally because of rarity (6 to 20 occurrences), or because of other factors demonstrably making it very vulnerable to extinction throughout its range. (Endangered throughout its range).
G3 - Very rare or local throughout its range or found locally in a restricted range (21 to 100 occurrences). (Threatened throughout its range).
G4 - Apparently secure globally, though it might be quite rare in parts of its range, especially at the periphery.
G5 - Demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery.
T - Taxa of subspecies or varieties, ranked on same criteria as G1-G5.

CNHP - State Rarity Ranking is based on the status of a species (relative abundance of individuals) in each state.

S1 - Critically imperiled in state because of extreme rarity (5 or fewer occurrences, or very few remaining individuals), or because of some factor of its biology making it especially vulnerable to extirpation from the state. (Critically endangered in state).
S2 - Imperiled in state because of rarity (6 to 20 occurrences), or because of other factors demonstrably making it very vulnerable to extirpation from the state. (Endangered or threatened in state).
S3 - Rare in state (21 to 100 occurrences).
S/B - Refers to the breeding season imperilment of elements that are not permanent residents.
S/N - Refers to the non-breeding season imperilment of elements that are not permanent residents. Where no consistent location can be discerned for migrants or non-breeding populations, a rank of SZN is used.
SZ - Migrant whose occurrences are too irregular, transitory, and/or dispersed to be reliably identified, mapped, and protected.

SPECIES CODES: Are from the BLM Wildlife & Fisheries Information System Data Element Dictionary: Plants: DED 2646 3/25/88; Vertebrates: DED 6554 2/25/88; and Fishes: DED 6803 2/25/88

OCCURRENCE:

Indicates Resource Area of known occurrence using the following DE codes:

Craig District (01) LS Little Snake (48),
Montrose District (03) UN Uncompahgre (48),
Canon City District (05) SL San Luis (48),
Grand Junction District (07) GJ Grand Junction (68),
- - Not known to occur on BLM lands but should be considered.
- - Occurrence on BLM lands uncertain, past sightings have been recorded.

WR White River (68), KR Kremmling (78)
GN Gunnison (68), SJ San Juan (88),
RG Royal Gorge (58)
GS Glenwood Springs (88)

APPENDIX G

STREAM SEGMENTS IN COLORADO AFFECTED BY SEDIMENT AND NUTRIENTS

Platte River Basin

SEGMENT	MILES AFFECTED	POLLUTANT	SEVERITY
Tarryall Creek from Jefferson Creek to Tarryall Reservoir	7	Sediment	Low
South Platte from Fairplay to confluence with North Fork	95	Sediment	Low
Cherry Creek	11	Sediment	Moderate
South Platte below Burlington Ditch and above Big Dry Creek	20	Sediment/Nu trients	Low
Boulder Creek below Boulder and above St. Vrain	16	Sediment/Nu trients	Moderate
St. Vrain below Hygiene Road and above the South Platte	23	Sediment/Nu trients	Moderate
South Platte below Big Dry Ck. and above Big Thompson River	25	Sediment/Nu trients	Moderate
Little Thompson R. below Culver Dam and above Big Thompson R.	22	Sediment	High
Big Thompson River below I-25 and above the South Platte	16	Sediment/Nu trients	High
Box Elder Creek from Wellington to confluence with the Cache La Poudre	14	Sediment/Nu trients	High
Poudre River below Box Elder Ck. and above the South Platte	24	Sediment	Moderate
South Platte below Big Thompson R. and above the State Line	161	Sediment/Nu trients	Moderate
Johnson Creek	6	Sediment	Moderate
Boswell Creek	4	Sediment	Moderate
Pole Creek	5	Sediment	Moderate
Illinois River	23	Sediment	N/A
Michigan River	22	Sediment	N/A

Arkansas River Basin

SEGMENT	MILES AFFECTED	POLLUTANT	SEVERITY
Badger Creek to Arkansas River	15	Sediment	Moderate
Arkansas R. below Badger Ck. and above Pueblo Reservoir	70	Sediment	Low
Grape Creek	5	Sediment	N/A
Upper Fourmile Creek	12	Sediment	Moderate
Fountain Creek below Monument Creek to Arkansas River	50	Sediment/Nutrients	Moderate
Arkansas River below Fountain Creek to John Martin Reservoir	118	Sediment	Moderate
Cucharas River below La Veta and above I-25	6	Sediment	Low
Huerfano River below I-25	15	Sediment	High
Apishapa River below Gulnare	15	Sediment	Moderate
Purgatoire River below Trinidad	20	Sediment	Moderate
Adobe Creek to confluence with the Arkansas River	5	Sediment	High
Arkansas River below John Martin Reservoir to State Line	58	Sediment	High

Rio Grande River Basin

SEGMENT	MILES AFFECTED	POLLUTANT	SEVERITY
Rio Grande River below Creede and above Alamosa	80	Sediment	Low
Alamosa River below Terrace Reservoir to Capulin	13	Sediment	Moderate
Rio Grande River below Alamosa to the State Line	53	Sediment/Nutrients	Low

Colorado River Basin

SEGMENT	MILES AFFECTED	POLLUTANT	SEVERITY
Fraser River near source to Tabernash	16	Sediment	Moderate
Willow Creek	20	Sediment	Moderate
Elk Creek	8	Sediment	Moderate
Soda Creek	5	Sediment/Nu trients	Moderate
Straight Creek from source to confluence with the Blue River	7	Sediment	Moderate
Otter Creek	5	Sediment/Nu trients	Moderate
Colorado R. below State Bridge and above Roaring Fork R.	64	Sediment	Low
Milk Creek	5	Sediment	High
Alkali Creek	6	Sediment	High
Muddy Creek	8	Sediment	Low
Gore Creek above Eagle River	11	Sediment	Low
Eagle River above Edwards to below Eagle	17	Sediment	Moderate
Seven Castles Creek source to Fryingpan River	2	Sediment	Moderate
Fryingpan R. from Seven Castles Creek to the Roaring Fork River	4	Sediment	Moderate
Roaring Fork River below Hunter Creek and above Basalt	19	Sediment/Nu trients	Low
Crystal River above the Roaring Fork River	29	Sediment	Low
Colorado River below Roaring Fork R. and above Parachute Ck.	44	Sediment	Low
Colorado River below Parachute Ck. and above the Gunnison R.	45	Sediment/Nu trients	Low
Roan Creek above Colorado River	22	Sediment/Nu trients	High
Colorado R. below the Gunnison R. and above the State Line	37	Sediment	Moderate
Big Salt Wash above the Colorado River	8	Sediment	High
East Salt Creek above Salt Ck.	15	Sediment	High

Colorado River Basin (con't.)

SEGMENT	MILES AFFECTED	POLLUTANT	SEVERITY
West Salt Creek above Salt Ck.	10	Sediment	High
Uncompahgre R. above Montrose	38	Sediment	Low
Red Canyon from Bostwick Park to the Gunnison River	4	Sediment/Nutrients	Moderate
Uncompahgre R. below Montrose and above the Gunnison River	25	Sediment/Nutrients	High
Tongue Creek	33	Sediment	High
North Fork Gunnison River below Paonia Reservoir and above Ditch	27	Sediment	Moderate
Gunnison River below the Uncompahgre River and above the Colorado River	48	Sediment	High
Disappointment Creek above the Dolores River	15	Sediment	High
Dolores R. below Glade Mountain	10	Sediment	Low
Dry Creek	20	Sediment	N/A
San Miguel River from Clay Creek to Uravan	35	Sediment	Moderate
San Miguel River from Uravan to confluence with the Dolores R.	6	Sediment	High

San Juan River Basin

SEGMENT	MILES AFFECTED	POLLUTANT	SEVERITY
Montezuma Creek	7	Sediment	N/A
San Juan River below Fourmile Creek to Navajo Reservoir	25	Sediment	Moderate
Piedra River below Indian Creek and above Navajo Reservoir	21	Sediment	Low
Los Pinos River below Highway 160 and above the State Line	20	Sediment	Low
Animas River below Junction Creek and above the State Line	26	Sediment	Low
Florida River below Farmers Canal and above Animas River	10	Sediment	Moderate
La Plata River below Hesperus and above the State Line	27	Sediment	Moderate
Mancos River below Highway 160 and above the State Line	51	Sediment	High
McElmo Creek below Cortez	35	Sediment	High

Green River Basin

SEGMENT	MILES AFFECTED	POLLUTANT	SEVERITY
Yampa River through and below Steamboat Springs	5	Sediment	Low
Wilson Creek source to confluence with Milk Creek	10	Sediment	Moderate
Yampa River below Lay Creek to the State Line	76	Sediment/Nutrients	Moderate
Morgan Gulch	9	Sediment	N/A
Little Snake River below Wyoming State Line to confluence with the Yampa River	54	Sediment/Nutrients	High
Flag Creek	10	Sediment	N/A
Sheep Creek	9	Sediment	N/A
Strawberry Creek	6	Sediment	N/A
White River below Meeker to State Line	99	Sediment/Nutrients	High
Wolf Creek above the White R.	10	Sediment	Low
Red Wash above the White River	22	Sediment	Moderate
Douglas Ck. from confluence of W. Douglas Ck. to the White R.	20	Sediment	High
Green River below Wyoming State Line to the Yampa River	40	Sediment	Moderate

APPENDIX H

COLORADO EMPLOYMENT TRENDS

INDUSTRY	NUMBER OF EMPLOYEES			% OF EMPLOYEES		
	1981	1985	1993	1981	1985	1993
EMPLOYMENT BY TYPE						
Total Employment	1,706,173	1,888,601	2,231,928	100%	100%	100%
Wage/Salary Earners	1,422,620	1,551,416	1,811,603	83.38%	82.15%	81.17%
Proprietors	283,553	337,185	420,325	16.62%	17.85%	18.83%
Farm/Ranch Proprietors	27,297	28,426	26,448	1.60%	1.51%	1.18%
Non Farm/Ranch Proprietors	256,256	308,759	393,877	15.02%	16.35%	17.65%
EMPLOYMENT BY INDUSTRY						
Total Employment	1,706,173	1,888,601	2,231,928	100%	100%	100%
Farm/Ranch	45,340	43,240	40,288	2.66%	2.29%	1.81%
Agricultural Services 1/	13,135	17,329	24,004	0.77%	0.92%	1.08%
Mining	53,501	48,807	26,097	3.14%	2.58%	1.17%
Construction	106,163	116,889	126,237	6.16%	6.19%	5.66%
Manufacturing	192,603	199,367	199,583	11.29%	10.56%	8.94%
T.C.U.*	88,052	96,646	116,326	5.16%	5.12%	5.21%
Wholesale Trade	84,517	87,719	99,266	4.95%	4.64%	4.45%
Retail Trade	281,693	317,861	384,055	16.51%	16.83%	17.21%
F.I.R.E.**	162,011	177,544	183,879	9.50%	9.40%	8.24%
Services	382,430	476,070	677,774	22.41%	25.15%	30.37%
Government (Federal, State, Local)	297,728	308,129	354,420	17.45%	16.32%	15.88%
*Transportation, Communications, Utilities						
**Finance, Insurance, Real Estate						
Source: U.S. Bureau of Economic Affairs						

Agricultural Services includes establishments primarily engaged in supplying soil preparation services, landscape services, landscape and horticultural services.

COLORADO TOTAL INCOME BY INDUSTRY
(thousands of \$)

INDUSTRY	1981	1985	1993
Farm/Ranch	261,872	375,229	990,046
Agricultural Services	113,130	186,389	345,068
Mining	1,787,617	1,630,009	1,257,290
Construction	2,075,859	2,603,483	3,482,030
Manufacturing	4,341,241	5,528,198	7,473,679
T.C.U.*	2,302,248	3,061,713	4,930,550
Wholesale Trade	1,847,718	2,238,734	3,364,220
Retail Trade	2,874,644	3,901,383	5,706,133
F.I.R.E.**	1,713,033	1,929,814	4,212,579
Services	5,188,075	7,712,163	15,889,774
Government (Federal, State, Local)	4,690,533	6,255,728	10,047,286
TOTALS	27,195,970	35,422,843	57,698,655
*Transportation, Communications, Utilities			
**Finance, Insurance, Real Estate			
Source: U.S. Bureau of Economic Affairs			

COLORADO PERCENT OF TOTAL INCOME BY INDUSTRY

INDUSTRY	1981	1985	1993
Farm/Ranch	0.96%	1.06%	1.72%
Agricultural Services	0.42%	0.53%	0.60%
Mining	6.57%	4.60%	2.18%
Construction	7.63%	7.35%	6.03%
Manufacturing	15.96%	15.61%	12.95%
T.C.U.*	8.47%	8.64%	8.55%
Wholesale Trade	6.79%	6.32%	5.83%
Retail Trade	10.57%	11.01%	9.89%
F.I.R.E.**	6.30%	5.45%	7.30%
Services	19.08%	21.77%	27.54%
Government (Federal, State, Local)	17.25%	17.66%	17.41%
TOTALS	100.00%	100.00%	100.00%
*Transportation, Communications, Utilities			
**Finance, Insurance, Real Estate			
Source: U.S. Bureau of Economic Affairs			

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