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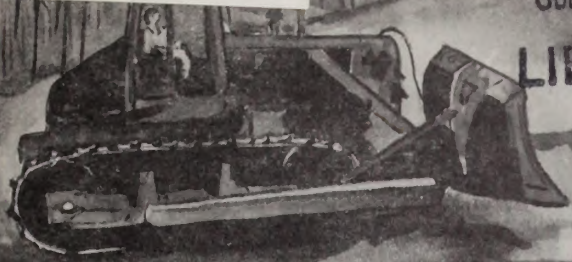


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GARNET RESOURCE AREA RESOURCE MANAGEMENT PLAN

Butte District, Montana



U.S. Department of the Interior
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As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. administration.

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RESOURCE MANAGEMENT PLAN

For The

GARNET RESOURCE AREA BUTTE DISTRICT MONTANA

Prepared By

BUREAU OF LAND MANAGEMENT
DEPARTMENT OF THE INTERIOR

Dean Stepanek

STATE DIRECTOR
MONTANA STATE OFFICE

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CHAPTER 1

INTRODUCTION

PURPOSE AND NEED

The Garnet Resource Management Plan as approved by the BLM State Director on January 10, 1986 provides a comprehensive framework for managing the public lands and allocating resources in the Garnet Resource Area (GRA) for the next ten or more years. This document is designed to provide, as much as possible, a single source of information for resource specialists, managers, and the public by drawing together information from the draft and final Garnet Resource Management Plan and Environmental Impact Statement (RMP/EIS). No new information or recommendations have been introduced. Future management of 145,660 surface acres and 213,385 subsurface acres of mineral estate is described. Although the GRA encompasses nine counties in northwestern Montana, only three have substantial surface acreage of public land, Missoula, Granite, and Powell counties (see Location map). These lands are administered by the Bureau of Land Management (BLM) through its Butte District office and Garnet Resource Area office in Montana.

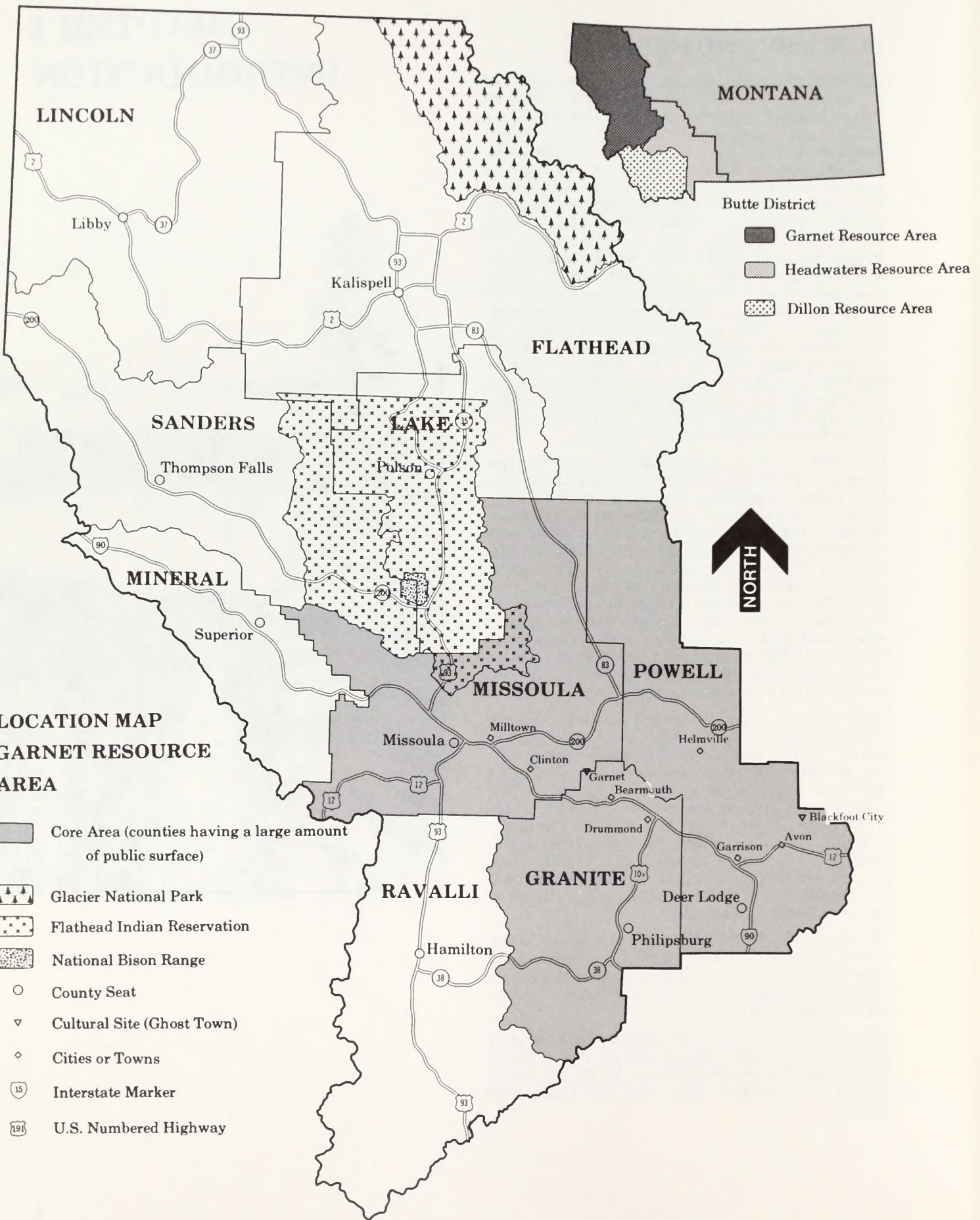
Section 603 of the Federal Land Policy and Management Act of 1976 (FLPMA) directs the BLM to complete a study of potential wilderness areas within 15 years. The suitability of two Wilderness Study Areas (WSAs) in the GRA was analyzed, and a preliminary recommendation for inclusion in the National Wilderness Preservation System or for a return to multiple use management was made through the Director of the BLM, Secretary of the Interior, and the President. The final decision on wilderness designation will be made by Congress. The Record of Decision for the Garnet RMP recommended both Wales Creek and Hoodoo Mountain Wilderness Study Areas (WSAs) as nonsuitable for wilderness designation.

BLM was granted permission to study two additional tracts of land for potential wilderness under Section 202 of FLPMA, which calls for comprehensive land use planning. A recommendation for wilderness designation for the Quigg West study area will be reported to Congress through the Director of the BLM, Secretary of the Interior, and the President. The final decision on wilderness designation will be made by Congress. A decision against wilderness designation for the Gallagher Creek study area has been made by the State Director in the Record of Decision for the Garnet RMP.










The final RMP (USDI, BLM 1985) also analyzed several alternatives for livestock grazing on public land. This fulfilled a court ordered agreement based on a 1973 lawsuit against the BLM by the Natural Resources Defense Council.




This planning document incorporates land use planning guidance previously found in five separate Management Framework Plans (MFP): the Blackfoot, Hoodoo, Salmon Lake, Avon, and Philipsburg MFPs.





**LOCATION MAP
GARNET RESOURCE
AREA**

-  Core Area (counties having a large amount of public surface)
-  Glacier National Park
-  Flathead Indian Reservation
-  National Bison Range
-  County Seat
-  Cultural Site (Ghost Town)
-  Cities or Towns
-  Interstate Marker
-  U.S. Numbered Highway

- Butte District**
-  Garnet Resource Area
-  Headwaters Resource Area
-  Dillon Resource Area



ISSUES ADDRESSED IN THE GARNET RMP

This plan addresses the resolution of five issue groups. Each issue includes a list of needed decisions.

Renewable Resources

How much of the Commercial Forest Land (CFL) should be harvested?

Where and to what degree of intensity can timber management be applied to provide a desired level of production? Is there any public land where fire should not be used as a method to manage the timber and forage resources? Is there any public land where pesticides (herbicides and insecticides) should not be used?

Where should livestock grazing not be authorized?

Which allotments can be prioritized for more intensive grazing management?

What options should be considered for grazing and timber management to meet the needs of wildlife habitat, livestock, watershed, and forest products?

Special Attention Resources

Which wilderness study areas (Wales Creek, Hoodoo Mountain, Gallagher Creek, or Quigg West) or portions thereof, if any, are suitable for designation as wilderness?

How should the WSAs be managed if they are not recommended for wilderness?

Are there any Areas of Critical Environmental Concern (ACECs) on public land that require special management?

Are there good management reasons for closing additional roads either seasonally or permanently? Where?

What emphasis should be placed on the management of riparian habitat and other special habitats?

Is there public land where the management of wildlife habitat should be the primary objective?

Nonrenewable Resources

Which public land, if any, should not be leased for oil and gas to protect other resource values?

Which public land should have special stipulations applied to oil and gas leases?

Is there public land that should be withdrawn or remain withdrawn from mineral entry to protect other resource values?

Land Ownership and Administration

Which land should be retained in public ownership?

Which public land should be excluded from future routing of major utility rights-of-way? Which public lands should be avoided if possible, and which public lands should remain available for future corridor development?

Where and what type of access is needed to meet resource management objectives and usage of the public lands?

Is there public land that should remain withdrawn from sale, location, and entry under the public land laws to protect certain resources?

Recreation, Cultural, and Aesthetic Resources

How should motorized vehicle use be managed?

How many areas, if any, should be provided for roadless, nonwilderness recreation; and where should they be located?

What areas should be identified primarily for the protection of developed and undeveloped recreation sites?

What recreational opportunities should be provided? Where?

Is there any public land that should be managed primarily for its scenic values? How should this land be managed for other resources?

To what degree should BLM be involved with management of Garnet Ghost Town?

What management emphasis should be placed on cultural or historic sites?

ANALYSIS ASSUMPTIONS

The following analysis assumptions were used by the interdisciplinary team in determining impacts and in developing the approved plan.

Funding and personnel will be adequate to fully implement all management actions associated with each alternative within ten years following plan approval. Implementation of the plan will begin in 1986.

All RMP recommendations that require action outside of the authority of the District Manager and State Director will be accepted and implemented. For example, recommendations for the revocation of existing withdrawals and the establishment of new withdrawals will be favorably acted upon by the Secretary of the Interior.

Areas recommended as suitable for wilderness designation will be so designated by Congress. Section 603 wilderness study areas recommended as nonsuitable for wilderness designation will be released by Congress from the BLM Interim Management Policy and Guidelines for Lands Under Wilderness Review and will be managed in accordance with nonwilderness RMP guidelines. Section 202 wilderness study areas recommended as nonsuitable for wilderness designation will be released for multiple use when the State Director signs the Record of Decision for the RMP.

Wales Creek and Hoodoo Mountain WSAs will remain under Interim Management for up to half the life of the RMP because of the review process. The President has until 1991 to make a recommendation to Congress for designation or nonsuitability of these WSAs. Congress has no set schedule for acting on these recommendations.

Market conditions, encumbrances, resource values, and other factors will permit only 25 percent of the public land outside of the retention zones to be processed in successful disposal actions during the life of the plan. Approximately 95 percent of disposal actions will be exchanges; the remainder will be sales. There will be no significant net gain or loss of resource values resulting from exchanges in the long term (e.g., for every acre of Commercial Forest Land (CFL) disposed of through exchange, an equivalent acre will be acquired). The total acreage of public land will remain at 145,660 acres.

Forty percent of the acres identified for timber harvest will be reentries into stands that have previously had some type of silvicultural treatment.

The average timber yield based on the Missoula Sustained Yield Unit extensive forest inventory, is 76.4 board feet per acre of CFL per year.

One and one-half miles of road are constructed per million board feet of timber harvested. These estimates are based on past harvest practices in the forests on the GRA.

Nine jobs harvesting, planting, and thinning timber are created for every million board feet of timber harvest.

Except for trails, toilets, trailheads, parking, and information signing no new recreational facilities would be constructed at undeveloped recreation sites during the 20-year life of the RMP. However, recreation site potential would be protected within Management Area 10.

Mineral exploration would disturb about ten to twenty acres per year.

The net effect of management area goals and guidelines on timber output, expressed as an estimated percent reduction from the potential yield expected under Standard Operating Procedures (SOPs), is shown in Table 1-1.

TABLE 1-1
ESTIMATED REDUCTION IN TIMBER
OUTPUT DUE TO MANAGEMENT AREA
PRESCRIPTIONS

No.	Management Area	% Reduction
1	Riparian Protection Zone	100
2	Riparian Multiple Use Zone	20
3	General Forest Management	0
4	Elk Summer and Fall Habitat Components	20
5	Big Game Summer and Fall Range	20
6	Big Game Winter Range	20
7	Noncommercial Forest and TPCC Withdrawn Commercial Forest	N/A
8	Areas Recommended For Wilderness Designation	100
9	Special Management Areas	100
10	Developed and Undeveloped Recreation Sites	20
11	Historical and Cultural Sites	100
12	Visual Corridor	0
13	Nonforest Habitat	N/A
14	Mineral Production Area	100

Project costs include the initial cost of the project, maintenance over a ten-year period, and the cost of replacement if the project has a life of less than 20 years.

PLANNING PROCESS OVERVIEW

The BLM resource management planning process has nine steps. Figure I-1 lists and highlights the completion dates of each step and the steps where public participation occurred.

Step 1. Identification of Issues

This step identifies resource management concerns, conflicts, and opportunities that can be resolved through the planning process. This process is called scoping and involves public participation.

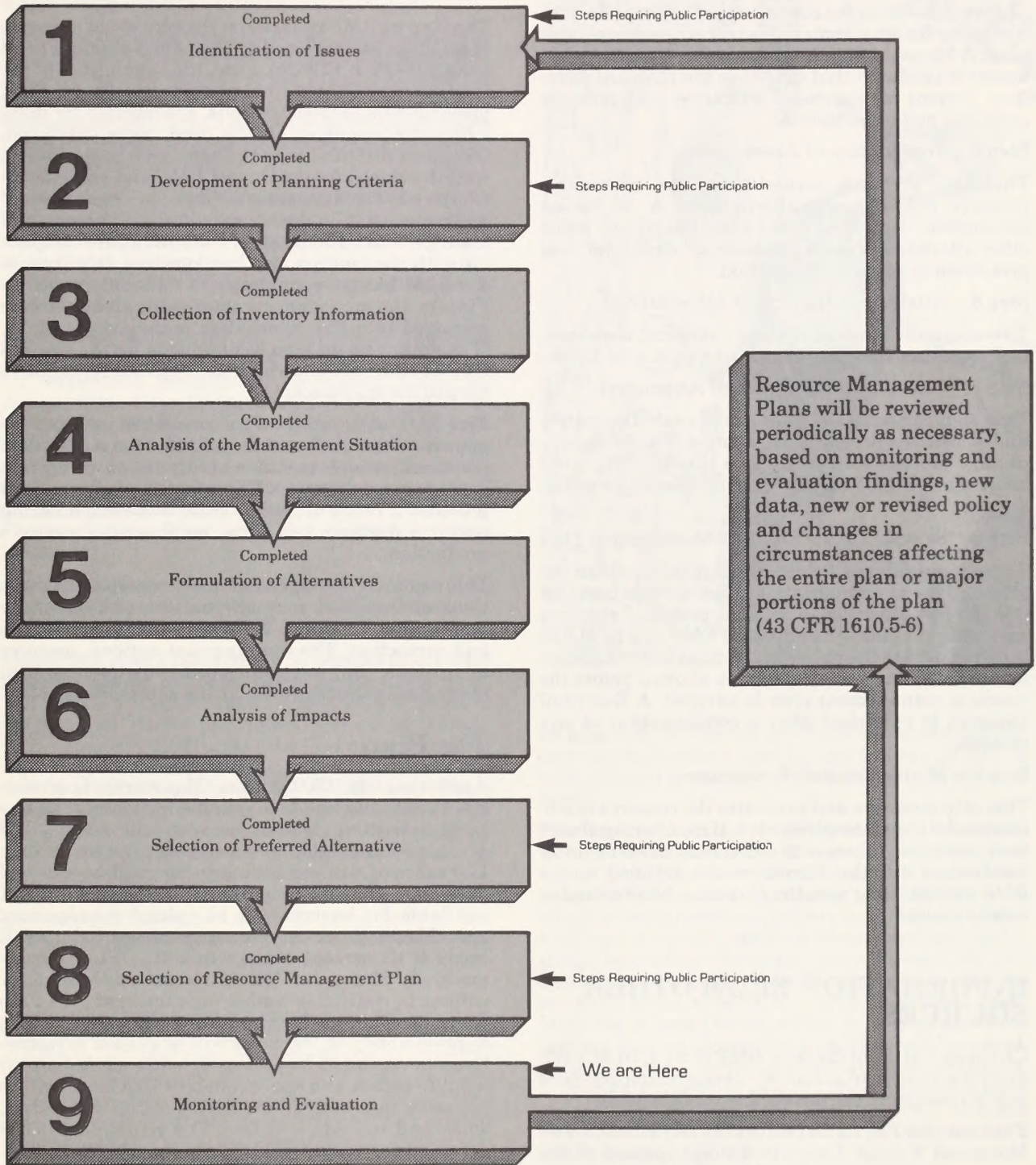
Step 2. Development of Planning Criteria

This step identifies the information needed to resolve issues, formulate and evaluate alternatives, and select the preferred alternative. The criteria are circulated for public review.

Step 3. Collection of Inventory Information

This step collects the data needed to resolve resource issues and other environmental, social, and economic concerns.

FIGURE 1
Steps in the Resource Management Planning Process



Step 4. Analysis of the Management Situation

This step assesses the current situation and provides a baseline for development of a resource management plan. A Management Situation Analysis (MSA) document is produced that describes the physical situation, current management guidance, and resource problems and opportunities.

Step 5. Formulation of Alternatives

This step prepares several complete, reasonable resource management alternatives. A no action alternative describes present management while other alternatives place emphasis on environmental protection or resource production.

Step 6. Analysis of Impacts of Alternatives

This step analyzes the physical, biological, economic, and social impacts of implementing each alternative.

Step 7. Selection of the Preferred Alternative

This step compares the impacts of each alternative and selects the preferred alternative. The interdisciplinary process used in Steps 5 through 7 is documented in a draft RMP/EIS and circulated for public review.

Step 8. Selection of the Resource Management Plan

This step analyzes public comments, modifies the alternatives as appropriate, and serves as a basis for the District Manager to select a proposed resource management plan. The proposed RMP and final EIS is distributed to the public in the final RMP/EIS document. A 30-day protest period is allowed before the resource management plan is adopted. A Record of Decision is published after a consideration of any protests.

Step 9. Monitoring and Evaluation

This step monitors and evaluates the resource condition as the plan is implemented. If monitoring shows that resource issues are not being satisfactorily resolved or that the desired results outlined by the RMP are not being met, the plan may be amended or totally revised.

INFORMATION FROM OTHER SOURCES

Chapters 5 and 7 of the final RMP (USDI, BLM 1985) describe the level of public involvement and degree of public concern in the development of the plan.

The Land Status, Land Ownership Adjustment, and Motorized Vehicle Restriction maps located in the map packet of the draft RMP (USDI, BLM 1984b) should become part of this document. Several corrections to these maps are listed in the Errata of this document.

SUMMARY OF THE RMP

The Garnet RMP is based on the concept of management areas as developed by the Lolo National Forest Plan (USDA, FS 1982b). First, the capabilities of the land were evaluated in a resource inventory. Then possible management options, appropriate for managing the resources on the land, were developed. (Fourteen different management area prescriptions were developed for the Garnet RMP and are listed in Chapter 3 of this document). Next, the capabilities of a given area of land were matched with an array of management options; all of the options are compatible with the multiple use management directives of the BLM but gave emphasis to different resources. Finally, the management options for all lands were arranged into five alternative management plans. (The management area assignments for the selected Garnet RMP are shown on the Selected Alternative map in the map packet.)

Five RMP alternatives were considered in the development of the draft and final RMP. One represented no action, which meant a continuation of current management direction. The other four alternatives provided a range of choices from those emphasizing resource protection to those emphasizing resource production.

The resource management plan incorporated portions of the other four alternatives and generally represented a balance between resource production and protection. The management actions, resource allocations, and environmental consequences that characterize the selected plan are summarized below.

The Plan

Approximately 105,020 acres (93 percent) of commercial forest land will be available for forest management activities. Annual harvest will affect 1,352 acres, yielding 7,030 mbf per year. Approximately 10.5 miles of new road construction will be required annually. The only significant areas of CFL not available for harvest will be special management area (MA 9). However, management restrictions will apply to 62 percent of the available CFL. Approximately 2,080 acres of CFL will be set aside (MA 1) or subject to restrictive timber management (MA 2) to protect and maintain riparian and watershed values; approximately 62,700 acres will be subject to restrictive management to protect or enhance important wildlife values; and approximately 6,620 acres will be set aside to protect or enhance wildlife, watershed, soils, and recreation values. The remaining 40,300 acres (38 percent) of CFL will emphasize forest management activities, subject to SOPs to maintain site productivity and water quality.

A total of 6,245 Animal Unit Months (AUMs) will be allocated to livestock use in the short term, a 5 percent increase over 1985 licensed use. In the long term, available AUMs are projected to increase to 8,013. These additional AUMs are a combined estimate of additional forage from range improvements and

improvement of vegetative conditions on 20 allotments under intensive grazing management.

Livestock carrying capacity of the range resource is projected to increase 28 percent in the long term. It is expected that 90 percent of the range available for livestock grazing will be in good or excellent condition over the long term. Logged areas are not included in the 90 percent because the condition classification method is not applicable.

Livestock use affects 48 percent (29 miles) of the aquatic habitat in the resource area; 21 percent of the aquatic habitat is in suboptimum condition. Intensive grazing management is projected to improve all of the suboptimum habitat through increased bank stability and cover.

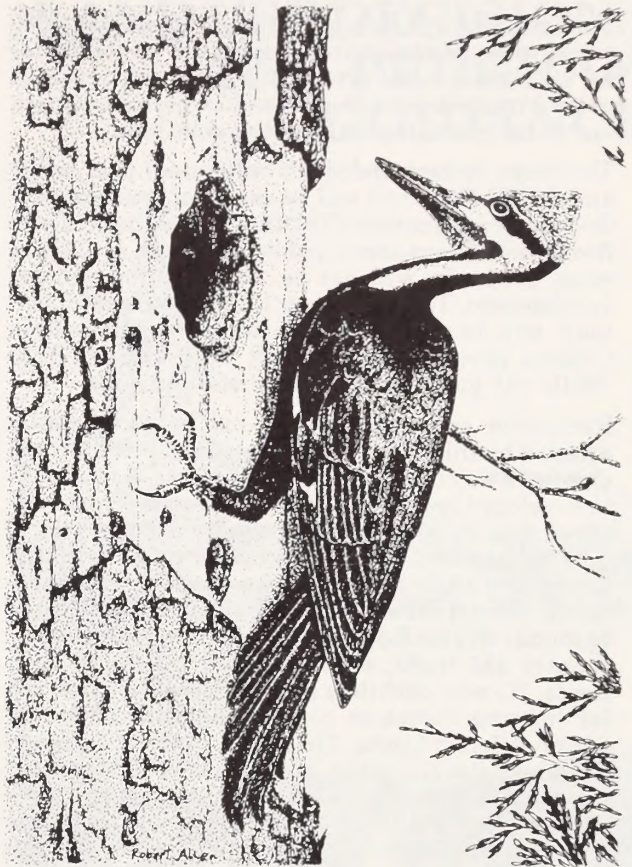
Quigg West, a 520-acre 202 WSA which adjoins a Forest Service RARE II area, will be recommended for wilderness designation contingent upon the designation of the Quigg RARE II area (1807) for wilderness. In the event the Quigg RARE II area (1807) does not become a designated wilderness, the 520 acres of public land will be managed as MA 9. Special management will be emphasized on 8,120 acres largely comprised of portions of the Wales Creek, Hoodoo Mountain, and Gallagher Creek WSAs.

A unique geologic feature, consisting of 20 acres of an exposed limestone formation in Rattler Gulch has been designated as an ACEC.

Under this plan 3,500 acres or 57 percent of the total riparian habitat will be managed emphasizing riparian values. All other riparian habitat will be managed under SOPs to protect watershed values. Approximately 5,800 acres (MA 7) of noncommercial forest land containing important wildlife features will be available primarily for wildlife use. Winter range, land with good summer range potential for elk, and areas of concentrations of habitat features totaling 80,450 acres will be managed to protect or enhance wildlife habitat while allowing for the harvest of timber. In addition, 8,140 acres of largely undeveloped lands, set aside in previous land use plans, will remain undeveloped. Cumulative adverse impacts to wildlife habitat are expected to be low to moderate.

Oil and gas leasing will be permitted on 205,066 acres (99 percent) of federal mineral estate. Leasing will be subject to seasonal restrictions on 84,076 acres and to stipulations prohibiting surface occupancy on 8,180 acres. These restricted areas consist largely of road closures, important big game habitat, and special management areas. Approximately 520 acres, recommended for wilderness designation, will not be leased. The remaining 112,810 acres will be leased subject to standard stipulations.

Exploration and development for locatable minerals will be permitted on 203,310 acres (99 percent) in the resource area. In addition to the 1,460 acres withdrawn to protect recreation, powersites, powerlines, scientific, and historical sites; withdrawal will also



be proposed for the 520 acres recommended for wilderness designation and for the 20-acre ACEC. A total of 2,000 acres will be withdrawn from mineral entry.

The land ownership adjustment issue has been resolved by identification of retention zones in areas where public lands will primarily be retained or enhanced. These retention zones total 126,872 acres which are characterized as reasonably consolidated holdings or contain resource values appropriate for public ownership. Retention zones represent 87 percent of the public land base. Public lands outside the retention zones total 18,788 acres. In general, these lands are in small tracts, widely scattered, and often without legal or physical access. They will be considered on their individual merits for retention, exchange, transfer, or sale. All site-specific decisions regarding land ownership adjustment will be made based on criteria identified in FLPMA and the draft RMP (USDI, BLM 1984b).

Future investments in public facilities and improvements, including land and access acquisition, generally will receive highest priority in retention areas.

Public access is available to 95 tracts totalling 114,600 acres or 78 percent of the total acreage. Administrative access is available to an additional 13 tracts comprising 5,320 acres.

Public access will be sought for an additional 9,500 acres, while administrative access will be sought for an additional 8,150 acres. This plan will result in overall improvement in the land ownership pattern and in increased legal access to public land.

The areas recommended for wilderness (520 acres) and ACEC (20 acres) will be excluded from corridor development. Another 17,620 acres have been identified as avoidance areas; public land with avoidance areas generally will not be available for corridor development. The remaining 127,500 acres (87.5 percent) will be available for further consideration. Criteria provided in the draft RMP (USDI, BLM 1984b) will guide future site-specific decisions.

Recreation opportunities will not be significantly affected by this plan as developmental activities are directed away from key recreation areas. A total of 41 undeveloped recreation sites, near water or road closure gates, are identified for protection. Other recreation management includes maintaining existing and potential walk-in hunting areas, cooperatively managing Garnet Ghost Town, managing the Garnet National Winter Recreation Trail, developing cross-country ski trails, and acquiring access to river tracts. No new outfitters and guides will be licensed for hunting except in conjunction with adjoining national forest lands. There will be no significant effects on visual quality. Management of cultural or historical sites will include interpreting key sites around Garnet and all others receiving protective management. There will be a beneficial effect on cultural resources.

Most public land will be designated as limited, with all vehicles including ORVs, restricted to open roads and trails. Exceptions may be made for snowmobiles. The 520-acre Quigg West, the 20-acre ACEC, the 240-acre Karshaw Mountain area, and the 4,280-acre Ram Mountain area will be closed. The need for additional road closures will be considered on a case-by-case basis. Seasonal closures will be implemented in areas to provide wildlife security, reduce recreation conflicts, reduce road maintenance, provide watershed protection, and enhance recreation, including the opening of private lands for hunting. It is generally the policy that new roads be closed or limited for motorized vehicle use. All existing closures will be emphasized for continuance.

Air quality will not be significantly affected. Watershed conditions are expected to improve significantly. Water quality should improve moderately.



CHAPTER 2

LAND USE DECISIONS AND PROGRAM GUIDANCE

This chapter presents the resource condition and use objectives, resource and land use allocations, management actions, standard operating procedures, and monitoring requirements for the resource programs addressed in the RMP.

Resource condition and use objectives reflect the desired effect the BLM and public would like to see as a result of combined management activities and resource (needed) decisions.

Resource or land use allocations provide a mix of allowable, limited, or excluded resource uses. The terms and conditions of such use are based on either resource condition and use objectives or other program or multiple use goals. The management area (MA) allocations fit into this scheme.

Specific management actions are needed to achieve resource condition and use objectives, provide for resource or land use allocations, or meet other program or multiple use goals. Management actions provide an insight into the work which must be accomplished for plan implementation. The actions are generally listed in order of importance.

Standard operating procedures provide information and guidance for each resource program which is applicable to the entire resource area or is not addressed in the previous categories.

For each resource there are a series of items that will be monitored. Each item is evaluated by location, technique for data gathering, unit of measure, and frequency and duration of data gathering. When duration is not specifically stated, the duration is for the life of the plan.

The information states the event that will signal an unacceptable impact to the resource. When such an event is noted, the management action associated with the event will be evaluated. If the adverse impact can be corrected by a management action that is within the scope of the RMP, the change will be implemented. If the adverse impact can be corrected only by a management action that is outside the scope of the RMP, the management change will be subject of a formal RMP amendment.



SOIL, AIR, AND WATER PROGRAM GUIDANCE

A. Resource Condition and Use Objective

1. Meet air and water quality standards established by the State of Montana.
2. Reduce soil movement and improve water quality to acceptable levels on the following known problem sites:
 - a. Black Bear Creek
 - b. Braziel Creek
 - c. Keno Creek
 - d. Marcum Mountain
 - e. McElwain Creek
3. Maintain soil productivity.
4. Maintain adequate soil cover to prevent accelerated surface movement.

B. Resource or Land Use Allocations

1. Maintenance and/or enhancement of water and air quality and site productivity will be pursued on all public lands in the resource area.
2. Maintenance and/or enhancement of riparian values will be emphasized in MAs 1 (Major Riparian) and 2 (Multiple Use Riparian) totaling 3,500 acres.

C. Management Actions

1. Provide recommendations into allotment management plans (AMPs), compartment management plans (CMPs), etc. to achieve resource condition objectives.
2. Prioritize and develop necessary activity plans to correct soil/water problems identified for Black Bear Creek, Braziel Creek, Keno Creek, McElwain Creek, and Marcum Mountain.
3. Prepare annual report to Montana Water Quality Bureau on the application and effectiveness of Best Management Practices (BMPs).

D. Standard Operating Procedures

1. Soil, Water, and Air

Soil, water, and air resources will continue to be evaluated and monitored on a case by case basis as a part of project level planning. The level of such evaluation and monitoring will be based upon the significance of the proposed project and the sensitivity of soil, water, and air resources in the affected area. Stipulations will be attached to proposed projects as appropriate to ensure compatibility of projects with management area goals and guidelines for soil, water, and air resources. It is the policy of the Garnet Resource Area to maintain, enhance, or restore site productivity, water quality, and stream stability on all public lands. This goal is incorporated in all the management areas in which any type of use or development may occur.

2. Air Quality

The BLM is a party to the Montana Smoke Management Cooperative Agreement. Under this agreement, the BLM will continue to work with state and local airshed groups to minimize air quality impacts from prescribed burns and similar activities. This will be done primarily through coordination with other agencies and by burning only when there is adequate smoke ventilation within the affected airshed. The watering of roads may be required during periods of construction or heavy traffic to alleviate localized dust problems.

3. Watershed Management

Surface disturbing activities will continue to be designed so as to maintain soil productivity, minimize erosion, and maintain or improve water quality and stream channel stability. Typical watershed concerns in the resource area will continue to be addressed through application of the following guidelines.

The timber productivity capability classification (TPCC) system, which is based on soil survey data, habitat types, elevation, aspect, and topography, will be used to classify forest lands (see Appendix B). The TPCC system considers soil compaction and erosion potential, soil climate, and soil chemical and physical properties as related to silvicultural practices.

Stream channel protection will be effected through the use of such measures as the FS Region One *Vegetation Manipulation Guidelines*, (USDI, FS 1965b) which are designed to limit increases in stream runoff to levels compatible with the capability of the channel to handle potential changes in flow and/or increases in sediment.

Best Management Practices, as developed through the *Montana Statewide 208 Study* (Montana 1979) will be used to control nonpoint sources of water pollution resulting from forest management practices and similar activities. General BMPs applicable to the Garnet Resource Area are identified in Appendix A. In addition, more specific soil unit BMPs will be utilized on a case by case basis. These BMPs, which have not yet been formalized, reflect more localized soil physical, chemical, and climate conditions. Recommendations drawn from these BMPs may include silvicultural systems to be applied, treatment of slash residual, slash disposal methods, and skidding methods, all oriented toward maintaining soil productivity on specific soil units.

Projects covered by BMPs will be monitored to assess the degree to which BMPs are being applied and the effectiveness of their application. BMPs will be monitored through stream discharge and sediment measurements. An interdisciplinary, on the ground evaluation team (soils, hydrology, forestry, and wildlife) will be used to increase the effectiveness of BMP monitoring. In accordance with an existing Memorandum of Understanding between the BLM and the State of Montana, an annual report will be made to the Montana Water Quality Bureau concerning BMPs application and effectiveness. The BLM also participates in the Cumulative Impacts Program along with the Forest Service, State of Montana, and private industry to coordinate logging activities and minimize impacts.

For timber sale planning, soils information, generally in the form of a soils map accompanied by a physical and chemical properties table, will be used to define soil capabilities and to

recommend soil BMPs and mitigating measures. Hydrology information, where available, will be used to describe existing water quality and quantity; such information will also be used as a reference point for future monitoring of hydrologic conditions.

Corrective measures will be applied where unsatisfactory watershed conditions are identified. Such measures may be implemented through project-level plans (watershed, habitat, allotment, or compartment management plans); such measures may also be implemented through stipulations attached to permits, leases, and other authorizations.

Management activities in riparian zones generally will be designed to maintain or, where possible, improve riparian habitat condition. Roads and utility corridors will avoid riparian zones to the extent practicable. Prescribed fire will not be used within 75 feet of stream channels. Where logging is to occur, wheel and crawler vehicles will not operate within 45 feet of stream channels. In MA2, they will not operate within 75 feet of stream channels.

E. Monitoring Requirements

Watershed program monitoring will involve BMP evaluation, channel cross section, stream channel stability, water quality, soil erosion, soil moisture, and soil compaction, as is appropriate for the specific situation. Table 2-1 lists the items to be monitored.



TABLE 2-1
WATERSHED RESOURCE MONITORING AND EVALUATION PLAN

Element	Item	Location	Technique ¹	Unit of Measure	Frequency and Duration	Info. Warranting a Decisions Change
Water	water quality	area wide where management activities are occurring or to expand base-line data	standard USGS methods (or modified to meet specific conditions), field and laboratory analysis ² done for selected stream basins that have discharge measurements during the period April thru September or runoff period; automated suspended sediment sampling and continuous temperature measurements will occur in selected streams during the period April thru September	standard quantitative measurements for discharge, turbidity, conductivity, pH, suspended sediment, temperature, major ions, heavy metals, toxic materials	field measurements 10-15 times per year; major ions once a year; heavy metals and toxic substances as needed; base line data collected for five years prior to disturbance activities in basins without prior data; monitoring will continue throughout the activity period and for up to 4 years following completion of activities	water quality parameters which exceed state of Montana water quality standards; water quality measurements, especially suspended sediments, which render the water unsuitable for its classified usage
Soil & Site Productivity	compaction	Tertiary Age volcanic soils which will be and have been disturbed	use of Proving Ring Pentrometer	pounds per square inch	twice per year over a 5 year period	when compacted areas exceed 10% of ground surface and do not recover through natural process within 5 years
	soil moisture	selected fine-grained volcanic soils, coarse-grained plutonic soils, limestone soils, Belt Super-group soils	manual sampling and gravimetric analysis	% by weight	once monthly June thru September	when regeneration is impaired due to inadequate soil moisture induced by silvicultural treatments

¹ Monitoring activities between differing elements and within the same element will be conducted and/or coordinated so as to reduce duplications, travel time, etc. and thereby increase efficiency while reducing costs. The existing Studies Index System will also be used as a tool for tracking and scheduling monitoring plans.

² USDI. Bureau of Land Management. 1908. "BLM-State of Montana Memorandum of Understanding."

ENERGY AND MINERALS PROGRAM GUIDANCE

A. Resource Condition and Use Objectives

1. Maintain the scientific and educational values of the Limestone Cliffs area.
2. Maintain availability of public lands and federal mineral estate for energy and mineral exploration and development while preventing unnecessary or undue degradation.

B. Resource or Land Use Allocations

1. Mining activity will be allowed on 203,310 acres.
2. Approximately 2,000 acres may be withdrawn from mineral entry.
 - a. Wilderness — 520 acres
 - b. ACEC — 20 acres
 - c. Historical and Cultural Sites — up to 160 acres (portion of MA 11)
 - d. Existing powersite and powerline withdrawals to be reviewed — 1,300 acres.
3. Oil and gas leasing will be allowed on 205,066 acres of federal mineral estate. Approximately 84,076 acres will be leased with special seasonal stipulations which apply mainly to road closure areas and important big game habitat (portions of MAs 4, 5, and 6). Approximately 8,180 acres will not be available for surface occupancy; such areas consist largely of special management areas (MA 9) and portions of cultural and historic sites (MA 11). Approximately 112,810 acres will be leased with standard stipulations.
4. Oil and gas leasing will not be allowed on 520 acres in the Quigg West wilderness area (MA 8).
5. The Limestone Cliffs area (20 acres) in T. 11 N., R. 13 W., Section 9, NE $\frac{1}{4}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$, P.M. M., will be managed as an Area of Critical Environmental Concern (ACEC).

C. Management Actions

1. Evaluate new lease applications, notice of intents, operating plans, applications for permit to drill, etc. to assure consistency with RMP.

2. Add seasonal stipulations to oil and gas leases in road closure areas and important big game habitat (MAs 4, 5, and 6).
3. Add stipulations prohibiting surface occupancy on oil and gas leases in special management areas (MA 9) and portions of cultural/historic sites (MA 11).
4. Develop a management plan for Limestone Cliffs ACEC.
5. Check and, if necessary, revise special stipulations map for oil and gas leases at the Montana State Office.
6. Seek a Secretarial withdrawal from mineral entry for Limestone Cliffs ACEC.
7. Keep management area overlay current concerning MA 14.

D. Standard Operating Procedures

Public lands generally will remain available for the exploration, development, and production of energy and mineral resources; such activities will be regulated to prevent unnecessary or undue degradation of surface resource values to the extent practicable. Such activities will also be guided by management area goals and guidelines (see Chapter 3).

Areas of federal subsurface ownership underlying private land also will generally remain available for energy and mineral exploration and development. Surface owners must be consulted by claimants/lessees. Proposed activities will be reviewed and authorized on a case by case basis.

1. Locatable Minerals

All public land is open to mineral entry and development except where withdrawn to protect other resource values and uses. Mining activities on public land will be regulated under 43 CFR 3809 to prevent unnecessary or undue degradation of surface resources and to ensure reasonable reclamation of disturbed sites. Standard procedures used in processing notices and plans of operations under the 3809 Regulations are summarized in Appendix C.

Validity examinations may be provided under the following conditions:

where a mineral patent application has been filed and a field examination is required to verify the validity of the claim(s);

where there is a conflict with a disposal application, and it is deemed in the public interest to do so, or where the statute authorizing the disposal requires clearance of any encumbrance;

where the land is needed for a federal program; or

where a mining claim is located under the guise of the mining law and flagrant unauthorized use of the land or mineral resource is occurring.

Public land will be opened to mineral entry where mineral withdrawals are revoked.

2. Oil and Gas Leasing

All public land is available for oil and gas leasing, with the exception of land recommended for wilderness designation.

Site-specific decisions regarding lease issuance and the attachment of appropriate stipulations will continue to be based on application of the Butte District Oil and Gas Leasing checklist and the leasing guidelines contained in the Butte District Oil and Gas Leasing Environmental Assessment issued September 1981. Standard and special stipulations and the Butte District Oil and Gas Leasing checklist are included in Appendix D.

All oil and gas leases will be issued with standard stipulations attached. Special stipulations will be attached where needed to protect seasonal

wildlife habitat and/or other sensitive resource values. In highly sensitive areas, where special stipulations are not sufficient to protect important surface values, stipulations prohibiting surface occupancy will be attached.

Oil and gas leasing guidance identified in this plan will apply only to leases processed after RMP approval. Existing leases will run their full term with only those stipulations attached at the time of lease issuance. Leases included in an operating unit or any future unit where production is established will remain unaffected by new stipulations as long as production continues or until leases are terminated.

3. Phosphate, Geothermal, and Other Leasables

Lease applications will continue to be processed as received. Site-specific decisions regarding lease issuance and the attachment of appropriate stipulations will be based on interdisciplinary review of each proposal.

4. Common Variety Mineral Materials

Applications for the removal of common variety mineral materials, including sand and gravel, will continue to be processed on a case by case basis. Stipulations to protect important surface values will be attached based on interdisciplinary review of each proposal.

E. Monitoring Requirements

Table 2-2 lists the items to be monitored.

TABLE 2-2
MINERALS RESOURCE MONITORING AND EVALUATION PLAN

Element	Item	Location	Technique ¹	Unit of Measure	Frequency and Duration	Info. Warranting a Decision Change
Minerals	use	MA 14	site inspection to determine adherence to 3809 regulations and monitor effects on other resources	resource characteristics	minimum of biweekly during periods of operation and increased frequency during road building, etc.	violation of 3809 regulations, change from plan of operations or notice; unnecessary or undue degradation

¹ Monitoring activities between differing elements and within the same element will be conducted and/or coordinated so as to reduce duplications, travel time, etc. and thereby increase efficiency while reducing costs. The existing Studies Index System will also be used as a tool for tracking and scheduling monitoring plans.

LANDS PROGRAM GUIDANCE

A. Resource Condition and Use Objectives

1. Maintain lands containing important resource values in public ownership.
2. Maintain availability of public lands for utility and transportation corridors.

B. Resource or Land Use Allocations

1. 126,872 acres are included in retention zones (see Land Adjustment map in the map packet of the draft RMP/EIS).
2. 18,788 acres will be open to consideration for retention, exchange, transfer, or sale.
3. 127,500 acres will be available for further consideration and possible routing of major utility and transportation rights-of-way (MAs 2, 3, 5, 6, 7, 12, 13, and 14).
4. 17,620 acres associated with riparian areas, important recreation, historic and cultural sites, and other special management areas are identified as avoidance areas where rights-of-way will be discouraged (MAs 1, 4, 9, 10, and 11).
5. All land recommended for wilderness (Quigg West, 520 acres) and for ACEC designation (Limestone Cliffs, 20 acres) will be excluded from corridor development.
6. The approximate 1,300 acres of powersite and power project withdrawals will remain in effect unless modified or revoked as a result of the withdrawal review process.
7. The land classifications on approximately 500 acres of river tracts and cultural sites will be lifted and the lands opened to the actions of the general land and mining laws. A formal withdrawal will be requested for protection of up to 160 acres involving such sites as Garnet Ghost Town, Coloma, Reynolds City, Blackfoot City, and other sites that are eligible for the National Register of Historic Places. These sites are recorded in the Butte District Office cultural resource files. (Some are mapped as MA 11.)

C. Management Actions

1. Evaluate all lands actions to assure consistency with RMP.

2. Inventory public land outside retention zones to determine suitability for retention, exchange, transfer, or sale.
3. Maintain Garnet Resource Area records to reflect the results of the withdrawal review process on the lands in Table 2-3 in Standard Operating Procedures.

**TABLE 2-3
EXISTING WITHDRAWALS AND
CLASSIFICATIONS¹**

Location	Acreege	Authority/ Purpose
T. 11 N., R. 8 W., Sec. 25	63	C&MU ²
T. 14 N., R. 11 W., Sec. 18	159	C&MU
Sec. 23	40	C&MU
Sec. 26	120	C&MU
T. 11 N., R. 14 W., Sec. 14	58	C&MU
T. 13 N., R. 14 W., Sec. 33	5	C&MU
T. 12 N., R. 14 W., Sec. 3	14	R&PP ³
T. 13 N., R. 14 W., Sec. 33	5	R&PP
	27	R&PP
T. 12 N., R. 13 W., Sec. 6	8	R&PP
T. 11 N., R. 16 W., Sec. 8	120	PSR ⁴
T. 11 N., R. 17 W., Sec. 2	179	PSR
Sec. 12	161	PSR
T. 12 N., R. 17 W., Sec. 18	49	PSR
T. 12 N., R. 18 W., Sec. 1	23	PSR
T. 10 N., R. 12 W., Sec. 10	40	PSR
T. 11 N., R. 13 W., Sec. 7	164	PSR
Sec. 18	80	PSR
Sec. 21	200	PSR
Sec. 22	120	PSR
T. 11 N., R. 14 W., Sec. 14	131	PSR
T. 11 N., R. 15 W., Sec. 22	40	PSR

¹ Does not include an estimated 40 acres within linear withdrawals for roads and powerlines

² Classification and Multiple Use Act

³ Recreation and Public Purposes Act

⁴ Power Site Reservation

4. Resolve unauthorized use of the public lands through termination, authorization by lease or permit, or sale.
5. Seek revocation of Classification and Multiple Use (C&MU) Act and Recreation and Public Purpose (R&PP) withdrawals, contingent upon Secretarial withdrawal from mineral entry for MA 11.

D. Standard Operating Procedures

1. Land Ownership Adjustments

The supplement to the State Director Guidance on *Land Pattern Review and Land Adjustment* (USDI, BLM 1984a) provides criteria for use in categorizing public land for retention or adjustment, and for identifying acquisition priorities. Site-specific decisions regarding land ownership adjustment in the resource area will be made based largely on the following criteria derived from the supplement to State Director Guidance.

Areas of National Significance. Areas that have national environmental significance include wilderness, wilderness study areas, former wilderness study areas being studied for protective management, ACECs, and wetlands and riparian areas under Executive Order 11990. Areas that have national cultural and recreational significance include lands nominated or eligible for the National Register of Historic Places or designated as National Scenic and Historic Trails.

Areas Containing Important Features. Areas that have important wildlife features include threatened and endangered species habitat, prime fisheries habitat, big game seasonal habitat, waterfowl and upland game bird habitat, and habitat for sensitive species including raptors and other nongame species.

Areas that have important recreational and cultural features include hunting and fishing sites, snowmobile trails, and areas that contribute significantly to the interpretive potential of cultural resources already in public ownership. Areas that have important watershed features include strategic tracts along rivers, streams, lakes, ponds, and springs.

Areas Important to BLM Programs. These areas include tracts of public land that are consolidated enough to make management of their resources cost effective, and have physical and legal access. Access generally should allow for public use but, at the least, should allow administrative access to manage the resources. Access to private lands will not be restricted without coordinating first with the private landowner. Areas usually contain a combination of multiple use values and have characteristics that facilitate BLM priorities on the national, state, and local level. Areas may have improvements that represent public investments; be encumbered by R&PP leases, withdrawals, mining claims, etc.; or be managed by cooperative agreements with other agencies.

Areas Important to the Economy. These areas include tracts having mineral potential and lands that contribute significantly to the stability of the local economy by virtue of federal ownership.

The land ownership adjustment criteria identified above will be considered in land reports and environmental analyses prepared for specific adjustment proposals.

Public land within retention areas (see the Land Pattern Adjustment Map in the map packet of the draft RMP/EIS) generally will remain in public ownership and be managed by the BLM. Such areas meet one or more of the preceding criteria for retention and are not considered difficult or uneconomic to manage. Transfers to other public agencies will be considered where improved management efficiency would result. Minor adjustments involving exchanges may be permitted based on site-specific application of the land ownership adjustment criteria. Adjustments involving sales would be permitted only by amending this RMP.

Public land outside of retention areas generally consists of isolated tracts which are considered difficult and uneconomic to manage. Such tracts may be considered for either retention, exchange, sale, or transfer to another agency, based on further site-specific application of the land ownership adjustment criteria. Exchanges will generally be preferred to sale.

Public land identified for exchange or sale as a result of future site-specific analysis must meet the disposal criteria in the *Supplement to the State Director Guidance on Land Pattern Review and Land Adjustment* (USDI, BLM 1984a) and in Sections 206 and 203 of FLPMA. No tracts will be exchanged or sold without proper environmental documentation and the required notification in the Federal Register and local newspapers.

Land to be acquired by BLM through exchange ordinarily must be located in retention areas. In addition, acquisition of such land should facilitate access to public land and resources, maintain or enhance important public values and uses, maintain or enhance local social and economic values, or facilitate implementation of other aspects of the Garnet RMP.

Consolidation of surface and subsurface ownership should be accomplished whenever possible to improve resource management opportunities and development potential.



2. Unauthorized Use

Unauthorized uses of public land will be resolved either through termination, authorization by lease or permit, or sale. Decisions will be based on the type and significance of improvements involved; conflicts with other resource values and uses, including potential values and uses; and whether the unauthorized use is intentional or unintentional.

3. Withdrawals

Current BLM policy is to minimize the acreage of public land withdrawn from mining and mineral leasing and, where applicable, to replace existing withdrawals with rights-of-way, leases, permits, or cooperative agreements.

At the present time, 1,800 acres are effectively withdrawn from mining, mineral leasing, and/or sale, location, and entry under the public land laws (see Table 2-3).

All existing powersite and power project withdrawals will remain in effect unless modified or revoked as a result of the withdrawal review process. All withdrawals under the Classification and Multiple Use Act and the Recreation and Public Purposes Act will be recommended

for revocation. However, for important historic and cultural sites (MA 11), such recommendations will be contingent upon withdrawal under Section 204 of FLPMA.

As provided in Section 4(d)(3) of the Wilderness Act and subject to valid existing rights, the minerals in lands designated as wilderness would be withdrawn from all forms of appropriation under the mining and mineral leasing laws.

4. Utility and Transportation Corridors

Public land within identified exclusion areas will not be available for utility and transportation corridor development. Public land within avoidance areas ordinarily will not be available for utility and transportation corridor development. Exceptions may be permitted based on type of and need for facility proposed; conflicts with other resource values and uses, including potential values and uses; and availability of alternatives and/or mitigating measures.

All other public land usually is available for development of utility and transportation corridors. Exceptions will be based on consideration of the criteria identified above.

RECREATION PROGRAM GUIDANCE

A. Resource Condition and Use Objectives

1. Maintain the scientific and sociocultural values of sites eligible for listing on the National Register of Historic Places.
2. Maintain the wilderness characteristics of the Wales Creek, Hoodoo Mountain, and Quigg West Wilderness Study Areas (WSAs) until directed by Congress to do otherwise.
3. Provide a broad range of outdoor recreation opportunities for all segments of the public, commensurate with demand.
4. Maintain the recreation potential of undeveloped recreation sites.
5. Maintain or improve the visual quality within areas of high visual sensitivity and high scenic quality (MA12).

B. Resource or Land Use Allocations

1. Approximately 7,850 acres will be managed to maintain or improve visual quality (see MA 12 outlined on Selected Alternative Map in map packet).
2. Approximately 160 acres; including Garnet, Coloma, Reynolds City, Copper Cliff, Blackfoot City, Beartown, Bearmouth, and other sites which qualify for the National Register of Historic Places; will be managed as historical and cultural sites (MA 11).
3. Pending Congressional approval, the 520-acre Quigg West (MA 8) will be allocated to wilderness.
4. Approximately 8,660 acres (MA 8 and 9) are allocated to roadless, nonmotorized recreation, including such areas as Wales Creek, Cottonwood Meadows, Upper Gallagher Creek, Chamberlain Meadows, Limestone Cliffs, and Quigg West.
5. Approximately 131,919 acres are available for roaded and/or motorized recreation.
6. Approximately 5,040 acres in the Ram and Karshaw Mountain areas are roaded but unavailable for motorized recreation.

7. Forty-one sites have been identified as undeveloped recreation sites (MA 10). A list of names and locations is located with the planning documents.
8. 54,770 acres of public land, as shown on the Motorized Recreation Restriction Map in the back packet of the draft RMP/EIS, will be kept in cooperative road closure programs. See Table 2-4.

C. Management Actions

1. Prepare a wilderness study report/preliminary final environmental impact statement on wilderness recommendations for Quigg West, Wales Creek, and Hoodoo Mountain WSAs.
2. Continue to apply the Interim Management Policy to Quigg West, Wales Creek, and Hoodoo Mountain WSAs.
3. Develop and implement a travel plan identifying those public lands to be restricted or closed to motorized vehicle use.
4. Maintain the existing network of snowmobile trails in the Garnet Range, including the Garnet National Winter Recreation Trail as described in the Garnet Winter Recreation Trails Brochure and the Garnet Range Winter Trails Management Plan.
5. Continue cooperating with Garnet Preservation Association in implementing the Garnet Ghost Town Management Plan.
6. Inventory and evaluate cultural resources as a part of project clearance.
7. Maintain existing road and area closures as shown on the Motorized Recreation Restriction Map (as corrected) in draft RMP/EIS.
8. Maintain 41 undeveloped recreation sites to acceptable health and safety standards (MA 10).
9. Develop and/or update activity plans/environmental assessments for the special recreation management areas (SRMAs).
 - a. Garnet National Winter Recreation Trail
 - b. Lewis and Clark Trail and Blackfoot River
 - c. Garnet Ghost Town
 - d. Blackfoot Special Management Area
 - e. Clark Fork River
 - f. designated wilderness areas

TABLE 2-4
WALK-IN HUNTING AREAS IN THE GARNET RESOURCE AREA

Name	Approximate Size	Visitor Use	Road Closure Dates	Year Started	Type	Admin.	Reason for Closure*
Morrison Peak Special Management Area (SMA)	24,000 ac. (40 ac. BLM)	High	Sept. 1 - Nov. 30	1976	Formal Cooperative (23 Cooperators)	MDFWP	1, 2, 3
Marcum Mtn. Special Management Area	8,000 ac. (4,560 ac. BLM)	High	Sept. 1 - Nov. 30 on private & BLM; Sept. 1 - April 30 on BLM along Blackfoot Canyon face	1974 (Formal since 1977)	Formal Cooperative (22 Cooperators)	MDFWP and BLM	1, 2, 3, 4
Deer Cr.	2,600 ac. (400 ac. BLM)	Moderate	Sept. 1 - Nov. 30	1976	Admin. closure of BLM road	BLM	2, 3
Wales, Yourname Creeks	15,400 ac. (14,120 ac. BLM)	Low	Yearlong	1974	Formal Cooperative on boundary road (BLM & BN)	MDFWP and BLM	2, 3
McElwain Douglas Creeks	8,500 ac. (7,840 ac. BLM)	Moderate	Murray Cr. Rd., Deer Gu. Spur & Trail Spring Spur closed Sept. 1 - Nov. 30. McElwain Fire Rd., Boiler connecting road & Snowcap Trail closed yearlong except open to over snow vehicles Jan. 1 - April 30.	1978 for Murray Cr. Rd. 1976 for Deer Gu. & Trail Spring 1974 for remaining roads.	BLM Admin. closure	BLM	2, 3, 5
Blackfoot SMA	42,000 ac. (9,500 ac. BLM)	High	Sept. 1 - Nov. 30 Elk logging study area portion, yearlong	1974 (Formal since 1976)	Formal Cooperative (10 Cooperators)	MDFWP and BLM	1, 2, 3, 5, 7
Ram Mtn.	11,100 ac. (4,800 ac. BLM)	Moderate	Closed year-long	1974	Informal Cooperative (3 Cooperators)	BLM	1, 2, 3, 4, 6

TABLE 2-4
WALK-IN HUNTING AREAS IN THE GARNET RESOURCE AREA

Name	Approximate Size	Visitor Use	Road Closure Dates	Year Started	Type	Admin.	Reason for Closure*
W.F. Braziel, Gobbler's Knob, Dry Cottonwood Creek	15,000 ac. (12,000 ac. BLM)	Moderate	Sept. 1 - Nov. 30	1978	Informal Cooperative (3 Cooperators)	BLM	1, 2, 3
Summit Cabin	900 ac. (870 ac. BLM)	Moderate	Sept. 1 - Nov. 30	1980	BLM admin. closure	BLM	2, 3, 7
Karshaw Mtn.	240 ac. (240 ac. BLM)	Low	Yearlong	1978	BLM admin. closure	BLM	2, 3, 7
Keno Cr. Spur	400 ac. (400 ac. BLM)	Moderate	Yearlong	1982	BLM admin. closure	BLM	2, 3, 7
	TOTAL	128,140 acres					
	TOTAL BLM	54,770 acres					

*Reasons for Closure

1. To gain hunting privileges on private land.
2. To improve the quality of hunting.
3. To prevent vehicular damage to soils & vegetation.
4. To reduce harassment of wintering big game.
5. To reduce harassment of elk on spring/summer/fall range.
6. To reduce pressure on big horn sheep herd.
7. To provide security for big game after logging.

10. Begin negotiating with potential cooperators in Ten Mile, Pearson, Warm Springs, and Klondike Creek areas with the goal of establishing cooperative road closure areas.
11. Develop and implement an interpretation plan for Blackfoot City and key sites near Garnet.
 - a. Reynolds City
 - b. Beartown
 - c. Springtown
 - d. Summit Cabin
 - e. Coloma
 - f. Blackfoot City
12. Seek a Secretarial withdrawal from mineral entry for MA 8 and MA 11.

D. Standard Operating Procedures

A broad range of outdoor recreation opportunities will continue to be provided for all segments of the public, commensurate with demand. Trails and other means of public access will continue to be maintained and developed where necessary to enhance recreation opportunities and allow public use. Recreation areas receiving the heaviest use will receive first priority for operation and maintenance funds. Sites that cannot be maintained to acceptable health and safety standards will be closed until deficiencies are corrected.

Investment of public funds for new recreation developments will be permitted only on land identified for retention in public ownership. However, no such developments are envisioned during the life of this plan. Therefore management will be limited to protecting the recreation potential of undeveloped sites.

These plans will provide more specific management guidance for recreation and other resources in each SRMA, consistent with the RMP. SRMAs are identified on the basis of high recreation use, the significance of recreation resources regionally and nationally, and the need to resolve conflicts in resource management or use.

Recreation resources will continue to be evaluated on a case by case basis as a part of project and activity planning. Such evaluations will consider the significance of the proposed action and the sensitivity of recreation resources in the affected area. Stipulations will be attached as appropriate to assure compatibility of the developments with recreation management objectives.

Recreation special use permits will be evaluated and approved on a case by case basis. This includes permits for commercial use, competitive events, and group activities such as trail rides, bicycle tours, and off-road vehicle (ORV) events. No outfitter and guide permits will be issued for hunting except in conjunction with adjoining Forest Service permits.

1. Travel Planning and Motorized Vehicle Use

All public land will be designated as either open, limited, or closed to motorized vehicle use under authority of Executive Order 11644.

All existing road and area closures generally will remain in effect (see Table 2-4) except for minor adjustments in the Chamberlain Creek drainage. New roads constructed in the future generally will be closed to motorized public use following completion of planned management activities. Cooperative closures involving adjoining landowners will be pursued in the Tenmile, Klondike, Warm Springs Creek, and Pearson Creek areas.

Public land within areas identified as limited to motorized vehicle use generally will receive priority attention during travel planning. Specific roads, trails, or portions of such areas may be restricted seasonally or yearlong to all or specified types of motorized vehicle use.

Public land within areas identified as closed to motorized vehicle use will be closed yearlong to all forms of motorized vehicle use. Exceptions may be allowed in wilderness study areas based on application of the Interim Management Policy.

Restrictions and closures will be established for specific roads, trails, or areas based on consideration of the following criteria:

- the need to promote user enjoyment and minimize use conflicts;

- the need to minimize damage to soil, watershed, vegetation, road beds, or other resource values;

- the need to minimize harassment of wildlife or significant degradation of wildlife habitat;

- the need to promote user safety; and

- the need to cooperate with adjoining landowners.

2. Visual Resources

Visual resources will continue to be evaluated as a part of activity and project plans using the visual resource management (VRM) guidelines described in Appendix E. Such evaluation will consider the significance of the proposed project and the visual sensitivity of the affected area. Stipulations will be attached as appropriate to mitigate impacts on visual resources.

Areas recommended for or designated as wilderness (MA 8) will be subject to Class I VRM guidelines. Certain lands generally within riparian zones, recreation or cultural sites, special management areas, and visual corridors (MA 1, 2, 9, 10, 11, and 12) will be subject to Class II or III VRM guidelines. All other public land will be subject to Class III, IV, or V VRM guidelines, as previously mapped and referenced in the Garnet Management Situation Analysis (MSA). The precise location of VRM Classes II through V may be delineated in more detail during project or activity planning, based on the standard criteria for evaluating scenic quality, visual sensitivity, and distance zones.

3. Cultural Resources

Cultural resource management will continue to focus on Garnet Ghost Town. This will include conducting historical research, recording architectural features, and stabilizing deteriorating structures. Cooperative management with the Garnet Preservation Association will continue with the goal of fully implementing the Garnet Ghost Town Management Plan.

Emphasis will also be placed on the interpretation of key sites near Garnet, including Reynolds City, Beartown, Springtown, Summit Cabin, and Coloma; and at Blackfoot City.

On the remainder of the resource area, cultural resources will continue to be inventoried and evaluated as part of project level planning in compliance with Sections 106 and 110 of the National Historic Preservation Act of 1966, as amended. Such evaluation will consider the significance of the proposed project and the sensitivity of cultural resources in the affected area. Stipulations will be attached as appropriate to mitigate impacts on cultural resources.

Standard Operating Procedures for cultural resource management are summarized below and are described in more detail in Appendix F:

Cultural resource inventories will be completed prior to any ground disturbing activity. Cultural resources will not be disturbed until evaluated by the District Manager or an authorized representative in consultation with the State Historic Preservation Officer to determine eligibility for inclusion on the National Register of Historic Places and/or the National Register of Historic Landmarks.

Consultation will also include appropriate representative(s) of Native American groups or organizations for cultural resources valuable for ceremonial, religious, or other sociocultural purposes.

Cultural resource sites generally will be protected from disturbance through project design and location. If sites are found to be eligible for the National Register(s) and cannot be avoided, a determination of the effect of the project on the site(s), including appropriate mitigating measures, will be made in consultation with the Montana Historic Preservation Officer and the National Advisory Council on Historic Preservation. No action affecting such sites will be permitted until the Advisory Council has had an opportunity to comment.

Adverse effects generally will be mitigated either through redesign of the proposed project so as to avoid the site or through complete excavation or other information recovery techniques. A memorandum of understanding will be developed with the Advisory Council to establish an acceptable level of mitigation for impacts on cultural resources when such impacts cannot be avoided.

To provide for consideration of cultural resources not evident during inventories, a stipulation will be attached to each surface-disturbing project requiring the operator to temporarily suspend work if buried cultural remains are encountered. The District Manager or an authorized representative will then determine the action necessary for protection or salvage of the discovery.

4. Wilderness Resources

The Interim Management Policy will continue to be applied to all wilderness study areas identified under Section 603 of FLPMA, and to any areas studied under Section 202 of FLPMA and recommended as suitable for wilderness designation, until such areas are reviewed and acted upon by Congress. Other 202 WSAs will be managed in accordance with applicable guidance provided by this RMP.

Public land within areas added by Congress to the National Wilderness Preservation System will be managed in compliance with the *Wilderness Management Policy* (USDI, BLM 1981b). Site-specific wilderness management plans will be developed for such areas.

Areas reviewed by Congress but not added to the National Wilderness Preservation System will be managed in accordance with other applicable guidance provided by this resource management plan.

An intensive inventory completed by the BLM in 1981, identified four wilderness study areas. These are Wales Creek (MT-074-150), Hoodoo Mountain (MT-074-151A), Gallagher Creek (MT-074-151B), and Quigg West (MT-074-155).

Quigg West is located in Granite County; Wales Creek, Hoodoo Mountain, and Gallagher Creek are in Powell County. They cover 27,737 acres or about 19 percent of the public land in the GRA. Table 2-5 lists the WSAs and their acreage.

E. Monitoring Requirements

Table 2-6 lists the items to be monitored.

TABLE 2-5
WILDERNESS STUDY AREAS IN THE GARNET RESOURCE AREA

WSA Name	WSA Number	Acreage	Study Authority	Wilderness Designation Recommendations
Wales Creek	MT-074-150	11,580	FLPMA, Sec. 603	not recommended
Hoodoo Mountain	MT-074-151A	11,380	FLPMA, Sec. 603	not recommended
Gallagher Creek	MT-074-151B	4,257	FLPMA, Sec. 202	dropped from consideration
Quigg West	MT-074-155	520	FLPMA, Sec. 202	recommended*
Total		27,737		

*Contingent on FS wilderness recommendations for Quigg (1807)

TABLE 2-6
Recreation Resource Monitoring and Evaluation Plan

Element	Item	Location	Technique ¹	Unit of Measure	Frequency and Duration	Info. Warranting a Decision Change
Cultural Resources	site vandalism	area wide for sites eligible for nomination to the Register of Historic Places	site inspection	number of sites disturbed	once yearly during snowfree season	any noticeable trend indicating increased site disturbance such as ground disturbance, modification of structures, etc.
	environmental degradation, movement of artifacts as a result of erosion and trampling	area wide for sites eligible for nomination to the Register of Historic Places	site inspection and photo plot-measurement method using closeup photos and measurements to show quantitative changes in the distribution of artifacts	number of artifacts displaced or altered per square yard	once a year	any disturbance involving sites eligible for nomination to the Register of Historic Places

TABLE 2-6
Recreation Resource Monitoring and Evaluation Plan

Element	Item	Location	Technique ¹	Unit of Measure	Frequency and Duration	Info. Warranting a Decision Change
Wilderness	wilderness study areas	MA 8	monitoring by flight or vehicle based review	site disturbance	once per month during use season or more often if evidence occurs to warrant disturbance	evidence of unauthorized activity which degrades wilderness values will instigate an investigation and possible civil or criminal court action
Recreation	general recreation use	area wide with emphasis on dispersed use of undeveloped recreational sites	area inspection to look for vandalism, resource abuse, etc.	visitor days	twice per year e.g. once in June and once in Oct.	collected data reveals user conflicts, resource degradation, or safety hazards
	concentrated recreation use and demand	Garnet, heavily used trail heads, and winter trails	visitor registration at Garnet, traffic counters, and estimates	visitor days	counters to be checked bi-weekly during periods of heavy use, daily counts or estimates of use at Garnet by BLM or Garnet Preservation Association	collected data indicates increased visitor use/yr. or sustained use that requires additional or improved facilities
	road closure	area wide with emphasis on designated walkin hunting areas	aerial reconnaissance and ground patrol	visitor days and violations	one fall and one winter flight per year, ground patrol of gates twice during periods of heavy use or more often if evidence occurs to warrant observation	on any given road closure gate, three violations are noted/season

¹ Monitoring activities between differing elements and within the same element will be conducted and/or coordinated so as to reduce duplications, travel time, etc. and thereby increase efficiency while reducing costs. The existing Studies Index System will also be used as a tool for tracking and scheduling monitoring plans.

FORESTRY PROGRAM GUIDANCE

A. Resource Condition and Use Objectives

1. Maintain or, where practical, enhance site productivity on all Commercial Forest Land (CFL) available for harvest.
 - a. Minimize insect and disease losses with harvesting and management practices.
 - b. Eliminate the current reforestation backlog and reestablish desired tree seedling densities within a reasonable timeframe following future harvests.
 - c. Precommercially thin stands to maximize growth on crop trees.
 - d. Participate in tree improvement cooperatives and using genetically improved seedlings in reforestation of CFL.
2. Offer approximately 7,300 mbf of timber for sale annually. This is the best current estimate of the harvest level sustainable in the Garnet Resource Area. It is subject to minor revision based on updated inventory information, changes in land status due to ownership adjustments, and/or funding allocations.
3. Efficiently harvest and use the timber resource without creating unacceptable environmental impacts on the forest ecosystem.
2. Update and implement the five-year timber sale program.
3. Develop and implement timber management plans/environmental assessments in conformance with RMP objectives.
4. Prepare and implement timber sale plans/environmental assessments.
5. Develop and implement a plan to eliminate reforestation backlog by 1993.
6. Identify stand conditions. Identify and prioritize opportunities to apply various intensive management practices.
7. Develop and maintain a computerized stand record system.

B. Resource or Land Use Allocations

1. Approximately 105,020 acres (93 percent) of CFL will be available for forest management (MA 2, 3, 4, 5, 6, 10, and 12).
2. Approximately 7,440 acres (7 percent) of CFL will be set aside for management for commercial products (MA 1, 8, 9, 11, and 14).
3. Management restrictions, which reduce volume harvested by an estimated 20 percent will be applied to approximately 64,720 acres (MA 2, 4, 5, 6, and 10).

C. Management Actions

1. Provide input into other resource activity plans, Habitat Management Plans (HMPs), AMPs, etc.



D. Standard Operating Procedures

Percentage reduction in timber output to accomplish management objectives of other resources are necessary and shown by management area in Table 2-7.

The resource area operates under a five-year timber sale and forest management program which is developed, implemented, and updated annually. The CFL is divided into compartments which are geographic units of roughly 3,000 acres. The suitable CFL as identified by the TPCC (see Appendix B) in each compartment is further divided into stands. Each stand is analyzed through the operations inventory for stocking, condition, age, and volume, and is given a priority for treatment. In addition to the stand analysis, a transportation system is developed for each compartment.

To develop a sale, a number of high priority stands are selected and a timber sale plan and environmental analysis is prepared and reviewed with an interdisciplinary team. These stands, after they are harvested or treated, are then monitored to determine how successful the treatment was in obtaining the silvicultural objectives of the prescription and meeting the goals and objectives of the specific management areas (Chapter 3) for these stands.

A typical monitoring sequence for a stand begins with a survival survey one-year after planting, and stocking surveys at three and five years to determine if the new stand meets BLM stocking standards. Additional surveys occur at age 20 to establish need for precommercial thinning; at years 40, 60, and 80 to determine suitability for commercial thinning; and at age 100 to prepare a prescription for harvest.

Yearly extensive detection surveys are made over all the forest land to monitor insect and disease trends. Funds are available for insect and disease control projects where control can occur through some silvicultural action.

Timber sale contracts are prepared for each sale. These contracts contain a wide range of standard clauses outlining the purchasers obligations for fire protection, watershed, soil protection, and road construction and maintenance. In addition to the standard clauses, each contract will contain specific instructions on the location and manner in which the timber is to be harvested; location of required roads and construction specification for each road; and requirements for slash disposal, site preparation, timber stand improvement, regeneration, and performance bonds.

The timber management program is monitored on a stand basis. As stands are inventoried through the operations inventory, a management program is prepared for the stand through rotation. Each step or activity in the management progression for the stand is monitored and evaluated to determine the timing for the next treatment. The stand development and the management objective must be reached before the next treatment phase is initiated.

E. Monitoring Requirement

The timber management program will be monitored on a stand basis to determine the need and timing of silvicultural treatments. The forest land management program will be monitored to ensure compliance with management area objectives. Table 2-8 lists the items to be monitored.

TABLE 2-7
ESTIMATED REDUCTION IN TIMBER OUTPUT DUE TO
MANAGEMENT AREA PRESCRIPTIONS

Number	Management Area	% Reduction	# Acres
1	Riparian Protection Zone	100	1,000
2	Riparian Multiple Use Zone	20	2,500
3	General Forest Management	0	36,900
4	Elk Summer and Fall Habitat Components	20	8,300
5	Big Game Summer and Fall Range	20	48,850
6	Big Game Winter Range	20	23,300
7	Noncommercial Forest and TPCC Withdrawn Commercial Forest	N/A	5,800
8	Areas Recommended For Wilderness Designation	100	520
9	Special Management Areas	100	8,140
10	Developed and Undeveloped Recreation Sites	20	41
11	Historical and Cultural Sites	100	160
12	Visual Corridor	0	7,850
13	Nonforest Habitat	N/A	1,300
14	Mineral Production Area	100	1,000

TABLE 2-8
FOREST RESOURCE MONITORING AND EVALUATION PLAN

Element	Item	Location	Technique ¹	Unit of Measure	Frequency and Duration	Info. Warranting a Decision Change
Commercial Forestland	stocking	all re-generated stands either natural or planted	stocking survey ²	number of trees per acre	five year intervals until stand is declared established or until 15 yrs.	fewer than 180 trees per acre well distributed throughout the stand 15 years after harvest
	post harvest evaluation	cutting units	site inspection	resource characteristics	within one month after termination or as soon as area is snowfree	sale plan EA and stand prescription recommendations not met
	prethinning evaluation	all re-generated stands	stocking survey ²	stand condition, trees/acre	approximately 20 yrs. after stand has been declared established	crown competition is evident
	insect & disease survey	timber stands	aerial and ground observation by USDA Forest Pest Mgmt.	acres affected	annual	change in incidence and level of damage
	cover	all re-generated stands in MAs 4, 5, 6	site inspection	200 trees per acre 8 feet tall	begin 15 years after stand is declared established, continue at 5 yr. intervals until stand meets MA objectives	stand meets MA objectives, adjacent stands then become eligible for harvesting
	use	all authorized use areas i.e. timber sales, post & pole permits, etc.	site inspection	amount of use	minimum of once a week during logging and increased frequency as necessary during road building, slash disposal and reforestation; minimum once a month for post & poles	violation of contract specification

TABLE 2-8
FOREST RESOURCE MONITORING AND EVALUATION PLAN

Element	Item	Location	Technique ¹	Unit of Measure	Frequency and Duration	Info. Warranting a Decision Change
	progeny test plantation (data collection)	Top-O-Deep	as required by IETIC ³	standard quantitative measurements of survival, height, growth	every 5 yrs on tree growth	when data is no longer required or different data is required
	progeny test plantation (site protection)	Top-O-Deep	site inspection	trees showing pest damage	twice a yr.	increase in pest activity

¹ Monitoring activities between differing elements and within the same element will be conducted and/or coordinated so as to reduce duplications, travel time, etc. and thereby increase efficiency while reducing costs. The existing Studies Index System will also be used as a tool for tracking and scheduling monitoring plans.

² USDI. Bureau of Land Management. 1981. BLM Manual. Section 5705. Denver, CO and Butte District Policy Memo. April 12, 1982. "Reforestation Backlog Certification Standards-Manual Supplement."

³ IETIC. Inland Empire Tree Improvement Cooperative.

RANGE PROGRAM GUIDANCE

A. Resource Condition and Use Objectives

1. Maintain or, where practical, enhance site productivity on all public land available for livestock grazing.
 - a. Maintain current vegetative condition in maintenance (M) and custodial (C) category allotments.
 - b. Improve unsatisfactory vegetative conditions by one condition class in certain improvement (I) category allotments (see Appendix L).
 - c. Prevent noxious weeds from invading new areas.
 - d. Limit utilization levels to provide for plant maintenance.
2. Provide a level of livestock grazing commensurate with resource objectives.

B. Land Use Allocations

1. The tracts listed in Table 2-9 will not be leased for livestock grazing.

TABLE 2-9

TRACTS TO REMAIN UNLEASED FOR LIVESTOCK GRAZING

Name	Acreage
Chamberlain Creek	5,760
Wales Creek	7,820
Gallagher Creek	3,420
Cottonwood Creek	3,040
Yourname Creek	7,160
Quigg Peak	520
Elk Creek East	4,480
Pearson Creek	1,570
Total	33,770

2. A total of 111,890 acres of public land in the GRA will remain available for livestock use (see Appendix K and allotment overlay in map packet).
3. A total of 81,294 acres will be covered by allotment management plans.

4. 6,245 animal unit months (AUMs) of livestock forage will be offered for lease by the year 1996. This number is the best current estimate of the level of livestock use sustainable in the GRA under present resource conditions and resource conditions anticipated by the year 1996; however, they are subject to revision based on the results of implementing and monitoring this RMP and on consultation with affected operators.
5. 8,013 AUMs of livestock forage will be offered for lease by the year 2006. This number is the best current estimate of the level of livestock use sustainable in the GRA under present resource conditions and resource conditions anticipated by the year 2006; however, they are subject to revision based on the results of implementing and monitoring this RMP and on consultation with affected operators.

C. Management Actions

1. Contact those grazing lessees (begin consultation process) who may be affected by changes in grazing management and inform them of possible changes.
2. Prepare and distribute a Rangeland Program Summary.
3. Provide input into resource activity plans, HMPs, timber sale plans, etc.
4. Continue livestock use supervision to assure compliance with lease terms/conditions.
5. Issue decisions to discontinue grazing leases in Elk Creek.
6. Discontinue AMP on Devil Mountain allotment.
7. Prepare and issue grazing decisions (including overall increase from 5,930 to 6,245 AUMs short-term).
8. Review the existing AMPs listed in Table 2-10 to assure consistency with RMP objectives and guidelines; incorporate wildlife/riparian habitat management objectives and forest regeneration considerations as needed.
9. Develop and implement AMPs for the I category allotments (Appendix L) listed in Table 2-11.

TABLE 2-10
AMP ALLOTMENTS EXISTING

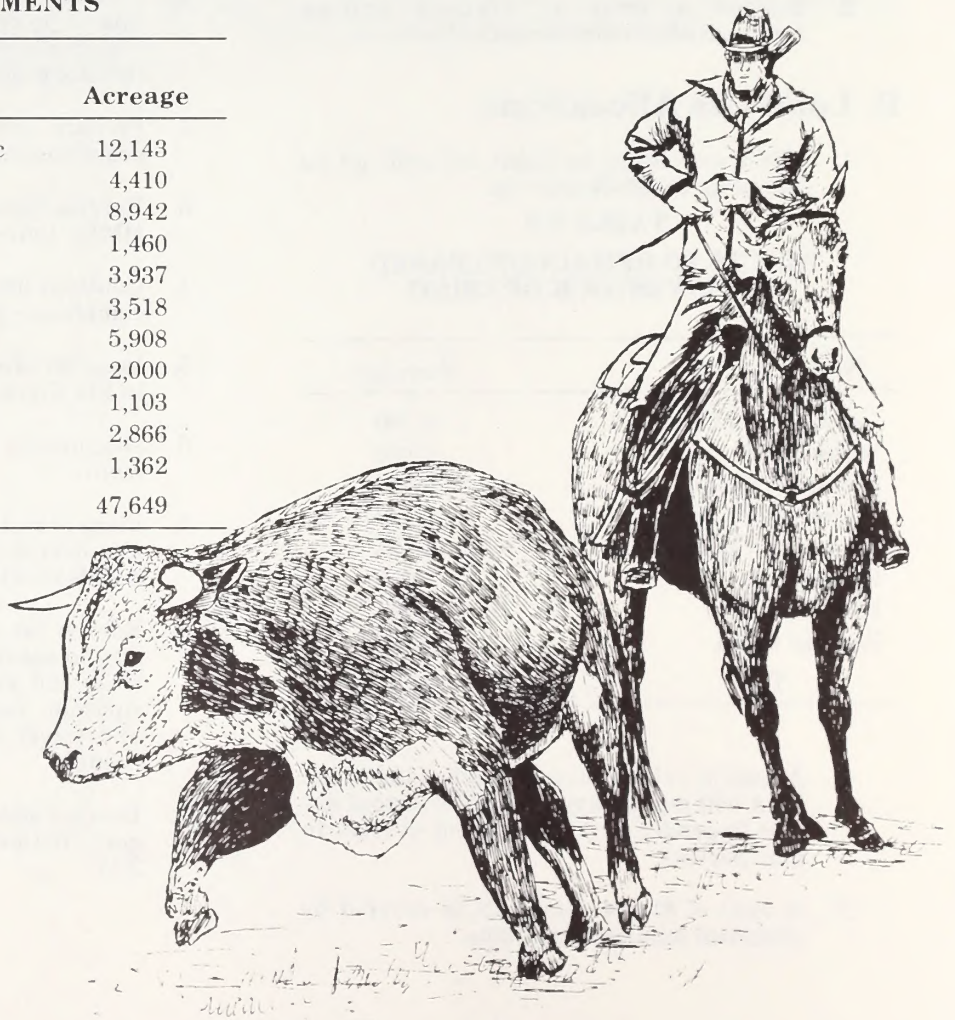
Allotment Number and Name	Grazing System	Acres		Year Initiated	Category
		BLM	Private		
7118 Five Mile	3 Pasture R.R.	480	—	1972	M
7119 McElwain Creek	4 Pasture R.R.	5,604	3,485	1970	M
7121 Wales	3 Pasture R.R.	854	640	1971	M
7207 Braziel Creek	3 Pasture R.R.	7,358	2,080	1971	M
7213 Marcum Mountain	3 Pasture D.R.	3,575	2,319	1975	M
7224 Warm Springs Creek	4 Pasture R.R.	7,451	13,567	1968	M
7316 Ram Mountain	4 Pasture R.R.	4,153	2,825	1969	M
7319 West Fork Buttes	4 Pasture R.R.	640	1,280	1969	M
7320 Stewart Lake	4 Pasture R.R.	2,335	2,640	1971	M

R.R. — rest rotation

D.R. — deferred rotation

TABLE 2-11
NEW AMP ALLOTMENTS

Allotment Number and Name	Acreage
7101 Bonita-Clinton-Potomac	12,143
7102 Weaver	4,410
7104 Lund #1	8,942
7105 McMahan	1,460
7106 Iverson	3,937
7108 Lund #2	3,518
7109 Murray-Douglas Cr.	5,908
7219 Mannix	2,000
7221 Murphy	1,103
7312 H. Luthje	2,866
7324 Collins #2	1,362
Total Acreage	47,649



D. Standard Operating Procedures

1. Allotment Categorization

All grazing allotments have been assigned to one of three management categories based on present resource conditions and the potential for improvement (see Appendix G). The M allotments generally will be managed to maintain current resource conditions; I allotments generally will be managed to improve resource conditions; and C allotments generally will receive custodial management to prevent resource deterioration.

2. Implementing Changes in Allotment Management

Allotment management plans generally will describe in detail the types of changes needed in an allotment and establish a schedule for implementation. Such plans will be based upon approved management objectives and guidelines established through the RMP process. Proposed changes in allotment management will be subject to the environmental review process, and such proposals will be modified or rejected when needed to mitigate adverse environmental impacts. Existing AMPs will be reviewed to assure consistency with RMP objectives and guidelines; wildlife and riparian habitat management objectives and forest regeneration considerations will be incorporated into existing AMPs as needed. The following sections contain discussions of changes likely to be recommended in an allotment management plan and the guidance that applies to these administrative actions.

Livestock Use Adjustments. Livestock use adjustments are most often made by changing one or more of the following: the kind or class of livestock grazing an allotment, the season of use, the stocking rate, or the pattern of grazing. For each of the five alternatives presented in this RMP, target stocking rates have been set for each allotment (refer to Appendix H). While most livestock use adjustments will occur in the I allotments, use adjustments are permitted for allotments in categories C and M.

In reviewing the target stocking rate figures and other recommended changes, it is emphasized that the target AUM figures are not final stocking rates. Rather, all livestock use adjustments will be implemented through documented mutual agreement or by decision. When adjustments are made through mutual agreement, they may be implemented once the Rangeland Program Summary has been through a public review period. When livestock use adjustments are implemented by decision, the decision will be based on operator consultation, range survey data, and monitoring of resource conditions.

Current BLM policy emphasizes the use of a systematic monitoring program to verify the need for livestock adjustments proposed on the basis of one-time inventory data. Monitoring will also measure the changes brought about by new livestock management practices and evaluate the effectiveness of these management practices in meeting stated objectives.

The federal regulations that govern changes in allocation of livestock forage provide specific direction for livestock use adjustments implemented by decision (43 CFR 4110.3). These regulations provide guidance for the allocation of additional forage on a temporary and a permanent basis, as well as guidance for reducing the livestock grazing capacity due to a decrease in available forage. Permanent increases in the allocation of livestock forage or suspension of preference will generally be implemented over a five-year period but can be implemented in less than five years when agreement between the BLM and affected interests is reached to shorten the time span, or when a shorter period is necessary to protect public lands due to conditions created by such factors as fire, drought, or insect infestations, and a final decision is issued and placed in full force and effect under 4160.3(C) of this title.

Forage created through timber harvesting will be allocated on a temporary five-year basis and not be renewed until adequate monitoring studies confirm a proper stocking level for that logged site.

Range Improvements and Treatments. Range improvements and treatments will be implemented under all alternatives. Typical range improvements and treatments and the general procedures to be followed in implementing them are described in Appendix I. The extent, location, and timing of such actions will be based on the allotment specific management objectives adopted through the resource management planning process, and on interdisciplinary development and review of proposed actions and alternatives.

Weed control efforts on public lands will be designed to prevent the invasion of noxious weeds into areas presently free of weeds. Target weeds will include knapweed, leafy spurge, and musk thistle. Priority will be placed on control efforts along primary public access roads into public lands, control of spot infestations, and cooperation with adjoining landowners in the control of large weed infestations. Biological control will be initiated on selected sites as control organisms are developed and proven as a viable method of weed control.

Allotments in which range improvement funds are to be spent will be subjected to an economic analysis. The analysis will be used to develop a priority ranking of allotments for the commitment of range improvement funds that are needed to implement activity plans. The highest priority for implementation generally will go to those improvements for which the total anticipated benefits exceed costs. Other factors to be considered include resource needs, public participation, operator contributions, and BLM funding capability. Range improvements will occur in the I and M allotments. Appendix G describes the criteria used to determine I, M, or C allotment categories and the general reasons warranting the expenditure of funds.

Grazing Systems. Grazing systems will be used in all alternatives. The type of system selected for each AMP will be based on consideration of the following factors: allotment specific management objectives; resource characteristics, including vegetation potential and water availability; operator needs; and implementation costs.

Typical grazing systems available for consideration are described in Appendix J.

Unleased Tracts. Unleased tracts will remain available for leasing, as provided for in the BLM grazing regulations (43 CFR 4110 and 4130), unless the RMP indicates no grazing will be allowed. Lands to be excluded from grazing may be made available for livestock use on a temporary, nonrenewable basis at the discretion of the Area Manager if such use would meet management goals and objectives for the area.

E. Monitoring Requirements

Monitoring efforts will focus on allotments in the I and M categories. For the range program, methodologies are available for monitoring vegetative trend, forage utilization, actual use (livestock numbers and periods of grazing), and climate. The data collected from these studies will be used to evaluate current stocking rates, to schedule pasture moves by livestock, to determine levels of forage competition, to detect changes in plant communities, and to identify patterns of forage use. Some of the methodologies that could be used include Daubenmire canopy transects, key forage plant utilization transects, aerial and ground reconnaissance of animal numbers and grazing patterns, actual use questionnaires, and low altitude aerial photography transects.

Priorities for monitoring grazing allotments will be established. The methodology and intensity of study that is chosen for a particular allotment will be determined by the nature and severity of the resource conflicts that are present in that allotment. Table 2-12 lists the items to be monitored.

TABLE 2-12
RANGE RESOURCE MANAGEMENT MONITORING AND EVALUATION PLAN

Element	Item	Location	Technique ¹	Unit of Measure	Frequency and Duration	Info. Warranting a Decision Change
Rangeland Vegetation	condition	all M&I allotments	as outlined in SCS National Range Handbook Section 305 ²	% pounds production compared to climax allowance	end of each grazing cycle	condition is reduced one class
	trend	a. all M&I allotments b. any allotment where adjustment in preference is proposed	canopy-coverage (Daubenmire), ³ soil surface factor (MSO-7100-1), ⁴ photos	change in % of surface area	a. end of each grazing cycle b. first and fifth year, then on 5 yr. interval	decrease of 10 percentage points from base data
	cover	M&I allotments	canopy-coverage (Daubenmire), ³ photos	% of surface area	end of each grazing cycle	decrease of 10 percentage points from base data
	utilization	M&I allotments	key forage plant ⁵	% forage removed	annually at end of grazing cycle	utilization more than 50% on native grasses
	precipitation	M&I allotments	site specific rain gauges, RAWS units, ⁶ NOAA data ⁷	inches of precipitation	monthly during growing season	consider with temperature data to determine utilization level
	temperature	M&I allotments	NOAA data, ⁷ RAWS data ⁶	degrees F or C	monthly during growing season	consider with precipitation data to determine utilization level

¹ Monitoring activities between differing elements and within the same element will be conducted and/or coordinated so as to reduce duplications, travel time, etc. and thereby increase efficiency while reducing costs. The existing Studies Index System will also be used as a tool for tracking and scheduling monitoring plans.

² USDA. Soil Conservation Service. 1976. National Range Handbook. Washington D.C.

³ Daubenmire. 1959. "A Canopy Coverage Method of Vegetational Analysis." Northwest Science. 33(1): 43-64.

⁴ USDI. Bureau of Land Management 1981. BLM Manual. Section 4430.5. Denver, CO.

⁵ USDI. Bureau of Land Management. 1984. Rangeland Monitoring: Utilization Studies. Technical Reference 4400.3. Denver, CO.

⁶ RAWS. Remote Automatic Weather Station operated by BLM.

⁷ NOAA. National Oceanic and Atmospheric Administration.

WILDLIFE AND FISHERIES PROGRAM GUIDANCE

A. Resource Condition and Use Objectives

1. Maintain all riparian habitat currently in satisfactory condition.
2. Improve riparian habitat condition from unsatisfactory to satisfactory in the I category allotments identified in the Range Program Guidance.
3. Stabilize or improve habitat conditions in other key areas.
 - a. Winter range (MA 16)
 - b. All suboptimum aquatic
4. Maintain and improve elk summer and fall habitat components in high density occurrence areas (MA 4).
5. Balance forage and cover requirements for big game on summer and fall ranges (MA 5).

B. Resource or Land Use Allocations

1. Approximately 3,500 acres will be managed primarily to maintain or enhance a variety of riparian habitat values (MA 1 and 2).
2. Approximately 80,450 acres will be managed primarily to emphasize big game habitat, including elk summer and fall habitat components (MA 4), big game summer and fall range (MA 5), and big game winter range (MA 6). Also, about 5,800 acres of noncommercial forest land (MA 7) not included in MA 4, 5, and 6 will be managed with emphasis on maintaining old-growth, unique features, and mature forest habitat for wildlife use.
3. Approximately 3,094 acres of unsatisfactory riparian habitat will be improved.
4. Approximately 1,110 acres of unsatisfactory riparian habitat will likely remain in unsatisfactory condition.
5. Approximately 637 acres of satisfactory riparian habitat will be maintained.
6. The condition of approximately 5,370 acres of big game winter range will be improved.
7. Approximately 14 miles of aquatic habitat in suboptimum condition will be improved.

C. Management Actions

1. Provide wildlife/fisheries habitat input into AMPs, CMPs, road/area closures, etc. (See Range Management portion of this chapter for a listing of existing and proposed AMPs and the Recreation portion for a listing of existing and proposed road closure areas. Also, see Appendix L for allotments containing wildlife objectives.)
2. Determine HMP or CMP, or project improvement needs; develop priorities and implement.

D. Standard Operating Procedures

1. General

Wildlife and fish habitat will be evaluated on an individual basis as a part of project level planning. Each evaluation will consider the significance of the proposed action and the magnitude of impacts to wildlife habitat. Appropriate stipulations or restrictions will be used to mitigate these impacts.

Habitat improvement and maintenance projects will be implemented where needed to stabilize or improve habitat conditions. These projects will be identified through coordinated resource activity plans. Improvement is based on ability of allotment management plans to achieve livestock control sufficient to maintain or improve riparian and winter range habitats.

2. Threatened, Endangered, and Sensitive Species

No activities will be permitted in habitat for threatened and endangered species that would jeopardize continued species existence. Whenever possible, management activities in threatened, endangered, and sensitive species habitat will be designed to benefit those species through habitat improvement.

Fish and Wildlife Service and the Montana Department of Fish, Wildlife, and Parks will be consulted prior to actions that may affect threatened and endangered habitat. Whenever the BLM biological assessment process determines such habitat may be affected, consultation with the Fish and Wildlife Service will be initiated as per Section 7 of the Endangered Species Act, as amended.

Inventory and monitoring of occupied and potential threatened and endangered habitat will continue on the resource area.

3. Terrestrial Wildlife Habitat

Road and area closures will be pursued for wildlife security and other resource values. Wildlife habitat goals and objectives will be included in all resource activity plans and projects that could affect wildlife habitat.

The Montana Department of Fish, Wildlife, and Parks (MDFWP) will be consulted prior to vegetative manipulation projects in accordance with Supplement 1 of the Master Memorandum of Understanding, 1977. In addition, MDFWP will be consulted on timber harvest and timber stand improvement projects. All animal control programs will be coordinated with the U.S. Fish and Wildlife Service, MDFWP, and in the case of aerial gunning requests, with the Montana Department of Livestock.

Management actions within floodplains and wetlands will include measures to preserve, protect, and if necessary, restore their natural functions, as required by Executive Orders 11988 and 11990. Water crossings will be designed and installed to minimize sediment production and maintain adequate fish passage. Riparian habi-

tat management needs will be considered when developing grazing systems, locating roads, and during layout of timber management activities.

Where applicable, the Montana Cooperative Elk Logging Study recommendations (USDA, FS 1982) including any future revisions will be followed (see Appendix M). Also, where applicable, the recommendations of the *Cooperative Fish Management Plan for Public Lands in Montana* (MDFWP; USDI, BLM 1984) will be followed.

The resource area snag management policy will be followed.

E. Monitoring Requirements

For the wildlife program, monitoring will be directed at the biotic resource components using both temporary and permanent studies. The findings from these studies can be used to monitor responses in habitat condition and trend; monitor forage availability, composition, and vigor; monitor changes in cover and habitat effectiveness; and monitor habitat management objectives. Table 2-13 lists the items to be monitored.



TABLE 2-13
WILDLIFE RESOURCE MONITORING AND EVALUATION PLAN

Element	Item	Location	Technique ¹	Unit of Measure	Frequency and Duration	Info. Warranting a Decision Change
Fisheries Habitat	use by native cutthroat, Dolly Varden, and other trout species	MAs 1, 2, and others where present	electro-shock, hook line, etc. as conducted by Montana Dept. of Fish, Wildlife and Parks	number and kind of fish per stream	to be coordinated with MDFWP information needs	a decline from the 3 yr. data base for native cutthroat
	habitat condition and trend for native cutthroat, Dolly Varden, and other trout species	MAs 1, 2, and others where present	stream habitat analysis form 6671-5	average % miles on BLM, pool/riffle, bank cover, bank stability	data base then once each 5-10 yrs.; also, pre and post disturbance survey	decline in habitat condition and trend
Threatened and Endangered Habitats	habitat use	bald eagle reproduction & wintering sites. Peregrine, grizzly bear and wolf-as identified by occurrence reports and recovery plans	bald eagle by aerial and/or field survey; other species by direct/indirect observation	number of sitings	bald eagle reproduction survey, 6 surveys mid-March thru July; winter roost and forage, 2-3 times from Dec. thru Feb.; other species when reported	1-3 yr. downward trend in production or occupancy
	habitat condition and trend	bald eagle MA 1, 2, 6, 12	Montana Bald Eagle Management Plan Survey levels ²	number of occupied/potential territories and roosts	once during base year and at 5-10 year intervals	1-3 yr. downward trend in suitable territory characteristics
Nongame Habitat	use	raptor reproduction sites	nest site visitation and route surveys	number of birds or occupied nests	once annually prior, during and post resource activities	1-3 yr. downward trend in production or occupancy

TABLE 2-13
WILDLIFE RESOURCE MONITORING AND EVALUATION PLAN

Element	Item	Location	Technique ¹	Unit of Measure	Frequency and Duration	Info. Warranting a Decision Change
Riparian Habitat	condition and trend	MA 1, 2, 9	photo plot, ³ cover board Daubenmire ⁴ aerial photo (IR)	% of total surface area, habitat characteristics	frequently while gathering 1 yr. data base for: AMP's with unsatisfactory riparian, improvement category allotments with unsatisfactory riparian and MA2 with planned timber harvest; read once per cycle in pastures with grazing system and once every 4 yrs. for allotments with no cycle i.e. same every year; read prior and once every year for 5 yrs. after timber harvest; monitor present satisfactory riparian when management action occurs	either deterioration or no improvement is noted in habitat that is presently in unsatisfactory condition, deterioration is noted in habitat presently in satisfactory condition
Big Game Habitat	seasonal habitat use	MA 3, 4, 5, 6, 9, 13	aerial survey, FWP data, traditional use areas, telemetry and pellet group indices	distribution of big game animals and use	at least once before, during and after other resource activities	objectives for big game habitat not being met (see MA Goals)
	habitat component use	MA 1, 2, 4, 5, 6, 9	direct/indirect observation, time lapse photography	frequency and duration of use by big game animals	once a year for a 2-year data base, after activity period	objectives for big game habitat not being met (see MA Goals)

seasonal habitat and component condition and trend	MA 3, 4, 5, 6, 13	tree, shrub, grass/forb Daubenmire ⁴ cover board, densi- ometer, chip/weight, point center quarter, ⁵ production utilization, photo	% of annual growth and % change in vegetative structure and composition	each compo- nent at a 5 to 10 year inter- val for struc- tural composi- tion changes unless earlier alteration	objectives for big game habitat not being met (see MA Goals)
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¹ Monitoring activities between differing elements and within the same element will be conducted and/or coordinated so as to reduce duplications, travel time, etc. and thereby increase efficiency while reducing costs. The existing Studies Index System will also be used as a tool for tracking and scheduling monitoring plans.

² Montana Bald Eagle Working Group. 1983. Montana Bald Eagle Management Plan (draft) and Butte District Memo. July 25, 1984. "MBO Report-Bald Eagle." 68-40.3.

³ USDI. Fish and Wildlife Service. 1981. "Riparian Trend Station; Adoption of Vegetation Profile Board."

⁴ Daubenmire. 1959. "A Canopy Coverage Method of Vegetational Analysis." Northwest Science. 33(1): 43-64.

⁵ Mueller. 1974. Aims and Methods of Vegetation Ecology. J. Wiley and Sons. New York, NY.



CADASTRAL SURVEY PROGRAM GUIDANCE

A. Resource Condition and Use Objectives

Maintain identification of public lands in support of resource programs.

B. Resource or Land Use Allocations

None.

C. Management Actions

Continue to identify and prioritize survey requests in support of RMP allocations and resource programs.

D. Standard Operating Procedures

Cadastral surveys will continue to be conducted in support of resource management programs. Survey requirements and priorities will be determined on a yearly basis as a part of the annual work planning process.

E. Monitoring Requirements

None.

FIRE AND PESTICIDE USE PROGRAM GUIDANCE

A. Resource Condition and Use Objectives

1. In conformance with other resource uses, maintain the use of fire as a tool for consideration in vegetative and fuels management.
2. In conformance with other resource uses, maintain the use of pesticides for consideration as a management tool.

B. Resource or Land Use Allocations

1. Prescribed fire will not be used on approximately 5,820 acres adjacent to stream channels and within developed and potential recreation sites.
2. Pesticides will not be considered for use within riparian areas.

C. Management Actions

1. Develop and implement a fire management plan.
2. Contingent upon the completion of worst case analysis by the BLM, prepare and implement a pesticide/herbicide use and monitoring plan.

D. Standard Operating Procedures

The primary fire protection objectives will be to prevent, detect, suppress, and monitor all fires on BLM lands. These objectives may be accomplished through contract with the Montana Department of State Lands.

A fire management plan will be prepared to establish areas in which the appropriate suppression action of control or confinement will be implemented for all fire starts. The plan may also identify areas and conditions where the use of heavy equipment is restricted or prohibited. Approval of the fire management plan will be based on consideration of values at risk; fire behavior; fire occurrence; beneficial fire effects, including but not limited to a reduction in fuel loading; fire suppression costs; and consistency with other agency plans and policies.

E. Monitoring Requirements

The use of fire and its effect on other resources and in meeting management objectives will be monitored. These will be addressed in the fire management plan.

The Garnet Noxious Weed Control Plan will include a monitoring plan.



ROAD AND TRAIL CONSTRUCTION AND MAINTENANCE PROGRAM GUIDANCE

A. Resource Condition and Use Objectives

Improve access to public lands to meet resource management objectives and public use needs.

B. Resource or Land Use Allocations

1. Approximately 9,500 acres of public land have been identified as needing public access.
2. Approximately 8,150 acres of public land have been identified as needing administrative access.
3. Approximately 8,090 acres will remain legally inaccessible for public or administrative access.

C. Management Actions

1. Prioritize needs and seek public access, according to priorities, budget and other considerations, for approximately 9,500 acres of public land identified on Access Map in Garnet MSA.
2. Prioritize needs and seek administrative access, according to priorities, budget and other considerations, for approximately 8,150 acres of public land identified on Access Map in Garnet MSA.
3. Develop and maintain a transportation plan.

D. Standard Operating Procedures

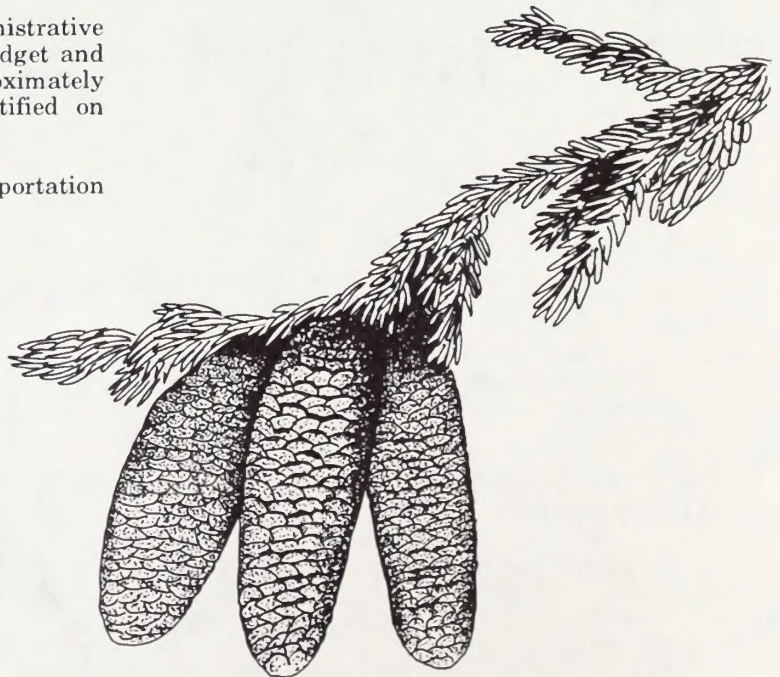
Road and trail construction and maintenance will continue to be conducted in support of resource management objectives. Construction and maintenance requirements and priorities will be determined on a yearly basis as a part of the annual work planning process.

Investment of public funds for road and trail construction generally will be permitted only on land identified for retention in public ownership. Exceptions may be allowed where investment costs can be recovered as a part of land disposal actions. Acquiring access or building roads to tracts outside the retention zones may be required for resource management activities such as timber sales.

Specific road and trail construction standards will be determined based on consideration of resource management needs; user safety; impacts to environmental values, including but not limited to wildlife and fisheries habitat, soil stability, recreation, and scenery; and construction and maintenance costs.

E. Monitoring

Access acquisition will be monitored annually in regard to meeting proposed management actions listed above.



CHAPTER 3

MANAGEMENT AREA PRESCRIPTIONS

A total of 14 management areas have been identified for use in the Garnet RMP. Each management area consists of units of public land with similar resource potentials and limitations that are designated for management under a common set of management goals and guidelines. Management area boundaries do not always follow easily located topographic features or legal subdivisions. The boundaries are flexible to assure proper management of resources identified through additional on-the-ground reconnaissance and project planning. Each management area may occur in several places within the resource area. The map displaying management areas (in back map packet) must be used in conjunction with these descriptions.

Management area descriptions, goals, and guidelines for the Garnet Resource Area are defined in this chapter. The guidelines include numerous mitigative and resource coordination measures as required by NEPA and other laws, regulations, and policies.

MANAGEMENT AREA 1: RIPARIAN PROTECTION ZONE

Description

Management Area 1 includes lands dominated by riparian vegetation, adjacent to rivers, perennial and intermittent streams, lakes, ponds, bogs, marshes, seeps, and wet meadows with high values for wildlife and fish habitat, visual and recreational enjoyment, watershed and water quality protection, and livestock forage.

Management Goals

1. Manage riparian areas to maintain or enhance their value for wildlife, recreation, fishery, and aquatic habitat.
2. Provide some elements of old-growth or mature forest for wildlife habitat.
3. Provide opportunities to improve wildlife and fisheries habitat through specifically prescribed vegetative manipulation.
4. Maintain or enhance site productivity, water quality, and stream stability.

Management Guidelines

1. Livestock grazing generally will be permitted where use has been established. Grazing systems and management practices will be designed to maintain or improve riparian vegetation, aquatic habitat conditions, and streambank stability.
2. Oil and gas leases will be issued with standard stipulations and special stipulations as needed.



3. Locatable minerals will be regulated by 3809 Regulations. Mining activities will be guided by management goals.
4. Mineral material permits generally will not be issued.
5. Herbicides and insecticides will not be used.
6. Commercial forest land is set aside.
7. Noncommercial forest land is unavailable for woodlands product harvest.
8. Firewood collection will not be authorized. Exceptions may be permitted where compatible with management goals.
9. New roads will avoid riparian zones, except where required to cross streams or to provide access to meet management goals. Existing roads in the riparian zone will be reviewed for possible stabilization, closure, or relocation outside the riparian zone.
10. A variety of dispersed and water based recreation activities are permitted and may be supported by the development of river access, trails, and trailhead facilities. Cooperative river management programs for recreation will be encouraged with appropriate BLM participation on the Clark Fork River, Blackfoot River, and Rock Creek.
11. Motorized vehicle use will be restricted to open roads and trails. Exceptions may be permitted for snowmobile use.
12. The area will be managed to meet the visual quality objective of Visual Resource Management Class II or III from the viewpoints identified on the visual sensitivity maps. Temporary departures from this visual quality objective may be acceptable when long-term visual values require such an action, or essential road access into other management areas is impossible without this temporary departure. Visual quality rehabilitation measures will be taken where the visual quality objective is not being met.
13. These lands generally will remain in public ownership. However, exceptions may be permitted where exchanges would result in acquisition of lands with greater public values.
14. These lands will be avoidance areas for utility corridors.

MANAGEMENT AREA 2: RIPARIAN MULTIPLE USE ZONE

Description

Management Area 2 includes lands dominated by riparian vegetation, adjacent to perennial and intermittent streams, ponds, bogs, marshes, seeps, springs, and wet meadows with value for wildlife and fish habitat, visual and recreational enjoyment, watershed and water quality protection, and livestock forage.

Management Goals

1. Manage riparian areas to maintain or enhance their value for wildlife, recreation, fishery, and aquatic habitat.
2. Under the principles of sustained yield, manage suitable and available commercial forest land with operational restrictions that maintain or improve riparian zone values.
3. Provide elements of old-growth or mature timber for wildlife habitat.
4. Maintain or enhance site productivity, water quality, and stream stability.

Management Guidelines

1. Livestock grazing generally will be permitted. Grazing systems and management practices will be designed to maintain or improve riparian vegetation, aquatic habitat conditions, and streambank stability.
2. Oil and gas leases will be issued with standard stipulations and special stipulations as needed.
3. Locatable minerals will be regulated by 3809 Regulations. Mining activities will be guided by management goals.
4. Mineral material permits generally will not be issued.
5. Herbicides and insecticides will not be used.
6. The width of the riparian influence zone will be determined on a site-specific basis for project plans. For general land management planning the management area will be considered as 75 feet on either side of designated stream channels or other aquatic features.
7. Timber management activities will be designed to maintain or improve riparian zone values.
8. Noncommercial forest land is available for wood product harvest. Generally, harvest will only occur when scheduled timber sales on adjacent commercial forest land provide an opportunity for sanitation or salvage, or when multiple use management goals require silvicultural treatment or habitat improvement to obtain desired stand structure and composition.
9. Firewood collection may be authorized. Closures may be implemented where needed to achieve management goals.
10. Machine scarification will not be used on slopes over 40 percent or in the riparian buffer zones designated in Table 3-1.
11. No wheel or crawler vehicles will operate within 75 feet of perennial and intermittent streams, except as required for road construction at stream crossings. Timber harvest and site preparation will maintain a minimum 75-foot wide strip of vegetation along stream channels to filter sediment and organic debris from disturbed areas.

**TABLE 3-1
RIPARIAN BUFFER ZONE**

Land Slope	Buffer Zone
10 percent	75 feet
20 percent	130 feet
30 percent	170 feet
40 percent	210 feet

12. New road locations will avoid the riparian zones, except where required to cross streams or to provide access to meet management goals. Road location and design adjacent to seeps, bogs, marshes, and wet meadows should avoid diverting flow of water from riparian features below roads or draining riparian features above roads.

13. A variety of dispersed and water based recreation activities are permitted and may be supported by the development of access trails and trailheads.

14. Motorized vehicle use will be restricted to open roads and trails. Exceptions may be permitted for snowmobile use.

15. The area will be managed to meet the visual quality objective of Visual Resource Management Class II or III from the viewpoints identified on the visual sensitivity maps. Temporary departures from this visual quality objective may be acceptable when long-term visual values require such an action, or essential road access into other management areas is impossible without this temporary departure. Visual quality rehabilitation measures will be taken where the visual objective is not being met.

16. These lands may be available for exchange or sale. All proposals will be evaluated.

17. These lands may be available for consideration as utility corridor if compatible with management goals.

MANAGEMENT AREA 3: GENERAL FOREST MANAGEMENT

Description

Management Area 3 consists of commercial forest lands of varying physical environments classified as suitable for timber management through timber production capability classification (see Appendix B).

Management Goals

1. Under the principles of sustained yield, manage suitable and available commercial forest land to realize timber growing potential.

2. Maintain site productivity, water quality, and stream stability.

3. Provide for dispersed recreation opportunities, wildlife habitat, and livestock use within the constraints of 1 and 2 above.

4. Provide elements of old-growth wildlife habitat in the immediate vicinity of important big game summer and fall habitat features such as wallows, licks, security areas, etc.

Management Guidelines

1. Livestock grazing generally will be permitted. Fencing, herding, manipulation of salt and water, or adjustments in the pasture rotation schedule will be used to protect regeneration in plantations. The number of animal unit months (AUMs) authorized may be increased, reduced, or relocated in response to vegetative changes.

2. Oil and gas leases will be issued with standard stipulations.

3. Generally, these lands are available for mineral exploration and production. Locatable minerals will be regulated by the 3809 Regulation. Mining activities will be guided by management goals.

4. Project plans will incorporate considerations for elk summer habitat, deer and elk winter ranges, riparian habitat, and nongame wildlife habitat management where these values are present or potentially present.

5. Specific big game features such as wallows, mineral licks, and important forage and resting sites associated with mesic areas will be protected with a buffer strip in which sanitation and salvage or selection harvest maintaining a minimum 70 percent of existing or normal tree canopy is permitted. For planning purposes, the width of the buffer strip will be mapped as 200 feet from the perimeter of the feature or complex of features. For project activity, the buffer strip width may vary, depending on the effectiveness of vegetative and topographic screens, but will not exceed 300 feet. Cutting unit boundaries will be adjusted so that the feature is contiguous to forested hiding cover. Skidding equipment should not be permitted within 100 feet of the feature and logging debris should be removed from all trails leading to the feature.

6. Riparian areas not designated Management Area 1 or Management Area 2 will be recognized in activity plans, and Best Management Practices for the protection of water quality and riparian features will be applied. The width of the riparian influence zone will be determined on a site-specific basis.

7. Timber harvest systems will include varying proportions of clearcut, seed tree, shelterwood, and selection depending on stand and site productivity and silvicultural objectives.

8. Timber harvest and slash treatment practices will be designed to provide opportunities for public firewood collection.

9. Machine scarification will not be used on slopes over 40 percent or in the riparian buffer zones designated in Table 3-2.

**TABLE 3-2
RIPARIAN BUFFER ZONES FOR
TOLERANT AND SENSITIVE SOILS**

Land Slope	For General Situation	Buffer Zone for Sensitive Soils
10 percent	45 feet	75 feet
20 percent	65 feet	130 feet
30 percent	85 feet	170 feet
40 percent	105 feet	210 feet

10. No wheel or crawler vehicles will operate within 45 feet of perennial and intermittent streams, except as required for road construction at stream crossings. Timber harvest and site preparation will maintain a minimum 45-foot wide strip of vegetation along stream channels to filter sediment and organic debris from disturbed areas.

11. Timber harvest will be designed to prevent an increase in runoff that is likely to result in stream channel degradation.

12. A variety of dispersed recreation activities are permitted and may be supported by construction of trails and trailheads.

13. Motorized vehicle use will be restricted to open roads and trails. Exceptions may be permitted for snowmobile use.

14. Seasonal or yearlong road closures will be permitted to achieve management goals for Management Area 3 or for adjacent management areas.

15. Management practices will follow guidelines for Visual Resource Management Class III or IV.

16. These lands may be available for exchange or sale depending upon their size and location. All proposals will be evaluated.

17. These lands may be available for consideration as utility corridors if compatible with management goals.



MANAGEMENT AREA 4: ELK SUMMER AND FALL HABITAT COMPONENTS

Description

Management Area 4 includes high density mappable portions of the resource area's elk summer and fall habitat components. It includes commercial forest, noncommercial forest, and nonforest lands containing components such as wallows, mineral licks, travel corridors, forage, and security areas in close proximity so that they tend to concentrate big game animals in a relatively small area. Although emphasis is on elk, other big game species will receive management consideration.

Management Goals

1. Maintain or improve elk summer and fall habitat components through specifically prescribed vegetative manipulation.
2. Provide elements of old-growth or mature timber for wildlife habitat in the immediate vicinity of elk summer and fall habitat components.
3. Manage riparian areas to maintain or enhance their value for wildlife, fisheries, aquatic habitat, recreation, watershed protection, and water quality.
4. Under the principles of sustained yield, manage suitable and available commercial forest land with operational restrictions that consider long-term requirements for elk summer and fall habitat components, including habitat conditions on adjoining lands.
5. Maintain site productivity, water quality, and stream stability.

Management Guidelines

1. Livestock grazing generally will be permitted and will be regulated to maintain or improve elk summer and fall habitat components.
2. Oil and gas leases will be issued with standard stipulations and special stipulations as needed.
3. Locatable minerals will be regulated by 3809 Regulations. Mining activity will be guided by management goals.
4. Riparian areas not designated Management Area 1 or Management Area 2 will be recognized in activity plans, and Best Management Practices for the protection of water quality and riparian features will be applied. The width of the riparian influence zone will be determined on a site-specific basis.
5. Timber management activities will be designed to maintain or improve elk summer and fall habitat components.

6. Noncommercial forest land may be considered for woodlands product harvest only when scheduled timber sales on adjacent commercial forest land provide an opportunity for sanitation or salvage, or when multiple use management goals require silvicultural treatment or habitat improvement to obtain desired stand structure and composition.

7. Firewood collection will be provided in timber sale areas, only when compatible with management goals.

8. Road location will avoid elk habitat components including wallows, licks, high use forage areas, and saddles used as travel routes wherever possible. Road right-of-way slash will be disposed of in such a way that it does not pose a travel barrier. Road right-of-way clearing will be kept to a minimum.

9. Duration of timber sale activity will be limited to as short a period as possible. Timber should be harvested, slash treated, and roads closed within two summer seasons. Additional timber sales will not be scheduled in or adjacent to Management Area 4 cutting units for 5 years following closure of a timber sale in the unit unless required to salvage mortality.

10. Security areas will be maintained adjacent to units where timber sales are scheduled as described in *Montana Cooperative Elk Logging Study* (USDA, FS 1982a) management recommendations (see Appendix M). Security areas should consist of adjacent drainages with acceptable cover quality in which no disturbance or timber sale activity is scheduled.

11. Harvest units, except single or group tree selection, and thinning units will be 20 acres or less with irregular shapes or reserve blocks within units to increase edge effect and maintain proper sight distances. Reserve areas between treatment units will be a minimum of 600 feet wide. Timber harvest adjacent to past cutting units will be deferred until regeneration provides hiding cover with a minimum of 200 trees per acre 8 feet high.

12. Slash disposal in cutting units will reduce average slash depths to less than 1.5 feet to reduce interference with forage use and travel.

13. Timber harvest will include varying proportions of shelterwood, seed tree, clearcuts, and selection methods.

14. Habitat components such as wallows, mineral licks, and forage and resting sites associated with mesic areas will be protected with a buffer strip in which sanitation and salvage or selection harvest maintaining a minimum 70 percent of existing or normal tree canopy is permitted. For planning purposes, the width of the buffer strip will be 200 feet from the perimeter of the feature or complex of features. For project activity, the buffered area (location) will be determined on the ground to take advantage of screening topography and vegetation, but not to exceed 300 feet width from the perimeter of the feature or complex of features. Cutting unit boundaries will be adjusted so that the feature is contiguous to forested hiding cover. Skidding equipment should not be

permitted within 100 feet of the feature and logging debris should be removed from all trails leading to the feature.

15. Timber harvest will be designed to maintain or develop hiding cover adjacent to natural forage areas. Shelterwood or selection systems will generally be favored adjacent to one to five-acre parks, meadows, and grasslands; and intermediate treatments (thinnings) will be designed to maintain hiding cover. For parks, meadows, and grasslands over five acres, timber harvest units may remove cover from up to 25 percent of the park perimeter. The remainder of the perimeter will be maintained in existing cover until harvested portions return to hiding cover. Hiding cover on the upslope portions of parks is especially critical.



16. The resource area wildlife and forestry staff will review prescriptions, unit layout, and marking guides for effectiveness in providing hiding cover throughout the rotation.

17. Timber harvest along designated ridge tops, saddles, and draws used as travel routes by big game will be designed to maintain hiding or thermal cover 600 feet wide using predominantly shelterwood or selection systems along travel routes. Wherever possible cover should be continuous and not disrupted by clearcut or seed tree units or roads.

18. Machine scarification will not be used in slopes over 40 percent or in the riparian buffer zones designated in Table 3-2.

19. No wheel or crawler vehicles will operate within 45 feet of perennial and intermittent streams, except as required for road construction at stream crossings. Timber harvest will maintain a minimum 45-foot wide strip of undisturbed vegetation along stream channels to filter sediment and organic debris from disturbed areas.

20. Timber harvest will be designed to prevent an increase in runoff that is likely to result in stream channel degradation.

21. A variety of dispersed recreation activities are permitted and may be supported by existing trails and trailheads. New trail construction or relocation of existing trails will avoid this management area. Campgrounds and other recreation developments will not be constructed.

22. Motorized vehicle use will be restricted to open roads and trails. Exceptions may be permitted for snowmobile use.

23. Existing mainline and spur roads will be closed seasonally or yearlong to motorized vehicle travel, except where checkerboard ownership patterns prevent unilateral closure of roads. In these cases, BLM will aggressively pursue the establishment of seasonal or yearlong cooperative road closures. Any new roads will also be closed seasonally or yearlong.

24. Management practices will follow the guidelines for Visual Resource Management Class III or IV.

25. These lands generally will remain in public ownership. However, exceptions may be permitted where exchanges would result in acquisition of lands with greater public values.

26. These lands will be avoidance areas for utility corridors.

MANAGEMENT AREA 5: BIG GAME SUMMER AND FALL RANGE

Description

Management Area 5 consists of commercial forest, noncommercial forest, and nonforest lands which are summer and fall ranges for big game, with emphasis on elk. This management area is applied where public lands are important elk summer and fall habitat.

Management Goals

1. Provide a beneficial arrangement of forage and cover for big game summer and fall range through timber management activities.
2. Under the principles of sustained yield, manage suitable and available commercial forest land with operational restrictions that consider the long-term requirements of big game summer and fall habitat, including habitat conditions on adjoining lands.
3. Provide for dispersed recreation opportunities, nongame wildlife habitat, and livestock use.
4. Maintain site productivity, water quality, and stream stability.
5. Provide elements of old-growth or mature forest for wildlife habitat in the immediate vicinity of big game summer habitat components.

Management Guidelines

1. Livestock grazing will generally be permitted and will be regulated to maintain summer range values.
2. Oil and gas leases will be issued with standard stipulations and special stipulations as needed.
3. Lands are generally available for locatable minerals and will be regulated by the 3809 Regulations. Mining activities will be guided by management goals.
4. Riparian areas not designated Management Area 1 or Management Area 2 will be recognized in activity plans, and Best Management Practices for the protection of water quality and riparian features will be applied. The width of the riparian influence zone will be determined on a site-specific basis.
5. Timber management activities will be designed to maintain or improve big game summer and fall habitat.
6. Noncommercial forest land may be considered for wood product harvest only when scheduled timber sales on adjacent commercial forest land provide an opportunity for sanitation or salvage, or when multiple use management goals require silvicultural treatment or habitat improvement to obtain desired stand structure and composition.

7. Firewood collection opportunities will be authorized in timber sale areas. Authorizations may be restricted as needed to achieve management goals.

8. Duration of timber sale activity will be limited to as short a period as possible. Timber should be harvested, slash treated, and roads closed within a maximum of three summer seasons.

9. Big game habitat components such as wallows, mineral licks, and foraging or resting sites will be protected with a buffer strip in which sanitation and salvage or selection harvest maintaining a minimum 70 percent of existing or normal tree canopy is permitted. For planning purposes the width of the buffer strip will be mapped as 200 feet from the perimeter of the components. For project activity, the buffer strip width may vary, depending on the effectiveness of vegetative and topographic screens, but will not exceed 300 feet. Cutting unit boundaries will be adjusted so that the component is contiguous to forested hiding cover. Skidding equipment should not be permitted within 100 feet of the component, and logging debris should be removed from all trails leading to the component.

10. Timber harvest will be designed to maintain or develop hiding cover adjacent to natural big game forage areas. Shelterwood or selection systems will generally be favored adjacent to one to five-acre parks, meadows, and grasslands; and intermediate treatments (thinnings) will be designed to maintain hiding cover. For parks, meadows, and grasslands over 5 acres timber harvest will remove cover from no more than 40 percent of the park perimeter. The remainder of the perimeter will be maintained in existing cover until harvested portions return to hiding cover. Hiding cover on the upslope portions of parks is especially critical. The resource area wildlife and forestry staff will review prescriptions, cutting unit layout, and marking guides for effectiveness in providing hiding cover throughout the rotation.

Security areas will be maintained adjacent to units where timber sales are scheduled as described in *Montana Cooperative Elk Logging Study* (USDA, FS 1982a) management recommendations. Security areas should consist of adjacent drainages with acceptable cover quality in which no disturbance or timber sale activity is scheduled.

11. Slash disposal in cutting units will reduce average slash depths to less than 1.5 feet to reduce interference with big game forage use and travel.

12. Timber harvest will include varying proportions of clearcut, seed tree, and shelterwood systems, depending on stand and site conditions and silvicultural objectives.

13. In order to optimize cover effectiveness harvest units, except single or group tree selection, and thinning units will generally be irregular in shape at 20 to 40 acres. Reserve areas between treatment units will be a minimum of 600 feet wide. Timber harvest adjacent to past harvest units will be deferred until regeneration on harvest units constitute hiding cover with a minimum of 200 trees per acre 8 feet high.

14. Timber harvest along designated ridge tops, saddles, and draws used as travel routes by big game will be designed to maintain hiding or thermal cover 600 feet wide using predominantly shelterwood systems along travel routes. Wherever possible cover should be continuous and not disrupted by clearcut or seed tree units or roads.

15. Machine scarification will not be used on slopes over 40 percent or in the riparian buffer zones designated in Table 3-2.

16. No wheel or crawler vehicles will operate within 45 feet of perennial and intermittent streams, except as required for road construction at stream crossings. Timber harvest will maintain a minimum 45-foot wide strip of undisturbed vegetation along stream channels to filter sediment and organic debris from disturbed areas. Timber harvest will be designed to prevent an increase in runoff that is likely to result in stream channel degradation.

17. Road location will avoid habitat components including wallows, licks, high use forage areas, and saddles used as big game travel routes wherever possible. Road right-of-way slash will be disposed of in such a way that it does not pose a barrier to big game travel. Road right-of-way clearing will be kept to the minimum required. Roads will be located and designed to reduce barriers to big game travel.

18. A variety of dispersed recreation activities are permitted and may be supported by construction of trails and trailheads. Campgrounds and other recreation developments will not be constructed.

19. Motorized vehicle use will be restricted to open roads and trails. Exceptions may be permitted for winter snowmobile use.

20. Generally roads will be closed seasonally or yearlong to motorized vehicle travel, except where checkerboard ownership patterns prevent unilateral closure of roads. In these cases, BLM will aggressively pursue the establishment of seasonal or yearlong cooperative road closures.

21. Management practices will follow the guidelines for Visual Resource Management Class III or IV.

22. Generally, these lands will remain in public ownership.

23. These lands may be available for consideration as utility corridors if compatible with management goals.

MANAGEMENT AREA 6: BIG GAME WINTER RANGE

Description

Management Area 6 consists of commercial forest, noncommercial forest, and nonforest lands which are winter ranges for deer, elk, or bighorn sheep. These lands will be managed to attain a balance of winter cover and forage for big game through timber management activities.

Management Goals

1. Enhance forage production and cover for deer, elk, or bighorn sheep on winter range.
2. Under the principles of sustained yield, manage suitable and available commercial forest land with operational restrictions for the maintenance or improvement of big game winter range.
3. Maintain site productivity, water quality, and stream stability.
4. Provide for dispersed recreation opportunities, nongame wildlife habitat, and livestock use.

Management Guidelines

1. Livestock grazing generally will be permitted and regulated to maintain sufficient forage to meet big game needs.
2. Oil and gas leases will be issued with standard stipulations and special stipulations as needed.
3. Locatable minerals will be regulated by 3809 Regulations. Mining activities will be guided by management goals.
4. Riparian areas not designated Management Area 1 or Management Area 2 will be recognized in activity plans; and Best Management Practices for the protection of water quality and riparian features will be applied. The width of the riparian influence zone will be determined on a site-specific basis.
5. Timber management activities will be designed to maintain or improve big game winter range.



6. Noncommercial forest land may be considered for woodlands product harvest only when scheduled timber sales on adjacent commercial forest land provide an opportunity for sanitation or salvage, or when multiple use management goals require silvicultural treatment or habitat improvement to obtain desired stand structure and composition.

7. Firewood collection opportunities will be authorized in timber sale areas. Authorization may be restricted as needed to achieve management goals.

8. Timber sale contracts will prohibit most sale activity during the winter and spring seasons to prevent disturbance of animals on winter range. Where winter logging is desirable, the activity must be compatible with big game winter habitat requirements.

9. Timber harvest will be designed to prevent runoff increases likely to result in stream channel degradation.

10. Duration of timber sale activity should be limited to as short a period as possible. Timber will be harvested, slash treated, and roads closed within two summer seasons in timber sale units.

11. Machine scarification will not be used on slopes over 40 percent or in the riparian buffer zones designated in Table 3-2.

12. No wheel or crawler vehicles will operate within 45 feet of perennial and intermittent streams, except as required for road construction at stream crossings. Timber harvest will maintain a minimum 45-foot wide strip of undisturbed vegetation along stream channels to filter sediment and organic debris from disturbed areas.

13. Timber sale units, except single or group tree selection, will generally be 20 to 30 acres in size. Unit shapes will be irregular with reserve blocks within harvest units where necessary to increase edge effect and maintain proper sight distances. Reserve areas between harvest units will be as wide as the harvest units or a minimum of 600 feet wide. Timber harvest adjacent to past harvest units will be deferred until harvest units constitute hiding cover with a minimum of 200 trees per acre 8 feet high.

14. Cover areas will be managed to maximize thermal cover (70+ percent forest canopy cover, minimum 40 feet dominant canopy height, preferably two-storied) with the remainder in hiding cover. Thermal cover should be provided on both low and high energy aspects adjacent to forage areas.

15. Timber harvest will be designed to maintain or develop thermal cover adjacent to natural big game forage areas. Shelterwood or selection systems will generally be favored adjacent to one to five-acre parks, meadows, and grasslands and intermediate treatments (thinnings) will be designed to develop or maintain thermal cover. For parks, meadows, and grasslands over 5 acres, timber harvest may remove cover from up to 25 percent of the park perimeter. The remainder of the perimeter will be maintained in existing cover until harvested portions return to thermal cover. The resource area wildlife and forestry

staff will review prescriptions, unit layout, and marking guides for effectiveness in providing thermal cover throughout the rotation.

16. Silvicultural systems will include varying proportions of clearcut, seed tree, shelterwood, group selection, and single tree selection methods.

17. Road right-of-way slash will be disposed of in such a way that it does not pose a barrier to big game travel. Slash disposal in cutting units will reduce average slash depths to less than 1.5 feet to reduce interference with big game forage use and travel.

18. A variety of dispersed summer and fall recreation activities are permitted and may be supported by construction of trails and trailheads. Winter recreation activity will be permitted where it does not conflict with wintering big game.

19. Motorized vehicle use will be restricted to open roads and trails unless closed under the terms of Guideline 18.

20. Generally, roads will be evaluated for seasonal or yearlong closure to motorized vehicle travel, except where checkerboard ownership patterns prevent unilateral closure of roads. In these cases, BLM may aggressively pursue the establishment of seasonal and yearlong cooperative road closures.

21. Management practices will follow the guidelines for Visual Resource Management Class III or IV, except in visually sensitive corridors identified in the Resource Management Plan.

22. These lands generally will remain in public ownership. However, exceptions may be permitted where exchanges would result in acquisition of lands with greater public values.

23. Available for consideration as utility corridor if compatible with management goals.

MANAGEMENT AREA 7: NONCOMMERCIAL FOREST AND TPCC WITHDRAWN COMMERCIAL FOREST

Description

Management Area 7 includes noncommercial forest land as well as commercial forest land withdrawn from the timber production base as a result of timber production capability classification (see Appendix B). These areas may include cliffs, caves, rock outcrops, talus, and old-growth timber.

Management Goals

1. Maintain site productivity, water quality, and stream stability.

2. Provide for the harvest of wood products from noncommercial forest and timber production capability classification withdrawn commercial forest while maintaining or enhancing other woodland resource values.

3. Maintain old-growth, mature forest, and unique features for wildlife habitat.

4. Provide opportunities for a variety of dispersed recreation activities.

Management Guidelines

1. Livestock grazing will generally be permitted and may be regulated.

2. Oil and gas leases will be issued with standard stipulations and special stipulations as needed.

3. Lands are generally available for locatable minerals and will be regulated by the 3809 Regulations. Mining activities will be guided by management goals.

4. Management practices to maintain or improve wildlife habitat will be permitted.

5. Riparian areas not designated Management Area 1 or Management Area 2 will be recognized in activity plans and will be given consideration for the protection of water quality and riparian features. The width of the riparian influence zone will be determined on a site-specific basis.

6. Noncommercial forest land may be considered for wood product harvest only when scheduled timber sales on adjacent commercial forest land provide an opportunity for sanitation or salvage, or when multiple use management goals require silvicultural treatment or habitat improvement to obtain desired stand structure and composition.

7. Firewood collection opportunities may be available, but will be limited by the absence of scheduled timber sales.

8. Construction of roads to access other management areas will be avoided if possible. Road construction in riparian zones will be avoided except where required to cross streams.

9. A variety of dispersed recreation activities are permitted and may be supported by construction of trails and trailheads.

10. Motorized vehicle use will be restricted to open roads and trails. Exceptions may be permitted for snowmobile use.

11. Seasonal or yearlong road closures will be permitted to achieve management goals for Management Area 7 or for adjacent management areas.

12. This area will be managed to meet the visual quality objective of Visual Resource Management Class II or III. Temporary departures from this visual quality objective may be acceptable when long-term visual values require such an action or essential road access into other management areas is impossible.

without this temporary departure. Visual quality rehabilitation measures will be taken where the visual quality objective is not being met.

13. These lands may be available for exchange or sale. All proposals will be evaluated.

14. These lands may be available for consideration as utility corridors if compatible with management goals.

MANAGEMENT AREA 8: AREAS RECOMMENDED FOR WILDERNESS DESIGNATION

Description

Management Area 8 consists of portions of the resource area that are being recommended for wilderness designation. Each such area has been evaluated or studied under either Section 202 or 603 of the Federal Land Policy and Management Act. Wilderness recommendations are based upon the wilderness review of the wilderness study areas (WSAs).

Wales Creek, Hoodoo Mountain, and Quigg West WSAs currently are subject to the BLM's *Interim Management Policy and Guidelines for Lands under Wilderness Review* (USDI, BLM 1983a). With the completion of the RMP, Gallagher Creek 202 WSA is released from the interim management policy (IMP) constraints. All other WSAs will be subject to IMP until Congress reviews the agency's recommendations. If any or all of these WSAs are not recommended suitable for wilderness, the area will be managed under the direction of one or more of the other management area prescriptions. These are identified in the map packet which accompanies this document.

Management Goals

Manage in accordance with the Wilderness Act of 1964 and USDI BLM Wilderness Management Policy. These include the following basic concepts: preserve wilderness character in an unimpaired condition, provide opportunities for public use and enjoyment, and allow nonconforming but accepted uses in a manner that will prevent unnecessary or undue degradation of wilderness character.

Management Guidelines

1. Following wilderness classification by Congress, a wilderness management plan will be written for each area and incorporated into the Garnet Resource Management Plan.

2. Livestock grazing, where already established, will be permitted to continue subject to the BLM wilderness management policy and grazing regulations (43 CFR 4100). Grazing systems and management practices will conform to BLM wilderness management policy.

3. Issuance of new oil and gas leases will be prohibited.

4. Subject to valid rights existing on the date of wilderness designation, mining will be prohibited and the area withdrawn from all forms of appropriation under the mining laws. Mining operations permitted because of valid existing rights must be based upon an approved plan of operations and will be regulated under 43 CFR 3809 and the BLM *Wilderness Management Policy* (USDI, BLM 1981b).

5. Mineral material permits will not be issued.

6. Herbicides and insecticides generally will not be used.

7. Fire management and control actions will be consistent with the BLM *Wilderness Management Policy* (USDI, BLM 1981b).

8. Commercial forest land is unavailable for timber production and is withdrawn from the sustained yield timber production base.

9. Noncommercial forest land is unavailable for wood product harvest.

10. Firewood collection is prohibited unless for incidental use associated with camping.

11. Visitor use will be managed to a level compatible with the wilderness resource to prevent loss of solitude or unacceptable depreciation of the wilderness qualities.

12. Trail construction may be permitted and will be accomplished with minimal disturbance of the natural environment.

13. Facilities and structures may be constructed to insure the protection of the wilderness values; however, facilities may not be constructed to provide convenience to recreationists.

14. Off-road vehicle use will not be permitted.

15. Management practices will follow the guidelines for the preservation of Visual Resource Management Class I, except for modifications caused by the operation of natural processes.

16. These lands will remain in public ownership.

17. These lands are unavailable for utility corridor development or facility siting.

MANAGEMENT AREA 9: SPECIAL MANAGEMENT AREAS

Description

Management Area 9 consists of land distinguished by special, unique, or natural characteristics which require some form of special management and include Areas of Critical Environmental Concern.

Management Goals

1. Goals for each area will depend on the special and unique features or values within that particular area.
2. Ultimate disposition for each area will maintain, enhance, or restore site productivity, water quality, and stream stability.

Management Guidelines

1. Livestock grazing generally will be permitted to continue where already established.
2. Oil and gas leases will be issued with stipulations that prohibit surface occupancy, as needed.
3. Locatable minerals will be regulated by 3809 Regulations. Mining activities will be guided by management goals.
4. Components of this management area may be evaluated for withdrawal from mineral entry.
5. Mineral material permits are not allowed where inconsistent with management goals.
6. Wildlife and fish habitat improvement projects may be permitted if consistent with management goals.
7. Commercial forest land is set aside.
8. Firewood collection will not be authorized unless consistent with management goals.
9. Roads will not be constructed for surface land management purposes unless needed to meet specific management goals. Roads will be permitted for mineral activities where construction is justified on the basis of mineral showings or data and where it is the next logical step in development of the mineral resource.
10. Developed recreation facilities, including campgrounds or picnic grounds, will not be constructed unless consistent with the primary goals of the area.
11. Trails and trailheads may be constructed or improved to increase accessibility, enhance dispersed recreation, and protect other resource values, if consistent with the goals of each special management area.
12. This area will generally be closed to motorized vehicle use. Exceptions may be permitted for snowmobile use.
13. Road closures may be possible, depending upon management objectives.
14. Management practices will follow guidelines for applicable Visual Resource Management Class.
15. Generally, these lands will remain in public ownership.
16. These lands will be avoidance areas for utility corridors.

MANAGEMENT AREA 10: DEVELOPED AND UNDEVELOPED RECREATION SITES

Description

Management Area 10 consists of existing and potential recreation use areas located throughout the resource area with developed, minimal, or no developed facilities to support a wide range of recreation activities.

Management Goals

1. Maintain and enhance the present variety and quality of recreation sites to contribute to public enjoyment of the resource area.
2. Under the principles of sustained yield, manage suitable and available commercial forest land with operational restrictions to maintain or improve recreational opportunities and scenic quality.
3. Maintain site productivity, water quality, and stream stability.

Management Guidelines

1. Livestock grazing generally will be permitted. However, there may be areas where grazing will not be permitted in order to meet management goals.
2. Oil and gas leases will be issued with standard stipulations and special stipulations as needed.
3. Generally, these lands are available for mineral location. Locatable minerals will be regulated by the 3809 Regulations. Mining activities will be guided by management goals.
4. Mineral material permits will generally not be issued.
5. Fire will not be used as a management tool in developed recreation sites.
6. Riparian areas not designated Management Area 1 or Management Area 2 will be recognized in activity plans, and Best Management Practices for the protection of water quality and riparian features will be applied. The width of the riparian influence zone will be determined on a site-specific basis.
7. Timber management activities will be designed to maintain or improve recreation opportunities and scenic quality.
8. Noncommercial forest land is available for wood product harvest on an unregulated basis. Generally, harvest will only occur when scheduled timber sales on adjacent commercial forest land provide an opportunity for sanitation or salvage, or when recreation and visual management goals require silvicultural treatment to obtain desired stand structure and composition.

9. Firewood collection will not be authorized unless compatible with management goals.
10. Complete disposal of thinning or timber harvest slash will be required to maintain scenic quality and recreation opportunities. 11. Roads may be constructed as necessary to meet management goals.
12. Recreation developments may be permitted.
13. Management practices will follow guidelines for Visual Resource Management Class II or III.
14. Motorized vehicle use is restricted to open roads and trails. Exceptions may be permitted for snowmobile use.
15. These lands generally will remain in public ownership. However, exceptions may be permitted where exchanges would result in acquisition of lands with greater public values or when lands can be better managed by another agency.
16. These lands will be avoidance areas for utility corridors.

MANAGEMENT AREA 11: HISTORICAL AND CULTURAL SITES

Description

Management Area 11 consists of scattered sites within or adjacent to BLM-administered lands that are protected because of historical and cultural significance. These include Garnet, Coloma, Reynolds City, Copper Cliff, Blackfoot City, Beartown, Bearmouth, and other sites that are eligible for the National Register of Historic Places.

Management Goal

Insure that eligible historical and cultural sites are preserved and protected.

Management Guidelines

1. Livestock grazing generally will be permitted where compatible with maintaining historical values. However, there may be areas where grazing will not be permitted in order to meet management goals.
2. Oil and gas leases will be issued with standard stipulations and special stipulations as needed.
3. Withdrawals from mineral entry will be sought for these sites. Locatable minerals, where not withdrawn, will be regulated by 3809 Regulations. Mining activities will be guided by management goals.
4. Mineral material permits will not be issued.
5. Fire will not be used as a management tool.
6. Commercial forest land is set aside.
7. Noncommercial forest land is unavailable for wood product harvest.

8. Firewood collection will not be authorized unless compatible with management goals.
9. Road and trail construction will be permitted to provide public access and interpretive facilities to the extent that the historical and cultural values are not compromised.
10. Recreation will be limited to day use activities, unless provided for in special site direction. Recreation development is permitted, as necessary, for site protection and interpretation.
11. This area will generally be closed to motorized vehicle use. Exceptions may be permitted for snowmobile use.
12. Management practices will follow guidelines for retention and partial retention under Visual Resource Management Classes II and III. Areas where the visual quality objective is not being met will be rehabilitated.
13. Fire suppression methods will be selected to minimize or eliminate the impact on historical site values.
14. These lands generally will remain in public ownership. However, exceptions may be permitted where exchanges would result in acquisition of lands with greater public values or when lands can be better managed by another agency.
15. These lands will be avoidance areas for utility corridors.

MANAGEMENT AREA 12: VISUAL CORRIDOR

Description

Management Area 12 consists of lands with high visual sensitivity that are available for varying degrees of resource management. These lands are generally foreground and middle ground viewing areas from major travel and recreation corridors.

Management Goals

1. Maintain or improve visual quality for highly sensitive, scenic areas.
2. Under the principles of sustained yield, manage suitable and available commercial forest land with operational restrictions to maintain or improve visual qualities.
3. Provide for dispersed recreational use opportunities, wildlife habitat, and livestock use within the constraints of Goal 1.
4. Maintain site productivity, water quality, and stream stability.

Management Guidelines

1. Mitigation measures will be designed to protect the values associated with the highly sensitive areas as part of the environmental analysis process for projects within the foreground viewing area.
2. Livestock grazing generally will be permitted.
3. Oil and gas leases will be issued with standard stipulations and special stipulations as needed.
4. Locatable minerals will be regulated by 3809 Regulations. Mining activities will be guided by management goals.
5. Mineral material permits will be considered on a case-by-case basis and may be issued if consistent with visual quality objectives.
6. Wildfire suppression methods that maintain visual quality will be selected whenever possible.
7. Prescribed burning will be permitted to the extent consistent with visual quality objectives.
8. Range and wildlife improvements are generally allowed. To the extent possible they should blend with the natural surroundings and follow natural breaks.
9. Riparian areas not designated Management Area 1 or Management Area 2 will be recognized in activity plans, and Best Management Practices for the protection of water quality and riparian features will be applied. The width of the riparian influence zone will be determined on a site-specific basis.
10. Timber management activities will be designed to maintain or improve visual qualities.
11. Noncommercial forest land may be considered for wood product harvest only when scheduled timber sales on adjacent commercial forest land provide an opportunity for sanitation or salvage, or when multiple use management goals require silvicultural treatment or habitat improvement to obtain desired stand structure and composition.
12. Firewood collection generally will be authorized. Authorization may be restricted as needed to achieve management goals.
13. Roads shall be concealed by vegetation, if possible, and follow natural landforms. Cut and fill areas will be kept to a minimum.
14. A variety of dispersed recreation activities are permitted and may be supported by construction of trails and trailheads.
15. Motorized vehicle use will be restricted to open roads and trails. Exceptions may be permitted for snowmobile use.
16. Seasonal or yearlong road closures will be permitted to achieve management goals for Management Area 12 or for adjacent management areas.
17. Management practices will follow the guidelines for Visual Resource Management Class II or III.

18. These lands may be available for exchange or sale. All proposals will be evaluated.

19. These lands may be available for consideration as utility corridors if compatible with management goals.

MANAGEMENT AREA 13: NONFOREST HABITAT

Description

Management Area 13 is a grassland and shrubland complex with minor inclusions of forest. It includes wet meadows, dry parks, and open grassland and shrubland varying in size from a few to several hundred acres. These lands provide high wildlife and livestock forage values.

Management Goals

1. Manage nonforest habitat to maintain or enhance forage for livestock and wildlife.
2. Maintain or enhance adjoining timber stands for wildlife cover.
3. Maintain site productivity, water quality, and stream stability.
4. Provide opportunities for a variety of dispersed recreation activities in a natural setting.

Management Guidelines

1. Livestock grazing will generally be permitted. Where wildlife habitat is important, grazing will be regulated to maintain sufficient forage to meet established big game needs.
2. Oil and gas leases will be issued with standard stipulations.
3. These areas will be available for mineral production and will be regulated by 3809 Regulations. Mining activities will be guided by management goals.
4. Prescribed burning may be used to accomplish wildlife habitat and livestock forage objectives.
5. Riparian areas not designated Management Area 1 or Management Area 2 will be recognized in activity plans, and Best Management Practices for the protection of water quality and riparian features will be applied. The width of the riparian influence zone will be determined on a site-specific basis.
6. Generally, any forest inclusions in this management area are unsuitable and unavailable for timber production and are not included in the sustained yield timber production base.
7. Firewood collection opportunities generally will not be available on nonforest land.
8. Emphasis will be placed on locating roads away from meadows and parks.

9. A variety of dispersed recreation activities are permitted and may be supported by construction of trails and trailheads. Seasonal restrictions on dispersed recreation may be required to achieve wildlife management objectives.
10. Motorized vehicle use is restricted to open roads and trails. Exceptions may be permitted for snowmobile use.
11. Seasonal or yearlong road closures will be permitted to achieve management goals for Management Area 13 or adjacent management areas.
12. Management practices will follow guidelines for Visual Resource Management Class III or IV, except in visually sensitive areas identified in the Resource Management Plan.
13. These lands may be included in the full range of land tenure possibilities. All proposals will be evaluated.
14. These lands may be available for consideration as utility corridors if compatible with management goals.

MANAGEMENT AREA 14: MINERAL PRODUCTION AREA

Description

Management Area 14 consists of active or recently active mineral extraction and processing operations and the immediate surrounding vicinity. Total acreages in this management area will fluctuate as other mining operations are identified or old operations are reclaimed.

Management Goals

1. Manage or utilize other resources to a degree compatible with mineral production.
2. Restore water quality and rehabilitate site productivity and stream stability through reclamation.

Management Guidelines

1. Livestock grazing will be permitted, if consistent with management goals.
2. Oil and gas leases will be issued with standard stipulations.
3. A Notice or Plan of Operations for proposed mining activities covered under 3809 Regulations will be developed. Mining activities will be guided by management goals.
4. Mining activities will be monitored for success in meeting State of Montana water quality standards.
5. Commercial forest land is set aside. These acres may be returned to the commercial forest land base when mining operations are completed.
6. Noncommercial forest land is available for wood product harvest.
7. Firewood collection generally will be allowed.
8. Dispersed recreation uses will be allowed.
9. Seasonal or yearlong road closures will be permitted to achieve management goals for adjacent management areas. Access will be available to mining claimants.
10. Management practices will follow guidelines for Visual Resource Management Class V.
11. These lands generally will remain in public ownership, unless mineral values warrant patenting.
12. These lands may be available for consideration as utility corridors.

CHAPTER 4

ALLOCATIONS AND OUTPUTS SUMMARY

The allocations and outputs are described in a tabular format for ease of presentation and reference.

Management area allocations are summarized in Table 4-1 and illustrated on the Selected Alternative map in the map packet.

Refer to Chapter 3, Management Area Prescriptions, for a description of goals, guidelines, and characteristics of each management area.

Table 4-2 describes the major resource allocations and outputs.

**TABLE 4-1
SUMMARY OF MANAGEMENT AREA
ALLOCATIONS**

Management Area	Acres	% of Resource Area
1. Riparian Protection Zone	1,000	0.7
2. Riparian Multiple Use Zone	2,500	1.7
3. General Forest Management	36,900	25.3
4. Elk Summer and Fall Habitat Components	8,300	5.7
5. Big Game Summer and Fall Range	48,850	33.5
6. Big Game Winter Range	23,300	16.0
7. Noncommercial Forest & TPCC Withdrawn Commercial Forest	5,800	4.0
8. Areas Recommended For Wilderness Designation	520	0.4
9. Special Management Areas	8,140	5.6
10. Developed and Undeveloped Recreation Sites	41	0.1
11. Historical and Cultural Sites	160	0.1
12. Visual Corridor	7,850	5.4
13. Nonforest Habitat	1,300	0.9
14. Mineral Production Area	1,000	0.7



TABLE 4-2
RESOURCE ALLOCATIONS AND OUTPUTS

Resource	Amount
Renewable Resources	
Total CFL Available for Harvest	105,020 acres
CFL Restricted ¹	64,720 acres
Other Restricted ²	8,518 acres
CFL Nonproblem ³	31,980 acres
Total CFL Set Aside	7,440 acres
Estimated Allowable Harvest	7,030 mbf/yr
New Roads	10.5 mi/yr
Total P.L. Available for Livestock Grazing	111,890 acres
P.L. Under Intensive Grazing Management	81,294 acres
AMP Allotments	20 allotments
Total P.L. Excluded From Livestock Grazing	33,770 acres
Livestock Forage Target	
— short-term	6,245 AUMs
— long-term	8,013 AUMs
Special Attention Resources	
Total P.L. Recommended for Wilderness Designation	520 acres
Total P.L. Designated as ACEC	20 acres
Total P.L. with Wildlife Habitat Emphasis (wildlife goals)	99,710 acres
Riparian Habitat with Wildlife and Watershed Mgmt Emphasis (MA 1,2)	3,517 acres
Riparian Habitat with Watershed Mgmt Emphasis Only (MA 3-13)	2,561 acres
Riparian Habitat Within Mineral Production Areas (MA 14)	98 acres
Unsatisfactory Riparian Habitat Targeted for Improvement thru Intensive Grazing Mgmt	3,094 acres
Unsatisfactory Riparian Habitat Not Targeted for Improvement thru Intensive Grazing Mgmt	1,110 acres
Satisfactory Riparian Habitat Targeted for Maintenance thru Intensive Grazing Mgmt	637 acres
Big Game Winter Range Targeted for Improvement through Intensive Grazing Management	5,370 acres
Nonrenewable Resources	
Total P.L. Available for Oil and Gas Leasing	205,066 acres
Surface Occupancy Permitted with Standard Stipulations	112,810 acres
Surface Occupancy Permitted with Seasonal Restrictions	84,076 acres
No Surface Occupancy	8,180 acres
Total P.L. Closed to Oil and Gas Leasing	520 acres
Total Federal Minerals Open to Mineral Entry	203,310 acres
Total P.L. Withdrawn from Mineral Entry	2,000 acres

TABLE 4-2
RESOURCE ALLOCATIONS AND OUTPUTS

Resource	Amount
Land Ownership and Administration	
Total P.L. within Retention Areas	126,872 acres
Total P.L. within Areas Considered for Exchanges and Sales	18,788 acres
Total P.L. to be Excluded from Utility and Transportation Corridor Development	540 acres
Total P.L. to be Avoided by Corridor Development	17,620 acres
Total P.L. Available for Further Consideration for Corridor Development	127,500 acres
Recreation, Cultural, and Aesthetic Resources	
Total P.L. Available for Roadless Nonmotorized Recreation	8,660 acres
Total P.L. Available for Roaded and/or Motorized Recreation	131,919 acres
Total P.L. Roaded but not Available for Motorized Recreation	5,040 acres
Total P.L. Protected for Recreation Sites	41 acres
Total P.L. with Visual Resource Management Emphasis	7,850 acres
Total P.L. with Historic and Cultural Resource Mgmt Emphasis	160 acres

¹CFL within MAs 2, 4, 5, 6, and 10; timber harvest permitted but restricted by special multiple use considerations.

²TPCC restricted or, in some cases, both TPCC restricted and restricted by MA guidelines.

³CFL Nonproblem relates to the MA classification, i.e., acres not allocated to restricting MAs.

P.L. = Public Land

CHAPTER 5

IMPLEMENTATION AND MONITORING

The decisions outlined in this plan will be implemented over a period of ten years or more, depending on the availability of funding and staff. The effects of implementation will be monitored and evaluated on a periodic basis over the life of the plan. The general purposes of monitoring and evaluation are:

- To determine if an action is fulfilling the purpose and need for which it was designed or if there is a need for modification or termination of an action;
- To discover unanticipated and/or unpredictable effects;
- To determine if mitigative measures are working as prescribed;
- To ensure that decisions are being implemented as scheduled;
- To provide continuing evaluation of consistency with state and local plans and programs; and
- To provide for continuing comparison of plan benefits versus costs including social, economic, and environmental.

A resource monitoring and evaluation plan for the Garnet Resource Area is included in Table 5-1. This plan identifies the key resources that will be affected by the Garnet RMP. For each resource there are a series of items that will be monitored. Each item is evaluated by location technique for data gathering, unit of measure, and frequency and duration of data gathering. When duration is not specifically stated, the duration is for the life of the plan.

The monitoring and evaluation plan identifies the type of information that will signal an unacceptable impact to the resource. When such information is noted, the management action associated with the event will be evaluated. If the adverse impact can be corrected by a management action that is within the scope of the RMP, the change will be implemented. If the adverse impact can be corrected only by a management action that is outside the scope of the RMP, the management change will be the subject of a RMP amendment.

PROVISION FOR PLAN MODIFICATION

The BLM planning regulations provide for three types of plan modification: maintenance, amendment, and revision.

Maintenance

Land management is dynamic. Resource management plans and supporting components will be maintained as necessary to reflect minor changes in data, such as those caused by ownership changes and natural occurrences. Maintenance is limited to further refining or documenting a previously approved decision incorporated in the plan. Maintenance will not result in expansion in the scope of resource uses or restrictions, or change the terms, conditions, and decisions of the approved plan. Maintenance is not



considered a plan amendment and will not require formal public involvement, interagency coordination, or the preparation of an environmental assessment or environmental impact statement. Maintenance will be documented in plans and supporting records.

Amendment

A resource management plan may be changed through amendment. An amendment will be initiated by the need to consider monitoring and evaluation findings, new data, new or revised policy, a change in circumstances or a proposed action that may result in a change in the scope of resource uses or a change in the terms, conditions, and decisions of the approved plan. An amendment will be made through an environmental assessment of the proposed change or an environmental impact statement, if necessary. Public involvement, interagency coordination and consistency determination, and any other data or analysis that may be appropriate will also take place. In all cases, the effect of the amendment on the plan will be

evaluated. If the amendment is being considered in response to a specific proposal, the analysis required for the proposal and for the amendment may occur simultaneously.

Revision

A resource management plan shall be revised as necessary, based on monitoring and evaluation findings, new data, new or revised policy and changes in circumstances affecting the entire plan or major portions of the plan. Revisions shall comply with all the requirements of the regulations for preparing and approving an original resource management plan.

TABLE 5-1
Resource Monitoring and Evaluation Plan

Element	Item	Location	Technique ¹	Unit of Measure	Frequency and Duration	Info. Warranting a Decision Change
Rangeland Vegetation	condition	all M&I allotments	as outlined in SCS National Range Handbook Section 305 ²	% pounds production compared to climax allowance	end of each grazing cycle	condition is reduced one class
	trend	a. all M&I allotments	canopy-coverage (Daubenmire), ³ soil surface	change in % of surface area	a. end of each grazing cycle	decrease of 10 percentage points from base data
		b. any allotment where adjustment in preference is proposed	factor (MSO-7100-1), ⁴ photos		b. first and fifth year, then on 5 yr. interval	
	cover	M&I allotments	canopy-coverage (Daubenmire), ³ photos	% of surface area	end of each grazing cycle	decrease of 10 percentage points from base data
	utilization	M&I allotments	key forage plant ⁵	% forage removed	annually at end of grazing cycle	utilization more than 50% on native grasses
	precipitation	M&I allotments	site specific rain gauges, RAWS units, ⁶ NOAA data ⁷	inches of precipitation	monthly during growing season	consider with temperature data to determine utilization level
	temperature	M&I allotments	NOAA data, ⁷ RAWS data ⁶	degrees F or C	monthly during growing season	consider with precipitation data to determine utilization level

Element	Item	Location	Technique ¹	Unit of Measure	Frequency and Duration	Info. Warranting a Decision Change
Cultural Resources	site vandalism	area wide for sites eligible for nomination to the Register of Historic Places	site inspection	number of sites disturbed	once yearly during snowfree season	any noticeable trend indicating increased site disturbance such as ground disturbance, modification of structures, etc.
	environmental degradation, movement of artifacts as a result of erosion and trampling	area wide for sites eligible for nomination to the Register of Historic Places	site inspection and photo plot-measurement method using closeup photos and measurements to show quantitative changes in the distribution of artifacts	number of artifacts displaced or altered per square yard	once a year	any disturbance involving sites eligible for nomination to the Register of Historic Places
Commercial Forestland	stocking	all regenerated stands either natural or planted	stocking survey ⁸	number of trees per acre	five year intervals until stand is declared established or until 15 yrs.	fewer than 180 trees per acre well distributed throughout the stand 15 years after harvest
	post harvest evaluation	cutting units	site inspection	resource characteristics	within one month after termination or as soon as area is snowfree	sale plan EA and stand prescription recommendations not met
	prethinning evaluation	all regenerated stands	stocking survey ⁸	stand condition, trees/acre	approximately 20 yrs. after stand has been declared established	crown competition is evident
	insect & disease survey	timber stands	aerial and ground observation by USDA Forest Pest Mgmt.	acres affected	annual	change in incidence and level of damage
	cover	all regenerated stands in MAs 4, 5, 6	site inspection	200 trees per acre 8 feet tall	begin 15 years after stand is declared established, continue at 5 yr. intervals until stand meets MA objectives	stand meets MA objectives, adjacent stands then become eligible for harvesting
	use	all authorized use areas i.e. timber sales, post & pole permits, etc.	site inspection	amount of use	minimum of once a week during logging and increased frequency as necessary during road building, slash disposal and reforestation; minimum once a month for post & poles	violation of contract specification

Element	Item	Location	Technique ¹	Unit of Measure	Frequency and Duration	Info. Warranting a Decision Change
	progeny test plantation (data collection)	Top-O-Deep	as required by IETIC ⁹	standard quantitative measurements of survival, height, growth	every 5 yrs on tree growth	when data is no longer required or different data is required
	progeny test plantation (site protection)	Top-O-Deep	site inspection	trees showing pest damage	twice a yr.	increase in pest activity
Wilderness	wilderness study areas	MA 8	monitoring by flight or vehicle based review	site disturbance	once per month during use season or more often if evidence occurs to warrant disturbance	evidence of unauthorized activity which degrades wilderness values will instigate an investigation and possible civil or criminal court action
Recreation	general recreation use	area wide with emphasis on dispersed use of undeveloped recreational sites	area inspection to look for vandalism, resource abuse, etc.	visitor days	twice per year e.g. once in June and once in Oct.	collected data reveals user conflicts, resource degradation, or safety hazards
	concentrated recreation use and demand	Garnet, heavily used trail heads, and winter trails	visitor registration at Garnet, traffic counters, and estimates	visitor days	counters to be checked biweekly during periods of heavy use, daily counts or estimates of use at Garnet by BLM or Garnet Preservation Association	collected data indicates increased visitor use/yr. or sustained use that requires additional or improved facilities
	road closure	area wide with emphasis on designated walk-in hunting areas	aerial reconnaissance and ground patrol	visitor days and violations	one fall and one winter flight per year, ground patrol of gates twice during periods of heavy use or more often if evidence occurs to warrant observation	on any given road closure gate, three violations are noted/season

Element	Item	Location	Technique ¹	Unit of Measure	Frequency and Duration	Info. Warranting a Decision Change
Water	water quality	area wide where management activities are occurring or to expand base-line data	standard USGS methods (or modified to meet specific conditions), field and laboratory analysis ¹³ done for selected stream basins that have discharge measurements during the period April thru September or runoff period; automated suspended sediment sampling and continuous temperature measurements will occur in selected streams during the period April thru September	standard quantitative measurements for discharge, turbidity, conductivity, pH, suspended sediment, temperature, major ions, heavy metals, toxic materials	field measurements 10-15 times per year; major ions once a year; heavy metals and toxic substances as needed; base line data collected for five years prior to disturbance activities in basins without prior data; monitoring will continue throughout the activity period and for up to 4 years following completion of activities	water quality parameters which exceed state of Montana water quality standards; water quality measurements, especially suspended sediments, which render the water unsuitable for its classified usage
Soil & Site Productivity	compaction	Tertiary Age volcanic soils which will be and have been disturbed	use of Proving Ring Pentrometer	pounds per square inch	twice per year over a 5 year period	when compacted areas exceed 10% of ground surface and do not recover through natural process within 5 years
	soil moisture	selected fine-grained volcanic soils, coarse-grained plutonic soils, limestone soils, Belt Super-group soils	manual sampling and gravimetric analysis	% by weight	once monthly June thru September	when regeneration is impaired due to inadequate soil moisture induced by silvicultural treatments
Threatened and Endangered Habitats	habitat use	bald eagle reproduction & wintering sites. Peregrine, grizzly bear and wolf-as identified by occurrence reports and recovery plans	bald eagle by aerial and/or field survey; other species by direct/indirect observation	number of sitings	bald eagle reproduction survey, 6 surveys mid-March thru July; winter roost and forage, 2-3 times from Dec. thru Feb.; other species when reported	1-3 yr. downward trend in production or occupancy
	habitat condition and trend	bald eagle MA 1, 2, 6, 12	Montana Bald Eagle Management Plan Survey levels ¹⁰	number of occupied/potential territories and roosts	once during base year and at 5-10 year intervals	1-3 yr. downward trend in suitable territory characteristics

Element	Item	Location	Technique ¹	Unit of Measure	Frequency and Duration	Info. Warranting a Decision Change
Nongame Habitat	use	raptor re-production sites	nest site visitation and route surveys	number of birds or occupied nests	once annually prior, during and post resource activities	1-3 yr. downward trend in production or occupancy
Riparian Habitat	condition and trend	MA 1, 2, 9	photo plot, ¹² cover board Daubenmire ³ aerial photo (IR)	% of total surface area, habitat characteristics	frequently while gathering 1 yr. data base for: AMP's with unsatisfactory riparian, improvement category allotments with unsatisfactory riparian and MA2 with planned timber harvest; read once per cycle in pastures with grazing system and once every 4 yrs. for allotments with no cycle ie. same every year; read prior and once every year for 5 yrs. after timber harvest; monitor present satisfactory riparian when management action occurs	either deterioration or no improvement is noted in habitat that is presently in unsatisfactory condition, deterioration is noted in habitat presently in satisfactory condition
Big Game Habitat	seasonal habitat use	MA 3, 4, 5, 6, 9, 13	aerial survey, FWP data, traditional use areas, telemetry, and pellet group indices	distribution of big game animals and use	at least once before, during and after other resource activities	objectives for big game habitat not being met (see MA Goals)
	habitat component use	MA 1, 2, 4, 5, 6, 9	direct/indirect observation, time lapse photography	frequency and duration of use by big game animals	once a year for a 2-year data base, after activity period	objectives for big game habitat not being met (see MA Goals)
	seasonal habitat and component condition and trend	MA 3, 4, 5, 6, 13	tree, shrub, grass/forb Daubenmire ³ cover board, densiometer, chip/weight, point center quarter, ¹¹ production utilization, photo	% of annual growth and % change in vegetative structure and composition	each component at a 5 to 10 year interval for structural composition changes unless earlier alteration	objectives for big game habitat not being met (see MA Goals)

Element	Item	Location	Technique ¹	Unit of Measure	Frequency and Duration	Info. Warranting a Decision Change
Fisheries Habitat	use by native cutthroat, Dolly Varden, and other trout species	MAs 1, 2, and others where present	electro-shock, hook line, etc. as conducted by Montana Dept. of Fish, Wildlife and Parks	number and kind of fish per stream	to be coordinated with MDFWP information needs	a decline from the 3 yr. data base for native cutthroat
	habitat condition and trend for native cutthroat, Dolly Varden, and other trout species	MAs 1, 2, and others where present	stream habitat analysis form 6671-5	average % miles on BLM, pool/riffle, bank cover, bank stability	data base then once each 5-10 yrs.; also, pre and post disturbance survey	decline in habitat condition and trend
Minerals	use	MA 14	site inspection to determine adherence to 3809 regulations and monitor effects on other resources	resource characteristics	minimum of biweekly during periods of operation and increased frequency during road building, etc.	violation of 3809 regulations, change from plan of operations or notice; unnecessary or undue degradation

¹ Monitoring activities between differing elements and within the same element will be conducted and/or coordinated so as to reduce duplications, travel time, etc. and thereby increase efficiency while reducing costs. The existing Studies Index System will also be used as a tool for tracking and scheduling monitoring plans.

² USDA. Soil Conservation Service. 1976. *National Range Handbook*. Washington D.C.

³ Daubenmire. 1959. "A Canopy Coverage Method of Vegetational Analysis." *Northwest Science*. 33(1): 43-64.

⁴ USDI. Bureau of Land Management. 1981. *BLM Manual*. Section 4430.5. Denver, CO.

⁵ USDI. Bureau of Land Management. 1984. *Rangeland Monitoring: Utilization Studies*. Technical Reference 4400-3. Denver, CO.

⁶ RAWS. Remote Automatic Weather Station operated by BLM.

⁷ NOAA. National Oceanic and Atmospheric Administration.

⁸ USDI. Bureau of Land Management. 1981. *BLM Manual*. Section 5705. Denver, CO and Butte District Policy Memo. April 12, 1982. "Reforestation Backlog Certification Standards-Manual Supplement."

⁹ IETIC. Inland Empire Tree Improvement Cooperative.

¹⁰ Montana Bald Eagle Working Group. 1983. *Montana Bald Eagle Management Plan* (draft). and Butte District Memo. July 25, 1984. "MBO Report-Bald Eagle." 68-40.3.

¹¹ Mueller. 1974. *Aims and Methods of Vegetation Ecology*. J. Wiley and Sons. New York, NY.

¹² USDI. Fish and Wildlife Service. 1981. "Riparian Trend Station; Adoption of Vegetation Profile Board."

¹³ USDI. Bureau of Land Management. 1980. "BLM-State of Montana Memorandum of Understanding."

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APPENDICES



APPENDIX A

BEST MANAGEMENT PRACTICES

The following Best Management Practices (BMPs) are adapted from the Montana Statewide 208 study (Montana 1979). In general, these BMPs are designed to avoid or reduce nonpoint sources of water pollution resulting from forest management practices and similar activities.

ROAD SYSTEM

Road locations, particularly in sensitive areas, should be evaluated by an engineer, soil scientist, wildlife biologist, and others as needed. Fit location to the topography to minimize cut and fill situations. In areas of important big game habitat, consultation with the wildlife biologist will be necessary to reduce location impact on ridgelines, saddles, and upper drainage heads.

Where alternative road locations are not possible, incorporate mitigative measures into plans.

Maintain streambank vegetation when crossing streams. Avoid stream crossings if possible; otherwise, minimize approach cuts and fills and channel disturbance.

Do not locate stream crossings strictly on where road grade indicates. Choose a stable site and adjust grade to it, when possible.

Keep stream disturbance to an absolute minimum.

If necessary, include short road segments with steeper grades, consistent with traffic needs and safety, to avoid problem areas or to take advantage of terrain features.

For timber harvest roads, take advantage of natural landing areas (flatter, better drained, open areas) to reduce soil disturbance associated with log landings and temporary work roads.

Vary road grades where possible to reduce concentrated flow in road drainage ditches and to reduce erosion on road surfaces.

Design drainage ditches, water bars, culvert placement, etc. in such a way as to disperse runoff and minimize cut and fill erosion.

Install culverts frequently enough to avoid accumulations of water that will cause erosion of road ditches and the area below the culvert outlet.

Seed (e.g., revegetate) cuts and fills the first fall season following disturbance.

Deposit excess material in stable locations well above the high water level and never into stream channel. Do not allow any material, including sidecast soil, stumps, logs, or other material to be deposited into a stream.

Plan ditch gradients steep enough (generally greater than 2 percent) to prevent sediment deposition.

When installing culverts, avoid changes in channel orientation and place culverts to conform to the natural channel gradient. Design culverts for maximum stream flow (e.g., 25 year discharge, etc.).

Skew culverts 30 degrees toward the inflow to provide better inlet efficiency.

Provide rock or other splash basins at the outlet end of culverts.

In some areas, alternating inslope and outslope sections can be built into the road especially if road grades are rolled to dispose of road surface flow.

Obtain all necessary permits for stream crossings before beginning activities.

Maintain roads immediately after logging and whenever necessary by cleaning ditch lines, blading debris from empty landings, trimming damaged culvert ends and cleaning out culvert openings. Culverts, cross drains, and dips should be cleaned regularly to assure proper functioning, especially before winter or expected rainy seasons. Debris should be removed from live drainages upstream from the inlet.

Grade the road surface as often as necessary to retain the original surface drainage (either insloped or out-sloped). Take care to avoid sidecasting graded material over the fill slope. Carefully monitor surface drainage during wet periods and close the road if necessary to avoid undue damage. Restore surfacing on the road tread and in the road ditch if necessary following damage caused by operation in wet periods.

Haul all excess material removed by maintenance operations to safe disposal areas. Apply stabilization measures on disposal sites if necessary to assure that erosion and sedimentation do not occur.

Use the steepest slopes possible on cut and fill slopes commensurate with the strength of the soil and bedrock material as established by an engineering geologist or other specialist in soil mechanics. Benching cut slopes in areas of weak or erodible bedrock (e.g., weathered granites) into a series of properly drained terraces provides opportunity for vegetative establishment and may even require less excavation.

Control roadside brush only to the extent required for good road maintenance.

LOGGING PRACTICES

Avoid logging across any stream supporting resident fish or on any stream where a downstream water system might be affected.

Time logging activities for the season in which soil damage can be kept to acceptable limits.

Design and locate skid trail and skidding operations to avoid across ridge and across drainage operation.

Avoid yarding in stream channels.

Install water bars on skid trails when logging is finished (soil scientist and/or engineer will provide assistance as requested and/or needed).

Avoid trapping and turning small streams out of their natural beds in tractor trails and landings.

Deposit excess materials from landings and skid trails in such locations that it will not get cut or be washed into streams.

If debris should enter any stream, such debris shall be removed concurrently with the yarding operation and before removal of equipment from the project site. Removal of debris shall be accomplished in such a way that natural streambed conditions and streambank vegetation are not disturbed.

Provide appropriate width buffer strips adjacent to perennial and intermittent streams, springs, and wet meadows.

CHEMICALS HANDLING

Chemicals applied to forest lands should not include direct applications to water bodies. Suitable buffer strips should be provided. Weather and runoff conditions should be considered.

During mixing and disposal of chemicals, entry of chemicals into drainages should be prevented.

Selective, nonpersistent pesticides should be favored whenever possible.

Prevent deposition of fertilizers in water bodies or drainage ways, particularly during aerial application.

Existing Montana regulations regarding use of chemicals should be strictly adhered to regarding mixing, application, and disposal.

APPENDIX B

TIMBER PRODUCTION CAPABILITY CLASSIFICATION

The Timber Production Capability Classification (TPCC) system is a method of evaluating which forest lands are suitable to produce timber on a sustained yield basis. There are three major classes of land: nonforest, noncommercial forest, and commercial forest. The commercial forest land is separated into three types: fragile sites, problem reforestation sites, and nonproblem sites.

NONFOREST LANDS

The nonforest lands are characterized by bunchgrass and wet meadow grasslands, brush fields, and strip mine areas. The sites are not capable of at least 16.7 percent stocking by commercial species. These sites are not included in the sustained yield timber production base.

NONCOMMERCIAL FOREST LANDS

The noncommercial forest lands are divided into three types: noncommercial species sites, low sites, and conflicting rock sites.

Noncommercial Species Sites (NT-W)

The noncommercial species sites are not capable of producing 20 cubic feet/acre/year of commercial tree species. They are dominated by hardwoods or juniper. These sites are withdrawn from the sustained yield timber production base.

Low Sites (LS-W)

The low sites are not capable of producing 20 cubic feet/acre/year of commercial tree species at culmination of mean annual increment. These sites are generally on south or west aspects with 20 to 60 percent slopes and skeletal soils. Common habitat types are 100 series, 210, 220, 230, 311, and 321 (USDA, FS 1977). Full stocking is generally 40 to 90 percent of normal stocking. Low sites are withdrawn from the sustained yield timber production base.

Conflicting Rock Sites (CR-W)

Conflicting rock sites have exposed rock that prohibits timber management activities by restricting or prohibiting the operation of conventional logging equipment. The location and orientation of the rock is more important than ground coverage. Talus or rock outcrops covering an excess of 50 percent of the site or rock shelves traversing slopes would be considered conflicting rock. These sites are withdrawn from the sustained yield timber production base.

COMMERCIAL FOREST LANDS

Fragile Sites

Slope Gradient Restriction (FG-R)

Timber harvest in areas with slopes in excess of 60 percent should limit soil disturbance through use of skyline cable or aerial yarding. Road locations are likely to be constrained by topography and type of yarding system.

Groundwater Restriction (FW-R)

Groundwater is a factor in areas with saturation within 60 inches of the soil surface or mottling within 36 inches of the surface. These conditions commonly occur in riparian areas and habitat types 630 and 650 (USDA, FS 1977) on slopes or benches. They are often associated with seasonal standing water or marsh type vegetation. These conditions indicate that regeneration harvest methods should be restricted to shelterwood or selection types avoiding complete removal of vegetation. Roads will probably require special drainage design and surfacing, and may be limited or prohibited within this area. Machine traffic may be limited to frozen or snow covered ground.

Mass Failure Restriction (FM-R)

Mass failure is a factor in areas with visible evidence of slumps, slides, or flows. These commonly occur on slopes from 30 to 70 percent in Tertiary volcanics, Tertiary sedimentary rock, siltstones of the Amsden Formation, and argillites of the McNamara Formation. In these areas, regeneration harvest methods should generally be restricted to shelterwood or selection systems on slopes over 40 percent. Roads should avoid these areas wherever possible. Road location and design should avoid intercepting and concentrating slope drainage, undercutting toe slopes of earthflows or slumps, and loading the heads of slumps with road fill. Special drainage and prompt seeding of disturbed soils may reduce slope failure.

Shallow Soil Restriction (FS1-R)

Shallow soils are a factor where soil depth to bedrock is less than 20 inches. This commonly occurs on slopes in excess of 30 percent. Talus or scree on 50 percent or more of the area also indicates shallow soils. Silvicultural systems, site preparation, and slash disposal should be designed to minimize exposure and disturbance of the mineral soil.

Erosive Soil Restriction (FS2-R)

Erosive soils are a factor where soils with granitic parent materials occur on slopes greater than 15 percent, where soils have more than 35 percent clay and occur on slopes over 30 percent, and where other soils occur on slopes over 70 percent. Silvicultural systems, site preparation, and slash disposal should be designed to minimize exposure of mineral soil. Prompt seeding and water barring should follow soil disturbance on skid trails and landings. Roads will require additional drainage and stabilization.

Soil Compaction Restriction (FS3-R)

Silt, silt loam, and loam soils with 27 to 35 percent clay and less than 25 percent coarse fragments in the soil horizons within 10 inches of the surface are prone to soil compaction. Machine traffic may be limited on these soils to periods when the soil is dry or snow covered. Slopes in excess of 30 percent should be yarded by cable or aerial methods.

Problem Reforestation Sites

Heat and Drought Sites (RH1-R)

These sites are warm and dry on south and west aspects with slopes between 20 and 60 percent, or on ridge tops. They are characterized by skeletal and shallow soils with common habitat types of 100 series, 210, 220, 230, 262, 311, and 321. Other habitat types may be present: 312, 323, and 324 (USDA, FS 1977).

These sites generally should use regeneration harvest methods such as shelterwood or selection systems with natural regeneration. Site preparation should maintain 10 to 15 tons/acre of down woody material over 6 inches in diameter to provide dead shade. Plans for allowable cut should use a 30 year regeneration lag period and anticipate reduced yields due to the increased regeneration lag period. Underplanting may be used with shelterwood or selection systems where natural seed sources are not adequate to provide natural regeneration.

Heat and Drought Sites (RH2-R)

These sites are moderately warm and dry on south and west aspects with slopes between 10 to 40 percent at elevations generally greater than 5,400 feet. They are characterized by habitat types 261, 280, 312, 323, 324, 330, and 690 (USDA, FS 1977).

These sites generally should use regeneration harvest methods such as shelterwood or selection systems with natural and artificial regeneration. Site preparation guidelines should address problems due to grass, sedge, and forb competition. A normal regeneration lag period of 15 years is anticipated. Underplanting should be used with shelterwood and selection systems where natural seed sources are not adequate to provide prompt natural regeneration.

Inadequate Moisture Sites (RM-R)

These sites occur on north and east aspects on 20 to 60 percent slopes with skeletal and shallow soils. Habitat types include 261, 280, 312, and 323 (USDA, FS 1977). Full stocking is 50 to 80 percent of normal yield table stocking. Competing vegetation, primarily grasses and sedges, present serious reforestation problems.

These sites generally should use regeneration harvest methods favoring natural regeneration. Site preparation guidelines should address problems due to grass, sedge, and forb competition. A normal regeneration lag period of 15 years is anticipated. Underplanting should be used with shelterwood systems where natural seed sources are not adequate to provide prompt natural revegetation.

Heat and Drought Sites (RH-W)

These are sites that meet criteria for Heat and Drought Sites (RH1-R). However, they are stands of CFL that are understocked or nonstocked with commercial species and are not expected to regenerate naturally within 30 years. They include some stands that are fully stocked but present reforestation problems and are isolated from other CFL.

Excessive Water Sites (RW-R)

These sites have heavy clay soils with well developed profiles and claypans. They are commonly found on north and east aspects or drainage bottoms. The habitat types include 630 and 650 (USDA, FS 1977).

Silvicultural prescriptions should emphasize natural regeneration. Machine traffic should be restricted to dry or frozen soils.

Excessive Water Sites (FW-RW-W)

These sites have permanent or seasonal standing water, which tends to retard the reforestation of commercial species. These sites are commonly found near rivers, streams, or wet meadows. They are withdrawn from the sustained yield timber production base.

Frost Sites (RF-R)

These sites are in depressions or benches on north or east aspects where topography tends to pool cool air. Habitat types include 250, 623, and 640 (USDA, FS 1977). Silt and silt loam soil texture are common, and the presence of higher elevation species at lower elevations may be an indicator.

Selection of species and stock for planting should recognize the potential for frost damage to seedlings and frost heaving. Silviculture systems, unit layout, and site preparation should be designed to reduce pooling of cool air.

Competing Vegetation and Sod Sites (CG1-R)

Other TPCC classifications take priority over this classification but may have the same site preparation problems described here. These problems are due to grass, sedge, and forb competition. The understory of these sites are dominated or potentially may be dominated by rhizomatous grasses and sedges such as pine grass or elk sedge. Habitat types include 312, 322, 323, and 324 (USDA, FS 1977).

These sites generally should use regeneration harvest methods such as shelterwood or selection systems; adequate regeneration should be well established before the final overstory is removed. Sites, where natural regeneration is inadequate three years following the regeneration harvest, should be scheduled for planting. Where planting is scheduled but cannot be done for more than two years following harvest, site preparation should be delayed and only the fuel reduced. Extensive hand scalping, machine scarification, or herbicide use prior to planting is anticipated.

Competing Brush Vegetation Sites (CG2-R)

These sites are dominated by menziesia, alder, willow, or ninebark brush on north and east aspects in drainage bottoms or on concave slopes. Site preparation to allow seedling establishment will be done by prescribed burning, herbicides, or mechanical scarification.

Nonproblem Forest Sites

Commercial forest land that does not classify in any of the previously mentioned categories may be carried in the sustained yield timber production land base. These areas are not expected to require any special techniques to protect the basic timber growing potential and should provide prompt regeneration.

APPENDIX C

PROCESSING NOTICES AND PLANS OF OPERATIONS UNDER THE 3809 REGULATIONS

The regulations for surface management of public lands under the U. S. mining laws (43 CFR 3809) require all operators on public lands to notify the BLM of proposed exploration or mining activities. If the proposed activities would cause surface disturbance of five acres or less per year, a written notice or letter must be provided at least fifteen days before starting work. An approved plan of operations is required prior to beginning operations which would disturb more than five acres of public land per year. An approved plan of operations is also required for any operation, except casual use, within designated Areas of Critical Environmental Concern, areas designated as part of the National Wilderness Preservation System, and areas designated as closed to motorized vehicle use. The standard procedures used in processing notices and plans of operations are summarized below.

PROCESSING A NOTICE

Although no special form or format is necessary in developing a notice, the operator is required to submit certain information to the appropriate BLM District Office under 43 CFR 3809.1-3(c). To assist the operator in meeting these requirements, a form (Figure C-1) is available for use by the operator in developing a notice.

Notices received by the BLM typically are processed according to the steps listed in Table C-1.

TABLE C-1
STEPS IN PROCESSING A NOTICE OF PLANNED MINING ACTIVITIES

Responsible Officer	Step	Action
Mineral Specialist District/Area	1.	<p>Confirms that operations under a notice will not disturb in excess of five acres during the calendar year. Reviews the notice to ensure that the operator has submitted all the information required under 43 CFR 3809.1-3(c).</p> <p>Determines if unnecessary or undue degradation would result from the proposed operation. Determines if consultation with the operator is desired when construction of access routes with inside cuts in excess of three feet are proposed.</p>
	2.	<p>Notifies the operator of deficiencies (if any) in the filing and requests the needed information. Reminds the operator that operations shall not commence until 15 days after the notice requirements have been met.</p> <p>If the notice is in order and meets the requirements as specified in 43 CFR 3809.1-3, the case file is forwarded to the appropriate Area Manager with findings of review.</p>
Area Manager	3.	<p>Reviews the notice and determines if additional staff assistance is needed.</p> <p>Cultural, paleontological, and endangered species inventories are not required under a notice. However, if known cultural or paleontological resources may be impacted by the proposed activities, the operator must be informed of the potential problem. In such a case, the regulations as described in 43 CFR 3809.2-2(e)(2) shall be emphasized.</p>
District/Area Mineral Specialist	4.	Prepares letter acknowledging receipt of the submitted notice and states that the notice is in order and complete.
District/Area Mineral Specialist and/or Compliance Specialist	5.	Completes a minimum of one compliance inspection of each notice. Determines if the operation is causing unnecessary or undue degradation of the lands and notifies the operator and Area Manager of such findings. Documents all inspections and places the findings in the case file.

OUTLINE FOR NOTICE
Submitted Under 43 CFR 3809 Regulations
(Disturbance of Five Acres or Less)

Surface Management of Public Lands
Under the U.S. Mining Laws

No form necessary, but the following format may be of assistance.

Timing: Written notification of planned mineral activities shall be made to the appropriate BLM District Office at least 15 days before starting work.

District: Butte Lewistown Miles City (see attached map)

Operator/Mining Claimant

Name: _____

Mailing Address: _____

Telephone: _____

Local Contact: _____

Telephone: _____

Mining Claims

Name _____

BLM Serial No. _____

Name _____

BLM Serial No. _____

Name _____

BLM Serial No. _____

Number of Mining Claims Involved _____

Location

Twp. _____ , Rge. _____ , Sec. _____ (A map also would be helpful)

Date Operations Will Start _____

Duration of Activities _____

Type of Operation _____

APPENDICES

Describe the proposed activities and their location in sufficient detail to locate the activities on the ground. Attach extra pages or a map when necessary.

Access

On existing roads (description and location) _____

Road to be constructed (location and type of equipment to be used.) _____

(A map also would be helpful.)

Check if:

Construction of access will involve cuts of 3 feet or more on the inside edge.

I hereby declare that I, or persons I have authorized to do so, will complete reclamation of all disturbed sites during the course of my operations to the standards described in 43 CFR 3809.1-3(d) and that all reasonable measures will be taken to prevent unnecessary or undue degradation of the federal lands during operations.

Note: You must notify the District Manager of when reclamation has been completed (43 CFR 3809.1-3e).

Signature of claimant or operator

Date

PROCESSING A PLAN OF OPERATIONS

Although no special form or format is necessary in developing a plan of operations, the operator is required to submit certain information to the appropriate BLM District Office (43 CFR 3809.1-5). To assist the operator in meeting these requirements, an outline (Figure C-2) is available for use by the operator in developing a plan.

In processing plans or modification of plans, special consideration is given to those operations necessary for timely compliance with requirements of federal or state laws (such as assessment work). Pending final approval of the plan, the District Manager shall approve any operations necessary for timely compliance with those requirements, subject to terms and conditions needed to prevent unnecessary or undue degradation.

In processing a plan, the steps listed in Table C-2 typically are followed.

TABLE C-2
STEPS IN PROCESSING A PLAN OF OPERATIONS

Responsible Officer	Step	Action
Mineral Specialist District/Area	1.	Promptly acknowledges receipt of the plan of operations.
	2.	Reviews and determines if the plan meets the requirements as specified in 43 CFR 3809.1-5. If the plan is found to be deficient, notifies the operator of the deficiencies and requests the needed information. If the plan is in order and meets the requirements of 43 CFR 3809.1-5 the case file is forwarded to the appropriate Area Manager for further processing.
Area Manager	3.	Reviews the plan of operations and determines if additional staff assistance is needed in preparation of the environmental assessment.
	4.	Requests input from the staff archaeologist and wildlife biologist concerning cultural resources and endangered species.
District/Area Mineral Specialist, Staff Specialists, Environmental Coordinator	5.	Completes and forwards to the Area Manager the environmental assessment and other appropriate field investigation, inventories, and reports, including recommendations on bond requirements.
Area Manager	6.	Provides plan approval and bonding recommendations to District Manager. Recommends mitigating measures which reflect and correct an identified action (or lack of action) and are required to prevent identified unnecessary or undue degradation of lands. If no unnecessary or undue degradation of the lands would occur as proposed in the submitted plan of operations, then no further mitigating measures may be applied to the plan.

Responsible Officer	Step	Action
District Manager	7.	<p>Within 30 days of receipt of a plan of operations, the District Manager must notify the operator that:</p> <ul style="list-style-type: none"> (a) The plan is approved; or (b) The proposed action (or lack of action) would cause unnecessary or undue degradation of the lands, and identified additions or modifications of the plan are necessary before the plan can be approved; or (c) An additional, specified amount of time, not to exceed an additional 60 days, is needed to complete the review of the submitted plan. (The only reason that would justify additional time is substantial public interest expressed in the plan. The additional time is needed to consider public comments on the environmental assessment. Also, days during which the area of operations is inaccessible for inspection shall not be counted when computing the additional 60 day period); or (d) The plan cannot be approved until 30 days after a final environmental statement has been prepared and filed with the Environmental Protection Agency; or (e) The plan cannot be approved until the Bureau has complied with Section 106 of the National Historic Preservation Act or Section 7 of the Endangered Species Act.
	8.	<p>If the plan of operations is not approved, assures that all necessary actions, as described in Steps 2-5 above, are completed and documented. The only justification for rejection of a plan of operations is the unavoidable or unmitigable conflict with an endangered species.</p>
	9.	<p>Completes a minimum of one compliance inspection on each approved plan. Determines if the operation is causing unnecessary or undue degradation of the lands and notifies the Area Manager of such findings. Documents all inspections and places the findings in the case file.</p>
District/Area Mineral Specialist and/or Compliance Specialist	10.	<p>When reclamation on part of the operation is completed and at the request of the operator, conducts a compliance inspection and documents the findings and places the findings in the case file. If reclamation has been satisfactorily completed, recommends to the Area Manager a reduction of bond, if appropriate.</p> <p>Upon completion of operations, conducts a final compliance inspection. If all necessary actions as described in the plan have been satisfactorily completed, recommends release of bond, if any, and closes case.</p>

**OUTLINE FOR PLANS OF OPERATIONS
SUBMITTED UNDER THE
43 CFR 3809 Regulations**

- I. Claimant Information
 - A. Name
 - B. Address
 - C. Telephone Number

 - II. Operator Information (If different than claimant)
 - A. Name
 - B. Address
 - C. Telephone Number

 - III. Mining Claim Information (If no claims locate, describe project area by township, range and section)
 - A. Claim Name(s)
 - B. Claim Type (Lode, Millsite, etc.)
 - C. BLM Serial Number(s)
 - D. Location of Claim(s) (Township, Range, Section)

 - IV. Proposed Operations
 - A. Period of Operation (estimated beginning and completion dates)
 - B. Access Routes (A description and location of existing access routes to be used and a description and location of any access routes to be constructed and the type of equipment to be used in their construction)
 - C. Existing Disturbance and Structures (A description and location of surface disturbances existing prior to January 1, 1981, structures, facilities, etc.)
 - D. Proposed Operations (A description of the type of operations and how they will be conducted, including the locations and size of areas where surface disturbances, structures, facilities, etc., are proposed. Calculate the total acreage proposed for disturbance. One acre = 43,560 sq. ft.)

 - V. Proposed Reclamation
 - A. Reclamation and Other Measure to Prevent Unnecessary or Undue Degradation (A description of the proposed reclamation procedures to reclaim disturbed areas resulting from the proposed operations, including the standards listed in section 3809.1-3 (d) of the surface management regulations, and other measures to be taken to prevent unnecessary or undue degradation of the lands).
 - B. Extended Period of Nonoperation (A description of the measures to be taken during extended periods of nonoperation to maintain the area in a safe and clean manner and to reclaim the land to avoid erosion and other adverse impacts. If not filed at the time of plan submitted, this information is to be submitted whenever an extended period of nonoperation is anticipated).

 - VI. Maps and/or Sketches
 - A. Map/Sketch Requirements (A map, preferably a topographic map, or sketch showing surface disturbances existing prior to January 1, 1981, structures, facilities, etc., and the locations and size of areas where surface disturbances are proposed, including existing and/or proposed routes of access, aircraft landing areas, etc.)
-

Notice to Operators

1. Approval of a submitted plan of operations is required from the BLM prior to commencing operations. The BLM will promptly acknowledge receipt of a submitted plan and will notify the operator of the status of the plan within 30 days of receipt of the plan.
2. Approval of a plan of operations does not constitute certification of ownership to any person named as owner of any listed mining claim, nor does approval constitute recognition of the validity of any mining claim named in an approved plan.
3. Generally, information that could be considered proprietary or confidential is not necessary to fulfill plan of operations requirements. However, information and data submitted and specifically identified by the operator as containing trade secrets or confidential or privileged commercial or financial information should be attached to a separate page and cited in the text of the plan of operation. This information will be filed separately and will not be available for public inspection.
4. Failure of an operator to file a plan of operations, as required by the 43 CFR 3809 regulations, will subject the operator to being served a notice of noncompliance or enjoined from the continuation of such operations by a court order until such time as a plan is filed with the BLM.

APPENDIX D

OIL AND GAS LEASING PROCEDURES

PROCESSING OF LEASE APPLICATIONS

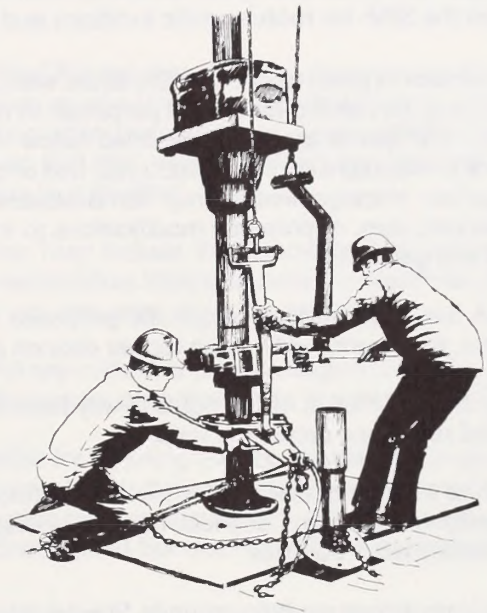
A lease application originates in the Montana State Office when a party applies for an oil and gas lease on a particular parcel of land. These are then either issued with the standard and controlled use stipulation (form MT-3109-1) directly from the Montana State Office or, in environmentally sensitive areas, are sent to the appropriate field office for review and special stipulations.

When the lease application is received by the resource area, it is reviewed by a wildlife biologist, recreation planner, soil scientist, and other specialists, as needed. As the lease is evaluated, it is assumed that the area will be developed and the impacts as described in the Butte District Oil and Gas EA will result from development.

Specialists reviewing a lease application will complete the Butte District Oil and Gas Leasing checklist and special stipulation form sheets, if necessary. After the checklist and resulting stipulations and rationale are completed, the lease application file is sent back to the Butte District Office for review. If the lease application involves Montana state lands or federal lands administered by other agencies, a copy may be sent to the appropriate agency for a 30-day review.

When the lease application has been completely reviewed, the Butte District's recommendation and all supporting documents are sent to the Montana State Office, where the lease is issued.

A copy of the Butte District Oil and Gas Leasing checklist, standard stipulation form MT-3109-1, and special stipulation forms MT-3109-2, MT-3109-3, MT-3109-4, and MT-3109-6 follow this section.



 (Serial Number)

OIL AND GAS LEASE STIPULATIONS

ESTHETICS—To maintain esthetic values, all surface-disturbing activities, semipermanent and permanent facilities may require special design including location, painting and camouflage to blend with the natural surroundings and meet the intent of the visual quality objectives of the SMA.

EROSION CONTROL—Surface disturbing activities may be prohibited during muddy and/or wet soil periods. This limitation does not apply to operation and maintenance of producing wells using authorized roads.

CONTROLLED OR LIMITED SURFACE USE STIPULATION—This stipulation may be modified by special stipulations which are hereto attached or when specifically approved in writing by the Bureau of Land Management with concurrence of the SMA. Distances and/or time periods may be made less restrictive depending on the actual onground conditions. The prospective lessee should contact the SMA for more specific locations and information regarding the restrictive nature of this stipulation.

The lessee/operator is given notice that the lands within this lease may include special areas and that such areas may contain special values, may be needed for special purposes, or may require special attention to prevent damage to surface and/or other resources. Possible special areas are identified below. Any surface use or occupancy within such special areas will be strictly controlled, or if **absolutely necessary**, excluded. Use or occupancy will be restricted only when the Bureau of Land Management and/or the surface management agency demonstrates the restriction necessary for the protection of such special areas and existing or planned uses. Appropriate modifications to imposed restrictions will be made for the maintenance and operations of producing oil and gas wells.

After the SMA has been advised of specific proposed surface use or occupancy on the leased lands, and on request of the lessee/operator, the Agency will furnish further data on any special areas which may include:

100 feet from the edge of the rights-of-way from highways, designated county roads and appropriate federally-owned or controlled roads and recreation trails.

500 feet, or when necessary, within the 25-year flood plain from reservoirs, lakes, and ponds and intermittent, ephemeral or small perennial streams; 1,000 feet, or when necessary, within the 100-year flood plain from larger perennial streams, rivers, and domestic water supplies.

500 feet from grouse strutting grounds. Special care to avoid nesting areas associated with strutting grounds will be necessary during the period from March 1 to June 30. One-fourth mile from identified essential habitat of state and federal sensitive species. Crucial wildlife winter ranges during the period from December 1 to May 15, and in elk calving areas, during the period from May 1 to June 30.

300 feet from occupied buildings, developed recreational areas, undeveloped recreational areas receiving concentrated public use and sites eligible for or designated as National Register sites.

Seasonal road closures, roads for special uses, specified roads during heavy traffic periods and on areas having restrictive off-road vehicle designations.

On slopes over 30 percent, or 20 percent on extremely erodable or slumping soils.

 (Date)

 (Signature)

NOTICE

CULTURAL AND PALEONTOLOGICAL RESOURCES—The Federal Surface Management Agency (SMA) is responsible for assuring that the leased lands are examined to determine if cultural resources are present and to specify mitigation measures. Prior to undertaking any surface-disturbing activities on the lands covered by this lease, the lessee or operator, unless notified to the contrary by the SMA, shall:

1. Contact the appropriate SMA to determine if a site specific cultural resource inventory is required. If an inventory is required, then;
2. Engage the services of a cultural resource specialist acceptable to the SMA to conduct a cultural resource inventory of the area of proposed surface disturbance. The operator may elect to inventory an area larger than the area of proposed disturbance to cover possible site relocation which may result from environmental or other considerations. An acceptable inventory report is to be submitted to the SMA for review and approval no later than that time when an otherwise complete application for approval of drilling or subsequent surface disturbing operation is submitted.
3. Implement mitigation measures required by the SMA. Mitigation may include the relocation of proposed lease-related activities or other protective measures such as testing salvage and recordation. Where impacts to cultural resources cannot be mitigated to the satisfaction of the SMA, surface occupancy on that area must be prohibited.

The lessee or operator shall immediately bring to the attention of the SMA any cultural or paleontological resources discovered as a result of approved operations under this lease, and not disturb such discoveries until directed to proceed by the SMA.

ENDANGERED OR THREATENED SPECIES—The SMA is responsible for assuring that the leased land is examined prior to undertaking any surface-disturbing activities to determine effects upon any plant or animal species, listed or proposed for listing as endangered or threatened, or their habitats. The findings of this examination may result in some restrictions to the operator's plans or even disallow use and occupancy that would be in violation of the Endangered Species Act of 1973 by detrimentally affecting endangered or threatened species or their habitats.

The lessee/operator may, unless notified by the authorized officer of the SMA that the examination is not necessary, conduct the examination on the leased lands at his discretion and cost. This examination must be done by or under the supervision of a qualified resources specialist approved by the SMA. An acceptable report must be provided to the SMA identifying the anticipated effects of a proposed action on endangered or threatened species or their habitats.

SPECIAL OIL AND GAS LEASE STIPULATIONS

The following special stipulations may be modified when specifically approved in writing by the Bureau of Land Management with concurrence of the Federal surface management agency.

(Only stipulations checked apply to this lease.)

(Approximate % of lease affected by stipulation.)

() No occupancy or other activity on the surface of the following-described land is allowed under this lease: ()

Reasons for this restriction are:

() No occupancy or other surface disturbance will be allowed within _____ feet of the _____ ()

() No drilling or storage facilities will be allowed within _____ feet of _____ located in _____ ()

() No occupancy or other surface disturbance will be allowed on slopes in excess of _____ percent. ()

() In order to _____
_____ exploration, drilling, and other development activity will be allowed only during the period from _____ to _____.
This limitation does not apply to maintenance and operation of producing wells and facilities. Lands within the leased area to which this stipulation applies are described as follows:

() The _____ will not be used as an access road for activities on this lease except as follows: ()

Oil & Gas Lease Stipulations

The following stipulations may be modified when specifically approved in writing by the District Engineer, U.S. Geological Survey with the concurrence of the authorized officer of the surface management agency.

No Surface Occupancy Stipulation

% of Lease

() No occupancy or other activity on the surface of the following described lands is allowed under this lease: ()
(a)

(b)

Reasons for this restriction are:

(a)

(b)

Surface Occupancy Restriction Stipulation (by location)

% of Lease

() No _____ will be allowed within: _____ located within: ()
_____ feet of _____

_____ feet of _____ located within:

_____ feet of _____ located within

_____ feet of _____ located within:

This area contains approximately _____ total acres

Surface Occupancy Restriction Stipulation (timing)

% of Lease

() (a) In order to (minimize) (protect) _____ will be allowed only during: _____ ()

(b) In order to (minimize) (protect) _____ will be allowed only during: _____

This does not apply to maintenance and operation of producing wells and facilities. Lands within the leased area to which this stipulation applies are described as follows:

(a)

(b)

Road Use Stipulation

% of Lease

() The _____ will not be used as an access road for activities on this lease except as follows: ()

Date

Signature

WILDERNESS PROTECTION STIPULATION

(Serial Number)

By accepting this lease, the lessee acknowledges that the lands contained in this lease are being inventoried or evaluated for their wilderness potential by the Bureau of Land Management (BLM) under section 603 of the Federal Land Policy and Management Act of 1976, 90 Stat. 2743 (43 USC Sec. 1782), and that exploration or production activities which are not in conformity with section 603 may never be permitted.

- All lands within the lease (% of lease affected)
- Part of the lands within the lease described as follows:

Expenditures in leases on which exploration drilling or production are not allowed will create no additional rights in the lease, and such leases will expire in accordance with law.

Activities will be permitted under the lease so long as BLM determines they will not impair wilderness suitability. This will be the case either until the BLM wilderness inventory process has resulted in a final wilderness inventory decision that an area lacks wilderness characteristics, or in the case of a wilderness study area until Congress has decided not to designate the lands included within this lease as wilderness. Activities will be considered nonimpairing if the BLM determines that they meet each of the following three criteria:

(a) It is temporary. This means that the use or activity may continue until the time when it must be terminated in order to meet the reclamation requirement of paragraphs (b) and (c) below. A temporary use that creates no new surface disturbance may continue unless Congress designates the area as wilderness, so long as it can easily and immediately be terminated at that time, if necessary to management of the area as wilderness.

(b) Any temporary impacts caused by the activity must, at a minimum, be capable of being reclaimed to a condition of being substantially unnoticeable in the wilderness study area (or inventory unit) as a whole by the time the Secretary of the Interior is scheduled to send his recommendations on that area to the President, and the operator will be required to reclaim the impacts to that standard by that date. If the wilderness study is postponed, the reclamation deadline will be extended accordingly. If the wilderness study is accelerated, the reclamation deadline will not be changed. A full schedule of wilderness studies will be developed by the Department upon completion of the intensive wilderness inventory. In the meantime, in areas not yet scheduled for wilderness study, the reclamation will be scheduled for completion within 4 years after approval of the activity. (Obviously, if and when the Interim Management Policy ceases to apply to an inventory unit dropped from wilderness review following a final wilderness inventory decision of the BLM State Director, the reclamation deadline previously specified will cease to apply.) The Secretary's schedule for transmitting his recommendations to the President will not be changed as a result of any unexpected inability to complete the reclamation by the specified date, and such inability will not constrain the Secretary's recommendation with respect to the area's suitability or nonsuitability for preservation as wilderness.

The reclamation will, to the extent practicable, be done while the activity is in progress. Reclamation will include

the complete recontouring of all cuts and fills to blend with the natural topography, the replacement of topsoil, and the restoration of plant cover at least to the point where natural succession is occurring. Plant cover will be restored by means of reseeding or replanting, using species previously occurring in the area. If necessary, irrigation will be required. The reclamation schedule will be based on conservative assumptions with regard to growing conditions, so as to ensure that the reclamation will be complete, and the impacts will be substantially unnoticeable in the area as a whole, by the time the Secretary is scheduled to send his recommendations to the President. ("Substantially unnoticeable" is defined in Appendix F of the Interim Management Policy and Guidelines for Lands under Wilderness Review.)

(c) When the activity is terminated, and after any needed reclamation is complete, the area's wilderness values must not have been degraded so far, compared with the area's values for other purposes, as to significantly constrain the Secretary's recommendation with respect to the area's suitability or nonsuitability for preservation as wilderness. The wilderness values to be considered as those mentioned in section 2(c) of the Wilderness Act, including naturalness, outstanding opportunities for solitude or for primitive and unconfined recreation, and ecological, geological or other features of scientific, educational, scenic, or historical value. If all or any part of the area included within the leasehold estate is formally designated by Congress as wilderness, exploration and development operations taking place or to take place on that part of the lease will remain subject to the requirements of this stipulation, except as modified by the Act of Congress designating the land as wilderness. If Congress does not specify in such act how existing leases like this one will be managed, then the provisions of the Wilderness Act of 1964 will apply, as implemented by rules and regulations promulgated by the Department of the Interior.

If it is found that the area does not have wilderness characteristics or is not suitable to be designated a part of the National Wilderness Preservation system, development and/or surface occupancy will be subject to the remaining lease terms and the special stipulations.

Date

Lessee's Signature

UNITED STATES DEPARTMENT OF THE INTERIOR
Bureau of Land Management

(Serial No.)

LIMITED SURFACE USE STIPULATION

The lessee is given notice that all or portions of the lease area contain special values, are needed for special purposes, or require special attention to prevent damage to surface resources. Any surface use or occupancy within such areas will be strictly controlled. Use or occupancy will be authorized only when the lessee/operator demonstrates that the area is essential for operations and when the lessee/operator submits a surface use and operations plan, which is satisfactory to the Bureau of Land Management and the Surface Management Agency (SMA), for the protection of these special values and existing or planned uses. Appropriate modifications to the imposed restrictions will be made for the maintenance and operation of producing oil and gas wells. After the SMA has been advised of the proposed surface use or occupancy on those lands, and on request of the lessee/operator, the SMA will furnish further data on such areas, which now include but are not limited to:

Reason for Restriction:

APPENDIX B - RESTRICTIVE STIPULATION

Duration of Restriction: (designate months)

RESTRICTIVE STIPULATION

The prospective lessee is required to provide a copy of this stipulation to the BLM/SMA for review and approval. The BLM/SMA will review the stipulation and determine if it is acceptable. If the BLM/SMA determines that the stipulation is not acceptable, the prospective lessee must revise the stipulation and resubmit it to the BLM/SMA for review and approval. The BLM/SMA will review the revised stipulation and determine if it is acceptable. If the BLM/SMA determines that the revised stipulation is acceptable, the prospective lessee may proceed with the lease. The BLM/SMA will monitor the lease to ensure that the stipulation is being followed. If the BLM/SMA determines that the stipulation is not being followed, the BLM/SMA may suspend the lease. The BLM/SMA will provide written notice of any suspension of the lease to the prospective lessee. The BLM/SMA will also provide written notice of any suspension of the lease to the public. The BLM/SMA will also provide written notice of any suspension of the lease to the media. The BLM/SMA will also provide written notice of any suspension of the lease to the public. The BLM/SMA will also provide written notice of any suspension of the lease to the media.

Prior to acceptance of this stipulation, the prospective lessee is encouraged to contact the BLM/SMA for further information regarding the restrictive nature of this stipulation.

Date

Signature

APPENDIX E

GUIDELINES FOR IMPLEMENTATION OF VRM CLASSES

CLASS I

This class provides primarily for natural ecological changes; however, it does not preclude very limited management activity. Any contrast created within the characteristic environment must not attract attention. This class is applied to wilderness areas, wilderness study areas, some natural areas, portions of the wild and scenic rivers, and other similar situations where management activities are to be restricted. All nonexempt resource management program actions that will modify the landform, waterbodies, vegetation, or structures will comply with required VRM contrast rating objectives. The contrast rating shall not exceed nine points when all mitigating measures have been applied, allowing a one year recovery period from project completion date.

CLASS II

Changes in any of the basic elements (form, line, color, texture) caused by a management activity should not be evident in the characteristic landscape. A contrast may be seen but should not attract attention.

Class II requires that management activities be designed and located to blend into the natural landscape and not be visually apparent to the casual visitor. A management activity may repeat the visual elements common in the characteristic landscape only if this repetition does not evidently change the essential quality of the existing dominance factors (e.g., pattern, intensity, amount).

Structures located in the foreground distance zone (0-1/2 mile) often create a contrast that exceeds the VRM class even when designed to harmonize and blend with the characteristic landscape. This may be especially true when a distinctive architectural motif or style is designed. Proposals will be reviewed on a case-by-case basis to determine whether such structure(s) meet the acceptable VRM class standards and, if not, whether they add acceptable visual variety to the landscape.

All nonexempt resource management program actions that will modify the landform and waterbodies, vegetation, and structures will comply with required VRM contrast rating directives. The following resource management guides shall apply.

Forest Management

Clearcuts must not be seen unless they simulate adjacent natural openings. No geometrical shapes are allowed.

Shelterwood cuts permitted, with a maximum cut of 60 percent to reduce modification of textural contrast with resulting openings that appear natural. If modifications of vegetative texture are made the contrast will be minimal.

Thinnings are acceptable if maximum cut does not exceed 40 percent. This is a modification of vegetative texture and the contrast will be minimal if stumps are cut flush with the ground and slash is removed from the first 400 feet within the foreground visual zones.

Roads must not be seen from major travel routes or recreation sites and must be designed to minimize cut and fill areas.

Range Management

Vegetative manipulation projects must appear as natural openings and shall follow existing breaks in vegetation and landform. There is no limit on size. Stockpiling of plant material will not be allowed.

Spring development will generally be allowed. Handwork may be required on some projects. Pipelines shall follow existing contours. Dozers will not drop blades to clear lines. Watering tanks will be painted to blend with surroundings.

Fence posts shall be natural in color with no white tops (can be changed to green or red posts with white tops where wildlife conflicts occur). Fences should follow natural breaks in vegetation and avoid straight lines.

Roads shall not be constructed but will be developed through vehicular use. Dozers will not drop blades.

Structures such as corrals and loading chutes will generally be allowed if constructed of wood and if no clearing is necessary.

Structures

Structures must incorporate the natural lines, colors, form, and materials of the landscape. Skylined structures will not be allowed from key observation points. Structures should take advantage of all opportunities for concealment.

Roads

Required roads shall be concealed by vegetation if possible, follow natural landforms, and be rehabilitated when the road is no longer needed.

Contrast Rating

All activities listed above as well as others (i.e., recreation, wildlife, access, etc.) will be subject to the contrast rating procedures. No project shall exceed ten points when all mitigating measures have been applied, allowing a two year recovery period from project completion date.

CLASS III

Contrasts to the basic elements (form, line, color, texture) caused by a management activity may be evident and begin to attract attention in the characteristic landscape. However, the changes should remain subordinate to the existing characteristic landscape.

This class provides that management activities may be evident to the casual visitor; however, the activity should remain subordinate to the visual strength and natural character of the landscape.

A management activity may repeat the dominant qualities common in the landscape and may visually change the essential character of existing dominance factors in the landscape. However, these changes must be relatively small in scale and generally subordinate to the visual strength of the natural landscape.

All nonexempt resource management program actions that will modify the landform and waterbodies, vegetation, and structures will comply with required contrast rating directives. The following resource management guides shall apply.

Forest Management

Clearcuts may be seen but must simulate typical natural openings. No geometric shapes are allowed.

Shelterwood cuts permitted, with a maximum initial entry cut of 60 percent to reduce modification of textural contrast. Resulting openings should appear natural.

Range Management

Vegetative manipulation projects must appear as natural openings. No limit on size.

Springs can be installed with equipment except in some instances where hand-tools will be necessary to protect the visual resource. Dozers will not drop blades to clear lines. Watering tanks will be located in areas that will screen them from major travel routes and key observation points.

Where possible, fences will not be constructed in long straight lines. No white topped posts are allowed (can be changed to red or green posts with white top where wildlife conflicts occur).

Roads shall not be constructed but will be developed through use and minimum work with a dozer blade to bypass obstacles. Dozers will not be used to construct roads to range developments unless they are absolutely necessary to install projects.

Structures

Structures should incorporate the natural lines, colors, and materials of the natural landscape.

Roads

Roads should be partially concealed by vegetation and follow natural landforms. Cuts and fills should be seeded as soon as possible.

Contrast Rating

All activities listed above and others (i.e., recreation, cultural, lands, etc.) will be subject to the contrast rating procedures. All projects shall not exceed 16 points after all mitigating measures have been applied, allowing a five year recovery period from completion date.

CLASS IV

Contrasts may attract attention and be a dominant feature of the landscape in terms of scale; however, the change should repeat the basic elements (form, line, color, texture) inherent in the characteristic landscape.

Class IV provides that management activities may be visually apparent to the casual observer and may also become dominant in the landscape.

Establishment of strong visual linkages between the management activity and the characteristic landscape is critical to reduce visible impacts. When viewed as foreground or middleground, the management activity may be dominant but may not appear to completely borrow from natural established dominance factors. However, when viewed as background, the management activity must be those of natural occurrences within the characteristic landscape.

Management activities, which are visually apparent, may be located in critically sensitive areas such as prominent features, long view duration areas, enframed views, and other critical focus areas if such modifications are subjected to sensitive analysis by the recreation planner or other visual design arts specialists.

All nonexempt resource management program actions that will modify the landform and waterbodies, vegetation, and structures will comply with required contrast rating directives. The following resource management guides shall apply.

Forest Management

Clearcuts may be seen but must incorporate the non-geometric lines of the natural landscape. Shelterwoods can be of any size.

Range Management

Vegetative manipulation projects shall not be geometric in shape. New roads will follow natural contours.

Structures

Structures should incorporate the natural lines, colors, and form of the landscape (can be changed to allow the use of red or green fence posts with white tops where wildlife conflicts occur).

Roads

Roads should follow the natural landforms and be rehabilitated as soon as possible.

Contrast Rating

All of the activities listed above and others (i.e., recreation, operations, etc.) will be subject to the contrast rating procedures. All projects shall not exceed 20 points after all mitigating measures have been applied, allowing a five year recovery period from project completion date.

CLASS V

Change is needed or change may add acceptable visual variety to an area. This class applies to areas where the natural character has been disturbed to a point where rehabilitation is needed to bring it back into character with the surrounding landscape. This class would apply to areas identified in the scenic evaluation where the quality class has been reduced because of unacceptable cultural modification. The contrast is inharmonious with the characteristic landscape. It may also be applied to areas that have the potential for enhancement, i.e., add acceptable visual variety to an area/site. It should be considered an interim or short-term classification until one of the other VRM class objectives can be reached through rehabilitation or enhancement. The desired visual resource management class should be identified.



APPENDIX F

CULTURAL RESOURCE MANAGEMENT PROCEDURES

OBJECTIVE AND PURPOSES

The objective of the BLM cultural resource program is to manage cultural resources in a stewardship role for public benefit. The Department of the Interior has issued instructions setting forth this management structure through a use evaluation system. The purposes of the system are to analyze the scientific and sociocultural values of cultural resources to provide a basis for allocation of cultural resources, to make cultural resources an important part of the planning system, and to identify information needed when existing documentation is inadequate to support a reasonable cultural resource-based land use allocation.

EVALUATION CATEGORIES

The evaluation of cultural resources requires the consideration of actual or potential use of individual sites or properties within the following categories.

Sociocultural Use. This category refers to the use of an object (including flora and fauna), structure, or place based on a social or cultural group's perception that the item has utility in maintaining the group's heritage or existence.

Current Scientific Use. This category refers to a study or project in progress at the time of evaluation for which scientists or historians are using a cultural resource as a source of information that will contribute to the understanding of human behavior.

Management Use. This category refers to the use of a cultural resource by the BLM or other entities interested in the management of cultural resources to obtain specific information that is needed for the reasonable allocation of cultural resources or for the development of effective preservation measures.

Conservation for Future Use. This category refers to the management of cultural resources by segregating them from other forms of appropriation until specific conditions are met in the future. Such conditions may include the development of research techniques that are presently not available or the exhaustion of all other resources similar to those represented in the protected sample. The category is intended to provide long-term, onsite preservation and protection of select cultural resources.

Potential Scientific Use. This category refers to the potential use (utilizing research techniques currently available) of a cultural resource as a source of information that will contribute to the understanding of human behavior.

Discharged Use. This category refers to a cultural resource that no longer retains the integrity necessary for its management as a cultural property.

PROCEDURES

The standard form of cultural resource management practiced in the Garnet Resource Area is inventory and evaluation of cultural properties implemented in response to proposed projects that may adversely effect such properties. The procedures for such management are mandated and specified in the Antiquities Act of 1906; Executive Order 11593; the Archaeological and Historic Preservation Act of 1974; the Federal Land Policy and Management Act of 1976; the National Historic Preservation Act, amended 1980; and the Native American Religious Freedom Act of 1982. Standard operating and reporting procedures minimize the possibility of damage to significant cultural properties. The individuals and groups involved are the State Historic Preservation Officer (SHPO), appropriate Native American officials, and the National Advisory Council for Historic Preservation, which will be involved if a site is eligible for the National Register of Historic Places.

Upon receipt of a Request for Cultural Resources Survey Form at the Butte District Office, the project is screened by the District Archaeologist to determine if the project is exempt from a necessary cultural resources inventory through programmatic memorandum of understanding with SHPO. If exempt, no further work is done. If not exempt, a project specific Class II inventory is performed using the Butte District master file of sites and inventories maintained at that office. This file contains the results of all inventories, inventory class, and location of all cultural properties by site number. The characteristics of each property are maintained in a permanent file of cultural properties. Should the project area be previously inventoried and no significant resources recorded, no further work is necessary besides reporting to SHPO; and the project proceeds.

If the area is previously uninventoried or contains a significant property, further work is necessary. Prior to field work, historic documents are consulted and the predictive modeling system applied as a project specific inventory review to determine the presence or predictive value of classes of cultural properties. Based upon this project specific inventory review, consultation with SHPO is made to determine the inventory strategy to be employed.

The typical inventory strategy in the Garnet Resource Area is the intensive Class III survey of all impact areas. For timber compartment management plans, only proposed cutting units, landings, and access roads are inventoried to Class III levels, with Class II survey given to areas within the compartment but outside impact areas. Thus, while a timber compartment management plan inventory will lead to the recordation of properties within impact areas, such inventories will seldom if ever record all properties within a compartment.

Cultural resource properties that are encountered are recorded on a modified form 8110-2, evaluated, and assigned a use allocation. Evaluation is generally made on the general surface characteristics of the site and limited historical review in concert with procedures of the Montana State Office of the BLM. Only those properties that clearly do not meet National Register criteria are assigned the discharged use allocation, with management use assigned to moderate value properties which require further evaluation and possible reallocation of use. Sites potentially eligible for the National Register are assigned other use allocations depending on site characteristics and type.

Copies of form 8110-2 are filed at the Butte District office; the University of Montana; and, as appropriate, SHPO. Inventory reports are recorded on MSO form 8110-1 and filed with the Butte District office, the Garnet Resource Area office, and SHPO. These inventory reports summarize management recommendations and fulfill cultural resource consultation requirements. Upon receipt of MSO form 8110-1, SHPO consults and comments upon the proposed action, which usually is permitted to proceed at that point due to the standard practice of project redesign to avoid impact to significant cultural properties. Copies of the consultation and comment record with SHPO are filed with the Butte District office and at the Garnet Resource Area office and project file, as appropriate.

Should properties of potential significance under the Native American Religious Freedom Act be encountered during a cultural resources inventory, representatives of appropriate Native American groups are also notified for their consultation and comment.

Only in those cases where cultural properties eligible for nomination to the National Register of Historic Places or the National Register of Historic Landmarks cannot be avoided by a proposed project, or when there are differences in property significance assessment or inventory standards between the BLM and SHPO is the National Advisory Council for Historic Preservation and/or the keeper of the Register consulted for comments. At this point the project may be redesigned to avoid the property, mitigated to standards designed for a no adverse effect determination in consultation with the National Advisory Council and SHPO in a memorandum of understanding, or permitted to proceed as a BLM management decision.

To provide for consideration of cultural properties not evident during inventories, a stipulation is attached to each project requiring the operator to temporarily suspend work if buried cultural materials are encountered. The District Manager or his authorized representative will then determine the action necessary for protection or salvage of the property.

APPENDIX G

SUMMARY OF RESOURCE CONDITIONS USED TO CATEGORIZE GRAZING ALLOTMENTS

Specific criteria were developed to evaluate the management situation for each allotment and to highlight those allotments that may require a change in present grazing management in order to resolve conflicts in the use of resources. These criteria were based on current BLM policy (WO-IM 82-292) and evaluated range condition, its potential to respond to management changes, the current management situation, the presence of resource use conflicts or controversy, and the opportunities for positive economic return on public investment. Each criterion was rated independently by a cross section of resource specialists familiar with the allotment. Each specialist recommended placement of the allotment into one of three management categories. Finally, the ratings and recommendations were reviewed by the Area Manager who then determined how the allotment would be categorized. The management category for an allotment may be changed when resource conditions change or new data becomes available.

IMPROVEMENT MANAGEMENT

Improvement management allotments (I allotments) are areas where changes are needed. In I allotments one or more of the following specific criteria apply:

Vegetative or watershed conditions are not satisfactory.

The allotment has a high to moderate potential for production, but is producing below its potential.

There are substantive conflicts with other resources.

The allotments size and physical characteristics make management changes and range improvements cost effective.

MAINTENANCE MANAGEMENT

Maintenance management allotments (M allotments) are areas where changes are not needed. In M allotments one or more of the following specific criteria apply:

Vegetative and watershed conditions are satisfactory.

The allotment is covered by an existing AMP.

The allotment has the potential for high resource production and is producing near its potential.

There are no serious resource conflicts.

The allotments size and physical characteristics would make management and range improvements cost effective.

CUSTODIAL MANAGEMENT

Custodial management allotments (C allotments) are areas where changes are not feasible. In C allotments one or more of the following specific criteria apply:

The biological potential for response to a change in management is low.

Management of the allotment would not be cost effective due to its size or potential productivity.

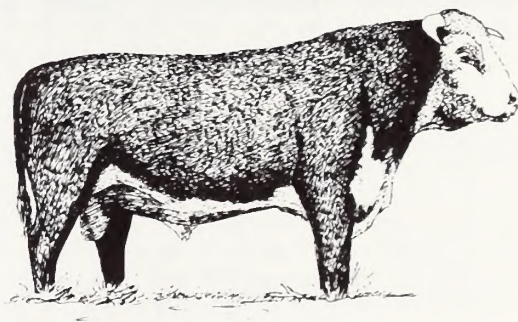
The cost of the range improvements that would be needed to change grazing management exceeds the expected benefits.

Little conflict, if any, exists in resource use.

Overall resource values are relatively low.

SUMMARY TABLES

Table G-1 places each allotment into one of the three management categories and shows the natural resource factors that were used in the categorization process. Table G-2 summarized the allotments by category.



**TABLE G-1
SUMMARY OF ALLOTMENTS BY CATEGORY**

Category	Number of Allotments	Total BLM Acres	Percent	Total BLM AUMs	Percent
I	11	47,589	43	1,373	23
M	23	51,295	47	3,553	60
C	50	11,385	10	1,004	17
Total	84	110,269	100	5,930	100

TABLE G-2
SUMMARY OF RESOURCE CONDITIONS
USED TO CATEGORIZE ALLOTMENTS

Allot. No.	Allotment Name	Change Needed in Veg. Condition or Prod.	Potential of Veg. to Respond	Change Needed in Watershed Condition	Potential of Watershed to Respond	Change Needed in Wildlife Habitat Cond.
7101	Bonita-Clinton-Potomac	Some	Moderate	Some	Low	Some
7102	Weaver	Significant	Moderate	Some	Moderate	—
7104	Lund #1	Significant	Moderate	Some	Moderate	Significant
7105	McMahon	Significant	Low	Some	Low	—
7106	Iverson	—	Low	Some	Moderate	Some
7108	Lund #2	Some	Moderate	Some	Moderate	Some
7109	Murray-Douglas Cr.	—	—	Some	Moderate	—
7110	Shelley	—	—	—	—	—
7111	Joseph	—	—	—	—	—
7112	Bearmouth Land	Some	Moderate	—	—	—
7113	Henderson	—	—	—	—	—
7114	Enman	—	—	—	—	—
7115	Nelson	Some	Moderate	—	—	Some
7116	Lindbergh	—	—	—	—	—
7118	Five Mile	Some	Moderate	Some	Moderate	—
7119	McElwain	Some	Moderate	Some	Moderate	—
7121	Wales	Some	Moderate	Some	Moderate	Some
7122	Koessler	—	—	—	—	—
7123	Lindburg	—	—	Some	Moderate	—
7124	Snead	—	—	—	—	—
7201	Devil Mountain	—	—	—	—	—
7202	A. Beck	—	—	—	—	—
7203	D. Beck	Some	Moderate	Some	Moderate	—
7204	L. Beck	—	—	—	—	—
7205	Benson	—	—	—	—	—
7206	Gimlet	—	—	—	—	—
7207	Semenza #4	Some	Moderate	Some	Moderate	Some
7208	A. Coughlin	—	—	—	—	—
7209	Dingwall	—	—	—	—	—
7210	Dutton	—	—	—	—	—
7211	D. Graveley	—	—	—	—	—
7212	C. Graveley	—	—	—	Moderate	Some
7213	Marcum	Some	High	Some	Moderate	Some
7214	Hogan	—	—	—	—	—
7215	Hollenback	—	—	—	—	—
7216	Keiley	Some	High	Some	High	Some
7217	Lingenfelter	—	—	—	—	—
7218	McMcCormick	—	—	—	—	—
7219	Mannix	Some	Moderate	Some	Moderate	—
7220	F. Mannix	—	—	—	Moderate	—
7221	Murphy	Some	Moderate	Some	Moderate	—

TABLE G-1
SUMMARY OF RESOURCE CONDITIONS
USED TO CATEGORIZE ALLOTMENTS

Potential of Wildlife Habitat to Respond	Change Needed In Riparian Condition	Potential Of Riparian to Respond	Other Areas of Concern	Tentative Management Category
Moderate	Significant	Low	Forest regeneration, wildlife- big game winter/summer range.	I
—	Some	Moderate	Forest regeneration.	I
Moderate	Some	Moderate	Forest regeneration.	I
—	Some	Low	Forest regeneration.	I
Moderate	Some	Moderate	Forest regeneration.	I
Moderate	Some	Moderate	Forest regeneration.	I
—	Some	Moderate	Wildlife summer/fall habitat, forestry in future.	I
—	Some	Moderate		C
—	—	—		C
Low	—	—		C
—	—	—		C
—	—	—	Wildlife-big game winter range.	C
Moderate	—	—	Wildlife-big game winter range.	M
—	—	—		C
—	—	—	Forest regeneration.	M
—	Some	Moderate	Forest regeneration, wildlife- big game winter range.	M
Moderate	Some	Moderate	Wildlife-big game winter range.	M
—	—	—	Wildlife-big game winter range.	M
—	Some	Moderate	Wildlife-big game summer range, walk in hunting, moose range.	M
—	—	—		C
—	—	—	Wildlife-big game summer range, move from M to C category.	C
—	—	—		C
—	—	—		C
—	—	—		C
—	—	—		C
Moderate	Significant	Moderate	Wildlife-summer/fall elk habitat, forestry- reforestation, recreation- walk in hunting.	M
—	—	—		C
—	—	—		C
—	—	—		C
—	—	—		C
Low	Some	Moderate	Recreation historic site.	M
Moderate	Some	Moderate	Wildlife-big game winter range, recreation-walk in hunting area.	M
—	—	—		C
Moderate	—	—	Wildlife-big game winter range.	C
Moderate	Some	Moderate	Wildlife-big game winter range.	M
—	—	—		C
—	—	—	Wildlife-winter eagle roost area.	C
Moderate	Significant	Moderate	Wildlife-stream fisheries.	I
—	Some	Moderate	Forestry-reforestation area.	C
—	Some	Moderate		I

APPENDICES

Allot. No.	Allotment Name	Change Needed in Veg. Condition or Prod.	Potential of Veg. to Respond	Change Needed in Watershed Condition	Potential of Watershed to Respond	Change Needed in Wildlife Habitat Cond.
7222	Sturgeon Cr.	—	—	—	—	Some
7223	Radtke #1	—	—	—	—	—
7224	Ward Paper	—	—	Some	Moderate	—
7225	R. Wohlers	—	—	—	—	—
7226	J. Weaver	—	—	—	—	—
7227	Hughes	—	—	—	—	—
7228	Henault	—	—	—	—	—
7229	Cochran	Some	Moderate	Some	Moderate	Some
7230	Geary	—	—	—	—	—
7231	Sunny Slope	—	—	—	—	—
7232	Gilman	Some	High	Some	Low	—
7301	Bauer	Some	Low	—	—	Some
7302	Bissonette	—	—	—	—	Some
7303	Strand	Some	Moderate	—	—	—
7304	Collins #1	—	—	—	—	—
7305	Gilles	—	—	—	—	—
7306	Vick	—	—	—	—	—
7307	W. Jensen	—	—	—	—	—
7308	Jensen Ranch #1	Some	Moderate	—	—	—
7309	Johnson	Some	Moderate	Some	Moderate	Some
7310	Morrison	—	—	—	—	—
7311	Lane	—	—	Some	Moderate	—
7312	H. Luthje	—	—	—	—	—
7313	J. Luthje	—	—	—	—	Some
7314	Neal #1	Some	Moderate	—	—	—
7315	Mungas	—	—	—	—	—
7316	Neal #2	Some	High	Some	Moderate	Some
7317	X Diamond	Significant	High	Some	Moderate	Significant
7318	Radtke #2	—	—	—	Moderate	Some
7319	West Fork Buttes	—	—	—	—	—
7320	Stewart Lake	—	—	—	—	—
7321	Sanders	—	—	—	—	—
7322	Flint Creek	—	—	—	—	—
7323	Jensen Ranch #2	Some	Moderate	Some	Moderate	Some
7324	Collins #2	Some	Moderate	—	—	Some
7325	Kolbeck	—	—	—	—	—
7326	Spieker	—	—	—	—	—
7501	McGillvray	—	—	—	—	—
7504	McIntosh	—	—	—	—	—
7505	DeLeo	—	—	—	—	—
7506	Reierson	—	—	—	—	—
7507	Mattice	—	—	—	—	—

Significant — Either a large part of the allotment or a key part is in unsatisfactory condition.

Some — Only a part of the allotment is in unsatisfactory condition.

— — No change is needed.

Potential of Wildlife Habitat to Respond	Change Needed In Riparian Condition	Potential Of Riparian to Respond	Other Areas of Concern	Tentative Management Category
Moderate	—	—	Wildlife-big game winter range.	C
—	—	—		C
—	Some	Moderate	Forestry-regeneration.	M
—	—	—		C
—	—	—		C
—	—	—	Wildlife-winter eagle roost area.	M
Moderate	—	—	Wildlife-big game winter range.	M
—	Some	Moderate	Wildlife-geese nest area.	C
—	—	—		C
—	Some	Low		C
Low	—	—		C
Moderate	—	—	Wildlife-big game winter range.	C
—	—	—	Wildlife-big game winter range.	M
—	Some	Moderate		C
—	—	—		C
—	—	—		C
—	—	—		C
—	—	—		C
Moderate	—	—	Wildlife-big game winter/spring range.	M
—	—	—		C
—	Some	Low		M
—	—	—	Forestry-reforestation, Coop USFS/BLM timber sale and range improvement area.	I
Low	—	—	Forestry-reforestation.	M
—	—	—		M
—	—	—		C
Moderate	Significant	Moderate	Forestry-reforestation, wildlife-big game winter range, recreation-walk in hunting.	M
Moderate	—	—	Wildlife-big game winter range.	C
Moderate	Some	Moderate	Forestry-reforestation, wildlife-moose winter/spring range.	C
—	Some	High	Wildlife-big game range.	M
—	—	—	Wildlife-elk calving and winter/spring range.	M
—	—	—	Wildlife-occasional bighorn sheep use.	C
—	—	—		C
Moderate	—	—	Wildlife-big game winter range.	M
Moderate	—	—	Wildlife-big game winter range, forestry-reforestation.	I
—	—	—		C
—	—	—		C
—	—	—		C
—	—	—		C
—	—	—		C
—	—	—		C

High — Site conditions are favorable for the resource to respond to treatment.
Moderate — Some site conditions are unfavorable for the resource to respond to treatment.
Low — Site conditions are unfavorable for the resource to respond.
— — The resource is already in a satisfactory condition.

I — Improvement allotment.
M — Maintenance allotment.
C — Custodial allotment.

APPENDIX H

ALTERNATIVE STOCKING RATES BY ALLOTMENT

Table H-1 identifies short-term targets and long-term estimates for livestock use by allotment.

Short-term targets represent approximate levels of livestock use that are likely to be applied within the first 10 years of plan implementation, based on current resource information. Actual livestock use adjustments will be implemented through agreement or by decision and, in the case of decisions, will be based on operator consultation, range survey data, and monitoring of resource conditions.

Long-term estimates represent approximate levels of livestock use that are likely to be applied at the end of the second decade following plan implementation, based on anticipated changes in forage production and availability, and other resource conditions.

In arriving at the various AUM values, several sources of data were used. An estimate of proper stocking rate, based of SCS's *Montana Grazing Guides* (USDA, SCS 1977) and unpublished technical range site descriptions, was available for all allotments. Several range surveys conducted prior to 1978, covering a number of the allotments, were reviewed. Some of the allotments have been monitored for actual use and utilization in recent years. This data is normally a very sensitive estimate of carrying capacity. In some allotments, annual changes in livestock use have been applied for and approved at levels lower than Active Preference (nonuse) and at levels exceeding Active Preference (temporary nonrenewable use). Where these annual variances have been repeated over a period of 3 years or more, this information was considered in developing AUM figures.

TABLE H-1
STOCKING RATES BY ALLOTMENT
(All Units in Animal Unit Months)

Allot.	Allotment Name	Current Stocking Rate	Short-term Target	Change Between Current Rate and Short-Term Target	Long-Term Estimate
7101	Bonita-Clinton Potomac	215	250	35	478
7102	F. Weaver	121	121	0	135
7104	Lund #1	145	181	36	249
7105	McMahon	37	37	0	46
7106	Iverson	44	55	11	90
7108	Lund #2	140	175	35	201
7109	Murray-Douglas Cr.	124	124	0	200
7110	Shelley	4	4	0	4
7111	Joseph	11	11	0	11
7112	Bearmouth Land	27	27	0	27
7113	Henderson	15	15	0	15
7114	Enman	26	26	0	26
7115	Nelson	113	136	23	142
7116	L. Lindbergh	2	2	0	2
7118	Five Mile	60	66	6	76
7119/	McElwain				
7120	Common Allotment	140	175	35	258
7121	Wales	120	120	0	150
7122	Koessler	8	15	7	40
7123	Lindbergh Cattle Co.	101	101	0	154
7124	Snead	4	4	0	4
7201	Devil Mountain	64	64	0	128
7202	A. Beck	30	30	0	46
7203	D. Beck	84	50	-34	102
7204	L. Beck	49	49	0	49
7205	Benson	27	27	0	27
7206	Gimlet	5	5	0	5
7207	Braziel Cr.	362	362	0	535
7208	Coughlin	1	1	0	1
7209	Dingwall	3	3	0	3
7210	Dutton Ranch	23	23	0	30
7211	Dan Graveley	6	6	0	6
7212	Cliff Graveley	110	110	0	130

TABLE H-1
STOCKING RATES BY ALLOTMENT
 (All Units in Animal Unit Months)

Allot.	Allotment Name	Current Stocking Rate	Short-term Target	Change Between Current Rate and Short-Term Target	Long-Term Estimate
7213	Marcum Mtn.	113	168	55	331
7214	Hogan	15	15	0	15
7215	Hollenback	10	10	0	10
7216	Keiley	40	40	0	73
7217	Lingenfelter	8	8	0	8
7218	McCormick	7	7	0	7
7219	Mannix Ranch	55	67	12	76
7220	F. Mannix	8	8	0	8
7221	Murphy	58	73	15	106
7222	Sturgeon Cr	35	35	0	35
7223	Radtke #1	7	7	0	7
7224	Warm Spring Cr.	466	533	67	632
7225	Wohlers	6	6	0	6
7226	J. Weaver	35	35	0	35
7227	Hughes	22	22	0	22
7228	Henault/Foster	15	15	0	15
7229	Cochran Ranch	41	41	0	51
7230	Geary Bros.	5	5	0	5
7231	Sunny Slope Grazing Assoc.	10	10	0	10
7232	Gilman	10	10	0	10
7301	Bauer	13	13	0	13
7302	Bissonette	20	20	0	20
7303	Strand	65	65	0	81
7304	Collins #1	42	42	0	52
7305	Gillies	8	8	0	8
7306	Vick	3	15	12	19
7307	Jensen	15	15	0	15
7308	Jensen Ranch Co. #1	56	56	0	56
7309	Johnson	164	164	0	174
7310	Morrison	25	25	0	25
7311	Lane	210	210	0	235
7312	H. Luthje	324	324	0	481
7313	J. Luthje	192	192	0	232
7314	R. Neal #1	216	216	0	251
7315	G. Mungas	22	22	0	22
7316	Ram Mtn.	398	398	0	398
7317	X Diamond Bar Ranch	25	25	0	25
7318	M. Radtke #2	33	33	0	33
7319	West Fork Buttes	140	140	0	182
7320	Stewart Lake	318	318	0	368
7321	L. Sanders	56	56	0	56
7322	Flint Cr. Land	34	34	0	34
7323	Jensen Ranch Co. #2	123	123	0	138
7324	T. Collins #2	110	110	0	132
7325	Kolbeck Ranches Inc.	6	6	0	6
7326	N. Spieker	16	16	0	16
7501	Wm. McGillvray	5	5	0	5
7504	W. McIntosh	20	20	0	20
7505	F. DeLeo	8	8	0	8
7506	S. Reiersen	38	38	0	38
7507	J. Mattice	38	38	0	38
	Total	5,930	6,245	302	8,013

APPENDIX I

RANGE IMPROVEMENTS AND TREATMENTS

The following is a discussion of typical design features and construction practices for range improvements and treatments. In addition, there are many special design features that can be made part of a project's design that are not specifically discussed in this appendix. One example of a special design feature would be the use of a specific color of fence post to blend with the surrounding environment and thereby mitigate some of the visual impact of the fence. These mitigating design features will be developed, if needed, for individual projects at the time an environmental assessment is written.

STRUCTURAL IMPROVEMENTS

Fences

Fences would be constructed to provide exterior allotment boundaries, divide allotments into pastures, protect streams, and control livestock. Most fences would be three or four wire with steel posts spaced 16.5 feet apart with intermediate wire stays. Jack legs would be used where steel posts are not practical. Proposed fence lines would not be bladed or scraped. Gates or cattleguards would be installed where fences cross existing roads.

Where fences may impair the movement of wildlife, they would be no more than forty-two inches in height with no stays, three or four strand with ten inch spacing between top and next lower wire, and the bottom wire at least sixteen inches above the ground. Where needed on key big game areas, the top wire would also be smooth. Existing fences that create wildlife movement problems would be modified. For any fences in wildlife migration areas, the need for let down fences to allow passage of wildlife would be analyzed. These fences would be let down when livestock are not present. The BLM would be responsible for management of these special purpose fences.

Spring Development

Springs would be developed or redeveloped using a backhoe to install a buried collection system, usually consisting of drain tile and a collection box. The collection box is normally made from a section of 24 to 42 inch metal culvert with a cover and a fitting to which a delivery pipe is connected. A short pipeline would be installed to deliver water to a trough for use by livestock and wildlife. Normally the spring area is fenced to exclude livestock.

Pipelines

Wherever possible, water pipelines would be buried. The trench would be excavated by a backhoe, ditch-witch, or similar equipment. Rigid plastic pipe would be placed in the trench, and the excavated material would be used to backfill. While some flexible pipe may be installed using a ripper tooth, this is not a preferred technique. Most pipelines would have water tanks spaced approximately one-half mile apart.

Wells

Well sites would be selected based on geologic reports that predict the depth to reliable aquifers. All applicable state laws and regulations that apply to the development of groundwater would be observed.

NONSTRUCTURAL IMPROVEMENTS

Burning

Burning is proposed to reduce the amount of big sagebrush and/or conifers on a site. Burning would normally be done during the spring months, April and May, or the fall months, September and October, depending on the specific prescription written for each area. Burn plans would be developed for each burn.

Plowing and Seeding

Most of the sites to be plowed and seeded are in poor or fair vegetative condition and have a low potential to improve under other management practices. Most of the existing vegetation would be eliminated during seedbed preparation, and the site would be seeded with species adapted to the area. The final selection of species to be seeded would depend on the planned use of the site and the management objectives for the allotment. Seed would be drilled wherever possible. The application of mulch and/or fertilizer would be prescribed based on site characteristics.

Interseeding

Interseeding differs from plowing and seeding in that the existing vegetation is not eliminated during seedbed preparation. Desirable plant species would be interseeded with existing vegetation. A seed dribbler used with a crawler tractor, a small scalper/ seeder, or range drill would be used to interseed strips. Broadcast seeding could possibly be used as well. Species to be seeded would be selected to meet management objectives developed for the allotment.

Plant Pest Control

Poisonous or noxious plants would be controlled where spot infestations occur or where the BLM would cooperate with other affected landowners in controlling infestations on relatively large areas. Biological control would be used where practical. Chemical control would conform to all applicable state and federal regulations.

STANDARD OPERATING PROCEDURES

The following procedures would be followed in the construction of all management facilities and for vegetative manipulations.

Specific projects would be assessed individually to determine whether they would have adverse environmental impacts.

Roads or trails to new construction or project sites would not normally be constructed. Use of existing roads and trails would be encouraged.

To comply with the National Historic Preservation Act of 1966, 36 CFR 800, and Executive Order 11593; all areas where ground is to be disturbed by range developments would be inventoried for prehistoric and historic features. Where feasible, all sites found by this inventory would be avoided. If buried cultural remains are encountered during construction, the operator would temporarily discontinue construction until the BLM evaluates the discovery and determines the appropriate action.

No action would be taken by the BLM that could jeopardize the continued existence of any federally listed threatened or endangered plant or animal species. An endangered species clearance with the U.S. Fish and Wildlife Service (FWS) would be required before any part of the proposal or alternatives would be implemented that could affect an endangered species or its habitat. In addition to the federally listed species, the BLM also would comply with any state laws that list animal or plant species as being threatened or endangered.

Wilderness values would be protected as required for lands under wilderness review or study by the Interim Management Policy.

All actions would comply with guidelines for implementing Visual Resource Management classes. The management criteria for the specific visual class would be followed.

Wildlife escape devices would be installed and maintained in water troughs.

In crucial wildlife habitat (winter ranges, fawning and calving areas, strutting grounds, etc.), construction work on projects would be scheduled during seasons when the animals are not concentrated in the area to avoid or minimize disturbances.

After construction, any disturbed areas would be revegetated with a mixture of grasses, forbs, and shrubs as appropriate for the site.

Analysis of cost effectiveness would be done in an Allotment Management Plan (AMP) prior to the installation of any management facility or land treatment.

All areas where vegetative manipulations occur would be totally rested from grazing for at least two growing seasons following treatment.

Vegetative manipulation would be done in irregular patterns creating more edge (more than strip and block manipulation) with islands of vegetation left for cover.

Consultation with the Montana Department of Fish, Wildlife, and Parks would be required prior to job layout, design, and accomplishment in accordance with the existing memorandum of understanding between the MDFW&P and BLM.

Chemical treatment would consist of applying approved chemicals to control noxious or poisonous plants. Before chemicals are applied, the BLM would comply with the Department of the Interior regulations. All chemical applications would be preceded by an approved pesticide use proposal. All applications of pesticides would be under the supervision of a certified pesticide specialist. All applications would be carried out in compliance with the pesticide laws of Montana.

APPENDIX J

GRAZING SYSTEMS

REST-ROTATION GRAZING SYSTEM

A rest-rotation grazing system will graze a prescribed number of livestock through a series of pastures for a given period of time while deferring certain of these pastures from grazing. The objective of the system is to produce seed of desirable forage species, to trample the seed, and then to rest the pasture to allow the seedlings to become established.

The grazing livestock act as agents to increase the density of desirable plants as well as the vigor of existing plants, and provide additional litter for soil protection. The system can be used to better control wind and water erosion (USDA, FS 1965a; Hormay 1970; USDA, FS 1972; Ratliff and Reppert 1974).

DEFERRED-ROTATION GRAZING SYSTEM

A deferred-rotation grazing system provides for a systematic rotation of pastures in which grazing is either delayed or discontinued to provide for plant reproduction, establishment of new plants, or restoration of the vigor of existing plants (Society of Range Management 1974).

One or more pastures are grazed during the spring, while the remaining one or more pastures are rested until after seed ripening of key species and then grazed. Deferred-rotation grazing differs from rest-rotation grazing in that no yearlong rest is provided.

DEFERRED GRAZING SYSTEM

A deferred grazing system is similar to deferred-rotation except the pastures in the allotment are not systematically rotated (Society of Range Management 1974). Under this system, grazing would begin after key plants have reached an advanced stage of development in their annual growth cycle. The growing season rest provided by this system promotes plant reproduction, establishment of new plants, or restoration of the vigor of old plants.

ALTERNATE GRAZING SYSTEM

Alternate grazing is grazing by livestock every other season, with the area being rested in the alternate year.

SHORT-DURATION, HIGH-INTENSITY GRAZING SYSTEM

High-intensity grazing permits short-duration grazing with the stocking rate higher than what would be considered normal. The purpose of this type of system is to obtain uniform use of all plants, desirable and undesirable alike, and to prevent regrazing on regrowth of the most desirable plants. This system allows desirable plants to compete for nutrients on an equal basis with less desirable plants.

APPENDIX K

DATA ON INDIVIDUAL ALLOTMENTS: ECOLOGICAL CONDITION, FORAGE POTENTIAL, AND CURRENT MANAGEMENT PRACTICES

METHODOLOGY

The initial vegetative inventories within the Garnet Resource Area were conducted during the mid-1960s. These surveys used the ocular reconnaissance method. Subsequent vegetative surveys were conducted between 1976 and 1982. These later surveys employed the soil-vegetation method, the *Montana Grazing Guides* (USDA, SCS 1977), and the *Montana Grazing Guides*, Amended 1983. The data collected have been used in this document to classify sites, determine vegetative condition of the existing vegetation, and determine suitability of the public lands for livestock grazing.

Classification

Several classification systems have been used in site identification. Sites dominated by a grass or shrub community were classified according to the *Montana Grazing Guides* (USDA, SCS 1977). Sites having the ability to produce 10 percent or greater canopy coverage of trees in a climax vegetation condition were classified using *Forest Habitat Types of Montana* (USDA 1977) and *Montana Grazing Guides*, Amended 1983. These systems interpret the site based upon the potential climax tree species and indicator plants in the understory.

Vegetative Condition and Trend

Inventory crews first identified and delineated the boundaries for the sites to be inspected. Estimates of plant species composition, based on weight, were then made for the plant community found on each site. Using tables in the *Montana Grazing Guides*, (USDA, SCS 1977) and more detailed data in the SCS's unpublished Technical Range Site Descriptions for Montana, the present species composition was compared to the potential climax composition for the site. A condition rating was computed for the vegetation on each site. This rating represents the extent to which the site differs from potential climax. While this condition rating is often referred to as range condition, this document refers to the rating as vegetative condition.

Four condition classes are set forth by the SCS. A plant community in excellent condition exhibits little change in species composition when compared to the potential climax plant community for the site. Between 100 percent and 75 percent of the kinds and amounts of vegetation produced would be found in climax. Good condition communities produce between 75 percent and 51 percent of the kinds and amounts of vegetation found in climax. Fair condition communities produce between 50 percent and 26

percent of the kinds and amounts of vegetation found in climax. Poor condition communities produce between 25 percent and 0 percent of the kinds and amounts of vegetation found in climax. A fifth condition class of unclassified was used in the inventory to designate vegetative communities that could not be legitimately compared to a climax community. The unclassified rating was applied to areas that had been plowed and seeded, areas where native vegetation has been manipulated by mechanical or chemical means, areas of undergrowth communities having dense forest canopies or heavy duff accumulation, etc.

The trend has been one of static or improving range condition on all of the 10 existing AMPs.

Determination of Vegetative Condition for Ocular Surveys

Approximately 50 percent of the public lands in the Garnet Resource Area are covered by the mid-1960 ocular survey. This type of survey method does not provide a direct method to determine vegetative condition class but rather provides percent canopy cover data. In order to extract vegetative range condition from canopy coverage data, the assumption was made that there is a direct correlation between percent composition by weight and percent canopy coverage of those vegetative species identified in the ocular surveys. The estimated vegetative composition of each range site mapped was compared with the climax plant community of the same range site in the same precipitation zone as defined by the *Montana Grazing Guides* (USDA, SCS 1977) to determine the vegetative condition.

Climax plant communities for each range site were determined from protected or undisturbed areas. These areas were considered to be the climax vegetative community for that particular site. The degree to which the present plant community varied from the undisturbed area is described by four condition classes: excellent, good, fair, and poor.

Suitability

The suitability of each site for livestock grazing was recorded. One of four ratings was assigned to each site. The suitable rating applies to sites with no environmental factors restricting livestock access and use of the site. The potentially suitable rating applies to sites where environmental factors now limit livestock access or use but changes could be made that would make the site suitable. The unsuitable rating applies to sites where environmental factors that cannot be changed now limit livestock access or use. The limited suitability rating applies to sites that are most commonly used for areas produ-

CURRENT MANAGEMENT INFO.

No.	Livestock (BLM only)		Season of Use		Est. Forage Production (BLM only) AUMs
	Class	From	To		
2	c/c	7/1	8/31	4	
6	c/c	10/1	10/31	11	
5	c/c	5/15	10/15	27	
4	c/c	6/21	10/20	15	
5	c/c	5/15	9/30	26	
1	c/c	6/1	10/15	7	
2	c/c	6/16	9/30	4	
16	c/c	6/16	10/15	224	
7	c/c	6/1	10/15	38	
21	c/c	6/1	9/30	127	
11	c/c	6/1	10/15	49	
6	c/c	6/1	10/15	56	
5	c/c	7/1	8/1	5	
1	c/c	6/1	10/1	1	
1	c/c	3/1	2/28	3	
29	c/c	7/1	10/1	75	
2	c/c	6/15	9/30	10	
6	c/c	6/1	10/15	15	
3	c/c	6/1	10/15	10	
2	c/c	6/1	9/30	11	
2	c/c	6/1	9/30	7	
2	c/c	6/15	9/30	8	
12	c/c	6/15	9/15	35	
1	c/c	3/1	2/28	21	
1	c/c	3/1	2/28	6	
14	c/c	6/15	8/31	35	
5	c/c	6/1	10/15	22	
1	c/c	3/1	2/28	5	
7	c/c	8/15	9/30	10	
4	c/c	6/15	9/30	10	
4	c/c	6/15	10/1	50	
5	c/c	5/15	9/15	29	
12	c/c	6/15	10/1	42	
1	c/c	3/1	2/28	8	
1	c/c	6/15	10/1	22	
5	c/c	7/15	10/15	26	
28	c/c	6/1	10/15	56	
25	c/c	8/15	9/14	25	
6	c/c	6/15	10/15	42	
7	c/c	6/1	9/15	25	
3	c/c	7/1	9/30	42	
12	c/c	6/1	10/15	109	
8	c/c	6/15	10/15	34	
2	c/c	7/1	9/30	6	
3	h	6/1	11/30	16	
1	c/c	3/1	2/28	5	
5	c/c	6/1	9/30	20	
1	c/c	6/15	10/1	8	
3	c/c	6/1	9/30	38	
10	c/c	6/1	9/30	38	

C.F. = Coniferous Forest

G. = Grassland

c/c = Cow-calf

y = Yearling

h = Horse

* = Existing AMP Allotments

cing ephemeral vegetation. The major criteria used to rate rangeland suitability are distance from water, slope or other physical barriers, forage production, and the erosion rating for the soil.

Logged Sites

Logged sites, for purposes of this document are generally described as areas where the climax vegetative stage is dominated by trees; and the trees have been removed, at least partially, through logging. These logged sites do not fit any known classification scheme yet developed and, therefore, cannot be classified as to vegetative condition.

Waste Areas

Waste areas are generally characterized as areas dominated by slopes over 50 percent, tree canopy coverage over 70 percent, and rock outcrops, all of which are unavailable for livestock grazing.

FORAGE PRODUCTION

Estimated forage production figures were generated from ocular surveys, *Montana Grazing Guides* (USDA, SCS 1977) and *Montana Grazing Guides*, Amended 1983. Ocular reconnaissance method is a method of inventorying vegetation by estimating total forage density and percent composition. Density consists of general ocular estimates of overhead (vertical) ground cover for the current year's growth of all usable vegetation on each range type. Density is recorded as the decimal proportion of the ground that is covered as viewed from directly above. Composition values for each species are obtained through estimates of the percentage of the total density attributable to each.

Lists of proper use factors are prepared for each plant species. Proper use for a particular plant is the degree to which its current annual growth will be utilized by a grazing animal when the range is properly used. Proper use tables from a number of nearby areas were compared, adapted to local plant species, and adjusted for grazing patterns observed in this local area.

The proper use pastures were selected to be representative of the survey area done by that particular survey crew. The same persons that did the range survey did the proper use pasture survey. The proper use pasture must have a good actual use record, be representative of the area being surveyed (similar soil, vegetation, climatic influences), and be interpreted as properly used. Proper use was determined by some utilization studies and professional judgment.

A forage inventory survey is a best estimate at a point in time and space as to what a particular piece of rangeland can support. The actual grazing capacity on a piece of ground depends on a variety of ecological circumstances and on the grazing program, and is evidenced by adequate trend, accurate actual use

information, and livestock performance. When trend and actual use information was available it was used in lieu of survey information.

Proper use factors for each species are multiplied by the percentage of that species in the range type and added together to arrive at the average proper use factor. This figure is then multiplied by the average density for the type, to obtain a Forage Acre Factor (FAF). The FAF is multiplied by the percentage of usable forage to obtain a net FAF.

The Forage Acre Requirement (FAR) is determined by study of a proper use pasture in which actual use is known. The acres of each type are multiplied by the FAF for that type to determine forage acres for each type. These are added, then the sum is divided by AUMs of actual (proper) use to determine the FAR. The FAR is divided by the net FAF to determine the grazing capacity in acres per Animal Unit Month (AUM).

The *Montana Grazing Guides*, Amended 1983, provide a means by which grazable forest lands can be evaluated as to their potential to provide livestock forage. Grazing guides incorporate soils, climate, canopy density, ecological condition, forage value, and livestock distribution factors.

The new guides combine an ecological condition concept and a forage value rating concept to overcome, for the most part, the limitations of each concept used alone. By determining both ecological condition and a modified forage value rating, one can use them as the axis of a matrix to refine stocking estimates and retain an ecological condition concept. Understanding ecological condition of forest understory plant communities is more difficult than on rangeland because understory composition changes with canopy density. To develop information useful in building forest land grazing guides, composition must be determined in relation to canopy density as well as other environmental factors.

CURRENT PERMITTED USE AND TARGET STOCKING RATES

Current stocking levels in the Garnet Resource Area were arrived at from the ocular surveys made during the mid-1960s. Updated range surveys using SCS grazing guides were used to establish AUM target stocking rates anticipated to occur in the long term. Table K-1 gives information for I allotments, Table K-2 gives information for M allotments, and Table K-3 gives information for C allotments.

TABLE K-1
I CATEGORY ALLOTMENTS

Allot. No.	Allotment Name	Biome	Acres (BLM only)	1985 Permitted Use (BLM) AUMs	Excel- lent	Vegetative Condition (Acres of BLM only)					Unclas- sified	Logged
						Good	Fair	Poor	Waste			
7101	Bonita-Clinton-Potomac Assoc.	C.F.	12,143	215	4,807	2,799	739	160	739	—	2,899	
7102	Weaver	C.F.	4,410	121	5	197	672	51	2,554	149	782	
7104	Lund #1	C.F.	8,942	145	—	653	399	—	6,146	—	1,744	
7105	McMahon	C.F.	1,460	37	—	74	177	—	680	—	29	
7106	Iverson	C.F.	3,937	44	—	25	410	26	1,976	—	1,500	
7108	Lund #2	C.F.	3,518	140	—	557	538	45	1,516	—	862	
7109	Murray-Douglas Cr.	C.F.	5,908	124	—	585	1,123	11	4,189	—	—	
7219	C. Mannix	C.F.	2,000	55	62	11	7	—	1,520	—	400	
7221	Murphy	C.F.	1,103	58	—	436	32	—	635	—	—	
7312	H. Luthje	C.F.	2,866	324	764	1,589	151	—	341	21	—	
7324	Collins #2	C.F.	1,362	110	61	270	104	—	720	—	207	

C.F. = Coniferous Forest y = Yearling
 G. = Grassland h = Horse
 c/c = Cow-calf

TABLE K-2
M CATEGORY ALLOTMENTS

Allot. No.	Allotment Name	Biome	Acres (BLM only)	1985 Permitted Use (BLM) AUMs	Excel- lent	Vegetative Condition (Acres of BLM only)					Unclas- sified	Logged
						Good	Fair	Poor	Waste			
7115	Nelson	C.F.	1,481	113	—	—	791	—	602	—	160	
7118	* Five Mile	C.F.	480	60	—	—	162	—	77	—	241	
7119/	* McElwain Cr./											
7120	Common Allot.	C.F.	6,358	140	—	1,871	628	—	2,642	—	1,217	
7121	* Wales	C.F.	856	120	—	146	237	—	160	—	313	
7122	Koessler	C.F.	1,114	8	—	862	96	—	—	—	156	
7123	Lindbergh Cattle Co.	C.F.	6,056	101	130	1,024	—	883	4,019	—	—	
7207	* Braziel Cr.	C.F.	8,105	362	2,709	625	1,389	16	2,866	—	500	
7212	C. Graveley	C.F.	1,999	110	72	423	266	—	1,238	—	—	
7213	* Marcum Mtn.	C.F.	3,443	113	1,345	735	119	—	682	—	562	
7216	Keiley	C.F.	362	78	89	31	242	—	—	—	—	
7224	* Warm Sp.	C.F.	7,361	466	722	825	2,114	87	3,582	—	31	
7228	Henault	G.	80	15	—	—	—	—	—	80	—	
7229	Cochran	C.F.	320	41	73	104	—	—	143	—	—	
7303	Strand	C.F.	395	65	—	132	111	—	152	—	—	
7309	Johnson	C.F.	1,061	164	64	771	20	5	176	—	25	
7311	Lane	C.F.	1,836	210	1,371	60	345	13	1,086	195	—	
7313	J. Luthje	C.F.	1,003	192	32	603	20	—	348	—	—	
7314	Neal #1	G.	601	216	—	303	173	—	125	—	—	
7316	* Ram Mtn.	C.F.	4,151	398	—	2,336	677	—	818	—	320	
7319	* West Fork Buttes	G.	640	140	—	611	29	—	—	—	—	
7320	* Stewart Lake	G.	2,251	318	176	787	—	—	920	—	368	
7323	Jensen Ranch #2	G.	454	123	—	15	414	—	25	—	—	

CURRENT MANAGEMENT INFO.

No.	Livestock (BLM only) Class	Season of Use		Est. Forage Production (BLM only) AUMs
		From	To	
664	c/c	6/1	9/30	2,242
27	c/c	6/1	10/15	293
7	c/c	6/10	10/10	582
9	c/c	6/10	10/9	177
11	c/c	6/15	10/15	81
35	c/c	6/10	10/10	216
31	y	6/10	10/10	247
28	c/c	7/20	9/20	79
15	c/c	6/15	10/15	255
81	c/c	6/1	9/30	641
31	c/c	6/10	9/30	146

C.F. = Coniferous Forest
 G. = Grassland
 c/c = Cow-calf
 y = Yearling
 h = Horse
 * = Existing AMP Allotments

CURRENT MANAGEMENT INFO.

No.	Livestock (BLM only) Class	Season of Use		Est. Forage Production (BLM only) AUMs
		From	To	
28	c/c	6/16	10/15	162
30	c/c	7/1	8/31	87
46	c/c	6/20	9/20	769
40	c/c	6/1	8/31	150
2	c/c	6/15	10/14	156
25	c/c	6/15	10/15	309
121	c/c	7/1	9/30	1,190
32	c/c	6/15	9/30	172
32	c/c	6/1	9/15	898
26	c/c	6/1	8/31	91
117	c/c	6/16	10/15	898
5	c/c	6/15	9/30	15
9	c/c	6/1	10/15	63
13	c/c	6/1	10/31	71
55	c/c	6/25	9/30	213
53	c/c	6/15	10/14	235
53	c/c	7/1	12/31	287
48	c/c	5/15	9/30	216
72	c/c	5/15	10/31	737
35	c/c	6/1	9/30	207
71	c/c	6/1	10/15	381
27	c/c	6/1	10/15	199

TABLE K-3
C CATEGORY ALLOTMENTS

Allot. No.	Allotment Name	Biome	Acres (BLM only)	1985 Permitted Use (BLM) AUMs	Excel- lent	Vegetative Condition (Acres of BLM only)					Unclas- sified	Logged
						Good	Fair	Poor	Waste			
7110	Shelley	C.F.	200	4	—	—	—	—	—	100	100	
7111	Joseph	G.	80	11	—	—	—	—	—	80	—	
7112	Bearmouth	G.	132	27	—	—	—	—	—	132	—	
7113	Henderson	G.	100	15	—	—	—	—	—	100	—	
7114	Enman	C.F.	240	26	—	—	—	—	—	240	—	
7116	Lindbergh	C.F.	40	2	—	40	—	—	—	—	—	
7124	Snead	C.F.	40	4	—	—	—	—	33	—	7	
7201	*Pilgeram	C.F.	2,018	64	—	48	1,165	10	755	40	—	
7202	A. Beck	C.F.	640	30	—	—	264	29	347	—	—	
7203	D. Beck	G.	925	84	—	297	43	—	415	47	123	
7204	L. Beck	C.F.	200	49	—	—	—	—	—	200	—	
7205	Benson	C.F.	360	27	—	260	27	—	33	—	40	
7206	Gimlet Creek	C.F.	322	5	—	—	—	—	—	322	—	
7208	Coughlin, A.	C.F.	54	1	—	—	—	—	—	54	—	
7209	Dingwall	C.F.	40	3	—	—	—	—	—	40	—	
7210	Dutton	C.F.	440	23	—	400	40	—	—	—	—	
7211	Graveley, D.	C.F.	80	6	—	80	—	—	—	—	—	
7214	Hogan	G.	158	15	—	—	—	—	—	158	—	
7215	Hollenback	C.F.	40	10	—	—	—	—	—	40	—	
7217	Lingenfelter	C.F.	40	8	13	16	—	—	11	—	—	
7218	McCormick	G.	25	7	—	—	—	—	—	25	—	
7220	Mannix, F.	C.F.	40	8	—	—	—	—	—	40	—	
7222	Sturgeon Cr.	G.	205	35	—	—	—	—	—	205	—	
7223	Radtke #1	C.F.	106	7	—	—	160	—	—	—	—	
7225	Wohlers	G.	40	6	—	—	—	—	—	40	—	
7226	Weaver, J.	C.F.	197	35	—	—	—	—	—	197	—	
7227	Hughes	C.F.	40	22	—	—	—	—	—	40	—	
7230	Geary	G.	22	5	—	—	—	—	—	22	—	
7231	Sunny Slope	C.F.	280	10	—	—	—	—	—	280	—	
7232	Gilman	G.	160	10	—	—	—	—	—	160	—	
7301	Bauer	C.F.	279	13	—	—	279	—	—	—	—	
7302	Bissonette	C.F.	175	20	65	—	—	—	110	—	—	
7304	Collins #1	C.F.	237	42	—	157	48	—	32	—	—	
7305	Gillies	C.F.	80	8	—	—	—	—	—	80	—	
7306	Vick	C.F.	120	3	—	—	120	—	—	—	—	
7307	Jensen, W.	C.F.	565	15	86	—	—	—	479	—	—	
7308	Jensen Ranch #1	G.	160	56	160	—	—	—	—	—	—	
7310	Morrison	G.	80	25	—	—	—	—	—	80	—	
7315	Mungas	C.F.	231	22	—	177	—	—	54	—	—	
7317	X Diamond Bar	C.F.	255	25	45	—	—	—	170	40	—	
7318	Radtke #2	C.F.	280	33	—	38	—	—	49	—	193	
7321	Sanders	C.F.	573	56	322	50	—	—	201	—	—	
7322	Flint Creek	C.F.	300	34	—	90	—	—	210	—	—	
7325	Kolbeck	C.F.	40	6	—	—	—	—	—	40	—	
7326	Spieker	G.	16	16	—	—	—	—	—	16	—	
7501	McGillvray	G.	44	5	—	—	—	—	—	44	—	
7504	McIntosh	C.F.	150	20	—	—	—	—	—	150	—	
7505	DeLeo	G.	40	8	—	—	—	—	—	40	—	
7506	Reierson	C.F.	122	38	—	—	—	—	—	122	—	
7507	Mattice	C.F.	320	38	—	—	—	—	—	320	—	

APPENDIX L

MANAGEMENT OPPORTUNITIES AND OBJECTIVES FOR I ALLOTMENTS

Table L-1 displays resource opportunities, conflicts, and management objectives for all I allotments. Table L-2 displays the ranking of allotments for implementation of management changes, based on current BLM range management policy.

A member of socioeconomic and natural resource factors have been considered in the ranking of I allotments for implementation. Allotments with a high benefit cost ratio, high resource values, and significant use conflicts generally are a high priority for changes in management. Other factors considered include the potential for increased forage production, the livestock operator's dependency on public land for grazing, the need to coordinate with other land management agencies, and the projected cost of implementation. The recommendations of the public, other agencies, and the District Grazing Advisory Board have been considered prior to final ranking.

This ranking will be used to select allotments for implementation, but is subject to change as new or better information becomes available. Examples of new considerations are annual budget constraints within BLM, an operators willingness to contribute to the cost of range improvements, unexpected public controversy, etc. The benefit cost data used in this analysis represents an initial estimate of the number and cost of improvements needed. Better estimates will be available as field inspections of allotments are conducted.

TABLE L-1
MANAGEMENT OPPORTUNITIES AND OBJECTIVES

Allotment No.	Allotment Name	Resource Opportunities/Problem	Resource Management Objectives
7101	Bonita-Clinton-Potomac	Majority of the livestock vegetation is in good and excellent condition. Scattered areas of riparian habitat are in unsatisfactory condition. Conflicts exist over extensive areas between livestock grazing and reforestation. Vegetative trend is generally static. Noxious weeds (knapweed) are common throughout the area.	Maintain the existing vegetative condition. Improve riparian vegetation where necessary in Cramer Cr. to a satisfactory condition. Resolve livestock/reforestation conflicts through the initiation of grazing management systems. Continue to improve upon present vegetative trend. Initiate noxious weed control where majority landowner cooperation can be obtained.
7102	Weaver	Vegetative trend is generally static; vegetative condition is generally fair with some poor. Generally riparian areas are in unsatisfactory condition. Reforestation/livestock grazing conflicts are serious, especially on slopes under 40%. Noxious weeds (knapweed) are common throughout the area.	Improve fair and poor condition range to good condition. Improve the riparian habitat to a satisfactory condition in the Ten Mile drainage. Resolve livestock/reforestation conflicts through the initiation of grazing management systems. Initiate noxious weed control where majority landowner cooperation can be obtained, especially in the Ten Mile drainage.
7104	Lund #1	Big game winter range areas are in unsatisfactory condition. Most riparian habitat areas are in unsatisfactory condition. Reforestation/livestock grazing conflicts are serious throughout the area. Noxious weeds (knapweed) are common throughout the area.	Reduce livestock use on winter game range on the Clark Fork face along I-90 thru grazing management systems. Improve riparian habitat to satisfactory condition in Upper Mulkey, Black Bear, and Upper Rattler Gulch. Resolve reforestation/livestock grazing conflicts through grazing management systems. Initiate noxious weed control where majority landowner cooperation can be obtained.

Allotment No.	Allotment Name	Resource Opportunities/Problem	Resource Management Objectives
7105	McMahon	Riparian areas are in unsatisfactory condition. Vegetative trend is generally static in a fair condition. Reforestation/livestock grazing conflicts are serious on a few acres. Noxious weed (knapweed and musk thistle) are common throughout the area.	Improve riparian areas to a satisfactory condition, especially in Upper Packer Gulch. Improve vegetative condition to good or excellent condition in Upper Dry Mulkey Gulch. Initiate grazing management systems on areas where reforestation/livestock grazing conflicts exist. Initiate noxious weed control in areas where majority landowner cooperation can be obtained.
7106	Iverson	Riparian areas are in unsatisfactory condition. Vegetative trend is static; vegetative condition is generally fair. Reforestation/livestock conflicts are widespread.	Improve all riparian areas to a satisfactory condition through initiation of grazing management systems. Improve range to good and excellent condition. Initiate grazing management systems on the entire area to reduce reforestation/grazing conflicts.
7108	Lund #2	Big game winter range areas are in unsatisfactory condition. Most riparian habitat areas are in unsatisfactory condition. Reforestation/livestock grazing conflicts are serious throughout the area. Noxious weeds (knapweed) are common throughout the area.	Reduce livestock use on winter game range on the Clark Fork face along I-90 thru grazing management systems. Improve riparian habitat to satisfactory condition in Upper Mulkey, Black Bear, and Upper Rattler Gulch. Resolve reforestation/livestock grazing conflicts through grazing management systems. Initiate noxious weed control where majority landowner cooperation can be obtained.
7109	Murray-Douglas Cr.	Vegetation is generally in a good condition, and trend is static. Riparian areas are in unsatisfactory condition in Murray Cr. and satisfactory in Douglas Cr. Proposed forest management actions will create livestock/reforestation conflicts.	Maintain or improve vegetative condition. Improve riparian habitat to satisfactory condition in Murray Cr. and maintain present condition in Douglas Creek. Initiate a grazing management system to resolve potential reforestation/livestock conflicts.
7219	C. Mannix	Most riparian habitat areas in this unit are in unsatisfactory condition. Vegetative trend is generally static or slightly downward. Noxious weeds (knapweed) have invaded lower parts of this area.	Improve riparian habitat areas to satisfactory condition, especially in main Cottonwood Cr. Maintain or improve vegetative trend. Initiate noxious weed control along logging roads and skid trails.
7221	Murphy	Vegetative trend is generally in a static or downward trend. Riparian habitat is generally satisfactory with some areas along main Warm Spring Creek in unsatisfactory condition.	Maintain or improve vegetative trend through the implementation of grazing management systems. Improve riparian habitat to a satisfactory condition.
7312	H. Luthje	Vegetative condition is generally high good and trend is static. Riparian habitat is in satisfactory condition. Proposed forest management actions may create reforestation/riparian/livestock grazing conflicts.	Maintain vegetative condition and trend. Maintain riparian habitat in satisfactory condition. Install grazing management systems to resolve potential livestock/reforestation/riparian conflicts.
7324	Collins #2	Vegetative trend is generally upward. Riparian areas are generally in satisfactory condition, except for a few small isolated areas where overuse by both livestock and big game on browse plants is evident. Reforestation problems are primarily due to heavy grass sodding.	Maintain vegetative trend. Improve riparian problems and reduce livestock use on browse plants through the installation of grazing management systems. Temporarily fence reforestation efforts to control livestock grazing around plantations that have been scarified and hand planted.

TABLE L-2
ALLOTMENT RANKING FOR 1 ALLOTMENTS

Allotment No.	Allotment Name	Total Cost x \$1000	Benefit Cost Ratio	Internal Rate of Return	Critical Resource Values	Use Conflicts	Need for Change in Condition	Percent Increase	Dependency*	Other Agency Coordination	Other Factors Considered	Rank
7101	Bonita-Clinton-Potomac	22.0	3.6		Forest-mod Wildlife-low Water-mod	Reforestation areas, spring game range, riparian area	Low/mod	91	High	High-CT/SCS/PCT	Very high interest by all parties	1
7102	Weaver	33.5	2.8	10.6	Forest-low Water-mod Veg-high	Reforestation, riparian area	Low	12	Mod	None	—	5
7104	Lund #1	54.1	2.3	12.6	Forest-high Water-mod Wildlife-high	Reforestation, riparian, winter range	Mod	38	Mod	High-CT/PCT	Extensive timber harvest by BLM/CT/PCT	2
7105	McMahon	72.6	1.9	4.7	Forest-mod	Reforestation	Low	25	High	High-CT	—	8
7106	Iverson	86.5	1.7	7.3	Forest-high Water-mod	Reforestation, riparian	Mod	64	High	None	Main road to high rec. use area, Garnet Ghost Town	4
7108	Lund # 2	99.5	1.7	9.6	Forest-high Water-mod Wildlife-mod	Reforestation, riparian, winter range-mule deer	Mod	15	Mod	High-CT/PCT	Extensive timber harvest	3
7109	Murray-Douglas Cr.	116.8	1.6	14.8	Forest-mod Wildlife-mod	Proposed reforestation, summer and fall range	Low	61	Low	Mod-CT	Proposed long-term timber harvest. Important elk hab.	6
7219	C. Mannix	128.7	1.5	3.2	Forest-low Veg-mod Water-mod	Reforestation, grass species, riparian	Low/mod	3	Mod	None	Watershed potential, fish habitat	7
7221	Murphy	147.7	1.4	0.8	Water-mod Veg-low	Riparian, grass species	Low	45	High	None	—	9
7312	H. Luthje	163.9	1.3	8.0	Forest-mod	Proposed sales	Low	48	Low	High-FS	Coord. FS/BLM Timber Sale	10
7324	Collins #2	169.5	1.4	13.0	Forest-mod Wildlife-mod	Reforestation, winter and spring range	Low	20	Low	None	—	11

* Dependency of ranch operation on use of public lands in grazing operation

PCT — Plum Creek Timber
 CT — Champion Timberlands
 SCS — Soil Conservation Service
 FS — Forest Service

1. The totals in this column are cumulative discounted costs.

APPENDIX M

COORDINATING ELK AND TIMBER MANAGEMENT RECOMMENDATIONS FROM THE FINAL REPORT OF THE MONTANA COOPERATIVE ELK-LOGGING STUDY 1970-1985

SECURITY DURING LOGGING OPERATIONS

Recommendation

Preparation of timber sales in elk summer range should include planning to attain minimum losses in habitat security during the period of road construction and logging.

Findings and Discussion

Entry to an area occupied by elk, for any purpose, reduces the security of the habitat in that area. Research in four different studies compared elk responses to situations ranging from large scale logging operations with all roads continuously accessible to small operations in which roads were only open to the logging contractor. Elk responses to road building and logging demonstrated that significant losses in security can be minimized when appropriate restrictions are used by the land manager. The degree of security loss is directly related to the number of acres disturbed, to the length of time the disturbance continues, and to the timing of field operations.

Displacement of elk was detected as far as four miles from the cutting units in large timber sales in which roads were open to nonlogging traffic. In one study, herd displacement was to an adjacent drainage and then beyond that drainage when the ridgeline was disturbed. In another investigation, displacement was down a ridgeline for two miles through undisturbed timber and over a point. In both cases, topographic features provided line-of-sight barriers between elk and the logging activity. Conversely, during relatively small timber sales, and particularly when roads were only open to the logging contractor, displacement of elk was generally less than one-half mile from the center of logging activities. In all studies, the time required for elk to return to the disturbed habitat was directly related to the distance they were displaced.

Security for elk can be satisfied by any habitat in which animals do not feel threatened or a habitat in which they will remain in the face of disturbance. There are a variety of ways in which the manager can reduce the distance moved by elk and simultaneously increase the probability of immediate return by animals displaced:

Disturbance by heavy equipment can be completed in the shortest possible time, and, if possible, during periods of the year when elk are not present. It has been shown, for example, that individual elk tend to use more level ground in early summer and move to steeper ground in the late summer and fall.

Adjacent drainages or areas into which elk might be expected to move can be made more secure by road closures.

Logging activity can be confined to a single drainage at a time and all work completed in the shortest possible time frame. Intensive activity over a single season has far less influence on elk than a low level of intensity continued over several seasons.

Displacement of elk is significantly reduced where access to the timber sale area is limited and nonlogging traffic is controlled. Recreational use of firearms by anyone working within an area closed to the general public should be prohibited.

REDISTRIBUTION OF ELK

Recommendation

Timber sales should be planned in a manner that minimizes potential problems arising from temporal redistribution of elk onto adjacent or other nearby property.

Findings and Discussion

In all four of the areas in which elk response to timber sales was studied, some movement away from the sale area was recorded. On these areas, movement by elk created no specific problems because there was adequate space available. Nevertheless, timber sales may result in local modification of the way elk utilize their home ranges. Such modifications sometimes result in increased use of nearby private lands or public lands not normally used by elk. It is usually possible to achieve greater compatibility in land use if sale planning recognizes and attempts to minimize potential problems involving increased elk use on adjacent properties where elk presence is undesirable. Knowledge of habitat use patterns by local elk herds and the availability of other nearby habitats will benefit the land manager; consultation with state and federal wildlife biologists will also be of considerable benefit in such assessments.

TRADITIONAL HOME RANGE USE BY ELK

Recommendation

Before timber sales are established and new roads are constructed, information should be obtained concerning traditional use patterns and distribution of elk harvest so that cutting can be timed and roads placed to have the least undesirable effect on both elk and elk hunting.

Findings and Discussion

Elk are very traditional in the way they distribute themselves over time and space. Home range size and shape vary considerably among individuals and areas, but there is comparatively little variation in the size and shape of home ranges used by the same animal from year to year. This is true for individuals and for herds as well. Data from frequent relocations of many elk over the course of several years has demonstrated annual home ranges varying from about 5 to nearly 200 square miles, but variations in the location of individual animals in consecutive seasons was very low. Individual elk usually use the same winter and summer areas from year to year throughout their lifetime; this traditional elk use of an area can override normal caution in an area rendered temporarily unsuitable by disturbance and habitat alteration.

Roading and logging of an area with high traditional elk use could lead to undesirable overharvest and a severe decline of the herd if hunting seasons and/or road closures are not adjusted to compensate for the reduction in habitat security. Studies of wildlife throughout the world have shown that habitat preference is learned as well as innate. This learned preference, called habitat imprinting, may be as important a consideration in elk habitat management as innate preferences. If, over several years, mortality of adult cows exceeds recruitment in a group of elk traditionally using a particular area, elk use of that area may decline to zero. Because elk are slow to pioneer and become established in a new area, local elimination may require many years before elk use is reestablished.

ROAD CONSTRUCTION AND DESIGN

Recommendation

As a part of the location and design of transportation systems, existing habitat occupancy and movement patterns and probable elk crossing areas should be identified and provisions made to maintain security for unimpeded movement.

Findings and Discussion

Both the location and density of forest roads have been shown to be disturbing to elk security on most elk ranges in North America. On study areas in Montana, most of the elk use of sideslopes in moderate to large drainages occurred above the lower third of the slope. In drainage headwaters the lower third of the slope appeared to provide the most important habitat. Elk travel routes from one drainage to another crossed ridges through saddles and were often easy to identify. Road construction in these sites resulted in declines or elimination of elk use of such crossings. Elk have also exhibited a preference for crossing ridges in sections where visibility is low and security

high, often where dense timber and/or topographic visual obstructions are present. Alteration of such crossing areas can be especially critical during the hunting season.

While any road constructed will tend to reduce the security level of existing elk habitat, losses in security can be significantly reduced if initial road designs and locations recognize existing elk behavior, habitat use, and probable response to new roads. A number of considerations can help to minimize the loss of habitat security:

- Locate permanent and high volume traffic roads in those areas least used by elk.

- Design secondary roads, in both construction and layout, to facilitate eventual closure. This is particularly important where roads enter drainage heads.

- Maintain frequent dense cover areas adjacent to the road.

- Avoid road construction in saddles or low divides frequented by elk in crossing ridges between drainages.

- Construct roads to the lowest standard that will meet management objectives. In important elk range this usually implies a low-speed, single-track construction without large cut slopes, fills, or straight stretches.

- Dispose of road right-of-way slash so it does not inhibit elk movement.

- Locate roads, even temporary roads, to avoid disturbance of moist sites and other areas of concentrated use by elk.

- Avoid areas of important elk winter range.

ROAD MANAGEMENT

Recommendation

Where maintenance of elk habitat quality and security is an important consideration, open road densities should be held to a low level, and every open road should be carefully evaluated to determine the possible consequences for elk.

Findings and Discussion

It has been repeatedly documented, in Montana and elsewhere throughout North American elk range, that vehicle traffic on forest roads evokes an avoidance response by elk. Even though the habitat near forest roads is fully available to elk, it cannot be effectively utilized. Declines in elk use have been detected as far as two miles from open roads, but significant reductions in habitat effectiveness are usually confined to an area within a half mile. The loss of habitat effectiveness has been shown to be greatest near primary roads and least near primitive roads, greatest where cover is poor and least where

cover is good, and greater during the hunting season than at any other time of the year. As a general average, habitat effectiveness can be expected to decline by one-fourth when open road densities are one mile per section and by one-half when road densities are two miles per section. Losses in habitat effectiveness for elk can be at least partially mitigated by imposing strict design and location standards during road construction. Losses can be greatly reduced through appropriate traffic control and road closures.

Roads, and the people and traffic associated with them, have a more significant influence on elk security than most other factors combined. Few considerations in forest management appear to provide a better opportunity for immediate mitigation in the management of elk habitat than road closures.

Some roads are needed for timber harvest, recreation, fire control, firewood cutting, and a variety of other purposes, including access by hunters. Where the maintenance of elk habitat security is an important consideration, requirements for public access should be identified prior to road design and construction, and all roads remaining open should be essential to an identified need.

Criteria for Road Closure Selections

Available data demonstrate that every road constructed in elk habitat is a potentially negative influence for elk. It is also clear that some roads are more disturbing than others. When choices are possible, the following criteria are suggested as guides for selection of roads to be closed in areas where elk habitat is an important consideration. As a general rule, yearlong closure is preferred to seasonal closure, but some specific advantages are possible with certain seasonal closures as noted. High priorities for closure include:

- roads in the heads of drainages, saddles, and low divides;
- roads through moist areas and wet meadows;
- loop roads that encourage through traffic;
- trunk roads with many dead-end side roads under one-half mile in length;
- midslope roads in the lower two-thirds of the drainages (especially in fall);
- roads in known calving areas (especially in spring);
- roads in winter range concentration areas (especially in winter); and
- roads in areas with poor cover (especially in fall).

AREA CLOSURES DURING THE HUNTING SEASON

Recommendation

Elk management goals and objectives should be clearly defined before imposing travel restrictions.

Findings and Discussion

Two studies in Montana involved area closures that restricted motor vehicles to a few selected roads during the general hunting season. Several other studies involved radio tracking of one or more elk during the hunting season.

The Judith Road Closure Study indicated that travel restrictions did not change elk distribution or temporal distribution of hunters. Apparently this area closure was not needed to "protect" elk where escape cover was adequate and well distributed (at least two-thirds cover to one-third open). Hunters spent more time walking; consequently they reported seeing and killing more elk under the restrictions than during the unrestricted control seasons. Their unsolicited comments showed a preference for limited access because of the "higher quality" hunt it afforded.

The Ruby Road Closure Study, on the other hand, showed that area closures can cause significant changes in elk distribution and hunter use of an area. This area was characterized by a relatively open, broken forest, with gentle terrain and easy access (one-third cover to two-thirds open). During seasons of restricted vehicle access, elk stayed in the restricted area longer and in greater numbers than during seasons of unrestricted access. This resulted in a more even distribution of hunting pressure, elk sightings, and elk harvest through the season, but did not increase total amounts. Hunters also spent more time walking during the restriction period. Most hunters interviewed believed that the area closure had increased the quality of their hunt.

Road density and pattern, including off-road travel, play an important role in determining the security level an area provides to elk during the hunting season. An area with sparse cover and low road densities may provide as much security as the same sized area with heavy cover and high road densities. In the Ruby portion of this study, the security level was significantly increased by reducing the number of open roads and eliminating off-road travel. Road density and cover quality are both important when considering adequate elk security during the hunting season. Managers should be especially cognizant of the following:

Restrictions will increase the time hunters spend walking, and as a result increase the number of animals seen and possibly increase the kill. They also will generally be accepted as providing a higher quality hunt, make retrieval of downed animals more difficult, and require time and money for implementation and enforcement.

Where cover is poor (one-third or less of total area) and road densities are high (more than one-half mile of road per square mile), restrictions will likely reduce harassment and emigration of elk and reduce the early elk harvest, but increase the uniformity of harvest throughout the season.

Where cover is good (at least two-thirds of total area) and open road densities are low (less than one-half mile of road per square mile), restrictions will probably have less influence on elk distribution and elk harvest. Where possible, elk will seek security at least a mile from open roads.

CLEARCUTS

Recommendation

In order to assure that forage produced in clearcuts is in fact available for use by elk, openings should satisfy the following criteria:

Slash cleanup inside the clearcuts should reduce average slash depths below 1.5 feet. Slash in excess of 1.5 feet will reduce elk use by more than 50 percent.

Openings should be small, even though openings up to 100 acres may be acceptable where the adjacent forest edge supplies adequate security.

In western Montana, some security cover is provided within openings by vegetation growth, and elk use increases in older cuttings. In central Montana, the younger openings are preferred by elk; security should be provided by designing clearcuts so that the best available cover occurs at the uncut edge. Thinning adjacent to clearcuts is not recommended.

Additional security, which will significantly increase elk use of clearcut openings, can be provided with appropriate road closures.

Findings and Discussion

Graphic analyses of the density of elk pellet groups inside clearcuts in central and western Montana have identified several variables that influence elk use of these openings. The relative importance of different variables depends on the environment available to elk and the behavioral patterns associated with their use of that environment.

In central Montana, large natural openings are a normal component of both summer and winter ranges. Elk inhabiting these areas are far more tolerant of large clearcuts than elk in western Montana where large natural openings are unusual. A preference for small openings was indicated, particularly in western Montana, but cutting units as large as 100 acres may be acceptable when the adjacent forest edge supplies adequate cover.

Throughout Montana elk ranges, slash within the opening was one of the most important determinants of elk use. There was no indicated preference among slash disposal methods as long as average slash depths were reduced below 1.5 feet. Broadcast burning, however, is considered preferable to mechanical methods.

Elk response to vegetation growth inside an opening differs between central and western Montana in a way clearly related to the habitual feeding behavior of elk in the respective areas. In the west, where new growth consists of both trees and shrubs and available forage is often browse plants, elk use of openings increases as vegetation height increases. Eastward, where new growth is mostly limited to trees, and available forage is primarily grasses and forbs, elk use of openings declines as tree heights increase and understory plants are shaded. Corollary to the indicated preference for openings lacking tall cover, central Montana elk require the greater security provided by good cover at the edge of the opening. These elk also demonstrate a positive response to openings without vehicle access.

Available data do not demonstrate that clearcuts in any configuration are clearly beneficial to elk, although it is known that forage production is increased in openings. Neither is it possible to show that clearcuts have detrimental effects if the opening can be developed without reducing overall habitat security for elk.

COVER TYPE

Recommendation

Management efforts for timber and elk should be coordinated to recognize the importance of cover type in addition to habitat type. Important or key areas for elk should be identified on a site-specific basis during the planning and implementation of silvicultural practices.

Findings and Discussion

Although various classification systems, such as habitat typing, give a reasonable description of forest community composition and ecological potential, the structural characteristics or cover types can vary considerably within the classifications over time. Elk use of cover types is often specific, changing in both space and time during summer and fall. For example, moist sites may be highly preferred from June through September but not necessarily sought out in October and November. Relatively advanced seral stages and more dense timber stands may not be as important June through August as in the fall months. Cover type is usually more important than habitat type in determining elk use during summer and fall.

MOIST SITES

Recommendation

Moist summer range sites, in combination with other habitat components which are heavily used by elk, should be identified and the overall integrity of these habitat components should be maintained.

Findings and Discussion

Findings from all study areas indicate that elk prefer moist sites during the summer months (June through September). Preferred elk summer range exists when these moist sites are interspersed with other necessary habitat components, including a diversity of timber types and densities, especially near drainage heads. Such sites are often found at the heads of drainages, bordering streams or marshy meadows, or occupying moist swales or benches. These sites are usually found within the *Abies lasiocarpa* habitat type series (USDA, FS 1977) both east and west of the Continental Divide. In central Montana, these sites are usually found within the Abla-Caca, Abla(Pial)-Vasc, Abla-Vasc (Thoc), and Abla-Luhi habitat types. In western Montana, moist sites are generally found within parts of the Abla-Luhi (Mefe), Abla-Clun, Abla-Mefe, Abla-Gatr, and Abla-Caca habitat types. Moist types in the *Picea engelmannii* series provide similar habitats.

Moist sites have been identified as a very important component of elk summer range, especially when they occur within the *Abies lasiocarpa* climax series. These habitats are primarily important because of their high forage production, good nutritional quality, diverse species composition, and high cover values when interspersed with trees. Because the forage is utilized after calving and prior to the breeding season, it may be important in both reproduction and winter survival.

Selective withdrawal from treatment, along with protection of peripheral zones to provide continuous cover with the uncut forest, will benefit elk. New or planned roads passing near these sites should be closed to summer and fall vehicular traffic except perhaps for light, intermittent administrative use. Roads that already occur near moist areas should be closely evaluated for travel restrictions.

Moist sites are more critical during dry summers when precipitation from the previous winter and early spring (October through May) approaches 25 percent below normal. During such years, elk will benefit if land managers shift human activities and/or livestock grazing away from moist sites, particularly in areas with little moist summer range.

ELK AND CATTLE RELATIONSHIPS

Recommendation

The effect of every proposed timber sale on elk and livestock management objectives should be evaluated. Allocation of area may be more practical and ecologically sound than allocation of forage. Cattle use of newly logged areas which have been previously used exclusively by elk should be discouraged.

Findings and Discussion

The presence and distribution of domestic cattle substantially influenced the distribution of elk on the study area which had summer range cattle allotments. Systematic observation revealed a significant tendency for elk to avoid cattle. In any habitat, the probability of elk use concurrent with cattle use was about one-half the probability of elk use in the absence of cattle.

Road construction and other associated timber harvest activities occasionally "open up" new areas for grazing or alter existing cattle grazing allotments on elk summer ranges. Such activities increase the potential for elk and cattle interactions.

WINTER RANGES

Recommendation

Timbered areas adjacent to primary winter foraging areas should be managed to maintain the integrity of cover for elk. Where timber harvest is acceptable, slash cleanup and logging should be scheduled outside the winter period.

Findings and Discussion

Elk on winter range in western Montana preferred dense timber stands and larger trees for bedding cover. Bedding sites were usually in close proximity to a feeding area such as a south facing slope with a good stand of browse or perennial grasses. Timbered areas that received moderate to heavy elk bedding use prior to logging were not used for bedding during winters following heavy selection logging. Elimination of preferred bedding sites subjected elk to decreased energy intake and increased energy output because of increased travel between suitable bedding and feeding sites.

Winter range conditions vary greatly across Montana. To the east, elk forage on grasslands and seek cover in adjacent timber stands. Snow depths are usually low to moderate, and elk wintering in these areas may venture far from timber cover when undisturbed. When snow does get deep, elk will seek cover. Logging adjacent to grassland winter ranges will normally be detrimental to elk. Forage conditions on these ranges may be improved by range rehabilitation, grazing management, or prescribed fire.

West of the Continental Divide, on important and already well-used browse ranges, the probability of improvement by logging is minimal. Where winter range quality is declining or is already poor, especially on shrub ranges, several management options offer possibilities for enhancing winter range. The presence of larger trees in a dense multistory stand is desirable. Where winter ranges are heavily forested and forage conditions are poor, the timber overstory can be removed in small patches to enhance forage production on south to west facing slopes. The design and layout openings should be planned so that adjacent forest cover on benches and finger ridges will provide thermal cover and bedding sites. Slash clean-up and logging should be scheduled outside the winter period.

Because of the relative importance of productive elk winter range and the narrow margin for error, any contemplated modification of timber stands should be planned on a site-by-site basis, with primary emphasis on maintaining adequate cover adjacent to productive forage areas. It is unlikely that winter ranges ever meet the nutritional needs of elk completely, so some winter weight loss will always be experienced. Elk productivity and, under severe conditions, survival will decrease as weight loss increases. Thus, conservation of stored energy as well as energy intake, is important to wintering elk.

GLOSSARY

The glossary contains explanations of acronyms, abbreviations, and terms.

ACEC. Area of Critical Environmental Concern. An area within the public lands where special management attention is required to protect and prevent irreparable damage to important historic values, cultural values, scenic values, fish and wildlife resources, or other natural systems; or to protect life and safety from natural hazards.

ACTIVE PREFERENCE. Number of AUMs currently allowed in a grazing authorization.

ACTIVITY PLAN. A site-specific plan for the management of one or more resources (i.e., CMP, AMP). Activity plans implement decisions made in the Resource Management Plan.

AESTHETICS. Evaluations and considerations concerned with the sensory quality of resources (sight, sound, smell, taste, and touch) and especially with respect to judgment about their pleasurable qualities.

ALLOWABLE CUT. The amount of timber which can be harvested on an annual or decadal basis consistent with the principle of sustained yield. The allowable cut includes all planned timber harvest volumes exclusive of such products as Christmas trees, branches, and cones.

ALLUVIAL FAN. A cone shaped deposit of alluvium made by a stream where it runs out onto a level plain or meets a slower stream.

ALLUVIUM. A general term for all detrital deposits resulting from the modern rivers; including sediments laid down in river beds, flood plains, fans at the foot of mountain slopes, and estuaries. The term is intended to apply to stream deposits of comparatively recent time.

AMENITIES. Those resource values for which market values are not or can not be established.

AMP. Allotment Management Plan. A plan for livestock grazing management designed to attain specific goals for improving the range, watershed, soils, wildlife, and/or forest resources on a grazing allotment.

ASH CAP. A surface layer of soil made up of fine fragments of glass and volcanic debris.

AUM. Animal Unit Month. The amount of forage necessary for the complete sustenance of one cow, or its equivalent (one horse or five sheep, all over 6 months old) for 1 month; also, a unit of measurement of grazing privilege.

AVAILABLE COMMERCIAL FOREST LAND. That portion of the timber production base available or remaining after consideration of other resource values and resolution of identified conflicts in the RMP process, and after wilderness study areas are identified.



AVOIDANCE AREAS. Land areas generally unsuitable for inclusion in utility corridors because they pose particular land use or environmental impacts that would be difficult or impossible to mitigate. This may vary by type of facility.

BEST MANAGEMENT PRACTICES. See BMP.

BFPA. Blackfoot Forest Protection Association.

BIG GAME SPECIES. Those species of large mammals normally managed as a sport hunting resource.

BIOLOGICAL CONTROL. Control of pests by means of living organisms like predators, parasites, and disease producing organisms.

BLM. Bureau of Land Management.

BMP. Best Management Practices. These practices are listed in Appendix A.

BOARD FOOT. A unit of solid wood, 1-foot square and 1-inch thick.

BROWSE. As a verb, to consume or to feed on (a plant); as a noun, the tender shoots, twigs, and leaves of trees and shrubs, often used as food by cattle, deer, elk, and other animals.

BSMA. Blackfoot Special Management Area. A cooperatively managed road closure area east of the Lubrecht Experimental Forest in the Garnet Range.

BUFFER STRIP. Designated land along the perimeter of a special feature that is set up to resist, absorb, or otherwise protect the feature from the effects of other land uses.

C ALLOTMENTS. Grazing allotments that have been selected for custodial management. See Appendix G.

C&MU. Classification and Multiple Use Act. Under the Classification and Multiple Use Act of September 19, 1964, lands administered by the BLM were to be classified for retention or disposal. Publication of notice for proposed classification had the effect of segregating the lands from the mining and mineral leasing laws (Maley 1983).

CANOPY COVER. The percentage of ground covered when a polygon drawn around the extremities of the undisturbed canopy of each plant is projected on the ground and all such projections on a given area are added together.

CFL. Commercial Forest Land. Forest land that is now producing or is capable of producing at least 20 cubic feet per acre per year of commercial coniferous tree species.

CHECKERBOARD OWNERSHIP. A situation where areas of public lands alternate with lands in other ownership causing the land ownership pattern to resemble a checkerboard. The situation originated in western Montana in 1883, when Congress granted lands to the Northern Pacific company to encourage the building of a railroad from Lake Superior to Puget Sound. In order to offer financial incentives at no cost to the taxpayer, Congress granted alternate sections of lands along the route. The building of the railroad

tended to double the value of the remaining public land. This land was then offered to homesteaders with total receipt to the government theoretically being the same as if all the land had been sold without the grant to the railroad. In practice, however, much of the public land was not suitable for homesteading and remained in public ownership.

CHERRYSTEMMED. The description of a long, narrow protrusion into the boundary of a wilderness study area.

CLEARCUT. An area where all trees are harvested both merchantable and unmerchantable.

CLEARCUT EQUIVALENCY. The number of acres of partial tree removal that equals one-acre of clearcut.

CLIMAX. The highest ecological development of a plant community capable of perpetuation under the prevailing climatic and soil conditions.

CMAI. Culmination of the Mean Annual Increment.

CMP. Compartment Management Plan. A compartment is a geographical area such as a drainage or road tributary area. The compartment management plan identifies, describes, and classifies the various stands in the CMP area. The plan also includes silvicultural prescriptions for each stand, priorities for treatment, and a transportation plan.

COMMERCIAL THINNING. Partial cuttings made in merchantable stands (40 to 70 years old) in order to stimulate the growth of remaining trees and increase total yield from the stand.

CONFINEMENT. An action that uses natural or preconstructed barriers or environmental conditions to confine a fire to a predetermined area.

CONTACT METAMORPHIC DEPOSIT. A deposit of mineral material formed when an igneous intrusion of magma interacts with the surrounding rock.

CORE AREA. The area addressed in the Garnet Resource Management Area. It includes Missoula, Granite, and Powell counties in Montana.

CONTROL. An immediate suppression action with enough forces to suppress a fire within the first burning period.

CRINOID DEBRIS. The remains of a type of echinoderm in fossil form.

CULTURAL RESOURCES. Any cultural property, including records and physical remains related to such property, and any traditional lifeway value.

DISPERSED RECREATION. A type of recreation that requires a variety of sites yet needs no special facilities.

EA. Environmental Assessment. A systematic environmental analysis of site-specific BLM activities used to determine whether such activities have a significant effect on the quality of the human environment and whether a formal environmental impact statement is required.

EARTHFLOW. A slow flow of earth lubricated with water.

EDGE EFFECT. Refers to the fact that wildlife populations are generally highest in the areas where a variety of habitats are available in a relatively small area. Also, refers to the ecotone created where plant communities of structural conditions within a community come together.

EIS. Environmental Impact Statement. A formal document to be filed with the Environmental Protection Agency that considers significant environmental impacts expected from implementation of a major federal action.

ENDANGERED SPECIES. Those species of plants or animals classified by the Secretary of the Interior or the Secretary of Commerce as endangered, pursuant to Section 4 of the Endangered Species Act. Means any species which is in danger of extinction throughout all or a significant portion of its range.

EPHEMERAL STREAM. A stream that flows only after rains or during snowmelt.

ERS. Economic Research Services, USDA.

FAF. Forage Acre Factor.

FAIR MARKET VALUE. Regarding the sale of BLM forest products, the dollar value that commercial operators are willing to bid on a competitive sale.

FAR. Forage Acre Requirement.

FLPMA. Federal Land Policy and Management Act of 1976.

FORAGE. Vegetation of all forms available for animal consumption.

FORB. A broadleaved herb that is not a grass or grasslike.

FOREGROUND VIEWING AREA. A part of the scenic view where texture and form of individual items in the landscape are clearly seen.

FOREST CANOPY. The more or less continuous cover of branches and foliage formed collectively by the crowns of adjacent trees and other woody growth.

FS. Forest Service.

FWS. Fish and Wildlife Service.

GAME BIRD SPECIES. Those species of birds normally managed as a sport hunting resource.

GLACIAL TILL. Unstratified and unsorted sediment carried or deposited by a glacier.

GPA. Garnet Preservation Association. A non-profit corporation set up to assist the BLM in management and preservation activities at Garnet Ghost Town.

GRA. Garnet Resource Area. The GRA is located in northwestern Montana and is part of the Butte District of the Bureau of Land Management.

GRANITIC INTRUSION. A geologic process whereby molten igneous rock of the granitic type is implaced into previously existing rocks. This process often alters the older rocks and may result in deposits of economic minerals.

HABITAT. A specific set of physical conditions that surround the single species, a group of species, or a large community. In wildlife management, the major elements of habitat are considered to be food, water, cover, and living space.

HABITAT TYPE. An aggregation of all land areas potentially capable of producing similar plant communities at climax.

HIDING COVER. Vegetation capable of hiding 90 percent of a standing adult elk from human view at less than 200 feet distance. Generally, a minimum of 200 trees per acre 8 feet tall meets security requirements on forest regeneration units.

HIGH VALUE RECREATION SITE. A site relatively undisturbed by other activities such as timber harvest, utility and transportation corridors, or livestock grazing in which vegetation is in a relatively natural condition.

HMP. Habitat Management Plan.

HOODOOS. Pillars developed by erosion of horizontal strata of varying hardness.

I ALLOTMENTS. Grazing allotments that have been selected for improvement. See Appendix G.

IETIC. Inland Empire Tree Improvement Cooperative.

IGNEOUS. Formed by solidification from a molten or partially molten state.

IMMEDIATE IMPACTS. Impacts that are predicted to occur while a management project is being initiated.

IMP. Interim Management Plan.

INTENSIVE TIMBER MANAGEMENT PRACTICES. These practices, used in the timber management plan for the MSYU, include tree improvement, site preparation, planting, precommercial thinning, and commercial thinning. These practices are aimed at reestablishing trees on forest land following harvest or natural catastrophe (fire) and promoting satisfactory or optimum growth of these forests.

INTRUSIVE. Having, while fluid, penetrated into or between other rocks, but solidifying before reaching the surface.

INVERTEBRATE. An animal without a backbone. This group includes such animals as insects, clams, snails, and worms.

ISA. Instant Study Area.

KEY ELK SUMMER AND FALL HABITAT. An area of summer and fall elk habitat containing a high density of big game habitat components.

LANDING. Any place on or adjacent to the logging site where logs are assembled for further transport.

LEASABLE MINERALS. (1) All minerals except salable minerals on acquired lands. (2) All minerals on the Outer Continental Shelf. (3) Coal; phosphate; oil; gas; chlorides, sulphates, carbonates, borates, silicates or nitrates of potassium and sodium; sulphur in the states of Louisiana and New Mexico; native asphalt, solid and semisolid bitumen and bituminous rock including oil-impregnated rock or sands from which oil is recoverable only by special treatment after the deposit is mined. (4) Geothermal resources and associated byproducts (Maley 1983).

LOCATABLE MINERALS. Minerals or materials subject to disposal and development through the Mining Law of 1872 (as amended). Generally includes metallic minerals such as gold and silver and other materials not subject to lease or sale (some bentonites, limestone, talc, some zeolites, etc.).

LODE. A tabular shaped deposit of valuable mineral between definite boundaries; a lode may also include several veins spaced closely together so that they may be mined as a unit. A mineral deposit in solid rock.

LONG-TERM IMPACTS. Impacts that are predicted to occur up to 20 years after the management project is initiated.

LTE. Long-term Estimate. (See Appendix H.)

M ALLOTMENTS. Grazing allotments that have been selected for maintenance management. See Appendix G.

MA. Management Areas.

MACHINE SCARIFICATION. A mechanical technique to prepare land for reforestation.

MANAGEMENT AREA PRESCRIPTIONS. A list of the goals and guidelines for managing units of public land with similar resource potentials and limitations. The management area prescriptions are based on resource capabilities, public issues, legal requirements, and policy considerations.

MANAGEMENT AREAS. Units of public land with similar resource potentials and limitations that are designated for management under a common set of management goals and guidelines. Management area boundaries do not always follow easily located topographic features or legal subdivisions. The boundaries are flexible to assure proper management of resources identified through additional on-the-ground reconnaissance and project planning.

MBF. Thousand Board Feet. A measure of timber volume.

MDFWP. Montana Department of Fish, Wildlife, and Parks.

MESIC AREA. A habitat having a moderate amount of moisture available for the support of plant life.

MFP. Management Framework Plan. Land use plan for public lands that provides a set of goals, objectives, and constraints for a specific planning area to guide the development of detailed plans for the management of each resource.

MINE TAILINGS. Materials that have been processed to remove a mineral or ore.

MINERAL LICK. A natural or artificial site used by big game species as a source of unbound nutrients or minerals.

MINERAL MATERIAL. Widespread deposits of common clay, sand, gravel, or stone which are not subject to disposal under the 1872 Mining Law (as amended).

MMBF. Million Board Feet. A measure of timber volume.

MOTORIZED VEHICLE USE. The use of all motorized vehicles including highway and off-road vehicles.

MSA. Management Situation Analysis. A document that assesses the current situation in a resource area. It includes current management guidance, a discussion of existing problems and opportunities for solving them, and a consolidation of data that is needed to analyze and resolve issues.

MSYU. Missoula Sustained Yield Unit.

NEPA. National Environmental Policy Act.

NONCOMMERCIAL FOREST. Land that is not able to yield at least 20 cubic feet of wood per acre per year of commercial species, or land that is capable of producing only noncommercial tree species.

NONFOREST HABITAT. Areas within a forest that are not capable of maintaining a crown cover of at least ten percent of forest trees. Examples are rock outcrops, roads, and urban areas.

NONGAME SPECIES. Any member of the animal kingdom from large animals through invertebrates which are not considered a game species.

NONPROBLEM FOREST LANDS. Forest lands that contain sites where regeneration can be expected within 15 years (see Appendix B).

NONRESTRICTED COMMERCIAL FOREST LANDS. All land in the timber production base that remains after withdrawn and restricted acreages are determined.

NONUSE. Current authorized grazing use (in AUMs) that is not used during a given time period. Nonuse is applied for and authorized on an annual basis.

NO SURFACE OCCUPANCY. The surface resources of a lease may not be disturbed by oil and gas development. However, oil and gas may be developed by directional drilling.

NOTICE. (Required for Disturbance of Five Acres or Less) Operators on project areas whose operations, including access across federal lands, cause a cumulative surface disturbance of five acres or less during any calendar year must file a notice with the Bureau of Land Management. 43 CFR 3809.1-3. A project area is defined in 43 CFR 3809.0-5(i) as a single tract of land upon which an operator is, or will be, conducting operations. It may include more than one mining claim under one ownership as well as federal lands on

which an operator is exploring or prospecting prior to locating a mining claim. Before an operator may conduct additional operations under another notice, all lands disturbed under a previous notice must be reclaimed. Reclamation is defined in 43 CFR 3809.5(j) as taking such reasonable measures as will prevent unnecessary or undue degradation of the federal lands, including reshaping land disturbed by operations to an appropriate contour. Revegetation of disturbed areas may be necessary so as to provide a diverse vegetative cover (see Appendix C)(Maley 1983).

NPS. National Park Service.

NWPS. National Wilderness Preservation System.

OLD-GROWTH. A stand of trees that are generally 120 plus years old and showing decadence; the last stage in forest succession. The stand may contain large snags, numerous downed logs, a multilayered canopy of several species, and small openings.

OPEN FORAGE. The herbaceous and woody vegetation available to ungulates in stands not meeting thermal or security cover criteria. Most often the resultant forage from clearcut, seed tree, or overstory removal stand treatment.

OPTIMUM AQUATIC HABITAT. Based on stream habitat analysis, (Duff and Cooper 1978), those streams rated 70 percent or better in meeting optimum aquatic habitat requirements.

ORV. Off-road Vehicle. Any motorized vehicle designed for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other natural terrain; except that such term excludes any registered motorboat; any fire, military, emergency, or law enforcement vehicle when used for emergency purposes; and any vehicle whose use is expressly authorized by the respective agency head under a permit, lease, license, or contract.

OVERTHRUST BELT. A geologic structure extending from southern Canada to Utah along the Continental Divide. The structure contains oil and gas reserves.

PARENT MATERIAL. The type of rock that has formed a given soil.

PHYSIOGRAPHIC PROVINCE. A region of similar structure and climate that has had a unified geomorphic history.

PINNACLE. Any high tower or spire-shaped pillar of rock, alone or cresting a summit. A tall, slender, pointed mass.

PILT. Payment in Lieu of Taxes.

PLACER MINING. Mining an alluvial or glacial deposit such as sand or gravel that contains particles of gold or other valuable minerals. The mineral is separated from the nonmineral substances by washing.

PLAN OF OPERATIONS. (Required for Disturbance of More Than Five Acres or Mining in Special Areas) A plan of operation must be submitted to the BLM if surface disturbance exceeds five acres for a single calendar year, or if the operations are proposed in the California Desert Conservation Area; areas designated for potential addition to, or an actual component of the National Wild and Scenic Rivers System; designated Areas of Critical Environmental Concern; areas designated as part of the National Wilderness Preservation System which are administered by the BLM; areas withdrawn from operation of the mining laws in which valid existing rights are being exercised; and areas designated as closed or limited to off-road vehicle use. 43 CFR 3809.1-4 (see Appendix C)(Maley 1983).

PLANNING CRITERIA. The factors used to guide development of the resource management plan, or revision, to ensure that it is tailored to the issue previously identified and to ensure that unnecessary data collection and analysis are avoided. Planning criteria are developed to guide the collection and use of inventory data and information, the analysis of the management situation, the design and formulation of alternatives, the estimation of the effects of alternatives, the evaluation of alternatives, and the selection of the preferred alternative.

PLANNING QUESTIONS. Questions to be addressed and analyzed by each of the plan alternatives. The questions were derived from the scoping process and the issues that were identified.

PRESCRIBED FIRE. The use of fire, under approved weather and fuel condition parameters, for vegetative manipulation and reduction of timber sale residue.

PRIMITIVE AND UNCONFINED TYPES OF RECREATION. Nonmotorized and nondeveloped types of outdoor recreational activities.

PROGENY SITE. A test area for evaluating parent seed trees by comparing the performance of their offspring seedlings.

PUBLIC LANDS. Federal lands managed by the Bureau of Land Management.

R&PP. Recreation and Public Purposes Act.

RAPTORS. A functional group of birds including all birds of prey such as eagles, hawks, owls, and vultures.

RECONNAISSANCE GEOLOGY SURVEY. A geologic survey that compiles and checks existing information. The survey done for the GRA placed the geologic information onto 7½ minute topographic maps.

RECREATION MANAGEMENT AREAS. Subunits of resource areas that serve as basic land units for recreation management. Each area is identified and managed as a unit based on similar or interdependent recreation values, homogeneous or interrelated recreation use, land tenure and use patterns, or administrative efficiency.

RED SLASH. Timber debris that has been recently cut and still has the needles on the limbs.

REFORESTATION. Reestablishment of a tree crop on forest land.

REGENERATION. The renewal of a commercial tree crop, whether by natural or artificial means; also, the young crop itself.

REGENERATION PERIOD. The time it takes for a new commercial timber stand to become stocked following the date of a timber sale.

RELICT. As related to climax, fragments of currently existing flora in areas with a historical record of no disturbance and with the plant community assumed to be in near virgin condition.

REPLACEMENT DEPOSITS. A vein in which certain minerals have passed into solution and have been carried away, while other minerals from the solution have been deposited in place of those removed. A mineral deposit formed by replacement of previous rock. Generally, a volume for volume process.

RESTRICTED COMMERCIAL FOREST LAND. Problem sites in the timber production base on which special techniques are required to protect the timber growing potential of the site or to insure adequate reforestation within specified time limits (see Appendix B).

RIPARIAN. An area identified by the presence of vegetation that requires free or unbound water or conditions more moist than normally found in the area.

RIPRAP. Broken rock used for revetment, the protection for bluffs or structures exposed to wave action, foundations, etc.

RMP. Resource Management Plan. The system that provides a step-by-step process for considering multiple resource values, resolving conflicts, and making resource management decisions.

RMP PROCESS. A process to weigh the effects of applying various mixes of management area prescriptions to the public lands of the resource area. Through alternative formulation and impact analysis, management area prescriptions are chosen that recognize the resource potentials and limitations of the public land and best achieve the principles of multiple use management and sustained yield.

SALABLES. Minerals, such as common varieties of sand, stone, gravel, cinders, pumice, pumicite, and clay that may be acquired under the Materials Act of 1947, as amended (Maley 1983).

SALVAGE CUTTING. The cutting of trees that are dead, dying, or deteriorating before their timber becomes worthless.

SANITATION CUTTING. Removal of individual trees killed or injured by fire, insects, disease, etc.

SATISFACTORY RIPARIAN. Satisfactory riparian is characterized by good vigor and canopy cover, abundant production of palatable plant species, and well developed, overhanging streambanks (see Figure 3-2 in the draft RMP/EIS, page 94).

SATISFACTORY WINTER RANGE. Big game wintering areas having preferred forage plants available in sufficient quantities and located in proximity to thermal and security cover.

SCENIC QUALITY. The overall impression retained by an observer after walking over, driving through, or flying over an area of land.

SEASONAL RESTRICTION. A restriction placed on resource development and use. The restriction is applied to protect surface resources during a time when activities would adversely affect them.

SECURITY AREAS. These are areas where elk may remain or move to following disturbing activities such as logging or hunting. Hiding cover (or security cover) alone will not constitute elk security.

SEED TREE CUTTING. Timber harvest that removes most mature trees in one cut leaving a small number of seed bearing trees.

SEISMIC EXPLORATION. A method of oil and gas exploration that uses sound vibrations to map underground strata.

SELECTION CUTTING. Timber harvest that removes mature trees at 5 to 20-year intervals. This method achieves an uneven-age timber stand.

SET ASIDES. Popular term used to describe all withdrawn or restricted commercial forest lands, as determined by timber production capability classification, resource management planning, or wilderness review processes.

SHELTERWOOD CUTTING. A series of partial cuttings designed to establish a new crop of trees under the protection of the old.

SHORT-TERM IMPACTS. Impacts that are predicted to occur after the management project is initiated and over a duration up to 10 years.

SHRUB. A low woody plant, usually with several stems; may provide food and/or cover for animals.

SITE INDEX. A measure of site quality based on the height of a tree at a given age. Age varies with the species of tree and region. For example, if the site index is 35 on a 50-year base, a tree is 35 feet tall at 50 years of age.

SITE PREPARATION. Any action taken in conjunction with a reforestation effort (natural or artificial) to create an environment that is favorable for survival of suitable trees during the first growing season. This environment can be created by altering ground cover, soil, or microsite conditions; using biological, mechanical, or manual clearing; using prescribed burning or herbicides; or using a combination of methods.

SKIDDING EQUIPMENT. Equipment used to transport logs by sliding or dragging along the ground.

SLASH. The branches, bark, tops, cull logs, and broken or uprooted trees left on the ground after logging has been completed.

SLUMP. Material that has slid downward and outward as a mass, usually with backward rotation of the unit or several subsidiary units.

SMSA. Standard Metropolitan Statistical Area. As defined by the Bureau of the Census in 1960, a county or group of contiguous counties that contains at least one city of 50,000 inhabitants or more (or twin cities with a combined population of at least 50,000); also, contiguous counties essentially metropolitan in character and socially and economically integrated with the central city.

SOP. Standard Operating Procedures. These procedures are identified in Chapter 2.

SPECIAL RECREATION MANAGEMENT AREAS. Areas where special or more intensive types of recreation management are needed. Recreation Activity Plans are required and greater managerial investments (e.g., facilities, supervision, etc.) can be anticipated. Area size is typically over 1,000 acres, although exceptions do occur (e.g., large campground units, trail segments, historical sites, etc.).

SPECIAL STIPULATIONS. See Appendix D.

SRMA. Special Recreation Management Area.

STANDARD OPERATING PROCEDURES. See SOP.

SPECIES OF SPECIAL INTEREST OR CONCERN. Animals not yet listed as endangered or threatened, but which are undergoing status review. This may include animals whose populations are consistently and widely dispersed or whose ranges are restricted to a few localities, so that any major habitat change could lead to extinction. A species that is particularly sensitive to some external disturbance factors.

STANDARD STIPULATIONS. See Appendix D.

STOCKING RATE. An expression of the number of animals and the grazing period allotted to a specific area. It is usually expressed as a ratio, such as acres/-AUM.

STT. Short-term Targets (see Appendix H).

SUBOPTIMUM AQUATIC HABITAT. Based on stream habitat analysis (Duff and Cooper 1978), these streams rated less than 70 percent in meeting optimum aquatic habitat requirements.

SUBSIDENCE. A sinking of a large part of the earth's crust.

SUCCESSIONAL STAGES (forested types). Phases of gradual supplanting of one community of plants by another, or progressive change in a timber stand toward maturity.

SUSTAINED YIELD TIMBER PRODUCTION BASE. The amount of timber in the Garnet Resource Area that is managed to achieve and maintain in perpetuity a high level annual or regular periodic output of timber.

T&E. Threatened and endangered species of plants and animals.

TACK-ON. A parcel of public land that is less than 5,000 acres in size, possesses the wilderness characteristics of naturalness and outstanding opportunities for solitude or primitive recreation, and is adjacent to other federal land that has been designated as wilderness or is being studied for wilderness designation.

TEMPORARY NONRENEWABLE USE. Livestock use that has been applied for and authorized to increase the number of AUMs on an allotment on a temporary basis.

THERMAL COVER. Vegetation or topography that prevents radiational heat loss, reduces wind chill during cold weather, and intercepts solar radiation during warm weather. Generally, a minimum thermal stand consists of tree heights averaging 40 feet or greater and crown closure of 70 percent or greater.

THREATENED SPECIES. Those species of plants or animals classified by the Secretary of the Interior or the Secretary of Commerce as threatened, pursuant to Section 4 of the Endangered Species Act. Means any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

TIMBERED FORAGE. The herbaceous and woody vegetation available to ungulates in stands not usually meeting thermal or security cover criteria. Most often the resultant forage from intermediate stand treatment.

TIMBER PRODUCTION BASE. Acres included in the calculation of the allowable cut.

TPCC. Timber Production Capability Classification. A classification system that identifies the commercial forest land base capable of producing timber on a sustained yield basis (see Appendix B).

TRANSITORY RANGE. Range that is created by timber harvest. The range is transitory because the regeneration of the timber stand will reduce the livestock forage production.

UNCLASSIFIED RANGE. A designation used for vegetative communities that could not be legitimately compared to a climax community (see Appendix K).

UNSATISFACTORY RIPARIAN. Unsatisfactory riparian habitat is characterized by poor vigor and canopy cover, low species diversity, and a lack of reproduction of woody plant species. Unpalatable plants such as sagebrush and iris are increasing in abundance (Figure 3-3 in the draft RMP/EIS, page 94).

UNSATISFACTORY WINTER RANGE. Big game wintering areas in which preferred forage plants are either not available in sufficient quantities, or the forage is not located in proximity to thermal and security cover.

UTILITY CORRIDOR. Lands that have existing rights-of-way for utility lines such as electric transmission lines, pipelines, telephone lines, etc.

UTILIZATION. The proportion of current year's forage production that is consumed or destroyed by grazing animals, usually expressed as percentage.

VEGETATIVE CONDITION. See Appendix K.

VEIN DEPOSIT. A fissure, fault, or crack in a rock filled by minerals that have traveled upwards from a deep source. A zone or belt of mineralized rock lying within boundaries clearly separating it from neighboring rock.

VRM. Visual Resource Management.

WALLOW. A depression, pool of water, or wet area used by elk during the breeding season.

WILDLIFE GOALS. Wildlife goals are statements of management emphasis either contained in the Management Area Prescriptions section of Chapter 3 or as stated in activity plans. An example of a goal is "Provide elements of old-growth or mature forest for wildlife habitat in the immediate vicinity of big game summer habitat components."

WINDOWS. Usually short, narrow passageways through constrained areas that are the most feasible potential locations for linear utility facilities, considering engineering and environmental factors.

WINTER RANGE. Area occupied by animals during the winter months.

WITHDRAWN FOREST LANDS. Forest lands that contain sites that are too fragile to log (see Appendix B).

WOOD PRODUCTS. Firewood, post and poles, boughs, sawlogs, wildings, Christmas trees, house logs, etc., that can be harvested from noncommercial forest lands.

WSA. Wilderness Study Area. A parcel of public land that through the BLM's wilderness inventory process has been found to possess the basic wilderness characteristics of being at least 5,000 acres in size, being primarily natural, and having outstanding opportunities for solitude or primitive and unconfined types of recreation.

WSB. Western Spruce Budworm. A common forest insect that causes damage to the foliage and cones of the Douglas-fir.

WSR. Wilderness Study Report.

YARDING. The process of conveying logs to a landing.

202 WSA. Same as a WSA except that it is less than 5,000 acres in size. It is studied under Section 202 of FLPMA.

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MAP ERRATA

Motorized Recreation Restrictions Map (West Half)	T13N, R13W, Sec. 36 Murray Cr.	Delete the Designation (D3) and change color to white.
	T13N, R12W, Sec. 31,32,33 Hamilton Gu. Rd.	The road between the yellow and orange shading should be green.
	T12N, R12W, Sec. 6	Change the portion of the SW $\frac{1}{4}$ SE $\frac{1}{4}$ east of the Murray Cr. Rd. to yellow to indicate fewer travel restrictions.
	T11N, R13W, Sec. 4 SE $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$, Sec. 9 NE $\frac{1}{4}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$ Limestone Cliffs	Change the shade to brown to indicate the area is closed to motorized vehicle use except for the Rattler Gu. Rd.
	T7N, R16W, Sec. 26	Change shade to brown to indicate the area is closed to motorized vehicle use.
	T6N, R15 & 16W, West Fork Buttes	Delete the designation "(E1)" as the cooperative road closure is no longer in effect.
Motorized Recreation Restrictions Map (East Half)	T14N, R10 & 11W, Marcum Mtn.	Change the period of closure for the lands between road B1 and Hwy 200 to Sept. 1 - Apr. 30.
Land Adjustment Map (West Half)	T13N, R12W, Sec. 15 NE $\frac{1}{4}$ NE $\frac{1}{4}$	Change the portion of Sec. 15 lying NE of the county road from "Retention" to Other Lands.
Land Adjustment Map (East Half)	T10N, R8W, Sec. 13 Carpenter Cr.	Change from "Retention" to Other Lands.
	T10N, R6W, Sec. 20,21,27,28, Rich Spur	The public land ownership is incorrect; for change contact BLM Garnet Area Office.
Surface Ownership Map (West Half)	T11N, R14W, Sec. 3,10 T13N, R14W, Sec. 4 T13N, R16W, Sec. 4 T12N, R15W, Sec. 17	The private land ownership is incorrect; for change contact BLM Garnet Area Office. Strip of Champion in S $\frac{1}{2}$ SE $\frac{1}{4}$ should be white.
Surface Ownership Map (East Half)	T9N, R11W, Sec. 26,35 T10N, R6W, Sec. 28	The public land ownership is incorrect; for change contact BLM Garnet Area Office.

88001901

WER'S CARD

agement plan for the Garnet
a Butte District Montana.

	OFFICE	DATE RETURNED
711501	SGJW	7-17-80
3604	white River Rd.	KKS

(Continued on reverse)

(Continued on reverse)

Bureau of Land Management
Library
Bldg. 50, Denver Federal Center
Denver, CO 80225

R 11 W

R 10 W

R 9 W

R 8 W

R 7 W



T 15 N

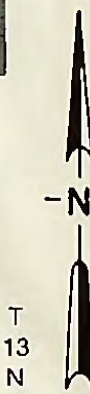
T 14 N

T 13 N

U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management

1986
RESOURCE MANAGEMENT PLAN
MAP OF
**SELECTED ALTERNATIVE
(EAST HALF)**

Garnet Resource Area
Butte District
Montana



47°0'

46°45'

LOCATION MAP



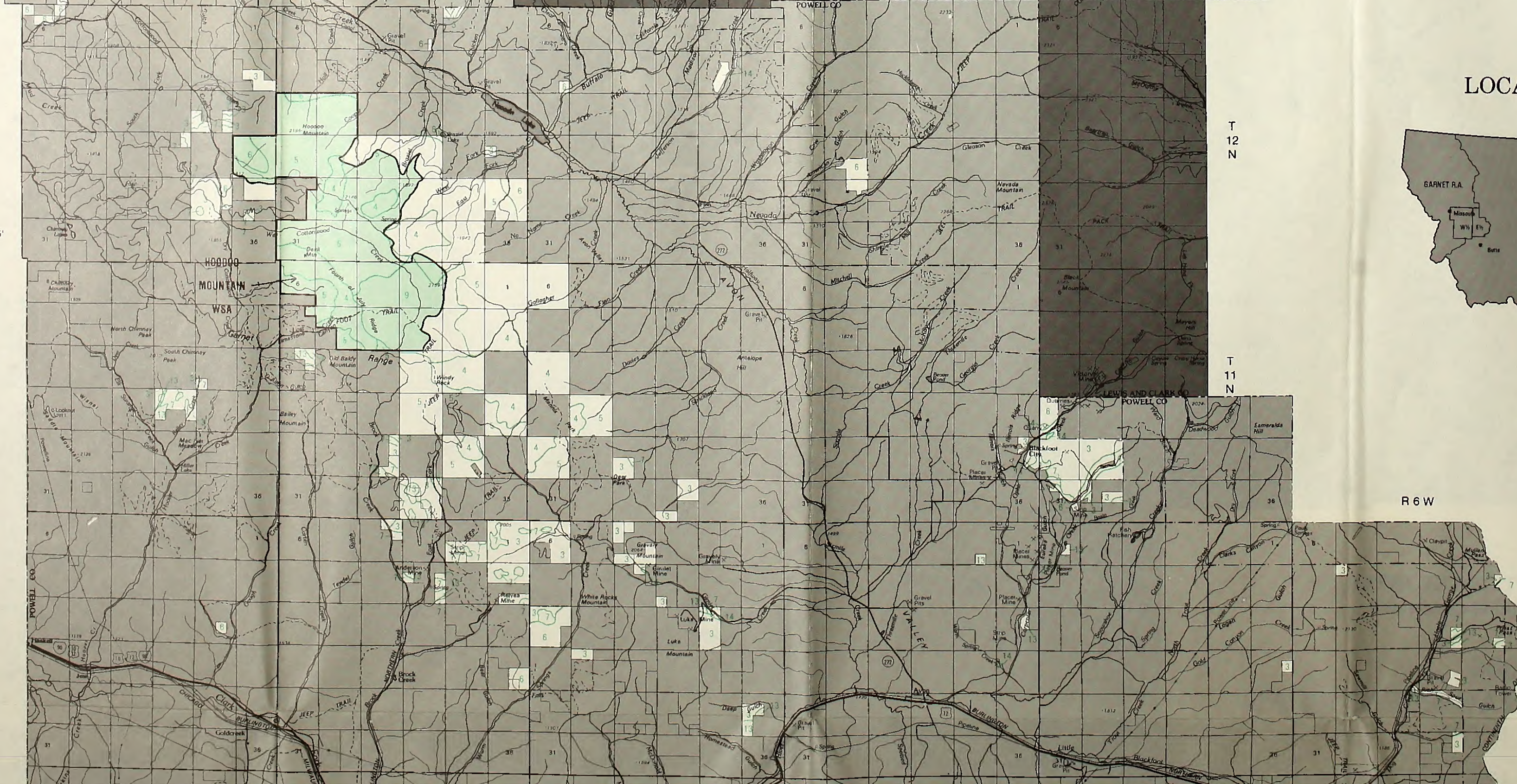
T 12 N

T 11 N

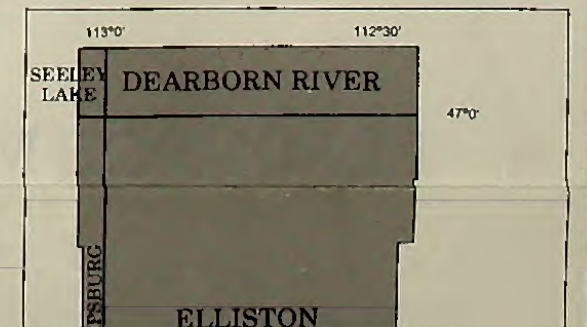
R 6 W

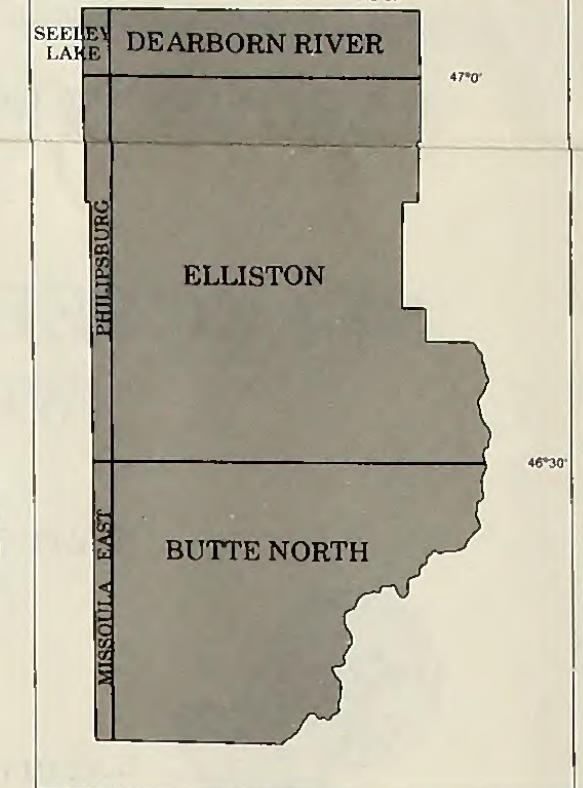
INDEX MAPS

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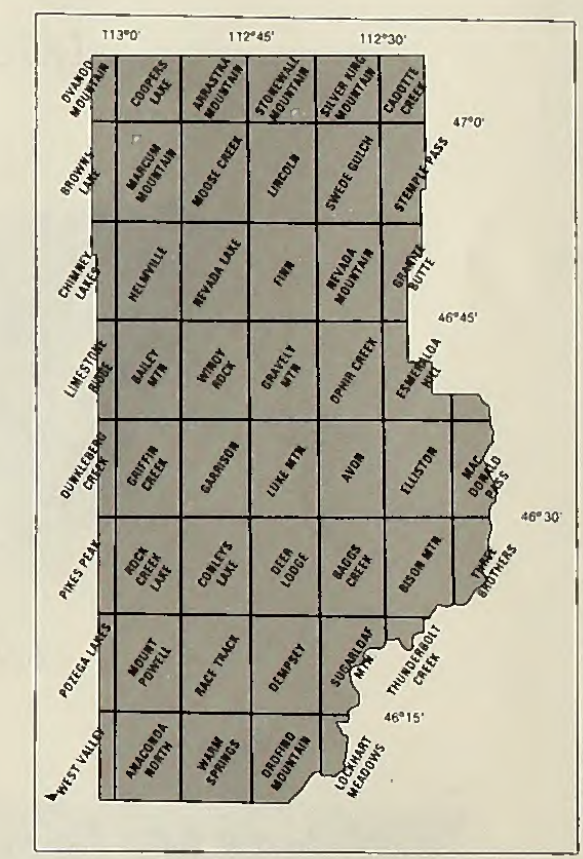


T 10 N






USGS 7 1/2'




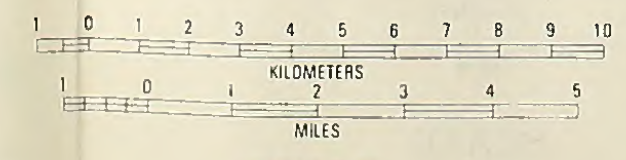
LEGEND

GARNET RESOURCE AREA MANAGEMENT AREAS

- | | |
|---|--|
| 1 Riparian Protection Zone | 8 Areas Recommended for Wilderness Designation |
| 2 Riparian Multiple Use Zone | 9 Special Management Areas |
| 3 General Forest Management | 10 Developed and Undeveloped Recreation Sites |
| 4 Elk Summer/Fall Habitat Components | 11 Historic and Cultural Sites |
| 5 Big Game Summer/Fall Range | 12 Visual Corridor |
| 6 Big Game Winter Range | 13 Non-Forest Habitat |
| 7 Non-Commercial Forest and TPC Withdrawn Commercial Forest | 14 Mineral Production Area |

 Wilderness Study Areas (WSA's) which will be managed under the BLM Interim Management Policy until reviewed and acted upon by Congress. Includes those WSA's identified under Section 603 of FLPMA, and areas studied under Section 202 of FLPMA and recommended as suitable for wilderness designation.

 Area Outside Garnet Resource Area



SCALE

1:126,720 1/2" = 1 mile

Due to scale of map, parcels of BLM lands containing 10 acres or less may not be shown.

This is a graphic representation only. For detailed information, contact the BLM Resource Area Office in Missoula, Montana.

R 19 W R 18 W R 17 W R 16 W R 15 W R 14 W R 13 W R 12 W

47°0'

T 15 N

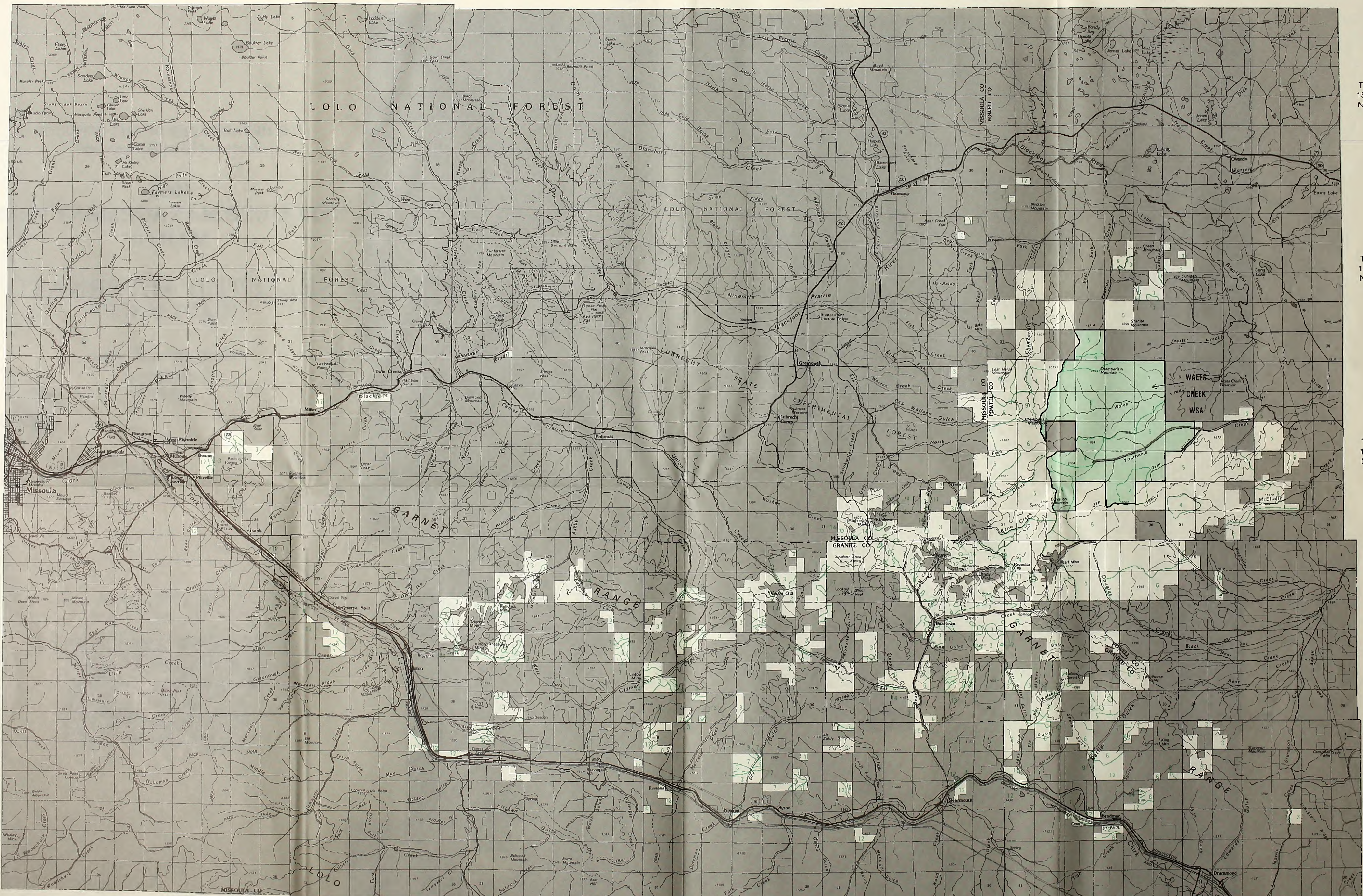
T 14 N

T 13 N

T 12 N

T 11 N

T 10 N



46°45'

113°45'

U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management

1986
RESOURCE MANAGEMENT PLAN
MAP OF



RESOURCE MANAGEMENT PLAN MAP OF SELECTED ALTERNATIVE (WEST HALF)

Garnet Resource Area
Butte District
Montana



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DENVER, CO 80225

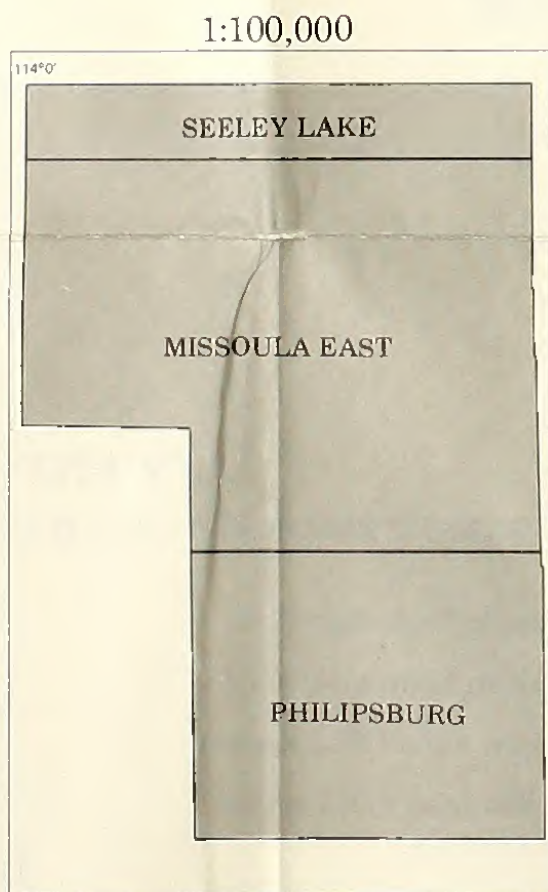
LOCATION MAP



INDEX MAPS

USGS 7 1/2'

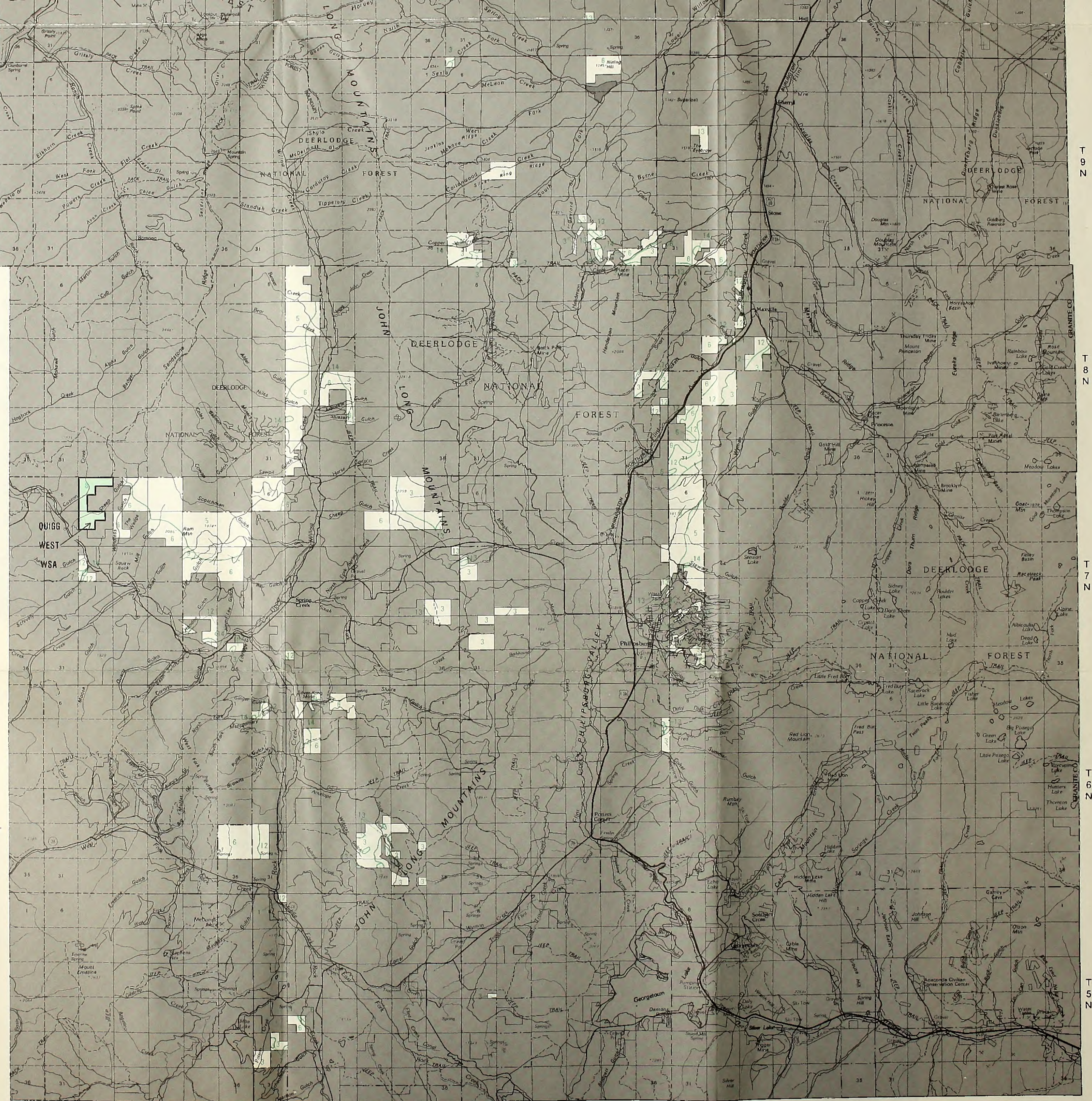
STUNT PLAIN	WYATT LAKE	OLD CREEK LAKE	HELMANT POST	SALAMY LAKE	WOODRIDGE	PLATED	STANDARD MOUNTAIN
ROBERTSON	BULLY POINT	PAULOVIC MTS	STYBOMC	SPRINGMOUNT	WALKER MTS	CHARTER LAKE	BRIDGE
BOYD	BONNIE	CLAYTON	MURRAY RIDGE	USDA PLAIN	RELIATION MTS	WELLS	CRANFORD
DAVIS POINT	ELK MOUNTAIN	RED POINT	BAVERIA	MCDONALD	PEARSON MTS	SHAWNEE	DEWATER
		SCOTT POINT	SWAN POINT	HARVEY POINT	BRAND HILL	HALL	POWELL
		QUINN PLAIN	ALVIN CREEK	BLACK HORN	HERRICK MOUNTAIN	BLACK HILL	PINED PLAIN
STREET	CROW	COMB CREEK	MATHEW SHELL	PHILLIPS PLAIN	FREDERICK LAKE	PROCTOR LAKE	
MOUNTAIN	MOUNTAIN GOLD	PITTS	GREENVIEW LAKE	STEVEN LAKE	WELLS HILL		



LEGEND

GARNET RESOURCE AREA MANAGEMENT AREAS

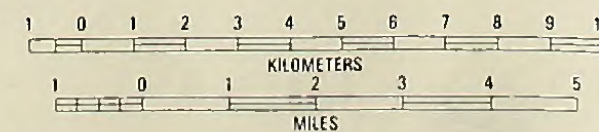
- | | |
|--|--|
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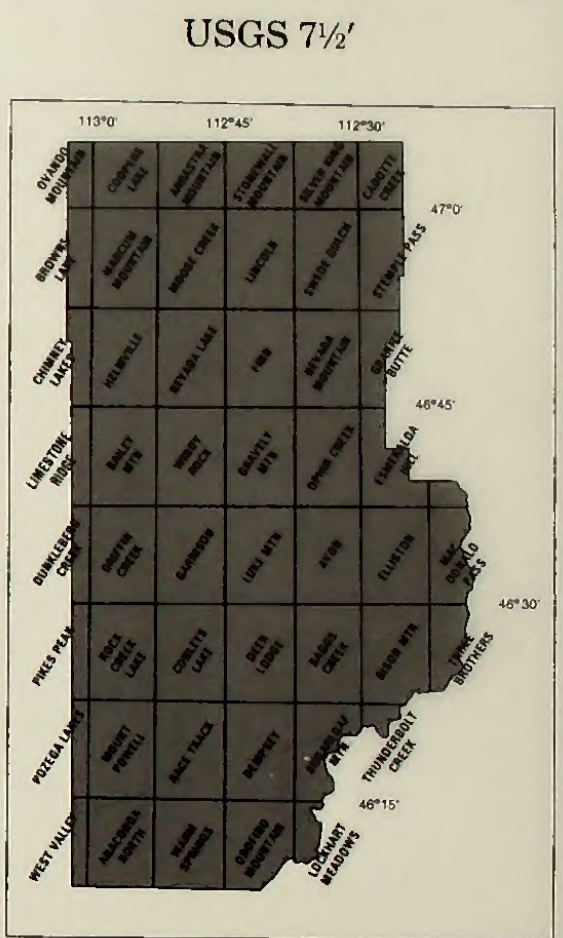
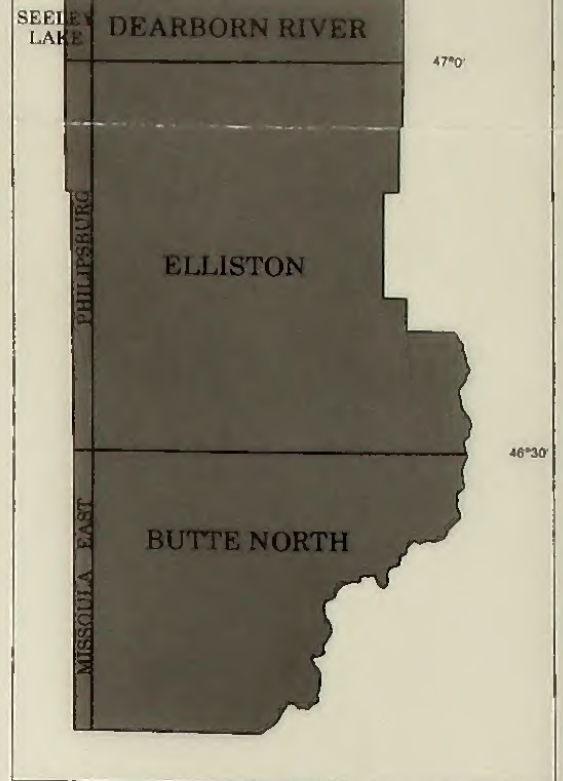
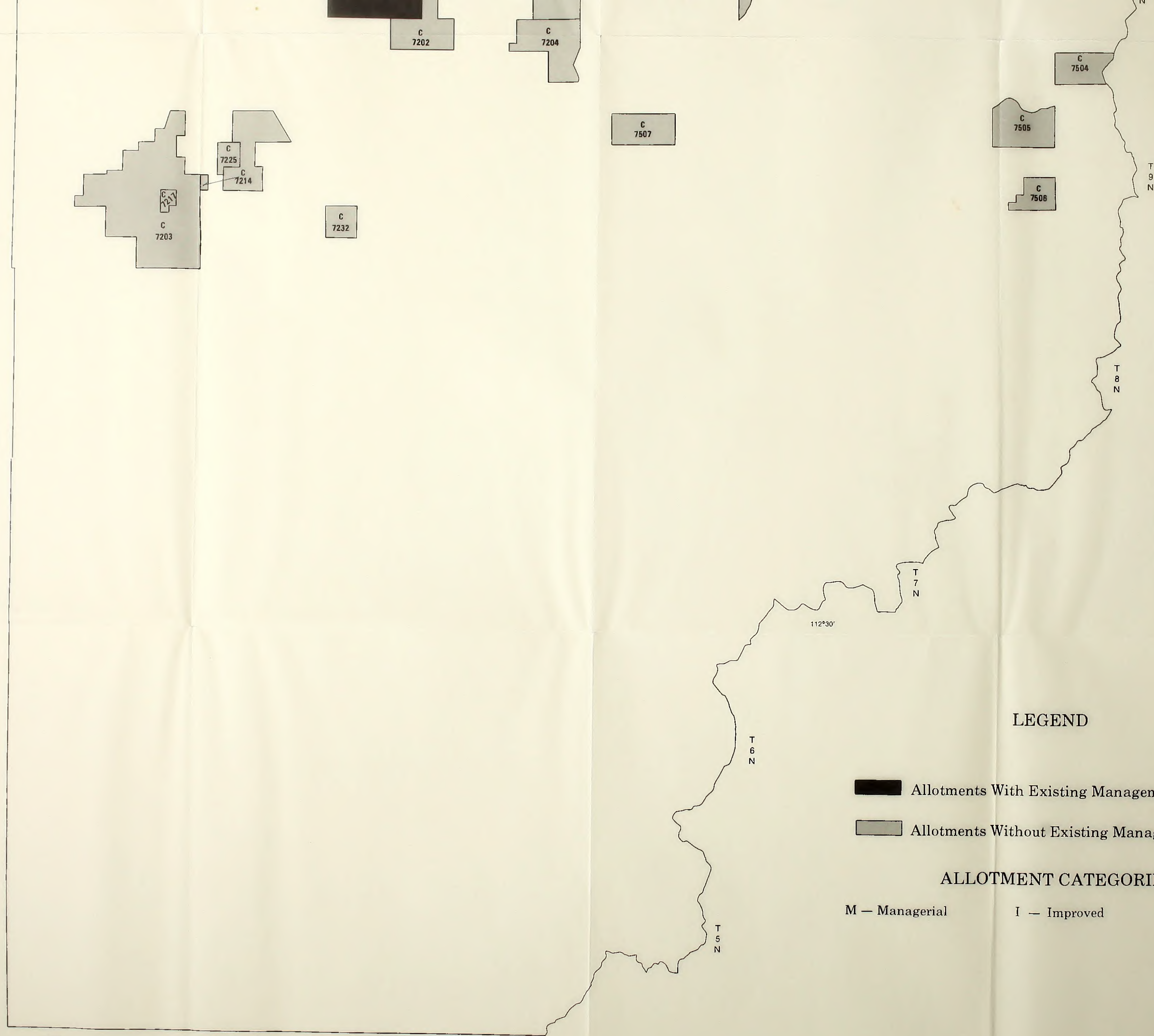


SCALE

1:126,720 1/2" = 1 mile

W 1/2 SELECTED ALTERNATIVE (Front)

E 1/2 SELECTED ALTERNATIVE (Back)



LEGEND

- Allotments With Existing Management Plans
- Allotments Without Existing Management Plans

ALLOTMENT CATEGORIES

M — Managerial I — Improved C — Custodial



SCALE
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R 19 W

R 18 W

R 17 W

R 16 W

R 15 W

R 14 W

R 13 W

R 12 W

T 15 N

T 14 N

T 13 N

T 12 N

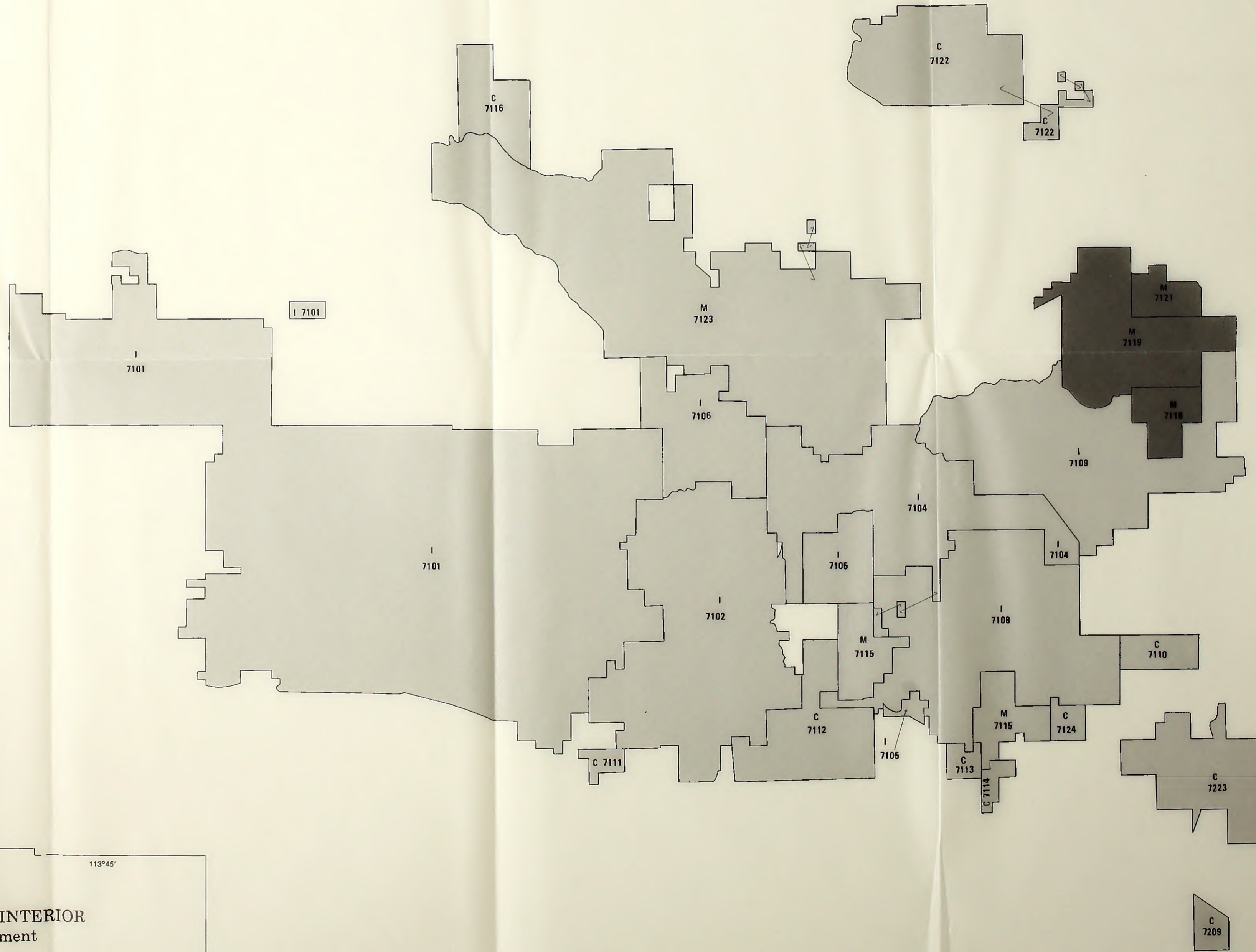
T 11 N

T 10 N

47°0'

46°45'

113°45'



U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management

1986
RESOURCE MANAGEMENT PLAN
MAP OF

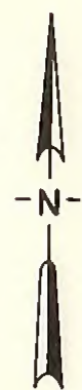
RESOURCE MANAGEMENT PLAN MAP OF

ALLOTMENTS (WEST HALF)

Garnet Resource Area
Butte District
Montana



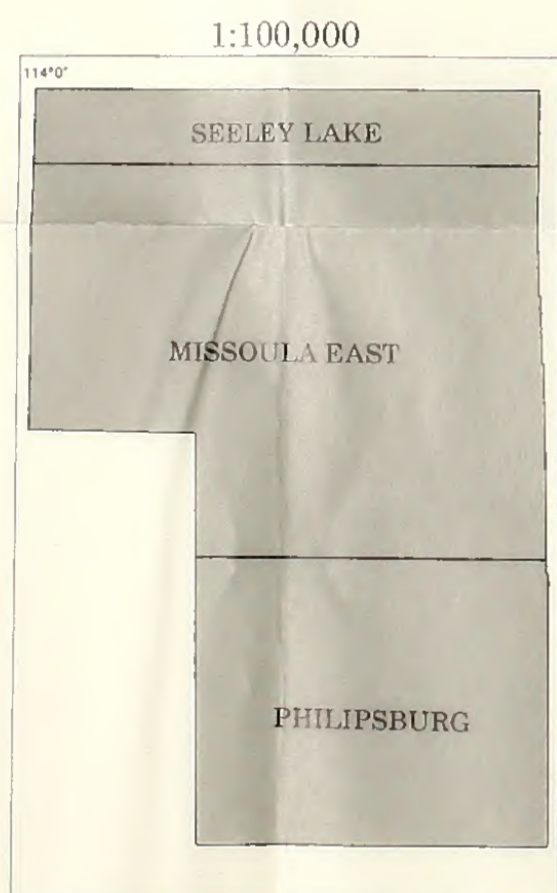
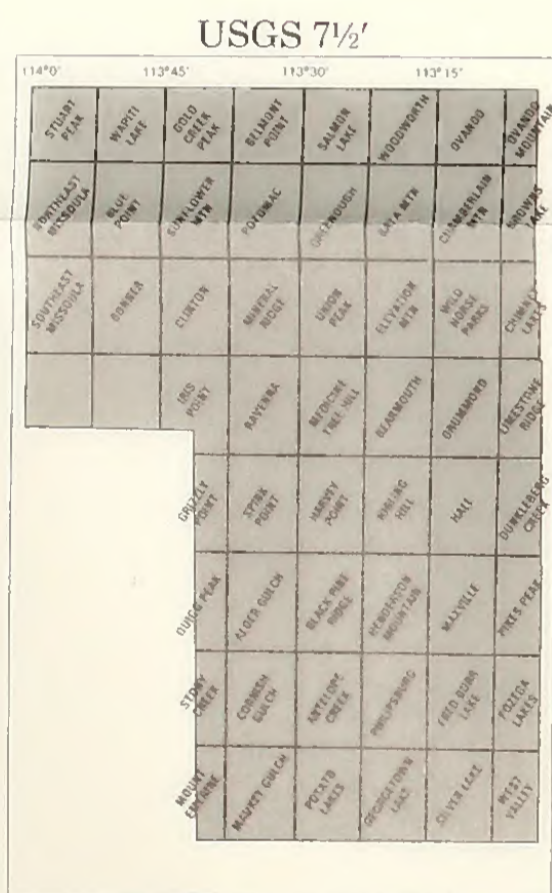
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DENVER, CO 80225



LOCATION MAP



INDEX MAPS

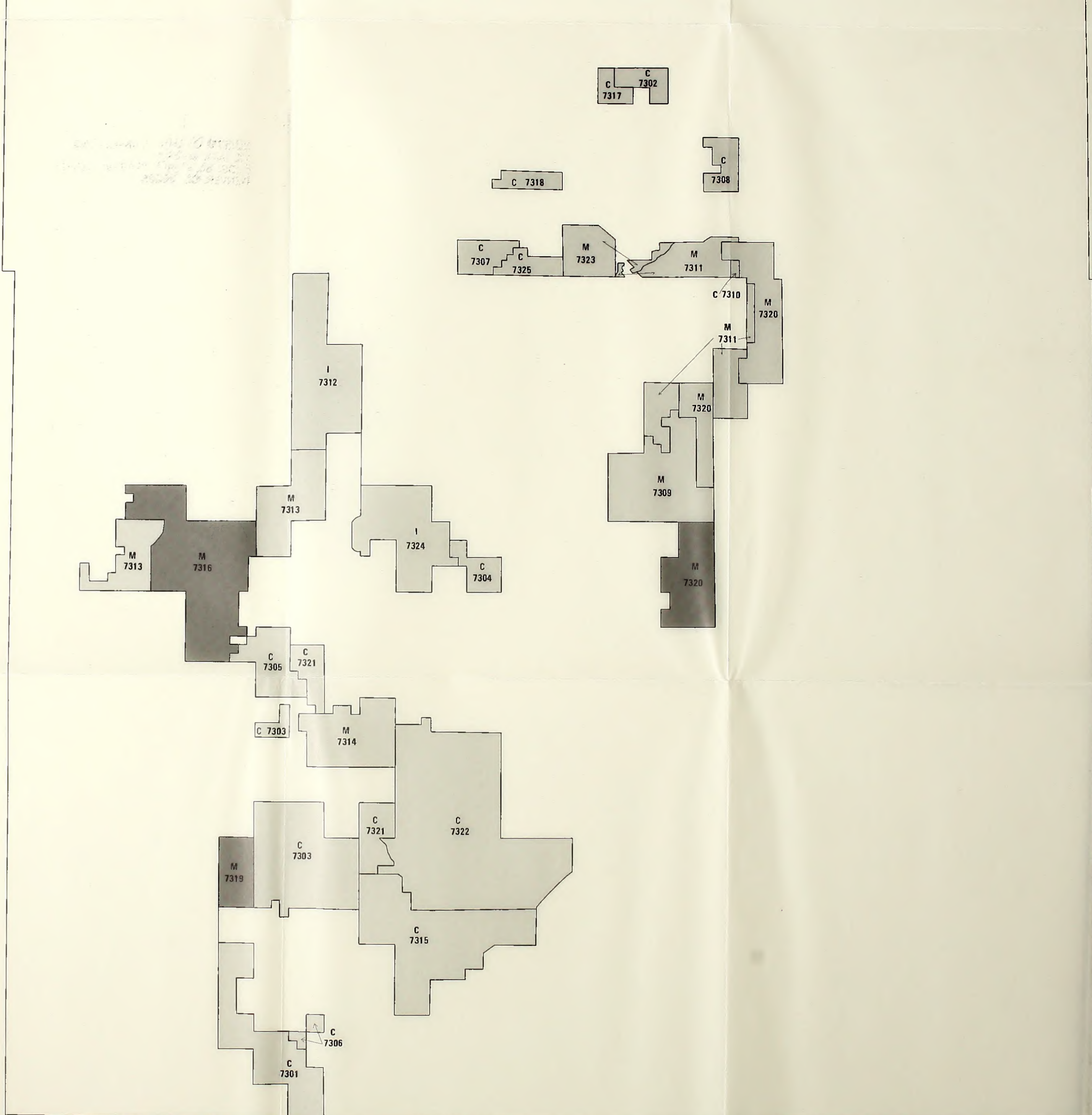


LEGEND

- Allotments With Existing Management Plans
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SCALE

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T 9 N

T 8 N

T 7 N

T 6 N

T 5 N

