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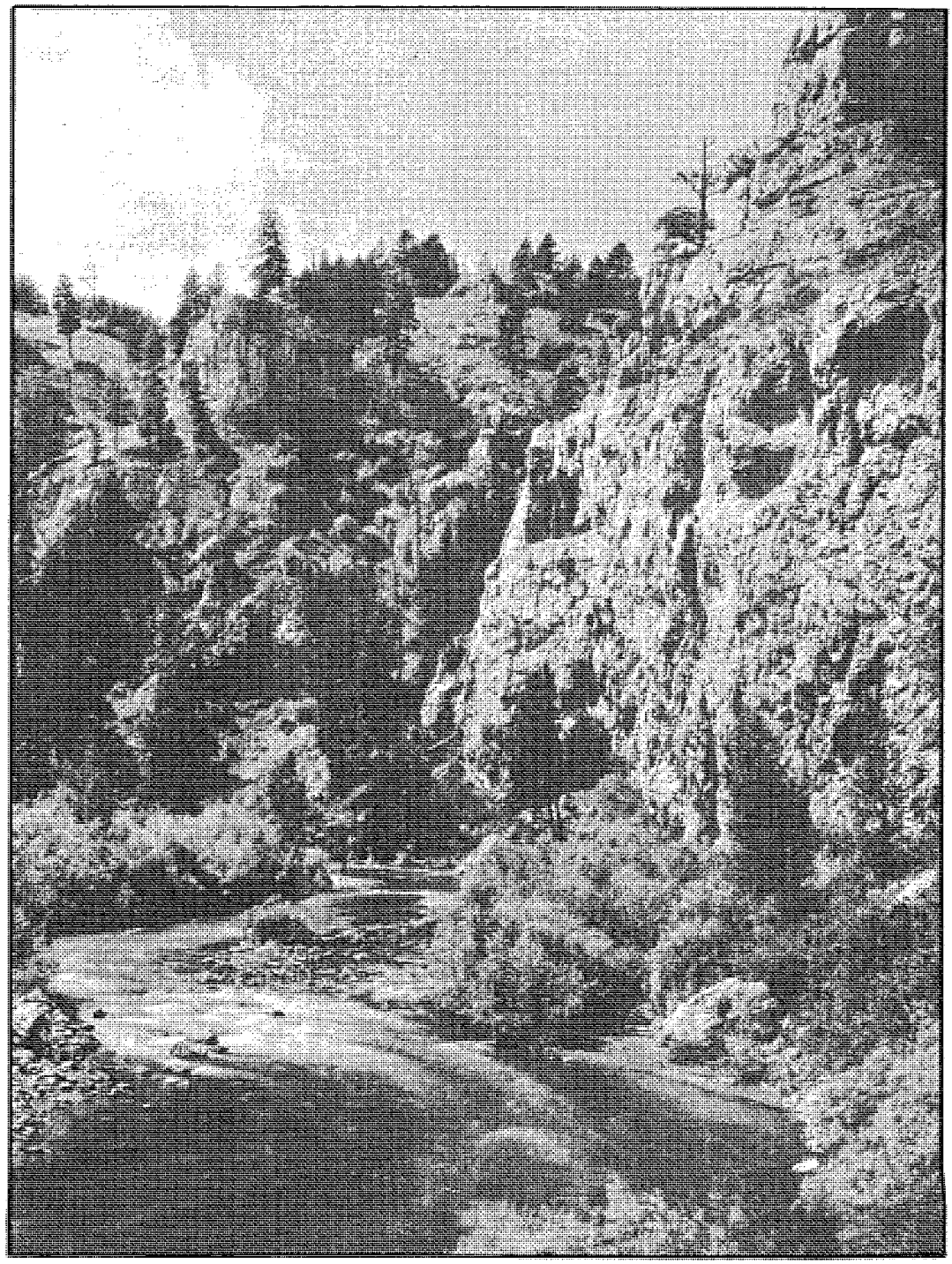
United States
Department of
Agriculture

Lewis and Clark
National Forest
P.O. Box 871
Great Falls, MT.
59403

Lewis and Clark National Forest Plan



Belt Creek Canyon below Monarch in the Little Belt Mountains.

PREFACE

FOREST PLAN

The Lewis and Clark National Forest Land and Resource Management Plan, Forest Plan for short, is an integrated land and resource management plan. Rather than several plans for different resources, the Forest Plan provides integrated guidance for all natural resource management activities. The purpose of the Forest Plan is to provide for multiple use and sustained yield of goods and services from the Lewis and Clark National Forest in a way that maximizes long-term net public benefits in an environmentally sound manner.

Final Environmental Impact Statement

The Forest Plan is based on the analysis and alternative selection in the FEIS (Final Environmental Impact Statement). The Forest Plan links the RPA (Resource Planning Act) National Program to the Forest with specific outputs and standards and guidelines, which are responsive to RPA. The Northern Regional Guide communicates National and Regional direction to the individual National Forests within the Northern Region for land and resource planning efforts. The Forest Plan will in turn be linked to the Forest's project level program.

Statement of Compliance

The Forest Plan is in compliance with NFMA (National Forest Management Act of 1976), the regulation for National Forest Land and Resource Management Planning (36 CFR Part 219), and NEPA (National Environmental Policy Act of 1969), including the Record of Decision for the Environmental Impact Statement covering the Forest Plan.

Content

The Forest Plan has two levels of direction: Forest-wide management direction and specific direction for each management area. It has six chapters as follows:

Chapter I, Introduction. Describes the planning process, the Forest, specific planning actions, and major changes in the Forest Plan.

Chapter II, Forest-wide Management Direction. It is divided into five sections: management goals; management objectives; research needs; desired future conditions of the Forest; and Forest-wide standards.

Chapter III, Management Area Direction. Describes each management area and gives specific guidelines, by resource, for the areas.

Chapter IV, Geographic Units. Each of the 29 units is mapped and the past, current, and proposed management activities are briefly discussed.

Chapter V, Implementation. Describes how the Forest Plan will be implemented and lists monitoring activities that are necessary to determine if management is leading to the future condition described in the Forest Plan and if the assumptions about environmental effect and cost made during the planning process are correct.

Chapter VI, Analysis of the Management Situation. This chapter summarizes the present Forest management. A brief description is given of the current management, project use levels, production potential, and supply potentials under the Forest Plan.

The Glossary defines terms used throughout the Plan.

The Appendix contains more detailed information on specific planning actions.

The Bibliography lists references stated in the plan.

Planning Records

Additional planning process and background information is referenced in the Forest Plan. Most of this information is in the planning records. Appendix D of the FEIS lists those planning records that are available on request at the Lewis and Clark National Forest Office, 1601 Second Avenue North, Great Falls, Montana. Request for copies of available planning records or other information on the Forest Plan should be sent to:

Forest Supervisor
Lewis and Clark National Forest
P.O. Box 871
Great Falls, MT 59403

FOREST PLAN Table of Contents

I. INTRODUCTION

II. FOREST-WIDE MANAGEMENT DIRECTION

III. MANAGEMENT AREA DIRECTION

A Stand of Lodgepole Pine on the Lewis and Clark National Forest.

FOREST PLAN

Chapter 1
Introduction

Overview

This chapter is divided into four parts. The first part describes the Forest Plan and its place in administration of the Forest. The second part describes the planning area. The third part describes specific actions used in this plan. The last part summarizes the major changes from the Revised Proposed Forest Plan.

PLANNING PROCESS

Purpose

This Forest Plan is the long-term direction for managing the Lewis and Clark National Forest. The Forest Plan contains the overall direction required to achieve the desired future condition of the Forest. A DEIS (Draft Environmental Impact Statement) and Proposed Lewis and Clark Forest Plan were prepared for public comment. Because of the Ninth Circuit Court decision on RARE II, the major changes made in the Proposed Forest Plan, and the results from public comments a Supplement to the DEIS and Revised Proposed Forest Plan was prepared for public comment. After the comment period a FEIS (Final Environmental Impact Statement) and Forest Plan was prepared.

The Forest Plan guides all natural resource management activities and establishes management standards for the Lewis and Clark National Forest. It describes resource management practices, levels of resource production and management, and the availability and suitability of lands for resource management.

Management Direction

The goals, objectives, standards, schedule of management practices, and monitoring and evaluation requirements comprise the Plan's management direction. However, the projected outputs, services, and rates of implementation are dependent on the annual budgeting process.

Planning Process

Preparation of the Forest Plan is required by RPA (Forest and Rangeland Renewable Resource Planning Act), as amended by the NFMA (National Forest Management Act). Assessment of the Plan's environmental impacts is required by NEPA (National Environmental Policy Act) and the implementing regulations of NFMA.

Relationships to Other Documents

Environmental Impact Statement

The Forest Plan is based on the various considerations which have been addressed in the accompanying FEIS and represents the proposed action in that FEIS. The planning process and the analysis procedure used in developing this Plan, as well as the other alternatives that were considered, are described or referenced in the FEIS. Project level activities will be planned and implemented to carry out the management direction in this Plan. The NEPA requirements will be followed as the site specific issues and impacts are addressed during project development.

PLANNING PROCESS

Regional Guide

The Regional Guide displays the Northern Region's portion of the RPA Program among the National Forests, provides direction for National Forest plans, and develops standards and guidelines for addressing major issues and management concerns which need to be considered at the Regional level to facilitate Forest Planning. The Regional Guide process allows for discussion and analysis of National Forest program capabilities to determine opportunities to meet short and long-term natural resource demands.

RPA Assessment and Program

Every 10 years the National Forest and rangeland renewable resource situation is assessed. The findings help determine the output levels of future Forest Service programs.

Alternative levels of outputs and associated costs are examined in the RPA Program, which is prepared every 5 years. Based on an analysis of these alternatives, along with consideration of public views, the Secretary of Agriculture decides upon a Recommended RPA Program for the Forest Service. The Recommended RPA Program along with a Presidential Statement of Policy is transmitted to Congress. The final Policy Statement and Program serve as the guide for planning and developing future Forest Service budget proposals.

On December 12, 1980, Congress amended the President's Statement of Policy for RPA. The revised Statement of Policy calls for forest and rangelands to be managed to maximize social and economic contributions to the Nation's well-being in an environmentally sound manner. The Forest Plan was prepared to comply with this policy.

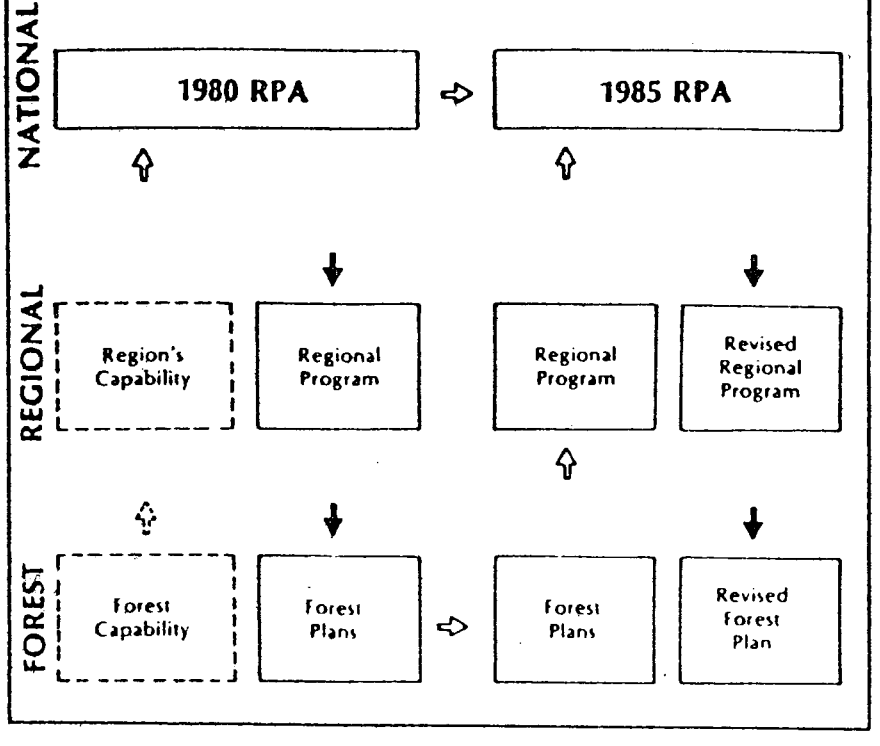
PLANNING PROCESS

Planning Cycle

The planning process is continuous. The Forest Plan has special relationships to other plans prepared both before and after it. The RPA Program is updated every 5 years. The Forest Plan will ordinarily be revised every 10-15 years, or sooner if needed. These interrelationships are shown in Figure 1.1.

FIGURE 1.1

LONG-RANGE PLANNING & PROGRAMING



PLANNING PROCESS

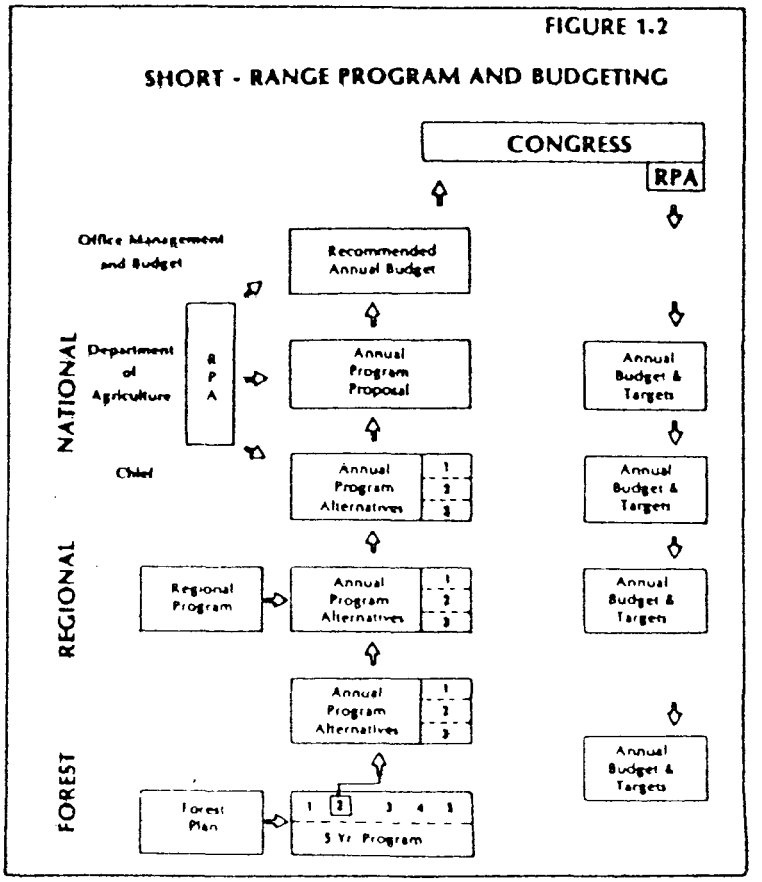
Management Direction

The goals, objectives, standards, schedule of management practices, and monitoring and evaluation requirements comprise the Plan's management direction. The RPA Program and Forest Plan set direction for objectives, outputs, standards, and guidelines. RPA and the Plan also include an estimated implementation cost based on the best information available. However, the projected outputs, services, and rate of implementation are dependent on the annual Federal budgeting processes.

Forest funding depends on a political process. The Forest submits its annual program through the Region to the Chief. The Chief develops an overall program for the Forest Service, which in turn is added to the Department of Agriculture's annual program. The Department's program is reviewed and recommended by the Office of Management and Budget. Based on National needs and priorities, Congress funds these programs and sets National targets. These targets (outputs) and funds are returned to the Forest through the Region. Through a review of the annual program and the annual budget, the Forest develops an annual work program. Figure 1.2 shows this process.

FIGURE 1.2

SHORT - RANGE PROGRAM AND BUDGETING



PLANNING PROCESS

Budget Proposals

Budget proposals represent firm commitments to achieve a certain output at a specified cost. Therefore, cost estimates are updated annually to reflect current conditions and the details of a specific set of project proposals.

Although RPA targets and Forest Service Plans serve as the basis for the initial budget proposals, they are frequently adjusted to reflect current conditions and the Administration and Congressional priorities, as expressed through the appropriation process. Budgets and programs are expected to vary annually. Once Congress passes the Appropriation Act, the budget becomes a firm work contract for which the Forest Service is held accountable. Normally, adjustments made during the budgeting process are within the scope of Forest Plans.

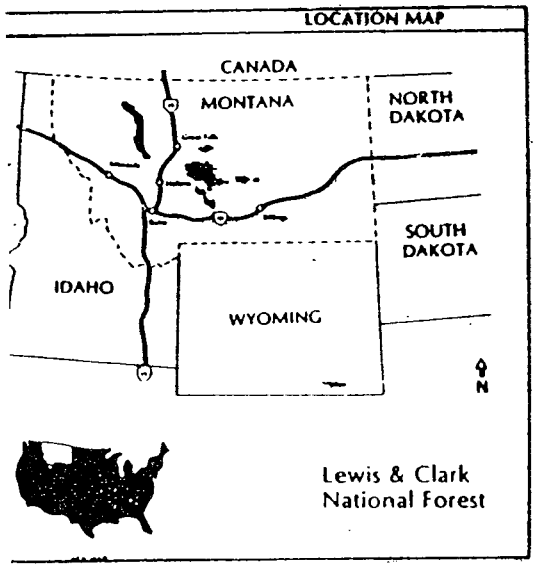
Finally, it is important to remember that planning is a continuous process. Judgments are made on the basis of the best information available at the time plans are made. To keep the planning process viable and responsive, plans will be adjusted over time to reflect new and better data or changes in assumptions and public needs.

Previous Plans

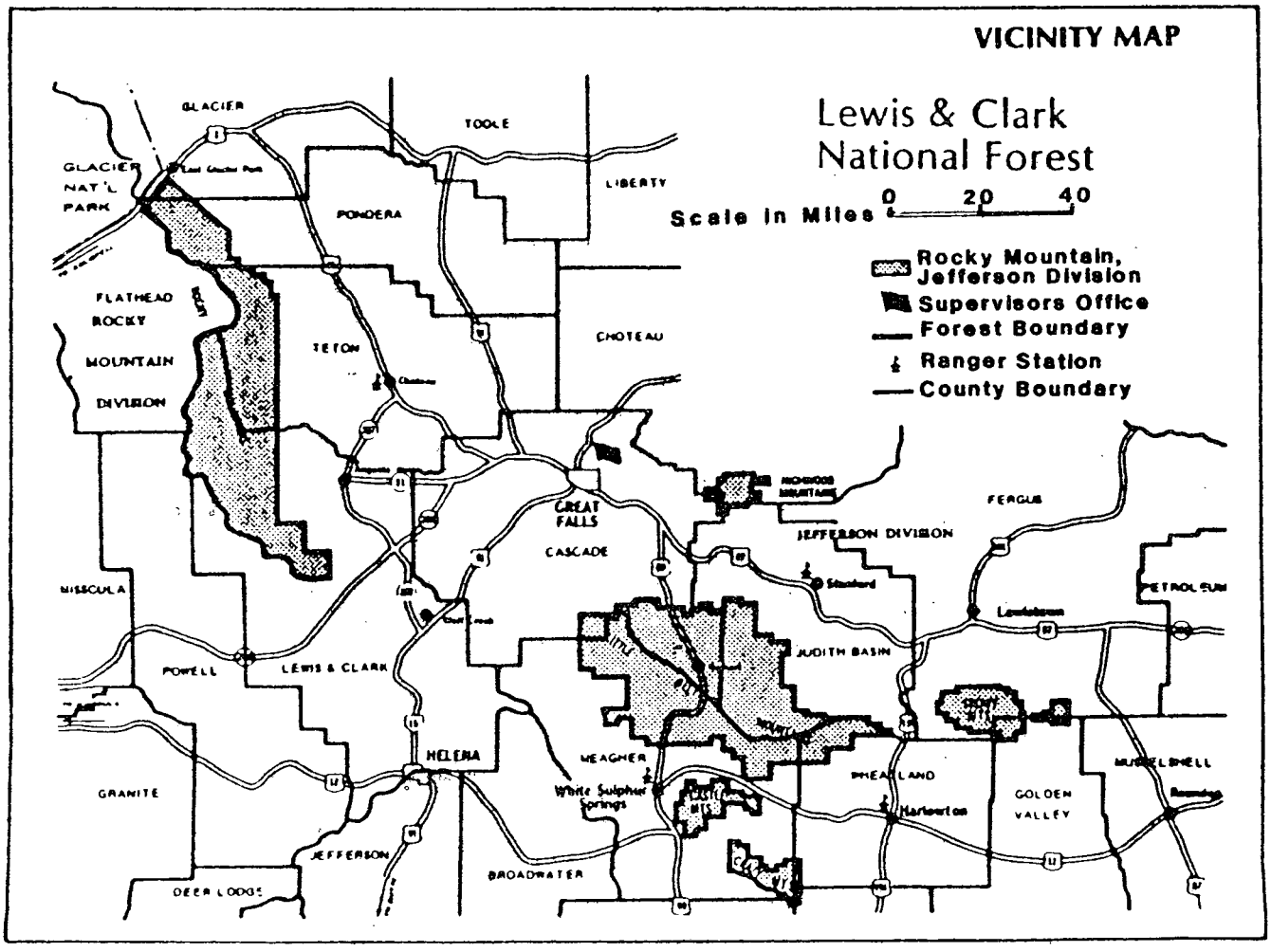
The Forest Plan replaces all previous resource management plans. All permits, contracts, and other instruments for the use and occupancy of National Forest System lands must conform with the Forest Plan. In addition, all subsequent activities affecting the Forest, including budget proposals, will comply with the Forest Plan.

PLANNING AREA

GENERAL DESCRIPTION



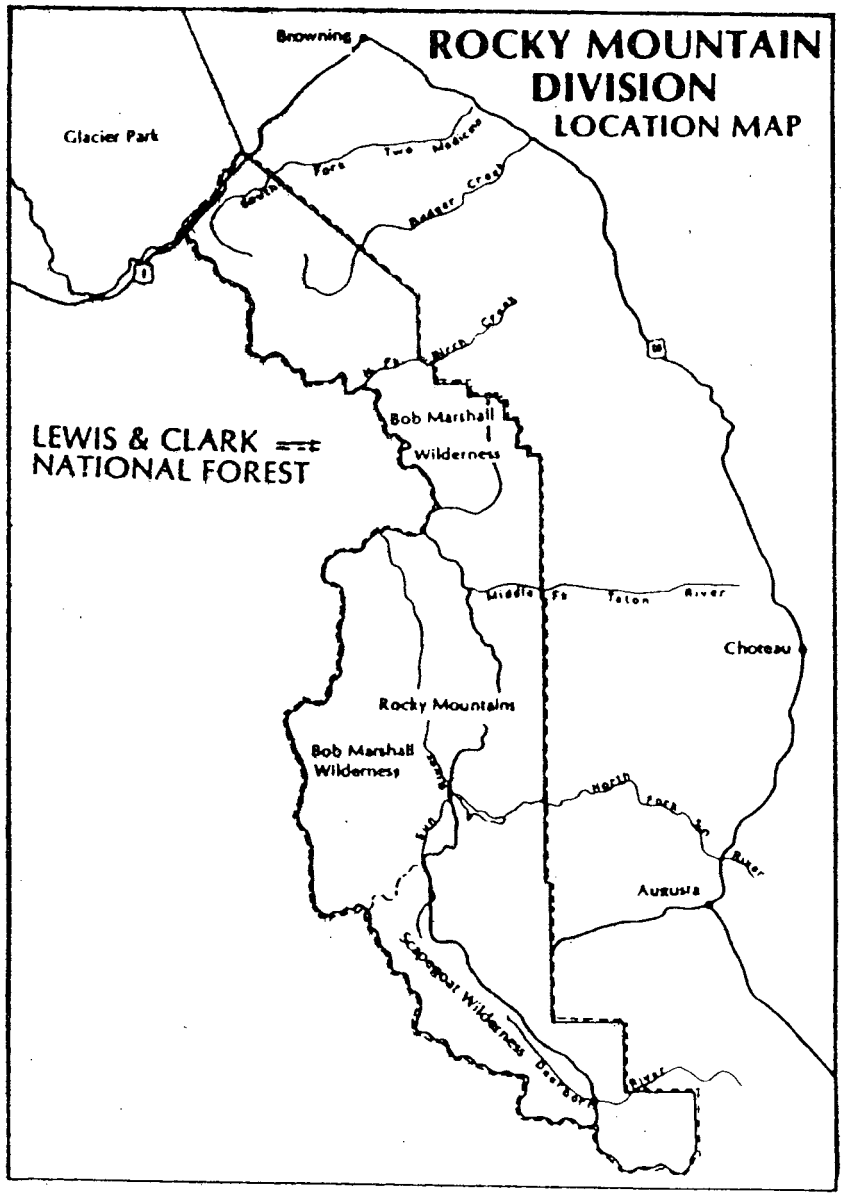
The Lewis and Clark National Forest is in north central Montana within the upper Missouri River system. Historically, the Forest has been referred to by two major divisions: the Rocky Mountain Division containing the Rocky Mountain Ranger District, and the Jefferson Division containing the Judith, Musselshell, and Kings Hill Ranger Districts.



PLANNING AREA

Rocky Mountain Division

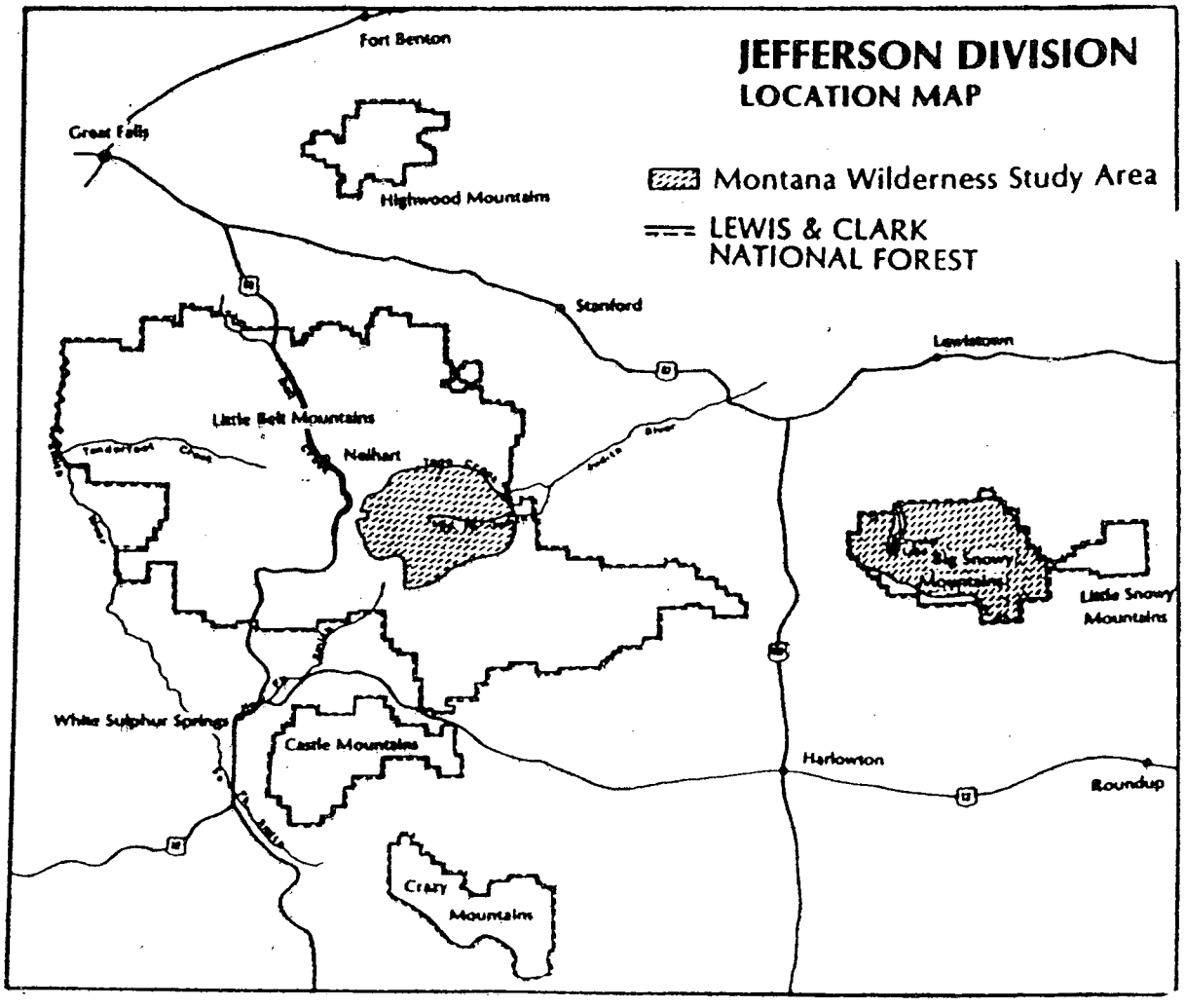
The Rocky Mountain Division, in Lewis and Clark, Teton, Pondera, and Glacier Counties, is bound on the west by the Continental Divide and the Flathead National Forest, on the north by U.S. Highway 2 and Glacier National Park, on the south by the Helena National Forest, and on the east by the Blackfeet Indian Reservation and State, BLM, and private lands. The Rocky Mountain Division includes major portions of the Bob Marshall and Scapegoat Wildernesses.



PLANNING AREA

Jefferson Division

The Jefferson Division lies east and south of Great Falls and is surrounded by private or other Federal or State lands. The Jefferson Division, in Cascade, Chouteau, Judith Basin, Fergus, Golden Valley, Wheatland, Sweetgrass, Park, and Meagher Counties, has six distinct mountain ranges. The Crazy Mountains lie southwest of Harlowton. The north half is administered by the Lewis and Clark National Forest and the south half by the Gallatin National Forest. The other mountain ranges are: the Little Belt Mountains, southeast of Great Falls; Castle Mountains, east and south of White Sulphur Springs; Crazy Mountains, southwest of Harlowton; Big Snowy and Little Snowy Mountains, south of Lewistown; and Highwood Mountains, east of Great Falls.



PLANNING AREA

Forest History

The Lewis and Clarke Forest Reserve (the "e" on Clarke was dropped in 1907) was created by a proclamation on February 22, 1897. The Lewis and Clarke, along with the Bitterroot Forest Reserve approved by the same proclamation, were the first forest reserves in Montana.

The Lewis and Clarke Reserve was comprised of lands limited to the Rocky Mountains. Administration headquarters were centered in Choteau. By 1899 the reserve area included almost 3,000,000 acres. Lands were added and eliminated from the reserve. New forest reserves, such as the Flathead, were carved from the Lewis and Clark Reserve.

Other areas which now are regarded as part of the Lewis and Clark National Forest gradually became forest reserves. The Little Belt Mountains Forest Reserve was approved August 16, 1902. The Highwood Mountains Forest Reserve was approved December 12, 1903, the Snowy Mountains approved November 5, 1906, and the Little Rockies approved March 2, 1907, (now under Bureau of Land Management administration).

Administration of the forest reserves was transferred from the Department of the Interior to the Bureau of Forestry, Department of Agriculture in 1905. Later in 1905 the Bureau of Forestry was renamed the Forest Service to promote its commitment of being a "service" organization. Forest reserves were renamed national forests in 1907.

In 1908 the four small national forests (Little Belts, Highwoods, Snowy, Little Rockies) were consolidated to form the Jefferson National Forest. The forest was named after the country's third president, Thomas Jefferson and included about 1,255,320 acres. Administration headquarters for the newly created forest were in Great Falls.

Lands continued to be deleted and added within the forest boundaries. In 1931 proceedings began to merge the Lewis and Clark and the Jefferson Forests headquarters. This was accomplished by President Herbert Hoover's Executive Order dated April 8, 1932.

Today, there are 1,843,397 acres in the Lewis and Clark National Forest in six mountain ranges.

SPECIFIC PLANNING ACTIONS

SPECIFIC PLANNING ACTIONS

Because of their complexity, timber planning, oil and gas leasing, transportation planning, and corridor planning are described in detail.

Timber Planning

In the timber planning process, timber aerial P.I. types (photograph interpretation types) were mapped and acres calculated by capability area. Condition classes were derived by sorting the timber inventory data by habitat type and P.I. type. Yield tables for regenerated stands were derived from the Eastside Growth Prognosis Model. Yield tables, analysis areas, management prescriptions, and age classes provided the input to FORPLAN, which was used to allocate and schedule resource management prescriptions.

Oil and Gas Leasing

By law, the Mineral Leasing Act of 1920, the BLM (Bureau of Land Management) is responsible for mineral leasing on Federal lands. By interagency agreement, the BLM refers to all applications to lease National Forest system lands to the Forest Service for review. The Forest Service recommends to the BLM whether those lands should be leased, and, if so, what controls (stipulations) are needed to protect surface values and uses.

As of June, 1985, 413,516 acres of the Forest have been leased. Another 60,526 acres of lease applications are pending in the Silver King-Falls Creek and Renshaw recommended wildernesses. Lease applications are also pending on 67,413 acres in the Big Snowies MWSA (Montana Wilderness Study Act) area.

Activities on leases that do not involve exploration drilling or field development are regulated by the Forest Service. Exploratory drilling or field development activities are regulated under authority of the USDI (U.S. Department of Interior) Bureau of Land Management. Through Onshore Order No. 1, the BLM is responsible for enforcement of surface protection and reclamation requirements established by the Forest Service. All of the off lease activity (such as access) is regulated by the Forest Service.

SPECIFIC PLANNING ACTIONS

The standard used in the environmental assessments for oil and gas leasing have been analyzed and brought forward into the Forest Plan. Under the Forest Plan, the Forest will continue to make leasing recommendations on all lands not withdrawn from mineral entry, as outlined by Forest Management Standard G-2. This standard provides for the continued protection of surface resource values while providing opportunities for resource development.

Transportation Planning

The Forest Transportation Road System is divided into two groups: (1) public roads, Forest arterial roads, collector roads and (2) local roads. These groups are referred to as the Arterial-Collector System and the Local System.

Different Arterial-Collector Systems are on capability area maps. The System's characteristics and costs were analyzed through the Northern Region Network Analysis Program, MINCOST. Characteristics analyzed included slope, stability, presence of non-rippable rock, erodibility, and need for road surfacing. Costs included construction, reconstruction, protection, maintenance, and vehicle operation cost. Transportation compartments were established by identifying barriers to roads through the use of maps and aerial photos. Each transportation compartment is accessed by one arterial-collector road. The Network Analysis Program identified the most cost-efficient route to access a transportation compartment. The Local System is needed only when a resource activity is undertaken. Road design and the exact location are part of project planning for an activity.

The Forest Plan identifies future road corridors for the Arterial-Collector System for both surface resource management and subsurface uses. Corridors for these roads are shown on Geographic Unit Maps in Chapter IV.

Corridor Planning

Rights-of-way (electrical transmission, oil and gas transmission, highways, railroads, and communication) planning was done in accordance with the memo 1950 Special Plans and Studies, Corridor Planning Guidance, October 7, 1982. This direction included the State/Federal Agreement of May 18, 1982, Criteria for Identifying Corridor Exclusion Areas, Avoidance Areas, and Windows in Montana.

SUMMARY MAJOR CHANGES

FOREST PLAN

Several major changes have been made in the Forest Plan. Some changes are a direct result of the public involvement with the DEIS-Supplement and Revised Proposed Forest Plan. Other changes were made in response to updating the planning process. These changes include the following.

Forest Management Standards

The term "Guideline" was replaced with "Standard" to conform with National planning direction. Two new Forest-Wide Standards have added to comply with NFMA planning regulations and several were revised to strengthen the direction for Forest operations, maintenance, and protection.

New Forest-wide Management Standards

Management Indicator Species	C-5
Rare Plants	N-2

Revised Forest-wide Management Standards

Developed Recreation: Operation, Maintenance, and Operations	A-2
Travel Shelters	A-4
Winter Dispersed Recreation Opportunity	A-5
Special Interest Area	A-6
Cultural Resource Management	A-7
Visual Resource Management	A-8
Wildlife Coordination and Habitat Management	C-1
Threatened and Endangered Species	C-2
Wildlife Trees	C-4
Range Improvement	D-1
Noxious Weeds and Other Pests	D-2
Riparian Area, Soil and Water Protection in Range Management	D-3
Livestock Grazing Restrictions	D-4
Timber Management Coordination and Information	E-1
Firewood Administration and Utilization	E-2
Timber Harvest	E-4
Data Collection	F-2
Soil, Water, and Air Protection	F-3
Seismic Exploration	G-1
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Land Uses	J-3
Signing	L-1
Travel Planning	L-2
Continental Divide National Scenic Trail	L-3
Maintenance and Construction of Road, Trails and Other Facilities	L-4
Protection	P-1

SUMMARY MAJOR CHANGES

Management Areas

The following major changes have been made in management area designations.

- An additional 5,830 acres has been recommended for wilderness. This area is located in the West Fork of the Teton on the Rocky Mountain Division.

- An additional 20,255 acres has been added to Management Area G. Most of this area is in the Badger-Two Medicine area. Regulated timber harvest will not be practiced on the North End Geographic Unit (RM-1).

- An additional 15,360 acres has been added to Management Area C. About 11,600 acres is in the Middle Fork of the Judith. This management provides greater emphasis in maintaining elk security cover while harvesting timber.

- An additional 8,720 acres has been added to Management Area I adjacent to the Sun River and Judith State Wildlife Management Areas.

- Management Area O on the Rocky Mountain Division has been reduced by 27,055 acres. This change is in response to a reduction in the Districts timber program to 0.5 million board feet yearly.

MANAGEMENT AREA	PROPOSED FOREST PLAN (7/82)	REVISED PROPOSED FOREST PLAN (11/84)	FOREST PLAN
Management Area A	88,248	17,467	16,261
Management Area B	393,579	345,938	330,838
Management Area C	68,425	96,304	111,664
Management Area D	38,831	24,456	24,456
Management Area E	105,125	118,123	116,519
Management Area F	---	352,746	352,746
Management Area G	547,920	227,389	247,644
Management Area H	31,048	32,378	31,778
Management Area I	---	29,147	37,867
Management Area J	7,400	11,100	11,100
Management Area K	9,125	9,125	9,125
Management Area L	---	19,872	16,112
Management Area M	3,281	3,281	3,281
Management Area N	41,838	41,838	41,838
Management Area O	---	49,757	22,702
Management Area P	385,046	384,407	384,407
Management Area Q	63,304	46,844	51,834
Management Area R	33,225	33,225	33,225

SUMMARY MAJOR CHANGES

Other Changes

Table 2.1 which shows projected outputs and activities used in programming, budgeting, and attainment reporting has been added to the Forest Plan.

Chapter V, Implementation, and Chapter VI, Monitoring, have been combined.

Chapter VI, Analysis of the Management Situation, has been updated and expanded.

The following Appendices have been updated:

- A - Summary of Timber Information and 10-Year Timber Sale Program
- B - Land Exchange
- C - Rights-of-Way Acquisition
- D - Bob Marshall, Great Bear, Scapegoat Wilderness Management Direction
- E - Forest Service Wildlife Policies and Objectives
- F - Elk Logging Study
- J - Laws, Policies, Other Related Legal Requirements, Recovery Plans and Special Studies
- L - Cumulative Effects Evaluation Process

Appendix D, Bob Marshall, Great Bear, Scapegoat Wilderness Management Direction has been updated and incorporated into Management Area P (Chapter III).

Appendix M, Recommendations for Mitigating Cumulative Effect of Seismic Exploration on T&E Species has been deleted. The requirements are contained in the Interagency Guidelines (Appendix I) and this information is no longer needed.

The following Appendices have been added:

- D - U.S. Fish and Wildlife Service Biological Opinion on T&E species
- M - 5-Year Wildlife Habitat Improvement Program
- R - 5-Year Range Improvement Program
- S - 5-Year Trail Construction/Reconstruction Program
- T - Projected Budget Required to Implement the Forest Plan
- U - Wilderness Recreation Opportunity Class Descriptions and Guidelines

FOREST PLAN

Chapter II
Forest-Wide Management Direction

Overview

This chapter describes long range goals and objectives for the Forest and lists projected outputs, activities and costs. Also, described are research natural area objectives, additional data requirements, research needs, and what the Forest would look like at the end of the first and fifth decade under the Forest Plan. Forest-Wide management standards list the overall direction for Forest operations, maintenance, and protection.

INTRODUCTION

FOREST PLAN	The Forest Plan is based on the Preferred Alternative described in the accompanying FEIS. The Preferred Alternative states:
Alternative G - Preferred Alternative	Alternative G would increase the use of Forest resources, while providing diverse wildlife habitat and maintaining dispersed recreation opportunities in a semi-primitive setting. By the fifth decade, 20 million board feet of timber would be offered for sale annually. Timber harvest activities would be programmed only in those areas where it is financially efficient considering costs and benefits. Most of the timber would be harvested on the Jefferson Division. the Rocky Mountain Division would provide wood products for local needs. Arterial and collector road construction would decrease from the current direct, but local road construction would almost double. Livestock grazing would increase from 71,000 AUMs (Animal Unit Months) to 73,600 AUMs, by the fifth decade. Adverse impacts on wildlife habitat would be minimized through coordination and mitigation. No additional grazing would be planned on big game winter range or riparian zones, unless wildlife needs could be fully met. Annual wildlife habitat improvement would increase to 700 acres, of which 100 acres would be for T&E (Threatened and Endangered) species. Developed recreation would increase about 32,000 RVDs (Recreation Visitor Days), by the fifth decade. Most semi-primitive recreation settings would be retained. The Forest would continue to recommend no-surface occupancy, limited surface use, activity coordination, and time restrictions on two-thirds of the acres in new and reissuance leases. Five areas (collectively called the East Slope) totalling 51,834 acres would be recommended as additions to the Bob Marshall and Scapegoat Wildernesses. The Big Snowies MWSA area would be managed for semi-primitive recreation. The Middle Fork Judith MWSA area would be managed for semi-primitive recreation and wildlife, except in the Harrison Creek Drainage. This drainage would be managed for timber production.

LONG RANGE GOALS

LONG RANGE GOALS	The long range goals for the Lewis and Clark National Forest are:
	1. Coordinate resource development and use activities so as to protect and improve land and resource quality and productivity, including natural beauty and quality of air, water, and soil. 2. Manage the Bob Marshall and Scapegoat Wildernesses to provide long-term opportunities for wilderness dependent experiences. 3. Promote high quality, wildlife, and fish habitat to insure a desired mixture of well-distributed species and numbers for public benefit. Aid in the recovery of the grizzly bear in the Northern Continental Divide Ecosystem. Aid in the recovery of the gray wolf. Give special emphasis to elk habitat management. Give special emphasis to Sensitive Species (plant, animal, and fish) management. 4. Continue a level of forage production to provide a portion of the year-round requirements for a viable and stable local industry. 5. Provide a sustained yield of timber products at a level that will hep support the economic structure of local communities and provide for Regional and National needs, while protecting the environment. 6. Facilitate exploration and development of the mineral resource while protecting other resources through mitigating stipulations. 7. Help insure water yields of the quality and quantity needed for local and regional use. State water quality standards will be met or exceeded. 8. Use forestry activities to help minority, economically depressed, elderly, handicapped, and youth groups. Improve Civil Rights opportunities on the Forest by developing closer ties with local Indian tribes and non-traditional groups. 9. As part of the continuing land management planning process, consult with and seek cooperative action with agencies at all levels of government and with private groups, Indian tribes, and individuals in programs for resource management and economic development.

LONG RANGE GOALS (continued)

	10. Give priority .to public educational programs in all Forest Service planning to: a) prevent damage to facilities and resources by encouraging proper use of National Forests and thus reduce agency maintenance, preservation, and enforcement costs; b) increase public understanding of Forest Service management activities and public awareness of goods, services and opportunities provided by the National Forests to develop a cooperative and mutually supportive relationship that will benefit both community and agency futures. 11. Protect the existing condition of rivers eligible for further study under the 1968 Wild and Scenic Rivers Act, as amended. Maintain and if possible, enhance the "outstandingly remarkable" resource value(s) attributable to each eligible river while providing for public recreation and resource uses which do not adversely impact or degrade those values.

FOREST-WIDE OBJECTIVES

	The following are brief summaries of how various resources and activities will be managed under the Forest Plan. A complete understanding of the management direction can be attained by reading the Forest-Wide goals and standards in the chapter and the management area goals and standards in Chapter III.
Resource/Activity Summaries Recreation	To make optimal use of the Forest's recreation resources, the public will be informed of recreation opportunities by implementing the Recreation Opportunity Guide throughout the Forest. Through educational programs dispersed recreation opportunities in the general forest environment will be emphasized, and encouragement will be given to Forest visitors not desiring a wilderness setting to use nonwilderness National Forest lands which can provide for their recreational needs. Minimum impact camping and "Pack In - Pack Out" will be encouraged through educational efforts to reduce management costs and resource impacts. Over 65 percent of the Forest will be managed for primitive or semi-primitive recreation. Recreation residence permits will be continued except where there are substantial conflicts with public needs or resources values. Trail shelters will be authorized as needed on the Jefferson Division. Cooperative winter trail programs will be increased with organizations, clubs, and other public agencies; the winter cabin rental program will be continued. The Forest will cooperate with the State of Montana Department of Fish, Wildlife and Parks, other agencies, landowners, and user groups in developing and implementing a management plan for the Smith River. The private sector will be permitted to develop suitable sites for recreation purposes which serve public need and are consistent with other Forest objectives. The Forest will increase its current level of camping, picnicking, and other "developed site" opportunities from 198,500 RVDs to 230,100 RVDs by 2030. This increase will be attained by expanding existing sites and developing new recreation sites. Development will not occur until existing opportunity is fully utilized. Sites may be closed, eliminated or relocated if they provide little or no opportunity, are in conflict with other values, or are not cost efficient in the service they provide. Expansion or new construction is not expected before the second decade.
Visual Resources	Landscape management will be emphasized in areas that are seen from identified visually sensitive roads and trails. In other areas of the Forest, landscape management mitigation principles will be applied to resource activities that may affect the visual setting. (See Appendix N.)

FOREST-WIDE OBJECTIVES (continued)

Cultural Resources	The cultural resource will be inventoried, evaluated, protected, and interpreted. An overview of the prehistory and history of the Forest will be completed by 2000.
Wilderness	The Bob Marshall and Scapegoat Wildernesses will be managed according to the objectives in the Wilderness Act of 1964. Important wildlife habitat for big game species, significant nongame species, and T&E species (especially the grizzly bear) will be maintained by natural processes. Existing grazing use will be maintained. The LAC (Limit of Acceptable Change) process will be used to determine the limit on the types and amounts of recreation use that can be tolerated while protecting wilderness resources and maintaining long-term opportunities for wilderness dependent experiences. A coordinated trail management program will be developed. Wilderness management direction is included in Management Area P (Chapter III).
Caves	To the extent practicable, protect and preserve non-renewable cave resources so their scientific, aesthetic, and recreational values do not decline. The majority of caves on the Forest will be managed as sensitive or undeveloped caves with limited visitation. A few caves will encourage public access as shown on Forest travel maps, trail signs, or District literature but will still offer a "wild" or undeveloped caving experience. Many caves will be protected for research or educational opportunities associated with resource attributes.
Roadless Areas	Of the 1,002,232 acres in the Forest roadless inventory, 51,834 acres are recommended as additions to the Bob Marshall and Scapegoat Wilderness, and 41,838 acres will remain a wilderness study area. Another 857,000 acres will be managed for their roadless values.
Wildlife and Fish	Emphasis in the Sensitive Species program (plant, animal, and fish) will center on gathering inventory data and providing coordination with other programs to insure maintenance of Sensitive Species populations. Management will emphasize the recovery of the endangered gray wolf and threatened grizzly bear on the Rocky Mountain Division and the Maintenance of current populations of elk and coldwater fish throughout the Forest. Programs will also be conducted to provide for huntable and trapable populations of small game and furbearers and viable populations of Other existing wildlife and fish species. (See Appendices D,E,F,H,I and K.)

FOREST-WIDE OBJECTIVES (continued)

	To achieve grizzly bear objectives the emphasis in the Regional action plan calls for coordination with range management, outfitters and guides, public information programs with hunters, and law enforcement to curtail illegal killing of bears (see Appendix J). To improve analytical capabilities on the effect of activities of grizzly bears and their habitat, a computerized cumulative effects model will be developed from this effort and area coordination plans will be prepared to regulate activities in time and space (see Appendix L). To maintain elk habitat capacity an annual program of habitat improvements will be conducted. Emphasis will center on prescribed burning on the winter range and a road management program to decrease human disturbance. To achieve the catchable trout objective, an annual program of habitat improvement is planned (see Apppendices G and M). Interagency monitoring and evaluation will continue to be stressed on the Rocky Mountain Front.
Range	Forage production and grazing permits will be continued at a level that slightly increases available forage for a portion of the year-round needs of the local livestock industry. Permitted use will increase from the current level of 71,000 to 73,600 AUMs by 2030. This increase will come from better distribution and use of forage, through the application of range improvement practices and more intensive management. (See Appendix R.) Grazing management will provide for protection of soil and water resources, riparian areas, and T&E species (see Appendix Q). State water quality standards will be met through application of best management practices. Range in unsatisfactory condition will be improved by 2030. Noxious weed control will be emphasized. A small portion of the Forest will be excluded from grazing, including municipal watersheds, Research Natural Areas, and areas with wildlife or watershed priority.
Timber	Management activities will increase the timber resource productivity by bringing 282,307 suitable acres under regulated management. These activities will provide for an annual timber sale program of 14 million board feet in the first decade and 20 million board feet by the third decade. Most of the timber will be harvested on the Jefferson Division. Achieving this level depends upon managing suitable acres with techniques such as stocking control, precommercial thinning, and commercial thinning and successfully managing any insect or disease outbreaks in the future. The Rocky Mountain Division will have a small sales program for local needs. Timber management activities and projects will be coordinated with other resources through an inter-disciplinary process. State water quality standards will be met through application of best management practices.

FOREST-WIDE OBJECTIVES (continued)

	Opportunities to gather firewood will be increased by expanding access, by not burning slash piles in potential woodcutting areas, and by developing a public awareness program. Refer to Appendix A for a summary of timber information and the 10-year timber sale program.
Water	The quantity of water currently meeting State water quality standards will be maintained. This will be accomplished by the application of soil and water conservation practices as necessary to protect soil productivity and water quality with a minimum as specified by Montana State or local BMP's (Best Management Practices). The outcome of these soil and water conservation practices will be monitored to determine their effectiveness. The quality of water coming from degraded watershed situations (backlog) on Forest lands will be improved through restoration projects (see soil objective). Sediment and water yield will be managed to increase less than 1 percent over current levels on a Forest-wide basis; these increases will be a result of increased timber harvest, road construction, and grazing. The application of appropriate conservation practices should ensure that the quality of individual water bodies will not be significantly affected by this increase. Water needed for National Forest purposes will be filed for and protected through State water rights procedures.
[illegible]	Approximately 1.4 million acres of National Forest lands on the Lewis and Clark National Forest, including potentially oil and gas rich lands in the rocky Mountain Division, are available for mineral entry and leasing under the Forest Plan. Mineral access, exploration, and development activities will be accomplished in a manner consistent with plan requirements for management of other resources and uses. Within this framework, the plan provides for resource coordination and identifies stipulations and restrictions to ensure that oil and gas activities comply with plan requirements. The standards provided in the Environmental Assessment on Oil and Gas Leasing on Non-Wilderness Lands" (February 1981) and "Environmental Assessment of Geophysical Exploration on Non-Wilderness Lands" (July 1982) were analyzed in the planning process and brought forward into the Forest Plan to ensure consistency in management of oil and gas activities. Activities authorized under the mining laws will be administered under the appropriate regulations and according to the Forest Plan. All mineral activities that result in soil disturbance have required reclamation to prevent erosion and increased stream sediment.

FOREST-WIDE OBJECTIVES (continued)

Soils	Soil productivity will be maintained and sediment resulting from soil erosion will be minimized by the application of soil and water conservation practices. When soil productivity is being decreased or soil erosion is approaching unacceptable sediment levels, project design will be changed or more intensive conservation practices will be applied. An estimated 373 acres of backlog restoration area will be treated by 1995 to protect the soil and control sediment.
Lands	As opportunities occur landownership adjustments will be made to support long-term Forest goals and objectives (see Appendix B). Necessary rights-of-way will be obtained to manage Forest resources as outlined by the Forest Plan (see Appendix C).practices.
Facilities	Transportation facilities willb e constructed, managed, and maintained to meet the land and resource objectives of the Forest in a cost effective way. (See Appendix O.) Transportation facilities include roads, trails, and airfields. State water quality standards will be met through the use of best management practices. The Forest's transportation system will be coordinated and integrated with public and private systems to the fullest extent possible. The existing road system, which consists of 1,395 miles will increase an average of 17 miles per year over the next 50 years. The present trail system of 1,677 miles will decrease slightly over this same period of time as roads replace some trails. Approximately 10 miles of trails will be constructed or reconstructed yearly. (See Appendix S.) The Forests airfields will be managed to ensure adequate and safe facilities for the Forest's needs.
Protection	The Forest will plan, implement, and maintain a fire management program that provides for the lowest cost plus net value change. This level of protection is determined through the National Fire Management Analysis process. For the Lewis and Clark National Forest the expected annual burned average at the most cost efficient level is 1,330 acres. (See Appendix P.) The excellent air quality on the Forest will be maintained. Requirements of the Montana Smoke Management Plan will be met. An effort will be made to control mountain pine beetle outbreaks by harvesting susceptible stands. During the first and second decade, over 70 percent of the timber harvest will be scheduled in the lodgepole pine type.

FOREST-WIDE OBJECTIVES (continued)

Projected Outputs, Activities, and Costs	Projected outputs and activities that will be used for programming, budgeting, and attainment reporting are displayed in Table 2.1. The first decade are proposed outputs and the other fur decades represent probably outputs. (See Glossary-Management Practices). The projected budget required to implement the Forest Plan is shown in Appendix T. Projected output and activities by mountain range is shown in Table 2.2. Appendices A, B, C, M, R, and S contain activity schedules or programs for various resources and activities. Projects will be added to these activities schedules or programs periodically as they are identified during the continuous project planning process. Projects may also be deferred or modified if problems are identified during project level environmental analysis (refer to Chapter V for a discussion of project planning).
Wild & Scenic Rivers	A river suitability study of North Badger Creek North Fork Birch Creek, North and South Forks Sun River, Green Fork Straight Creek, Dearborn River, Smith River, Tenderfoot Creek, and Middle Fork Judith River will be conducted with a recommendation to the Chief of the Forest Service on their suitability for inclusion into the National Rivers System. In the interim, Wild/ Scenic/ Recreational Forest-Wide Management Standards will direct resource management activities of eligible rivers and their adjacent corridors to maintain their existing condition, so as not to reduce their assigned potential classification.

TABLE 2.1 Projected Outputs and Activities by Time Period

Target Item (Average Annual Units)	Output or Activity	Unit of Measure	First Decade	Second Decade	Third Decade	Fourth Decade	Fifth Decade
Recreation							
T01	Developed Use	M RVD	169	189	211	230	230
T02	Dispersed Use						
	Wilderness	M RVD	86	101	117	132	148
	Non-Wilderness	M RVD	614	793	971	1151	1329
Wildlife & Fish							
T03	Wildlife Hab Imp	Acres	600	600	600	600	600
T04	Fish Habitat Imp	Acres	5	5	5	5	5
T05	T&E Habitat Imp	Acres	100	100	100	100	100
T29	Wildlife Hab Struc	Structures	10	10	10	10	10
T30	Fish Hab Struc	Structures	25	25	25	25	25
Range							
T06	Permitted Graz Use	M AUM	71.1	72.1	72.5	73.0	73.6
T07	Range Improvement						
	Nonstructural	Acres	1329	1229	1229	1229	1229
	Structural	Structures	40	40	40	40	40
T08	Range Res Plans						
	(Allot Mgt Plans)	Plans	10	10	10	10	10
T09	Noxious Weed Control (Chemical)	Acres	600	400	400	400	400
Soil							
T10	Soil Inventory	Acres	2000	2000	2000	2000	2000
T10A	Soils Improvement	Acres	45	-	-	-	-
Lands							
T11	Land Exchange	Acres	60	60	60	60	60
Minerals							
T12	Minerals Mgt	Cases	160	160	160	160	160
Timber							
T13	Tot Vol Offered	MM BF	14	17	20	20	20
T15	Silv Exams	M Ac.	28	28	28	28	28
T16-17	Reforest-Approp	Acres	54	50	61	72	60
T18-19	Reforest-KV	Acres	270	250	305	360	30
T20	Tbr Std Imp-Approp	Acres	200	200	220	210	260
T21	Tbr Std Imp-KV	Acres	0	0	0	0	0
T22	Landline Location	Miles	26	29	29	29	29
T44	Fuels Mgt-BD	Acres	1470	1410	1750	2420	1720
Protection							
T23	Fuels Mgt-FFP	Acres	700	700	700	700	700
Facilities							
T81-82	Road Construction	Miles	9.0	12.0	12.0	12.0	12.0
	Road Reconstruction	Miles	24.0	25.0	25.0	25.0	25.0
T83	Trail Const/Reconst	Miles	14.0	14.0	14.0	14.0	14.0

TABLE 2.2 PROJECTED OUTPUTS, ACTIVITIES, AND COSTS

(Numbers are yearly averages/or the level at the end of the planning period 2030)

Mountain Ranges

RESOURCE USE AND DEVELOPMENT FACTORS	UNITS	Rockies	Little Belts	High-woods	Crazy	Snowy	Castle	Total
RECREATION USE POTENTIAL BY 2030	Thousand RVDs							
- Primitive		54	0	0	0	0	0	54
- Semi-Primitive		20	125	2	12	12	12	183
- Roaded Natural		47	1,920	0	28	24	115	2,134
- Rural		8	155	1	1	3	26	194
RECREATION SETTING BY 2030	Thousand Acres							
- Primitive		436	0	0	0	0	0	436
- Semi-Primitive		309	400	31	16	90	21	867
- Roaded Natural		26	388	11	22	28	48	523
- Rural		5	10	0	0	1	1	17
DEVELOPED RECREATION USE POTENTIAL	Thousand RVDs							
- First Decade		62	88	15	0	23	10	198
- Second Decade		62	88	15	0	23	10	198
- Third Decade		62	92	15	5	23	10	207
- Fourth Decade		66	97	20	5	23	10	221
- Fifth Decade		66	106	20	5	23	10	230
VISUAL QUALITY OBJECTIVES BY 2030	Thousand Acres							
- Preservation		436	3	0	0	0	0	439
- Retention		42	0	0	0	0	0	42
- Partial Retention		272	407	31	16	91	22	839
- Modification		26	388	11	22	28	48	523
WILDERNESS								
- Existing	Thousand	384	0	0	0	0	0	384
- Recommended	Acres	52	0	0	0	0	0	52
ROADLESS MANAGEMENT								
--1985	Thousand	300	455	40	27	98	30	95
--1995	Acres	300	450	40	26	98	29	94
--2030		282	397	31	16	90	21	85
WILDLIFE								
-Wildlife Habitat Improvement								
--Nonstructural	Acres	100	200	100	50	50	100	600
--Structural	Structures	2	2	2	1	1	2	10
--Structural Riparian	Structures	13	12	0	0	0	0	25
--T&E Species	Acres	100	0	0	0	0	0	100
-Elk Population Potential	Number							
--All Decades		3800	3000	500	400	200	600	8500
-Grizzly Bear Population	Number							
--All Decades		85	0	0	0	0	0	85
-Catchable Trout Potential	Number							
--All Decades	(Thousands)	159	30	2	4	5	2	202
-Big Game Forage	AUMs							
--First Decade	(Thousands)	74.5	127.1	9.3	6.6	18.1	13.4	249
--Fifth Decade		77.5	128.5	9.2	6.5	18.1	13.2	252
-Habitat for Old Growth Users	Acres							
--First Decade		30205	373815	0	11023	63856	13461	492360
--Fifth Decade		49392	367583	18837	9641	59995	33978	539426

RESOURCE USE AND DEVELOPMENT FACTORS	UNITS	Rockies	Little Belts	High-woods	Crazy	Snowy	Castle	Total
WILDLIFE (continued)								
-Habitat for Grass-Forb Users	Acres							
--First Decade		967	14534	0	1147	509	440	17597
--Fifth Decade		2747	52011	502	2120	2450	1998	61828
-Total Land Harvested in Undeveloped Areas by 2030	Acres							
--Nonwinter range		2873	35985	503	2412	0	986	42759
--Winter range		1263	1973	0	0	0	213	3449
-Elk Hunter Recreation	Thousand							
--First Decade	Hunter	14.2	40.5	.6	2.1	.2	6.1	63.7
--Fifth Decade	Days	14.2	37.1	.6	2.0	.2	6.1	60.2
RANGE	Thousand AUMs							
-Grazing Level								
--First Decade		11.0	30.5	8.2	5.0	5.4	11.0	71.1
--Second Decade		11.2	31.2	8.2	5.0	5.5	11.0	72.1
--Third Decade		11.2	31.3	8.2	5.0	5.6	11.0	72.3
--Fourth Decade		11.3	31.8	8.2	5.0	5.7	11.0	73.0
--Fifth Decade		11.4	32.2	8.2	5.0	5.8	11.0	73.6
-Range Improvement								
--Nonstructural-Forage Imp.	Acres	178	926	126	68	182	149	1629
--Nonstructural-Nox. Weeds	Acres	170	280	75	5	65	5	600
--Structural	Structures	7	18	6	2	5	2	40
TIMBER								
-Lands Available, Capable, and Suitable	Thousand Acres	8.0	246.6	2.3	7.1	11.0	7.3	282.3
-Annual Timber Sale Program								
First Decade	Million							
Programmed Sales	Board Feet	.00	10.13	.0	.95	.29	.33	11.7
Small Sales		.50	1.52	.0	.16	.05	.06	2.3
Total		.50	11.65	.0	1.11	.34	.39	14.0
Second Decade								
Programmed Sales		.00	13.31	.0	.15	.28	.26	14.0
Small Sales		.50	2.37	.0	.03	.05	.05	3.0
Total		.50	15.68	.0	.18	.33	.31	17.0
Third Decade								
Programmed Sales		.00	14.76	.15	1.00	.26	.50	16.7
Small Sales		.50	2.32	.03	.26	.05	.21	3.4
Total		.50	17.08	.18	1.26	.31	.71	20.0
Fourth Decade								
Programmed Sales		.00	15.08	.15	.46	.83	.34	16.8
Small Sales		.50	2.34	.03	.08	.15	.06	3.2
Total		.50	17.42	.18	.54	.98	.40	20.0
Fifth Decade								
Programmed Sales		.00	14.94	.15	.46	.96	.34	16.8
Small Sales		.50	2.31	.03	.08	.17	.06	3.2
Total		.50	17.25	.18	.54	1.13	.40	20.0
-Reforestation (Natural and Planting)	Acres							
First Decade		0	1,533	0	120	50	40	1,743
Second Decade		0	1,551	0	10	20	30	1,611
Third Decade		0	1,790	20	100	40	80	2,030
Fourth Decade		0	2,220	20	30	120	30	2,420
Fifth Decade		0	1,790	20	40	90	40	1,980

RESOURCE USE AND DEVELOPMENT FACTORS	UNITS	Rockies	Little Belts	High-woods	Crazy	Snowy	Castle	Tot
TIMBER (continued)								
-Precommercial Thinning	Acres							
First Decade		0	170	0	10	10	10	2
Second Decade		0	170	0	10	10	10	2
Third Decade		0	180	0	10	10	10	2
Fourth Decade		0	190	0	10	10	10	2
Fifth Decade		0	210	0	20	20	10	2
-Commercial Thinning	Acres							
First Decade		0	10	0	0	0	0	
Second Decade		0	10	0	0	0	0	
Third Decade		0	10	0	0	0	0	
Fourth Decade		0	25	0	0	0	0	
Fifth Decade		0	25	0	0	0	0	
-Ave. Annual Silvicultural Burning for Composition and Stocking Control	Acres	0	0	0	0	20	0	
-Activity Fuel Treatment								
First Decade	Acres	0	1,533	0	120	50	40	1,7
Second Decade		0	1,551	0	10	20	30	1,6
Third Decade		0	1,790	20	100	40	80	2,0
Fourth Decade		0	2,220	20	30	120	30	2,4
Fifth Decade		0	1,790	20	40	90	40	1,9
-Long Term Sustained Yield Capacity	Million Board Feet	Not Disaggregated						23
SOIL AND WATER								
-Total Sediment Yield	Thousand Tons/Year							
--First Decade		Not Disaggregated						4
--Fifth Decade								4
-Increase In Water Quality	Thousand							
--First Decade	Acre Feet/	Not Disaggregated						1,7
--Fifth Decade	Year							1,7
MINERALS 1/ (See Next Page)								
-Energy								
--Category A	Thousand	436	3	0	0	0	0	4
--Category B	Acres	340	0	0	0	0	0	3
--Category C		0	150	0	20	12	15	1
--Category D		0	645	42	18	107	55	8
-Nonenergy								
--Category A	Thousand	436	3	0	0	0	0	4
--Category B	Acres	340	0	0	0	0	0	3
--Category C		0	150	0	20	12	15	1
--Category D		0	645	42	18	107	55	8
LANDS								
-Lands Required for Right-of-Way	Miles	Not Disaggregated						70
ROADS (does not include roads built for minerals or special use purposes)								
Construction	Miles							
First Decade		0	7.9	0	.5	.3	.3	9
Second Decade		0	11.5	0	0	.3	.2	1
Third Decade		0	9.4	.3	1.0	.3	1.0	1
Fourth Decade		0	10.4	.2	.3	.8	.3	1
Fifth Decade		0	10.2	.3	.4	.9	.2	1

RESOURCE USE AND DEVELOPMENT FACTORS	UNITS	Rockies	Little Belts	Highwoods	Crazy	Snowy	Castle	Total
MINERALS [1]								
-Nonenergy								
--Category A	Thousand	**776**	3	0	0	0	0	**779**
--Category B	Acres	**0**	0	0	0	0	0	**0**
--Category C		0	150	0	20	12	15	197
--Category D		0	645	42	18	107	55	867

[1] Catergory A – lands withdrawn or proposed for withdrawl from mineral entry.
Category B – lands where laws or executive orders require specific protection or mitigation measures.
Category C – lands where special mitigation measures are required by the Regional Forester.
Category D – lands where standard lease stipulations apply.

Mountain Ranges

RESOURCE USE AND DEVELOPMENT FACTORS	UNITS	Rockies	Little Belts	High-woods	Crazy	Snowy	Castle	Total
ROADS (continued)								
Reconstruction	Miles							
First Decade		0	19.8	0	2.4	.9	.9	24.0
Second Decade		0	23.8	0	.3	.4	.5	25.0
Third Decade		0	18.3	.3	2.6	1.5	2.3	25.0
Fourth Decade		0	20.4	.3	1.1	2.3	.9	25.0
Fifth Decade		0	21.5	.2	.9	1.6	.8	25.0
TRAILS								
-Construction/Recon.	Miles	Not Disaggregated						14.0

1/
Category A - lands withdrawn or proposed for withdrawal from mineral entry.
Category B - lands where laws or executive orders require specific protection or mitigation measures.
Category C - lands where special mitigation measures are required by the Regional Forester.
Category D - lands where standard lease stipulations apply.

Annual Benefits and Costs Million Dollars

	TOTAL BENEFITS	RETURN TO US GOVT	RETURN TO STATE	TOTAL COSTS	CAPITAL INVESTMENTS	OPERATIONS & MAINTENANCE	PURCHASER ROAD CREDIT	PERM CO
First Decade	12.42	1.27	.51	7.89	.15	4.12	.46	.
Second Decade	15.83	2.23	.73	9.42	.24	4.13	.41	.
Third Decade	19.30	3.17	1.03	11.35	.45	4.26	.57	.
Fourth Decade	23.54	5.32	1.67	12.93	.65	4.63	.87	.
Fifth Decade	25.84	7.06	1.98	12.50	.55	4.55	.55	.

RESEARCH NATURAL AREA

RESEARCH NATURAL AREA

The Regional habitat types listed in Table 2.3 have been assigned by the Northern Regional Guide as the Forest's objectives for Research Natural Area recommendations. The table also lists a candidate area (or areas) representative of each assigned type. Establishment reports will be prepared for each area. (Also see Management Standard N-1, Research Natural Areas.)

TABLE 2.3

Research Natural Area Objectives

Habitat Type Code	Habitat Type Abbrev.	Name	Occurance*	Proposed/ Candidate RNA
Forest Types				
010		Scree	M	Paine Gulch/ Walling Reef
091	PIFL/AGSP	limber pine/ bluebunch wheat-grass	m	Paine Gulch
092	PIFL/FEID	limber pine/ Idaho fescue	m	Paine Gulch
094	PIFL/FEID-FESC	limber pine/ Idaho fescue-rough fescue phase	m	Walling Reef
220	PSME/FEID	Douglas fir/Idaho fescue	M	Paine Gulch
290	PSME/LIBO	Douglas fir/twin-flower	M	Paine Gulch
310	PSME/SYAL	Douglas fir/snow-berry	M	Paine Gulch
340	PSME/SPBE	Douglas fir/white spirea	m	Paine Gulch
350	PSME/ARUV	Douglas fir/ kinnikinnick	m	Paine Gulch
360	PSME/JUCO	Douglas fir/juniper	M	Paine Gulch
410	PICEA/EQAE	spruce/horsetail	m	Jumping Creek
460	PICEA/SEST	spruce/groundsel	m	Bartleson Peak Big Snowy
770	ABLA/CLPS	subalpine fir/ virgin's bower	m	Paine Gulch
780	ABLA/ARCO	subalpine fir/ heartleaf arnica	M	Little Belt/ Big Snowy
		Aspen	M	Front Range
Grassland and Shrubland Types				
021	DECA/CAREX	tufted hairgrass/ sedge	m	Onion Park/ Walling Reef
034	POFR/FESC	shrubby cinquefoil/ rough fescue	m	Walling Reef
034	POFR/FEID	shrubby cinquefoil/ Idaho fescue	m	
Aquatic Types				
001		Type I Streams		Onion Park/Jumping Creek
		Waterfalls		Front Range
		Cold Springs		Paine Gulch/Walling Reef
		Beaver Ponds		Jumping Creek
		Lake, Low Prod.		Walling Reef

* M = major occurance satisfied by representation of 50 acres.
m = minor occurance satisfied by representation of 10 acres.

ADDITIONAL DATA REQUIREMENTS

ADDITIONAL DATA REQUIREMENTS

Additional requirements that are needed to improve the Forest's data base, revise the current data base inventories, and to incorporate new data base requirements that have recently been identified, include the following:

Grizzly Bear Habitat Inventory - Occupied grizzly bear habitat has been stratified by management situations (see Appendix K). Constituent element mapping is approximately 70 percent completed. This mapping is based on radio monitoring studies conducted under The Rocky Mountain Front Interagency Monitoring and Evaluation Program (see Appendix H). The identification and description of grizzly bear habitat components has been completed. Habitat Component mapping should be completed within the next five years.

Timber Stand Data - There is a need to acquire inplace data for all forested stands. The Chief of the Forest Service 1986 goals and objectives state that each National Forest will inventory all stands on a 10-year basis. In the Northern Region, 1/10th of stands will be inventoried every year, using the new compartment inventory procedure.

Old Growth Forest Inventory - There is currently no inventory of timber stands on the Forest which meet the old growth forest definition. These stands will be identified as a part of resource program and project level wildlife inventories and evaluations. Photographs of representative old growth stands in the various conifer habitat type series will be helpful in completing future inventories (see Management Standard E-3).

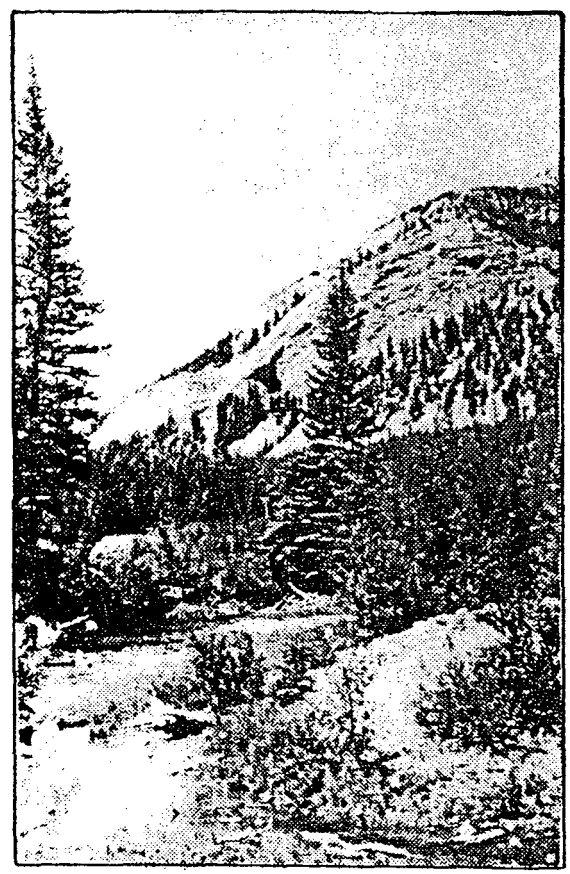
Stream and Lake Fish Habitat Surveys - The stream and lake habitat inventory is outdated. Current stream and lake fish habitat surveys are needed to determine priorities and opportunities for implementing a direct habitat improvement 5-year program.

Soil and Water Data - Soil and water data is needed to validate assumptions important in both long range and project planning. (Also see Management Standard F-2, Data Collection).

Bob Marshall Wilderness Complex - Complete campsite re-inventory every 5 years, extensive social data every 10 years, and analysis of range condition by 1995.

RESEARCH NEEDS

RESEARCH NEEDS	The following research needs have been identified during development of this Forest Plan; they will be evaluated by the Regional Forester for inclusion in the Regional research program proposal. It is anticipated that more research need will become apparent during monitoring and evaluation of the Forest Plan as it is implemented.
Wilderness	Limits of acceptable change (carrying capacity) for wilderness. The amount and type of use that is consistent with some measure of quality in recreation experience. (See Management Area P.)
Wildlife	Effects of oil and gas activities on wildlife, especially T&E species. (See Management Standard C-2.)
Watershed	Effects of timber management and other developmental activities on watersheds. (See Management Area K.)



A Quiet Day in the Forest.

DESIRED FUTURE CONDITION OF THE FOREST

DESIRED FUTURE CONDITION OF THE FOREST

This section describes what the future Forest should be like if the management direction contained in the Forest Plan is implemented. It summarizes the anticipated physical changes which would result from carrying out planned management practices, at two points in time: at the end of ten years and at the end of fifty years (RPA planning horizon).

FIRST DECADE

By the end of the first decade of implementing the Forest Plan there will be some noticeable changes to the Forest.

Rocky Mountain Division

On the Rocky Mountain Division oil and gas exploration will have affected the quality of the recreation setting. Pad site and road construction will have temporarily lowered the visual quality and may have affected wildlife habitat use patterns. Because oil and gas exploration and development is carried out by private companies under a Federal leasing program, activities are generated by the private sector. The amount, kind, and timing of the oil and gas activities will determine the change.

The strong, on-going preliminary exploration program will continue on the Rocky Mountain Division. It is anticipated that by the end of the first decade several wildcat wells will have been drilled. Limited production may occur if economic finds are made. The complex geology of the overthrust belt and the great depth of the hydrocarbon targets will dictate a slowly developing program. However, if a discovery is made on National Forest or nearby lands, there will be a flurry of activity throughout most of the Division. Examination of oil and gas fields in similar geologic settings suggest that if producing fields are established they would likely be between 3 and 30 square miles.

By the end of the first decade, in response to local needs, about 5 million board feet on 570 acres scattered throughout the Division will have been harvested. This timber harvest will increase the opportunities for firewood gathering. Over 3,000 acres will have been treated to maintain wildlife habitat capacity and 1,780 acres to increase forage production for livestock. Wildlife populations and livestock grazing levels should not change.

DESIRED FUTURE CONDITION OF THE FOREST

There will be little noticeable change in the Bob Marshall and Scapegoat Wildernesses, although there will have been a slight increase in visitor use, and fire will have played a more natural role. During the first decade 51,834 acres recommended for wilderness classification should be considered by Congress for additions to the Bob Marshall and Scapegoat Wildernesses. All of the high quality opportunities for semi-primitive motorized and non-motorized opportunities will remain unchanged. Overall recreational use will have increased slightly.

Jefferson Division

On the Jefferson Division, by the end of the first decade, over 135 million board feet of timber on 17,490 acres will have been harvested and reforested and 2,000 acres precommercially thinned. To support these timber management activities, 36 miles of new arterial and collector roads, and 130 miles of new local roads will have been constructed. These activities will have caused slight changes in the recreation setting, visual quality, and wildlife habitat effectiveness. Additional road closures and restrictions will have been used to resolve user conflicts, promote user safety, or protect resources. Opportunities to gather firewood will have increased.

Over 4,000 acres will have been treated to maintain wildlife habitat capacity and 14,510 acres to increase forage production for livestock. Wildlife populations should not change. Livestock grazing levels will have increased slightly because of increased forage from burning, timber harvest, and improving livestock distribution.

There will have been a decrease in the roadless resource of the Jefferson Division as 7,000 acres of roadless land are developed for timber management during the first decade. Most of the popular Tenderfoot/Deep Creek, Pilgrim, Middle Fork/Lost Fork Judith, and Big Snowies will be maintained for semi-primitive recreation. Overall recreational use will have increased slightly. Hardrock mineral exploration will continue at about the current level with most activity centered at existing mining districts. Hydrocarbon exploration will have increased in the Crazy and Snowy Mountains.

DESIRED FUTURE CONDITION OF THE FOREST

Forest-Wide	During the first decade of the Plan many changes to the Forest will hardly be noticed. Throughout the Forest 100 miles of trail will have been constructed or reconstructed, and it is projected that 12,280 acres will have been burned by wildfire. Habitat for grass forb users will have increased slightly (3 percent), while habitat for old growth users will have decreased slightly (4 percent). Forage for big game animals will remain constant. Elk populations should not change. Elk hunter recreation will have decreased slightly (2 percent) because of increased access. There will have been a slight increase in sediment yield (1 percent) because of road construction and timber harvest activities. Soil productivity will be maintained. Air quality will have decreased slightly for a short time when burning for timber, roads, wildlife, and range programs.
FIFTH DECADE	By the end of the fifth decade of implementing the Forest Plan there will be many noticeable changes in the Forest.
Rocky Mountain Division	On the Rocky Mountain Division, if economic finds of oil and gas are made, field development, production, and rehabilitation will be common activities. Exploration for hydrocarbons will continue. Nationally, changes in energy supply patterns will take place, but the change will be gradual and over a long period of time. Oil, coal, and natural gas will still be the chief sources of energy supply. Timber harvest will continue, as 25 million board feet on 4,314 acres scattered throughout the Division will have been harvested. There will have been some increased opportunity for firewood gathering. Over 15,000 acres will have been treated to maintain wildlife habitat capacity and 8,900 acres to increase forage production for livestock. Wildlife populations should not change. Grazing will have increased slightly. In the Bob Marshall and Scapegoat Wilderness use will have more than doubled and visitors will be regulated more. There will be a slight decrease in the roadless resources as 18,000 acres of presently roadless lands are developed by the end of the decade.

DESIRED FUTURE CONDITION OF THE FOREST

Jefferson Division

On the Jefferson Division, about 885 million board feet of timber on 95,000 acres will have been harvested and reforested and 10,900 acres precommercially thinned by 2030. To support these timber management activities, 121 miles of new arterial and collector roads and 762 miles of new local roads will have been constructed. Semi-primitive recreation opportunities will have decreased slightly while roaded natural opportunities will have increased. In many areas, management activities will dominate the original landscape. Wildlife habitat effectiveness will have been reduced slightly (less than 5 percent). There will be more restrictions on the use of roads, trails, and areas. By the end of the decade, over 20,000 acres will have been treated to maintain wildlife habitat capacity and 72,550 acres to increase forage production for livestock. Wildlife populations should not change. Livestock grazing levels will have increased slightly (1 percent) because of increased forage from burning, timber harvest, and improvement of livestock distribution.

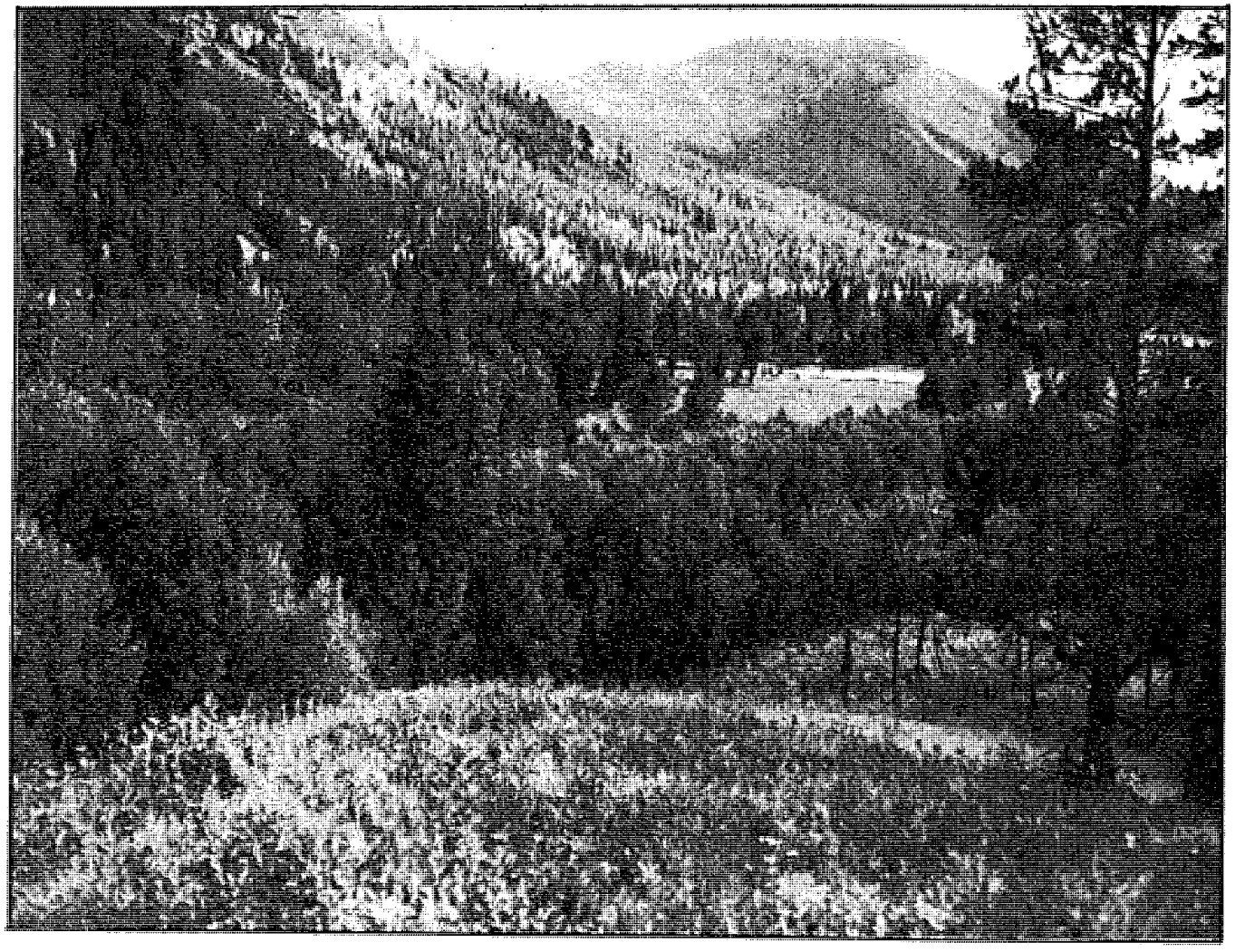
There will have been a decrease in the roadless resource of the Jefferson Division, as 75,000 acres of presently roadless land will have been developed for timber management by the end of the decade. Most of the popular Tenderfoot/Deep Creek, Pilgrim, Middle Fork/Lost Fork Judith, and Big Snowies will be maintained for semi-primitive recreation. Hardrock mining activity will have increased over the first decade level. Hydrocarbon exploration will have been completed in the Crazy and Snowy Mountains. Any development would hinge on an economic discovery.

Forest-Wide

During the fifth decade there will have been many noticeable changes in the Forest. Recreational use will have doubled as the Forest will be receiving almost 1.5 million RVDs of use yearly. The existing road system will have increased by about 60 percent or 883 miles. About 1000 miles of trail will have been constructed or reconstructed. Over 99,000 acres of forested land will have been harvested, reforested, and managed for timber products.

Habitat for grass forb users will have tripled, while habitat for old growth users and forage for big game will have increased slightly (5 and 1 percent respectively). Elk population should not

change. However, elk hunter recreation will have decreased by about 6,000 hunter days yearly (10 percent) because of increased access. There will have been a slight increase in sediment yield (1 percent). Air quality will have decreased slightly for a short time when burning for timber, roads, wildlife, and range programs.



View of the South Fork Sun River.

FOREST-WIDE MANAGEMENT STANDARDS

FOREST-WIDE MANAGEMENT STANDARDS

Management of programs administered by the Forest Service requires the establishment of standards for land and resource management. Forest-Wide Management Standards clarify existing policy and direction for Forest operations, maintenance, and protection. A summary of each management standard follows. Management standards are fully described in the planning record, "Management Guideline Analysis Report."

The following standards apply to the National Forest land that is administered by the Lewis and Clark National Forest. They are intended to supplement, not replace, the National and Regional policies, standards and guidelines found in Forest Service Manuals and Handbooks and the Northern Regional Guide.

1. If it is determined during project design that the best way to meet the management area goals of the Forest Plan conflicts with a Forest Plan standard, the Forest Supervisor may approve an exception to that standard for that project; such exceptions and the rationale therefore must be described in the project's documentation.

2. As soon as practicable, and subject to valid existing rights, all outstanding and future permits, contracts, cooperative agreements, leases and other instruments for occupancy and uses of lands of the Lewis and Clark National Forest will be made consistent with the Forest Plan.

3. Subsequent activities affecting the Forest, including budget proposals, shall be based on the Forest Plan. Proposed implementation schedules may be changed to reflect differences between proposed annual budgets and appropriate funds. Such scheduled changes will be considered an amendment to the Forest Plan. They will not be considered a significant amendment, or require the preparation of an environmental impact statement, unless the changes significantly alter the long-term relationship between levels of multiple use goods and services projected under planned budget proposals as compared to those projected under actual appropriations.

FOREST-WIDE MANAGEMENT STANDARDS

LISTING OF FOREST-WIDE MANAGEMENT STANDARDS

Management Standard A-1
Recreation Information

Make recreation information more visible by completing the Recreation Opportunity Guide, training additional visitor information service personnel, making more use of existing media to communicate information, and developing a Forest newsletter with current recreation information.

Management Standard A-2
Developed Recreation

(1) Manage fee campgrounds, heavy-use campgrounds, and heavy-use picnic areas at full service levels. Maintain facilities to their original standard. Replace or rehabilitate worn and substandard facilities and sites, in accordance with the Northern Regional Guide.

(2) Manage low-use campgrounds and picnic areas at a reduced service level. However, to reduce user conflicts and damage to Forest resources and recreation facilities, patrols and educational programs will be increased as necessary. Maintain facilities to protect investment and provide safe, sanitary, and reasonably attractive sites.

(3) Follow Management Standard L-4, Maintenance and construction of Roads, Trails, and Other Facilities, for construction and maintenance of recreation facilities.

(4) Full implementation requires substantial recreation fund increases. Therefore, implementation should be staged over several years.

(a) First Priority--Manage campgrounds at full administration and operation levels. Increase maintenance and education to protect the investment and provide safe, sanitary, and reasonably attractive facilities and sites.

(b) Second Priority--Increase information services and public awareness of recreation opportunities.

(c) Third Priority--Provide the optimum level of developed-site administration, operation, and maintenance.

(5) Administer provisions of the Endangered Species Act in occupied T&E species habitat (Appendix I). Use the Management Guidelines developed under the Interagency Rocky Mountain Front Wildlife Monitoring/Evaluation Program to avoid or mitigate conflicts between developed recreation and T&E species (Appendix I).

Management Standard A-3

Recreation Residences

(1) Administer recreation-residence permits according to Forest Service Manual 2720. The manual directs that permits will be terminated if they are incompatible with public interest, or pose substantial physical conflicts with public needs. Also, termination ca occur where permittees will not or cannot correct existing or anticipated unacceptable resource degradation, safety hazards, or unsanitary conditions.

(2) Inspect recreation residences at least every four years. Combine fire and recreation inspections.

(3) Formally train Forest Service personnel on permit administration.

Management Standard A-4

Travel Shelters

(1) Authorize travel shelters on the Jefferson Division, in response to user needs.

(2) Evaluate the use of existing Forest Service facilities to meet a portion of user needs. Assure that such use does not compete with the private sector.

Management Standard A-5

Winter Dispersed Recreation Opportunity

(1) Provide winter snow trails for both motorized and non-motorized use.

(2) Pursue cooperative agreements with organizations, clubs, and agencies for snow trail development, maintenance, and operations.

Management Standard A-6

Special Interest Areas

Inventory and manage, but do not publicly identify special interest areas which need protection. These areas include areas with rare or unusual vegetation and other special sites.

Management Standard A-7

Cultural Resource Management

In compliance with the national historic Preservation Act, the procedures outlined in 36 CFR 800, and Executive Order 1593, the following direction is established to inventory, evaluate and protect significant cultural resource values:

(1) Identification of Cultural Resources -- A cultural survey, will be conducted to identify and record cultural properties within the area of environmental impact. Sites, building, districts and objects which may qualify for the National Register of Historic Places will be nominated in accordance with established procedures.

(2) Protection of Cultural Resources --

(a) Evaluate, according to criteria which determine eligibility for the National Register of Historic Places, and in consultation with the SHPO (State Historic Preservation Officer), any identified archaeological or historical site, building, structure, or district.

(b) Consult with the SHPO and together determine the project's effect on significant cultural properties. If no effect is identified, the Forest proceeds with the project.

If an effect is identified, the Forest and the SHPO determine whether the effect will be adverse or not. If the effect is not adverse, the Forest and the SHPO send documentation to the Advisory Council on Historic Preservation, and the Forest proceeds with the project.

If a potentially adverse effect on a property on or eligible for listing on the National Register is identified, consultation with the Advisory Council on Historic Preservation is required. The procedure is to generate alternatives for management of the property in question. After the Advisory Council has commented, the Forest chooses the most desirable management and proceeds.

(c) A schedule will be developed for visiting known sites to determine what protection, if any, is necessary.

(3) Management of Cultural Resources--Cultural resources are not renewable. Therefore, the Forest will make every effort to design projects without adversely affecting cultural resources. Normally, slight project modification will avoid any potentially adverse effects.

(4) Interpretation of Cultural Resources--The decision to provide interpretative information will consider the following criteria:

(a) Can the site provide visitor information?

(b) Is the site near other recreation attractions?

(c) How easily can visitor impact on the site be monitored?

(d) Is the site representative of cultural resources elsewhere on the Forest and surrounding areas?

(e) Can interpretation be coordinated with the protection, preservation, maintenance, and interpretation of other resources?

(5) Public Education--Educational efforts will be made to increase public understanding of the importance of these identified cultural resources and thereby mitigate damage and maintenance problems.

Management Standard A-8
Visual Resource Management

(1) Landscape management principles will be applied to all activities on the Forest (FSM 2380). This will be accomplished by implementing the procedures defined in National Forest Landscape Management, Volume 2, Chapter I, The Visual Management System (Agriculture Handbook No. 462).

(2) A VQO (visual quality objective) is stated for each management area (see Chapter III). These VQOs provide the guideline for altering the landscape. If the VQO conflicts with the management prescription, then the prescription will prevail, unless the area is within the seen areas of the roads or trails identified on Forest Plan maps. These roads and trails are in sensitivity level I; all recreation use areas included in Management Area H are also assigned sensitivity level I. Seen areas from these designated roads and trails, and recreation use areas will be managed for the protection or enhancement of scenic values.

The seen areas associated with these roads, trails and use areas occur in different management areas with different prescriptions. In these seen areas visual resource management principles will be emphasized and visual impacts mitigated to meet the VQO. The mitigation is described in terms of existing visual condition (see Appendix N).

(3) Emphasis will be given to acquaint the public with and explain the Forest Service visual management system.

The Forest adjacent to or as seen from all or segments of the following roads and trails, as shown on Forest Plan maps, will be managed for its visual resource. Only roads and trails that may be affected by development are identified. National Recreation Trails are discussed in L-4, Maintenance and Construction of Roads, Trails, and Other Facilities.

ROADS
U.S. Highway 2
U.S. Highway 12
U.S. Highway 89
Sun River 108
South Fk. Teton River 109
Dry Fk. Belt Cr. 120
North Fk. Teton River 144
Crystal Lake 175
Elk Creek 206
Four Mile 211
Willow Cr/Beaver Cr 233
Benchmark 235
Dry Wolf 251
Logging Creek 251
Memorial Way 487
Belt Park 6511
Highwood Country Road

TRAILS
No. Fk. Badger 103
Blackleaf Canyon 106
No. Fk. Teton 107
Route Creek 108
West Fk. Teton 114
No. Fk. Birch Cr. 121
No. Fk. Dupuyer 124
Headwater Cr. 165
Elk Pass 205
Dearborn River 206
Arsenic Creek 208
Jackie Creek 214
Smith Creek 215
Falls Creek 229
Lost Fork Judith 409
Two Medicine -Elk Calf NRT

Additional Sensitivity Level I viewpoints were analyzed in the Oil and Gas Leasing Analysis. The following Sensitivity Level I viewpoints are added to the Forest Plan viewpoints for roads and trails:

Rocky Mountain Division:

- Four Blackfeet Indian Reservation Roads, including gravel/paved road one mile south of East Glacier to Heart Butte; paved road from Browning south to Heart Butte; road from Four Horns Cemetery near Highway 89 to Heart Butte; and paved road from Highway 89 near Robere Cemetery to Heart Butte. Highway 49 north of East Glacier, as well as Four Horns Lake, are also viewpoints.
- Glacier National Park Viewpoints
  Glacier Park-Autumn Creek Trail/Summit Trail (Continental Divide National Scenic Trail)
- State/County Roads:
  Road 146 from Dupuyer to Swift Dam
  Gravelled road from Dupuyer through Roosevelt Ranch to Forest Road 9193
  Road 145 from Bynum to Blackleaf Canyon
  Road 144 from Highway 89 to Forest Boundary near Cave Mountain
  Road ½ mile south of Choteau to Forest Road 109
  Road from Augusta to Forest Boundary near Home Gulch Campground
  Road 235 from Augusta to both Forest Boundary and junction with Road 233
  Road from junction with Highway 434 to Trail 215 trailhead along Smith Creek
  Highway 434 from Augusta to Highway 200
  Road along Elk Creek from Highway 434 to Forest Boundary
  Road 577 from junction with Highway 434 to Dearborn Trailhead
- Reservoirs:
  Bynum
  Pishkun
  Willow Creek
  Nilan
  Bean
  Four Horns Lake
- Trails:
  Continental Divide National Scenic Trail (CDNST)

Jefferson Division:

- Smith River

Management Standard C-1

Wildlife Coordination and Habitat Management

(1) Strengthen wildlife habitat coordination with all Forest uses by improving cooperation with the MDFW&P (Montana Department of Fish, Wildlife, and Parks). Identify wildlife habitat values early in the planning of other resource projects. Protect those values through involvement of appropriate MDFW&P personnel during all stages of project planning and implementation.

Specific Forest Service policies and objectives provide guidance for wildlife and fish habitat management on National Forest lands. Appendix E lists these policies.

(2) Utilize the general concepts presented in Agriculture Handbook No. 533, Wildlife Habitats in Managed Forests. This handbook provides management strategies for various wildlife habitat situations. The handbook's specific habitat parameters may have to be adjusted for the Lewis and Clark National Forest. When more site specific management recommendations are available through the Forest Service or MDFW&P those recommendations will be followed.

(3) An annual meeting will be held at the Forest Supervisor (L&C NF) and REgional Supervisor (MdFW&P, R-4) level to discuss programs affecting wildlife resources and habitats, as specified in the Memorandum of Understanding dated September 1978. In addition, annual meetings should be held at the District level with appropriate MDFW&P personnel to discuss specific projects and issues of mutual interest or concern.

(4) Incorporate recommendations from the Montana Cooperative Elk-Logging Study in the planning of timber sales and road construction projects. These recommendations are listed in Appendix F.

(5) Require a big-game cover analysis of projects involving significant vegetative removal to ensure that effective hiding cover is maintained. The cover analysis should be done on a drainage or elk herd unit basis. Drainages or elk herd units containing identified summer/fall range will be maintained at 30 percent or great effective hiding cover.

(6) Manage motorized use on National Forest system lands through the Forest Travel Plan, in cooperation with the public, State of Montana, and other Federal agencies, to reduce effects on wildlife during periods of high stress (hunting seasons and wintering periods). Also see Chapter III and Appendix O. The Montana Fish and Game Commission Road Management Policy and the Forest Service Road Regulations are shown in Appendix G.

(7) Forage competition and social interaction between wildlife and livestock are important winter ranges. Wildlife habitat needs will be fully met on these important areas prior to any livestock increase.

(8) Implement improved grazing management systems at the earliest opportunity on allotments within identified big game winter range. Kinds and numbers of livestock, as well as grazing seasons and other practices, may be adjusted from the present situation to maintain or enhance key wildlife habitat components.

(9) Cooperate with private, State, and other Federal land managers on lands adjacent to identified big-game winter ranges in implementing improved grazing management systems to enhance key wildlife habitat components.

(10) Cooperate with private landowners, State of Montana, and other Federal agencies in implementing programs for land acquisition, land exchanges, access easements, and conservation easements which will promote overall wildlife management objectives.

(11) The Interagency Wildlife Monitoring/Evaluation Program was initiated in 1980 to promote better coordination of wildlife studies along the Rocky Mountain Front (see Appendix H).

Data gathered through this program is the basis for grizzly bear, elk, mountain goat, mule deer, bighorn sheep, and raptors management guidelines (Appendix I). These guidelines will be used in the management of land-use activities occurring within habitat of these species on the Rocky Mountain Front.

(12) Schedule direct habitat improvement projects to meet outputs. Prescribed fires will be frequently used for big game and other wildlife habitat management.

(13) Work closely with State of Montana and other Federal agencies in developing long-term plans for specific wildlife habitat improvement projects.

Management Standard C-2
Threatened and
Endangered Species

Standards have been established to further the recovery efforts on behalf of T&E (threatened and endangered) species. These standards are a continuation of present methods, policies, and direction. (Also see Management Standards D-4, E-2, E-4, G-1, and G-2).

(1) Comply with the Endangered Species Act, other related laws, executive orders, Forest Service Manual direction, implementing regulations of the National Forest Management Act, legal decisions that have a bearing on the Forest Service T&E species program, consultation with the U.S. Fish and Wildlife Service, recovery plans, and special studies. Cooperate with future interagency recovery efforts. These items are reviewed in Appendix J. Compliance with the above items and conservation of T&E species will be accomplished by following the procedures and standards identified below.

Note:
Amendment 12 modifies C-2 (2)(4) and (11) to include Sensitive Species

(2) Conduct a biological evaluation of each program or activity which is Forest Service funded, authorized, or carried out on occupied T&E species habitat, to determine whether the activity may affect T&E species. This evaluation will determine whether or not informal or formal consultation with the U.S. Fish and Wildlife Service on T&E species is appropriate. Appendix J describes the consultation process. Appendix D displays the U.S. Fish and Wildlife Service "biological opinion" on the Forest Plan and the Forest Service "biological assessment".

(3) Identify and evaluate cumulative effects as part of each biological evaluation. This evaluation may result in specific management recommendations in addition to those identified above. Appendix L describes this process.

(4) Maintain active communications with research organizations to ensure current research data are being used in resource planning and administration affecting T&E species and their habitat. As necessary, District Ranger and biologists shall meet to review current research findings and discuss their application in resource management.

Review and revise guidelines periodically to keep them current. Address research needs in terms of Forest management activities. Monitor the application of guidelines to assure they are properly and effectively used.

(5) Participate in the Interagency Wildlife Monitoring/Evaluation Program for the Rocky Mountain Front. The members chartered the program in 1980 to promote better coordination of wildlife studies along the Front. The Interagency Program is reviewed in Appendix H. Data gathered through this program is the basis of the grizzly bear management guidelines (Appendix I). The Interagency Grizzly Bear Guidelines will be used to coordinate multiple-use activities with the biological requirements of endangered and threatened species. (Appendix V.)

(6) Schedule direct habitat improvement projects to meet the Forest outputs. Prescribed fires will frequently be used for grizzly bear and gray wolf habitat management.

(7) The occupied grizzly bear habitat (all of the Rocky Mountain Division) has been stratified according to "The Guidelines For Management Involving Grizzly Bears in the Greater Yellowstone Ecosystem" (USFS, 1979). Appendix K describes this stratification and the management direction based on this stratification. Forest management on occupied grizzly bear habitat will comply with this management direction.

(8) Manage problem grizzly bears in accordance with the "Guidelines for Determining Grizzly Bear Nuisance Status and for Controlling Nuisance Grizzly Bears in the Northern Continental Divide and Cabinet-Yaak Grizzly Bear Ecosystems." This guideline was developed by the Montana Department of Fish, Wildlife, and Parks; U.S. Fish and Wildlife Service; Forest Service; National Park Service; Bureau of Indian Affairs; and Border Grizzly Bear Project. It is revised as needed. The document specifies the criteria for accepting nuisance grizzlies and identifies suitable relocation sites.

(9) Manage gray wolf primarily by maintaining a suitable prey base and important habitat components such as rendezvous sites. Management for big game species will follow the management guidelines established by the Interagency Wildlife Monitoring/Evaluation Program.

(10) Compile all reports of wolf sightings, sign, or other activity in order to maintain knowledge of present distribution and population levels. When available, define management situation stratification based on current habitat suitability, population, and distribution trends.

(11) Establish an active public information and education program addressing T&E and Sensitive species management and stressing goals, objectives, and actions required to recover the populations. Provide educational facts on ecology, legal status, present populations levels, and disturbance factors to Forest users through a strong educational effort. Emphasize protective measures for allowing T&E and Sensitive species populations to become viable.

(12) Maintain bald eagle and peregrine falcon essential habitat (currently unoccupied). Suitable habitat exists outside identified essential habitat. If active nest sites or other important habitat components are discovered, a management standard for such areas will be developed based on information available in the literature or from knowledgeable persons.

(13) There are sensitive plants, as listed by the Regional Forester, of limited distribution that occur on the Forest and may require special consideration in land management to maintain diversity within the species gene pool. Assessments of suitable habitats for sensitive plants will be conducted before surface disturbing activities are permitted.

Management Standard C-3
Fish Habitat

(1) increase the coordination of the fisheries resource with other forest activities and programs including timber harvest, range management, and oil and gas exploration or development.

(2) Increase coordination with the Montana Department of Fish, Wildlife, and Parks to adequately address issues and concerns related to the Forest's overall annual program of work.

(3) Design and schedule fish habitat surveys and studies to develop a program of work to improve fisheries resource.

(4) Emphasize the maintenance or enhancement of habitat supporting populations of Upper Missouri River (blackspotted) cutthroat trout.

(5) The management of soils and vegetation in riparian areas is essential to fisheries habitat management. (See Management Standards D-3, F-3, E-4, G-1, L-4, and P-2).

Management Standard C-4

Wildlife Trees

Wildlife trees include snags (standing dead trees) and down trees. Snags may be "hard" or "soft." Hard snags are sound wood that may or may not have commercial value. If an axe sinks into the wood with difficulty, the snag is hard. Soft snags are in advances stages of decay and usually have no commercial value.

(1) Following are the recommended sizes and numbers of hard snags by timber type. The management level percentage relates to the optimum number of hard snags for the various timber types, based on cavity nesting species present, territory sizes, and other habitat parameters. The primary excavator (woodpecker) species most representative of the type is also listed.

Douglas Fir/Ponderosa Pine -- 70% Management Level
- Hairy woodpecker
- 10 inch dbh minimum
- 158 snags/100 acres

Riparian/Aspen -- 100% Management Level
- Downy woodpecker
- 6 inch dbh minimum
- 300 snags/100 acres

Lodgepole Pine -- 40% Management Level
- Northern three-toed woodpecker
- 10 inch dbh minimum

Subalpine Fir/Whitebark Pine -- 60% Management Level

Mixed Conifer -- 60% Management Level
- Black backed three-toed woodpecker
- 10 inch dbh minimum
- 135 snag/100 acres

(2) Keep all soft snags, which are not a safety or fire hazard.

(3) Locate wildlife trees adjacent to natural openings, near water, in valley bottoms, or in aspen groves, if possible. It is in these areas that wildlife threes are utilized most often.

(4) Cluster wildlife trees in important habitat, rather than spacing them uniformly in an area.

(5) Retain larger diameter wildlife trees wherever possible, because they provide for more species than do smaller trees.

(6) Concentrate wildlife trees in areas away from roads, because firewood cutters remove most deadwood adjacent to roads. To limit firewood cutting, develop and implement educational programs to inform the public about the importance of snags to wildlife. Use area closures, road closures, or sign essential snags and "Wildlife Trees" where necessary.

(7) Leave deformed, cull, and spike-topped trees during timber harvest, to provide future wildlife trees. These trees should be girdled or otherwise killed so they stop producing seed.

(8) Use timber sale contract "C" clauses, as needed, to retain deadwood.

(9) Snags could be provided where there are too few, by killing diseased, mistletoe infested, and cull trees.

(10) Where feasible, consider protecting snags when using prescribed fire by clearing brush or applying retardant.

(11) Keep down trees for wildlife feeding sites. To reduce fire hazard, keep logs instead of windrows, slash piles, and root wads. It is preferable to have two logs with bark per acres and some deteriorated logs.

Management Standard C-5
Management Indicator Species

Monitor population levels of all Management Indicator Species on the Forest and determine the relationship to habitat trends. Population levels will be monitored and evaluated as described in the monitoring plan (Chapter V).

Wildlife Category	Indicator Species
Endangered and Threatened	Gray Wolf (E) Bald Eagle (E) Peregrine Falcon (E) Grizzly Bear (T)
Commonly Hunted and Fished	Elk Mule Deer Whitetail Deer Black Bear Bighorn Sheep Mountain Goat Mountain Lion Blue Grouse Cutthroat Trout Brook Trout Rainbow Trout
Commonly Trapped	Beaver Bobcat
Special Interest	Wolverine Lynx Golden Eagle Prairie Falcon
Special Habitat Needs - Old Growth Forest - Tree Cavity-Conifer	Goshawk Northern 3-Toed Woodpecker

Management Standard D-1
Range Improvements

(1) Cooperate with permittees in constructing range improvements . Use one of the following approaches to arrange the cooperative work.

(a) Modify the grazing permit.
(b) Use collection agreements.
(c) Use appropriate procurement procedures when the Forest Service pays the permittee to do all the work.

(2) Share range improvement cost to increase or maintain the grazing level. The objective will be a 50-50 participation level between the Forest Service and the permittee. Maintenance of these improvements is usually a permittee responsibility. Cost for range improvements to livestock distribution in response to other resource values will be the responsibility of the Forest Service. Maintenance of these improvements is usually a Forest Service responsibility.

(3) Use prescribed fire for control of sagebrush and tree encroachment and other vegetative manipulation as needed to meet outputs.

Management Standard D-2
Noxious Weeds and Other Pests

(1) Develop a public information and education program to emphasize practices that prevent resource degradation and spread of noxious weeds.

(2) Emphasize preventing noxious weeds by reseeding, with desirable plant species, mineral soil exposed by Forest activities. (See Management Standard F-3, Soil and Water Protection.)

(3) Evaluate alternatives, as outlined in FSM 2155.3, to determine effective environmentally acceptable practices to control noxious weeds and other pests.

(4) Identify areas where noxious weed and/or pest control is needed. Special attention should be paid to: streams, bogs, and associated riparian habitat; upland game bird nesting habitat; and any other sensitive non-target animal or habitat which may be adversely affected by spraying.

(5) Annually review spray projects, in environmentally sensitive areas, for opportunities to replace spraying with other Integrated Pest Management methods. Cooperate and support basic research for biological control of noxious weeds and other pests.

(6) Cooperate closely with other Federal and State agencies, private individuals, contractors, and permittees to control noxious weed and pest infestations.

Management Standard D-3
Riparian Area, Soil, and Water Protection in Range Management

(1) Where analysis shows range resource damage, the cause will be identified and corrective action will be initiated through an allotment management plan. Allotment planning will be coordinated with adjacent and inclusive landowners.

(2) Best management practices will be used to minimize livestock damage to soils, streamsides and other fragile areas.

(3) Incorporate new research results and management techniques in allotment management plans to protect riparian values and by:

(a) Developing and delivering water to tanks away from riparian areas wherever possible.

(b) Fencing springs, as necessary, to prevent damage by livestock. Piping water to a tank outside of the fenced area for livestock use.

(c) Directing salt blocks to be located away from riparian or wet areas.

(4) Protect fish and wildlife habitat in riparian areas when developing allotment management plans. This should be considered in the assignment of AUMs, grazing season, and indicators of time for removal of livestock.

Three factors which indicate livestock use may be damaging to fisheries habitat in areas adjacent to low gradient (less than 5 percent) streams with small amounts of bank rock and deep, erosive soils are:

(a) Total physical bank damage on key areas in excess of 30 percent. (This includes natural erosion.)
(b) Poor reproduction survival of streamside shrubs.
(c) Excessive grass/forb use.

Grass/forb use is the most sensitive indicator of levels of livestock use which may adversely affect fisheries habitat values. Use of grass/forb vegetation should be restricted to no more than 40 percent in areas with little or no shrub cover adjacent to low gradient streams, in order to maintain acceptable levels of shrub vigor and total bank damage. In areas with high levels of streamside shrub cover and/or bank rock content, grass/forb use can vary between 50 percent to 60 percent before fish habitat values are seriously impacted.

If water delivery systems, salting, and other indirect management techniques are not effectively keeping livestock use of riparian areas within management objectives, then construct and maintain fencing as necessary to achieve these objectives.

(5) Adjust allotment management plans to consider landtype limitations as given in the Lewis and Clark National Forest Soil Resource Inventory (Holdorf, 1981).

Management Standard D-4
Livestock Grazing Restrictions

(1) Exclude livestock grazing from certain areas because of higher priority uses for the land. This includes:

PRIORITY USE	ACRES OF SUITABLE RANGE EXCLUDED FROM LIVESTOCK GRAZING
Municipal Watershed	480 acres
Research (Natural Area and Experimental Forest)	280 acres
Riparian/Fishery	474 acres
Wildlife/Watershed	33,030 acres
	34,264 acres

Appendix Q lists specific areas where livestock grazing is excluded.

(2) Do not use livestock grazing permits and commercial transportation livestock use permits in the areas excluded from grazing. However, livestock (i.e., horses and mules) used by the public for dispersed recreation activities are allowed to graze these areas.

(3) Re-open areas excluded from livestock grazing when the reason for excluding livestock ceases. The Forest Supervisor may exclude livestock grazing from additional areas or re-open areas by following NEPA procedures.

(4) Adhere to the livestock grazing restrictions for developed recreation areas (Management Area H) and wilderness (Management Area P), as outlined in the management area prescriptions.

(5) Administer provisions of the Endangered Species Act in occupied T&E species habitat. Use the Interagency Wildlife Guidelines to avoid or mitigate conflicts between livestock razing and T&E species (Appendix I).

(6) Grazing which affects grizzly bears and/or their habitat will be made compatible with grizzly needs or such uses will be disallowed for eliminated.

(7) Place a high priority on implementing improved grazing management systems on range allotments within identified big-game winter range. The kinds and numbers of livestock as well as grazing seasons and other practices may be adjusted from the present situation to maintain or enhance wildlife habitat components.

Management Standard E-1

Timber Management Coordination and Information

(1) Develop and implement ongoing public information and education programs to foster an informed public with whom the agency can maintain a constructive diaglogue on timber management activities. Provide public information, when requested or needed, to explain harvesting, timber use, reforestation, or other timber management activities. Appendix A lists the 10-year timber sale program.

(2) Increase public information and education regarding general rules and regulations on firewood cutting, including explanations of the reasons for these regulations and the importance of snags and other habitat components to wildlife species.

Management Standard E-2

Firewood Administration and Utilization

(1) Issue permits for all personal use firewood cutting, as directed by National policy. Free use will continue in designated areas of excessive deadwood, such as slash piles. Standard rates, set annually by the Regional Office, will apply to all other firewood cutting.

(2) Require special authorization whenever tractors, rubbrr-tired skidders, jammers or other equipment used by the logging industry are used for yarding firewood.

(3) Providing firewood will be emphasized as a slash treatment method.

(4) When roads approach diverse complexes of T&E habitat components such as those in the upper end of drainages, they should not be opened to firewood cutting during any season. For roads which enter areas of low vertical relief and limited component diversity, access for firewood cutting is compatible with grizzly bear use as long as the access is prohibited during important use seasons. Firewood cutting should be limited to 2 to 3 years after timber harvest. Then the road should be permanently closed to the public.

Management Standard E-3

Reforestation

(1) The basic approach in all regeneration harvest cuts on the Lewis and Clark National Forest is to specify state-of-the-art treatments that will assure natural regeneration wherever feasible. Site preparation must commence as soon after the regeneration cut as feasible. This is immediately after clearcutting and the seed cut of the seed tree and shelterwood systems.

(2) The first-year stand examination will certify that the ground conditions necessary for natural regeneration are present and that adequate restocking should occur.

(3) Intermediate stand examinations will be scheduled at the appropriate intervals for the individual sites to monitor seedling establishment. If the regeneration process is not working and will not occur under existing site conditions, evaluate the stand to determine if additional treatment is needed to bring the regeneration to a satisfactory level.

(4) The 5th-year stand examination will:

(a) Certify the stand regeneration is completed by meeting the following criteria:

-The required natural regeneration has survived at least three full growing seasons, is in a healthy condition (healthy leaders and buds), and is at least 6 inches high.

-Planted stock has survived two growing seasons and is in a healthy condition (healthy leaders and buds).

-At least 90% of the reforestable land area in the stand meets the prescribed stocking level.

The District Silviculturist has determined the stand is satisfactorily stocked.

(b) identify those stands not meeting all certified standards, but progressing satisfactorily toward certification.

c) Schedule for retreatment those stands not progressing to certification.

Management Standard E-4
Timber Harvest

(1) Require silvicultural examinations and prescriptions before any silvicultural treatment. Exceptions include cutting of trees that block vision along roads, cutting hazard trees, clearing right-of-way, clearing for mineral development, minor and incidental amounts of wood products, and cutting personal firewood. appendix A describes the appropriate silviculture systems for the Lewis and Clark National Forest.

(2) Manage the timber resource to enhance riparian values by:

(a) Protecting streamside vegetation when its removal could result in increased stream temperature or increased turbidity, bedload, and suspended solids which would be detrimental to the aquatic habitat.

(b) Minimizing the amount of debris entering stream channels and lakes by using correct logging and construction operations. If debris enters the streamcourse in amounts which may adversely affect the natural flow of

the stream water quality, or fish resource, then debris shall be removed in a manner that will cause the least disturbance to the streamcourse.

(c) Locating log landings away from riparian areas or where surface runoff will not discharge directly into the channel.

(d) Allow the yarding of logs across a stream only when they can be fully suspended above the stream channel.

(e) Locating slash piles away from riparian areas so that residues will not reach perennial streams.

(3) Use all necessary measures to minimize soil damage and soil erosion on timber sale areas. (Best Management Practices-See Glossary).

(4) Limit equipment use where ground conditions are such that excessive damage would result.

(5) In plans and contract requirements, stress prevention of erosion and prevention of channel clearing, rather than using remedial measures.

(6) Limit tractor skidding to slopes of 45 percent or less depending on soil type.

(7) Give consideration to limitations on landtypes as described in Lewis and Clark Soil Resource Inventory (Holdorf, 1981).

(8) Satisfy the requirements for a cultural resource survey prior to ground disturbing activities. (Also see A-7, Cultural Resource Management).

(9) Old Growth Forest Objective - A minimum of 5 percent of the commercial forest land within a timber compartment should be maintained in an old growth forest condition. A minimum stand size of 20 acres is recommended for old growth management. In management areas included in the regulated timber harvest base (Management Areas A,B,C, and O) a rotation of at least 200 years is recommended on the 5 percent of the commercial forest land to be maintained in an old growth condition. (See additional data requirements page 2-16).

(10) Administer provisions of the Endangered Species Act in occupied T&E species habitat. Use the Interagency Wildlife Guidelines to avoid or mitigate conflicts between timber harvest and T&E species (Appendix I).

(11) Provide personal involvement by Supervisors and Rangers in management objectives for transportation planning. Development plans will make good sense first and meet technical requirements secondly.

(12) Conduct an area timber harvesting economic assessment when sales are planned for an undeveloped area. The level of assessment will be determined by the Forest Supervisor on a case-by-case basis.

Conduct an area assessment for other developed or partially developed area when previous sales have shown substantial economic problems. Guidelines for designation of such sales areas will be determined by the Forest Supervisor on a case-by-case basis

Conduct a feasibility analysis of each sale over 1 million board feet to assure it has been designed with the most cost-effective measures possible in keeping with environmental concerns. This analysis will examine strategic items in the sale design process to assure the economic impact of these items on the sale value has been considered. Conduct a cash flow analysis to determine the viability of the sale with then current market conditions.

(13) When anticipated costs are higher than the predicted high bid:

--consider deferring the sale until economic conditions would indicate higher bids would be received. Potential purchasers should be notified as early as practical if such a decision is made.

--proceed to sell the timber and provide proper documentation that benefits others than immediate monetary return from the timber, are of importance. This step should consider subjects such as timber age class, diversity needs, and wildlife security or forage needs. The Forest expects to continue to make below cost sales, but will articulate the reasons and benefits accurately and effectively.

The following standards apply to occupied grizzly bear habitat on the Rocky Mountain Division.

(14) Coordinate timber harvest activities with seasonal grizzly habitat use patterns to minimize the disturbance to grizzly bears. This can most easily be accomplished with seasonal restrictions on logging and road building activities.

(15) Maintain or improve the production of grizzly food species on harvesting sites. To accomplish this, soil scarification during logging and post-logging treatments will be done to the minimum level necessary to insure timber regeneration.

(16) Broadcast burning will be favored over dozer piling in areas where broadcast burning willnot adversely affect timber regeneration.

(17) Use equipment no bigger than necessary to complete the job.

(18) Encourage horse logging where it is feasible because it is generally "easy on the land" allowing many bear foods to recover rapidly.

(19) Maintain escape cover and a degree of isolation for the grizzly. This standard can be met by:

--creating irregular borders where possible to provide nearby cover for a great proportion of the cutting unit.

--screening clearcuts from the road by a strip of trees between the road and the cut.

maintaining visual cover along streams; around wet areas such as seeps, wet meadows and marshes; along ridgetops; and adjacent to open habitat components such as snowchutes, shrubfields, sidehill parks, and slabrock areas.

--retaining stringers of timber that serve as travel routes, as well as feeding sites, along riparian zones, snowchutes, and between adjacent cutting units.

--limiting timber harvest activities at or near ridgetops, at drainage heads, and along creek bottoms. These sites are important grizzly travel/feeding areas.

--protecting travel corridors, denning areas, or feeding sites.

--harvesting timber systematically so as to allow cover, food, and trees time to recover adequately before re-entry.

Management Standard N-1 Research Natural Areas	(1) Establish sufficient research natural areas to meet Forest assignments in the Northern Regional Guide (see page 2-16), direction from both the Regional Guide and the Northern Region Natural Area Committee, and other appropriate sources. Establishment reports will be prepared for each area. (2) All research natural areas, except those in classified wilderness, will be included in Management Area M. (3) To select research natural areas and to minimize the conflict with other resources the following evaluation criteria will be used. (a) Candidate areas should not contain known valuable mineral deposits. (b) Candidate areas should, to the extent possible, meet regional targets for habitat types or aquatic ecosystems. (c) Consider the condition of existing fences, and the need and cost of additional fences to exclude livestock. Also consider if livestock grazing might be necessary to achieve research natural area objectives in place of fencing. (d) Management as a research natural area should not seriously disrupt established land uses. (4) Complete an environmental analysis to determine the management necessary to protect the research natural area before classification. As a minimum, this analysis will evaluate withdrawal from mineral entry under the 1872 Act, determine what controls on recreation use are necessary, recommend appropriate changes in the Forest Travel Plan, and determine if any other special management practices are needed to protect the area.
Management Standard N-2 Rare Plants	DELETED--September 9, 1993
Management Standard N-3 Caves	(1) Caves will be managed as required by the Federal Cave Resources Protection Act of 1988 and its implementing regulations. In general, this includes: (1) managing caves in a manner that protects and maintains, to the extent practicable, significant caves; (2) fostering increased cooperation and exchange of information with those utilizing caves for scientific, education, or recreational purposes; and (3) not releasing a cave's location to the public unless it would further the purposes of the Act and would not create a substantial risk of harm, theft, or destruction of such cave.

	(2) Inventory, map, and evaluate caves. Inventory includes the underground resources but also considers a cave's interaction with its surface surrounds. Encourage partnerships with cavers, researchers, and interested publics to inventory and map caves. Inventory data collection requires an interdisciplinary effort of resource specialists. Inventory will not include any collection of any cave feature by any individual or group without a permit authorized by the Forest Supervisor. Cave inventory will include scientific and recreational values. Inventory should include visits at more than one time of the year to consider the seasonal changes (i.e. ice speleothems, water concentrations, cave fauna like bats). Biological inventory must recognize that small and inconspicuous invertebrate animals contribute a large part of a cave's biological importance. This includes plant and animal communities in and adjacent to the cave entrance. Individual cave management plans may be developed based on the inventory findings. (3) Caves, sinkholes, and other connected geological features will be protected based on their resource values and classification. Using inventory information which identifies resource values, develop a cave classification system that manages caves and their contents into different management strategies. Management strategies should include delineating some caves for public access and others for protection and preservation of sensitive or pristine resources and/or scientific study which limits or excludes general public access. (4) Caves where public access is encouraged or directed should be managed under an individual cave management plan. Plan contents should include but not be limited to: search and rescue considerations, visitor use including cave register maintenance and monitoring trends, monitoring human use and the relationship to cave attributes, management actions such as seasonal restrictions to protect bats or other fauna, area closures, etc. (5) Prior to ground-disturbing activities, caves within the project area should be evaluated to determine the effects that the proposed action would have on the cave structure and its ecosystem. (6) Known caves and associated geological features with high resource values may be considered for withdrawal from mineral entry.

Management Standard F-1

Erosion Control

(1) Utilize adequate soil and water conservation practices to protect soil productivity and to control nonpoint water pollution from project activities, using as a minimum, practices specified in any State-developed "Best Management Practices."

(2) Develop and update watershed management and erosion control handbooks and supplements.

(3) Eliminate the backlog of soil and water restoration needs by 1995 (373 acres). Watershed improvement projects will be identified, prioritized, and developed on a watershed basis.

Management Standard F-2

Data Collection

(1) Collect soil and water data needed to validate assumptions important in both long-range and project planning. (Also see Monitoring Plan, Chapter VI.) Include a statement of why the data is needed, and what type of data is needed, as part of a data collection plan.

(2) Decide how to get the needed data. Consider extrapolating from other studies, working with existing projects of other agencies, and the capabilities of the Forest Service.

(3) Determine the data needed to predict and monitor soil and water impacts from the following activities.

(a) Oil and gas exploration and development.
(b) Timber harvest.
(c) Commercial special uses.
(d) Grazing.
(e) Subdivision of adjacent private lands.
(f) Development of recreation sites.
(g) Mining.

(4) Display the results of the data and analysis in appropriate reports. Use this information to improve predictions of watershed impacts and to validate monitoring requirements.

(5) Protect snow courses, snotel, and other hydro-meteorological data collection sites from acitivities that would affect the validity of data from these sites. Provide appropriate access for winter measurement and summer maintenance.

Management Standard F-3
Soil, Water and Air Protection

(1) Require application of Best Management Practices to project activities to ensure meeting or exceeding State water quality standards.

(2) Develop additional Best Management Practices during the environmental analysis process and incorporate them into all land use and project plans as a principal mechanism for controlling non-point pollution sources and meeting soil and water quality or other resource goals.

(3) Meet State water quality standards as required by the Clean Water Act (33 U.S.C. 1323), and as detailed in the Memorandum of Understanding to Implement the 208 Program on National Forests in the State of Montana. Coordinate with the State of Montana concerning stream channels as agreed to in the Memorandum of Understanding with Montana Fish and Game Commission.

(4) Require a watershed analysis of projects involving significant vegetative removal to ensure that the project, considered with other activities, will not increase water yields or sediment beyond acceptable limits. The analysis should identify any opportunities for mitigating adverse effects on water related benefical uses, including capital investments for fish habitat or watershed improvement.

(5) Conduct an environmental analysis for all management actions planned for flood plains, wetlands, riparian areas, or bodies of water prior to implementation. Adopt the necessary mitigation measure to minimize risk of flood loss, to restore and preserve flood plain values, and to protect wetlands.

(6) Claim water rights for non-consumptive water uses (instream flows) necessary for fisheries habitat, recreational uses, or other beneficial water uses on appropriate waterbodies and streams. Instream flows adequate to protect the aquatic environment will be maintained during any project which removes water from any stream.

(7) Do not let any waste waters that are thermally polluted or contain sediments beyond state standards, petroleum, and/or other chemicals to enter aquatic systems.

(8) Require drainage structures on disturbed areas where it is necessary to control erosion.

(9) Cooperate with other landowners in watersheds of mixed ownership, to develop mutually agreeable watershed management plans.

(10) In accordance with NFMA, RPA, and Multiple Use-Sustained Yield Act, all management activities will be planned to sustain site productivity. During project analysis, ground disturbing activities will be reviewed and needed mitigating actions prescribed.

(11) Require prompt revegetation of disturbed areas, especially cut and fill slopes, to control surface erosion. To stabilize disturbed areas, seed with grasses, forbs, and deep-rooted native shrubs, where natural establishment of native cover is not expected within two years. Ideally the seedbed should be firm with a roughened surface. The slope must be stable, usually less than 2:1. Steeper slopes can be benched or terraced. Compacted soils should be ripped from eight to twelve inches.

(12) Select seeding mixtures based on site conditions, soil protection, ease of establishment, and seed availability. Fertilizer is usually necessary. Native species should be used when available. Mulching will be used only on very critical areas where wind is not a problem or the mulching can be protected.

(13) Achieve a 70 percent vegetative or litter cover level on cut and fill slopes and other soil disturbance areas within 2 growing seasons or a natural level of vegetative and litter cover when it is less than 70 percent.

(14) Comply with Federal and State standards and the Montana airshed group's Memorandum of Understanding on any management activity that may effect air quality.

(15) Protect air quality by cooperating with Montana Air Quality Bureau in the Prevention of Significant Deterioration program and State Implementation Plan.

Management Standard G-1
Seismic Exploration

The following standards are the basis for specific clauses to be attached to seismic prospecting permits. They have been developed over a four year period on the Rocky Mountain Division where over 700 miles of seismic prospecting has been conducted. They are based on the "Environmental Assessment on Geophysical Exploration on Nonwilderness Lands." Applications for seismic exploration will receive additional analysis as required by NEPA tiering to the FEIS and Forest Plan.

(1) Conduct all operations with regard for good land management. Avoid unnecessary damage to improvements, and prevent pollution of soil, water, and air resources.

(2) Require seismic charges to be placed outside the riparian area, a perennial stream or lake. Seismic activities will avoid wetland (mostly land-type 201). Proposed activities that would impact floodplains and wetlands will meet requirements of Executive Orders 11988 and 11990. Do not detonate charges within 1/4 mile of any developed recreation area, residence, or resort, unless otherwise noted.

(3) Rehabilitate all areas of excessive surface disturbance caused by the permittee's operations, as prescribed by Management Standard F-3, Soil and Water Protection. Fully repair any damage resulting from exploration operations to trails, roads, or other improvements.

(4) Plug all seismic drill holes with Forest Service approved material.

(5) Prohibit vehicle travel when road conditions are wet enough to cause damage to the road bed.

(6) Use only existing roads for seismic activity. No new roads will be constructed.

(7) Prohibit surface charges from being placed on the ground. All such charges shall be situated to prevent soil and vegetation damage. Generally a maximum of five pounds of explosives will be allowed on one lath. Should a company propose other charge sizes, they would be required to present data or show by example that the surface disturbance associated with the proposed method is minimal. Require the primacord between charges be taut. Kinks, droops, and contact with the ground are not allowed. Contact with vegetation shall be avoided.

(8) Store and handle explosives in compliance with Federal, State, and local rules and regulations. No surface charges or loaded holes will be left unattended or unprotected. Notify the Forest Service and the county sheriff immediately, if explosives are lost or stolen. Use only no-flash or fire retardant explosives. Attach the Fire Plan to all permits.

(9) Provide for public safety by requiring that the permittee post signs when blasting is to occur within one mile of all developed and used trails. Signs will be posted at the next trail junction back from the blast zone, allowing Forest users to take an alternative route. Require that an observer be stationed on each end of a shot, to stop and warn Forest users.

(10) Avoid helicopter travel over Glacier National Park, wildernesses, hunter camps, developed recreation areas, residences, and resorts. Require that helicopter routes be offset 1/4 mile, where terrain permits, from any opened trail.

(11) Require helicopters to follow flight corridors paralleling seismic lines or routes approved in writing. Corridors from staging areas to the seismic lines will also be designated. Corridors should generally not exceed one half mile in width. However, during periods of adverse flying conditions or emergencies, flight routes will be selected by the pilot.

(12) Authorize directional movement along a seismic line only, with approval from the District Ranger. To minimize the flight along a line, helicopter supported surveys generally should begin at the end of the line away from the main landing zone or staging area and work back, towards the staging area. Consolidate helicopter trips to minimize effect on wildlife.

(13) Authorize helicopter landing sites which involve cutting live vegetation only upon approval from the District Ranger.

(14) Protect T&E wildlife species through compliance with the Endangered Species Act. Use the Interagency Guidelines to avoid or mitigate conflicts with seismic exploration and T&E species (Appendix I).

(15) Use the Interagency Guidelines to avoid or mitigate conflicts with seismic exploration and other wildlife species (Appendix I).

(16) Do not permit seismic activity at least two days before and during the general big-game hunting season to minimize disturbance to wildlife and hunting opportunity.

(17) Temporarily suspend or reschedule activities, as necessary, to prevent conflicts with concentrated, dispersed, and developed recreation during heavy use periods or on weekends.

(18) Require the permittee to conduct operations as prescribed to protect paleontological or cultural resources.

(19) Require the permittee to appoint and maintain at all times during the term of a permit a local agent who may be served written notices regarding the permit and who will have full authority to act for the permittee.

(20) The seismic party manager and the District Ranger or representative will agree to all items in the permit and review the permit before commencing operations.

(21) Require the local agent to notify the District Ranger when operations are to begin or are completed on National Forest lands. During operations on the Forest, the local agent will notify the District daily as to the location of activities (telephone contact is sufficient). The permittee should receive prior approval for beginning activity on each individual line.

(22) Receive prior approval before making any deviation from the approved permit, such as adjustment of survey routes.

(23) Within 15 days after completion of the exploration project, revocation of the permit, or permit expiration, the permittee will furnish the District Ranger a certified copy of the operation log or survey plat showing the exact location and number of shotpoints, and redrilled seismic holes and/or miles of line utilized.

Management Standard G-2 Oil and Gas Leasing, Exploration Drilling Field Development, and Production	The following standards were developed from the Environmental Assessment on Oil and Gas Leasing, Nonwilderness Lands, Lewis and Clark National Forest. These standards provide for exploration and development of oil and gas resources while protecting other resource values. To date, over 423,000 acres have been leased. When the existing leases on the Forest expire, the issuance of new leases will be based on an analysis of current information, including oil and gas potential, as well as the Forest Plan goals and management objectives which were developed in consideration of T&E and other wildlife habitat needs, water quality, soils, and other resource values. New leases and subsequent lease reissuance will undergo additional analysis as required by NEPA tiering to the FEIS and Forest Plan. (1) Road construction will not normally be permitted on slopes greater than 60 percent. Exceptions to these slope restrictions on occupancy may be made when project analysis demonstrates that occupancy on steeper slopes is environmentally acceptable. (2) A No Surface Occupancy stipulation will be applied to drainages supporting populations of westslope cutthroat trout that are considered either "managed-as-pure (i.e. 98-100% genetic purity) or "indicator" (i.e. 90-70% genetic purity. (3) Apply the Controlled Surface Use stipulation to the following landtypes. 14B, 14C, 22, 25C, 59B, 177 (Severe cut-bank failure potential) 14D, 20A, 23A, 25A, 25B, 41, 42, 43, 43A, 44 (Moderate cut-bank failure potential) (4) Minimize fire potential by applying standard stipulations and: --Adhere to Montana State Forest Fire Regulations. --Prohibit or limit activity during high fire danger periods. (5) Protect existing uses and rights, such as administrative sites, developed recreation sites, special use cabins and resorts by the No Surface Occupancy stipulation.

	(6) Conduct on-the-ground inventories for rare plant species before surface disturbing activities are permitted in landtypes cited as being in rare plant habitat. Minor road relocation could be required for protection of these species. Core populations of northern rattlesnake-plantain will be stipulated by No Surface Occupancy. (7) Protect cultural resources by implementing the standard stipulation. Areas identified as Traditional Cultural Districts will not be offered for lease. Identified individual Traditional Cultural properties will be stipulated with No Surface Occupancy. Areas identified as Historic Districts will be protected through use of Controlled Surface Use stipulation. (8) Notify the Blackfeet Tribe of all exploration drilling and development proposals within the Treaty Lands on the rocky Mountain District (North End Geographic Unit, RM-1). This ensures compliance with the American Indian Religious Freedom Act. (9) Protect threatened and endangered species through Section 7 of the Endangered Species Act (consultation procedures), the standard stipulation, the Controlled Surface Use stipulation, timing limitations, and the use of the Interagency Guidelines. An analysis of proposed actions will identify conditions under which activities must be restricted, delayed, or modified to prevent adverse effects on threatened and endangered species and their habitat. (10) Apply wildlife habitat stipulations to leases, for the protection of important wildlife habitat according to the Interagency Guidelines (Appendix I). Not all important habitat is inventories. Therefore, additional restrictions may result from the environmental analysis for specific project proposal. Vary the degree of restriction needed to protect wildlife depending on factors such as: (1) the species' sensitivity to human activity; (2) importance of the habitat element to maintaining population levels; and (3) the availability of alternative habitat. Use no-surface occupancy stipulations when more than one specie uses the habitat and the combined seasons of use leave no opportunity for oil and gas occupancy. (11) Follow Management Standard L-4, Maintenance and Construction of Roads, Trails, and Other Facilities, when constructing roads, drill pads, or pipelines.

	(12) Construct roads according to the transportation corridors identified on Geographic Unit Maps. (See Chapter IV.) Roads to serve oil and gas exploration will be built to a standard commensurate with the site and duration of the project. Road design should consider the possibility of increasing the road width in the event of field development. Roading specifications for location, design, construction, maintenance, and rehabilitation of oil and gas roads will be based on the Proposed Guidelines for Oil and Gas Developed for the Northern Region (Hadley, 1983). (13) Evaluate roads constructed for oil and gas exploration and development as to their value in managing surface resources. Depending on the management area prescription, the road may be opened to public use, retained for administrative use, or obliterated by removing drainage structures and associated fill dirt from stream channels. (See Chapter IV.) (14) Follow Management Standard F-3, Soil and Water Protection, in site preparation and reclamation. (15) Implement, as needed, monitoring programs to ensure compliance with the preceding guidelines and other management guidance. As a minimum the monitoring would include wildlife, cultural resources, water quality, and effectiveness of road closures.

Management Standard G-3 Mineral Withdrawal	(1) Relinguish existing mineral withdrawals that are no longer needed. Review of existing withdrawals shall be completed not later than FY 1990. (also see Chapter VII, Minerals.) (2) Use withdrawal only where protection is definitely needed and cannot be achieved through other management options. All National Forest System lands on the Rocky Mountains Division have been withdrawn from entry under the general mining laws. Management area prescriptions for these lands are to be interpreted consistent with this direction. (3) Criteria to be used in evaluating existing and proposed withdrawals include: (a) Is the land still being used for the purpose for which it was withdrawn? (b) Are there other ways available to protect the resource values (for instance, existing statutes and regulations, rights-of-way, cooperative agreements)? (c) Are the values at risk of such a nature that a significant financial, social, or cultural loss could occur? and (d) Does the withdrawal area have a high mineral potential or are there nearby mining claims or mining activities?
Management Standard G-4 Energy Conservation	Conserve energy by conforming to the Regional Energy Management Plan. This plan presents alternatives for conservation in travel, facilities, and project related work. The Forest will implement those alternatives which meet the criteria of optimizing energy conservation with the least impact on resource outputs.
Management Standard G-5 Locatable and Common Variety Minerals	(1) Consistent with the Mining and Mineral Policy Act of 1970, continue to encourage the development of mineral resources on National Forest lands by private enterprise. Activities authorized under Notices of Intent, Plans of Operation, and mineral material permits will contain conditions and specifications appropriate to meet the intent of Standards G-1 and G-2; except, conditions may not be imposed on locatable mineral operations that are contrary to the surface use regulations for locatable minerals (36 CFR 228). (2) Access to valid mining claims is guaranteed under the mining laws. However, the claimant/operator must be able to justify the need for a particular type of access. The type of access approved under 36 CFR 228 will be consistent with the next logical step in the development of the property involved. Access roads for mineral needs will be coordinated with the Forest Transportation Plan. (3) Provide guidance to miners and prospectors for planning reclamation and to minimize surface disturbance.

Management Standard H-1
Native American Claims

(1) The rights and privileges reserved to the Indians of the Blackfeet Indian Reservation by Article I of Agreement set forth in, and accepted, ratified and confirmed by the Act of Congress approved June 10, 1896, respecting that portion of their Reservation now known as the North End Geographic Unit (RM-1) of the Lewis and Clark National Forest, shall be in no way infringed or modified by this Plan.

"Provided, That said Indians shall have, and do hereby reserve to themselves, the right to go upon any portion of the lands hereby conveyed so long as the same shall remain public lands of the United States, and to cut and remove therefrom wood and timber for agency and school purposes, and for their personal uses for houses, fences, and all other domestic purposes: And provided further, That the said Indians hereby reserve and retain the right to hunt upon said lands and to fish in the streams thereof so long as the same shall remain public lands of the United States under and in accordance with the provisions of the game and fish laws of the State of Montana." - Article I Agreement with the Indians of the Blackfeet Indian Reservation in Montana 29 Stat. 321, 353-354 (1896).

(2) Any decision respecting 1895 Agreement lands will be made only after informing the Blackfeet Tribe. Notice of proposed actions respecting these lands will be sent to the Chairman of the Blackfeet Tribe in sufficient time to enable the Blackfeet Tribe to properly consult with the Forest Service.

(3) Establish a working group with representatives of the Blackfeet Tribe and the Bureau of Indian Affairs in order to negotiate agreements which will enable both the Forest Service and the Blackfeet Tribe to share in the management of those resources reserved by the Blackfeet Tribe. An agreement under this guideline need not affect the legal status of those reserved rights.

Management Standard H-2
Native American Rights

(1) Protect and preserve for Native Americans their inherent right of freedom of belief, expression, and exercise their traditional religions.

(2) Assess impacts of Forest Service activities on Native American spiritual sites and objects.

(3) Implement a special-use permit system for needed temporary area closures, to enable Native Americans to exercise their religious rights without interference.

(4) Expand Forest programs which promote employment for Native Americans.

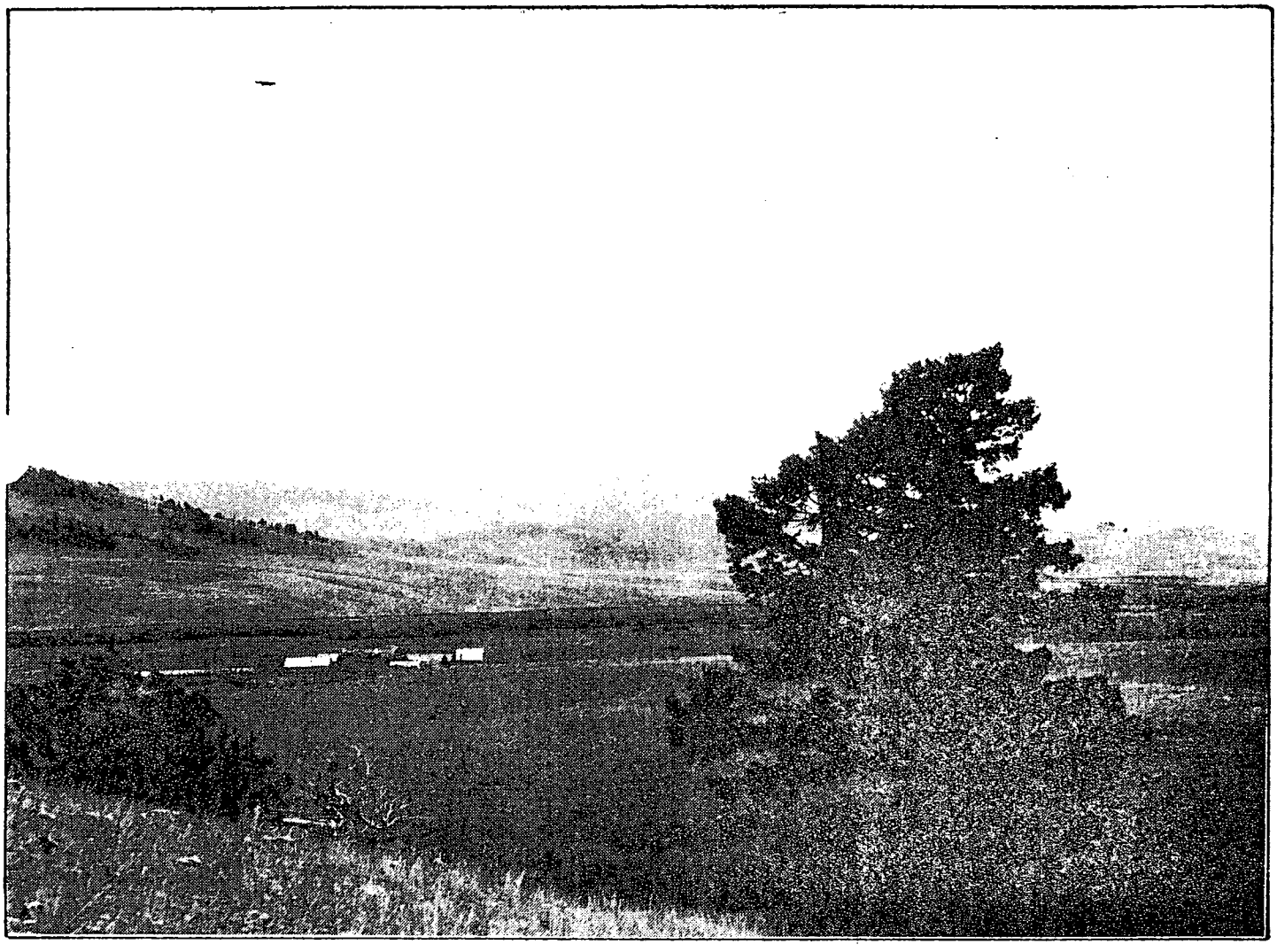
(5) Consult with the Blackfeet Tribe regarding the establishment of proper procedures to implement the American Indian Religious Freedom Act. Using as a basis President Carter's 1978 Report to the Congress on that Act, the Forest Service will negotiate an agreement with the Blackfeet Tribe on this issue.

Roosevelt Memorial Dedication 1931.

FOREST-WIDE MANAGEMENT STANDARDS

Management Standard J-1 Landowenership Adjustment	Seek landownership adjustments to support long-term Forest goals and objectives. (See Appendix B.)
Management Standard J-2 Right-of-Way Acquistion	Acquire right-of-way easements for roads and trails, to support long-term Forest goals and objectives. (See Appendix C.) Consider relocation as an alternative to right-of-way acquisition.
Management Standard J-3 Land Uses	(1) Enhance resource management by working with other agencies and landowners to develop and achieve common resource objectives. (2) Provide for private development of minerals and energy sources, to support the national objective of becoming self-sufficient. (3) Provide for special-use permits to support the Forest goals and objectives. (4) Provide for private development of uses that private land cannot provide, such as electronic sites, water developments, and transmission lines. (5) Require that all new special uses avoid riparian areas, if possible. New special uses that must use riparian areas will be planned and administered to maintain the unique ecosystem. (6) Require that all special uses protect the soil and water resource. Any special use involving roads will follow Management Standard L-4, Maintenance and Construction of Roads, Trails, and Other Facilities. (7) The number of priority use permits for outfitter-guide operations will generally be maintained at the 1984 level. Applications for additional permits will be considered on a case-by-case basis, in accordance with applicable regulations and policies. (8) Evaluate applications for hydropower, water diversion, water storage, or other water-related facilities on a case-by-case basis. The applicant may be required to use private consultants or other personnel to make

environmental studies needed by the Forest Service and/or state agencies for evaluation of the proposal. Close coordination and cooperation with other agencies where appropriate should be sought.



Rolling Hills in the National Forest.

Management Standard L-1
Signing

Establish and maintain signs according to Regional signing standards, with the following priority:

(1) Safety, Warning, and Regulatory Signs
(2) Guide and Directional Signs
(3) Informational Signs

Management Standard L-2
Travel Planning

Roads and trails are an integral part of the Forest transportation system. They support much of the Forest recreation. The management of roads, trails, and off-road areas is called "travel planning." The Travel Plan will be printed on the Forest Visitor map. To facilitate travel planning, the following guidelines have been developed:

(1) The Lewis and Clark National Forest will generally be open to vehicles except for roads, trails, or areas which may be restricted. (See Forest Visitor Map for specific information.)

(2) Manage road and trail use to provide public access, public safety, and resource protection, while minimizing environmental and user conflicts.

(3) Manage off-road vehicle use to protect the resources, to promote public safety, and to minimize user conflicts.

(4) The criteria to be used for road, trail, or area restrictions are as follows:

Safety - Restrictions may be necessary to provide for safety of Forest users.

Resource Protection - Unacceptable damage to soils, watershed, fish, wildlife, or historical/archaeological sites will be mitigated by road restrictions or other road management actions as necessary. Restrictions for wildlife reasons will be coordinated with the MDFWP.

User Conflicts - Conflicts between user groups (especially motorized vs. non-motorized) may require restrictions.

Facility Protection - Restrictions may be necessary to prevent damage to administrative sites, special use facilities, or other improvements.

Public Support - Public concern may necessitate restricting or opening some roads, trails, or areas.

(5) Review the Forest Travel Plan annually and revise as needed, as part of the implementation of the Forest Plan. The Travel Plan will be consistent with Forest Plan management direction and tiered to the management area prescriptions. (See Chapter III.) Road and trail management is summarized in Appendix O.

(6) Develop a plan: (a) to involve the public; (b) to inform the public; and (c) to monitor as part of the Forest Travel Plan.

(7) Give enforcement of the Travel Plan a high priority. Weekend partrolling, signing, gating, obliterating unnecessary roads, and public education will be used to improve enforcement. Enforcement will be coordinated with the MDFWP and other State and local agencies.

Management Standard L-3
Continental Divide National Scenic Trail

(1) Apply the management objectives and practices for the CDNST (Continental Divide National Scenic Trail) as specified by the Secretary of Agriculture under Section 5(f) of the National Trails System Act, as amended. (Also see Chapter III, Management Area P.)

(2) Coordinate the management of CDNST, near U.S. Highway 2, with Glacier National Park. Cooperate in the development of future recreation facilities at Marias Pass.

Management Standard L-4
Maintenance and Construction of Roads, Trails and Other Facilities

(1) Road construction will be the minimum density, cost, and standards necessary for the intended need, user safety and resource protection.

(2) Forest development roads will not be constructed without an Area Transportation Plan. Other road construction will be evaluated on a case-by-case basis.

(3) Design and construct roads and other facilities to protect riparian areas, to control erosion, and to protect lands and resources.

(4) Locate facilities, including roads, drill pads, or pipelines, as far from riparian areas as practical. This will generally be no closer than 100 feet. Width of buffer strips should vary with slope, erosion hazard, and ground cover density.

(5) Cross riparian areas only when necessary. Such crossings will be specially designed to minimize adverse environmental effects.

(6) Consider the total value when an evaluation dictates the need for a road paralleling a stream. For example, a stream channel change, properly designed and constructed, might result in a road with less adverse impact than would construction of a road across a steep slope.

(7) Consult Montana Department of Fish, Wildlife, and Parks and the Montana Department of Health and Environmental Sciences, Water Quality Bureau (FG-124 form) prior to any construction in or adjacent to stream channels, in order to aid in limiting sedimentation, and to protect the aquatic ecosystem.

(8) Maintain streamside vegetation if possible. Replace what is destroyed in order to meet the needs of the aquatic environment.

(9) Do not operate any heavy equipment in stream courses, except if essential to construction activities. Heavy equipment use must be specifically authorized by the District Ranger.

(10) Place the toe of overcast material from road construction, maintenance, and other earth-moving activities above the high-water line. Use construction methods and/or structural barriers to prevent fill material from washing downstream. Keep road widths to a minimum when construction must encroach on the stream channel.

(11) Avoid channeling streams. Channeling or encroaching on streams shall be prohibited within or contiguous to recreation areas, unless absolutely essential to correct an existing channel problem, to protect life and/or property, or to protect recreation facilities from flooding.

(12) When channeling is necessary, install drop structures, construct meanders, or use other approved methods to maintain natural stream velocities. All drop structures should be designed to permit fish passage. Channel structures or alterations shall allow for safe passage and not detract from scenic qualities where streams have boating or floating opportunities.

(13) Design riprap, or other erosion protection materials, to withstand peak flows comparable to a 25-year flood, except where associated with major bridges which are designed for a 50-year flood. Riprap should not deteriorate during the life of the project. Place riprap and other protective material to prevent any erosion.

(14) Restore a stream, temporarily diverted to accommodate construction or other activities, to the natural course as soon as practical or prior to the major runoff season, whichever is sooner. Complete channels, including scour and erosion protection, before turning water into them.

(15) Reshape lands impacted by stream channel operations and lands contiguous to streams that have been altered by construction activities to as near natural condition as possible. Then revegetate in a manner compatible with recreation use. (See Management Standard F-3, Soil, Water, and Air Protection.) Slope streambanks so they are not barriers to recreation use.

(16) Design, construct, and maintain roadways and other facilities to minimize surface runoff. When needed, use special design features, such as slope drains, settling aprons below drains, insloping, rolling the grade, crowning, or berms. Avoid construction during runoff periods, to minimize stream sedimentation. If construction is essential during runoff, minimize sedimentation by installing debris basins, where necessary. Revegetate disturbed soil (See Management Standard F-3, Soil, Water, and Air Protection).

(17) Require culverts or bridges where major roads with substantial yearlong traffic cross perennial stream courses. Fords may be appropriate on light use roads and/or intermittent stream channels. Such facilities will be designed to handle the anticipated water flow and fish passage and to blend with the natural environment. Remove all bridges, culverts, and associated fills when the temporary road is no longer needed. Shape fill material to blend with the natural terrain, and revegetate all disturbed soil.

(18) Protect temporary roads from erosion by cross ditching, ripping, seeding, or other suitable

(18) Protect temporary roads from erosion by cross ditching, ripping, seeding, or other suitable means. Build silting ponds or other facilities, as needed, to prevent silty water from entering streams.

(19) Design water collection systems, which protect roads or facilities, so that waters turned onto slopes or into natural channels will not exceed the channel capacity. Discharge road drainages where sediment can settle out before runoff reaches a stream channel. Minimize sediment from disturbed areas by ponding, vegetative barrier strips, settling aprons, or other means.

(20) Do not allow any waste waters that are thermally polluted or contain sediments, salt water, petroleum, and/or other chemicals to enter aquatic systems. For any discharge of water back into natural water, an application for a Waste Discharge Permit must be submitted to the State Board of Health and Environmental Sciences, as directed by the Montana Water Quality Act.

(21) Construction equipment service areas shall be located and treated to prevent gas, oil, or other contaminants from washing or leaching into streams or lakes.

(22) Apply the Controlled Surface Use stipulation to the following landtypes.

14B, 14C, 22, 25C, 59B, 177
(Severe cut-bank failure potential)

14D, 20A, 23A, 25A, 25B, 41, 42, 43, 43A, 44
(Moderate cut-bank failure potential)

(23) Require special design measures to mitigate the moderate water erosion hazard on new cut and fill slopes on the following landtypes.

14, 19, 22, 26, 42, 44, 52, 52A, 59, 59A, 59B 62, 63, 63A, 64, 66, 68, 71, 110, 160, 173.

(24) Do not construct roads and other facilities on slopes greater than 60 percent. Exceptions to these slope restrictions may be made when project analysis determines it is environmentally acceptable.

(25) Construct bridges when appropriate to protect fisheries values on some streams. If culverts are used, they should be installed so there is a pool at each end. To facilitate fish movement in areas where culverts would create barriers to fish, open-bottom arch pipes will be used to maintain natural water flows.

(26) Recommended stream velocities per length of pipe:

Pipe Length (linear ft)	Maximum Velocity (ft/sec)
30 or less	4.0
40	3.5
50	3.0
60 or greater	2.6

(Note: Maximum velocities may be exceeded during spring runoff.)

Bed and backfill all culverts according to approved engineering practices.

(27) Maintain roads to a level commensurate with the need for the following operational objectives: resource protection, road investment protection, user safety, user comfort, and travel efficiency. A Forest Road Maintenance Plan will be prepared annually and be responsive to the long-term needs of the Forest Transportation System.

(28) Schedule any in-stream construction activities to reduce potential disturbances to both spring and fall spawning trout.

(29) Use a recharge pond, rather than the stream, as part of the storm drain system for all industrial, residential, and recreational developments.

(30) In addition to Northern Region criteria, (FSM 2353 R-1 Supplement) trail construction/reconstruction maintenance priorities will be as follows:

- Transportation Category #1 The trail system serves as the primary transportation facility within a specific management area. The following Management Areas are included in this category: F, G, J, M, N, P, and Q.

- Transportation Category #2 The trail system serves as part of the total transportation system within a specific management area, but is not necessarily the primary system. This trail system will continue to serve a portion of the transportation needs in these Management Areas: C, D, E, I, K, and O.

- Transportation Category #3 The trail system serves as a secondary function of the total transportation needs in specific management areas. Roads serve as the primary transportation system in these areas. The following Management Areas are included in this category: A, B, H, and L.

(31) Trails may be abandoned or rerouted when analysis indicates they are no longer needed for public or administrative use, or are not cost-effective. Trails will be relocated as needed to protect Forest resources and optimize their value as travelways.

(32) Maintain and protect National Recreation Trail corridors.

The following standards apply to occupied grizzly bear habitat on the Rocky Mountain Division:

(33) Administer provisions of the Endangered Species Act in occupied T&E species habitat. Use the Interagency Wildlife Guidelines to avoid or mitigate conflicts between road construction and use and T&E species (Appendix I).

(34) Limit new road construction to an absolute minimum to provide isolation and disturbance-free areas for grizzlies. Where new road construction is required:

--Roads will be built to the minimum specifications necessary to complete the project.

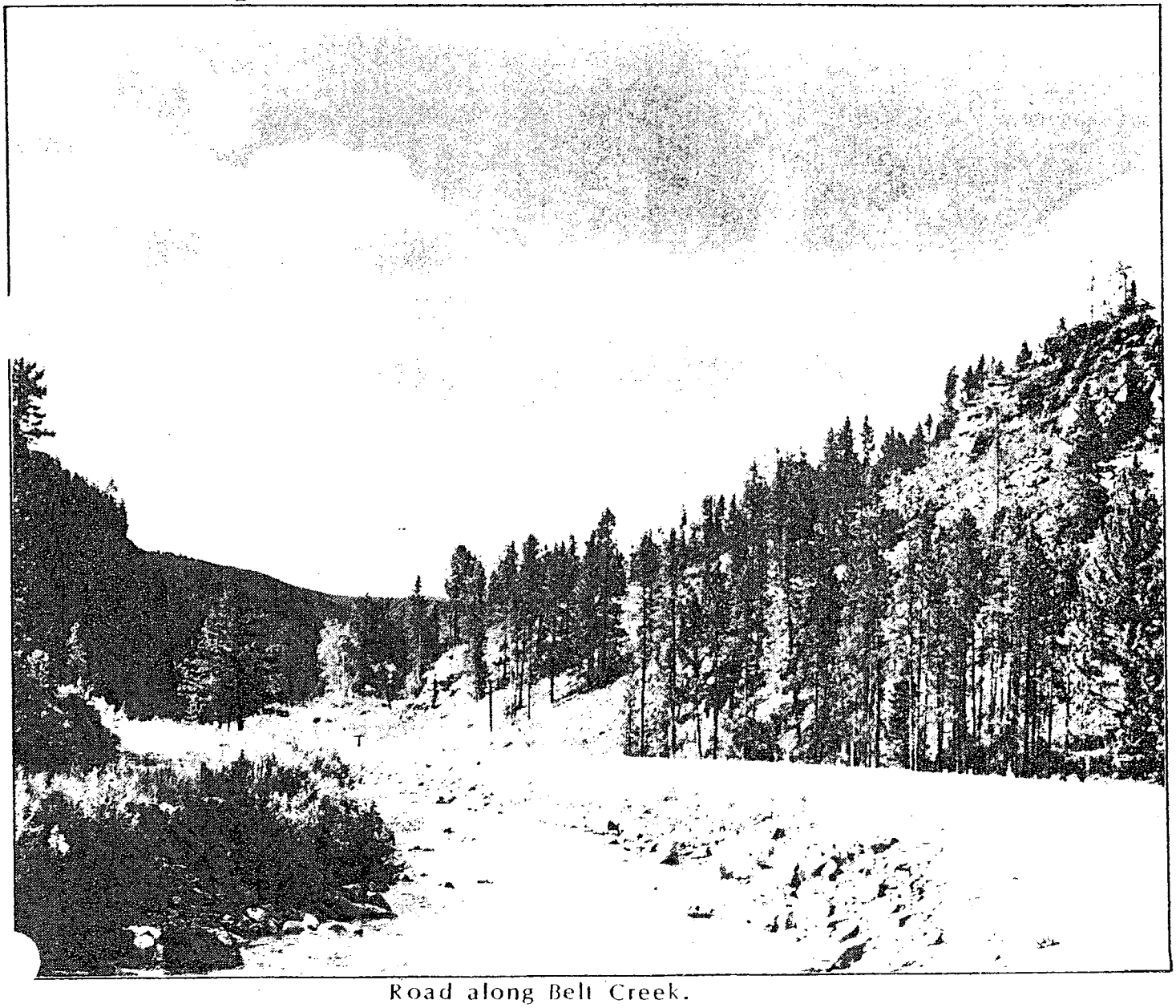
--Roads will avoid wet areas, including stream bottoms, snowchutes, and wet meadows, which are important grizzly feeding sites and travel corridors.

--Roads should not bisect known or suspected grizzly travel corridors. When corridors must be entered, cover should be retained for 120 feet on each side of the road.

--Public traffic should be restricted on new Forest roads to minimize the disturbances to bears.

--The initial section of permanently closed roads should be destroyed and planted with shrubs or trees that help maintain the closure and provide cover and/or food.

--Implement seasonal or year-round closures on existing or proposed roads if the biological evaluation indicates they are necessary to allow grizzly use of important habitat, to reduce human/bear conflicts, and to meet stated habitat effectiveness objectives.



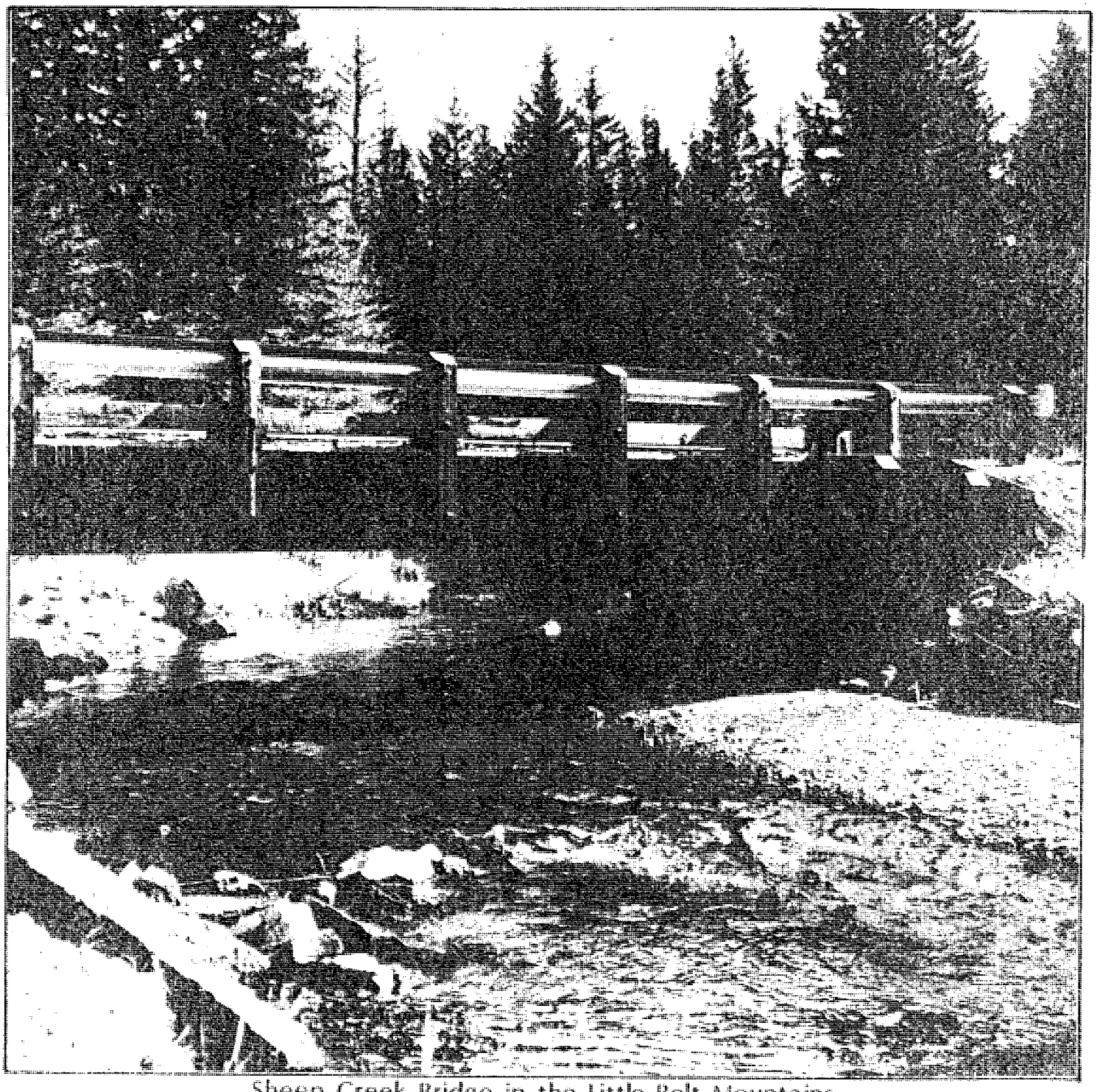
Road along Belt Creek.

Management Standard P-1 Protection	(1) Emphasize harvest of stands that exhibit characteristics of high risk for mountain pine beetle attack. Locate timber sales in order to break-up continuous natural fuel accumulations. Systems will emphasize treatments that reduce losses to other insects and diseases by (a) improving species diversity, growth and vigor for stands, and (b) increasing the size diversity and class diversity between stands. (2) During ongoing infestations, control insects and disease through silvicultural and biological practices. Chemical controls will be limited to high value areas or used on a broader scale only when all other measures have failed and other resource values can be protected. Emphasize cooperative control measures between Federal, State, and private landowners. (3) Use prescribed fire as appropriate to achieve land management goals, including improvement or maintenance of vegetation diversity. Management area direction indicates the appropriate use of prescribed fire (See Chapter III).
Management Standard P-2 Debris Control	(1) Most slopes over 45 percent should not be dozer piled. All dozer piling will consider the soil type. (2) Burn debris according to the Montana Cooperative Smoke Management Plan. (3) Brush blades should be used for dozer piling. (4) Leave approximately 10 tons of fuel per acre, where available. This should be material over four inches in diameter, which is randomly scattered over the area. Material should touch the ground for faster decomposition. (5) Pile slash to a minimum of 15 feet wide and 6 feet high. Piles should be dirt free and tight. Protruding objects, such as trees, logs, and limbs should not extend over 8 feet beyond the pile. (6) Piled material should generally be a minimum of 50 feet from hazardous perimeters. (7) Normally do not occupy over 20 percent of the work area with piles.

(8) Put slash piles in landings, along skid trails, and on the edge of logging roads, when possible. These locations facilitate firewood gathering.

(9) Restrict dozer piling from buffer strips that maintain riparian values and water quality. Width of these buffer strips will vary with slope, erosion hazard, and ground cover density. Buffer strips will include all riparian vegetation, wetlands, floodplains, and any additional areas within approximately 100 feet of perennial streams and other water bodies. (See Management Standard L-4, Maintenance and Construction of Roads, Trails, and Other Facilities.) Large unwanted debris in these buffer strips will be removed by cable.

(10) Windrows should not unduly hinder big game movement. Breaks should be at least every 150 feet or at reasonable intervals.



Sheep Creek Bridge in the Little Belt Mountains.

Management Standard W-1 Wild River Areas	The following Forest-Wide Management Standards apply to eligible wild river areas on the Lewis and Clark National Forest. These standards do not affect other public or private land and will not abrogate any existing rights, privileges, or contracts affecting Lewis and Clark National Forest lands held by any private party.
Hydroelectric Power:	No development of hydroelectric power facilities will be permitted. Where the licensing authority is the Federal Energy Regulatory Commission, the Forest will recommend that no license be issued for hydroelectric power facilities.
Water Supply:	All water supply dams and major diversions are prohibited. If necessary, water monitoring stations are permitted but must be unobtrusive.
Flood Control:	No flood control dams, levees, or other works are allowed in the channel or river corridor. The natural appearance and essentially primitive character of the river area must be maintained.
Range:	Agricultural use is restricted to a limited amount of domestic livestock grazing and hay production to the extent currently practiced. Row crops are prohibited.
Timber Production:	Cutting of trees will not be permitted except when needed in association with a primitive recreation experience (such as clearing for trails and protection of users) or to protect the environment (such as control of fire). Timber outside the boundary but within the visual corridors, will be managed and harvested in a manner to provide special emphasis to visual quality. To protect "outstandingly remarkable" fishery values, cumulative sediment analyses will be required for all projects/activities requiring road construction or significant land disturbance.

Mining:	New mineral leases are prohibited within .25 mile of the river. Valid claims and leases will not be abrogated. Subject to regulations (36 CFR 228) that the Secretaries of Agriculture and Interior may prescribe to protect the rivers included in the National System, other existing mining activity will be allowed to continue. Existing mineral activity must be conducted in a manner that minimizes surface disturbance, sedimentation, and visual impairment. Reasonable access will be permitted. To protect "outstandingly remarkable" fishery values, cumulative sediment analyses will be required for all projects/ activities requiring road construction or significant land disturbance.
Road Construction:	Subject to valid existing rights, no roads or other provisions for overland motorized travel will be permitted within a narrow incised river valley or, if the river valley is broad, within .25 mile of the river bank. Also, unobtrusive trail bridges may be allowed.
Motorized Travel:	Motorized travel on land or water may be permitted, but is generally not compatible with this classification.
Utilities:	New transmission lines, gas lines, water lines, etc. are discouraged. Where no reasonable alternative exists, additional or new facilities should be restricted to existing rights-of-way. Where new rights-of-way are indicated, the scenic, recreational, and fish and wildlife values must be evaluated in the selection of the site.
Recreation Development:	Major public-use areas, such as large campgrounds, interpretive centers, or administrative headquarters, are located outside the wild river area. Simple comfort and convenience facilities, such as fireplaces or shelters, may be provided as necessary within the river area. These should harmonize with the surroundings.

Structures:	A few minor existing structures may be allowed assuming such structures are not incompatible with the essentially primitive and natural values of the view shed. New structures will not be allowed except in rare instances to achieve management objectives (i.e. structures and activities associated with fisheries enhancement programs may be allowed).
Management Standard W-2 Scenic River Areas	The following Forest-Wide Management Standards apply to eligible scenic river areas on the Lewis and Clark National Forest. These standards do not affect other public or private lands and will not abrogate any existing rights, privileges, or contracts affecting Lewis and Clark National Forest land held by any private party.
Hydroelectric Power:	No development of hydroelectric power facilities will be permitted. Where the licensing authority is the Federal Energy Regulatory Commission, the Forest will recommend that no license be issued for hydroelectric power facilities.
Water Supply:	All water supply dams and major diversions are prohibited. If necessary, water monitoring stations are permitted but must be unobtrusive.
Flood Control:	Flood control dams and levees will be prohibited.
Range:	A wider range of agricultural uses is permitted to the extent currently practiced. Row crops are not considered as an intrusion of the "largely primitive" nature of scenic corridors as long as there is not a substantial adverse effect on the natural-like appearance of the river area.

Timber Production:	A wide range of silvicultural practices may be allowed provided that such practices are carried on in such a way that there is no substantial adverse effect on the river and its immediate environment. The river area will be maintained in its near natural environment. Timber outside the boundary but within the visual scene area will be managed and harvested in a manner which provides special emphasis on visual quality. To protect "outstandingly remarkable" fishery values, cumulative sediment analyses will be required for all projects/ activities requiring road construction or significant land disturbance.
Mining:	Subject to regulations (36 CFR 228) that the Secretaries of Agriculture and the Interior may prescribe to protect the values of rivers included in the National System, new mining claims and mineral leases will be allowed and existing operations allowed to continue. However, mineral activity must be conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment. To protect "outstandingly remarkable" fishery values, cumulative sediment analyses will be required for all projects/activities requiring road construction or significant land disturbance.
Road Construction:	Roads may occasionally bridge the river area and short stretches of conspicuous or longer stretches of inconspicuous and well-screened roads or screen railroads could be allowed. Consideration will be given to the type of use for which roads are constructed and the type of use that will occur in the river area. To protect "outstandingly remarkable" fishery values, cumulative sediment analyses will be required for all projects/activities requiring road construction or significant land disturbance.
Motorized Travel:	Motorized travel on land or water may be permitted, prohibited or restricted to protect the river values.

Utilities:	New transmission lines, gas lines, water lines, etc. are discouraged. Where no reasonable alternative exists, additional or new facilities should be restricted to existing rights-of-way. Where new rights-of-way are indicated, the scenic, recreational, and fish and wildlife values must be evaluated in the selection of the site.
Recreation Development:	Larger scale public use facilities, such as moderate size campgrounds, public information centers, and administrative headquarters are allowed if such structures are screened from the river. Modest and unobtrusive marinas also can be allowed.
Structures:	Any concentrations of habitations are limited to relatively short reaches of the river corridor. New structures that will have a direct and adverse effect on river values will not be allowed.
Management Standard W-3 Recreational River Areas	The following Forest-Wide Management Standards apply to eligible recreational river areas on the Lewis and Clark National Forest. These standards do not affect other public or private lands and will not abrogate any existing rights, privileges, or contracts affecting Lewis and Clark National Forest land held by any private party.
Hydroelectric Power:	No development of hydroelectric power facilities will be permitted. Where the licensing authority is the Federal Energy Regulatory Commission, the Forest will recommend that no license be issued for hydroelectric power facilities.
Water Supply:	Existing low dams, diversion works, rip rap and other minor structures are allowed provided the waterway remains generally natural in appearance. New structures are prohibited. If necessary, water monitoring stations are permitted but must be unobtrusive.

Flood Control:	Existing flood control works may be maintained. New structures are prohibited.
Range:	Lands may be managed for a full range of agricultural uses, to the extent currently practiced.
Timber Production:	Timber harvesting will be allowed under standard restrictions to protect the immediate river environment, water quality, scenic, fish and wildlife, and other values. To protect "outstandingly remarkable" fishery values, cumulative sediment analyses will be required for all projects/activities requiring road construction or significant land disturbance.
Mining:	Subject to regulations (36 CFR 228) that the Secretaries of Agriculture and the Interior may prescribe to protect values of rivers included in the National System, new mining claims and mineral leases are allowed and existing operations are allowed to continue. Mineral activity must be conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment. To protect "outstandingly remarkable" fishery values, cumulative sediment analyses will be required for all projects/activities requiring road construction or significant land disturbance.
Road Construction:	Paralleling roads or railroads may be constructed on one or both river banks. There can be several bridge crossings and numerous river access points. To protect "outstandingly remarkable" fishery values, cumulative sediment analyses will be required for all projects/activities requiring road construction or significant land disturbance.
Motorized Travel:	Motorized travel on land or water may be permitted, prohibited or restricted. Controls will usually be similar to surrounding lands and waters.

Utilities:	New transmission lines, gas lines, water lines, etc. are discouraged. Where no reasonable alternative exists, additional or new facilities should be restricted to existing rights-of-way. Where new rights-of-way are indicated, the scenic, recreational, and fish and wildlife values must be evaluated in the selection of the site.
Recreation Development:	Campgrounds and picnic areas may be established in close proximity to the river. However, recreational classification does not require extensive recreation development.
Structures:	Small Communities as well as dispersed or cluster residential developments are allowed. New structures are allowed for both habitation and for intensive recreation use.

FOREST PLAN

Chapter III
Management Area Direction

Overview

This chapter presents the management area direction to be used to achieve the goals and objectives listed in Chapter II.

MANAGEMENT AREAS AND PRESCRIPTIONS

MANAGEMENT AREAS AND PRESCRIPTIONS	The National Forest land within the Lewis & Clark National Forest has been divided into 18 management areas, each with different management goals, resource potential, and limitations. Parts of each management area may be scattered throughout the Forest. Table 3.1 lists the management areas and acres in each area. Management areas are shown on "Forest Plan Maps", which accompany this document, and on "Geographic Maps" in Chapter IV. These maps can be used for reference. The riparian management areas were not mapped at this scale. Except for congressionally established or special administrative boundaries, the management area boundaries are not firm lines and do not always follow easily found topographic features, such as major ridges. The boundaries represent a transition from one set of opportunities and constraints to another with management direction established for each. The boundaries are flexible to assure that the values identified are protected and to incorporate additional information gained from further on-the-ground reconnaissances and project level planning. The Forest-Wide management direction in Chapter II of this Plan applies to all management areas. Management areas provide: (1) Description of the management area. (2) Discussion of the management areas' management goal. (See planning record, "Management Prescriptions," for FORPLAN prescriptions.) (3) Discussion of management standard by resource. Letter designations of the management practices listed for each resource are for scheduling and tracking purposes. The full practice description is in the planning record, "Management Practices." Table 3.2 at the end of this chapter summarizes management practices by management area. (4) A schedule of timber, range, and wildlife management practices for the first two decades. All other resource practices are assumed to be implemented in the 1st decade. Table 3.3 at the end of this chapter summarizes the schedule of management practices for periods 1 and 2. The schedule of management practices are not intended to act as limits but will be monitored to test for long-term application. (5) The monitoring requirements are each area. (See Chapter V.). The Forest contains two wilderness study areas: Middle Fork Judith and Big Snowies. As part of the Forest planning process, the Regional Forester has recommended nonwilderness for both areas. Wilderness studies on these lands are required by the Montana Wilderness Study Act

	of 1977 (Public Law 95-150). Final recommendations on the Middle Fork Judith and Big Snowies Wilderness Study Areas are being made through a separate FEIS. These recommendations will receive further review and possible modification in the offices of the Chief of the Forest Service, the Secretary of Agriculture, and the President. Congress has reserved the right to make final decisions on wilderness designation. These study areas are designated as Management Areas B, F, I, L, and R. But until Congress determines otherwise, the two wilderness study areas will be managed, subject to existing private rights and uses, to maintain their existing wilderness character and potential for inclusion in the National Wilderness Preservation System. After Congress's decision, further analysis may be necessary to incorporate its decision into the Forest Plan.

TABLE 3.1 MANAGEMENT AREAS AND ACRES

Management Area	1987 Acres	Net Changed Acres	Current Acres	Net Proposed Changes	New Acres
Management Area A	16,261	+13,582	29,834	No Change	29,843
Management Area B	330,838	-41,476	289,362	No Change	289,362
Management Area C	111,664	-24,554	87,110	-26,707	60,403
Management Area D	24,456	No Change	24,456	+17,997	42,453
Management Area E	116,519	+8,051	124,570	+5,062	129,632
Management Area F	352,746	-554	352,192	No Change	352,192
Management Area G	247,644	+26,634	274,278	+3,609	277,887
Management Area H	31,778	-2,832	28,946	-438	28,508
Management Area I	37,867	-79	37,788	No Change	37,788
Management Area J	11,100	-715	10,385	+477	10,862
Management Area K	9,125	-1,209	7,916	No Change	7,916
Management Area L	16,112	+610	16,722	No Change	16,722
Management Area M	3,281	+7,089	10,370	No Change	10,370
Management Area N	41,838	-580	41,258	No Change	41,258
Management Area O	22,702	No Change	22,702	No Change	22,702
Management Area P	384,407	No Change	384,407	No Change	384,407
Management Area Q	51,834	No Change	51,834	No Change	51,834
Management Area R	33,225	+96	33,321	No Change	33,321
Management Area S	0	+2,600	2,600	No Change	2,600
Management Area T	0	+12,980	12,980	No Change	12,980
Total Forest Acres	1,843,397		1,843,040		1,843,040

MANAGEMENT AREA A

Management Area A (29,843 acres; 1.6 percent). (Suitable timber acres 8,469).

Description

Management Area A has high scenic values near U.S. Highway 89 and the Dry Fork of Belt Creek (Road No. 120). Most of the timber is lodgepole pine and Douglas fir, on gentle to steep slopes. The area is primarily summer range for big-game animals. Some livestock grazing does occur.

Goal

Protect, maintain, or enhance the scenic values. Meet the visual quality objectives, usually retention or partial retention, with all management activities. Provide moderate timber and range levels.

In addition to the Forest-wide Standards in Chapter II, the following applies:

RESOURCE ELEMENT	MANAGEMENT DIRECTION
Recreation	
Dispersed (AP2a)	Manage dispersed recreation settings and existing recreation improvements, prepare travel plans, and administer recreation special use permits.
Improvements (AP3c)	Improvements are day use sites, visitor information services, trailheads, parking facilities, and sanitation facilities.
Setting	Recreation setting is roaded natural. Interaction between users may be low to moderate with evidence of other users. Resource activities will be evident, but will blend with the natural environment.
Visual Quality Objective	The VQO (Visual Quality Objective) will usually be retention or partial retention. Although the landscape is changed by resource activities, the natural appearance of the landscape remains dominant. The modification VQO is acceptable when activity is not visible from an arterial road. (See Forest-Wide Standard--Visual Resource A-8) The visual impacts from any resource activity should not alter the landscape to less than an EVC (Existing Visual Condition) Class 3 where retention or partial retention is the recommended VQO. Where modification is appropriate, the visual impacts may alter the landscape to an EVC Class 45. However, the site should be rehabilitated to an EVC Class 3 within 2 years. (See Appendix N.)

RESOURCE ELEMENT	MANAGEMENT DIRECTION
Wildlife	
Operation, Protection and Maintenance (CW2b)	Maintain important identified wildlife habitat. Lengthened timber rotation will increase the diversity of successional stages. Important identified habitat includes T&E species habitat, big-game winter ranges, calving or lambing area, migration routes, elk summer concentration areas, and raptor nesting sites.
Structural Improvements (CW3G)	Priority for funding levels is low for wildlife habitat improvement, fencing areas such as winter ranges or wetlands and the construction of water developments. KV funds will also be programmed for wildlife habitat improvement in timber sale areas where appropriate needs are identified.
Range	
Administration (DR2b)	Administer existing range permits, monitor range use, and cooperate with permittees in maintaining existing range improvements (range improvements will normally be replaced on a 20-year schedule). Prepare range allotment plans or other plans involving range management on a 10-year schedule. Continue to use and develop range agreements with other agencies or landowners. Priority for funding will be moderate.
Nonstructural Improvements (DR3a)	Use prescribed fire to control tree/shrub encroachment and to maintain or enhance forage production on range. Mechanical or chemical methods are also acceptable. Cooperate closely with other Federal and State agencies, individuals, contractors, and permittees to control noxious weed and pest infestations.
Structural Improvements (DR3e)	Build/rebuld improvements (fences, water developments) to improve livestock distribution and/or maintain existing AUMs, in response to other resource values (wildlife, timber, recreation).
Timber	
Unprogrammed (ET2)	Harvest unprogrammed amounts of forest products including Christmas trees, firewood, ornamentals, and miscellaneous wood products through administrative use, fee use, permits, salvage, and sanitation cutting.
Reforestation (ER3a)	Natural regeneration is the primary objective. Where natural regeneration is not successful, planting or seeding may be used on an estimated 10 percent of the general forest stands and 20 percent of the dry forest stands.

A harvested area will no longer be considered a forest opening when the density and height of the regeneration meets the management area's goal. Usually this will be when the VQO has been met and the area is certified as stocked.

Precommercial Thinning (EI3)

Stands will be precommercially thinned if silviculturally desirable and compatible with the management area's goal.

Stands under extensive management will not be precommercially thinned, except where over stocking could significantly reduce growth. Approximately 8 percent of the general forest stands will be thinned. Usually, dry forest stands will not be thinned.

For stands under intensive management, precommercial thinning may be done on 70 percent of the general forest stands and 20 percent of the dry forest stands.

Commercial Thinning (EC3)

Commercial thinning will be based on the stand's silvicultural prescription, which considers size, site productivity, species, stocking, basal area, costs, and stand condition.

Even-Aged Management

Clearcutting (EP3d)

In accordance with the Regional Guide the timber harvest system in the general forest will usually be clearcutting, if VQOs are met. Other harvest systems may be prescribed to meet specific on-site constraints.

Final harvest will generally occur at or beyond the culmination of mean annual increment. The clearcut harvest will remove all trees, except those designated to maintain or enhance other values.

Shelterwood Cutting (EP3e)

The final harvest in the dry forest should utilize the shelterwood method. Where silviculturally desirable, Douglas fir stands in the general forest may be shelterwood harvested. The area's VQO must be met.

Final harvest will generally occur at or beyond the culmination of mean annual increment. Shelterwood harvest will normally use a two-step method: a seed cut and a removal cut. Where trees are not producing enough seed, a light preparation cut may be used to develop good seed producers. This would be considered a three-step method: preparatory, seed, and removal cut.

	Approximately 50 to 70 percent of the merchantable volume will be removed at the seed cut. The remaining volume will be harvested at the removal cut, which is when regeneration is established and VQO and other requirements are met.
Soil and Water Protection (FW2b)	Adhere to State water quality standards and maintain current soil productivity. Priority for funding will be moderate for structural or land treatments which maintain or rehabilitate watersheds or soil.
Minerals Development (GA3a)	Allow soil disturbing activities on environmentally suitable land. Where mineral activities are not compatible with management area goals, mitigate the effects through special lease stipulations. Design, locate, and, if necessary, reclaim roads and drill pads in compliance with the management area's goal.
Administration (GM2a)	Evaluate requests for mineral exploration and development. Administer geophysical prospecting and oil and gas exploration through permits and leases, respectively. Administer locatable and common variety minerals through Notices of Intent, operating plans, and mineral material permits.
Land Use Special-Use Permits (JL2a)	All new special-use permits must not conflict with the management area's goal. This management area is available for utility-transportation corridor allocation or facility siting. Visuals must be given the highest consideration when planning a utility-transportation corridor or facility site.
Roads Management (LR2b)	Achieve moderate public access by permitting motorized use on all arterial roads and most collector roads, plus some local roads. Moderate access is defined as 1.5 - 3.0 miles of open road per square mile of area (Montana Cooperative Elk Logging Study, 1982 describes the method for determining open road densities). Closures or restrictions may be used to: (1) resolve user conflict; (2) promote user safety; or (3) protect resources. Roads which cannot be maintained for motorized use may be restricted or closed. Closed roads may be occasionally opened for firewood gathering. (Also see Appendix O.)
	Roads constructed for mineral exploration and development will usually be open to public use. Mineral permit clauses will regulate use to minimize conflicts with the public.

	Commercial users may be required to pay a proportionate share of road maintenance cost.
Construction/ Reconstruction (LS10a)	Roads opened to public use will be located and constructed or reconstructed for economical resource management and safe public use. All resources should be protected and visual quality objectives met.
	Roads closed to public use will be located and constructed or reconstructed for the most economical resource management, while protecting soil and water resources and meeting visual quality objectives.
Mineral Access (LS10b)	Construct or reconstruct mineral access roads to the minimum standard consistent with the intended long-range use of the roads. Use existing roads whenever possible.
Trails Management (LT2b)	Open all areas and trails to ORVs except where use is restricted by season, type of vehicle, or type of activity. Closures or restrictions may be used to: (1) resolve user conflict; (2) promote user safety; or (3) protect resources. (Also see Appendix O.)
Construction/ Reconstruction (LS11c)	Design trails to be compatible with the adjacent recreation settings. If a road provides the same access as a trail, during transportation planning the trail should be evaluated to see whether or not it should be abandoned. Provide trailhead facilities as needed to facilitate safe access to the trail and obtain necessary rights-of-way to the National Forest.
Protection Suppression (PD8a)	Aggressive "control" will normally be the appropriate fire suppression response in this management area. (See Appendix P for specific Fire Management Direction.)
Prescribed Fire (PS12a)	Prescribed fire with planned ignitions will be used in this management area for the enhancement and maintenance of resources. (See Appendix P for specific Fire Management Direction.)
Fuels (PS11)	Fuel reduction methods for activity created fuels include burning, removing residue, or rearranging, such as dozer trampling. Disposal activities will meet visual quality objectives. (See Appendix P for specific Fire Management Direction.)

SCHEDULE OF PRACTICES (Average Annual)

	Proposed Decade 1	Probable Decade 2
Wildlife (See Appendix M)		
CW3g (Structural Improvements)	.5 Structures	.5 Structures
Range (See Appendix R)		
DR3a (Nonstructural Improvements)	7 Acres	7 Acres
DR3e (Structural Improvements)	1 Structure	1 Structure
Timber (See Appendix A)		
EP3d (Clearcutting)	35 Acres (.18 MMBF)	17 Acres (.09 MMBF)
EP3e (Shelterwood Cutting)	35 Acres (.38 MMBF)	66 Acres (.61 MMBF)
EI3 (Precommercial Thinning)	8 Acres	10 Acres
ER3a (Reforestation)	70 Acres	83 Acres

All other practices are assumed to be implemented in the first decade and apply to all acres.

The following monitoring requirements apply to this management area. (See Chapter V.)

A-1, A-2, A-3, A-5, A-6, A-7, A-8, C-1, C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-9, C-10, C-12, C-13, D-1, D-2, D-3, D-4, E-1, E-2, E-3, E-4, E-5, E-6, E-7, E-8, E-9, E-10, E-11, F-1, F-2, F-5, F-6, G-1, G-2, G-3, G-4, G-5, J-1, J-2, J-3, L-1, L-2, P-1, P-2, P-3, P-4, P-5, P-6, P-7, 1-1, 1-2, 1-3, 1-4.

The procedures outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

MANAGEMENT AREA B

Management Area B (304,872 acres; 16.5 percent). (Suitable timber acres 224,310).

Description

Management Area B contains most of the commercial forest land on the Jefferson Division. In the general forest, the species mix is approximately 75 percent lodgepole pine and 25 percent Douglas fir. In the dry forest, the species mix is approximately 84 percent Douglas fir, 11 percent ponderosa pine, and 5 percent lodgepole pine. Much of the area provides summer and fall habitat for big-game animals and forage for livestock.

Goal

Emphasize timber management and provide a moderate level of livestock forage production, while minimizing impacts to other resources.

In addition to the Forest-wide Standards in Chapter II, the following applies:

RESOURCE ELEMENT	MANAGEMENT DIRECTION
Recreation	
Dispersed (AP2a)	Manage dispersed recreation settings and existing recreation improvements, prepare travel plans, and administer recreation special-use permits.
Improvements (AP3c)	Improvements may consist of day use (occupancy spots), visitor information services, trailheads, parking facilities, and sanitation facilities.
Setting	The recreation setting is mostly roaded natural. Interaction between users may be low to moderate, but with evidence of other users prevalent. Resource activities will be evident, but will blend with the natural environment.
Visual Quality Objectives	The VQO will usually be partial retention or modification. Retention may be appropriate if the activity is within the seen area of a sensitivity level 1 road, trail, or use area. (See Forest-Wide Standard--Visual Resource A-8.) If the VQQ is not achieved and the visual impacts can be classed as EVC 5 or greater, the land should be rehabilitated within 2 years to at least an EVC class 4. (See Appendix N.)
Wildlife	
Operation, Protection and Maintenance (CW2c)	Minimize impacts on important identified wildlife habitat while achieving programmed harvest or range management objectives. Important identified habitat includes big-game winter ranges, calving or lambing areas, migration routes, and elk summer concentration areas.

RESOURCE ELEMENT	MANAGEMENT DIRECTION
Nonstructural Improvements (CW3b)	Coordinate prescribed burning and revegetation projects with range management. Jointly financed projects should be considered where feasible. Priority for funding is low.
Structural Improvements (CW3g)	Priority for funding is low for wildlife habitat improvement, such as fencing winter ranges or wetlands or constructing water developments. KV funds will also be programmed for wildlife habitat improvement in timber sale areas where appropriate needs are identified.
Range	
Administration (DR2b)	Administer existing range permits, monitor range use, and cooperate with permittees in maintaining existing range improvements (range improvements will normally be replaced on a 20-year schedule. Continue to use and develop range agreements with other agencies or landowners. Priority for funding will be moderate.
Nonstructural Improvements (DR3a)	Use prescribed fire to control tree/shrub encroachment and to maintain or enhance forage production on range. Mechanical or chemical methods are also acceptable. Cooperate closely with other Federal and State agencies, individuals, contractors, and permittees to control noxious weed and pest infestations.
Structural Improvements (DR3c)	Build/rebuild structural improvements (fences, water developments) to increase and/or maintain AUMs. Build/rebuild improvements to improve livestock distributions, range vigor, and range vegetation.
Timber	
Unprogrammed (ET2)	Harvest unprogrammed amounts of forest products including Christmas trees, firewood, ornamentals, and miscellaneous products through administrative use, free use, permits, salvage, and sanitation cutting.
Reforestation (ER3a)	Natural regeneration is the primary objective. Where natural regeneration is not successful, planting or seeding may be used on an estimated 10 percent of the general forest stands and 20 percent of the dry forest. A harvested area will no longer be considered a forest opening when the density and height of the regeneration meets the management area's goal. Usually this is when trees are 2½ feet in height

and the area is certified as stocked with the prescribed density, size, and species of tree seedlings.

Precommercial Thinning (EI3)

Stands will be precommercially thinned if silviculturally desirable and compatible with the management area's goal.

Stands under extensive management will not be precommercially thinned, except where over stocking could significantly reduce growth. Approximately 8 percent of the general forest stands will be thinned. Usually, dry forest stands will not be thinned.

For stands under intensive management, precommercial thinning may be done on 70 percent of the general forest stands and 20 percent of the dry forest stands.

Commercial Thinning (EC3)

Commercial thinning will be based on the stand's silvicultural prescription which considers size, site productivity, species, stocking, basal area, costs, and stand condition.

Even-Aged Management
Clearcutting (EP3a)

In accordance with the Regional Guide the timber harvest system in the general forest will usually be clearcutting (patch, strip, or stand). Other harvest systems may be prescribed to meet specific on-site constraints.

Final harvest will generally occur at or near culmination of mean annual increment. The clearcutting harvest will remove all trees, except those designated to maintain or enhance other resource values.

Shelterwood (EP3b)

The final harvest in the dry forest should utilize the shelterwood method. Where silviculturally desirable, Douglas fir stands in the general forest may be shelterwood harvested.

Final harvest will generally occur at or near the culmination of mean annual increment. Shelterwood harvest will normally use a two-step method; a seed cut and a removal cut. Where trees are not producing enough seed, a light preparation cut may be used to develop good seed producer. This would be considered a three-step method: preparatory, seed, and removal cut.

	Approximately 50 to 70 percent of the merchantable volume will be removed at the seed cut. The remaining volume will be harvested at the removal cut, which is when regeneration is established and other resource requirements are met.
Soil and Water Protection (FW2b)	Adhere to State water quality standards and maintain current soil productivity. Priority for funding will be moderate for structural or land treatments which maintain or rehabilitate watersheds or soil.
Minerals Development (GA3a)	Allow soil disturbing activities on environmentally suitable land. Where mineral activities are not compatible with present use, mitigate the effects through special lease stipulations. Design, locate, and, if necessary, reclaim roads and drill pads in compliance with the management area's goal.
Administration (GM2a)	Evaluate requests for mineral exploration and development. Administer oil and gas leases and geophysical prospecting permits. Administer locatable and common variety minerals through Notices of Intent, operating plans, and mineral material permits.
Land Use Special-Use Permits (JL2a)	All new special-use permits must not conflict with the management area's goal. This management area is available for utility-transportation corridor allocation or facility siting.
Roads Management (LR2b)	Achieve moderate public access by permitting motorized use on all arterial roads and most collector roads, plus some local roads. Moderate access is defined as 1.5 - 3.0 miles of open road per square mile of area. Closures or restrictions may be used to: (1) resolve user conflict; (2) promote user safety; or (3) protect resources. Roads which cannot be maintained for motorized use may be restricted or closed. Closed roads may be occasionally opened for firewood gathering. (Also see Appendix O.)
	Roads constructed for mineral exploration and development will usually be open to public use. Mineral permit clauses will regulate use to minimize conflicts with the public.
	Commercial users may be required to pay a proportionate share of road maintenance cost.

Construction/ Reconstruction (LS10a)	Roads opened to public use will be located and constructed or reconstructed for economical resource management and safe public use. All resources should be protected. Roads closed to public use will be located and constructed or reconstructed for the most economical resource management, while protecting soil and water resources.
Mineral Access (LS10b)	Construct or reconstruct mineral access roads to the minimum standard consistent with the intended long-range use of the roads. Use existing roads whenever possible.
Trails Management (LT2b)	Open all areas and trails to ORVs except where use is restricted by season, type of vehicle, or type of activity. Closures or restrictions may be used to: (1) resolve user conflict; (2) promote user safety; or (3) protect resources. (Also see Appendix O.)
Construction/ Reconstruction (LS11c)	Design trails to be compatible with the adjacent recreation settings. If a road provides the same access as a trail, during transportation planning the trail should be evaluated to see whether or not it should be abandoned. Provide trailhead facilities as needed to facilitate safe access to the trail and obtain necessary rights-of-way to the National Forest.
Protection Suppression (PD8b)	The appropriate suppression response ranges from "control" to "containment" in this management area depending upon location, expected fire behavior, and other decision logic criteria related to values at risk. The decision criteria will be stated in a Fire Management Action Plan. (See Appendix P for specific Fire Management Direction.)
Prescribed Fire (PS12a)	Prescribed fire with planned ignitions will be used in this management area for the enhancement and maintenance of resources. (See Appendix P for specific Fire Management Direction.)
Fuels (PS11)	Fuel reduction methods for activity created fuels include burning, removing residue, or rearranging, such as dozer trampling. Disposal activities will meet visual quality objectives. (See Appendix P for specific Fire Management Direction.)

SCHEDULE OF PRACTICES (Average Annual)

	Proposed Decade 1	Probable Decade 2
Wildlife (See Appendix M)		
CW3b (Nonstructural Improvements)	20 Acres	20 Acres
CW3g (Structural Improvements)	2 Structures	2 Structures
Range (See Appendix R)		
DR3a (Nonstructural Improvements)	571 Acres	571 Acres
DR3c (Structural Improvements)	5 Structures	5 Structures
Timber (See Appendix A)		
EP3a (Clearcutting)	666 Acres(5.74 MMBF)	611 Acres(6.55 MMBF)
EP3b (Shelterwood Cutting)	807 Acres(5.49 MMBF)	766 Acres(7.58 MMBF)
EC3 (Commercial Thinning)	10 Acres	10 Acres
EI3 (Precommercial Thinning)	169 Acres	171 Acres
ER3a (Reforestation)	1473 Acres	1378 Acres

All other practices are assumed to be implemented in the first decade and apply to all acres.

The following monitoring requirements apply to this management area. (See Chapter V.)

A-1, A-2, A-3, A-5, A-6, A-7, A-8, B-3, C-3, C-5, C-6, C-7, C-8, C-9, C-10, C-12, D-1, D-2, D-3, D-4, E-1, E-2, E-3, E-4, E-5, E-6, E-7, E-8, E-9, E-10, E-11, F-1, F-2, F-5, F-6, G-1, G-2, G-3, G-4, G-5, J-1, J-2, J-3, L-1, L-2, P-1, P-2, P-3, P-4, P-5, P-6, P-7, 1-1, 1-2, 1-3, 1-4.

The procedures outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

MANAGEMENT AREA C	Management Area C (87,110 acres; 4.7 percent). (Suitable timber acres 20,157).
Description	Management Area C is entirely on the Jefferson division and includes important elk and deer habitat. The management area includes lodgepole pine, Douglas-fir, and ponderosa pine in the dry, general, and noncommercial forest types.
Goal	Maintain or enhance existing elk habitat by maximizing habitat effectiveness as a primary management objective. Emphasis will also be directed toward management of indigenous wildlife species. Commodity resource management will be practiced where it is compatible with these wildlife management objectives.

In addition to the Forest-wide Standards in Chapter II, the following applies:

RESOURCE ELEMENT	MANAGEMENT DIRECTION
Recreation Dispersed (AP2a)	Manage dispersed recreation settings and existing recreation improvements, prepare travel plans, and administer recreation special use permits.
Improvements (AP3c)	Improvements may consist of day use (occupancy spots), visitor information services, trailheads, parking facilities, and sanitation facilities.
Setting	The recreation setting is mostly roaded natural. Interaction between users may be low to moderate, but with evidence of other users prevalent. Resource activities will be evident, but will blend with the natural environment.
Visual Quality Objectives	The VQO will be partial retention or modification. Retention may be appropriate if the activity is within the seen area of a sensitivity level 1 road, trail, or use area. (See Forest-wide Standard--Visual Resource A-8). If the VQO is not achieved and the visual impacts can be classed as EVC 5 or greater, the land should be rehabilitated within 2 years to at least an EVC class 4. (See Appendix N.)
Wildlife Operation, Protection, and Maintenance (CW2a)	Maintain or enhance important identified wildlife habitat, including T&E habitat, big-game winter ranges, calving or lambing areas, migration routes, elk summer concentration areas, raptor nesting sites, and significant nongame habitat.

RESOURCE ELEMENT	MANAGEMENT DIRECTION
	Maintain effective hiding cover (see glossary) percentages by timber compartment at an average of 40 percent with a minimum of 35 percent (or the natural level if less than 35 percent) for any individual sub-compartment. Habitat effectiveness will be positively managed through road management and other necessary controls on resource activities.
Nonstructural Improvements (CW3d)	Emphasize habitat improvement projects, including prescribed burning and revegetation. Priority for funding is high. Some slash may be left for small game and nongame habitat. Plant desirable forage species on heavy-use sites, as well as sites disturbed by development. Use other methods of habitat improvement, including mechanical treatment and hand cutting, where desirable to maintain or create early successional stages of vegetation.
Structural Improvements (CW3e)	Priority for funding is moderate for wildlife habitat improvements, such as fencing important habitat, building nest boxes, and developing water sources. KV funds will also be programmed for wildlife habitat improvement in timber sale areas where appropriate needs are identified.
Range Administration (DR2b)	Administer existing range permits, monitor range use, and cooperate with permittees in maintaining existing range improvements (range improvements will normally be replaced on a 20-year schedule). Prepare range allotment plans, or other plans involving range management, based on a 10-year schedule. Continue to use and develop range agreements with other agencies or landowners. Priority for funding will be moderate.
Nonstructural Improvements (DR3a)	Use prescribed fire to control tree/shrub encroachment and to maintain or enhance forage production on range. Mechanical or chemical methods are also acceptable. Cooperate closely with other Federal and State agencies, individuals, contractors, and permittees to control noxious weed and pest infestations.
Structural Improvements (DR3e)	Build/rebuild improvements (fences, water developments) to improve livestock distribution and/or to maintain existing AUMs, in response to other resource values (wildlife, recreation, timber).

Timber Unprogrammed (ET2)	Harvest unprogrammed amounts of forest products including Christmas trees, firewood, ornamentals, and miscellaneous wood products through administrative use, free use, permits, salvage, and sanitation cutting.
Reforestation (ER3a)	Natural regeneration is the primary objective. When natural regeneration is not successful, planting or seeding may be used on an estimated 10 percent of the general stands and 20 percent of the dry forest stands. A harvested area will no longer be considered a forest opening when the density and height of the regeneration meets the management area's goal. Usually this will be when the area is considered hiding cover and the area is certified as stocked.
Precommercial Thinning (EI3)	Stands will be precommercially thinned if silviculturally desirable and compatible with the management area's goal. Stands under extensive management will not be precommercially thinned, except where over stocking could significantly reduce growth. Approximately 8 percent of the general forest stands will be thinned. Usually dry forest stands will not be thinned. For stands under intensive management, precommercial thinning may be done on 70 percent of the general forest stands and 20 percent of the dry forest stands.
Commercial Thinning (EC3)	Commercial thinning will be based on the stand's silvicultural prescription, which considers size, site productivity, species, stocking, basal area, costs, and stand condition. Commercial thinning will be used on many of the younger stands.
Even-Aged Management Clearcutting (EP3d)	In accordance with the Regional Guide the timber harvest system in the general forest will usually be clearcutting, if management objectives are met. Other harvest systems may be prescribed to meet specific on-site constraints. Harvest will generally occur at or beyond the culmination of mean annual increment. The clearcut harvest will remove all trees, except those designated to maintain or enhance other values.
Shelterwood Cutting (EP3e)	The final harvest in the dry forest will be by the shelterwood method. Where silviculturally desirable, Douglas-fir stands in the

	general forest may be shelterwood harvested. Final harvest will generally occur at or beyond the culmination of mean annual increment. Shelterwood harvest will normally use a two-step method: a seed cut and a removal cut. Where trees are not producing enough seed, a light preparation cut may be used to develop good seed producers. This would be considered a three-step method: preparatory, seed, and removal cut. Approximately 50 to 70 percent of the merchantable volume will be removed at the seed cut. The remaining trees will be harvested at the removal cut, which is when regeneration is established and wildlife objectives are met.
Soil and Water Protection (FW2b)	Adhere to State water quality standards and maintain current soil productivity. Priority for funding will be moderate for structural or land treatments which maintain or rehabilitate watersheds or soils.
Minerals Development (GA3a)	Allow soil disturbing activities on environmentally suitable land. Where mineral activities are not compatible with present use, mitigate the effects through special lease stipulations. Design, locate, and, if necessary, reclaim roads and drill pads in compliance with the management area's goal. The timing and location of exploration activities in relation to the use of key wildlife habitat determines the significance of disturbing or displacing wildlife. Timing restrictions will protect key wildlife habitat. (See Forest-wide Standards G-1 and G-2.)
Administration (GM2a)	Evaluate requests for mineral exploration and development. Administer geophysical prospecting and oil and gas exploration through permits and leases, respectively. Administer locatable and common variety minerals through Notices of Intent, operating plans, and mineral material permits.
Land Use Special-Use (JL2a)	All new special-use permits must not conflict with the management area's goal. This management area is available for utility-transportation corridor allocation or facility siting. Wildlife values must be given the highest consideration when planning a utility-transportation corridor or facility site.
Roads Management (LR2c)	Achieve low public access through permitting motorized use on all arterial and most collector roads. Although local roads could remain open, collectively the access provided would be restricted.

	Low access is defined as 0.5 to 1.5 miles of open road per square mile of area. Closures or restrictions may be used to: (1) resolve user conflict; (2) promote user safety; or (3) protect resources. Elk habitat effectiveness will be maintained. Roads which cannot be maintained for motorized use may be restricted or closed. Closed roads may be occasionally opened for firewood gathering. (Also see Appendix O.) Roads constructed for mineral exploration and development will usually be closed to public use and obliterated when no longer needed. If the road is constructed for mineral exploration and development and opened for public use, minerals permit clauses will regulate use to minimize user conflicts. If the road is closed to public use, but maintained for administrative use, the permittee must leave it in a condition suitable for non-use maintenance.
Construction/ Reconstruction (LS10a)	Road opened to public use will be located and constructed or reconstructed for the most economical resource management and safe public use. All resources should be protected. Roads closed to public use will be located and constructed or reconstructed for economical resource management, while protecting other resources.
Minerals Access (LS10b)	Construct or reconstruct mineral access roads to the minimum standard consistent with the intended long-range use of the roads. Use existing roads whenever possible.
Trails Management (LT2b)	Open all areas and trails to ORVs, except where use is restricted by season, type of vehicle, or type of activity. Closures or restrictions may be used to: (1) resolve user conflict; (2) promote user safety; or (3) protect resources. Elk habitat effectiveness will be maintained. (Also see Appendix O.).
Construction/ Reconstruction (LS11c)	Design trails to be compatible with the adjacent recreation setting. If a road provides the same access as a trail, during transportation planning the trail should be evaluated to determine whether it should be abandoned. Provide trailhead facilities as needed to facilitate safe access to the trail and obtain necessary rights-of-ways to the National Forest.
Protection Suppression (PD8b)	The appropriate suppression response ranges from "control" to "confinement" in this management area depending upon location, expected fire behavior, and other decision logic criteria related to values at risk. The decision criteria will be stated in a Fire

	Management Action Plan. (See Appendix P for specific Fire Management Direction).
Prescribed Fire (PS12a)	Prescribed fire with planned ignitions will be used in this management area for the enhancement and maintenance of resources. (See Appendix P for specific Fire Management Direction.)
Prescribed Fire (PS12b)	Prescribed fire with unplanned ignitions may be used in this management area for the enhancement and maintenance of resources, when within preestablished prescribed fire criteria. This criteria will be detailed in a Fire Management Action Plan. (See Appendix P for specific Fire Management Direction).
Fuels (PS11)	Fuel reduction methods for activity created fuels include burning, removing residue, or rearranging such as dozer trampling. Disposal activities will meet visual quality objectives. (See Appendix P for specific Fire Management Direction.)

SCHEDULE OF PRACTICES (Average Annual)[1]		
	Proposed-Decade 1	**Probable-Decade 2**
Wildlife (See Appendix R) CW3d (Nonstructural Improvements) CW3e (Structural Improvements)	 113 Acres 2 Structures	 113 Acres 2 Structures
Range (See Appendix M) DR3a (Nonstructural Improvements) DR3e (Structural Improvements)	 368 Acres 2 Structures	 368 Acres 2 Structures
Timber (See Appendix A) EPd (Clearcutting) EP3e (Shelterwood Cutting) EI3 (Precommercial Thinning) ER3a (Reforestation) PS12a (Prescribed Fire for Stocking Control)	 48 Acres (.73 MMBF) 152 Acres (.96 MMBF) 23 Acres 200 Acres 20 Acres	 65 Acres (.98 MMBF) 86 Acres (.67 MMBF) 19 Acres 151 Acres 20 Acres
[1]All other practices are assumed to be implemented in the first decade and apply to all acres.		

The following monitoring requirements apply to this management area. (See Chapter V.)

A-1, A-2, A-3, A-5, A-6, A-7, A-8, B-3, C-3, C-5, C-6, C-7, C-8, C-9, C-10, C-12, D-1, D-2, D-3, D-4, E-1, E-2, E-3, E-4, E-5, E-6, E-7, E-8, E-9, E-10, E-11, F-1, F-2, F-5, F-6, G-1, G-2, G-3, G-4, G-5, J-1, J-2, J-3, L-1, L-2, P-1, P-2, P-3, P-4, P-5, P-6, P-7, 1-1, 1-2, 1-3, 1-4.

The procedures outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

MANAGEMENT AREA D	Management Area D (24,456 acres; 1.3 percent).
Description	Management Area D is in the Highwood Mountains and includes grasslands, high areas, and mosaics (timber stands interspersed with grass) which are excellent for livestock use. All slopes are included. The area also provides summer and fall habitat for approximately 400 head of elk and numerous deer.
Goal	Provide a sustained high level of forage production for livestock, while protecting, maintaining, and improving water, wildlife, and other resource qualities.

In addition to the Forest-Wide Standards in Chapter II, the following applies:

Resource Element	Management Direction
Recreation Dispersed (AP2a)	Manage dispersed area recreation settings and existing recreation improvements, prepare travel plans, and administer recreation special use permits.
Improvements (AP3c)	Improvements may consist of day use (occupancy spots), visitor information services, trailheads, parking facilities, and sanitation facilities.
Setting	The recreation setting is mostly roaded natural. Interaction between users may be low to moderate, but with evidence of other users prevalent. Resource activities will be evident, but will blend with the natural environment.
Visual Quality Objective	The VQO will usually be partial retention. Although the landscape is changed by resource activities, the natural appearance of the landscape remains dominant. The modification VQO is acceptable when activity is not visible from an arterial road. If the VQO is not met and the visual impacts can be classified as EVC 4 or greater, the site should be rehabilitated within 2 years to restore the landscape to at least an EVC Class 3. (See Appendix N.)
Wildlife Operation, Protection and Maintenance (CW2c)	Minimize impacts on important identified wildlife habitat while achieving range management goal. Important identified habitat includes big-game winter ranges, calving areas, migration routes, and elk summer concentration areas.

Nonstructural Improvements (CW3b)	Coordinate prescribed burning and revegetation projects with range management. Jointly financed projects should be considered where feasible. Priority for funding is moderate.
Structural Improvements (CW3f)	Coordinate fencing and water developments with range management. Projects should be jointly financed where both resources benefit. Priority for funding will be moderate.
Range Administration (DR2a)	Administer existing range permits, monitor range use, and cooperate with permittees in maintaining existing range improvements (range improvements will normally be replaced on a 20-year schedule). Prepare range allotment plans, or other plans involving range management, on a 10-year schedule. Continue to use and develop range agreements with other agencies or landowners. Priority for funding will be high.
Nonstructural Improvements (DR3a)	Use prescribed fire to control tree/shrub encroachment and to maintain or enhance forage production on range. Mechanical or chemical methods are also acceptable. Cooperate closely with other Federal and State agencies, individuals, contractors, and permittees to control noxious weed and pest infestations.
Structural Improvements (DR3c)	Build/rebuild improvements (fences, water developments) to increase and/or maintain AUMs. Build/rebuild improvements to improve livestock distribution, range vigor, and range vegetation.
Timber Unprogrammed (ET2)	Harvest unprogrammed amounts of forest products including Christmas trees, firewood, ornamentals, and miscellaneous wood products through administrative use, free use, permits, salvage, and sanitation cutting.
Soil and Water Protection (FW2b)	Adhere to State water quality standards and maintain current soil productivity. Priority for funding will be moderate for structural or land treatments which maintain or rehabilitate watersheds or soil.
Minerals Development (GA3a)	Allow soil disturbing activities on environmentally suitable land. Where mineral activities are not compatible with forage production, mitigate the effects through special lease stipulations. Design, locate, and, if necessary, reclaim roads and drill pads in compliance with the management area's goal.

Administration (GM2a)	Evaluate requests for mineral exploration and development. Administer geophysical prospecting and oil and gas exploration through permits and leases, respectively. Administer locatable and common variety minerals through both Notices of Intent, operating plans, and minerals material permits.
Land Use Special-Use Permits (JL2a)	All new special-use permits must not conflict with the management area's goal. This management area is available for utility-transportation corridor allocation or facility siting.
Roads Management (LR2c)	Achieve low public access through permitting motorized use on all arterial and most collector roads. Although local roads could remain open, collectively the access provided would be restricted. Low access is defined as 0.5 to 1.5 miles of open road per square mile of area. Closures or restrictions may be used to: (1) resolve user conflict; (2) promote user safety; or (3) protect resources. Roads which cannot be maintained for motorized use may be restricted or closed. Closed roads may be occasionally opened for firewood gathering. (Also see Appendix O.) Roads constructed for mineral exploration and development will usually be closed to public use and obliterated when no longer needed. If the road is constructed for mineral exploration and development and opened for public use; mining permit clauses will regulate use to minimize user conflicts. If the road is closed to public use, but maintained for administrative use, the permittee must leave it in a condition suitable for non-use maintenance.
Construction/ Reconstruction (LS10a)	Roads opened to public use will be located and constructed or reconstructed for economical resource management and safe public use. All resources should be protected. Roads closed to public use will be located and constructed or reconstructed for the most economical resource management, while protecting other resources.
Minerals Access (LS10b)	Construct or reconstruct mineral access roads to the minimum standard consistent with the intended long-range use of the roads. Use existing roads whenever possible.

Trails Management (LT2a)	Open all areas and trails to ORVs, except for those areas and trails that cannot be protected against erosion or provide for user safety. Closures or restrictions may be used to: (1) resolve user conflict; (2) promote user safety; or (3) protect resources. (Also see Appendix O.)
Construction/ Reconstruction (LS11c)	Design trails to be compatible with the adjacent recreation settings. If a road provides the same access as a trail, during transportation planning the trail should be evaluated to determine whether it should be abandoned. Provide trailhead facilities as needed to facilitate safe access to the trail and obtain necessary rights-of-way to the National Forest.
Protection Suppression (PD8b)	The appropriate suppression response ranges from "control" to "confinement" in this management area depending upon location, expected fire behavior, and other decision logic criteria related to values at risk. This decision criteria will be stated in a Fire Management Action Plan. (See Appendix P for specific Fire Management Direction.)
Prescribed Fire (PS12a)	Prescribed fire with planned ignitions will be used in this management area for the enhancement and maintenance of resources. (See Appendix P for specific Fire Management Direction.)
Prescribed Fire (PS12b)	Prescribed fire with unplanned ignitions may be used in this management area for the enhancement and maintenance of resources, when within pre-established prescribed fire criteria. This criteria will be detailed in a Fire Management Action Plan (See Appendix P for specific Fire Management Direction.)

SCHEDULE OF PRACTICES (Average Annual)

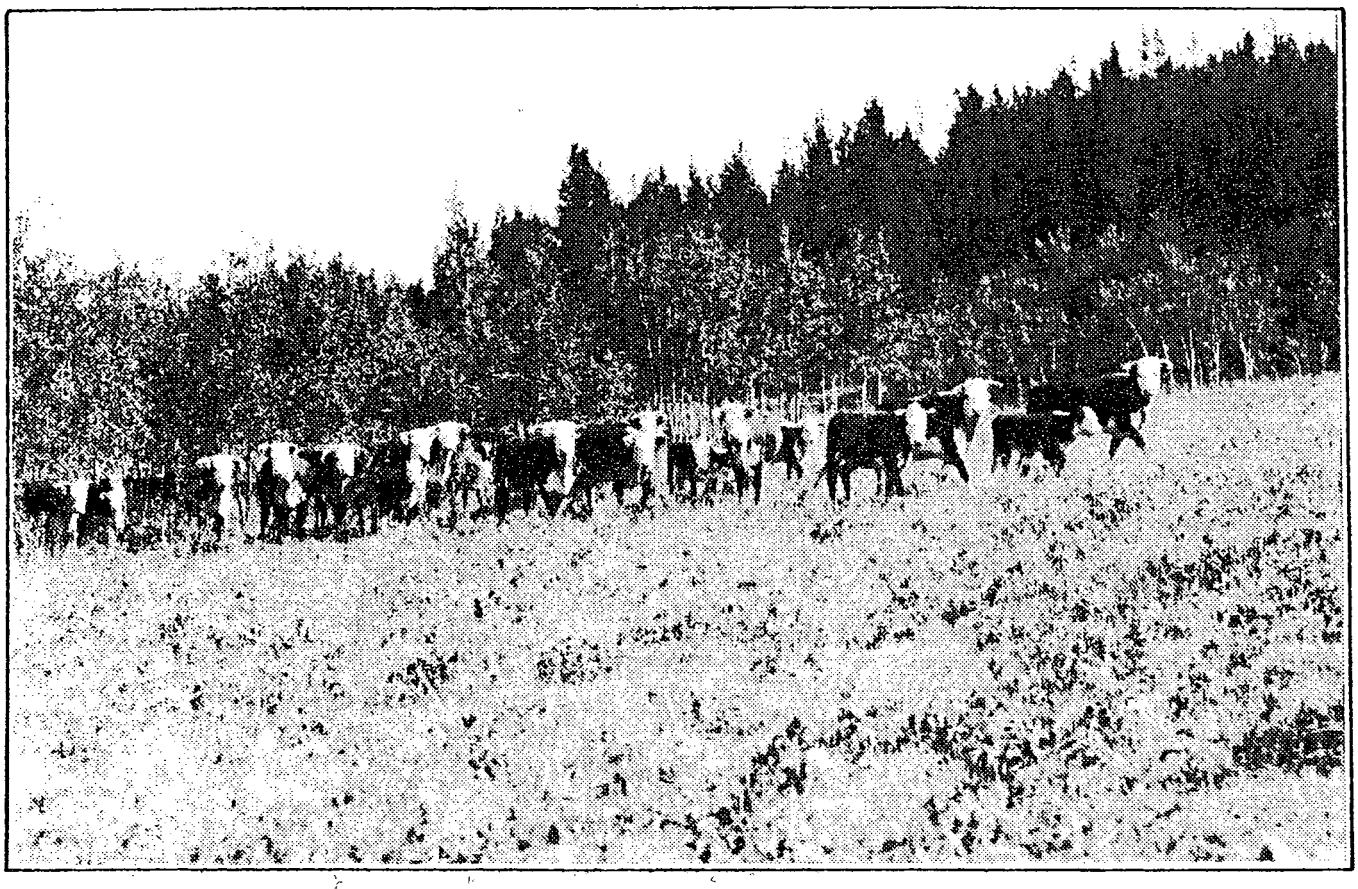
	Proposed Decade 1	Probable Decade 2
Wildlife (See Appendix M)		
CW3b (Nonstructural Improvements)	20 Acres	20 Acres
CW3f (Structural Improvements)	.5 Structures	.5 Structures
Range (See Appendix R)		
DR3a (Nonstructural Improvements)	92 Acres	92 Acres
DR3c (Structural Improvements)	4 Structures	4 Structures

All other practices are assumed to be implemented in the first decade and apply to all acres.

The following monitoring requirements apply to this management area. (See Chapter V.)

A-1, A-2, A-3, A-4, A-5, A-6, A-7, A-8, B-3, C-3, C-5, C-6, C-7, C-8, C-9, C-10, C-12, D-1, D-2, D-3, D-4, E-9, E-10, E-11, F-1, F-2, F-5, F-6, G-1, G-2, G-3, G-4, G-5, J-1, J-2, J-3, L-1, L-2, P-2, P-3, P-4, P-5, P-6, P-7, 1-1, 1-2, 1-3, 1-4.

The procedures outlined in Chapter V will be followed to evaluate the data gathered during monitoring.



Cattle Grazing on the National Forest.

MANAGEMENT AREA E Management Area E (124,570 acres; 6.8 percent).

Description — Nearly all of this management area occurs on big-game winter range and contains both grass and forested lands. The land is generally near the Forest boundaries.

Goal — Provide sustained high level of forage for livestock and big game animals.

In addition to the Forest-wide Standards in Chapter II, the following applies:

RESOURCE ELEMENT	MANAGEMENT DIRECTION
Recreation	
Dispersed (AP2a)	Manage dispersed recreation settings and existing recreation improvements, prepare travel plans, and administer recreation special use permits.
Improvements (AP3c)	Improvements may consist of day use (occupancy spots), visitor information services, trailheads, parking facilities, and sanitation facilities.
Setting	The recreation setting is mostly roaded natural. Interaction between users may be low to moderate, but with evidence of other users prevalent. Resource activities will be evident, but will blend with the natural environment.
Visual Quality Objective	The VQO will usually be partial retention. Although the landscape is changed by resource activities, the natural appearance of the landscape remains dominant. The modification VQO is acceptable when activity is not visible from an arterial road. If the VQO is not met and the visual impacts can be classified as EVC 4 or greater, the site should be rehabilitated within 2 years to restore the landscape to at least an EVC Class 3. (See Appendix N.)
Wildlife	
Operation, Protection, and Maintenance (CW2b)	Maintain important identified wildlife habitat, including T&E habitat, big-game winter ranges, calving or lambing areas, migration routes, elk summer range, raptor nesting sites, and significant non-game habitat values.
Nonstructural Improvements (CW3b)	Coordinate prescribed burning and revegetation projects with range management. Jointly financed projects should be considered where feasible. Priority for funding is high.

RESOURCE ELEMENT	MANAGEMENT DIRECTION
Structural Improvements (CW3f)	Coordinate fencing and water developments with range management. Projects should be jointly financed where both resources benefit. Priority for funding will be high.
Range Administration (DR2b)	Administer existing range permits, monitor range use, and cooperate with permittees in maintaining existing range improvements (range improvements will normally be on a 20-year replacement schedule). Prepare range allotment plans or other plans involving range management on a 10-year schedule. Continue to use and develop range agreements with other agencies or landowners. Priority for funding will be high.
Nonstructural Improvements (DR3a)	Use prescribed fire to control tree/shrub encroachment and to maintain or enhance forage production on range. Mechanical or chemical methods are also acceptable. Cooperate closely with other Federal and State agencies, individuals, contractors, and permittees to control noxious weed and pest infestations.
Structural Improvements (DR3d)	Build/rebuild improvements (fences, water developments) to increase and/or better distribute AUMs. Build/rebuild improvements to improve livestock distribution, in response to other resource values (wildlife, timber, recreation).
Timber Unprogrammed (ET2)	Harvest unprogrammed amounts of forest products including Christmas trees, firewood, ornamentals, and miscellaneous wood products through administrative use, free use permits, salvage, and sanitation cutting.
Soil and Water Protection (FW2b)	Adhere to State Water quality standards and maintain current soil productivity. Priority for funding will be moderate for structural or land treatments which maintain or rehabilitate watersheds or soil.
Minerals Development (GA3a)	Allow soil disturbing activities on environmentally suitable land. Where mineral activities are not compatible with present use, mitigate the effects through special lease stipulations. Design, locate, and if necessary, reclaim roads and drill pads in compliance with th management area's goal. The timing and location of exploration activities in relation to the use of key wildlife habitat determines the significance of disturbing or displacing wildlife. Timing restrictions will

	protect key wildlife habitat. (See Forest-Wide Guidelines G-1 and G-2.)
Administration (GM2a)	Evaluate requests for mineral exploration and development. Administer geophysical prospecting and oil and gas through permits and leases, respectively. Administer locatable and common variety minerals through both Notices of Intent, operating plans, and mineral material permits.
Land Use Special-Use Permits (JL2a)	All new special-use permits must not conflict with the management area's goal. This management area is available for utility-transportation corridor allocation or facility siting.
Roads Management (LR2c)	Achieve low public access through permitting motorized use on all arterial and most collector roads. Although local roads could remain open, collectively the access provided would be restricted. Low access is defined as 0.5 - 1.5 miles of open road per square mile of area. Closures or restrictions may be used to: (1) resolve user conflict; (2) promote user safety; or (3) protect resources. Important identified wildlife habitat will be protected. Roads which cannot be maintained for motorized use may be restricted or closed. Closed roads may be occasionally opened for firewood gathering. (Also see Appendix O.)
	Roads constructed for mineral exploration and development will usually be closed to public use and obliterated when no longer needed. If the road is constructed for mineral exploration and development and opened for public use, mineral permit clauses will regulate use to minimize user conflicts. If the road is to be closed to public use, but maintained for administrative use, the permittee must leave it in a condition suitable for non-use maintenance.
Construction/ Reconstruction (LS10a)	Roads opened to public use will be located and constructed or reconstructed for economical resource management and safe public use. All resources should be protected.
	Roads closed to public use will be located and constructed or reconstructed for the most economical resource management, while protecting soil and water resources.

Minerals Access (LS10b)	Construct or reconstruct mineral access roads to the minimum standard consistent with the intended long-range use of the roads. Use existing roads whenever possible.
Trails Management (LT2b)	Open all areas and trails to ORVs, except where use is restricted by season, type of vehicle, or type of activity. Closures or restrictions may be used to: (1) resolve user conflict; (2) promote user safety; or (3) protect resources. Important identified wildlife habitat will be protected. (Also see Appendix O.)
Construction/ Reconstruction (LS11c)	Design trails to be compatible with the adjacent recreation settings. If a road provides the same access as a trail, during transportation planning the trail should be evaluated to determine whether it should be abandoned. Provide trailhead facilities as needed to facilitate safe access to the trail and obtain necessary rights-of-way to the National Forest.
Protection Suppression (PD8b)	The appropriate suppression response ranges from "control" to "confinement" in this management area depending upon location, expected fire behavior, and other decision logic criteria related to values at risk. This decision criteria will be stated in a Fire Management Action Plan. (See Appendix P for specific Fire Management Direction.)
Prescribed Fire (PS12a)	Prescribed fire with planned ignitions will be used in this management area for the enhancement and maintenance of resources. (See Appendix P for specific Fire Management Direction.)
Prescribed Fire (PS12b)	Prescribed fire with unplanned ignitions may be used in this management area for the enhancement and maintenance of resources, when within pre-established prescribed fire criteria. This criteria will be detailed in a Fire Management Action Plan. (See Appendix P for specific Fire Management Direction.)

SCHEDULE OF PRACTICES (Average Annual)[1]

	Proposed-Decade 1	Probable-Decade 2
Wildlife (See Appendix M		
CW3b (Nonstructural Habitat Improvements)	182 Acres	182 Acres
CW3f (Structural Habitat Improvements)	10 Structures	10 Structures
Range (See Appendix R)		
DR3a (Nonstructural Improvements)	334 Acres	334 Acres
DR3d (Structural Improvement)	2 Structures	2 Structures

[1]All other practices are assumed to be implemented in the first decade and apply to all acres.

The following monitoring requirements apply to this management area. (See Chapter V.)

A-1, A-2, A-3, A-5, A-6, A-7, A-8, B-3, C-1, C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-9, C-10, C-12, C-13, D-1, D-2, D-3, D-4, E-9, E-10, E-11, F-1, F-2, F-5, F-6, G-1, G-2, G-3, G-4, G-5, J-1, J-2, J-3, L-1, L-2, P-2, P-3, P-4, P-5, P-6, P-7, 1-1, 1-2, 1-3, 1-4.

The procedures outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

MANAGEMENT AREA F Management Area F (355,337 acres; 19.3 percent).

Description: Management Area F is undeveloped land with limited motorized access on existing roads and trails. The land is forested but contains much rock, some grassy inclusions, and is generally steep. Portions of the area are used by elk and livestock during the summer and fall seasons.

Goal: Emphasize semi-primitive recreation opportunities, while maintaining and protecting other Forest resources.

In addition to the Forest-wide Standards in Chapter II, the following applies:

RESOURCE ELEMENT	MANAGEMENT DIRECTION
Recreation	
Dispersed (AP2a)	Manage dispersed recreation settings and existing recreation improvements and administer recreation special-use permits. Cooperate with the BLM and Montana Fish, Wildlife and Parks in the preparation of a coordinated management plan for the Smith River.
Improvements (AP3c)	Improvements may consist of trailheads, parking facilities, and sanitation facilities at the periphery of large undeveloped areas, or be limited to trailhead facilities along opened roads.
Setting	The setting is mostly semi-primitive, natural environment of moderate-to-large size. Concentration of users is low, but there is often evidence of other area users. Minimum on-site controls and restrictions may be present, but are subtle. Motorized use may be permitted.
Visual Quality Objective	The VQO will usually be retention or partial retention. Landscape changes will not be evident to the average person. Modification will not be appropriate in the management area. If the VQO is not met and the visual impacts can be classed as EVC 3 or greater, the site should be rehabilitated within 1 year to restore the landscape to at least EVC Class 2. (See Appendix N.)
Wildlife	
Operation, Protection, and Maintenance (CW2b)	Maintain important identified wildlife habitat, including T&E habitat, big-game winter ranges, calving or lambing areas, migration routes, elk

	summer range, raptor nesting sites, and significant non-game habitat values.
Nonstructural Improvements (CW3c)	Improve habitat by prescribed burning and planting desirable forage on disturbed sites. Priority for funding will be moderate.
Structural Improvements (CW3f)	Coordinate fencing and water developments with range management. Projects should be jointly financed where both resources benefit. Priority for funding will be moderate.
Range Administration (DR2c)	Administer existing range permits, monitor range use, and cooperate with permittees in maintaining existing range improvements (improvements will normally be replaced on a 20-year schedule). Prepare range allotment plans or other plans involving range management on a 20-year schedule. Continue to use and develop range agreements with other agencies or landowners. Priority for funding will be low.
Nonstructural Improvements (DR3a)	Use prescribed fire to control tree/shrub encroachment and to maintain or enhance forage production on range. Mechanical or chemical methods are also acceptable. Cooperate closely with other Federal and State agencies, individuals, contractors, and permittees to control noxious weed and pest infestations.
Structural Improvements (DR3e)	Build/rebuild improvements (fences, water developments) to improve livestock distribution and/or maintain existing AUMs, in response to other resource values (wildlife, recreation, timber).
Timber Unprogrammed (ET2)	Harvest unprogrammed amounts of forest products including Christmas trees, firewood, ornamentals, and miscellaneous wood products through administrative use, free use, permits, salvage, and sanitation cutting.
Soil and Water Protection (FW2c)	Adhere to State water quality standards and maintain current soil productivity. Priority for funding will be low for structural or land treatments which maintain or rehabilitate watersheds or soil.
Minerals Development (GA3b)	Surface occupancy for mineral leasing is not allowed.

Administration (GM2a)	Evaluate requests for mineral exploration and development. Administer geophysical prospecting and oil and gas exploration through permits and leases, respectively. Administer locatable and common variety minerals through both Notices of Intent, operating plans, and mineral material permits.
Land Use Special-Use Permits (JL2a)	All new special-use permits must not conflict with the management area's goal. This management area is available for utility-transportation corridor allocation or facility siting. Semi-primitive recreation must be given the highest consideration when planning a utility-transportation corridor or facility site.
Roads Management (LR2d)	Minimize public access by limiting motorized use to existing roads and travelways. Closures or restrictions may be used to: (1) resolve user conflict; (2) promote user safety; or (3) protect resources. (Also see Appendix O.)
Construction/ Reconstruction (LS10a)	Do not construct roads for surface use activities. Roads constructed for subsurface resource use will be closed to the public and obliterated when no longer needed.
Minerals Access (LS10b)	Construct or reconstruct mineral access roads to the minimum standard consistent with the intended long-range use of the roads. Use existing roads whenever possible.
	JEFFERSON DIVISION
Trails Management (LT2b)	Open all areas and trails to ORVs, except where use is restricted by season, type of vehicle, or type of activity. Closures or restrictions may be used to: (1) resolve user conflict; (2) promote user safety; or (3) protect resources. (Also see Appendix O.)
Construction/ Reconstruction (LS11b)	Design trails to blend with the natural landscape and construct or reconstruct trails for non-motorized and/or motorized use. Provide trailhead facilities as needed to facilitate safe access to trail and obtain necessary rights-of-way to the National Forest.
	ROCKY MOUNTAIN DIVISION
Management (LT2d)	Close all areas and trails to ORVs, except designated routes. (Also see Appendix O.)

RESOURCE ELEMENT	MANAGEMENT DIRECTION
Construction/Reconstruction LS11b)	Design trails to blend with the natural landscape and construct or reconstruct trails for non-motorized use. Provide trailhead facilities as needed to facilitate safe access to trails and obtain necessary rights-of-ways to the National Forest.
Protection Suppression (PD8b)	The appropriate suppression response ranges from "control" to "confinement" in this management area depending upon location, expected fire behavior, and other decision logic criteria related to values at risk. This decision criteria will be stated in a Fire Management Action Plan. (See Appendix P for specific Fire Management Direction.)
Prescribed Fire (PS12a)	Prescribed fire with planned ignitions will be used in this management area for the enhancement and maintenance of resources. (See Appendix P for specific Fire Management Direction.)
Prescribed Fire (PS12b)	Prescribed fire with unplanned ignitions may be used in this management area for the enhancement and maintenance of resources, when within pre-established prescribed fire criteria. This criteria will be detailed in a Fire Management Action Plan. (See Appendix P for specific Fire Management Direction.)

SCHEDULE OF PRACTICES (Average Annual)[1]

	Proposed-Decade 1	Probable-Decade 2
Wildlife (See Appendix M) CW3c (Nonstructural Improvements CW3f Structural Improvements)	144 Acres 1.5 Structures	144 Acres 1.5 Structures
Range (See Appendix R) DR3a (Nonstructural Improvements) DR3e (Structural Improvements)	97 Acres 8 Structures	97 Acres 8 Structures

[1]All other practices are assumed to be implemented in the first decade and apply to all acres.

The following monitoring requirements apply to this management area. (See Chapter V.)

A-1, A-2, A-3, A-5, A-6, A-7, A-8, B-3, C-1, C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-9, C-10, C-12, C-13, D-1, D-2, D-3, D-4, E-9, E-10, E-11, F-1, F-2, F-5, F-6, G-1, G-2, G-3, G-4, G-5, J-1, J-2, J-3, L-1, L-2, P-3, P-4, P-5, P-6, P-7, 1-1, 1-2, 1-3, 1-4.

MANAGEMENT AREA G	Management Area G (259,178 acres; 14.1 percent).
Description	Management Area G contains large areas of undeveloped land. Motorized access is very limited. The land is forested but contains much rock, some grassy inclusions, and is generally steep and broken. Much of the area is non-commercial forest or is not economical for timber harvest. The exception to this description is the Two-Medicine drainage, a broad U-shaped valley on the Rocky Mountain Division.
Goal	Maintain and protect Forest resources with minimal investments.

In addition to the Forest-wide Standards in Chapter II, the following applies:

RESOURCE ELEMENT	MANAGEMENT DIRECTION
Recreation	
Dispersed (AP2a)	Manage dispersed recreation settings and existing recreation improvements, prepare travel plans, and administer recreation special use
Improvements (AP3c)	Improvements may consist of trailheads, parking facilities, and sanitation facilities at the periphery of large undeveloped ares, or be limited to trailhead facilities along opened roads.
Setting	The setting is mostly semi-primitive natural environment of moderate-to-large size. Concentration of users is low, but there is often evidence of other area users. Minimum on-site controls and restrictions may be present, but are subtle. Motorized use may be permitted.
Visual Quality Objective	The VQO will usually be retention or partial retention. Landscape changes will not be evident to the average person. Modification may not be appropriate in the management area. If the VQO is not met and the visual impacts can be classed as EVC 3 or greater, the site should be rehabilitated within 1 year to restore the landscape to at least EVC Class 2. (See Appendix N.)
Wildlife	
Operation, Protection, and Maintenance (CW2b)	Maintain important identified wildlife habitat, including T&E habitat, big-game winter ranges, calving or lambing areas, migration routes, elk summer range, raptor nesting sites, and significant non-game habitat values.
Nonstructural Improvements (CW3c)	Improve habitat by prescribed burning and planting desirable forage on disturbed sites. Priority for funding will be low.

Structural Improvements (CW3f)	Coordinate fencing and water developments with range management. Projects should be jointly financed where both resources benefit. Priority for funding will be low.
Range Administration	Administer existing range permits, monitor range use, and cooperate with permittees in maintaining existing range improvements (range improvements will normally be replaced on a 20-year schedule.) Prepare range allotments plans or other plans involving range management, on a 20-year schedule. Continue to use and develop range agreements with other agencies or landowners. Priority for funding will be low.
Nonstructural Improvements (DR3a)	Use prescribed fire to control tree/shrub encroachment and to maintain or enhance forage production on range. Mechanical or chemical methods are also acceptable. Cooperate closely with other Federal and State agencies, individuals, contractors, and permittees to control noxious weed and pest infestations.
Structural Improvements	Build/rebuild improvements (fences, water developments) to improve livestock distribution, range vigor, and range vegetation.
Timber Unprogrammed (ET2)	Harvest unprogrammed amount of products including Christmas trees, firewood, ornamentals and miscellaneous wood products through administrative use, free use, permits, salvage, and sanitation cutting.
Soil and Water Protection (FW2c)	Adhere to State water quality standards and maintain current soil productivity. Priority for funding will be low for structural or land treatments which maintain or rehabilitate watersheds or soil.
Minerals Development (GA3b)	Surface occupancy for mineral leasing will be allowed (with other appropriate stipulations) within one mile of existing roads. A No Surface Occupancy stipulation for mineral leasing will be applied to other lands within this management area.
Administration (GM2a)	Evaluate requests for mineral exploration and development. Administer geophysical prospecting and oil and gas exploration through permits and leases, respectively. Administer locatable and common variety minerals through both Notices of Intent, operating plans, and mineral material permits.

Land Use Special-Use Permits (JL2a)	All new special-use permits must not conflict with the management area's goal. This management area is available for utility-transportation corridor allocation or facility siting.
Roads Management (LR2d)	Minimize public access by limiting motorized use to existing roads and travelways. Closures or restrictions may be used to: (1) resolve user conflict; (2) promote user safety; or (3) protect resources. (Also see Appendix O.) Roads constructed for mineral use will usually be closed to public use and obliterated when no longer needed.
Construction/ Reconstruction (LS10a)	Short segments of local roads (up to 1.0 mile from roads as shown on the 1983 inventory) may be constructed to remove round, salvage, and deadwood. To minimize public access these roads will be closed to public use, except when opened seasonally for public firewood removal.
Mineral (LS10b)	Construct or reconstruct mineral access roads to the minimum standard consistent with the intended long-range use of the roads. Use existing roads whenever possible.
Trails Management (LT2b)	Open all areas and trails to ORVs except where use is restricted by season, type of vehicle, or type of activity. Closures or restrictions may be used to: (1) resolve user conflict; (2) promote user safety; or (3) protect resources. (Also see Appendix O).
Construction/ Reconstruction (LS11b)	Design trails to blend with the natural landscape and construct or reconstruct trails for motorized or non-motorized use. Provide trailhead facilities as necessary to facilitate safe access to the trail and obtain necessary rights-of-ways to the National Forest.
Protection Suppression (PD8b)	The appropriate suppression response ranges from "control" to "confinement" in this management area depending upon location, expected fire behavior, and other decision logic criteria related to values at risk. This decision criteria will be stated in a Fire Management Action Plan. (See Appendix P for specific Management Direction.)
Prescribed Fire (PS12a)	Prescribed fire with planned ignitions will be used in this management area for the enhancement and maintenance of resources. (See Appendix P for specific Management Direction.)

RESOURCE ELEMENT	MANAGEMENT DIRECTION
Prescribed Fire (PS12b)	Prescribed fire with unplanned ignitions will be used in this management area for the enhancement and maintenance of resources, when within preestablished prescribed fire criteria. This criteria will be detailed in a Fire Management Action Plan. (See Appendix P for specific Management Direction.)

SCHEDULE OF PRACTICES (Average Annual)[1]

	Proposed-Decade 1	Probable-Decade 2
Wildlife (See Appendix M)		
CW3b (Nonstructural Habitat Improvements)	155 Acres	155 Acres
CW3f (Structural Improvements)	1 Structure	1 Structure
Range (See Appendix R)		
DR3a (Nonstructural Improvements)	119 Acres	119 Acres
DR3f (Structural Improvements)	7 Structures	7 Structures

[1]All other practices are assumed to be implemented in the first decade and apply to all acres.

The following monitoring requirements apply to this management area. (See Chapter V.)

A-1, A-2, A-3, A-5, A-6, A-7, A-8, B-3, C-1, C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-9,C-10,C-12, C-13, D-1, D-2, D-3, D-4, E-9, E-10, E-11, F-1, F-2, F-5, F-6, G-1, G-2, G-3, G-4, G-5, J-1, J-2, J-3, L-1, L-2, P-2, P-3, P-4, P-5, P-6, P-7, 1-1, 1-2, 1-3, 1-4.

The procedures outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

MANAGEMENT AREA H Management Area H (29,146 acres; 1.6 percent).

Description — Management Area H includes developed recreation sites such as campgrounds, ski areas, recreation residences, and the land adjacent to all of these sites. Some livestock grazing occurs within and adjacent to the area.

Goal — Provide winter recreation opportunities supported by public and private developments while maintaining other resource values.

In addition to the Forest-wide Standards in Chapter II, the following applies:

RESOURCE ELEMENT	MANAGEMENT DIRECTION
Recreation	
Dispersed (AP2a)	Manage dispersed recreation settings and existing recreation improvements and administer recreation special-use permits.
Improvements (AP3c)	Improvements may consist of day use (occupancy spots), visitor information services, signing, trailheads, parking facilities, and sanitation facilities or be limited to needed trailhead facilities along roads that are open to the public
Developed (AD2)	Manage developed recreation sites. Prepare recreation plans for specific areas and administer recreation special uses. Manage trees to insure adequate and desirable forest cover in and around developed sites.
Development (AD3)	Create new developed recreation sites or expand and improve existing sites (campgrounds and picnic areas).
Setting	The recreation setting is roaded either natural or rural. In roaded natural, resource activities will be evident, but will blend with the natural environment. Interaction between users may be low to moderate. The rural setting is a substantially modified environment. Resource modification and use is primarily to enhance recreation and to maintain vegetative cover and soil. Interaction between users is moderate to high.
Visual Quality Objectives	The VQO will usually be retention or partial retention. Although the landscape is changed by resource activities, the natural appearance of the landscape remains dominant. The modification VQO is acceptable when activity is not visible

	from an arterial road. If the VQO is not met and the visual impacts can be classified as EVC 4 or greater, the site should be rehabilitated within 2 years to restore the landscape to at least an EVC Class 3. (See Appendix N.)
Wildlife Operation, Protection, and Maintenance (CW2c)	Minimize impacts on important identified wildlife habitat. Important identified habitat includes T&E habitat, big-game winter ranges, calving or lambing areas, migration routes, and elk summer ranges.
Range Administration (DR2c)	Administer existing range permits, monitor range use, and cooperate with permittees in maintaining existing range improvements (improvements will normally be replaced on a 20-year schedule). Prepare range allotment plans or other plans involving range management, on a 20-year schedule. Continue to use and develop range agreements with other agencies or landowners. Priority for funding will be low.
	In areas without established livestock use, allow grazing for vegetation manipulation, fuel management, and other resource-generated purposes, as needed, to maintain or enhance other primary resource values.
Structural Improvements (DR3e)	Build/rebuild improvements (fences, water developments) to improve livestock distribution and/or to maintain existing AUMs, in response to other resource values (wildlife, recreation, timber).
Structural Improvements (DR3g)	Build/rebuild fences to exclude livestock from developed recreation sites. Design fences to blend with the natural setting.
Nonstructural Improvements (DR3a)	Use prescribed fire to control tree/shrub encroachment and to maintain or enhance forage production on range. Mechanical or chemical methods are also acceptable. Cooperate closely with other Federal and State agencies, individuals, contractors, and permittees to control noxious weed and pest infestations.
Timber Unprogrammed (ET2)	Harvest unprogrammed amounts of forest products including Christmas trees, firewood, ornamentals, and miscellaneous wood products through administrative use, free use, permits, salvage, and sanitation cutting, while maintaining or enhancing other resource values.

Soil and Water Protection (FW2a)	The soil and water resources are highly visible and may be damaged by recreation developments and uses. Take special care in managing recreation (and other resources) to prevent damage and to correct overuse. A special effort should be made to direct the recreation use away from landtypes with serious limitations that might result in damage to the soil or water resources. Adhere to State water quality standards and maintain current soil productivity. Priority for funding will be high for structural and land treatments which maintain or rehabilitate watersheds or soil.
Minerals Restrictions (GA3c)	Recommend no-surface occupancy stipulations for leases which could conflict with developed recreation and other surface uses. Permit occupancy only where surface uses can be maintained and the surface quality is fully reclaimable. Development may be allowed but must be mitigated, to the fullest extent possible, by stipulations. Reclamation will be done according to Management Guideline F-3, Soil and Water Protection, and in a manner consistent with management area goal.
Administration (GM2a)	Evaluate requests for mineral exploration and development. Administer geophysical prospecting and oil and gas exploration through permits and leases, respectively. Administer locatable and common variety minerals through both Notices of Intent, operating plans, and mineral material permits.
Land Use Special-Use Permits (JL2b)	All new special-use permits must not conflict with the goals of the management area. This management area should be avoided during utility-transportation corridor allocation or facility siting. Developed recreation values must be given the highest consideration during any special-use permitting process.
Roads Management (LR2a)	Achieve high public access by permitting motorized use on all arterial and collector roads, plus some local roads. High public access is defined as +3.0 miles of open road per square mile of area. Closures or restrictions may be used to: (1) resolve user conflict; (2) promote user safety; or (3) protect resources. Closed roads may be occasionally opened for firewood gathering. Roads which cannot be maintained may be restricted or closed. (Also see Appendix O.)

RESOURCE ELEMENT	MANAGEMENT DIRECTION
Trails	
Management (LT2b)	Open all areas and trails to ORVs except where use is restricted by season, type of vehicle, or type of activity. Closures or restrictions may be used to: (1) resolve user conflict; (2) promote user safety; or (3) protect resources. (Also see Appendix O.)
Construction/Reconstruction (LS11c)	Design trails to be compatible with the adjacent recreation settings. If a road provides the same access as a trail, during transportation planning the trail should be evaluated to see whether or not it should be abandoned. Provide trailhead facilities as needed to facilitate safe access to the trail and obtain necessary rights-of-way to the National Forest.
Protection	
Suppression (PD8a)	Aggressive "control" will normally be the appropriate fire suppression response in this management area. (See Appendix P for specific Fire Management Direction.)
Prescribed Fire (PS12a)	Prescribed fire with planned ignitions will be used in this management area for the enhancement and maintenance of resources. (See Appendix P for specific Fire Management Direction.)
Fuels	Fuel reduction methods for activity created fuels include burning, removing residue, or rearranging, such as dozer trampling. Disposal activities will meet visual quality objectives. (See Appendix P for specific Fire Management Direction.)

SCHEDULE OF PRACTICES (Average Annual)[1]

	Proposed-Decade 1	Probable-Decade 2
Range (See Appendix M)		
DR3a (Nonstructural Improvements)	10 Acres	10 Acres
DR3e (Structural Improvements)	2 Structures	2 Structures
DR3g (Structural Improvements)	2 Structures	2 Structures

[1]All other practices are assumed to be implemented in the first decade and apply to all acres.

The following monitoring requirements apply to this management area. (See Chapter V.)

A-1, A-2, A-3, A-4, A-5, A-6, A-7, A-8, C-1, C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-9, C-10, C-12, C-13, D-1, D-2, D-3, D-4, E-9, E-10, E-11, F-1, F-2, F-5, F-6, F-9, G-1, G-2, G-3, G-4, G-5, L-1, L-2, P-2, P-3, P-4, P-5, P-6, P-7, 1-1, 1-2, 1-3, 1-4.

The procedures outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

MANAGEMENT AREA I Management Area I (37,788 acres; 2.1 percent).

Description — Management Area I is a very important wildlife habitat, especially for big-game species. These areas are near the Forest boundary and adjacent to State Game Management Areas.

Goal — Maintain or enhance important big-game habitat including winter ranges, migration routes, elk calving areas, and sheep lambing area. Also, emphasize the management of T&E species habitat, such as grizzly bear spring range and suitable nesting sites for peregrine falcon.

In addition to the Forest-wide Standards in Chapter II, the following applies:

RESOURCE ELEMENT	MANAGEMENT DIRECTION
Recreation	
Dispersed (AP2a)	Manage dispersed recreation settings and existing recreation improvements, prepare travel plans, and administer recreation special-use permits.
Improvements (AP3c)	Improvements may consist of day use (occupancy spots), visitor information services, trailheads, parking facilities, and sanitation facilities or be limited to needed trailhead facilities along roads that are open to the public.
Setting	The setting is mostly semi-primitive. Concentration of users is low, but there is often evidence of other area users. Minimum on-site controls and restrictions may be present, but are subtle. Motorized use may be permitted.
Visual Quality Objectives	The VQO will usually be retention or partial retention. Although the landscape is changed by resource activities, the natural appearance of the landscape remains dominant. The modification on VQO is acceptable when activity is not visible from an arterial road. If the VQO is not met and the visual impacts can be classed as EVC 3 or greater, the site should be rehabilitated within 1 year to restore the landscape to at least EVC Class 2. (See Appendix N.)
Wildlife	
Operation, Protection, and Maintenance (CW2a)	Maintain or enhance important identified wildlife habitat, including T&E habitat, big-game winter ranges, calving or lambing areas, migration routes, elk summer ranges, raptor nesting sites, and significant non-game habitat.

Nonstructural Improvements (CW3d)	Emphasize habitat improvement projects, including prescribed burning and revegetation. Priority for funding is high. Some slash may be left for small game and nongame habitat. Plant desirable forage species on heavy use sites, as well as sites disturbed by development. Use other methods of habitat improvement, including mechanical treatment and hand cutting, where desirable to maintain or create early successional stages of vegetation.
Structural Improvement (CW3e)	Provide high wildlife investment for structural improvements, including fencing important habitat, building nest boxes, and developing water sources.
Range Administration (DR2a)	Administer existing range permits, monitor range use, and maintain existing range improvements (range improvements will normally be replaced on a 20-year schedule). Continue to use and develop range agreements with other agencies or landowners. Priority for funding will be high.
Nonstructural Improvements (DR3a)	Use prescribed fire to control tree/shrub encroachment and to maintain or enhance forage production on range. Mechanical or chemical methods are also acceptable. Cooperate closely with other Federal and State agencies, private individuals, contractors, and permittees to control noxious weed and pest infestations.
Structural Improvements (DR3e)	Build/rebuild improvements (fences, water developments) to improve livestock distribution and/or maintain existing AUMs, in response to other resource values (wildlife, recreation, timber).
Timber Unprogrammed (ET2)	Harvest unprogrammed amounts of forest products including Christmas trees, firewood, ornamentals, and miscellaneous wood products through administrative use, free use, permits, salvage, and sanitation cutting.
Soil and Water Protection (FW2a)	Adhere to State water quality standards and maintain current soil productivity. Priority for funding will be high for structural and land treatments which maintain or rehabilitate watersheds or soil.
Minerals Surface Occupancy (GA3a)	Occupancy is allowed only where wildlife habitat can be maintained and the surface quality can be fully reclaimed after mineral activity.

Administration (GM2a)	Evaluate requests for mineral exploration and development. Administer geophysical prospecting and oil and gas exploration through permits and leases, respectively. Administer locatable and common variety minerals through both Notices of Intent, operating plans, and mineral material permits.
Land Use	
Special-Use Permit (Jl2a)	All new special-use permits must not conflict with the management area's goal. This management area is available for utility-transportation corridor allocation or facility siting.
Roads	
Management (LR2c)	Achieve low public access through permitting motorized use on all arterial and most collector roads. Although local roads could remain open, collectively the access provided would be restricted. Low access is defined as 0.5 to 1.5 miles of open road per square mile of area. Closures or restrictions may be used to: (1) resolve user conflict; (2) promote user safety; or (3) protect resources. Roads which cannot be maintained for motorized use may be restricted or closed. Closed roads may be occasionally opened for firewood gathering. (Also see Appendix O.) Roads constructed only for mineral exploration and development will usually be closed to public use and obliterated when no longer needed. If the road is constructed for mineral exploration and development and opened for public use, mining permit clauses will regulate use to minimize user conflicts. If the road is closed to public use, but maintained for administrative use, the permittee must leave it in a condition suitable for non-use maintenance.
Construction/reconstruction (LS10a)	Roads opened to public use will be located and constructed or reconstructed for economical resource management and safe public use. All resources should be protected.

	Roads closed to public use will be located and constructed or reconstructed for the most economical resource management, while protecting soil and water resources and meeting management area objectives.
Mineral Access (LS10b)	Construct or reconstruct mineral access roads to the minimum standard consistent with the intended long-range use of the roads. Use existing roads whenever possible.
Trails Management (LT2b)	Open all areas and trails to ORVs except where use is restricted by season, type of vehicle, or type of activity. Closures or restrictions may be used to: (1) resolve user conflict; (2) promote user safety; or (3) protect resources. Important identified wildlife habitat will be protected. (Also see Appendix O.)
Construction/ Reconstruction (LS11c)	Design trails to be compatible with the adjacent recreation settings. If a road provides the same access as a trail, during transportation planning the trail should be evaluated to determine whether it should be abandoned. Provide trailhead facilities as needed to facilitate safe access to the trail and obtain necessary rights-of-way to the National Forest.
Protection Suppression (PD8b)	The appropriate suppression response ranges from "control" to "confinement" in this management area depending upon location, expected fire behavior, and other decision logic criteria related to values at risk. This decision criteria will be stated in a Fire Management Action Plan. (See Appendix P for specific Fire Management Direction.)
Prescribed Fire (PS12a)	Prescribed fire with planned ignitions will be used in this management area for the enhancement and maintenance of resources. (See Appendix P for specific Fire Management Direction.)
Prescribed Fire (PS12b)	Prescribed fire with unplanned ignitions may be used in this management area for the enhancement and maintenance of resources, when within pre-established prescribed fire criteria. This criteria will be detailed in a Fire Management Action Plan. (See Appendix P for specific Fire Management Direction.)

SCHEDULE OF PRACTICES (Average Annual)

	Proposed Decade 1	Probable Decade 2
Wildlife (See Appendix M)		
CW3d (Nonstructural Improvements)	42 Acres	42 Acres
CW3e (Structural Improvements)	1 Structures	1 Structures
Range (See Appendix R)		
DR3a (Nonstructural Improvements)	5 Acres	5 Acres
DR3e (Structural Improvements)	2 Structures	2 Structures

All other practices are assumed to be implemented in the first decade and apply to all acres.

The following monitoring requirements apply to this management unit. (See Chapter V.)

A-1, A-2, A-3, A-5, A-6, A-7, A-8, B-3, C-1, C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-9, C-10, C-12, C-13, D-1, D-2, D-3, D-4, E-9, E-10, E-11, F-1, F-2, F-5, F-6, G-1, G-2, G-3, G-4, G-5, L-1, L-2, P-2, P-3, P-4, P-5, P-6, P-7, 1-1, 1-2, 1-3, 1-4.

The procedures outlined in Chapter V will be followed to evaluate data gathered during monitoring.

MANAGEMENT AREA J	Management Area J (11,100 acres; 0.6 percent).
Description	The area consists of the two municipal watersheds on the Lewis and Clark National Forest: O'Brien Creek south of Neihart, and Willow Creek, southeast of White Sulphur Springs. Both areas are forested.
Goal	Maintain high-quality water for municipal use.

In addition to the Forest-Wide Standards in Chapter II, the following applies:

Resource Element	Management Direction
Recreation – Dispersed (AP2b)	Manage dispersed recreation settings with consideration for municipal watershed values. Prepare travel plans.
Setting	The setting is mostly semi-primitive, natural environments of moderate-to-large size. Concentration of users is low, but there is often evidence of other area users. Minimum on-site controls and restrictions may be present, but are subtle. Motorized use may be permitted.
Visual Quality Objective	The VQO will usually be retention or partial retention. Landscape changes may be noticed by the average person, but will not attract attention. The natural appearance of the landscape still remains dominant. Modification is acceptable when an area is not visible from an arterial road. If the VQO is not met and the visual impacts can be classed as EVC 3 or greater, the site should be rehabilitated within 1 year to restore the landscape to at least an EVC Class 2. (See Appendix N.)
Wildlife Operation, Protection, and Maintenance (CW2c)	Maintain important identified wildlife habitat. Important identified habitat elements include T&E habitat, big-game winter ranges, calving or lambing areas, migration routes, elk summer ranges, and raptor nesting sites.
Range	Livestock grazing is only permitted when moving animals between pastures, which are adjacent to the watershed. However, there will be no allotments within the watersheds.

Timber	Limited timber harvest in the upper part of O'Brien Creek (approx. 3700 acres) will be allowed. The area is roaded and timber harvesting and related management activities began in the 1950s. Under strict supervision, there may be further timber harvest if the watershed could be protected. Elsewhere in the two watersheds, timber should only be harvested where necessary to control a hazard to the water resources.
Unprogrammed (ET2)	Harvest unprogrammed amounts of forest products including Christmas trees, firewood, ornamentals, and miscellaneous wood products through administrative use, free use, permits, salvage, and sanitation cutting.
Reforestation (ER3a)	Natural regeneration is the primary objective. Where natural regeneration is not successful, planting or seeding may be used on an estimated 10 percent of the general forest stands and 20 percent of the dry forest stands. A harvested area will no longer be considered a forest opening when the density and height of the regeneration meets the management area's goal. Usually this will be when municipal watershed objectives have been met and the area is certified as stocked.
Precommercial Thinning (EI3)	Stands will be precommercially thinned if silviculturally desirable and compatible with the management area's goal. Stands under extensive management will not be precommercially thinned, except where over stocking could significantly reduce growth. Approximately 8 percent of the general forest stands will be thinned. Usually, dry forest stands will not be thinned. For stands under intensive management, precommercial thinning may be done on 70 percent of the general forest stands and 20 percent of the dry forest stands.
Commercial Thinning (EC3)	Commercial thinning will be based on the stand's silvicultural prescription, which considers size, site productivity, species, stocking, basal area, costs, and stand condition.
Even-Aged Management Clearcutting (EP3d)	In accordance with Regional Guides the timber harvest system in the general forest will usually

	be clearcutting, if watershed needs are met. Other harvest systems may be prescribed to meet specific on-site constraints. Final harvest will occur at or beyond the culmination of mean annual increment. The clearcut harvest will remove all trees, except those designated to maintain or enhance other values.
Soil and Water Protection (FW2a)	Adhere to State water quality standards and maintain current soil productivity. Priority for funding will be high for structural and land treatments which maintain or rehabilitate watersheds or soil.
—	The Montana Department of Health and Environmental Sciences, Water Quality Bureau, must approve road construction, timber harvest, and mining activities in municipal watersheds. Early coordination with the Bureau is necessary.
Minerals Surface Occupancy (GA3b)	Occupancy is allowed only where water quality can be maintained. Development may be allowed but it must be mitigated to the fullest extent possible, by using the "limited surface use" stipulation.
Administration (GM2a)	Evaluate requests for mineral exploration and development. Administer geophysical prospecting and oil and gas exploration through permits and leases, respectively. Administer locatable and common variety minerals through both Notices of Intent, operating plans, and mineral material permits.
Land Use Special-Use Permits (JL2b)	All new special-use permits must not conflict with the goals of the management area. This management area should be avoided during utility-transportation corridor allocation or facility siting. Watershed values must be given the highest consideration during any special-use permitting process.
Roads Management (LR2e)	Roads constructed for minerals will be closed to public use and obliterated when no longer needed. Restore the roaded area to the natural contour and plant native vegetation to restore the landscape and prevent erosion. (Also see Appendix O.)
Construction/ Reconstruction (LS10a)	Limited road construction for surface resource management in the upper part of O'Brien Creek will

	be allowed if the municipal watershed is adequately protected. Elsewhere in the two watersheds, roads will not be constructed for surface resource management.
Mineral Access (LS10b)	Construct or reconstruct mineral access roads to the minimum standard consistent with the intended long-range use of the roads. Use existing roads whenever possible.
Trails Management (LT2d)	Close all trails or routes to ORVs, except designated routes. (Also see Appendix O.)
Construction/ Reconstruction (LS11b)	Design trails to blend with the natural landscape and not impact the water resource. Trails will be constructed or reconstructed for non-motorized and/or motorized use.
Protection Suppression (PD8a)	Aggressive "control" will normally be the appropriate fire suppression response in this management area. (See Appendix P for specific Fire Management Direction.)
Fuels (PS11)	Fuel reduction methods for activity created fuels include burning, removing residue, or rearranging, such as dozer trampling. Disposal activities will meet visual quality objectives. (See Appendix P for specific Fire Management Direction.)

SCHEDULE OF PRACTICES (Average Annual)

No investment for timber, range, or wildlife is scheduled in the first 2 decades. All other practices are assumed to be implemented in the first decade and apply to all acres.

The following monitoring requirements apply to this management area. (See Chapter V.)

A-1, A-2, A-3, A-5, A-6, A-7, A-8, B-3, C-2, C-3, C-5, C-6, C-7, C-8, C-9, C-10, C-12, C-13, E-1, E-2, E-3, E-4, E-5, E-6, E-7, E-8, E-9, E-10, E-11, F-1, F-2, F-3, F-5, F-6, G-1, G-2, G-3, G-4, G-5, J-1, J-2, J-3, L-1, L-2, P-1, P-2, P-3, P-4, P-5, P-6, P-7, 1-1, 1-2, 1-3, 1-4.

The procedures outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

MANAGEMENT AREA K

Management Area K (7,916 acres; 0.4 percent).

Description

The 9,125 acre Tenderfoot Experimental Forest in the Little Belt Mountains was established in 1961 for the development of management techniques for harvesting lodgepole pine while maintaining soil stability. The research also could provide methods for improving water yields without aggravating snowmelt, summer storm peaks, and sediment production. Since establishment of the Experimental Forest, development has been minimal. In 1978, a new research proposal to study "multiple resource management of eastside subalpine forest lands in Montana" was made. In 1980, an additional proposal was made to conduct research to "improve our ability to access, predict, and control non-point pollution from Forest operations." Research projects have not yet been funded and research plans are under additional study to meet the most urgent needs within anticipated funding capabilities. Research on harvesting systems, utilization and associated silviculture and pest management are the most likely projects. Research plans and activities are maintained and managed by the Intermountain Forest and Range Experiment Station.

Goal

Manage the Tenderfoot Experimental Forest to meet research objectives.

In addition to the Forest-wide Standards in Chapter II, the following applies:

RESOURCE ELEMENT	MANAGEMENT DIRECTION
Recreation	
Dispersed (AP2a)	Manage dispersed recreation settings with consideration for research values. Prepare travel plans.
Setting	Recreation setting is roaded natural. Interaction between users may be low to moderate, with evidence of other users. Resource activities will be evident, but will blend with the natural environment.
Visual Quality Objective	VQO will usually be partial retention or modification. Retention may be appropriate if the area is within the seen area of a sensitivity level 1 road, trail, or use area. (See Forest-Wide Standard A-8, Visual Resource Management.) If the VQO is not achieved and the visual impacts are EVC 5 or greater, the site should be rehabilitated within 2 years to at least an EVC Class 4.

Wildlife Operation, Protection and Maintenance (CW2b)	Maintain important identified wildlife habitat, including big-game winter ranges, calving or lambing areas, migration routes, elk summer ranges, and raptor nesting sites.
Range	Close the management area to grazing. Livestock may pass through the unit as they move from one pasture or allotment to another.
Timber Management (EP3g)	Manage timber for research needs as programmed by the Intermountain Forest and Range Experiment Station Director. Any timber removed will be considered unregulated.
Soil and Water Protection	State water quality standards and maintaining current soil productivity may be violated for the sake of developing research information on responses to management treatment. Variation from these standards will be evaluated by environmental analysis for specific research projects.
Minerals Surface Occupancy (GA3b) Administration (GM2a)	Surface occupancy for mineral leasing is not allowed.. Evaluate request for mineral exploration and development. Administer geophysical prospecting and oil and gas exploration through permits and leases, respectively. Administer locatable and common variety minerals through both Notices of Intent, operating plans, and mineral material permits.
Land Use Special-Use Permits (JL2b)	All new special-use permits must not conflict with the goals of the Management area. This management area should be avoided during utility-transportation corridor allocation or facility siting.
Roads Management (LR2d) Construction/Reconstruction (LS10a)	Minimize public access by only allowing motorized access on existing roads and travelways. Closures or restrictions may be used to: (1) resolve user conflict; (2) promote user safety; or (3) protect resources. Research values will be protected. (Also see Appendix O.) Roads constructed for research activities will be closed to public use. Roads constructed for sub-surface resource use will be closed to public use and obliterated when no longer needed.

Mineral Access (LS10b)	Construct or reconstruct mineral access roads to the minimum standard consistent with the intended long-range use of the roads. Use existing roads whenever possible.
Trails Management (LT2b)	Open all areas and trails to ORVs except where use is restricted by season, type of vehicle, or type of activity. Closures or restrictions may be used to: (1) resolve user conflict; (2) promote user safety; or (3) protect resources. Research values will be protected. (Also see Appendix O.)
Construction/ Reconstruction (LS11c)	Design trails to be compatible with the adjacent recreation settings. If a road provides the same access as a trail, during transportation planning the trail should be evaluated to determine whether it should be abandoned. Provide trailhead facilities as needed to facilitate safe access to the trail and obtain necessary rights-of-ways to the National Forest.
Protection Suppression (PD8a)	Aggressive "control" will normally be the appropriate fire suppression response in this management area; however, when low to moderate fire danger prevails, a delayed attack response may be used for purposes of crew safety and/or cost efficient suppression. The decision criteria for delayed attack will be detailed in a Fire Management Action Plan. (See Appendix P for specific Fire Management Direction.)

SCHEDULE OF PRACTICES (Average Annual)

No investment for timber, range, or wildlife is scheduled in the first 2 decades. All other practices are assumed to be implemented in the first decade and apply to all acres.

The following monitoring requirements apply to this management area. (See Chapter V.)

A-1, A-2, A-3, A-5, A-6, A-7, A-8, C-3, C-5, C-6, C-7, C-8, C-9, C-10, C-12, E-10, E-11, F-1, F-2, F-5, F-6, G-1, G-2, G-3, G-4, G-5, J-1, L-1, L-2, P-2, P-3, P-4, P-5, P-6, P-7, 1-1, 1-2, 1-3, 1-4.

The procedures outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

MANAGEMENT AREA L	Management Area L (16,112 acres; .9 percent).
Description	This area contains the Neihart, Barker-Hughsville, Castle Mountains, and other similar mining districts. Landownership patterns are very complex, as there are many patented mining claims and numerous small unpatented fractions of National Forest land, which are difficult to locate and manage. The areas are characterized by many old mines, mine tailings, roads, and historical buildings.
Goal	Emphasize opportunities for mineral exploration, development, and production while protecting historical values.

In addition to the Forest-Wide Standards in Chapter II, the following applies:

Resource Element	Management Direction
Recreation Dispersed (AP2b)	Manage dispersed recreation settings and existing recreation improvements with consideration for mineral and historical values. Prepare travel plans and administer recreation special use permits.
Setting	Recreation setting is roaded natural. Interaction between users may be low to moderate with evidence of other users. Resource activities will be evident, but will blend with the natural environment.
Visual Quality Objective	The VQO will usually be partial retention or modification. Retention may be appropriate if the activity is within the seen area of a sensitivity level 1 road, trail, or use area. (See Forest-Wide Standard--Visual Resource A-8.) If the VQO is not achieved and the visual impacts can be classed as EVC 5 or greater, the land should be rehabilitated within 2 years to at least an EVC Class 4. (See Appendix N.)
Wildlife Operation, Protection, and Maintenance (CW2c)	Minimize impacts on important wildlife habitat while achieving mineral objectives. Important identified habitat includes T&E habitat, big-game winter ranges, calving or lambing areas, migration routes, and elk summer ranges.
Range Administration (DR2c)	Administer existing range permits, monitor range use, and cooperate with permittees in maintaining

	existing range improvements (range improvements will normally be replaced on a 20-year schedule). Prepare range allotment plans or other plans involving range management, on a 20-year schedule. Continue to use and develop range agreements with other agencies or landowners. Priority for funding will be low.
Nonstructural Improvements (DR3a)	Use prescribed fire to control tree/shrub encroachment and to maintain or enhance forage production on range. Mechanical or chemical methods are also acceptable. Cooperate closely with other Federal and State agencies, individuals, contractors, and permittees to control noxious weed and pest infestations.
Structural Improvements (DR3f)	Build/rebuild improvements (fences, water developments) to improve livestock distribution, range vigor, and range vegetation.
Timber Unprogrammed (ET2)	Harvest unprogrammed amounts of forest products including Christmas trees, firewood, ornamentals, and miscellaneous wood products through administrative use, free use, permits, salvage, and sanitation cutting.
Soil and Water Protection (FW2b)	Adhere to State water quality standards and maintain current soil productivity. Priority for funding will be moderate for structural or land treatments which maintain or rehabilitate watersheds or soil.
Minerals Administration (GM2a)	Evaluate requests for mineral exploration and development. Administer geophysical prospecting and oil and gas exploration through permits and leases, respectively. Administer locatable and common variety minerals through both Notices of Intent, operating plans, and mineral material permits.
Development (GA3a)	Allow soil disturbing activities on environmentally suitable land. Protect other values through special lease stipulations. Design, locate, and, if necessary, reclaim roads and drill pads in compliance with the management area's goal.
Land Use Special-Use Permit (JL2a)	All new special-use permits must not conflict with the management area's goal. This management area is available for utility-transportation corridor allocation or facility siting.

Roads Management (LR2a)	Achieve high public access by permitting motorized use on all arterial and collector roads, plus some local roads. High public access is defined as +3.0 miles of open road per square mile of area. Closures or restrictions may be used to: (1) resolve user conflict; (2) promote user safety; or (3) protect resources. Roads which cannot be maintained may be restricted or closed. Closed roads may be occasionally opened for firewood gathering. (Also see Appendix O.) Roads constructed for mineral exploration and development will usually be open to public use. Mineral permit clauses will regulate use to minimize conflicts with the public. Commercial users may be required to pay a proportionate share of road maintenance cost.
Construction/ Reconstruction (LS10a)	Roads opened to public use will be located and constructed or reconstructed for economical resource management and safe public use. All resources should be protected. Roads closed to public use will be located and constructed or reconstructed for the most economical resource management, while protecting soil and water resources.
Mineral Access (LS10b)	Construct or reconstruct mineral access roads to the minimum standard consistent with the intended long-range use of the roads. Use existing roads whenever possible.
Trails Management (LT2a)	Open all areas and trails to ORVs, except for those areas and trails that cannot be protected against erosion or provide for user safety. Closures or restrictions may be used to: (1) resolve user conflict; (2) promote user safety; or (3) protect resources. (Also see Appendix O.)
Construction/ Reconstruction (LS11c)	Design trails to be compatible with the adjacent recreation settings. If a road provides the same access as a trail, during transportation planning the trail should be evaluated to see whether or not it should be abandoned.
Protection Suppression (PD8a)	Aggressive "control" will normally be the appropriate fire suppression response in this management area. (See Appendix P for specific Fire Management Direction.)

SCHEDULE OF PRACTICES (Average Annual)

No Investment for timber, range, or wildlife is scheduled in the first 2 decades. All other practices are assumed to be implemented in the first decade and apply to all acres.

The following monitoring requirements apply to this management area. (See Chapter V.)

A-1, A-2, A-3, A-5, A-6, A-7, A-8, C-2, C-3, C-5, C-6, C-7, C-8, C-9, C-10, C-12, D-1, D-2, D-3, D-4, E-9, E-10, E-11, F-1, F-2, F-5, F-6, G-1, G-2, G-3, G-4, G-5, J-1, J-2, J-3, L-1, L-2, P-2, P-3, P-4, P-5, P-6, P-7, 1-1, 1-2, 1-3, 1-4.

The procedures outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

MANAGEMENT AREA M Management Area M (10,370 acres; 0.4 percent).

Description

Management Area M are the established (designated) Research Natural Areas (RNAs) on the Forest. They contain representations of forest vegetation and aquatic ecosystems assigned by the Northern Region to the Lewis and Clark National Forest. These undisturbed ecosystems typify important forest, shrubland, grassland, alpine, aquatic, and geologic types on the Lewis and Clark National Forest. As other RNAs are designated they will be added to this management area through appropriate environmental analysis and Forest Plan amendment. Established RNAs are:

Paine Gulch--2,405 acres
Minerva Creek--330 acres
Wagner Basin--965 acres
Walling Reef--835 acres
O'Brien Creek--715 acres
Onion Park--1,209 acres
Bartleson Peak--1,601 acres
Big Snowy--3,145

Goal

Establish RNAs fulfilling the assigned habitat type targets during the first decade of the Plan. Leave the areas in their natural condition. Use the areas for non-manipulative research and observation.

In addition to the Forest-wide Standards in Chapter II, the following applies:

RESOURCE ELEMENT	MANAGEMENT DIRECTION
Recreation Dispersed (AP2a)	Manage dispersed recreation settings with consideration for research natural area values. Prepare travel plans.
Setting	These are predominantly semi-primitive, natural environments of moderate-to-large size. Concentration of users is low, but there is often evidence of other area users. The area is managed in such a way that minimum on-site controls and restrictions may be present, but are subtle. Motorized use may be permitted.
Visual Quality Objective	The VQO is preservation. This objective allows for ecological changes only. Management activities, except for very low visual-impact recreation facilities, are prohibited.
Wildlife	Do not allow habitat improvement, in order to protect natural values.
Range	Do not allow livestock grazing, in order to protect natural values

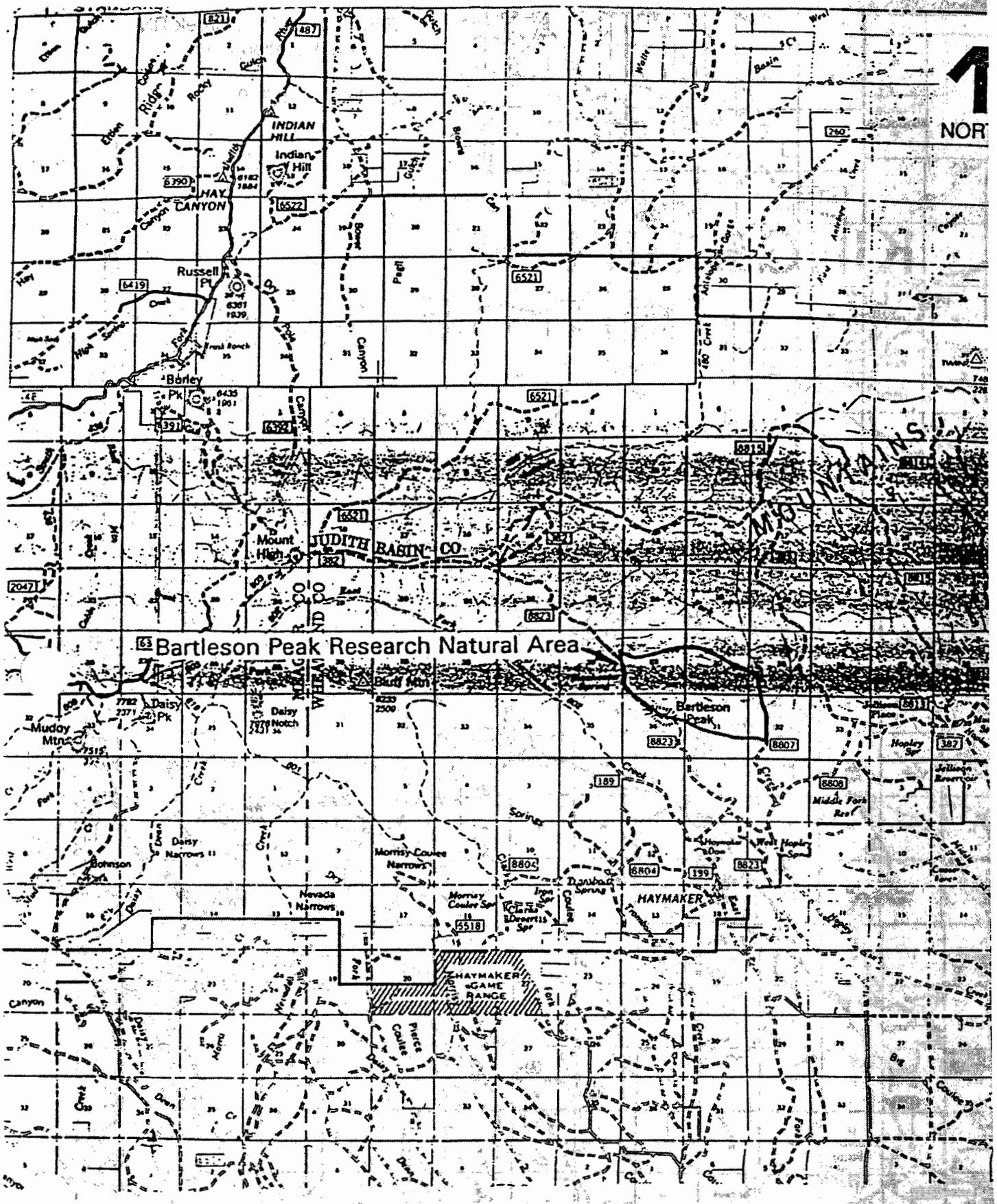
	unless it necessary to achieve research natural area objectives.
Timber	Do not harvest timber, in order to protect natural values.
Soil and Water Protection (FW2c)	Adhere to State water quality standards and maintain current soil productivity. Priority for funding will be low for structural or land treatments which maintain or rehabilitate watersheds or soil.
Minerals Administration	Recommend no surface occupancy leases for all oil and gas leases. The area will be withdrawn from all forms of mineral entry under the 1872 Mining Law.
Land Use Special-Use Permits	Special-use permits conflict with the goals of the management area. This management area should be avoided during utility-transportation corridor allocation or facility siting. The research values must be given the highest consideration during any special-use permitting process.
Roads	Do not build roads.
Trails Management (LT2b)	Open all areas and trails to ORVs except where use is restricted by season, type of vehicle, or type of activity. Closures or restrictions may be used to: (1) resolve user conflict; (2) promote user safety; or (3) protect resources. Protect research natural area values. (Also see Appendix O.)
Construction/Reconstruction	Do not build trails.
Protection Suppression (PD8b)	The appropriate suppression response ranges from "control" to "confinement" in this management area depending upon location, expected fire behavior, and other decision-logic criteria related to values at risk. This decision criteria will be stated in a Fire Management Action Plan. (See Appendix P for specific Fire Management Direction.)
Prescribed Fire (PS12a)	Prescribed fire with planned ignitions may be used in this management area if fire is commensurate with the goals and objectives of the RNA as provided for in the Establishment Record.
Prescribed Fire (PS12b)	Prescribed fire with unplanned ignitions may be used in this management area for the enhancement and maintenance of resources, when within pre-established prescribed fire criteria. This criteria will be detailed in a Fire Management Action Plan. (See Appendix P for specific Fire Management Direction.)

SCHEDULE OF PRACTICES (Average Annual)
No investment for timber, range, or wildlife is scheduled in the first 2 decades. All other practices are assumed to be implemented in the first decade and apply to all acres.

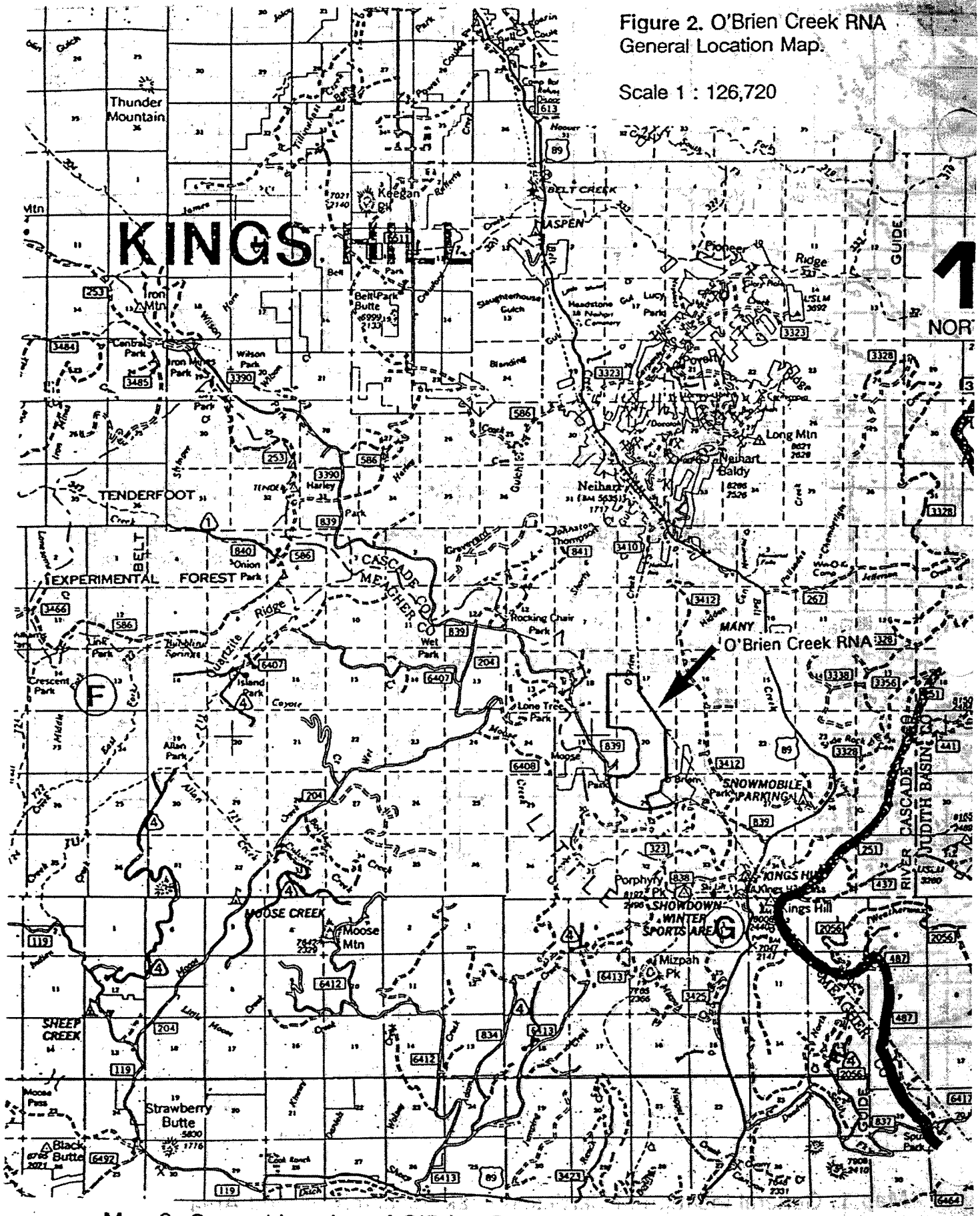
The following monitoring requirements apply to this management area. (See Chapter V.)

A-1, A-2, A-3, A-5, A-6, A-7, A-8, B-3, C-2, C-3, C-5, C-6, C-7, C-8, C-9, C-10, C-11, E-9, E-10, E-11, F-1, F-2, F-5, F-6., G-5, L-1, P-2, P-3, P-4, P-5, P-6, P-7, 1-1, 1-2, 1-3, 1-4.

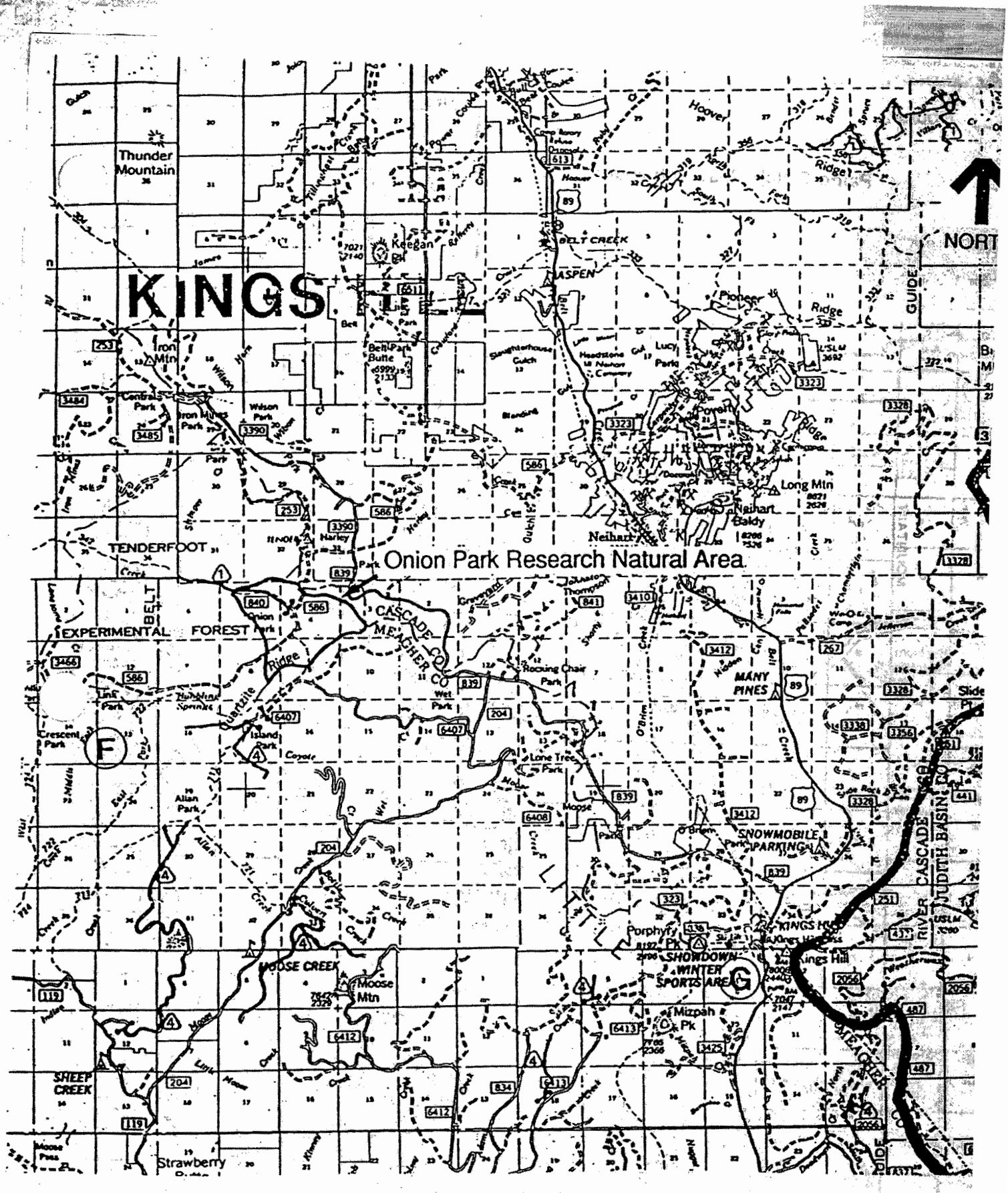
The procedures outlined in Chapter V will be followed to evaluate the data gathered during monitoring.



Map 1. General location of Bartleson Peak Research Natural Area.



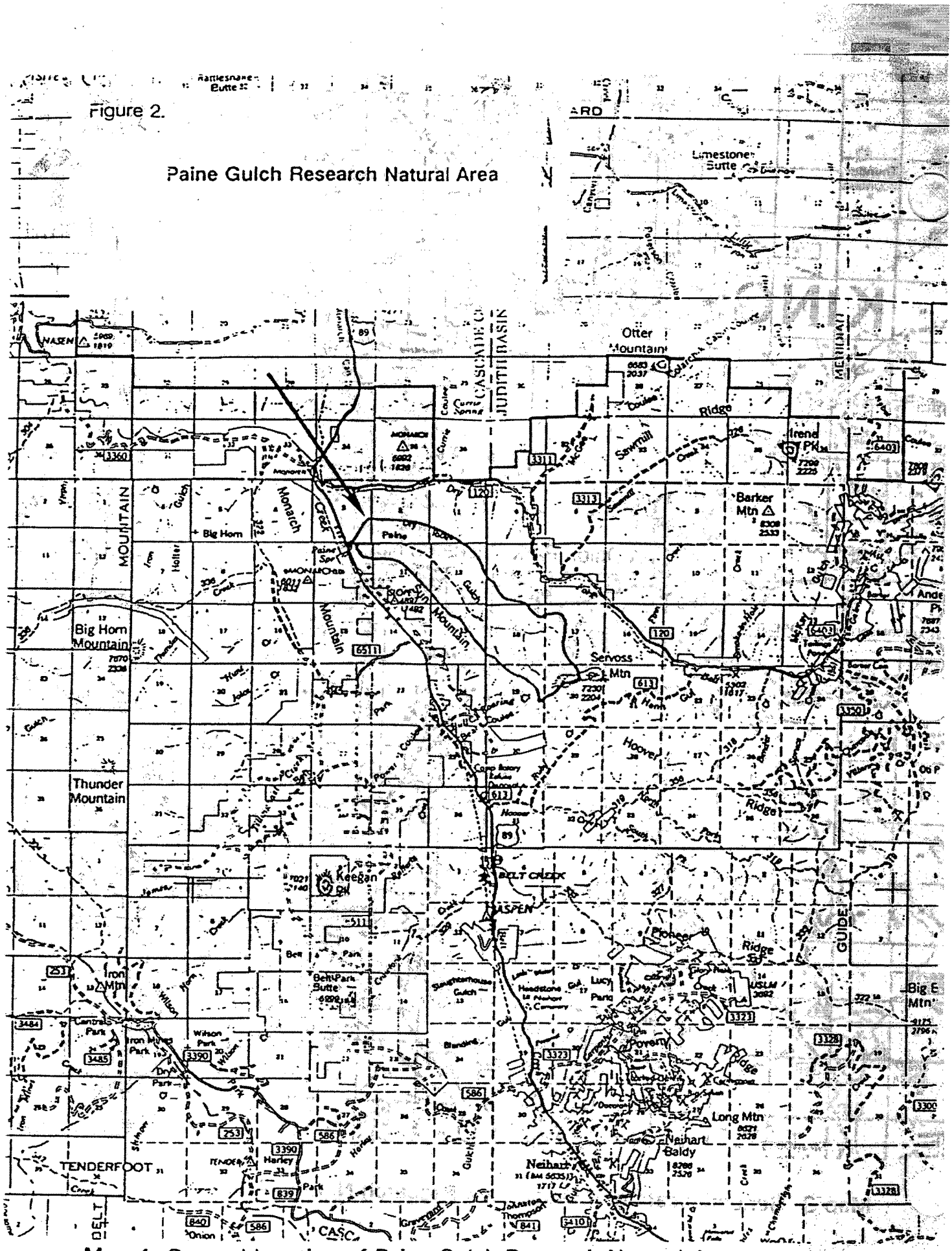
Map 2. General location of O'Brien Creek Research Natural Area.



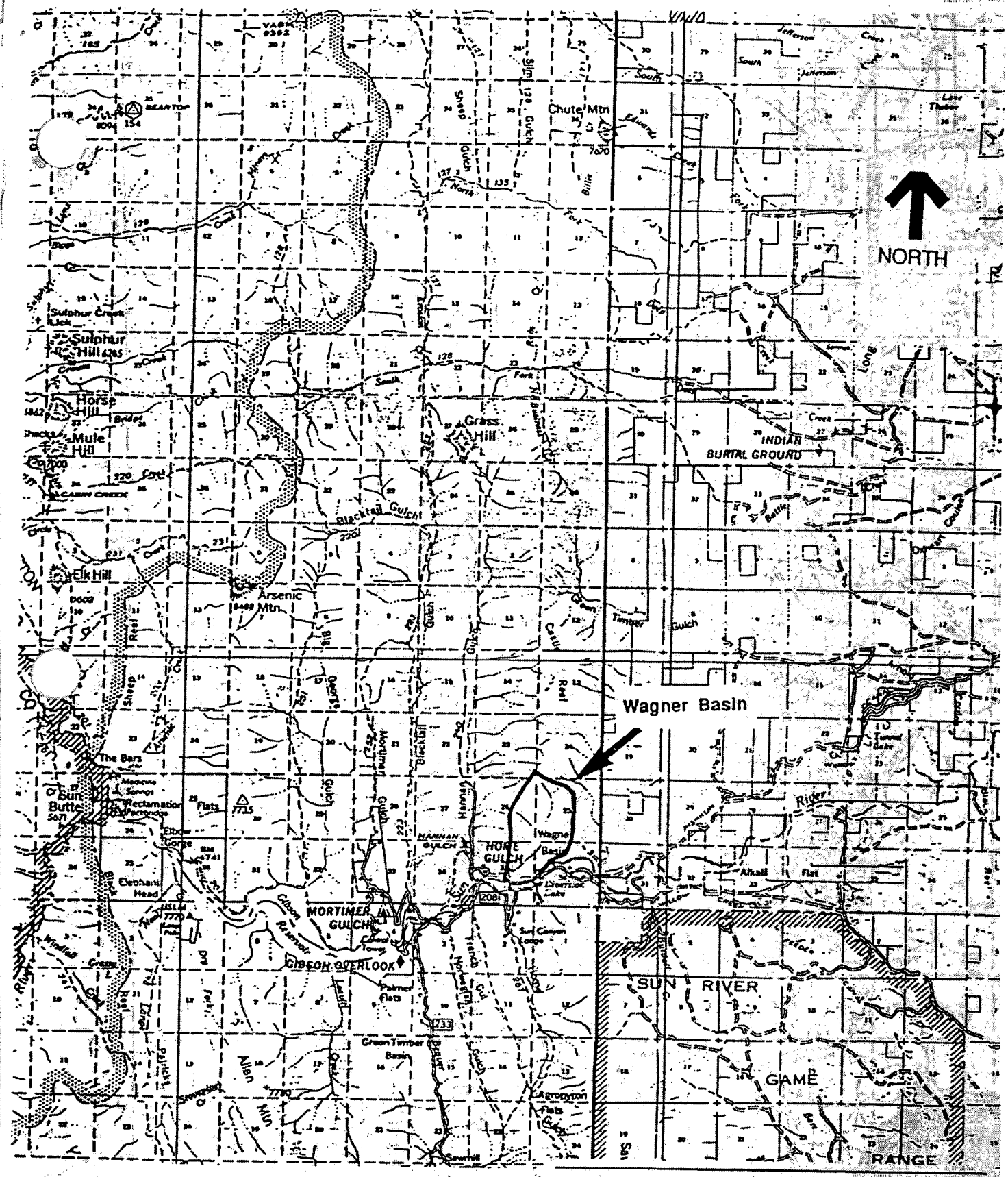
Map 3. General location of Onion Park Research Natural Area.

Figure 2.

Paine Gulch Research Natural Area

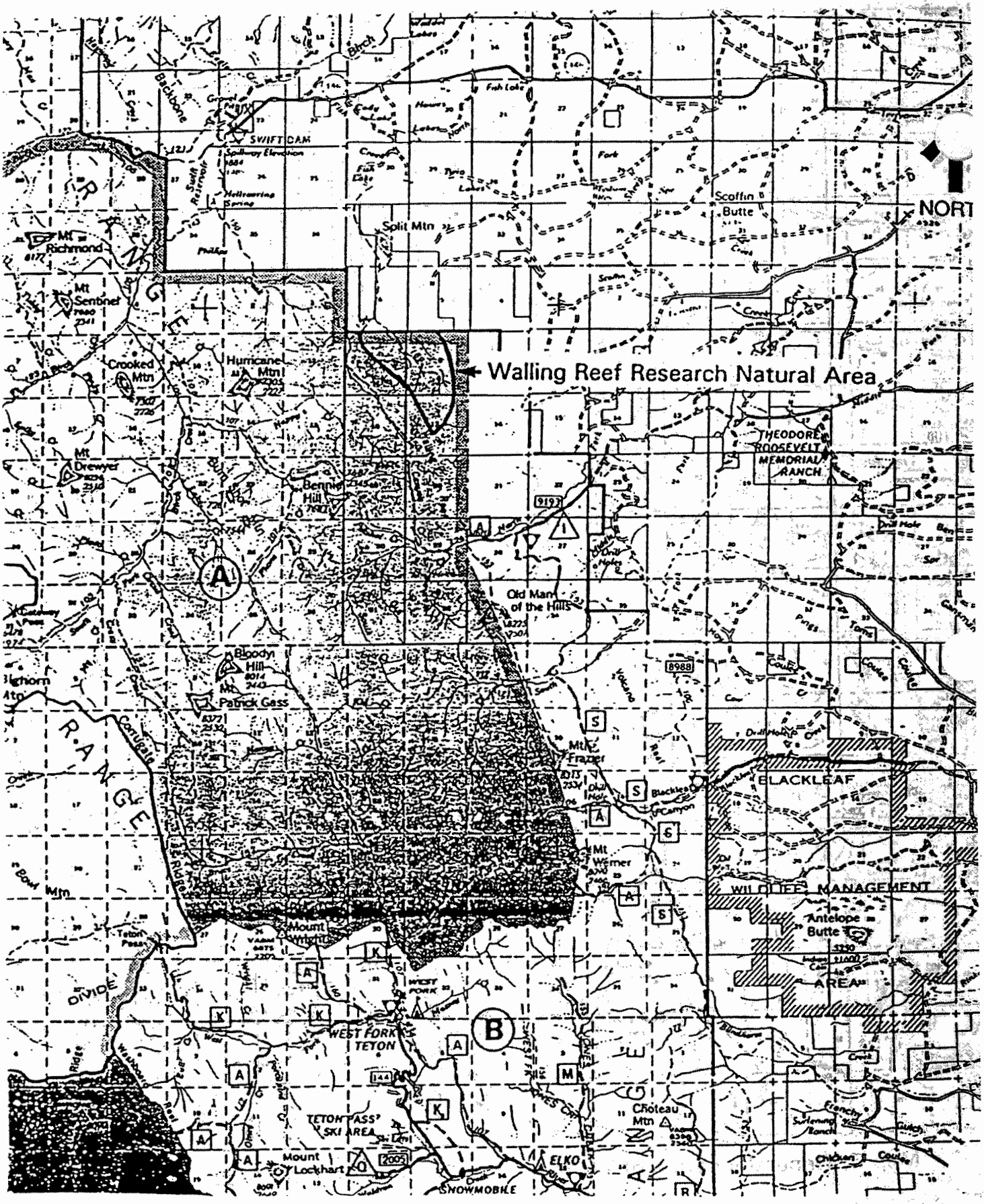


Map 4. General location of Paine Gulch Research Natural Area.



Map 5. General location of Wagner Basin Research Natural Area.

10 W. R. 9 W. R. 8 W.



Map 6. General location of Walling Reef Research Natural Area.

MANAGEMENT AREA N	Management Area N (41,258 acres; 2.2 percent).
Description	Leases in the Deep Creek-Reservoir North Further Planning Area were cancelled under U.S. District Court order. The Further Planning Area will not be offered for oil and gas leasing during the next 10-15 years.
Goal	Manage the area to maintain its wilderness characteristics pending a decision on whether to recommend the area for wilderness classification.

In addition to the Forest-wide Standards in Chapter II, the following applies:

RESOURCE ELEMENT	MANAGEMENT DIRECTION
Recreation Dispersed (AP2a)	Manage dispersed recreation settings with consideration for wilderness values. Prepare travel plans.
Setting	The setting is mostly semi-primitive, natural environments of moderate-to-large size. Concentration of users is low, but there is often evidence of other area users. Minimum on-site controls and restrictions may be present, but are subtle. Motorized use is permitted.
Visual Quality Objectives	The VQO will usually be retention or partial retention. Landscape changes may be noticed by the average person, but will not attract attention. The natural appearance of the landscape still remains dominant. Modification is acceptable if oil and gas lease rights are exercised. If the VQO is not met and the visual impacts can be classed as EVC 4 or greater, the site should be rehabilitated within 2 years to restore the landscape to at least an EVC Class 3. (See Appendix N.)

Wilderness (BM2)	Manage the area to protect its wilderness values.
Wildlife Operation, Protection, and Maintenance (CW2b)	Maintain important identified wildlife habitat, including T&E habitat, big-game winter ranges, calving or lambing areas, migration routes, elk summer range, raptor nesting sites, and significant nongame habitat.
Nonstructural Improvements (CW3c)	Improve habitat through prescribed burning and planting desirable wildlife foods on disturbed sites.
Range Administration (DR2c)	Administer existing range permits, monitor range use, and cooperate with permittees to maintain existing range improvements (improvements will normally be replaced on a 20-year schedule). Prepare range allotment plans or other plans involving the range management on a 20-year schedule. Continue to use and develop range agreements with other agencies or landowners. Priority for funding will be low.
Structural Improvements (DR3e)	Build/rebuild improvements (fences, water developments) to improve livestock distribution in response to values.
Timber	In order to protect wilderness values, timber will not be harvested.
Soil and Water Protection (FW2c)	Adhere to State water quality standards and maintain current soil productivity. Priority for funding will be low for structural or land treatments which maintain or rehabilitate watersheds or soil.
Minerals Development (GA3d)	The Deep Creek-Reservoir North Further Planning Area will not be offered for oil and gas leasing during the next 10-15 years.

Running Wolf Management Area Changes

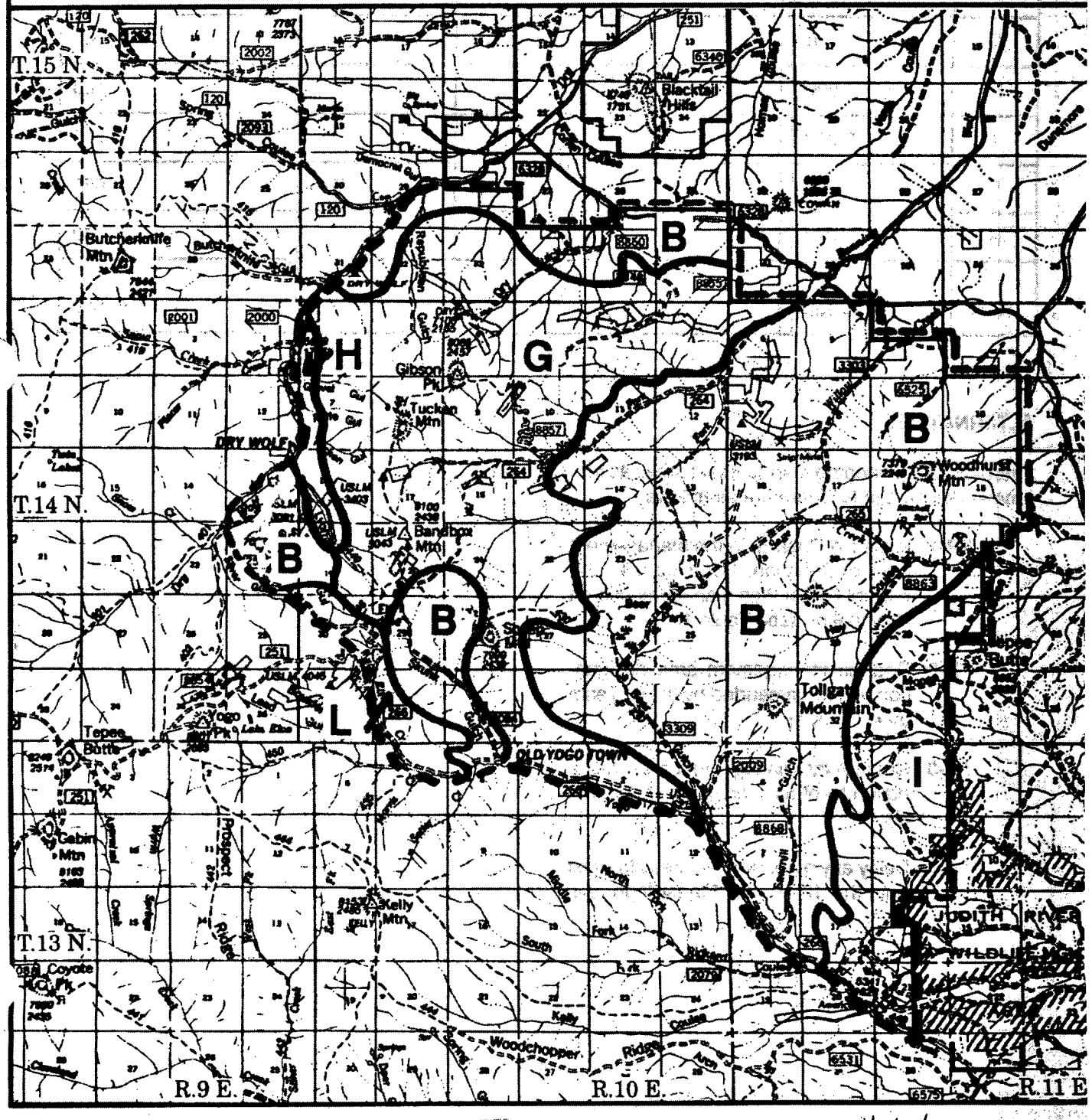
MAP II-1

Project Area Boundary

B Management Areas

1/2" = 1 mile

N



Administration (GM2a)	Evaluate requests for mineral exploration and development. Administer geophysical prospecting and oil and gas exploration through permits and leases, respectively. Administer locatable and common variety minerals through Notices of Intent, operating plans, and mineral material permits.
Land Use Special-Use Permits (JL2c)	All new special-use permits must not conflict with the management area's goal. This management area is not available for utility-transportation corridor allocation or facility siting.
Roads Management (LR2d)	Minimize public access by limiting motorized use to existing roads and travelways. Closures or restrictions may be used to: (1) resolve user conflict; (2) promote user safety; or (3) protect resources.
Construction/ Reconstruction (LS10a)	Do not construct roads for surface resource management activities. Roads constructed for subsurface resource use will be closed to public use and obliterated when no longer needed. Restore the roaded area to the natural contour by returning the soil to its original location and by planting native vegetation.
Mineral Access (LS10b)	Construct or reconstruct mineral access roads to the minimum standard consistent with the intended long-range use of the roads. Use existing roads whenever possible.
Trails Management (LT2b)	Open all areas and trails to trail vehicles and snow machines except where use is restricted by season, type of vehicle, or type of activity. Closures or restrictions may be used to: (1) resolve user conflict; (2) promote user safety; or (3) protect resources. Protect wilderness values. (Also see Appendix O.)
Construction/ Reconstruction (LS11b)	Design trails to blend with the natural landscape and construct or reconstruct trails for non-motorized use. Provide trailhead facilities as needed to facilitate safe access to the trail and obtain necessary rights-of-ways to the National Forest.
Protection Suppression (PD8b)	The appropriate suppression response ranges from "control" to "confinement" in this management area depending upon location, expected fire behavior, and other decision-logic criteria related to values

	at risk. This decision criteria will be stated in a Fire Management Action Plan. (See Appendix P for specific Fire Management Direction.)
Prescribed Fire (PS12a)	Prescribed fire with planned ignitions will be used in this management area for the enhancement and maintenance of resources. (See Appendix P for specific Fire Management Direction.)
Prescribed Fire (PS12b)	Prescribed fire with unplanned ignitions may be used in this management area for the enhancement and maintenance of resources, when within pre-established prescribed fire criteria. This criteria will be detailed in a Fire Management Action Plan. (See Appendix P for specific Fire Management Direction.)

SCHEDULE OF PRACTICES (Average Annual)

	Proposed Decade 1	Probable Decade 2
Wildlife (See Appendix M)		
CW3c (Nonstructural Improvements)	4 Acres	4 Acres
Range (See Appendix R)		
DR3e (Structural Improvements)	2 Structures	2 Structures

All other practices are assumed to be implemented in the first decade and apply to all acres.

The following monitoring requirements apply to this management unit. (See Chapter V.)

A-1, A-2, A-3, A-5, A-6, A-7, A-8, B-3, C-1, C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-9, C-10, C-12, C-13, D-1, D-2, D-3, D-4, E-9, E-10, E-11, F-1, F-2, F-5, F-6, G-1, G-2, G-3, G-4, G-5, J-1, J-2, J-3, L-1, L-2, P-2, P-3, P-4, P-5, P-6, P-7, 1-1, 1-2, 1-3, 1-4.

The procedures outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

MANAGEMENT AREA O

Management Area O (22,702 acres; 1.2 percent). (Suitable timber acres, 8,026).

Description

Management Area O is on the Rocky Mountain Division and the majority is commercial forest land, in the general forest. Some of the land produces forage suitable for grazing. The area is on all slopes, is primarily summer range for big-game animals, and has inclusions of noncommercial forest land, grass, rock, and scree. Most of the management area is associated with existing roads.

Goal

Protect, maintain, and improve resource quality while providing timber at a low intensity level to meet local needs. Manage forage for livestock at a moderate intensity level.

In addition to the Forest-wide Standards in Chapter II, the following applies:

RESOURCE ELEMENT	MANAGEMENT DIRECTION
Recreation	
Dispersed (AP2a)	Manage dispersed recreation and existing recreation improvements, prepare travel plans, and administer recreation special-use permits.
Dispersed (AP3c)	Improvements are day use (Occupancy spots), visitor information services, trailheads, parking facilities, and sanitation facilities.
Setting	These are predominantly roaded natural. Interaction between users may be low to moderate with evidence of other users. Resource activities are evident, but blend with the natural environment.
Visual Quality Objectives	VQO will usually be partial retention or modification. Retention may be appropriate if the area is within the seen area of a sensitivity level 1 road, trail, or use area. (See Forest-Wide Standard--Visual Resource A-8.) If the VQO is not achieved and the visual impacts can be classed as EVC 5 or greater, the site should be rehabilitated within 2 years to restore the landscape to at least an EVC Class 4. (See Appendix N.)
Wildlife	
Operation, Protection, and Maintenance (CW2a)	Maintain or enhance important identified wildlife habitat, including T&E habitat, big-game winter ranges, calving or lambing areas, migration routes, elk summer ranges, raptor nesting sites, and significant nongame habitat.

RESOURCE ELEMENT	MANAGEMENT DIRECTION
Nonstructural Improvements (CW3a)	Plant forage species which are desirable wildlife foods.
Structural Improvements (CW3g)	Priority for funding is low for wildlife habitat improvement, fencing areas such as winter ranges or wetlands and the construction of water developments. KV funds will also be progrmmed for wildlife habitat improvement in timber sale areas where appropriate needs are identified.
Range	
Administration (DR2b)	Administer existing range permits, monitor range use, and cooperate with permittees in maintaining existing range improvements (range improvements will normally be replaced on a 20-year schedule). Prepare range allotment plans, or other plans involving range management, on a 10-year schedule. Continue to use and develop range agreements with other agencies or landowners. Priority for funding will be moderate.
Nonstructural Improvements (DR3a)	Use prescribed fire to control tree/shrub encroachment and to maintain or enhance forage production on range. Mechanical or chemical methods are also acceptable. Cooperate closely with other Federal and State agencies, private individuals, contractors, and permittees to control noxious weed and pest infestations.
Structural Improvements (DR3d)	Build/rebuild improvements (fences, water developments) to increase and/or better distribute AUMs. Build/rebuild improvements to improve livestock distribution, in response to other resource values (wildlife, timber, recreation).
Timber	**NOTE:** Average timber sale program will be 0.5 million board feet per year. The emphasis will be on supplying post, poles, houselogs and firewood and local needs on an unscheduled basis.
Unprogrammed	Harvest unprogrammed amounts of forest products including Christmas trees, firewood, ornamentals, and miscellaneous wood products, through administrative use, free use, permits, salvage, and sanitation cutting.
Programmed Clearcutting (EP3d) Shelterwood Cutting (EP3e) Selection Cutting (EP3f)	Both even-aged and uneven-aged systems will be used within the area, consisting of individual tree and group selection methods, shelterwood harvest, small clearcuts (1-5 acres) and commercial thinnings.

Reforestation	Forest regeneration will be natural.
Soil and Water Protection (FW2b)	Adhere to State water quality standards and maintain current soil productivity. Priority for funding will be moderate for structural or land treatments which maintain or rehabilitate watersheds or soil.
Minerals Restrictions (GA3a)	Allow soil disturbing activities on environmentally suitable land. Where mineral activities are not compatible with present use, mitigate the effects through special lease stipulations. Design, locate, and if necessary, reclaim roads and drill pads in compliance with the management area's goal. Reclaim disturbed areas.
Administration (GM2a)	Evaluate requests for mineral exploration and development. Administer geophysical prospecting and oil and gas exploration through permits and leases, respectively. Administer locatable and common variety minerals through Notices of Intent, operating plans, and mineral material permits.
Land Use Special-Use Permits (JL2a)	All new special-use permits must not conflict with the management area's goal. This management area is available for utility-transportation corridor allocation or facility siting.
Roads Management (LR2d)	Minimize public access by limiting motorized use to existing roads and travelways. Closures or restrictions may be used to: (1) resolve user conflict; (2) promote user safety; or (3) protect resources. (Also see Appendix O.) Roads constructed for surface and mineral activities will be closed to public use at the time of construction.
Construction/ Reconstruction (LS10a)	Roads will be located and constructed for the most economical commodity resource management along with production of T&E species habitat. Only non-permanent type roads, such as truckways, will be constructed to harvest timber. Some roads constructed for mineral activities may be used to meet a part of the District's timber program.
Mineral Access (LS10b)	Construct or reconstruct mineral access roads to the minimum standard consistent with the intended long-range use of the roads. Use existing roads whenever possible.

Trails Management (LT2b)	Open all areas and trails to trail vehicles and snow machines except where use is restricted by season, type of vehicle, or type of activity. Closures or restrictions may be used to: (1) resolve user conflict; (2) promote user safety; or (3) protect resources. (Also see Appendix O.)
Construction/ Reconstruction (LS11c)	Design trails to be compatible with the adjacent recreation settings. If a road provides the same access as a trail, during transportation planning the trail should be evaluated to see whether or not it should be abandoned. Provide trailhead facilities as needed to facilitate safe access to the trail and obtain necessary rights-of-way to the National Forest.
Protection Suppression (PD8b)	The appropriate suppression response ranges from "control" to "containment" in this management area depending upon location, expected fire behavior, and other decision-logic criteria related to values at risk. This decision criteria will be stated in a Fire Management Action Plan. (See Appendix P for specific Fire Management Direction.)
Prescribed Fire (PS12a)	Prescribed fire with planned ignitions will be used in this management area for the enhancement and maintenance of resources. (See Appendix P for specific Fire Management Direction.)
Fuels (PS11)	Fuels reduction methods for activity created fuels include burning, removing residue, or rearranging, such as dozer trampling. Disposal activities will meet visual quality objectives. (See Appendix P for specific Fire Management Direction.)

SCHEDULE OF PRACTICES (Average Annual)

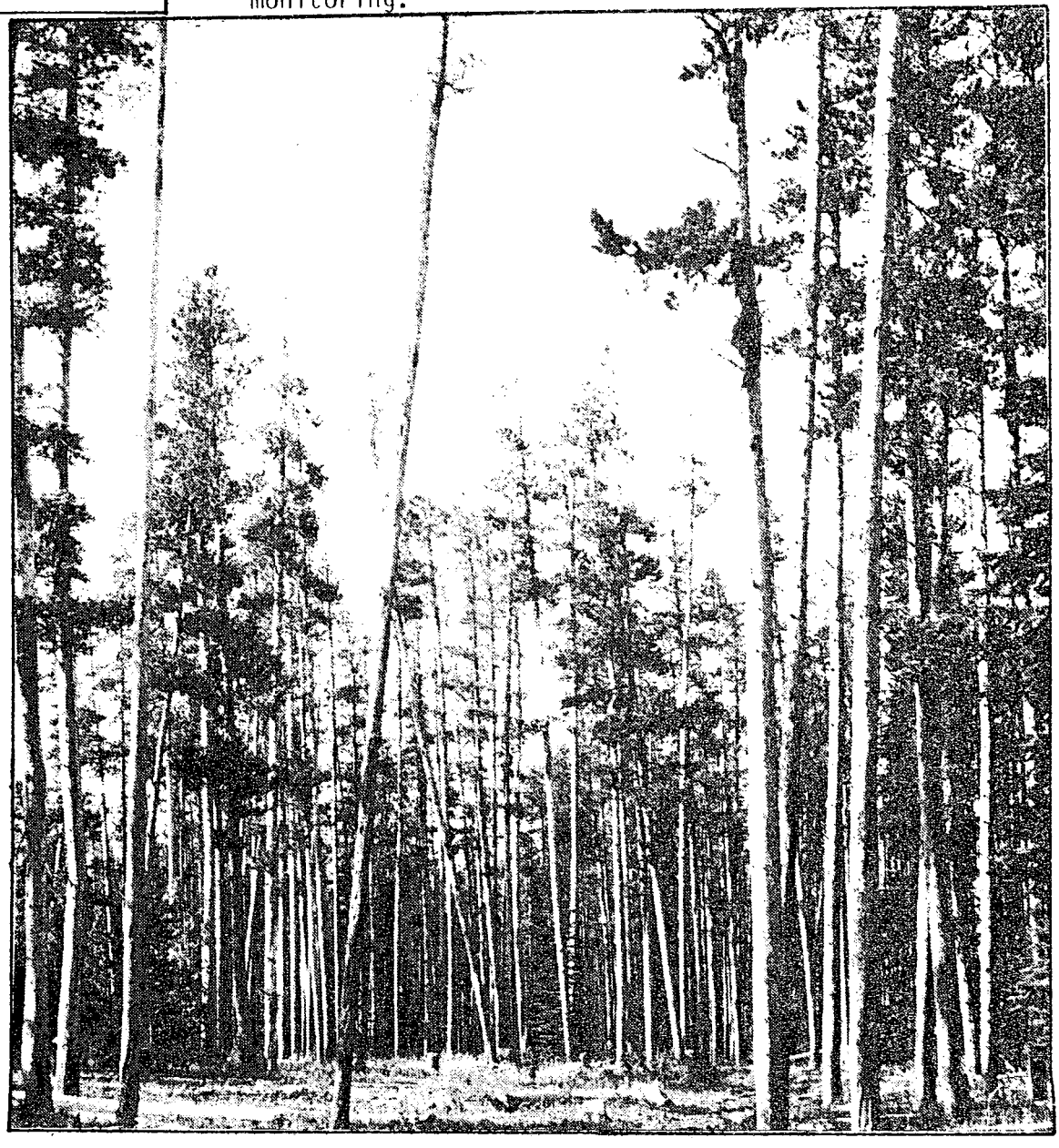
	Proposed Decade 1	Probable Decade 2
Wildlife (See Appendix M)		
CW3a (Nonstructural Improvements)	10 Acres	10 Acres
CW3g (Structural Improvements)	.5 Structures	.5 Structures
Range (See Appendix R)		
DR3a (Nonstructural Improvement)	26 Acres	26 Acres
DR3d (Structural Improvements)	1 Structures	1 Structures
Timber (See Appendix A)		
EP3f (Selection Cutting)	57 Acres (.5 MMBF)	52 Acres (.5 MMBF)

All other practices are assumed to be implemented in the first decade and apply to all acres.

The following monitoring requirements apply to this management area. (See Chapter V.)

A-1, A-2, A-3, A-5, A-6, A-7, A-8, B-3, C-1, C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-9, C-10, C-12, C-13, D-1, D-2, D-3, D-4, E-1, E-2, E-3, E-4, E-5, E-6, E-7, E-8, E-9, E-10, E-11, F-1, F-2, F-5, F-6, G-1, G-2, G-3, G-4, G-5, J-1, J-2, J-3, L-1, L-2, P-1, P-2, P-3, P-4, P-5, P-6, P-7, 1-1, 1-2, 1-3, 1-4.

The procedures outlined in Chapter V will be followed to evaluate the data gathered during monitoring.



MANAGEMENT AREA P	Management Area P (384,407 acres; 20.9 percent).
Description	Management Area P consists of the portions of the Bob Marshall and Scapegoat Wildernesses administered by the Lewis and Clark National Forest. The Bob Marshall Wilderness was classified by Congress in 1964 and the Scapegoat Wilderness was classified in 1972. The Lewis and Clark National Forest manages approximately 30 percent of the Bob Marshall Wilderness and approximately 35 percent of the Scapegoat Wilderness. This entire management area lies on the Rocky Mountain District.
Goal	Manage this area in accordance with the Wilderness Act of 1964 to maintain an enduring system of high quality wilderness representative of National Forest ecotypes. Perpetuate the wilderness resource for future generations, and in response to this goal, the visual quality objective is preservation. To the extent that it is consistent with the first two goals, provide opportunities for public use, enjoyment, and understanding of wilderness and the unique experiences dependent upon a wilderness setting. Maintain plants and animals indigenous to the area by protecting the dynamic equilibrium associated with natural, complete ecosystems. Accommodate and administer those "nonconforming but accepted" uses provided in the Wilderness Act and subsequent acts in a way to minimize their impacts. Consider the special protection needs of endangered plant and animal species and their habitats.

In addition to the Forest-Wide Standards in Chapter II, the following applies:

Resource Element	Management Direction
All	Management standards for resources in the Bob Marshall/Great Bear/Scapegoat Wilderness Complex were jointly prepared by the Lolo, Lewis and Clark, Helena, and Flathead National Forests for common, integrated administration of these three adjoining wildernesses.

Visitor Use Management

Management action for limitating and/or distributing visitor use in these wildernesses will be based on application of the LAC (Limits of Acceptable Change) process described by Stankey, et al, in The Limits of Acceptable Change (LAC System for Wilderness Planning, Intermountain Forest and Range Experiment Station, USDA - Forest Service, General Technical Report INT-176, January 1985. The LAC system provides a framework for determining the range of social and resource conditions acceptable in wilderness settings, in order to ensure that a diversity of high quality wilderness recreation opportunities is provided. It focuses on limiting change to resources that, if overused, would degrade the wilderness experience, and defines opportunities for various levels of contact with the natural scene. The concept recognizes that an area's ability to accommodate use depends on several variables, including the intensity of management, visitor behavior, timing of season of use, and elevation and habitat of the specific sites involved. The lands within these wildernesses will be assigned to one of the four wilderness recreation opportunity classes described in Appendix U. The management emphasis for each opportunity class is stated in the Managerial Setting portion of the description. The emphasis will be on Opportunity Classes I and II except around heavily used trail corridors. Upon completion of public review and Regional Forester approval, additional direction for limitation and distribution of use will be incorporated into the Forest Plan, in accordance with the amendment provisions of 36 CFR 219.10 (a).

The current limits on party size (15), head of livestock per party (35), and length of stay (14 days) will remain in effect. Exceptions must be approved in writing by the local District Ranger.

Managers of the Scapegoat, Great Bear, and Bob Marshall Wildernesses will meet at least annually to discuss priorities for the use of wilderness rangers at overused areas and trailheads that are takeoff points to them. Managers will establish coordinated guidelines for the training of wilderness rangers and schedule training on a regular basis to ensure continuity of personnel adequately trained and current in state-of-the-art wilderness management techniques.

As encountered, remove or obliterate improvised camp structures, tent poles, fire rings, and other camp location indicators.

Establish a situation reporting network to keep administrative units updated on use, site conditions, trail conditions, and other helpful information that would support indirect, voluntary methods of visitor management. These reports will be made as needed. Information will not be provided to mass media, but used to respond to specific inquiries.

Managers may consider party size and duration of stay limits more restrictive than those currently in effect at sites where the limits of acceptable change are being approached or have been reached or exceeded. Inform outfitters and the public at least 30 days prior to implementing changes. In cases where site impacts exceed those acceptable levels for the assigned wilderness experience opportunity class (refer to Appendix U), immediate closure will be considered. Outfitters will be given 1 years advance notice of changes which significantly affect their operations when an emergency does not exist. Notices will convey clearly the intent and purpose of changes from the current limits.

Visitor education and information programs will emphasize visitor contacts at portals and prior to the visitor reaching the wildernesses. Programs will be designed to allow about 60-80 percent of the users to read or hear the wilderness message prior to entering the area.

Encourage visitors to adopt a Low Impact Camping ethic:

- Use self-contained stoves.
- Remove fire circles and scatter remaining charcoal.
- Refrain from cutting green trees or limbs.
- Practice a Pack-in Pack-out policy.
- Use biodegradable soap and dispose of human waste and waste water from cooking and washing at least 100 feet from streams and lakes.

A public notice will be placed on the major portal bulletin board requesting visitors cooperation in refraining from disturbing archeological resources

Prior to completion of the LAC process, the following interim standards will be followed:

The primary objective of wilderness managers will be to minimize the amount of regulations and control present in wilderness. In conjunction with this objective, managers and wilderness rangers must work toward the preservation and restoration of the wilderness resource (See FSM 2320.1 for a discussion and definition of wilderness and wilderness management objectives.) Managers should try indirect, voluntary methods as a first choice, monitor effects, and proceed to more direct enforcement strategies as needs dictate.

Managers will concentrate on improving conditions at campsites with unacceptable impacts such as the following:

- 50 percent or more of the available ground cover reduced or removed in the immediate area,
- absence of seedlings and saplings,
- tree roots exposed; tree boles defaced,
- abundance of non-native plant species,
- lack of fuelwood,
- rock fire rings,
- trails radiating from the site to latrine locations, and creeks.

The following methods will be used for managing campsites with unacceptable impacts. The methods used as specific sites and areas will be developed according to the LAC process

Public information (public service media messages, portal notices, personal contact) geared to informing the public what to look for in a campsite and the characteristics of sites they want to avoid. Emphasize low impact camping.

Physical site alteration. Make unacceptably impacted sites less appealing/less accessible. Remove fire rings and other evidence of man's presence.

Post a site restoration message at portals and a sign at the overused site. Suggest alternative camping locations (by characteristics, not specific location) on the portal notice.

For specific sites, set limits on party size, length of stay, and equipment requirements (e.g., stoves rather than campfires). Requires that the public be informed of areas to which limitations and requirements apply; requires followup administration to check for compliance.

Initiate a self-issuing permit system. Post a destination signup sheet at portals to help managers and wilderness visitors alike to learn where other visitors intend to camp. This method must be accompanied by public information efforts to work effectively.

Site-specific closures involve informing the public, posting notices on portals and at administrative sites, and signing sites as closed to all camping until further notice. This method also requires administrative followup.

A mandatory issued permit system requires users to check in at an administrative site and obtain a camping permit. Administrative units need to coordinate and communicate numbers of persons permitted at specific problem sites. Administrative followup is required.

Wildfire

Refer to the Wilderness Fire Plan, Phase II, Great Bear-Bob Marshall, 1983, and the Scapegoat-Danaher Fire Management Plan for specific direction.

Insect and Disease

No control measures will be considered without an appropriate environmental analysis. If control of insects and disease is necessary, it shall be carried out by measures which have the least adverse impact on the wilderness resource.

Wildlife and Fish

Fish and wildlife management in the complex will be consistent with Policies and Guidelines for Fish and Wildlife Management in Wildernesses and Primitive Areas adopted by the Forest Service, Bureau of Land Management, and the International Association of Fish and Wildlife Agencies.

Managers will consult annually with personnel from the Montana Department of Fish, Wildlife, and Parks relative to levels of harvest appropriate for maintaining native hunted and trapped species as part of the wilderness resource.

Natural processes such as fire, wind, and insect and disease activity will be the only agents permitted to influence vegetation and its associated wildlife in the wildernesses. No new exclosure structures will be installed.

The conservation of threatened and endangered species and their habitats will receive high priority in management of the wilderness resource.

The grizzly bear will continue to be a part of the wilderness experience. The public will be kept informed of known grizzly problem areas, but use will generally not be restricted from these areas.

Education of bear avoidance techniques will be emphasized. Forest Supervisors will direct the development of more detailed standards necessary to protect both the bear and wilderness visitors. These standards will be consistent with Forest-Wide Standards for grizzly bear management in occupied grizzly bear habitat, and will be incorporated into the Forest Plan through an amendment.

Cave Management

Caves will be managed as an element of the wilderness resource with the objective of allowing them to remain untrammeled without significant development or advertisement. Retain the opportunity for the public to experience cave discovery and challenge. Wilderness caves shall not be signed, nor will they be marked on maps or discussed in brochures.

The interior portions of caves in wilderness are subject to the same management guidelines that apply to all other portions of wilderness. Permanent reference markings within caves are not permitted. Flagging may be used if promptly removed after it has served its purpose. Permanent or semi-permanent installations and facilities are not permitted. All camping and exploration equipment will be packed out at the end of each trip unless excepted in writing by the District Ranger. Permanent caches will not be permitted.

The appropriate wilderness manager will establish contact with local caving clubs. Prior to any groups commencing exploration activity, a memorandum of understanding/volunteer agreement will be prepared addressing the items discussed above and the following: schedules, party sizes, campsites,

length of stay, exploration methods, removal of equipment, and campsite cleanup. Groups will be encouraged to avoid publicizing/promoting cave locations and attractions.

Caving is considered a high risk activity. In keeping with wilderness management philosophy, no specific actions will be taken to reduce the hazards encountered in cave exploration.

Lake Management

Minimize the evidence of man's activities around the lakes and return those showing signs of overuse in a more pristine condition.

Managers and wilderness rangers will encourage visitors to practice low impact camping techniques. Efforts will include informing the public of State laws that prohibit contaminating lakes with fish entrails and other refuse.

The use of chemical agents such as soap, detergents, and bleaches, whether biodegradable or not, will not be permitted in lakes.

Stock will not be tied, corraled, or picketed within 100 feet of a lake, spring, or stream.

Grazing

The Conference Report to S. 2009 (H.R. 96-1126) in the section under "Grazing in National Forest Wilderness Areas", FSM 2323.2, established guidelines and policy relative to domestic livestock grazing in wilderness. These guidelines and subsequent Forest Service Manual directives govern livestock management in wilderness. This direction includes:

Grazing in wilderness will be controlled under general regulations governing grazing. Any adjustments in the number of livestock permitted to graze in wilderness should be made as a result of land management plans or revision in grazing plans given consideration to legal mandate, range conditions, and the protection of the range resource from deterioration.

The maintenance of supporting facilities existing in an area prior to wilderness classification is permissible.

The replacement or reconstruction of deteriorated facilities should not require the use of "natural materials".

RESOURCE ELEMENT	MANAGEMENT DIRECTION
	The construction of new improvements or replacement of deteriorated facilities is permissible if in accordance with appropriate plans. All grazing areas within the wilderness will be designated as livestock grazing allotments. Objectives for the allotment management will be consistent with resource conditions in the assigned wilderness opportunity class (see Appendix U). Managers will establish this projects direction for: spring and early summer grazing dates (generally not before July 1) based on range readiness checks; determination of carry capacity, condition, and trend; and monitoring of actual use levels. Livestock grazing will be limited to areas capable and suitable for such use. The criteria for determining capability and suitability will be developed as part of an inventory of the forage resources in the wildernesses. Permanent range structures, not authorized by permit, will be removed. Managers will encourage horse and packstock users (including administrative, outfitter, and private parties) to plan for the fewest number of animals required for each trip. No more than 35 horse or mules will be permitted per party. Lower limits will be considered where warranted and considered necessary to protect the wilderness resource. As a guide, encourage the use of one pack animal for each two persons in a party. It is recognized that stock users may need two animals (one pack, one riding) per person during the hunting season. Salt for livestock will be in block form and will be kept in leach-proof containers. Salt will be packed out of the wilderness at the end of each trip or at the end of the permitted use period. Managers shall inform wilderness users of the noxious weed problem and will use an Integrated Pest Management approach to prevent, control, or eradicate noxious weeds in the wilderness.

RESOURCE ELEMENT	MANAGEMENT DIRECTION
	Before a decision is made to control noxious weeds with chemicals, an environmental document must be prepared discussing the need for control, risk to human health and the method to be used.
Transportation System and Signing	The management of the trail system including design standards, maintenance frequency and levels in the Complex will be in accordance with the direction developed through the LAC process. Managers will agree to appropriate maintenance schedules and standards for trails or segments of trails that cross administrative boundaries at coordination meetings. All administrative segments of such trails will be maintained to the appropriate standard during the same season. Managers will establish design standards and maintenance criteria for all portals. As a minimum, portals will have a bulletin board featuring a map of the area and pertinent visitor information. Sign standards, mounts, and materials will be in accordance with standard Northern Region specifications for wilderness. Nonconforming signs will be phased out by attrition. Signs will be posted and used only when maps and route descriptions cannot adequately serve the wilderness users.
Cultural and Historic Resources	Cultural and historic resources will be considered a unique and nonrenewable part of the wilderness. Above-ground evidence of sites or structures will be subject to natural processes. Scientific study of these resources is permissible within the intent and concept of wilderness. Complete a cultural resource assessment on the evidence of man's activities and structures in the wilderness. Objectives of the assessment are to identify and nominate to the National Register of Historic Places those structures that qualify, and evaluate alternatives for handling those that do not.

Outfitter and Guide Operations

Administration of outfitter permits will be in accordance with FSM 2721.53.

Prior to making a decision on the level of outfitter services, no additional outfitter and guide permits will be issued nor will approval be granted to expand operations beyond use levels authorized in 1978-1980 special use permits. The maximum use level for each outfitter is based on the highest annually permitted use during the years 1978-1980.

A decision will be made establishing the level of outfitter services following completion of the LAC process and/or additional environmental analysis. This decision will include at least the following criteria: type and amount of services; existing operations to determine how they meet identified needs; existing operations to determine how they meet overall wilderness management objectives.

Increase on-the-ground administration and management of outfitter-guide permits.

Encourage outfitters to develop and use minimum impact use techniques, and to educate their clientele to these techniques. Emphasize the role of these techniques and their use in protecting the wilderness resource and the continued recognition of outfitter operations as a means for many publics to enjoy this resource.

The Outfitter Special Use Permit will be the basis for determining conduct of outfitter and guide activities within the wilderness. Operations such as overnight use, day use, and drop camps shall be included.

Managers will develop uniform camp standards for outfitter operations based on the Regional Forester's policy resulting from the 1980 Northern Region National Forest Outfitters and Guides Task Force recommendations and the LAC process. The standards should delineate acceptable developments and the extent of development, including: camp locations relative to trails, streams, lakes, and features; permanent and temporary improvements authorized; and camp layout.

The use of spike camps will be evaluated during development or review of outfitter management direction. Spike camps which are not being utilized appropriately will be either reclassified accordingly, or use changed to abide by the terms of the permit.

Intensify efforts to eliminate or reduce unlicensed or unauthorized outfitter and guide use.

Administrative Facilities

Existing administrative structures and facilities will be retained for wilderness administrative purposes during this planning period.

Cultural assessments of facilities will be required before decisions concerning their future status are made.

No new facilities or major expansion of existing facilities (administrative sites, lookouts, fences) will be considered during this planning period.

Radio repeaters, if necessary for wilderness administration, may be installed within the wilderness only if locations outside the wilderness will not achieve communication needs.

Administrative Coordination

To achieve coordinated and consistent management of the Scapegoat, Great Bear, and Bob Marshall Wildernesses, retain the management coordination team composed of District Rangers from each administrative unit. The team will serve as a coordinating body, making recommendations to appropriate Forest Supervisors concerning program budget proposals, standards and guidelines, and the implementation and monitoring of management direction.

Minerals, Oil and Gas Leases

The 1964 Wilderness Act (P.L. 88-577) withdrew the Bob Marshall, Scapegoat, and Great Bear Wildernesses from mining and mineral leasing laws effective midnight, December 31, 1983, except that, valid existing mining claims will be administered in accordance with appropriate mining laws.

Valid existing mining claims will be administered in accordance with appropriate mining laws.

Operating plans will minimize degradation of wilderness values.

Emergency

Motorized equipment and mechanical transport may be allowed when an emergency condition exists which involves the health and safety of human beings (FSM 2326.11).

Removal of bodies and seriously ill or injured persons will be considered an emergency justifying landing of an aircraft. For emergency helicopter landings, natural openings will be utilized where possible rather than cutting new openings.

Public communications from inside wilderness will be restricted to emergencies.

Water

Monitor water quality to meet or exceed State Water Quality Standards.

All project proposals will be analyzed and evaluated to determine the potential water quantity and quality impacts. Mitigation measures will be developed to minimize adverse effects. If the unacceptable effects cannot be adequately mitigated, the project will be redesigned or abandoned.

Air Quality

Manage the airshed in the Bob Marshall and Scapegoat to meet Class I Air Quality Standard and Class II in the Great Bear and Bob Marshall addition in the Lewis and Clark National Forest.

Where manageable or negotiable, identify and mitigate outside influences. The air quality related values will be identified when a PSD (Prevention of Significant Deterioration) action that may impact the wilderness is received.

Research

Research may be conducted in wilderness but must be done in accordance with the concept of wilderness and within the constraints of FSM 2320. Requests will be considered only if wilderness is essential to the results of the research, there being no suitable land areas elsewhere. Where possible, research projects should be directed outside wilderness where similar areas are available or where wilderness values would not be jeopardized in the conduct of research. Research projects will be reviewed by the management coordination team and approved by the Regional Forester (see FSM 2323.9).

Continental Divide Trail

A specific CDNST (Continental Divide National Scenic Trail) route will not be identified prior to approval of the comprehensive plan being prepared by the Department of Agriculture.

Individual inquiries about the trail will be handled on a case-by-case basis. Routes suggested may vary depending on the method of travel, proposed length of stay, season of travel, and degree of challenge desired.

One person per Forest will be designated as responsible for handling inquiries concerning the CDNST.

Lands	
Special Uses	Radio repeaters, if necessary for wilderness administration, may be installed within wilderness only if locations outside the wilderness will not achieve communication needs. This Management Area is an exclusion area for utility corridors (see page 1-11). The Lolo National Forest Landownership Adjustment Program will establish the priority for acquiring the private land in the Scapegoat Wilderness.
Wild and Scenic River	Where segments of the Flathead Wild and Scenic River are located in the Wilderness Complex, the more stringent standards established for the Wildernesses will prevail.

SCHEDULE OF PRACTICES (Average Annual)

No investment practices for range or wildlife scheduled in the first 2 decades.

All other practices are assumed to be implemented in the first decade and apply to all acres.

The following monitoring requirements apply to this management area. (See Chapter V.)

A-1, A-2, A-3, A-5, A-7, A-8, B-1, B-2, C-1, C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-9, C-10, C-12, C-13, D-1, D-2, D-3, D-4, F-5, G-5, J-1, L-1, P-2, P-4, P-5, P-6, P-7, 1-1, 1-4.

The procedures outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

MANAGEMENT AREA Q	
Description	Management Area Q (51,834 acres; 2.8 percent). Management Area Q includes the East Slope Recommended Wildernesses. This management area is on the Rocky Mountain Division and is contiguous with the Bob Marshall and Scapegoat Wildernesses.
Goal	Manage these areas to protect their wilderness values. Manage with limited investment in range management and trail construction. This recommendation is a preliminary administrative recommendation that will receive further review and possible modification by the Chief of the Forest Service, the Secretary of Agriculture, and the President of the United States. Final decisions o wilderness designation have been reserved by the Congress to it self. If designated wilderness by Congress, it will be managed as Management Area P the Bob Marshall-Scapegoat Wildernesses.

In addition to the Forest-Wide Standards in Chapter II, the following applies:

Resource Element	Management Direction
Recreation Dispersed (AP2c)	Manage dispersed recreation settings with consideration for special wilderness values. Prepare wilderness plans.
Improvements (AP3a)	Improvements are generally limited to trail construction or reconstruction or temporary structures needed to protect wilderness resources.
Setting	The setting is unmodified, primitive. Interaction between users is very low and evidence of other area users is minimal. The area is managed to be essentially free from evidence of man-induced restrictions and controls. Provide for historic motorized use consistent with the Forest Travel Pl
Visual Quality Objective	The VQO is preservation. The objective allows for ecological changes only. Management activities, except for very low visual-impact recreation facilities, are prohibited.
Wilderness Management (BM2)	Manage areas to protect their wilderness values.
Wildlife Operation, Protection, and Maintenance (CW2a)	Maintain or enhance important identified wildlife habitat, including T&E habitat, big-game winter ranges, calving or lambing areas, migration routes elk summer-fall range, raptor nesting sites, and significant nongame habitat values.

RESOURCE ELEMENT	MANAGEMENT DIRECTION
Range Administration (DR2c)	Administer existing range permits, monitor range use, and cooperate with permittees in maintaining existing range improvements (improvements will normally be replaced on a 20-year schedule). Prepare range allotment plans or other plans involving range management on a 20-year schedule Continue to use and develop range agreements with other agencies or landowners. Priority for funding will be low.
Structural Improvements (DR3e)	Build/rebuild improvements (fences, water developments) to improve livestock distribution in response to wilderness values.
Timber	Timber will not be harvested in order to protect wilderness values.
Soil and Water Protection	Adhere to State water quality standards and maintain current soil productivity.
Minerals Development (GA3b)	About 13,830 acres of this management area has been leased for oil and gas. (8,050 acres permit surface occupancy and 5,780 acres with no-surface occupancy.) The remainder of the management area is not leased. Occupancy is allowed only where surface resources can be maintained during occupancy and the surface quality can be fully reclaimed after mineral activity. Development may be allowed, but must be mitigated to the fullest extent possible. *Once existing leases expire they will not be recommended for reissuance.* Denial will be recommended for all other lease applications.
Administration (GM2a)	Evaluate requests for mineral exploration and development. Administer geophysical prospecting and oil and gas exploration through permits and leases, respectively. Administer locatable and common variety minerals through both Notices of Intent,operation plans, and mineral material permits.
Land Use Special-Use Permits (JL2c)	All new special-use permits must not conflict with the management area's goal. This management area is not available for utility-transportation corridor allocation or facility siting.
Roads	Roads will not be constructed for surface resources in order to protect wilderness values.
Trails Management (LT2b)	Open all areas and trails to trail vehicles and snow machines, except where use is restricted by season, type of vehicle, or type of activity. See Travel Plan for exceptions. Closures or restrictions may be used to: (1) resolve user conflict; (2) promote user safety; and (3) protect resources. Protect wilderness values.

MANAGEMENT AREA Q Management Area Q (51,834 acres; 2.8 percent).

Description — Management Area Q includes the East Slope Recommended Wildernesses. This management area is on the Rocky Mountain Division and is contiguous with the Bob Marshall and Scapegoat Wildernesses.

Goal — Manage these areas to protect their wilderness values. Manage with limited investment in range management and trail construction. This recommendation is a preliminary administrative recommendation that will receive further review and possible modification by the Chief of the Forest Service, the Secretary of Agriculture, and the President of the United States. Final decisions on wilderness designation have been reserved by the Congress to itself. If designated wilderness by Congress, it will be managed as Management Area P - the Bob Marshall-Scapegoat Wildernesses.

In addition to the Forest-wide Standards in Chapter II, the following applies:

RESOURCE ELEMENT	MANAGEMENT DIRECTION
Recreation	
Dispersed (AP2a)	Manage dispersed recreation settings with consideration for special wilderness values. Prepare wilderness plans.
Improvements (AP3c)	Improvements are generally limited to trail construction or reconstruction or temporary structures needed to protect wilderness resources.
Setting	The setting is unmodified, primitive. Interaction between users is very low and evidence of other area users is minimal. The area is managed to be essentially free from evidence of man-induced restrictions and controls. Provide for historic motorized use consistent with the Forest Travel Plan.
Visual Quality Objective	The VQO is preservation. The objective allows for ecological changes only. Management activities, except for very low visual-impact recreation facilities, are prohibited.
Wilderness	
Management (BM2)	Manage areas to protect their wilderness values.
Wildlife	
Operation, Protection, and Maintenance (CW2a)	Maintain or enhance important identified wildlife habitat, including T&E habitat, big-game winter ranges, calving or lambing areas, migration routes, elk summer-fall range, raptor nesting sites, and significant non-game habitat values.

RESOURCE ELEMENT	MANAGEMENT DIRECTION
Construction/Reconstruction (LS11b)	Design trails to blend with the natural landscape and construct or reconstruct trails for nonmotorized use.
Protection	
Suppression (PD8b)	The appropriate suppression response ranges from "control" to "confinement" in this management area depending upon location, expected fire behavior, and other decision-logic criteria related to values at risk. This decision criteria will be stated in a Fire Management Action Plan. (See Appendix P for specific Fire Management Direction.)
Prescribed Fire (PS12b)	Prescribed fire with unplanned ignitions may be used in this management area, for the enhancement and maintenance of resources, when within pre-established prescribed fire criteria. This criteria will be detailed in a Fire Management Action Plan. (See Appendix P for specific Fire Management Direction.)

SCHEDULE OF PRACTICES (Average Annual)

No investment practices for range or wildlife scheduled in the first 2 decades.
All other practices are assumed to be implemented in the first decade nd apply to all acres.

The following monitoring requirements apply to this management area. (See Chapter V.)

A-1, A-2, A-3, A-5, A-6, A-7, A-8, B-1, B-3, C-1, C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-9, C-10, C-12, C-13, D-1, D-2, D-3, D-4, E-10, F-5, G-1, G-2, G-3, P-6, P-7, 1-1, 1-2, 1-3, 1-4.

The procedures outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

MANAGEMENT AREA R

Management Area R (33,321 acres; 1.8 percent). (Suitable timber acres 1,412).

Description

Management Area R consists of riparian areas through the Forest. They are made up of the lakes, streams, and land where vegetation is influenced by surface and subsurface water. Many important resources, such as fish, some wildlife, and certain vegetation communities, are totally dependent on this area for their existence. Streams usually flow year round in riparian areas, although the main characteristic of these management areas is riparian vegetation, not necessarily stream flow. Management area boundaries of riparian areas are determined by on-site characteristics of soil and vegetation.

NOTE: Riparian areas throughout the Forest have been given special consideration. These considerations include: (1) minimizing activity in riparian areas where possible; (2) standards for stream crossings; and (3) measures to avoid stream contamination.

Goal

Manage to protect or enhance unique ecosystem values associated with riparian zones. Give preferential consideration to riparian area dependent resources. Timber and range management activities are permitted.

In addition to the Forest-wide Standards in Chapter II, the following applies:

RESOURCE ELEMENT	MANAGEMENT DIRECTION
Riparian Environment:	Adopt new Northern Region riparian area guidelines as soon as available, and follow direction in 2526 section of the Forest Service Manual and in 36 CFR 219.27. Complete an inventory of riparian areas. The inventory should prioritize riparian areas by such factors as present condition, sensitivity to disturbance, and potential conflicts. Provide funding and targets for improvement and/or management of riparian areas. Obtain funds, as appropriate, from the fish and wildlife function, the range function, the water resource function, the recreation function, the timber function, or a combination of these functions.

	The actual on-the-ground effects of actions within and adjacent to riparian areas will be monitored and evaluated, as appropriate. (See Chapter VI.)
Recreation Dispersed (AP2a)	Manage dispersed area recreation and existing recreation improvements, prepare travel plans, and administer recreation special use permits.
Improvements (AP3c)	Improvements may consist of day use and visitor information services (such as signing), trailheads, parking facilities, and sanitation facilities.
Setting and Visual Quality Objective	The Riparian Management Area will be managed to meet adjacent recreation settings and VQOs.
Wildlife Operation, Protection, and Maintenance (CW2d)	Maintain or enhance important identified wildlife and fish habitat. Important identified habitat includes T&E species habitat, big-game winter ranges, calving or lambing areas, migration routes, elk summer-fall ranges, raptor nesting sites, spawning areas, and significant nongame habitat values. Uneven-aged harvest systems will provide for stream shading, bank stability protection, and a range of successional stages.
Nonstructural Improvements (CW3a)	Plant forage species which are desirable wildlife foods and/or enhance fisheries values.
Structural Improvements (CW3h)	Fencing will be coordinated to maintain or enhance important wildlife values.
Range Administration (DR2a)	Administer existing range permits, monitor range use, and cooperate with permittees in maintaining existing range improvements (improvements will normally be replaced on a 20-year schedule). Prepare range allotment plans or other plans involving range management, on a 10-year schedule. Continue to use and develop range agreements with other agencies or landowners. Priority for funding will be high.
Structural Improvements (DR3d)	Build structural improvements (fences and water developments) to increase and/or distribute AUMs. Build improvements to improve livestock distribution in response to other riparian values.
Timber Unprogrammed (ET2)	Harvest unprogrammed amounts of forest products including Christmas trees, firewood, ornamentals, and miscellaneous wood products through administrative use, free use, salvage, and sanitation cutting, while maintaining or enhancing other resource values.

Reforestation	Forest regeneration will be natural.
Uneven-Aged Management Selection Cutting (EP3f)	Uneven-aged systems will predominate within the area, consisting of individual tree and group selection methods. Also, even-aged shelterwood harvest method may be permitted where conditions warrant. The silvicultural method employed will be based on site conditions, timber type, and compatibility with long-term scheduling on adjacent Management Areas A, B, C, and O. In riparian areas approximately 15 percent of the merchantable volume will be removed at each entry.
Soil and Water Protection (FW2a)	Adhere to State water quality standards and maintain current soil productivity. Priority for funding will be high for structural or land treatments which maintain or rehabilitate watersheds or soil. Refer to Management Guidelines D-3, E-4, F-3, J-3, L-4, and P-2 for specific direction for activities in riparian zones. Use flood-proofing or alternative locations outside flood plains for any capital investments in land with a one percent or greater flood probability, where feasible, as directed by E.O. 11988.
Minerals Restrictions (GA3c)	Recommend non-surface occupancy stipulations for leases which could conflict with riparian values. Permit occupancy only where riparian values can be maintained and the surface quality is fully reclaimable. Development during mineral use may be allowed but must be mitigated, to the fullest extent possible, by stipulations. Reclamation will be done according to Management Guideline F-3, Soil and Water Protection, and in a manner consistent with management area goals.
Administration (GM2a)	Evaluate requests for mineral exploration and development. Administer geophysical prospecting and oil and gas exploration through permits and leases, respectively. Administer locatable and common variety minerals through both Notices of Intent, operating plans, and mineral material permits.
Land Use Special-Use Permits (JL2b)	All new special-use permits must not conflict with the goals of the management area. This management area should be avoided during utility-transportation corridor allocation or facility siting.

Roads and Trails	Roads and trails will be managed to be compatible with adjacent road and trail management. (Also see Appendix O.)
Protection Suppression (PD8b)	The appropriate suppression response ranges from "control" to "containment" in this management area depending upon location, expected fire behavior, and other decision-logic criteria related to values at risk. This decision criteria will be stated in a Fire Management Action Plan. (See Appendix P for specific Fire Management Direction.)
Prescribed Fire (PS11)	Fuel reduction methods for activity created fuels include burning, removing residue, or rearranging, such as dozer trampling. Disposal activities will meet riparian area objectives. (See Appendix P for specific Fire Management Direction.)
Prescribed Fire (PS12a)	Prescribed fire with planned ignitions will be used in this management area for the enhancement and maintenance of resources. (See Appendix P for specific Fire Management Direction.)

SCHEDULE OF PRACTICES (Average Annual)

	Proposed	Probable
Wildlife (See Appendix M)	Decade 1	Decade 2
CW3h (Structural Improvements)	25 Structures	25 Structures
CW3d (Nonstructural Improvements)	10 Acres	10 Acres
Range (See Appendix R)		
DR3d (Structural Improvements)	4 Structures	4 Structures
Timber (See Appendix A)		
EP3f (Selection Cutting)	7 Acres (.02 MMBF)	6 Acres (.02 MMBF)

All other practices are assumed to be implemented in the first decade and apply to all acres.

The following monitoring requirements apply to this management area. (See Chapter V.)

A-1, A-2, A-3, A-4, A-6, A-7, A-8, B-3, C-1, C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-9, C-10, C-11, C-12, C-13, D-1, D-2, D-3, D-4, E-1, E-2, E-4, E-5, E-6, E-7, E-9, E-10, E-11, F-1, F-2, F-4, F-5, F-6, F-7, F-8, G-1, G-2, G-3, G-4, G-5, J-1, J-2, J-3, L-1, L-2, P-1, P-2, P-3, P-4, P-5, P-6, P-7, 1-1, 1-2, 1-3, 1-4.

The procedures outlined in Chapter V will be followed to evaluate the data gathered in monitoring.

TABLE 3.2 SUMMARY OF MANAGEMENT PRACTICES BY MANAGEMENT AREA

MANAGEMENT AREA	RECREATION	WILDERNESS	WILDLIFE	RANGE	PRACTICES TIMBER	SOIL/WATER	MINERALS	LAND USES	ROADS	TRAILS	PROTECTION
A	AP2a AP3c		CW2b CW3g	DR2b DR3a DR3e	ET2 ER3a EI3 EC3 EP3d EP3e	FW2b	GA3a GM2a	JL2a	LR2b LS10a LS10b	LT2b LS11c	PD8a PS12a PS11
B	AP2a AP3c		CW2c CW3b CW3g	DR2b DR3a DR3c	ET2 ER3a EI3 EC3 EP3a EP3b	FW2b	GA3a GM2a	JL2a	LR2b LS10a LS10b	LT2b LS11c	PD8b PS12a PS11
C	AP2a AP3c		CW2a CW3d CW3e	DR2b DR3a DR3e	ET2 ER3a EI3 EC3 EP3d EP3e	FW2b	GA3a GM2a	JL2a	LR2c LS10a LS10b	LT2b LS11c	PD8b PS12a PS12b PS11
D	AP2a AP3c		CW2c CW3b CW3f	DR2a DR3a DR3c	ET2	FW2b	GA3a GM2a	JL2a	LR2c LS10a LS10b	LT2a LS11c	PD8b PS12a PS12b
E	AP2a AP3c		CW2b CW3b CW3f	DR2b DR3a DR3d	ET2	FW2b	GA3a GM2a	JL2a	LR2c LS10a LS10b	LT2b LS11c	PD8b PS12a PS12b
F	AP2a AP3b		CW2b CW3c CW3f	DR2c DR3a DR3e	ET2	FW2c	GA3b GM2a	JL2a	LR2d LS10a LS10b	LT2b LS11b LT2d	PD8b PS12a PS12b

TABLE 3.2 SUMMARY OF MANAGEMENT PRACTICES BY MANAGEMENT ARE

MANAGEMENT AREA	RECREATION	WILDERNESS	WILDLIFE	RANGE	PRACTICES TIMBER	SOIL/WATER	MINERALS	LAND USES	ROADS	TRAILS	PROTECTION
G	AP2a AP3b		CW2b CW3c CW3f	DR2c DR3a DR3f	ET2	FW2c	GA3b GM2a	JL2a	LR2d LS10a LS10b	LT2b LS11b	PD8b PS12a PS12b
H	AP2a AP3c AD2 AD3		CW2c	DR2c DR3a DR3e DR3g	ET2	FW2a	GA3c GM2a	JL2b	LR2a	LT2b LS11c	PD8a PS11 PS12d
I	AP2a AP3c		CW2a CW3d CW3e	DR2a DR3a DR3e	ET2	FW2a	GA3a GM2a	JL2a	LR2c LS10a LS10b	LT2b LS11c	PD8b PS12a PS12b
J	AP2b		CW2c		ET2 ER3a E13 EC3 EP3d	FW2a	GA3b GM2a	JL2b	LR2e LS10a LS10b	LT2d LS11b	PD8a PS11
K	AP2b		CW2b		EP3g	FW2d	GA3b GM2a	JL2b	LR2d LS10a LS10b	LT2b LS11c	PD8a
L	AP2b		CW2c	DR2c DR3a DR3f	E12	FW2b	GM2a GA3a	JL2a	LR2a LS10b LS10a	LT2a LS11c	PD8a
M	AP2b					FW2c	GA3e	JL2b		LT2b	PD8b PS12b
N	AP2b	BM2	CW2b CW3c	DR2c DR3e		FW2c	GA3d GM2a	JL2c	LR2d LS10a LS10b	LT2b LS11b	PD8b PS12b PS12a
O	AP2a AP3c		CW2a CW3a CW3g	DR2b DR3a DR3d	ET2 EP3d EP3e EP3f	FW2b	GA3a GM2a	JL2a	LR2d LS10a LS10b	LT2b LS11c	PD8b PS11 PS12a
P	AP3a	BM2	CW2b	DR2c DR3e		FW2c		JL2c		LT2c LS11a	PD8b PS12b
Q	AP2c AP3a	BM2	CW2a	DR2c DR3e		FW2c	GA3b GM2a	JL2c		LT2b LS11b	PD8b PS12b
R	AP2a AP3c		CW2d CW3a CW3h	DR2a DR3d	ET2 EP3f	FW2a	GA3c GM2a	JL2b			PD8b PS11 PS12a

(4/89 Amendment)

RESOURCE ELEMENT	MANAGEMENT DIRECTION
Minerals	
Restrictions (GA3c)	Recommend no-surface occupancy stipulations for leases which could conflict with developed recreation and other surface uses. Permit occupancy only where surface uses can be maintained and the surface quality is fully reclaimable. Development may be allowed but must be mitigated, to the fullest extent possible, by stipulations. Reclamation will be done according to Management Guideline F-3, Soil and Water Protection, and in a manner consistent with management area goals.
Administration (GM2a)	Evaluate requests for mineral exploration and development. Administer geophysical prospecting and oil and gas exploration through permits and leases, respectively. Administer locatable and common variety minerals through Notices of Intent, operating plans, and mineral material permits.
Land Use	
Special-Use (JL2a)	All new special-use permits must not conflict with the goals of the management area. This management area should be avoided during utility-transportation corridor allocation or facility siting. Developed winter recreation values must be given the highest consideration during any special-use permitting process.
Roads	
Management (LR2a)	Achieve high public access by permitting motorized use on all arterial and collector roads, plus some local roads. High public access is defined as +3.0 miles of open road per square mile of area. Closures or restrictions may be used to: (1) resolve user conflict; (2) promote user safety; or (3) protect resources. Closed roads may be occasionally opened for firewood gathering. Roads which cannot be maintained may be restricted or closed. (Also see Appendix O.)
Trails	
Management (LT2b)	Open areas and trails to ORVs, except where use is restricted by season, type of vehicle, or type of activity. Closures or restrictions may be used to: (1) resolve user conflict; (2) promote user safety; or (3) protect resources. (Also see Appendix O.) NOTE: The ski areas are closed to public motorized vehicle use yearlong.
Construction/Reconstruction (LS11c)	Design trails to be compatible with the adjacent recreation setting. If a road provides the same access as a trail, during transportation planning the trail should be evaluated to see whether or not it should be abandoned. Provide trailhead facilities as needed to facilitate safe access to the trail and obtain necessary rights-of-ways to the National Forest.

RESOURCE ELEMENT	MANAGEMENT DIRECTION
Protection	
Suppression (PD8a)	Aggressive "control" will normally be the appropriate fire suppression response in this management area. (See Appendix P for specific Fire Management Direction.)
Prescribed Fire (PS12a)	Prescribed fire with planned ignitions will be used in this management area for the enhancement and maintenance of resources. (See Appendix P for specific Fire Management Direction.)
Fuels (PS11)	Fuel reduction methods for activity created fuels include burning, removing residue, or rearranging such as dozer trampling. Disposal activities will meet visual quality objectives. (see Appendix P for specific Fire Management Direction.)

SCHEDULE OF PRACTICES (Average Annual)[1]

	Proposed-Decade 1	Probable-Decade 2
No investments for timber, range, or wildlife is scheduled in the first 2 decades.		

[1]All other practices are assumed to be implemented in the first decade and apply to all acres.

The following monitoring requirements apply to this management area. (See Chapter V.)

A-1, A-2, A-3, A-4, A-5, A-6, A-7, A-8, C-1, C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-9, C-10, C-12, C-13, D-1, D-2, D-3, D-4, E-9, E-10, E-11, F-1, F-2, F-5, F-6, F-9, G-1, G-2, G-3, G-4, G-5, L-1, L-2, P-2, P-3, P-4, P-5, P-6, P-7, 1-1, 1-2, 1-2, 1-4.

The procedures outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

MANAGEMENT PRESCRIPTIONS MANAGEMENT AREA T

MANAGEMENT AREA T

Management Area T (12,980 acres; 0.7 percent). (Suitable timber acres 11,900).

Description

Management Area T is primarily a ponderosa pine forest in the Little Snowies. Important wildlife species include whitetail deer, turkeys, and nongame species.

Goal

Management emphasis will be directed toward providing for habitat diversity to ensure the welfare of a variety of indigenous wildlife and plant species. Commodity resource management will be practiced where it is compatible with wildlife management objectives. Manipulation of vegetation with fire, timber harvest, and mechanical means will provide for a mosaic of vegetative successional stages within a ponderosa pine forest. Longer rotation periods will be practiced within this management areas. This direction will move the existing vegetative condition to a more ecologically natural state that, in the past was maintained by light ground fires.

In addition to the Forest-wide Standards in Chapter II, the following applies:

RESOURCE ELEMENT	MANAGEMENT DIRECTION
Recreation	
Dispersed (AP2a)	Manage dispersed recreation settings and existing recreation improvements, prepare travel plans, and administer recreation special use permits.
Improvements (AP3c)	Improvements may consist of day use (occupancy spots), visitor information services, trailheads, parking facilities, and sanitation facilities.
Setting	The recreation setting is mostly roaded natural. Interaction between users may be low to moderate, but with evidence of other users prevalent. Resource activities will be evident, but will blend with the natural environment.
Visual Quality Objectives	The VQO will be modification. If the VQO is not achieved and the visual impacts can be classed as EVC 5 or greater, the land should be rehabilitated within 2 years to at least an EVC class 4. (See Appendix N.)
Wildlife	
Operation, Protection, and Maintenance (CW2a)	Maintain or enhance important identified wildlife habitat, big-game winter ranges, calving/fawning areas, raptor nesting sites, and significant nongame habitat.

RESOURCE ELEMENT	MANAGEMENT DIRECTION
	Maintain effective hiding cover percentages by timber compartment at an average of 40 percent with a minimum of 35 percent (or the natural level if less than 35 percent) for any individual subcompartment. Exception to these percentages are permissible if a benefit for wildlife is demonstrated. Maintaining areas free from motorized use will be positively managed through area and road restrictions and other necessary controls on resource activities. Maintain 10-15% of the commercial forest land in an old growth forest condition. A minimum block size of 20 acres is recommended.
Nonstructural Improvements (CW3d)	Emphasize habitat improvement projects, including prescribed burning and revegetation. Priority for funding is high. Some down woody material may be left for small game and nongame habitat. Plant desirable forage species on heavy-use sites, as well as sites disturbed by development. Use other methods of habitat improvement, including mechanical treatment and hand cutting, where desirable to maintain or create early successional stages of vegetation.
Structural Improvements (CW3e)	Priority for funding is high for wildlife habitat improvements, such as fencing important habitat, building nest boxes, and developing water sources. KV funds will also be programmed for wildlife habitat improvement in timber sale areas where appropriate needs are identified.
Range	
Administration (DR2b)	Administer existing range permits, monitor range use, and cooperate with permittees in maintaining existing range improvements (range improvements will normally be replaced on a 20-year schedule). Prepare range allotment plans, or other plans involving range management, based on a 10-year schedule. Continue to use and develop range agreements with other agencies or landowners. Priority for funding will be moderate.
Nonstructural Improvements (DR3a)	Use prescribed fire to control tree/shrub encroachment and to maintain or enhance forage production on range. Mechanical or chemical methods are also acceptable. Cooperate closely with other Federal and State agencies, individuals, contractors, and permittees to control noxious weed and pest infestations.
Structural Improvements (DR3e)	Build/rebuild improvements (fences, water developments) to improve livestock distribution and/or to maintain existing AUMs, in response to other resource values (wildlife, recreation, timber).

RESOURCE ELEMENT	MANAGEMENT DIRECTION
Timber	
Unprogrammed (ET2)	Harvest unprogrammed amounts of forest products including Christmas trees, firewood, ornamentals, and miscellaneous wood products through administrative use, free use, permits, salvage, and sanitation cutting.
Reforestation (ER3a)	Natural regeneration is the primary objective. When natural regeneration is not successful, planting or seeding may be used on an estimated 20 percent of the stands. A harvested area will no longer be considered a forest opening when the density and height of the regeneration meets the management area's goal. Usually this will be when the area is considered hiding cover for big game species and the area is certified as stocked.
Precommercial Thinning (EI3)	Stands will be precommercially thinned if they are identified to meet the needs for wildlife and are silviculturally desirable. Fire and mechanical means are methods that will be used. Stands under extensive management will not be precommercially thinned, except where over stocking could significantly reduce growth, or wildlife needs are identified. For stands under intensive management, precommercial thinning may be done on 20 percent of the stands.
Commercial Thinning (EC3)	Commercial thinning will be based on the stand's silvicultural prescription, which considers size, site productivity, species, stocking, basal area, costs, stand condition, and wildlife needs. Commercial thinning will be used on many of the immature stands.
Even-Aged Management	
Clearcutting (EP3d)	Clearcuts are appropriate in the ponderosa pine type. The size and shape will be dictated by the needs of wildlife and habitat diversity. Undulating edges, leaves patches for cover, snags, and visuals barriers will be tools used to duplicate a more natural setting that at one time was created by fire. Harvest will generally occur beyond the culmination of mean annual increment.
Seed Tree/Shelterwood (EP3e)	The final harvest will be by the seed tree method.

RESOURCE ELEMENT	MANAGEMENT DIRECTION
	Final harvest will not be before the culmination of mean annual increment. This harvest will normally use a two-step method: a seed cut and a removal cut. Where trees are not producing enough seed, a light preparation cut may be used to develop good seed producers. This would be considered a three-step method: preparatory, seed, and removal cut. Mineral soil and sunlight are key to seedling establishment and juvenile growth. Approximately 60 to 90 percent of the merchantable trees will be removed at the seed cut. A portion of the remaining trees may be harvested at the removal cut if they have not been designated as reserves.
Uneven-Aged Management Selection Cutting (EP3f)	Uneven-aged systems, consisting of individual tree and group selection methods, will also be used in the ponderosa pine type with the created openings being up to 3 acres in size.
Soil and Water Protection (FW2b)	Adhere to State water quality standards and maintain current soil productivity. Priority for funding will be moderate for structural or land treatments which maintain or rehabilitate watersheds or soils.
Minerals Development (GA3a)	Allow soil disturbing activities on environmentally suitable land. Where mineral activities are not compatible with present use, mitigate the effects through special lease stipulations. Design, locate, and, if necessary, reclaim roads and drill pads in compliance with the management area's goal. The timing and location of exploration activities in relation to the use of key wildlife habitat determines the significance of disturbing or displacing wildlife. Timing restrictions will protect key wildlife habitat. (See Forest-wide Standards G-1 and G-2.)
Administration (GM2a)	Evaluate requests for mineral exploration and development. Administer geophysical prospecting and oil and gas exploration through permits and leases, respectively. Administer locatable and common variety minerals through Notices of Intent, operating plans, and mineral material permits.
Land Use Special Use (JL2a)	All new special-use permits must not conflict with the management area's goal. This management area is available for utility-transportation corridor allocation or facility siting. Wildlife values must be given the highest consideration when planning a utility-transportation corridor or facility site.

RESOURCE ELEMENT	MANAGEMENT DIRECTION
Roads	
Management (LR2c)	Provide for a low level of public access through permitting motorized use on designated roads. Low access is defined as up to 1.5 miles of open road per square mile of area. Closures or restrictions may be used to: (1) resolve user conflict; (2) promote user safety; or (3) protect resources. Roads which cannot be maintained for motorized use may be restricted or closed. Closed roads may be occasionally opened for firewood gathering. (Also see Appendix O.) Roads constructed for mineral exploration and development will usually be closed to public use and obliterated when no longer needed. If the road is constructed for mineral exploration and development and opened for public use, minerals permit clauses will regulate use to minimize user conflicts. If the road is closed to public use, but maintained for administrative use, the permittee must leave it in a condition suitable for non-use maintenance.
Construction/Reconstruction (LS10a)	Roads opened to public use will be located and constructed or reconstructed for the most economical resource management and safe public use. All resources should be protected. Roads closed to public use will be located and constructed or reconstructed for economical resource management, while protecting other resources.
Minerals Access (LS10b)	Construct or reconstruct mineral access roads to the minimum standard consistent with the intended long-range use of the roads. Use existing roads whenever possible.
Protection	
Suppression (PD8b)	The appropriate suppression response ranges from "control" to "confinement" in this management area depending upon location, expected fire behavior, and other decision logic criteria related to values at risk; with "control" being the normal response because of smallness of area and adjacency of private land. The decision criteria will be stated in a Fire Management Action Plan. (See Appendix P for specific Fire Management Direction).
Prescribed Fire (PS12a)	Prescribed fire with planned ignitions will be used in this management area for the enhancement and maintenance of resources. (See Appendix P for specific Fire Management Direction.)
Fuels (PS11)	Fuel reduction methods for activity created fuels include burning, removing residue, or rearranging such as dozer trampling. Disposal activities will meet wildlife objectives. (see Appendix P for specific Fire Management Direction.)

SCHEDULE OF PRACTICES (Average Annual)[1]

	Proposed-Decade 1	Probable-Decade 2
Wildlife (See Appendix R)		
CW3d (Nonstructural Improvements)	250 Acres	250 Acres
CW3e (Structural Improvements)	1 Structures	1 Structures
Range (See Appendix M)		
DR3a (Nonstructural Improvements)	60 Acres	60 Acres
DR3e (Structural Improvements)	10 Structures	10 Structures
Timber (See Appendix A)		
EP3e (Seed Tree Cutting)	10 Acres (70 MBF)	10 Acres (200 MBF)
EP3f (Selection Cutting)	10 Acres (50 MBF)	20 Acres (100 MBF)
EI3 (Precommercial Thinning)	10 Acres	10 Acres
EC3 (Commercial Thinning)	80 Acres (150 MBF)	50 Acres (180 MBF)
ER3a (Reforestation)	20 Acres	30 Acres
PS12a (Prescribed Fire for Stocking Control)		20 Acres 50 Acres

[1]All other practices are assumed to be implemented in the first decade and apply to all acres.

The following monitoring requirements apply to this management area. (See Chapter V.)

A-1, A-2, A-3, A-5, A-6, A-7, A-8, B-3, C-3, C-5, C-6, C-7, C-8, C-9, C-10, C-12, D-1, D-2, D-3, D-4, E-1, E-2, E-3, E-4, E-5, E-6, E-7, E-8, E-9, E-10, E-11, F-1, F-2, F-5, F-6, G-1, G-2, G-3, G-4, G-5, J-1, J-2, J-3, L-1, L-2, P-1, P-2, P-3, P-4, P-5, P-6, P-7, 1-1, 1-2, 1-3, 1-4.

The procedures outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

TABLE 3.2 SUMMARY OF MANAGEMENT PRACTICES BY MANAGEMENT AREA

MANAGEMENT AREA	RECREATION	WILDERNESS	WILDLIFE	RANGE	TIMBER	SOIL/WATER	MINERALS	LAND USES	ROADS	TRAILS	PROTECTION
A	AP2a AP3c		CW2b CW3g	DR2b DR3a DR3e	ET2 ER3a EI3 EC3 EP3d EP3e	FW2b	GA3a GM2a	JL2a	LR2b LS10a LS10b	LT2b LS11c	PD8a PS12a PS11
B	AP2a AP3c		CW2c CW3b CW3g	DR2b DR3a DR3c	ET2 ER3a EI3 EC3 EP3a EP3b	FW2b	GA3a GM2a	JL2a	LR2b LS10a LS10b	LT2b LS11c	PD8b PS12a PS11
C	AP2a AP3c		CW2a CW3d CW3e	DR2b DR3a DR3e	ET2 ER3a EI3 EC3 EP3d EP3e	FW2b	GA3a GM2a	JL2a	LR2c LS10a LS10b	LT2b LS11c	PD8b PS12a PS12b
D	AP2a AP3c		CW2c CW3b CW3f	DR2a DR3a DR3c	ET2	FW2b	GA3a GM2a	JL2a	LR2c LS10a LS10b	LT2a LS11c	PD8b PS12a PS12b
E	AP2a AP3c		CW2b CW3b CW3f	DR2b DR3a DR3d	ET2	FW2b	GA3a GM2a	JL2a	LR2c LS10a LS10b	LT2b LS11c	PD8b PS12a PS12b
F	AP2a AP3b		CW2b CW3c CW3f	DR2c DR3a DR3e	ET2	FW2c	GA3b GM2a	JL2a	LR2d LS10a LS10b	LT2b LS11b LT2d	PD8b PS12a PS12b
G	AP2a AP3b		CW2b CW3c CW3f	DR2c DR3a DR3f	ET2	FW2c	GA3b GM2a	JL2a	LR2d LS10a LS10b	LT2b LS11b	PD8b PS12a PS12b
H	AP2a AP3c AD2 AD3		CW2c	DR2c DR3a DR3e DR3g	ET2	FW2a	GA3c GM2a	JL2b	LR2a	LT2b LS11c	PD8a PS11 PS12a

TABLE 3.2 SUMMARY OF MANAGEMENT PRACTICES BY MANAGEMENT AREA

MANAGEMENT AREA	RECREATION	WILDERNESS	WILDLIFE	RANGE	TIMBER	SOIL/WATER	MINERALS	LAND USES	ROADS	TRAILS	PROTECTION
I	AP2a AP3c		CW2a CW3d CW3e	DR2a DR3a DR3e	ET2	FW2a	GA3a GM2a	JL2a /	LR2c LS10a LS10b	LT2b LS11c	PD8b PS12a PS12b
J	AP2b		CW2c		ET2 ER3a EI3 EC3 EP3d	FW2a	GA3b GM2a	JL2b	LR2e LS10A LS10b	LT2d LS11b	PD8 PS11
K	AP2b		CW2b		EP3g	FW2d	GA3b GM2a	JL2b	LR2d LS10a LS10b	LT2b LS11c	PD8a
L	AP2b		CW2c	DR2c DR3a DR3f	ET2	FW2b	GM2a GA3a	JL2a	LR2a LS10b LS10a	LT2a LS11c	PD8a
M	AP2b					FW2c	GA3e	JL2b		LT2b	PD8b PS12b
N	AP2b	BM2	CW2b CW3c	DR2c DR3e		FW2c	GA3d GM2a	JL2c	LR2d LS10a LS10b	LT2b LS11b	PD8b PS12b PS12a
O	AP2a AP3c		CW2a CW3a CW3g	DR2b DR3a DR3d	ET2 EP3d EP3e EP3f	FW2b	GA3a GM2a	JL2a	LR2d LS10a LS10b	LT2b LS11c	PD8b PS11 PS12a
P	AP3a	BM2	CW2b	DR2c DR3e		FW2c		JL2c		LT2c LS11a	PD8b PS12b
Q	AP2c AP3a	BM2	CW2a	DR2c DR3e		FW2c	GA3b GM2a	JL2c		LT2b LS11b	PD8b PS12b
R	AP2a AP3c		CW2d CW3a CW3h	DR2a DR3d	ET2 EP3f	FW2a	GA3c GM2a	JL2b			PD8b PS11 PS12a

SUMMARY

TABLE 3.3

SCHEDULE OF PRACTICES

Forest Total for Periods 1 & 2

Practice	Period 1	Period 2
Timber *		
EP3a (Clearcut)	6660	6110
EP3d (Clearcut)	830	820
EP3b (Shelterwood)	8070	7660
EP3e (Shelterwood)	1870	1520
EP3f (Selection Cut)	640	580
EC3 (Commercial Thinning)	100	100
EI3 (Precommercial Thinning)	2000	2000
ER3a (Reforestation)	17430	16110
PS12a (Prescribed Fire-Stocking Control)	200	200
Range **		
DR3a (Nonstructural Improvement)	16290	16290
DR3c (Structural Improvement)	90	90
DR3d (Structural Improvement)	70	70
DR3e (Structural Improvement)	160	160
DR3f (Structural Improvement)	70	70
DR3g (Structural Improvement)	10	10
Wildlife ***		
CW3a (Nonstructural Habitat Improvement)	200	200
CW3b (Nonstructural Habitat Improvement)	3770	3770
CW3c (Nonstructural Habitat Improvement)	440	440
CW3d (Nonstructural Habitat Improvement)	2590	2590
CW3e (Structural Habitat Improvement)	30	30
CW3f (Structural Habitat Improvement)	40	40
CW3g (Structural Habitat Improvement)	30	30
CW3h (Riparian Structural Habitat- Improvement)	250	250

* See 10-Year Timber Sale Schedule in Appendix A
** See 5-Year Range Improvement Program in Appendix B
*** See 5-Year Wildlife Habitat Improvement Program in Appendix M

FOREST PLAN

Chapter IV
Geographic Units

Overview

This chapter describes how different areas of the Forest would be managed.

GEOGRAPHIC UNITS

GEOGRAPHIC UNITS

Geographic units describe and illustrate how the management area prescriptions will affect specific parts of the Forest. Geographic units do not provide management direction.

Geographic units are described in terms of their physical and biological setting, past management activities, and future management activities. Geographic unit maps show:

(1) management areas;
(2) transportation corridors that will be developed for surface resource management;
(3) the 10-year timber sales program; and
(4) land exchange possibilities.

The 10-year timber program, land exchange possibilities, and right-of-way acquisition needs are listed in the Appendices A, B, and C, respectively.

For the Rocky Mountain Division, separate geographic unit maps show: (1) oil and gas occupancy opportunities as developed for oil and gas leases; and (2) transportation corridors that could be developed for oil and gas exploration drilling and production.

Transportation corridors, where they extend into Management Areas E, F, G, and I, will not be developed for surface resources. Also shown are two illustrations of a hypothetical field development. Shown on Map RM-1 is what a "large discovery" might look like. A "most probable" discovery is shown on Map RM-2. These illustrations are based on occupancy opportunities, well-spacing requirements, and local road needs.

Geographic units are grouped by mountain ranges. Geographic units for the Rocky Mountain Division are shown on page 4-2 and for the Jefferson Division on page 4-43.

Legend

Geographic Unit
Management Area
Timber Sale Area
Campground
Landownership Adjustment
Suitable for Acquisition
Suitable for Disposal

Roads

Managed for Visual Resources
..... Existing
-.-.- Proposed

Oil & Gas Lease Stipulations

(Rocky Mountain Front only)

1 Stipulation 1 — no surface occupancy, slopes 60%

5 Stipulation 5 — limited surface use unstable landtypes standard surface use stipulations

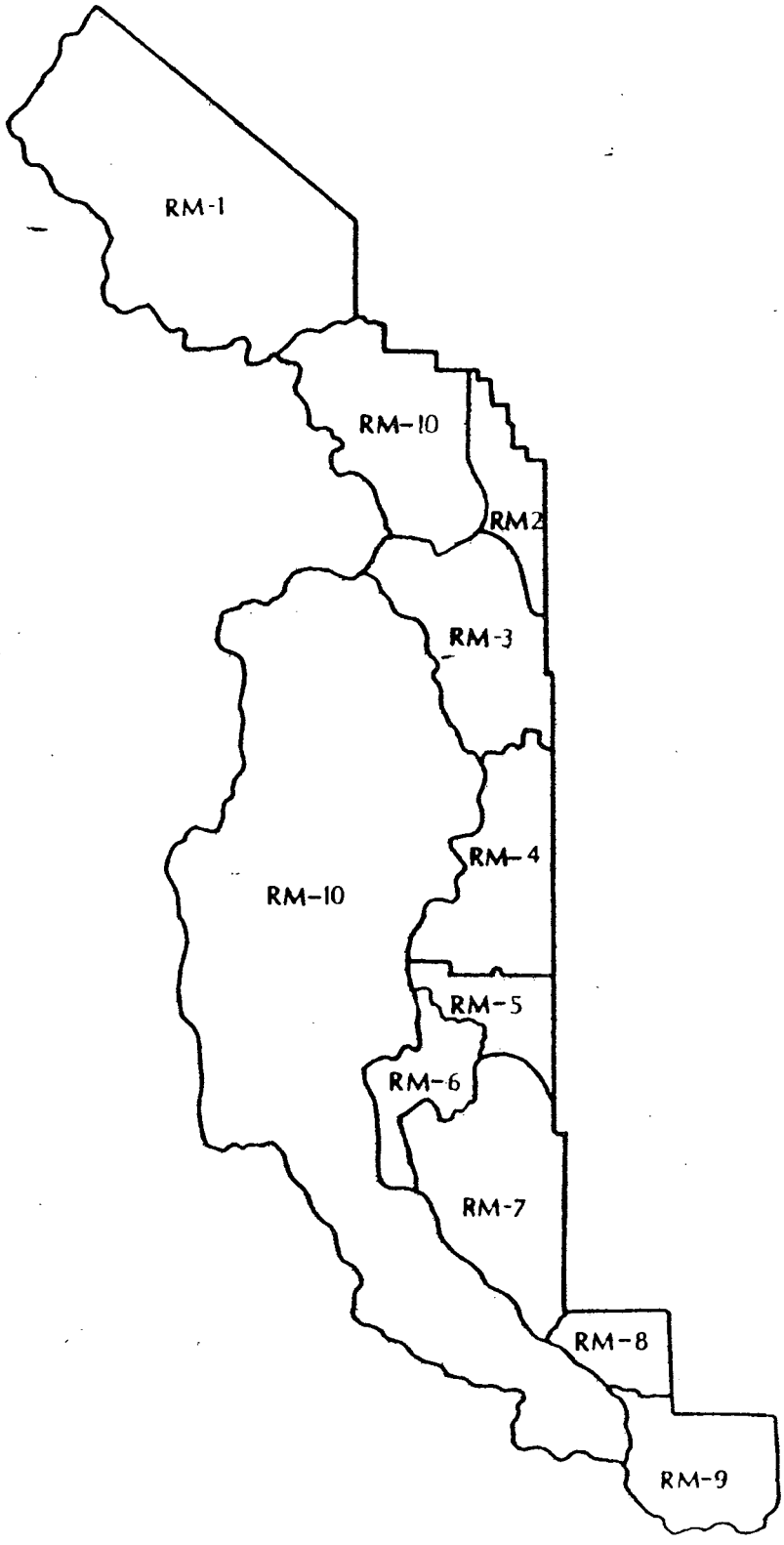
0 Standard surface use stipulation
(Wildlife timing restrictions as shown on Table 4.2 are present but not shown.)

☼ Gas Well (Hypothetical)

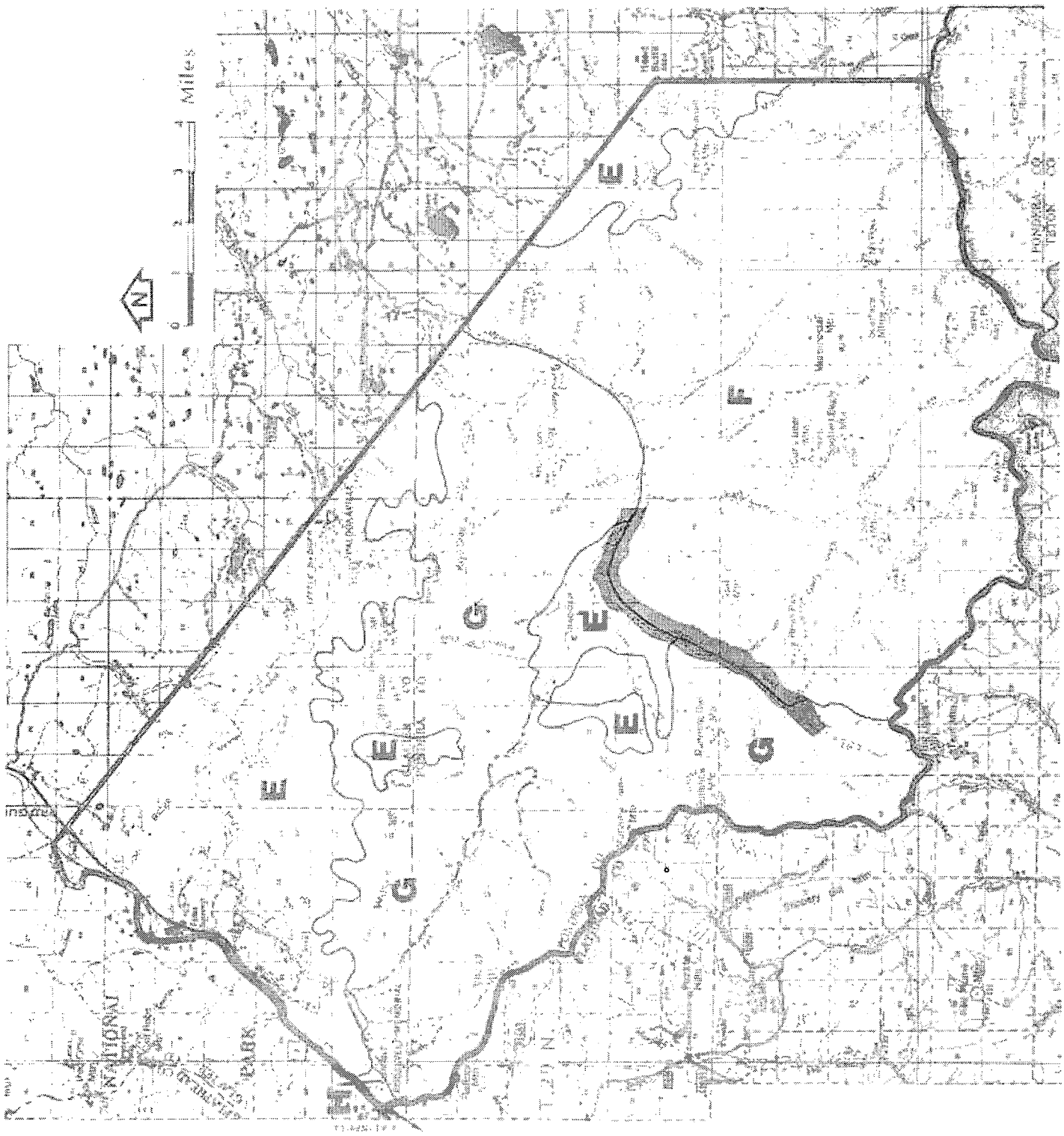
--- Local Roads

▲ Gas Processing Facility (Hypothetical)

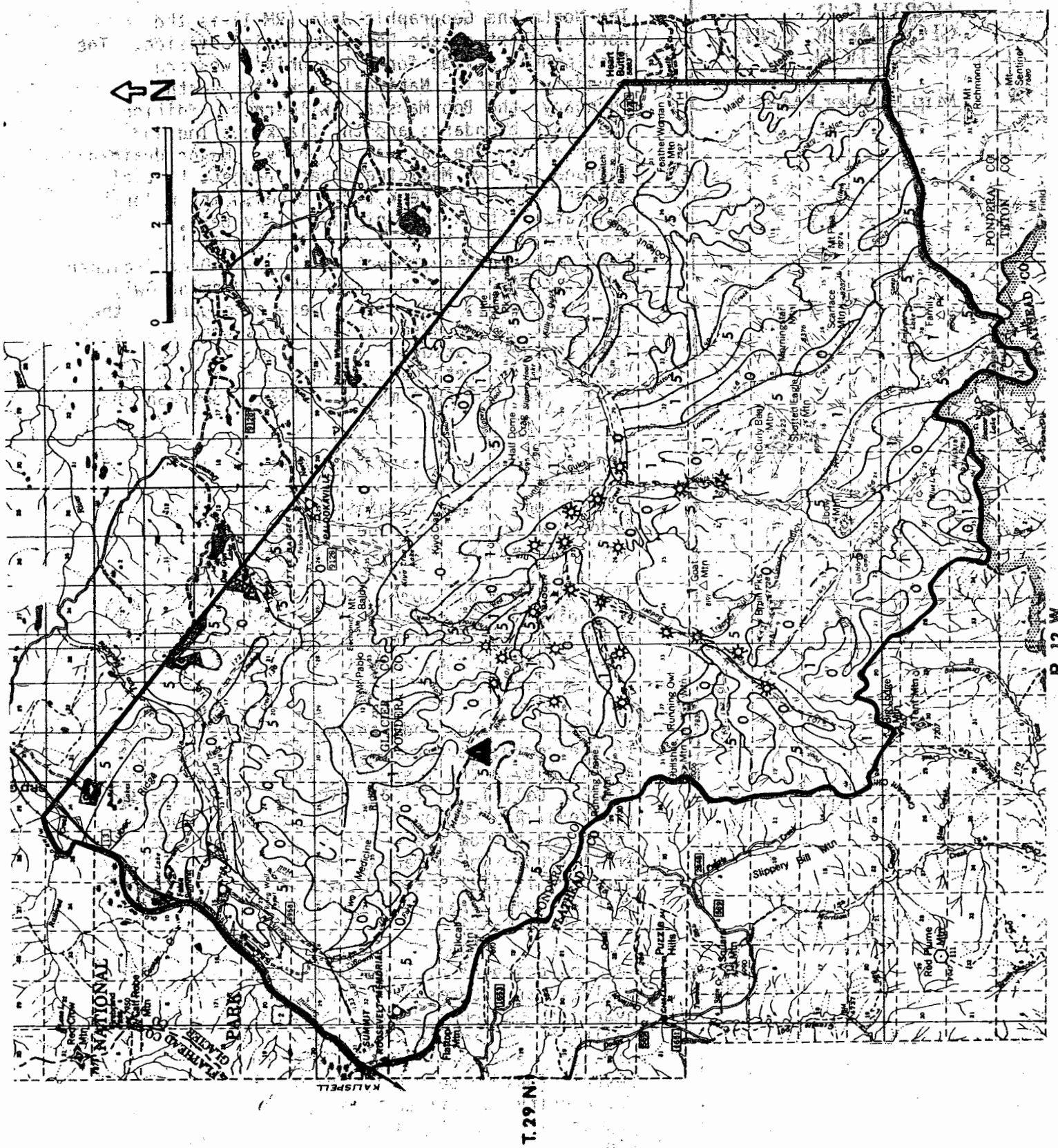
Lewis & Clark
National Forest Plan
Rocky Mountain Division
Geographic Units



RM-1
North End
Geographic Unit



RM-1
North End Geographic Unit



NORTH END GEOGRAPHIC UNIT DESCRIPTION Map Number RM -1	The North End Geographic Unit (RM-l) is the northern part of the Rocky Mountain Division. The Continental Divide forms the unit's western boundary; Glacier National Park, the north boundary; the Bob Marshall Wilderness Addition, the south boundary; and the Blackfeet Indian Reservation, the eastern boundary. Major drainages include the Two Medicine River, Badger, Little Badger, and North Fork Birch Creek. The major mountains within the unit are Curly Bear, Scarface, Poia, Morningstar, Spotted Eagle, Family Peak, Baldy, Mount Pablo, Half Dome, Feather Woman, Kiyo Craig, Goat, Bullshoe, Running Owl, and Big Lodge. These lands were once part of the Blackfeet Indian Reservation. This area was ceded from the Reservation in 1896. The Blackfeet Indian Nation retains certain use rights on these lands under the Agreement of 1896. (See Management Standard H-1.) Slopes in the unit vary from steep to gentle. The geography was formed by glacial erosion or deposition. Major vegetation types include lodgepole pine, subalpine fir, spruce, white bark pine, aspen, and fescue grasslands. The unit provides some winter range for big game, including moose, mountain goat, and elk, and also provides habitat for grizzly bear and gray wolf. A major elk calving area is in the northern part of the unit. Summit Campground and Roosevelt Memorial are to the north, next to U.S. Highway 2. The unit is accessed by a trail system. Primary trails include the Elk Calf Trail (137), Two Medicine-Heart Butte (National Recreation Trail) (101), Whiterock Trail (102), East Wood Creek Trail (170), North Badger Trail (103), South Badger Trail (104), North Fork Birch Trail (121), Elbow Creek Trail (145), and Muskrat Creek Trail (147). Elk Calf is a National Recreation Trail. Oil and gas potential is high. A number of large geologic structures are present which may contain hydrocarbons (Mudge, 1983). Occupancy opportunities are limited in certain areas, by nosurface occupancy and the limited use stipulations. Timing restrictions protect big-game wintering areas. Opportunity for oil and gas exploration and development is generally in valley bottoms and side slopes. During the next 10-15 years of the Plan, this unit will not be offered for lease once existing lease rights have expired (Amendment 21). **The lands in this Geographic Unit have been withdrawn from entry under the general mining laws (Amendment 22).**

There is a major pipeline and transmission line corridor south of Glacier National Park. The Burlington Northern Railroad parallels this corridor, as does U.S. Highway 2. A microwave site is on Baldy Mountain.

Three administrative sites are in the unit: the Badger Guard Station, Little Badger Guard Station, and the Summit Administrative Area.

Past Management Activities

Near U.S. Highway 2, some timber was harvested in the 1960s. Post and pole harvesting is currently taking place along with firewood cutting.

U.S. Highway 2 provides major east-west travel. The Pike Creek Road is a three mile year-round use road. Old seismic roads are now used as trails and an administrative site is accessed by Whiterock Road.

Range allotments include Lubec-Badger, Little Badger, Sawmill, and Heart Butte.

Fires burned portions of the unit between 1889 and 1910. Part of the unit was burned in the Hungry Man Creek fire in 1941. A 720-acre fire burned in Pike Creek in 1970.

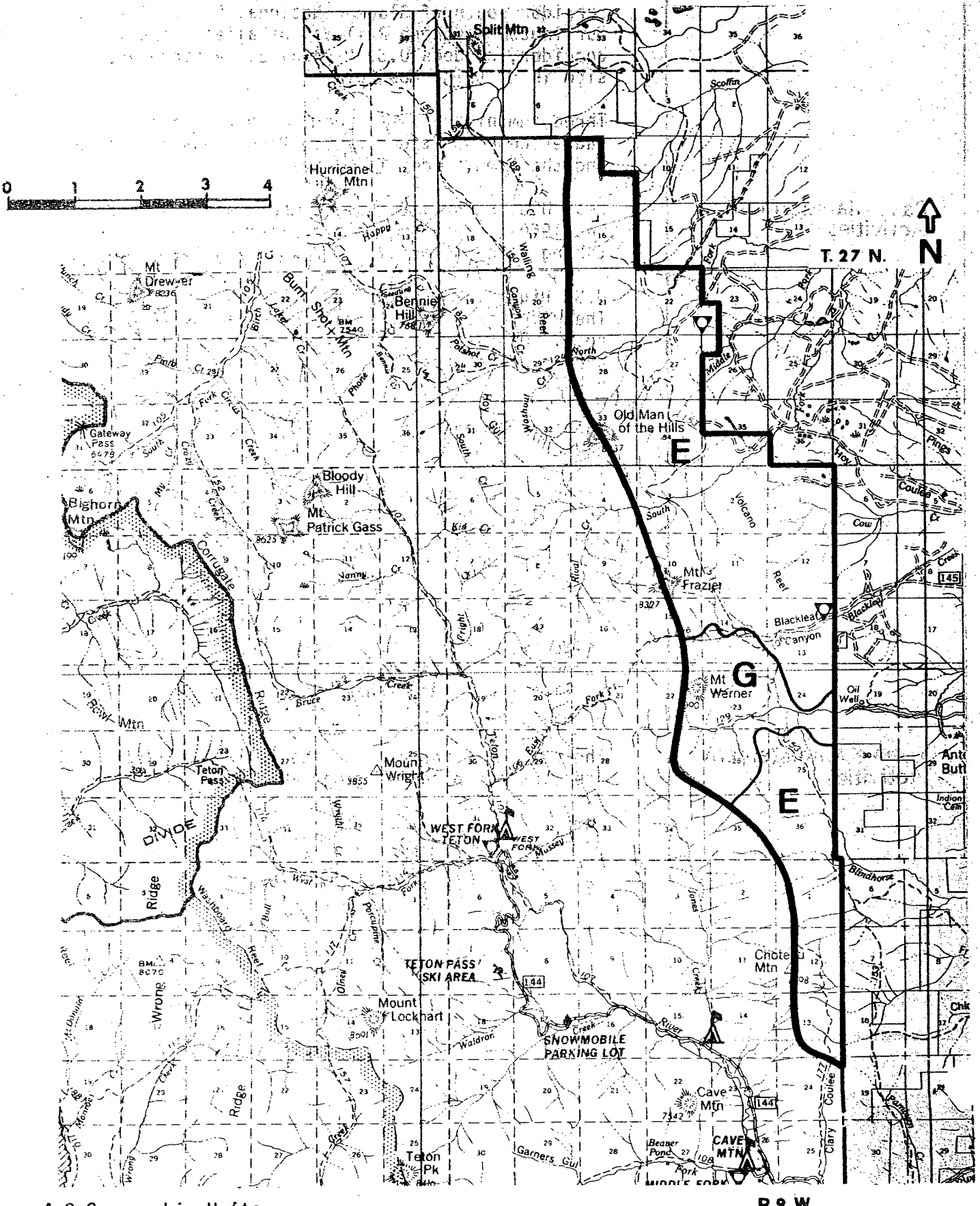
Seismic exploration for oil and gas has taken place at various times in the past and is currently on-going in the unit. Oil and gas drilling has taken place in the past near Palookaville and an application to drill has been received near Hall Creek.

Future Management Activities

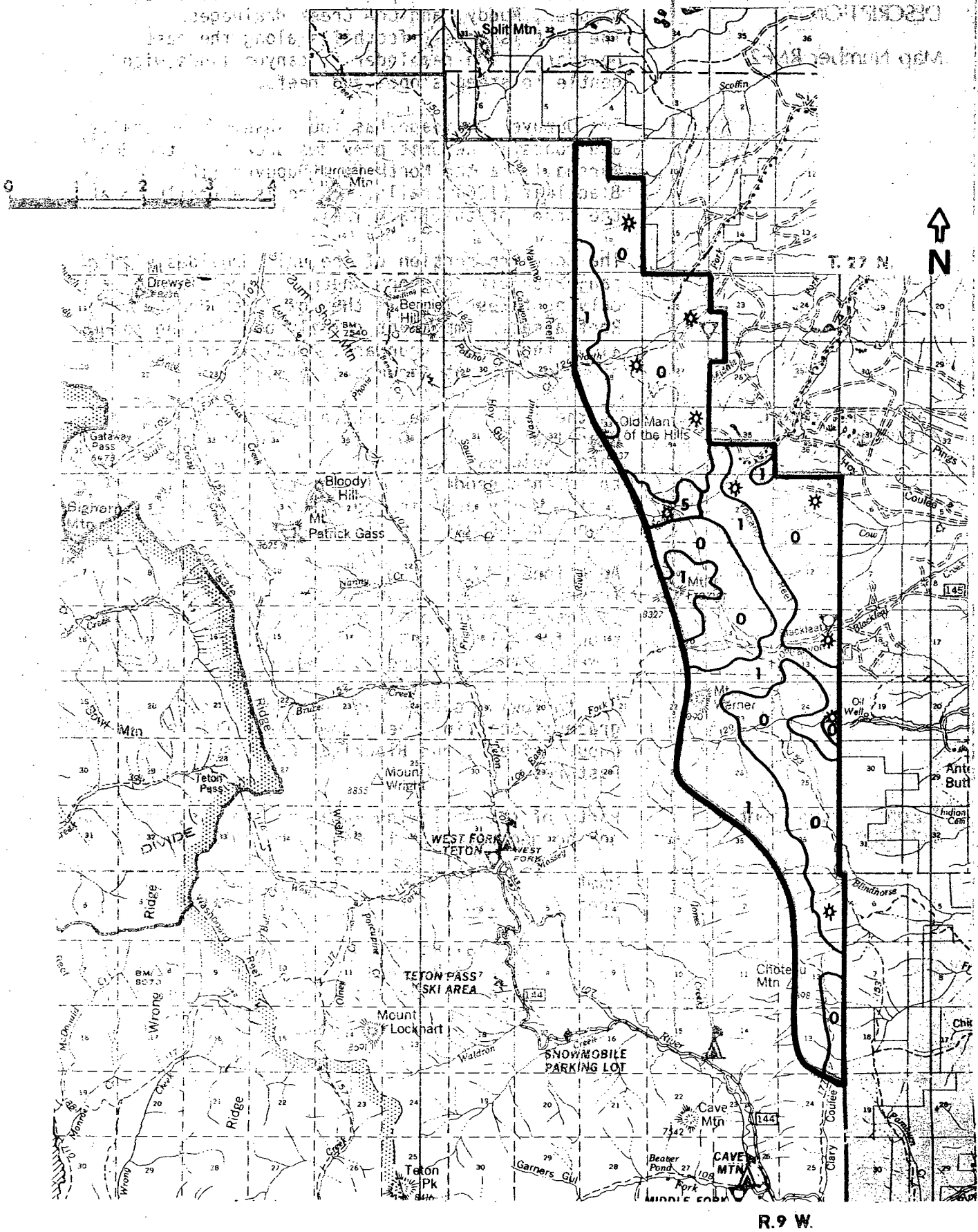
The unit contains part of the following management areas as shown on the geographic unit map.

Mgmt Area	VQO	Recreation Setting
E	Partial Retention	Roaded Natural
F	Partial Retention	Semi-Primitive
G	Partial Retention	Roaded Natural
H	Retention/Partial Retention	Roaded Natural & Rural
R	Same as adjacent lands	Same as adjacent lands

RM-2
Blackleaf — Dupuyer Geographic Unit

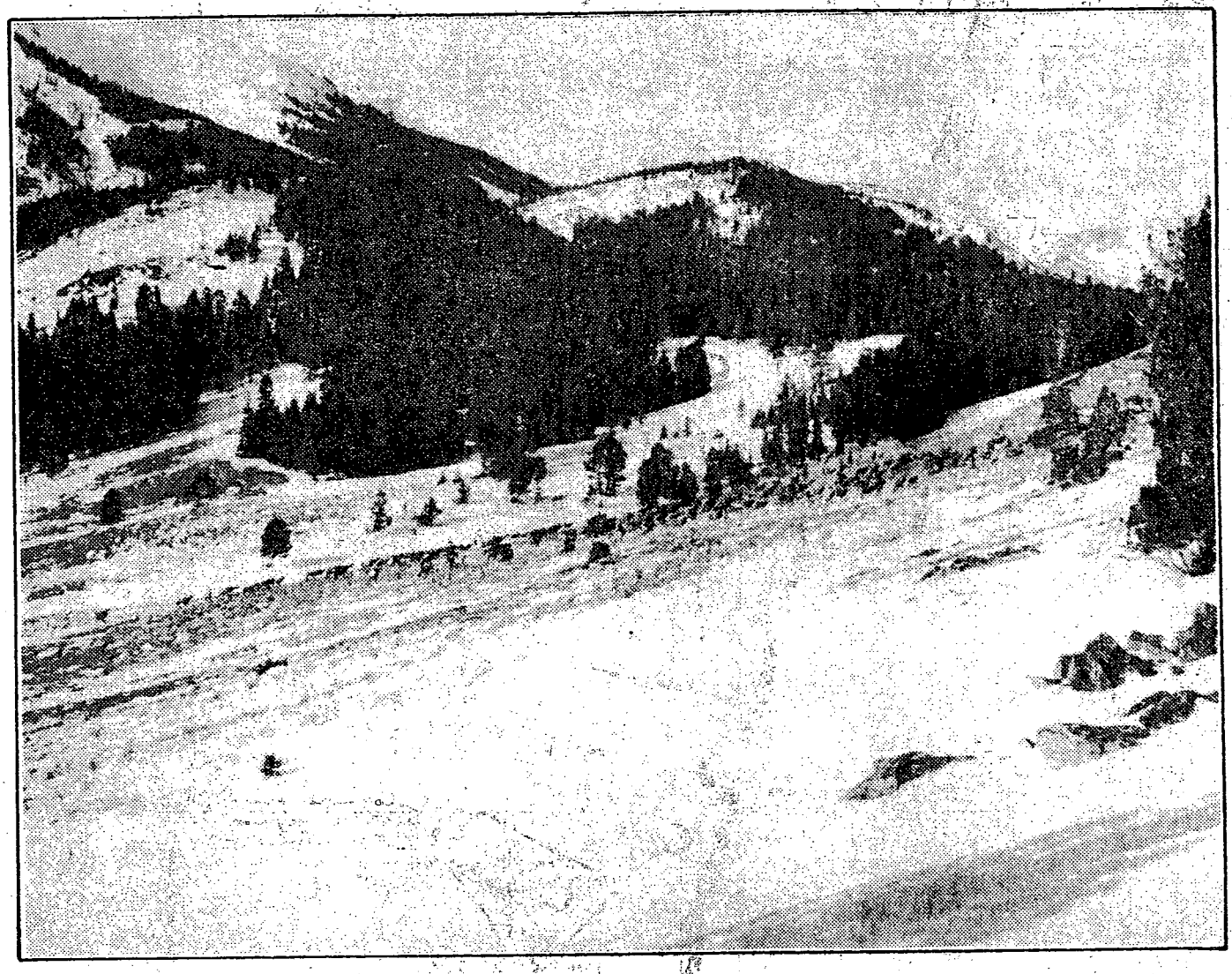


RM-2
Blackleaf — Dupuyer
Geographic Unit



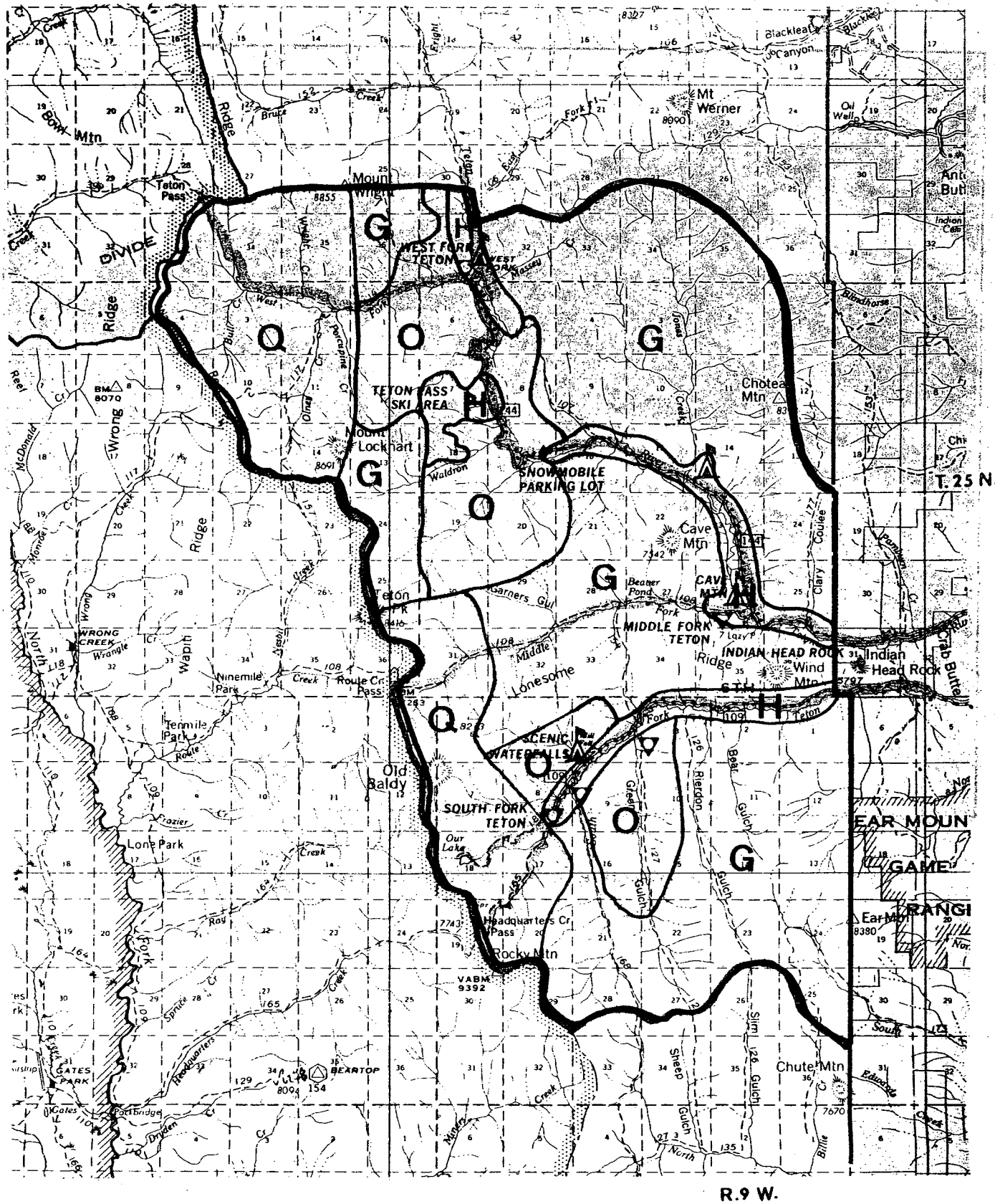
BLACKLEAF -DUPUYER GEOGRAPHIC UNIT DESCRIPTION Map Number RM-2	The Blackleaf-Dupuyer Geographic Unit (RM-2) includes the middle portions of the Blackleaf-Dupuyer, Muddy, and Cow Creek drainages. The unit is grassy foothills along the east boundary. The remainder is canyon lands with gentle to steep slopes and reefs. The Dupuyer drainage has four-wheel-drive trails and roads. The unit provides access to the Bob Marshall via the North Fork Dupuyer (124) and Blackleaf (106) trails. There is a trailhead at the start of the Black Trail. The northern portion of the unit provides winter range for elk, bighorn sheep, and mule deer. Elk calving takes place in the Cow Creek and Walling Reef areas. Important grizzly bear spring range is along the Forest boundary. Much of the unit provides habitat for mountain goat.
Past Management Activities	In the past, two wells have been drilled in Blackleaf Canyon. One is capable of producing large volumes of natural gas. The well is expected to go into production in the near future. Two producing wells are located outside the Forest, between Muddy Creek and Blackleaf Creek. Additional drilling permits are expected in the future. Surface opportunities exist. There are big-game wintering restrictions. Seismic exploration for oil and gas has taken place at various times in the past and is ongoing in the unit. The following cattle and horse allotments are grazed: Scoffin Creek, Cow Creek, Chicken Coulee, Dupuyer Creek, and Blackleaf Administrative Pasture.
Future Management Activities	Parts of the following management areas, as shown on the geographic unit map, are in the unit. Mgmt Area — VQO — Recreation Setting E — Partial Retention — Roaded Natural G — Partial Retention — Semi-Primitive R — Same as adjacent lands — Same as adjacent lands **The lands in this Geographic Unit have been withdrawn from entry under the general mining laws (Amendment 22).**

ROCKY MOUNTAINS



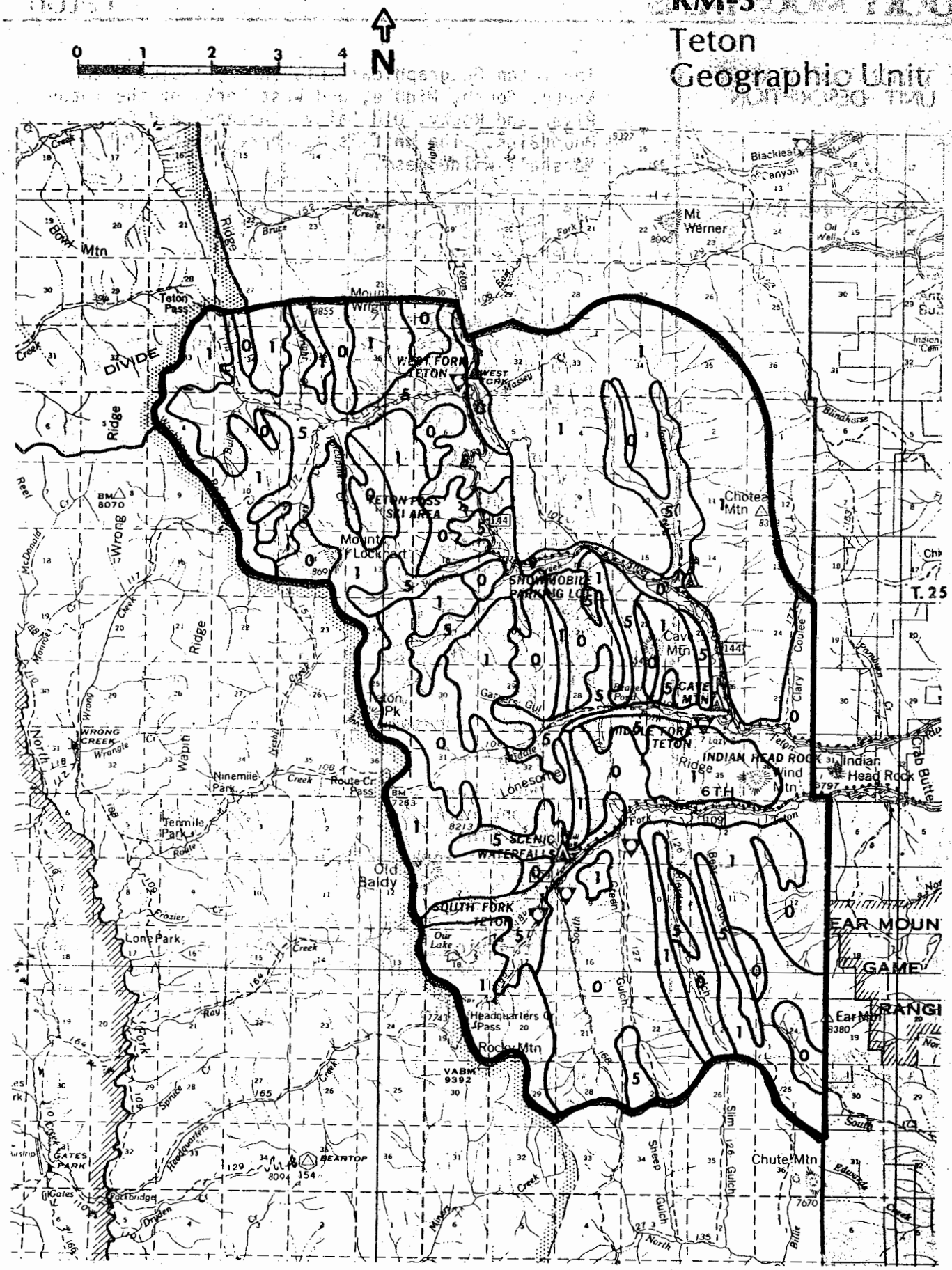
Elk wintering in the Rocky Mountains.

RM-3
Teton
Geographic Unit



RM-3

Teton
Geographic Unit



Geographic Units 4-13

TETON GEOGRAPHIC UNIT DESCRIPTION

Map Number RM-3

The Teton Geographical Unit (RM-3) includes the North, South, Middle, and West Forks of the Teton River and Rocky, Old Baldy, Choteau, and Ear Mountains. The unit is southeast of the Bob Marshall Wilderness.

The unit contains narrow valleys, foothills, and steep reefs with forested slopes. The sidehills have Douglas fir, subalpine fir, and lodgepole pine.

The unit contains winter range and lambing areas for bighorn sheep. Important spring range and breeding areas for grizzly bear are along the Forest boundary. Mountain goat habitat is at the higher elevations throughout the unit.

The unit contains two National Recreation Trails: Blacktail-South Fork of Teton (168) and Jones Creek (107). Other trails, including Route Creek (108), Teton Pass (114), Our Lake (184), and Headquarters (165), provide access to the Bob Marshall Wilderness.

Trailheads for Green Gulch, Jones Creek, West Fork, South Fork, and Middle Fork Teton trails are in the unit. The unit also has a number of developed campgrounds: Elko, West Fork, Cave Mountain, Mill Falls, and Waldron Creek. The Teton Pass Ski Area and a snowmobiling parking lot are near Teton Pass.

One guest ranch, the 7 Lazy P, is in the unit. In addition, nine summer homes are in the Massey Creek drainage. Three administrative sites, West Fork, South Fork, and Ear Mountain, are in the unit.

Oil and gas potential is high. Surface occupancy opportunities exist in the valley bottom. Slopes and landtypes limit development on valley sides and ridgetops. Activities in valley bottoms are subject to the limited surface use stipulation.

Past Management Activities

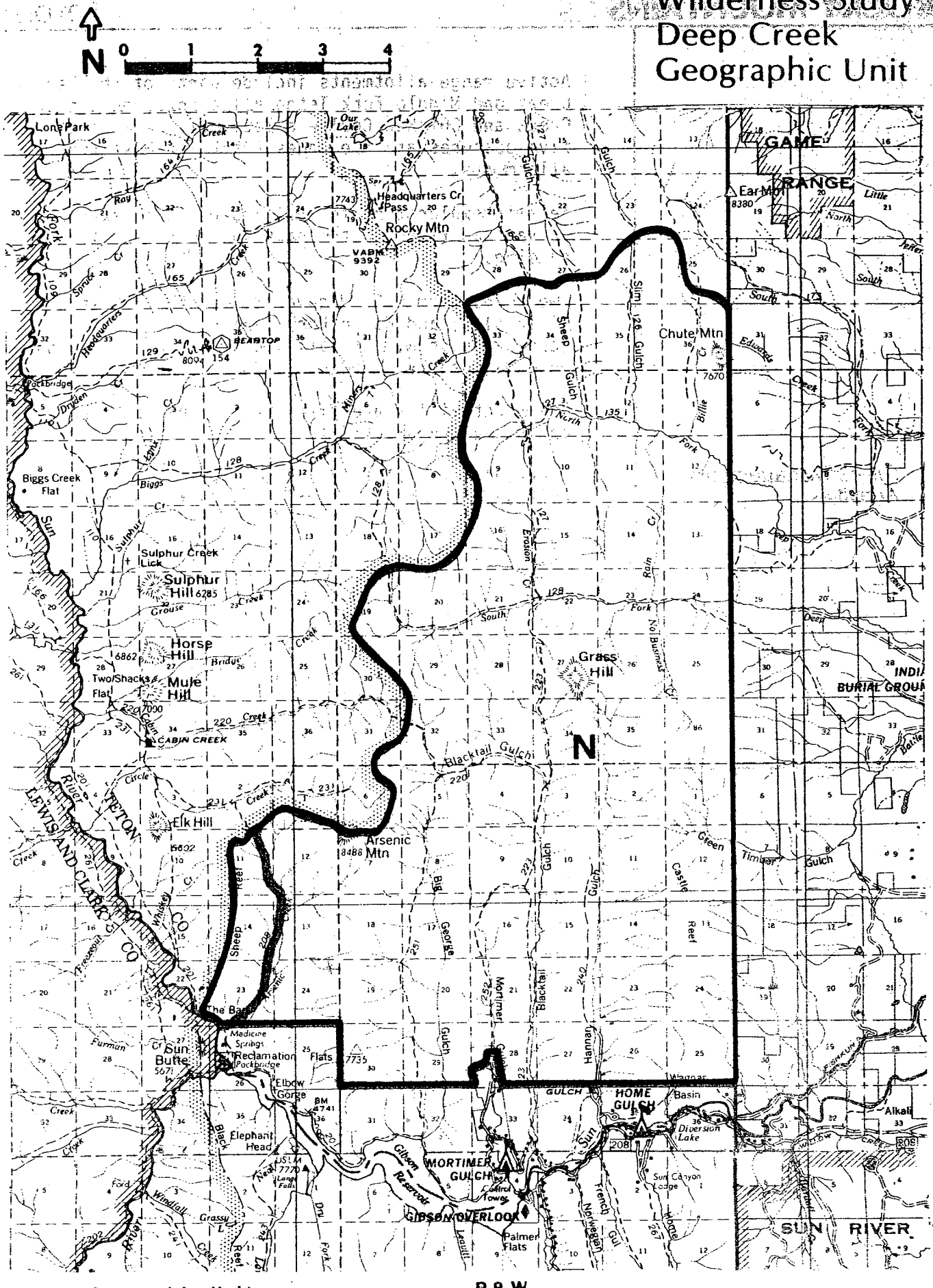
Timber harvesting took place in the 1960s in the North Fork Teton, West Fork Teton, and Waldron Creek drainages. At present firewood, posts, poles, and houselogs are being cut in the South and North Forks of the Teton drainages, along old clearcut units.

Two recent fires, the West Creek Fire in 1969 and the Massey Creek Fire in 1979, burned portions of the unit.

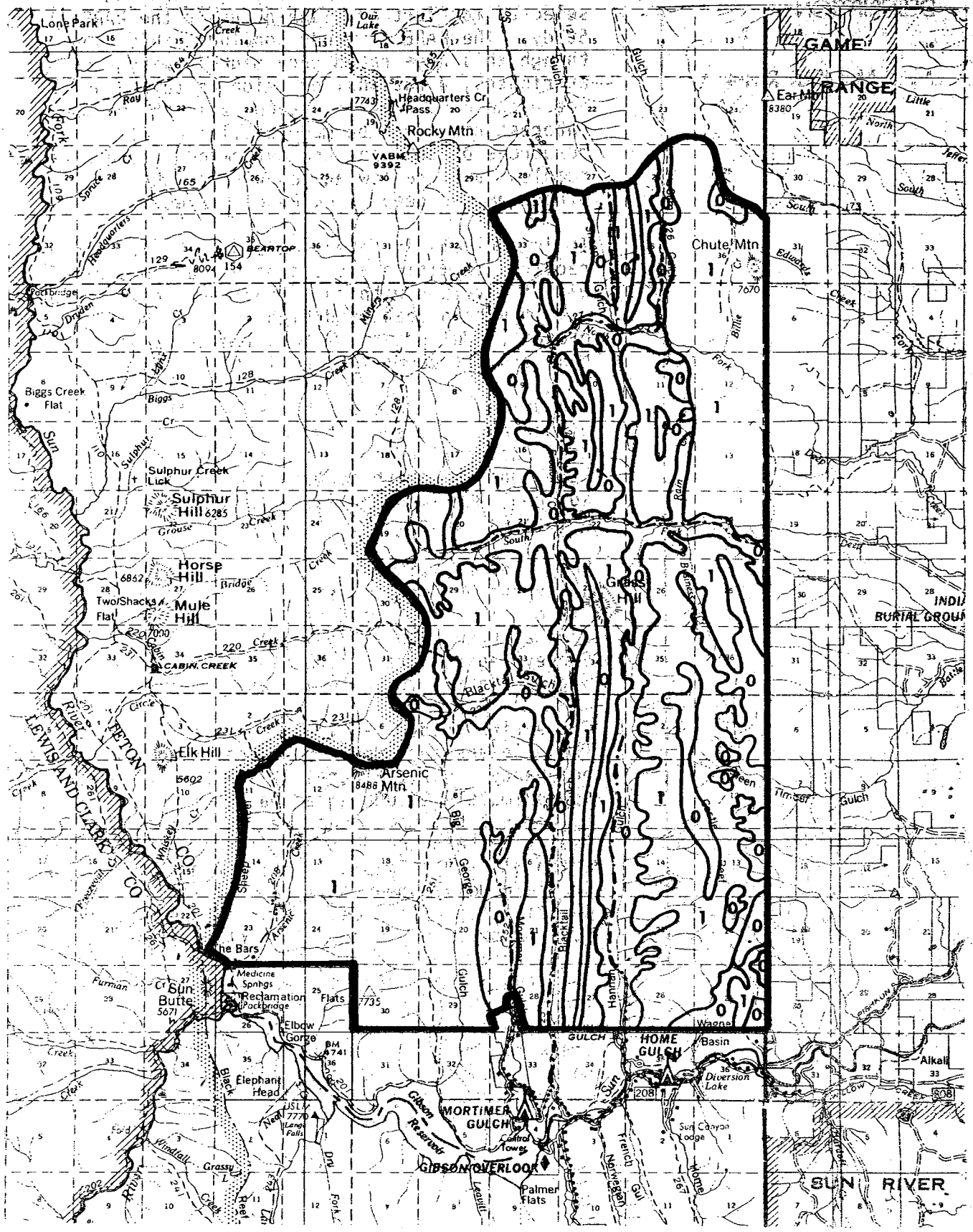
	Active range allotments include parts of the Deep Creek and Middle Fork Teton allotments and Jones Creek and Chicken Coulee allotments, Administrative pastures are the Jones Creek and West Fork allotments. Seismic exploration for oil and gas has taken place at various times in the past and is currently ongoing. Two roads from U.S. Highway 89, South Fork Teton River (109) and North Fork Teton River (144), access the area. Streams and riparian vegetation were damaged by flooding, in both 1964 and 1975. Other activities are fisheries improvement and cross-country ski trails.
Future Management Activities	Parts of the following management areas, as shown on the geographic unit map, are in the unit. Mgmt Area — VQO — Recreation Setting G — Partial Retention — Semi-Primitive H — Retention/Partial Retention — Roaded Natural & Rural 0 — Modification — Roaded Natural Q — Preservation — Primitive R — Same as adjacent lands — Same as adjacent lands **The lands in this Geographic Unit have been withdrawn from entry under the general mining laws (Amendment 22).**

KM-4

Wilderness Study
Deep Creek
Geographic Unit



RM-4
Wilderness Study
Deep Creek
Geographic Unit



DEEP CREEK-RESERVOIR NORTH GEOGRAPHIC UNIT DESCRIPTION

MAP NUMBER RM-4

The Deep Creek-Reservoir North Geographic Unit (RM-4) is located on the Rocky Mountain Division. The Deep Creek-Reservoir North (P1-485) was selected for further planning under the RARE II Study. The RARE II Study concluded that even though this area rated very high in wilderness attributes, a rational decision as to whether or not wilderness classification is in the National interest could not be made until the oil and gas resources of the area are determined. The current roadless area review agrees with the RARE II direction for Deep Creek-Reservoir North.

It is entirely in Teton County, Montana. The area receives primitive recreation use and has high wildlife values with such species as grizzly bear, elk, mountain goat, and bighorn sheep being present. Mule deer, whitetailed deer, and black bear are all commonly seen in the unit.

The unit is bounded on the west by the Bob Marshall Wilderness, the south by the Gibson Reservoir Reclamation withdrawal, the east by BLM and private land, and the north by National Forest lands. The adjacent BLM land is also being studied for wilderness classification.

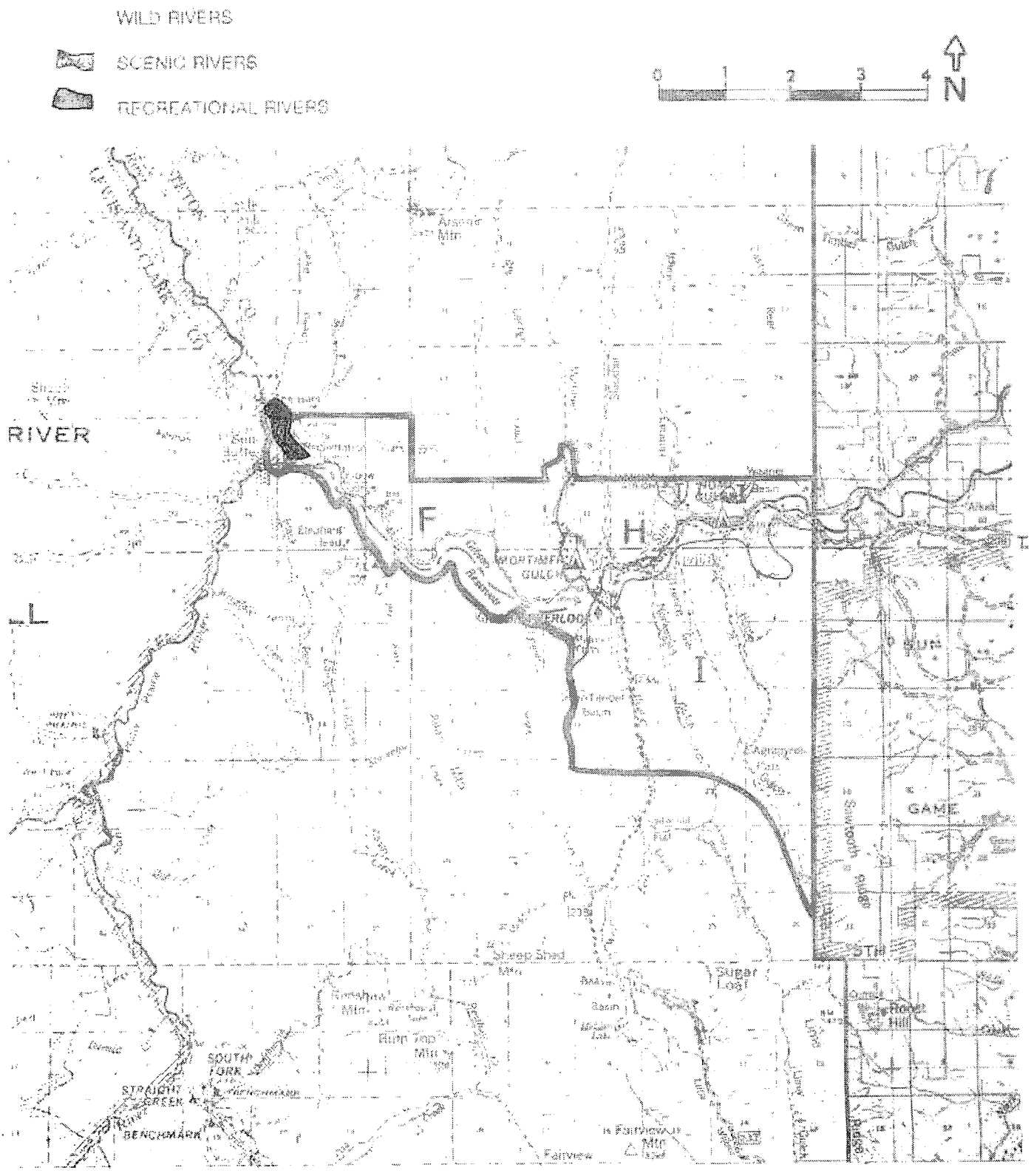
Deep Creek is situated in the Overthrust Belt, an extensive geologic structure in which major discoveries of oil and gas have been made in Canada, Utah, and Wyoming. The U.S. Geological Survey regards the entire study area as having high potential for natural gas.

The entire study area is leased for oil and gas. These leases include 34,664 acres of no surface occupancy and 7,174 acres of surface occupancy. Approximately 25,000 acres have timing restrictions to protect big game concentration areas. The leases contain the "Further Planning Stipulation" which allows for exploration, but not production or field development until a decision on wilderness classification is made. Suit has been filed in U.S. District Court to review these leases.

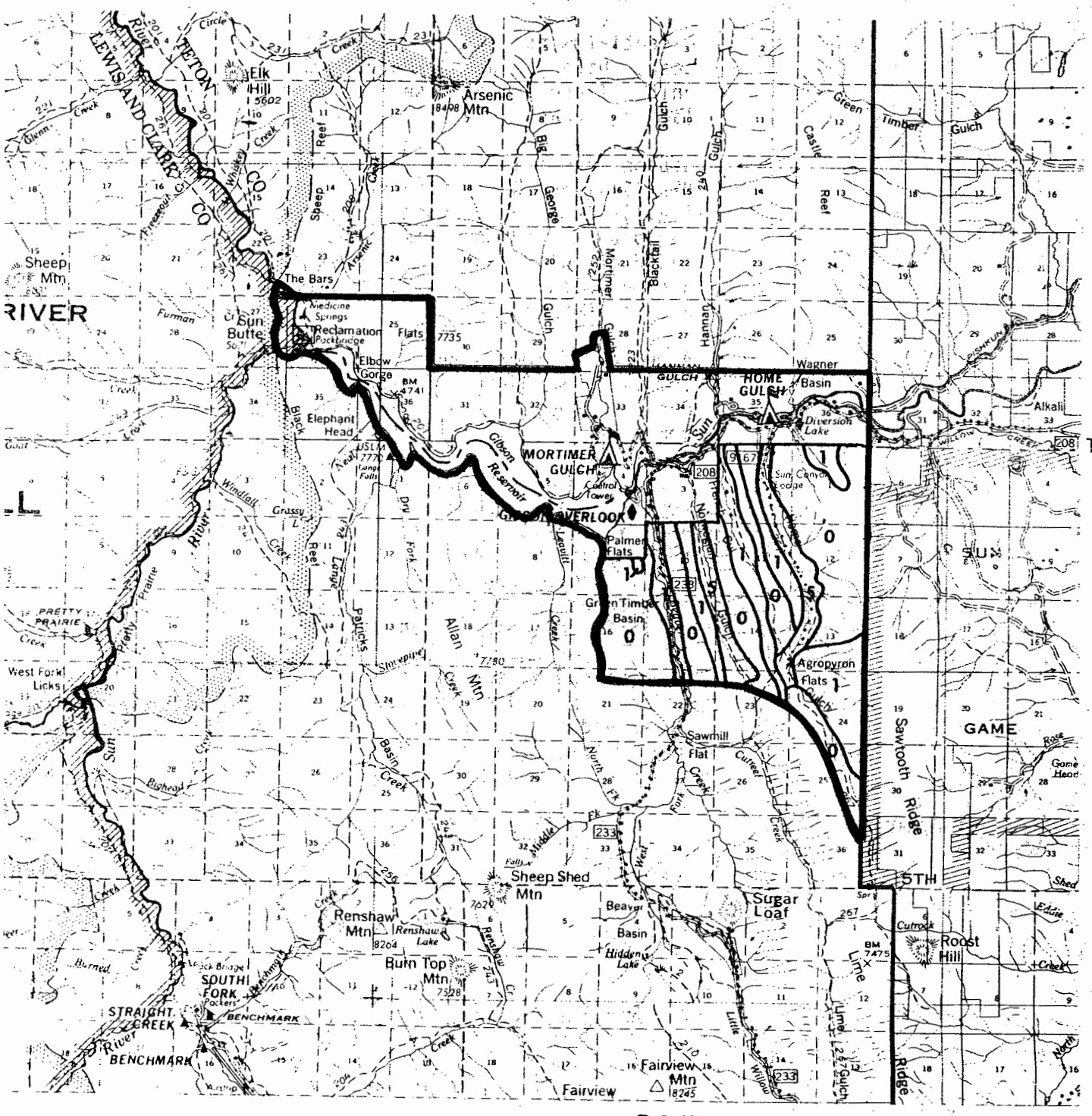
The study area contains five range allotments (one vacant), which provide 676 AUMs of grazing. These allotments include the southern half of the Deep Creek allotment, the Salmond allotment, the Mortimer Gulch Packer allotment, a part of the Sun Butte Packer allotment and all of the Hannon Gulch Administrative Pasture.

	Large numbers of elk use the southern portion of the study area for seasonal migration and winter range. While big-game winter range is found at lower elevations throughout the study area, Big George Gulch and Hannan Gulch-Wagner Basin provide major opportunities for wildlife habitat improvement through burning. Deep Creek received high ratings for primitive recreation opportunities and solitude in the RARE II process. These high ratings were largely derived by the amount of topographic and vegetative screening and the distance of the core from the perimeter of the study area. The area currently provides high value primitive and semi-primitive nonmotorized recreation in its southwestern portion and along its northern boundary. Visitor use in the area is light during the spring and summer and consists of day hiking, horseback riding, and traffic enroute to adjacent wilderness. Increased use during hunting season radiates from numerous campsites within the area and from trailheads that are used for day hunting access. The area also contains part of South Fork Teton-Blacktail National Recreation Trail running north-south through Deep Creek along Blacktail and Erosion Gulches. Other important trails are Deep-Biggs (128), Big George (251), and Cabin Creek Black (220). The study area contains two roads (constructed in the 1960s for seismic exploration) and two recreation residences. The recreation residences are scheduled for termination and the roads are closed to motorized use.
Future Management Activities	Because of the undetermined oil and gas potential and pending litigation, Deep Creek-Reservoir North is considered a further planning area. The area will be managed as a Wilderness Study Area. Once the oil and gas potential is determined, a recommendation regarding wilderness will be made through an amendment or revision to the Forest Plan. The following management area, as shown on the geographic unit map, is in the unit. Mgmt Area N — VQO: Partial Retention — Recreation Setting: Semi-Primitive **The lands in this Geographic Unit have been withdrawn from entry under the general mining laws (Amendment 22).**

RM-5
Sun Canyon
Geographic Unit



RM-5
Sun Canyon Geographic Unit



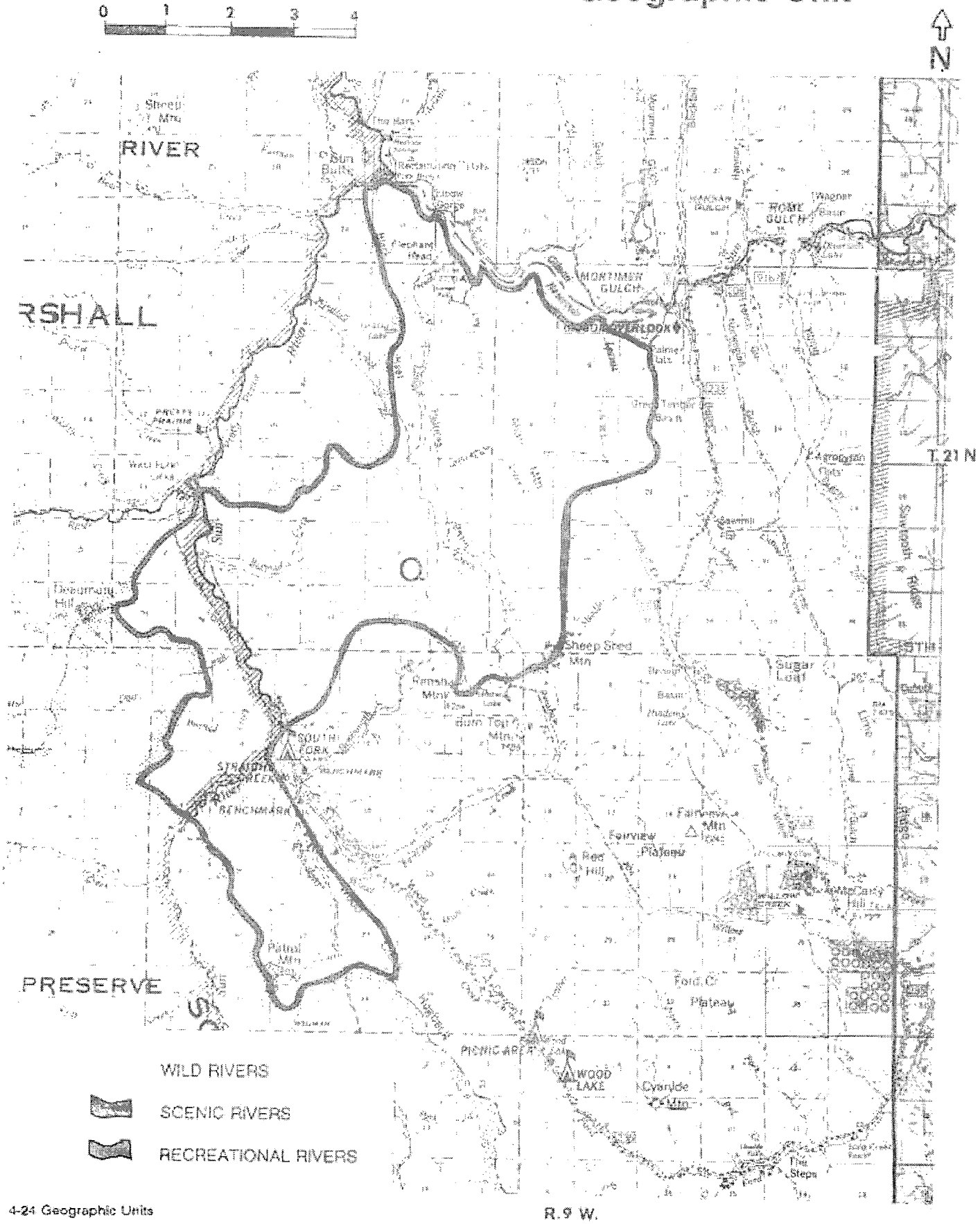
SUN CANYON GEOGRAPHIC UNIT DESCRIPTION Map Number RM-5	The Sun River Geographic Unit (RM-5) is the Sun River Canyon, which includes Gibson Dam, Reservoir, Lake, and Diversion Dam. The unit ranges from steep rock and scree slopes to gentle forested slopes of subalpine fir, Douglas-fir, and lodgepole pine on north-south valleys, to fescue grasslands and spruce along flatter valley bottoms. Essential winter ranges for bighorn sheep, mule deer, whitetail deer, and elk occur in this unit. There are also several bighorn sheep lambing areas. Gibson Lake Trail (201), Blacktail Trail (223), and Blacktail-South Fork of Teton (National Recreation Trail) (168) run through the area. Developed campgrounds and boat ramps are at Mortimer Gulch and Home Gulch, and an administrative site is at Hannon Gulch. There is a very heavily used trail- head at Mortimer Gulch. A number of lodges and resorts are in the unit: Triple J., Klicks upper and lower resort, Sun Canyon Lodge, Gibson Lake Lodge, and 52 summer homes. The area around Gibson Reservoir has been withdrawn for reclamation purposes. These lands will not be offered for oil and gas leasing during the next 10-15 years. The lands in this Geographic Unit have been withdrawn from entry under general mining laws.
Past Management Activities	Timber was harvested in the 1920s and 1930s. Present harvest is limited to firewood and some small sales of posts, poles, and houselogs. The only active grazing allotments are a portion of the Beaver Creek allotment and two outfitter allotments, Home Gulch and Sun Butte. Seismic exploration for oil and gas has taken place at various times and is currently ongoing. **The lands in this Geographic Unit have been withdrawn from entry under the general mining laws (Amendment 22).**

Future Management Activities

Parts of the following management areas, as shown on the geographic unit map, are in the unit.

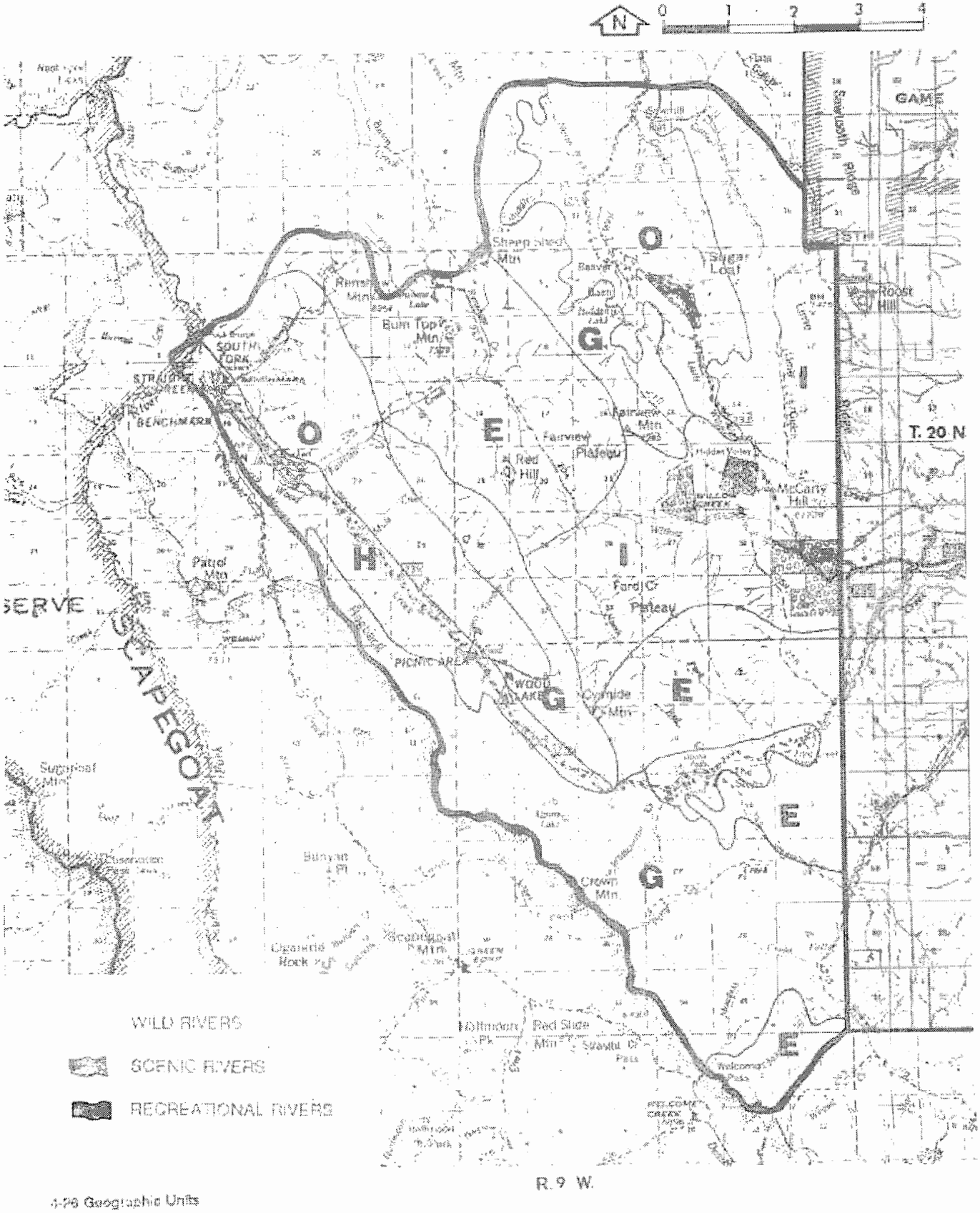
Mgmt Area	VQO	Recreation Setting
F	Partial Retention	Semi-Primitive
H	Retention/Partial Retention	Roaded Natural & Rural
I	Partial Retention	Semi-Primitive
R	Same as adjacent lands	Same as adjacent lands

RM-6
Renshaw
Geographic Unit

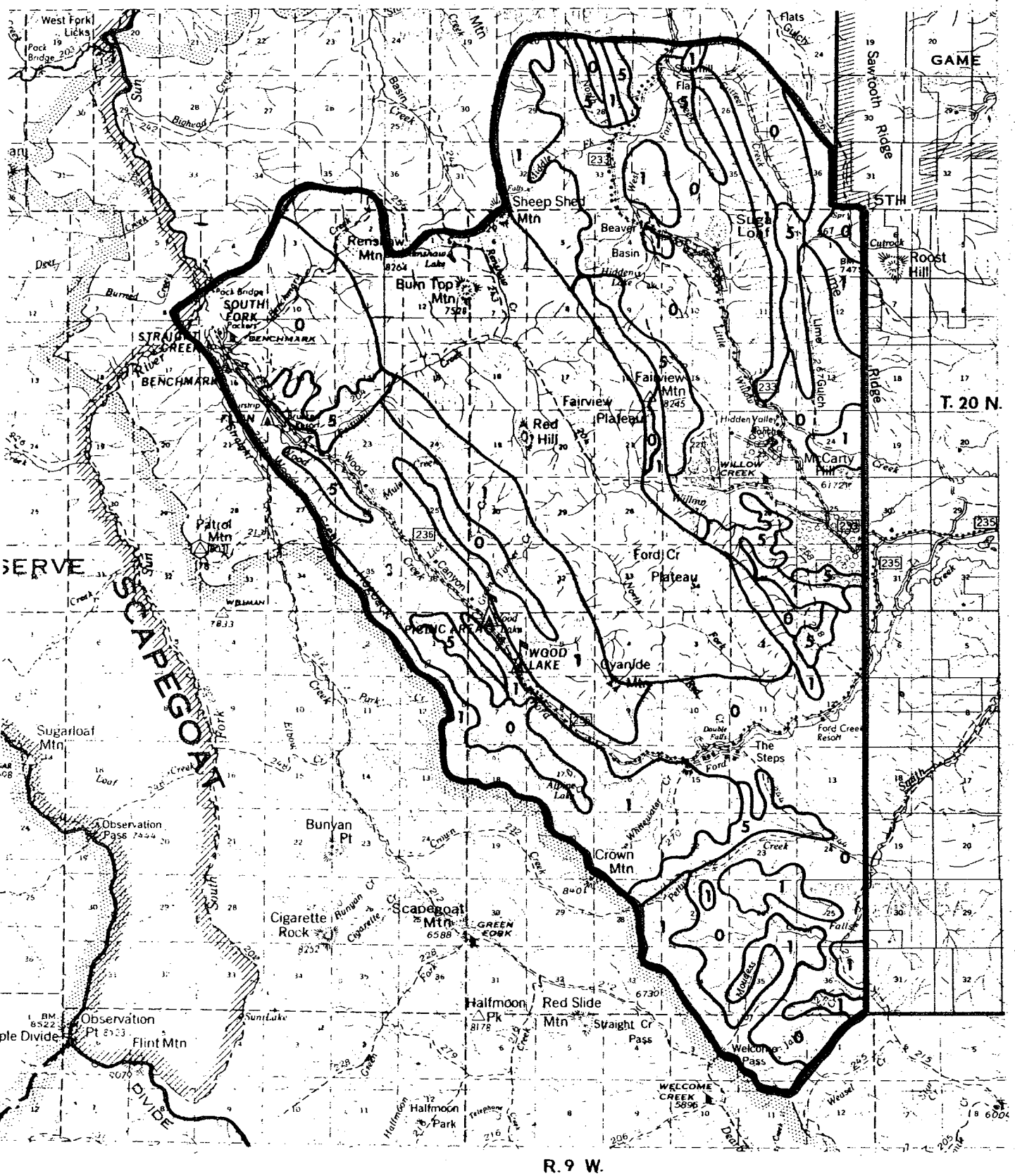


RENSHAW GEOGRAPHIC UNIT DESCRIPTION Map Number RM-6	The Renshaw Geographic Unit (RM-6) includes Leavitt Creek, Dry Fork, Lange Creek, and Bighead Creek. It also includes Allan Mountain, Sheep Shed Mountain, and Black Reef. The Lange Creek Trail (243) is a highly scenic route leading to the Bob Marshall Wilderness. Recreation use is primarily backpacking, horseback riding, and hunting. Game species throughout the area are mule deer, elk, and bighorn sheep. The area contains major access corridors to the Bob Marshall and Scapegoat Wildernesses and is managed to provide a primitive recreation experience. Oil and gas potential is high. Portions of the area have been leased prior to wilderness recommendation.
Future Management Activities	Parts of the following management areas, as shown on the geographic unit map, are in the unit. Mgmt Area — VQO — Recreation Setting Q — Preservation — Primitive **The lands in this Geographic Unit have been withdrawn from entry under the general mining laws (Amendment 22).**

RM-7
Benchmark Willow
Geographic Unit



RM-7
Benchmark Willow Geographic Unit



BENCHMARK-WILLOW GEOGRAPHIC UNIT DESCRIPTION

Map Number RM-7

The Benchmark-Willow Geographic Unit (RM-7) includes Wood, Ford, Petty, Willow, and Beaver Creeks, and the head of Smith Creek. It also includes Crown, Patrol, Renshaw, Fairview, and Burn Top Mountains. Ford Creek and Fairview are high rugged plateaus bisected by the headwaters of Benchmark, Fairview, North Fork, and Willow Creeks.

Gentle to steep slopes of Douglas fir, spruce, subalpine fir, and lodgepole pine yield to open grassland on the lower slopes. The valleys are oriented north-south.

Some winter range and larger amounts of summer range are used by elk, bighorn sheep, and mule deer. Important spring range for grizzly bear is also present. A limited cutthroat fishery is found in Renshaw Lake, a small cirque lake in Lange Creek.

Three campgrounds, Benchmark, Wood Lake, and South Fork, and one picnic area, Wood Lake, offer developed recreation. The Benchmark Airstrip is adjacent to Benchmark Campground. Other developments within or adjacent to the management area include Ford Creek and Benchmark Wilderness Ranch; several private resorts; Hidden Valley Ranch, a girl scout camp; Willow Creek and Benchmark administrative sites and pastures; Straight Creek packer corral; and 54 summer homes. Dispersed recreation is primarily backpacking, horseback riding, and hunting.

Major trails include Fairview Trail (204), Jakie Creek Trail (214), Straight Creek Trail (212), and Petty Fork Creek National Recreation Trail (232 and 244).

Oil and gas potential is high. Occupancy opportunities exist throughout the unit. To protect migration, lambing, and big-game wintering, activities will be restricted during critical times. Oil and gas activities are also subject to restrictions to protect recreation opportunities.

Past Management Activities

There was some timber harvesting in Willow Creek drainage in the 1920s and 1930s. A few small sales of posts, poles, houselogs, and sawlogs are being planned in the Beaver-Willow and Benchmark area.

Grazing includes only a portion of the Beaver Creek and Smith Creek allotments and all of Cutrock and Willow Creek allotments. The unit

<table>
<tr><td></td><td>also includes the Lime Gulch and Fairview-Benchmark Packer allotments, the Cobb Special Use Pasture, and the Willow Creek and Benchmark Administrative Pastures.

Beaver-Willow Road (233) has been closed and continues to be closed in the fall for elk migration. The only other major road in the area is Benchmark Road (235).

Seismic exploration for oil and gas has taken place in the past and is ongoing.</td></tr>
<tr><td>Future Management Activities</td><td>Parts of the following management areas, as shown on the geographic unit map, are in the unit.

<table>
<tr><th>Mgmt Area</th><th>VQO</th><th>Recreation Setting</th></tr>
<tr><td>E</td><td>Partial Retention</td><td>Roaded Natural</td></tr>
<tr><td>G</td><td>Partial Retention</td><td>Semi-Primitive</td></tr>
<tr><td>H</td><td>Retention/Partial Retention</td><td>Roaded Natural & Rural</td></tr>
<tr><td>I</td><td>Partial Retention</td><td>Semi-Primitive</td></tr>
<tr><td>O</td><td>Modification</td><td>Roaded Natural</td></tr>
<tr><td>R</td><td>Same as adjacent lands</td><td>Same as adjacent lands</td></tr>
</table>

The lands in this Geographic Unit have been withdrawn from entry under the general mining laws (Amendment 22).</td></tr>
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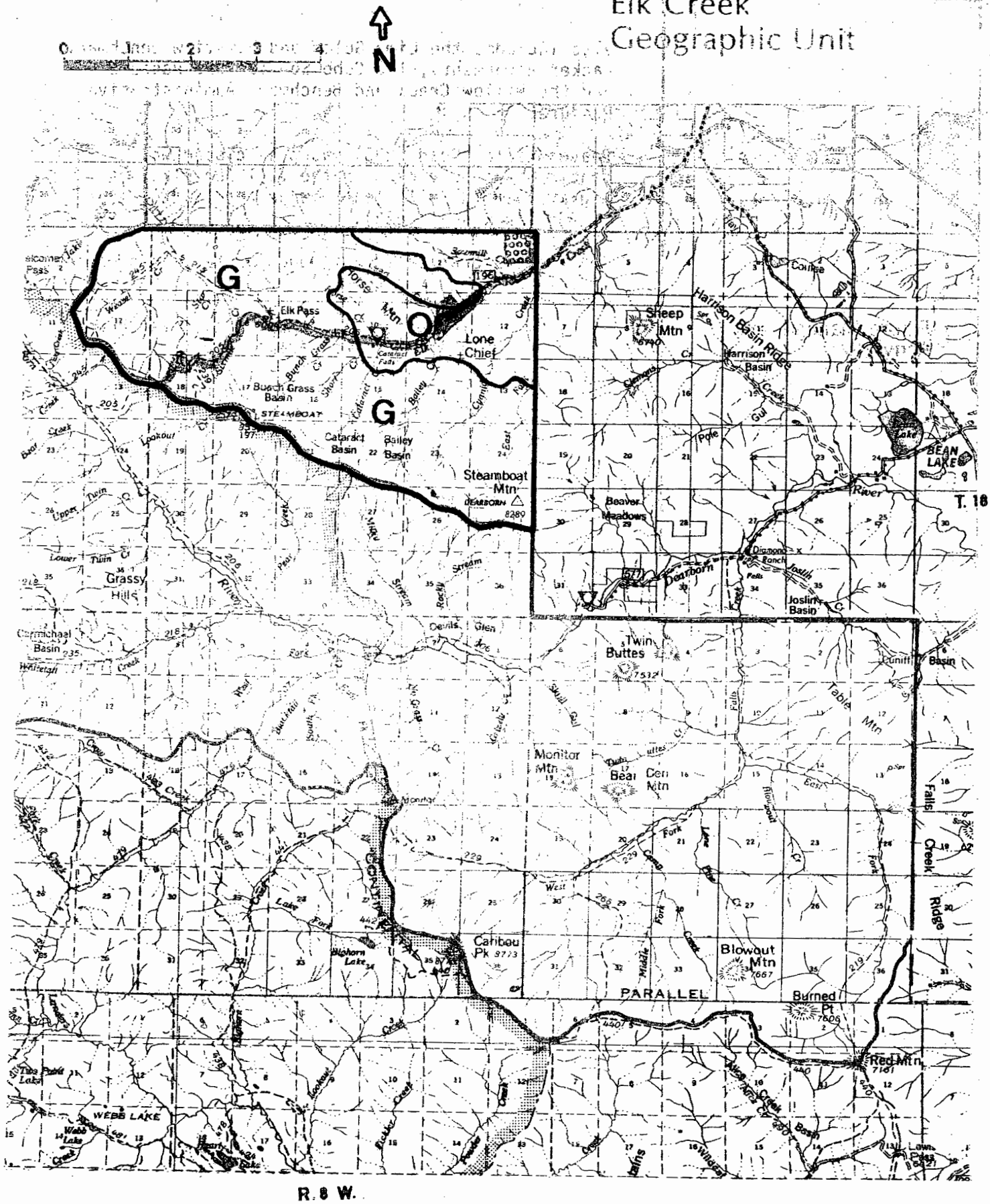
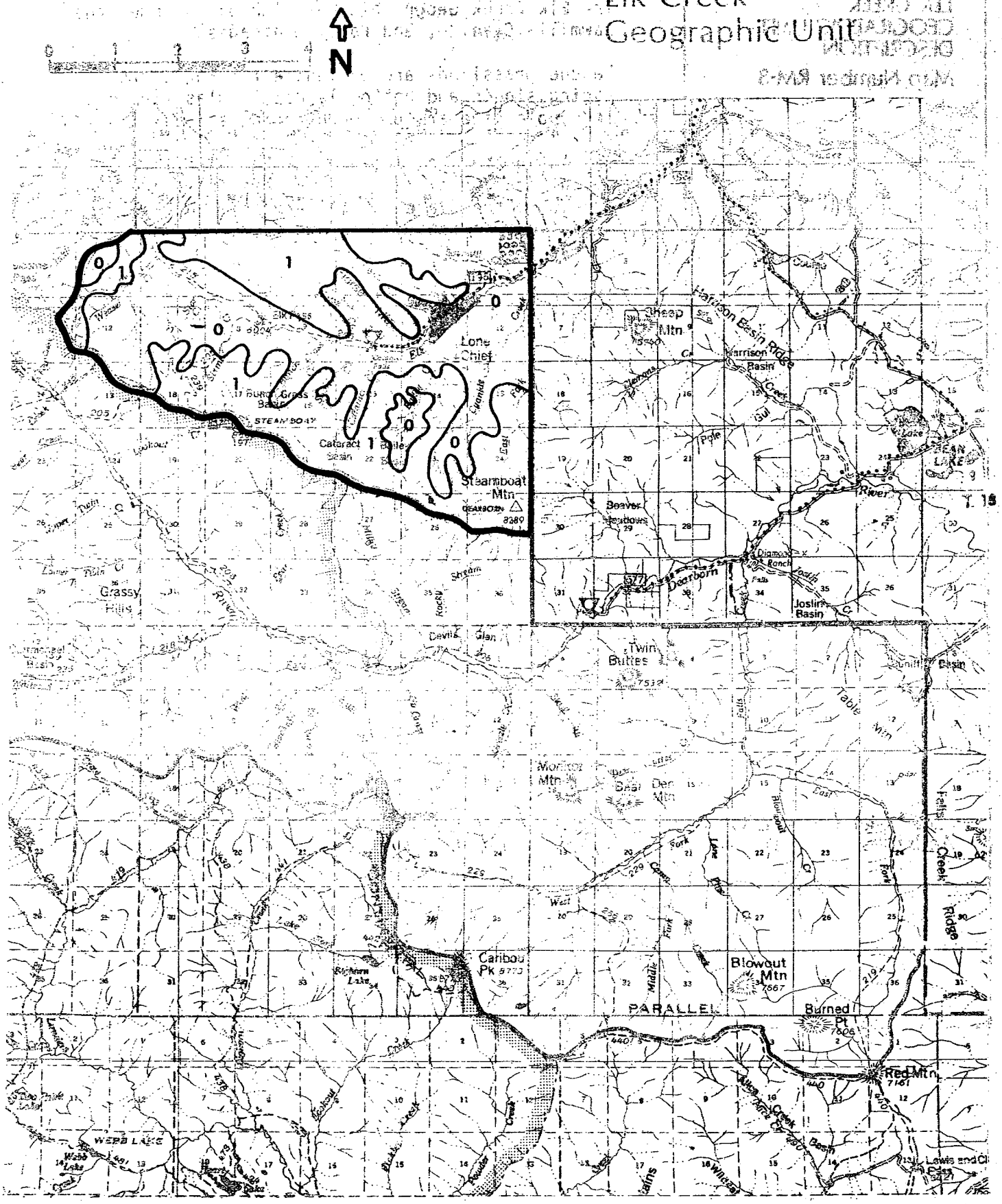
RM-8
Elk Creek
Geographic Unit



RM-8
Elk Creek
Geographic Unit



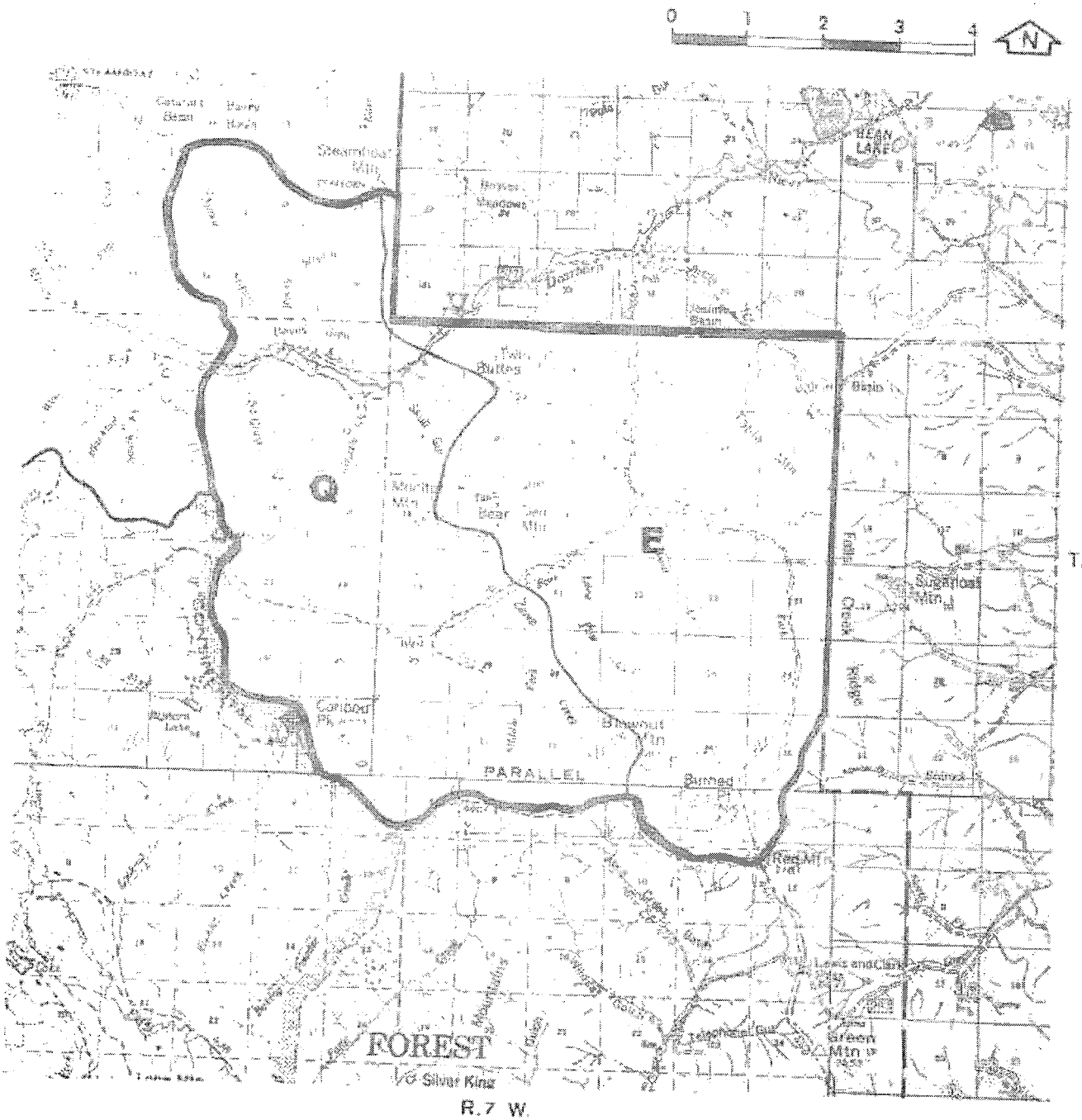
ELK CREEK GEOGRAPHIC UNIT DESCRIPTION Map Number RM-8	The Elk Creek Geographic Unit (RM-8) includes the Sawmill, Cyanide, and Baily drainages. Fescue grasslands are on gentle rolling south-facing slopes and bottom lands; Douglas fir and lodgepole pine are on north-facing slopes. Trails in the area include Elk Pass Trail (205) and Smith Creek Trail (215). Elk Pass Trail provides access to the Scapegoat Wilderness. The Elk Creek administrative site and pasture are part of the unit. The unit provides some winter range for mule deer. Important spring range for grizzly bear is in Elk Creek. Oil and gas potential is high. Occupancy opportunities are limited by slope and timing restrictions, involving big-game migration routes.
Past Management Activities	Timber was harvested in the Cyanide and Elk Creek drainages in the 1920s and 1930s. This unit includes portions of the Smith Creek allotments and all of the Cyanide-Baily, Elk Creek, and Steamboat allotments, and the Elk Creek Administrative Pasture. Some flood rehabilitation work was done after flooding in 1975. In recent years, the only timber harvesting has been small sales of posts, poles, and houselogs. Seismic exploration for oil and gas has taken place in the past and is ongoing. Some sawlogs and houselogs were harvested in Cyanide Creek in the 1920s and 1930s.
Future Management Activities	Parts of the fallowing management areas, as shown on the geographic unit map, are in the unit. Mgmt Area / VQO / Recreation Setting G — Partial Retention — Semi-Primitive O — Modification — Roaded Natural R — Same as adjacent lands — Same as adjacent lands **The lands in this Geographic Unit have been withdrawn from entry under the general mining laws (Amendment 22).**

RM-9
Falls Creek
Geographic Unit

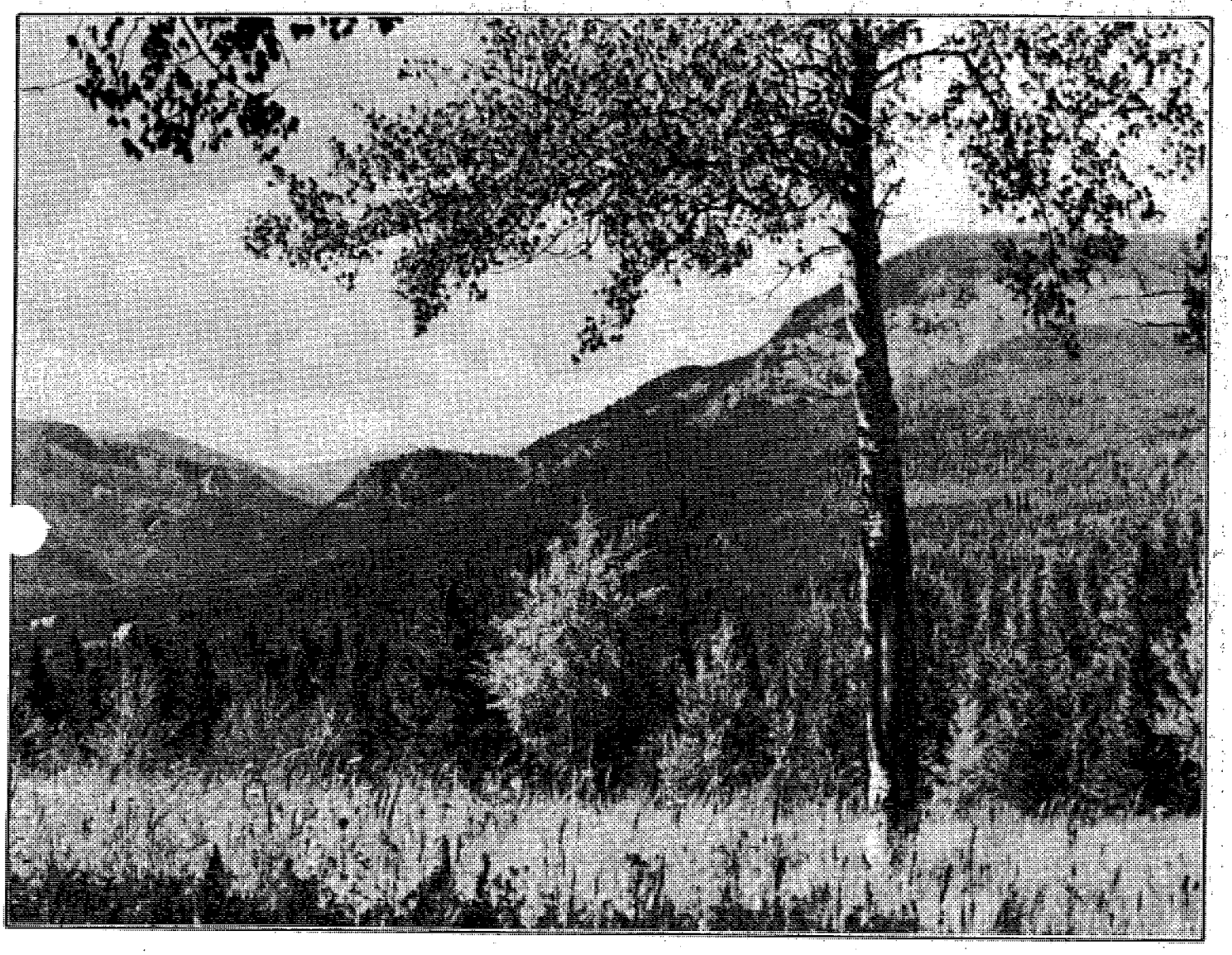
WILD RIVERS

SCENIC RIVERS

RECREATIONAL RIVERS

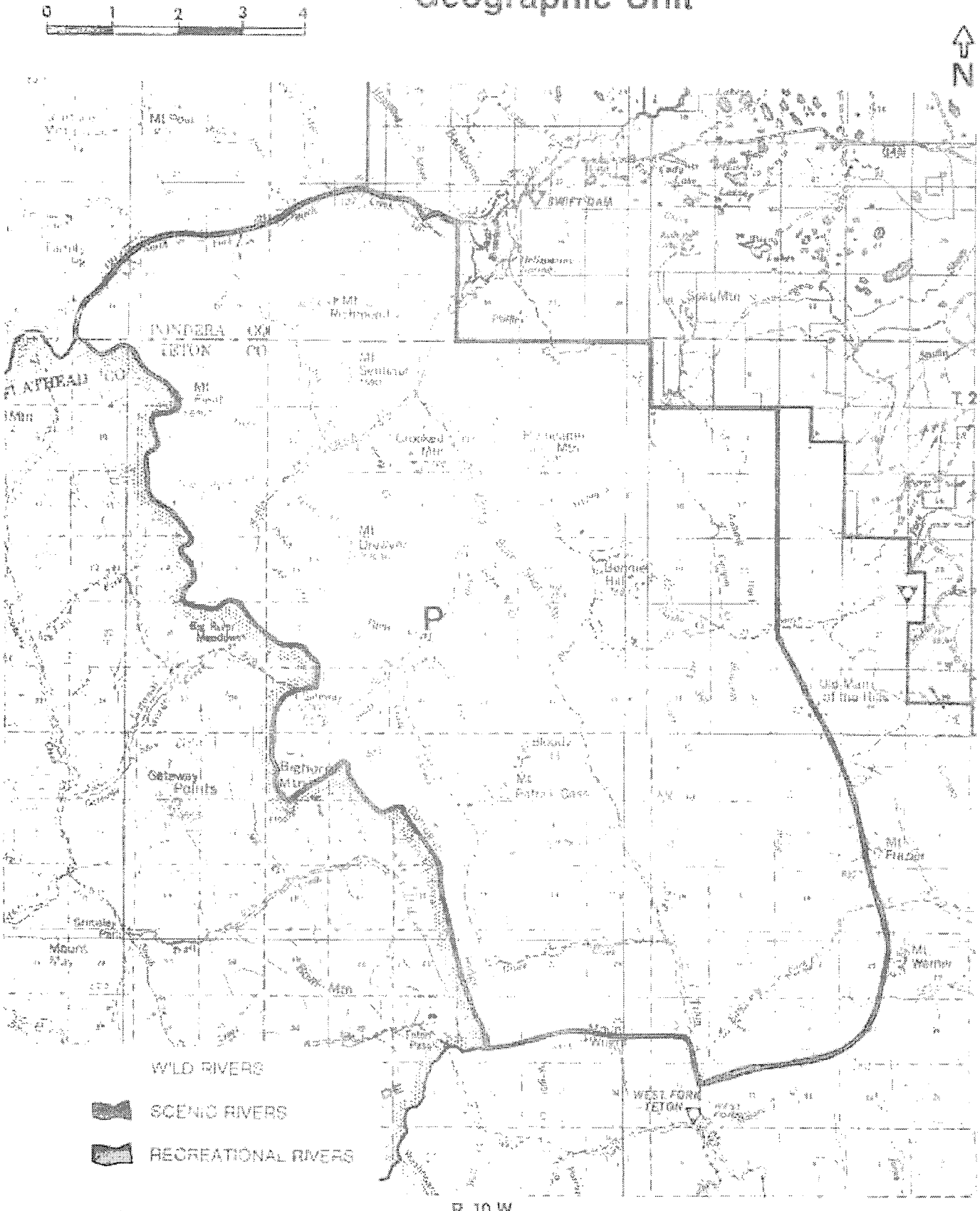


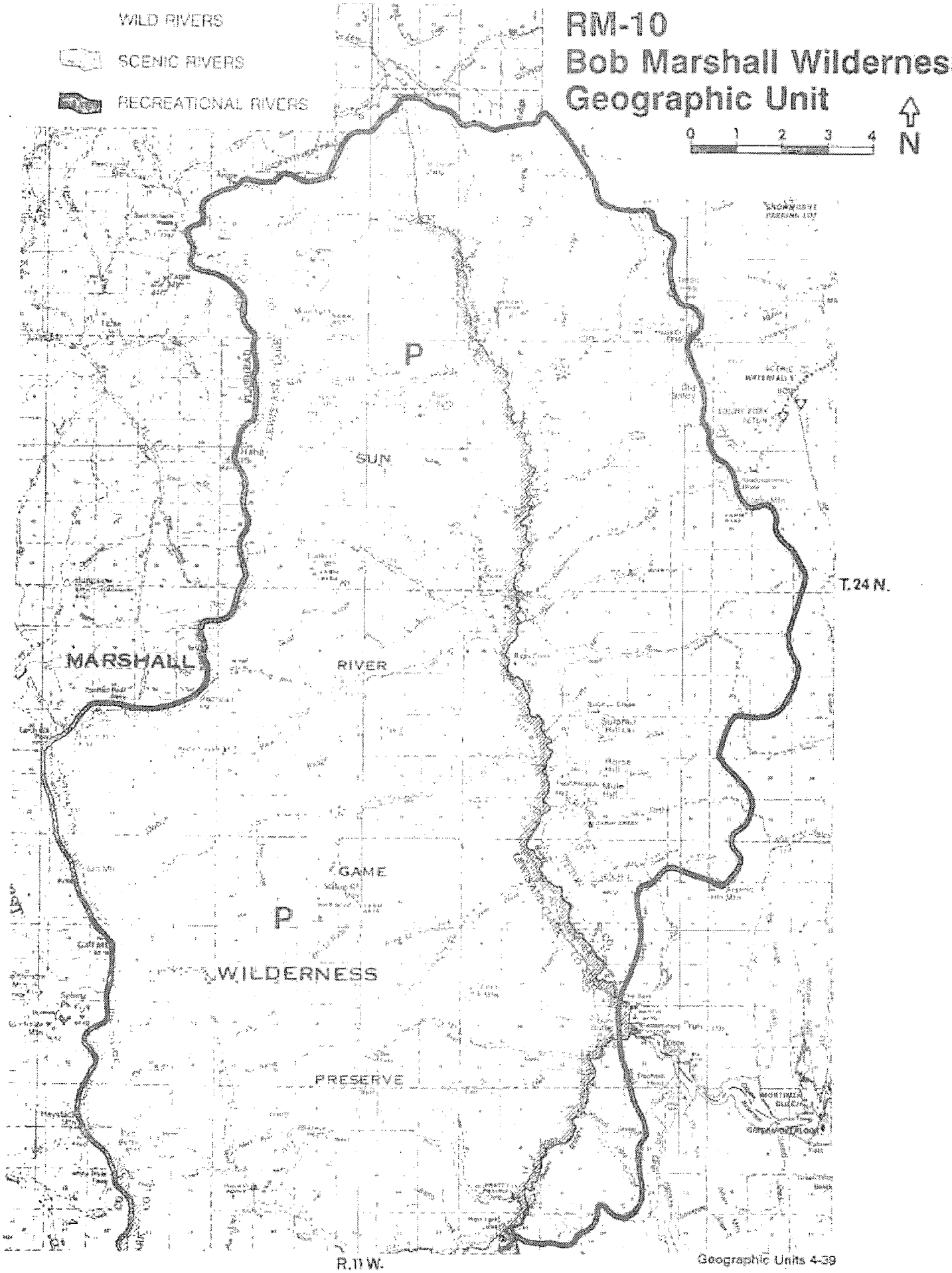
FALLS CREEK GEOGRAPHIC UNIT DESCRIPTION Map Number RM-9	The Falls Creek Geographic Unit (RM-9) lies to the east of the Scapegoat Wilderness and includes the Falls Creek drainage and the Dearborn River drainage lying below the Scapegoat Wilderness, Twin Buttes, Corridor Peak, Burned Point, and Steamboat Mountain all help define the boundaries of the area. Dearborn and Falls Creek are popular for cutthroat trout fishing, hiking, horseback riding, and hunting are popular throughout the unit. Most common game animals are elk and deer. Some grizzly bears are in the area. Oil and gas potential is high. Seismic exploration has taken place in the past. Grazing occurs on the following range allotments: Main Falls Creek and East Fork Falls Creek.
Future Management Activities	The following management area, as shown on the geographic unit map, is in the unit. Mgmt Area — VQO — Recreation Setting E — Retention/Partial Retention — Roaded Natural Q — Preservation — Primitive **The lands in this Geographic Unit have been withdrawn from entry under the general mining laws (Amendment 22).**



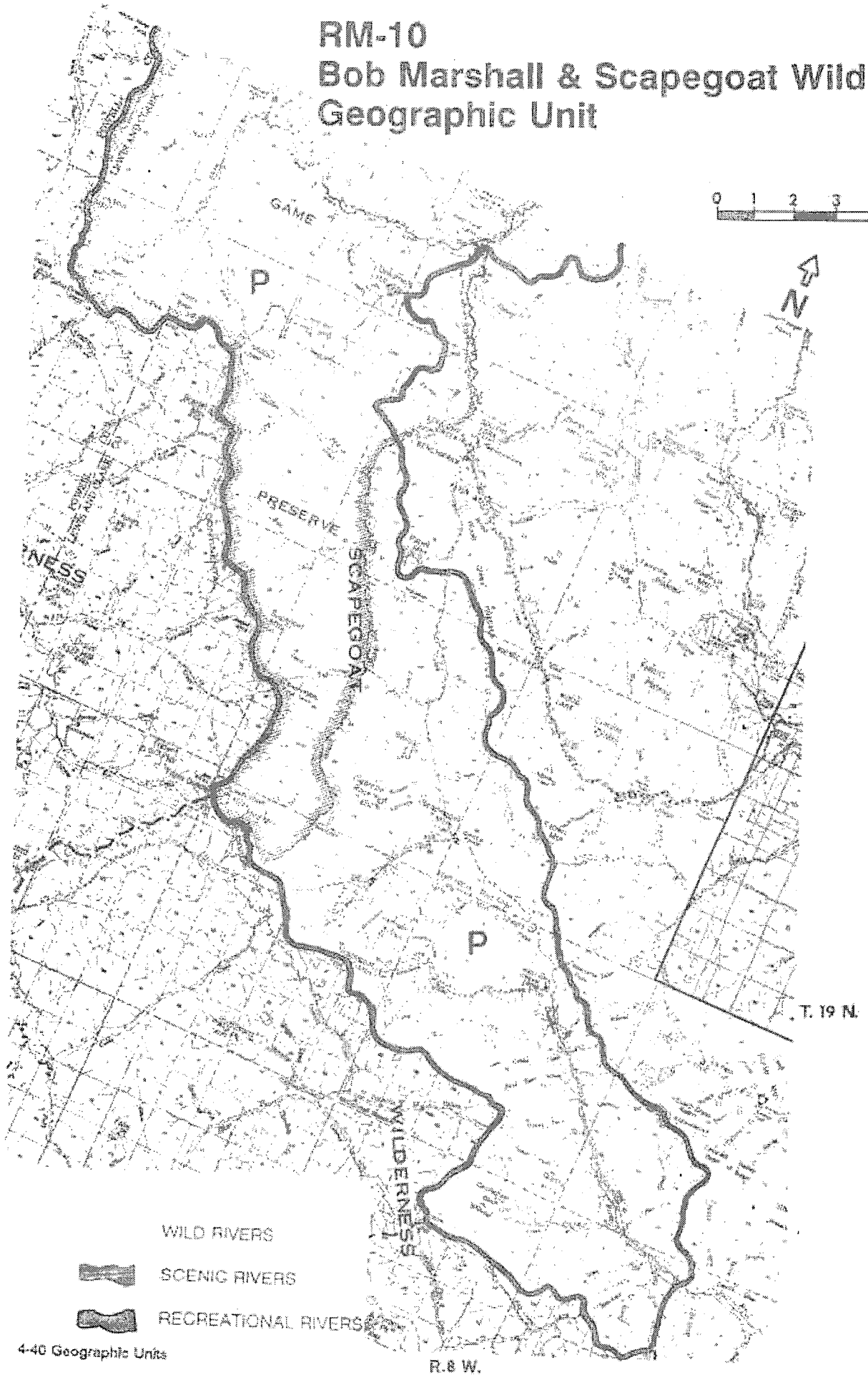
Looking up Furman Creek in the Bob Marshall Wilderness.

RM-10
Bob Marshall Wilderness Additio
Geographic Unit




WILD RIVERS
SCENIC RIVERS
RECREATIONAL RIVERS
RM-10
Bob Marshall Wilderness
Geographic Unit
0 1 2 3 4
N
P
SUN
T. 24 N.
MARSHALL
RIVER
GAME
P
WILDERNESS
PRESERVE
R. 11 W.

RM-10
Bob Marshall & Scapegoat Wildernes
Geographic Unit



WILDERNESS GEOGRAPHIC UNIT DESCRIPTION

Map Number RM-10

The Wilderness Geographic Unit (RM-10) includes the Bob Marshall, Bob Marshall Addition, and Scapegoat Wildernesses.

The unit extends about 60 miles from north to south along the Continental Divide on the Rocky Mountain Division. Elevation varies from 5,000-foot valley floors to more than 9,000 feet along the Continental Divide.

Visitors travel by foot and horseback. Access to the unit is by means of trails originating from Forest roads on the north and east side. Major roads encompassing the unit are U.S. Highway 2 to the north and U.S. Highways 89 and 287 to the east. Topography ranges from rugged, precipitous ridgetops, to gentle sloping alpine meadows, to forested river bottoms. Fossils are in the limestone. Most of the big-game animals of the West live here, including deer, elk, moose, black bear, mountain goat, bighorn sheep, and mountain lion. Fish are plentiful. The wildernesses are noted for excellent hunting, fishing, scenery, and geology.

Grazing takes place on the following allotments: South Fork Birch Creek Packer allotment, portions of the Dupuyer allotment, Blackleaf Administrative Pasture, Wrong Creek Packer allotment, Gates Park Packer allotment, Gates Park Administrative Pasture, Biggs Creek Packer allotment, Cabin Creek Administrative Pasture, Halfmoon Packer allotment, Welcome Creek Administrative Pasture, Whitetail Packer allotment, and Blacktail-Dearborn Packer allotment.

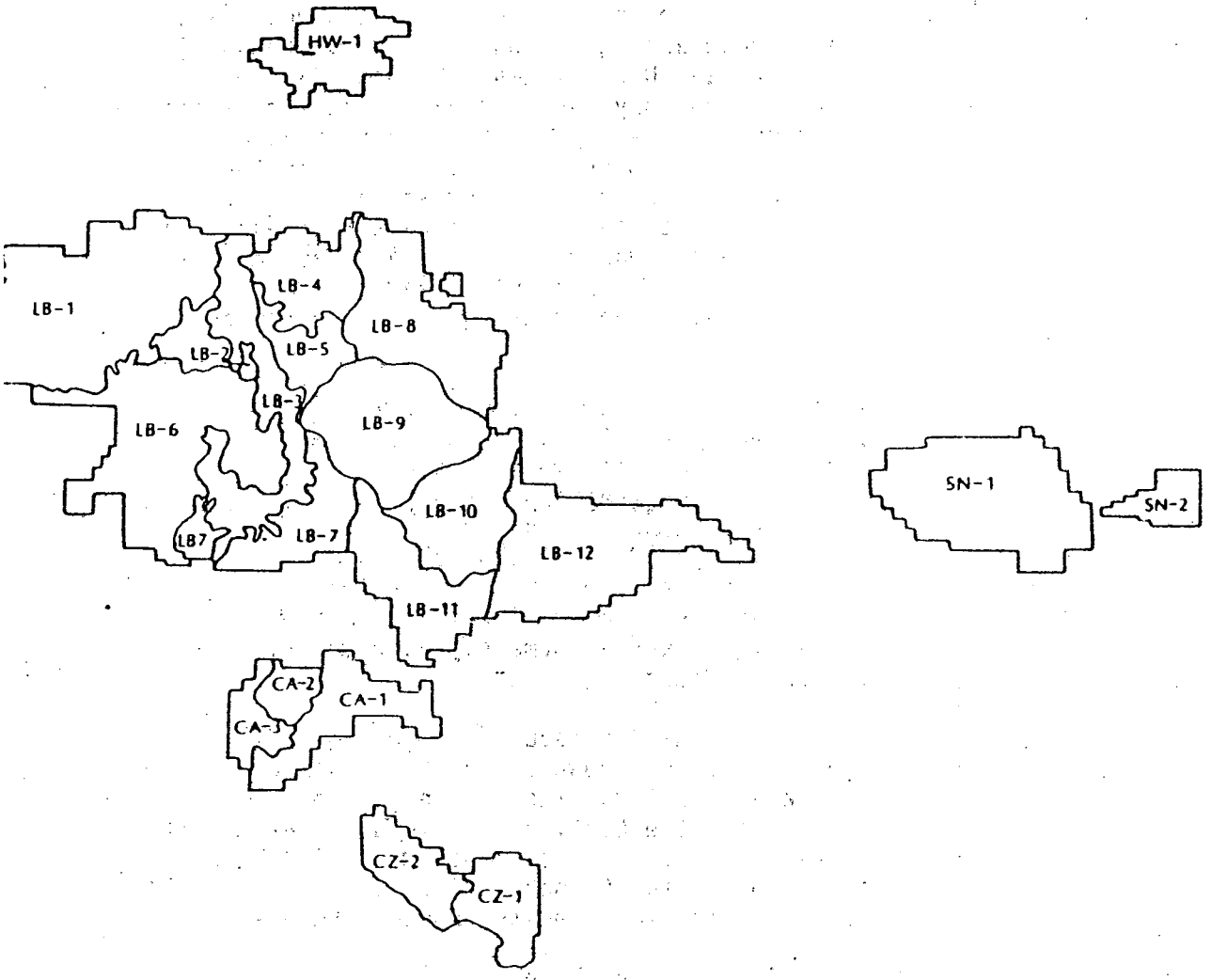
The Bob Marshall's beauty is highlighted by a huge escarpment known as the "Chinese Wall." The wall averages 1,000 feet in height and extends 22 miles along the Continental Divide. The massive limestone cliffs of Scapegoat Mountain are an extension of the Chinese Wall. There is a well developed trail system throughout the area.

Future Management Activities

The following management area, shown on the geographic unit map, is in the unit.

Mgmt Area	VQO	Recreation Setting
P	Preservation	Primitive

Lewis & Clark National Forest Plan Jefferson Division Geographic Units



Legend

- Geographic Unit
- Management Area
- Timber Sale Area
- Campground
- Landownership Adjustment
  - Suitable for Acquisition
  - Suitable for Disposal

Roads

- Managed for Visual Resources
- ..... Existing
- -.-.- Proposed

Cattle grazing on the White Sulphur Springs District

HIGHWOOD GEOGRAPHIC UNIT DESCRIPTION

Map Number HW-1

The Highwood Geographic Unit (HW-1) includes all the National Forest portion of the Highwood Mountains. Major drainages are Highwood, Martin, Shonkin, Cottonwood, Arrow, and Little Belt Creeks. Major mountains are Middle Peak, North Peak, East Peak, Pinewood Peak, Arrow Peak, Lava Peak, Highwood Baldy, Windy, Mount Kennon, and Prospect Peak. The unit is a mosaic of timber (Douglas fir, lodgepole pine, and limber pine), grass (bunchgrasses), and rock. Slopes are moderately steep. Winter and summer range for elk and deer are scattered throughout the unit.

The trails on the north side of the unit receive the most use because of their close proximity to Thain Creek Campground. The major trails are North Fork Trail (423), Briggs Creek Trail, Windy Mountain Trail (454), and Kirby Trail (425). The Highwood Unit contains Thain Creek Campground, three recreation residences, and the Highwood Guard Station. An electronics site on Highwood Baldy has been used by both the public and private sector since 1965.

Public access into the unit is limited to the county road paralleling Highwood Creek and the county road system extending into the headwaters of Arrow Creek. The South Fork Highwood Road (121) splits the mountain range.

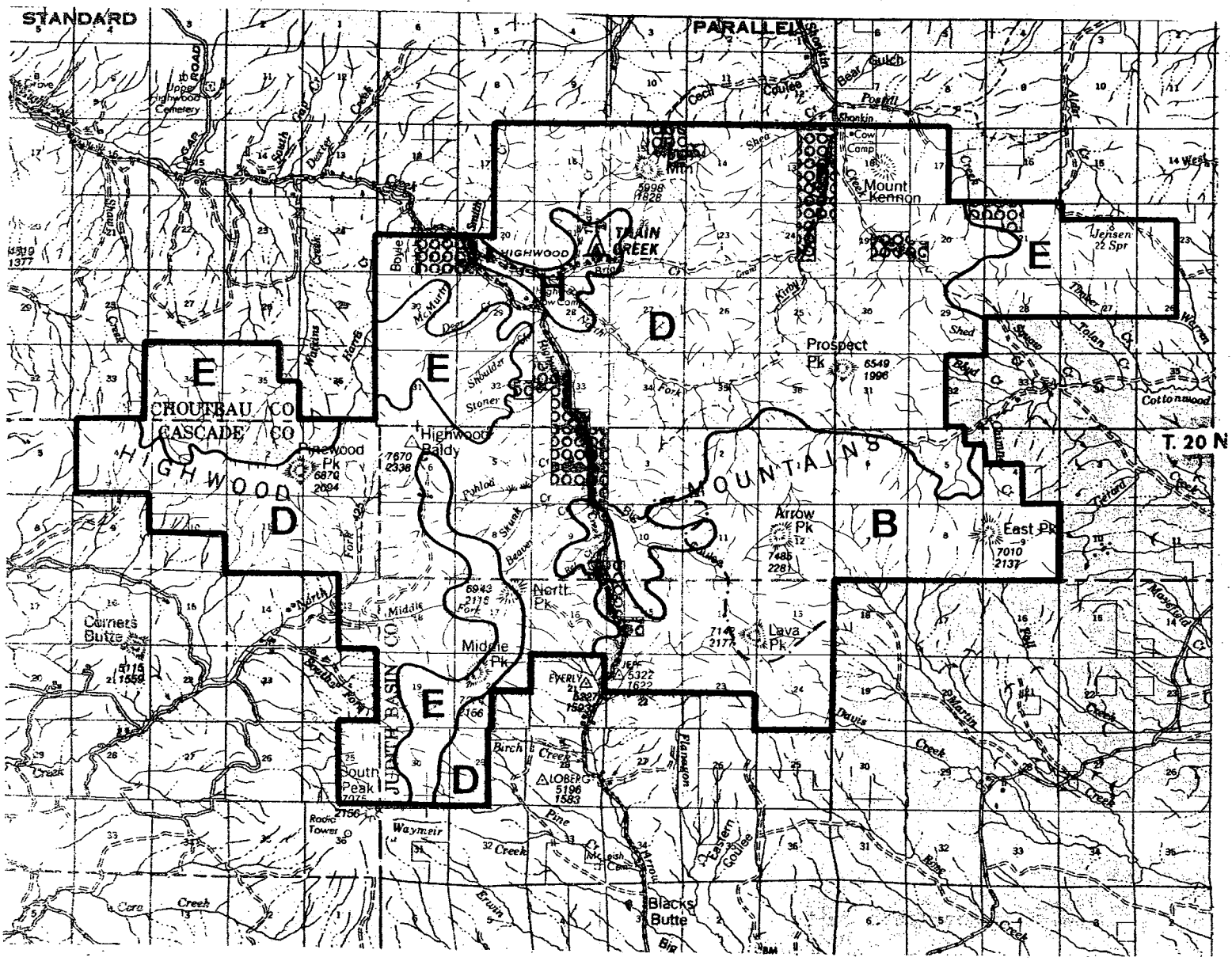
The Highwood Mountains consist of igneous and volcanic rocks which have intruded and covered the sedimentary rocks. The volcanic rocks may hide subsurface geologic structures and traps. On this basis, the oil and gas resource is a potential economic resource, with a low level of geologic assurance. The area is leased for oil and gas, but there has been little activity in the past.

Past Management Activities

A small amount of post and poles have been harvested. The unit provides 8,273 AUMs of livestock grazing annually. Thirty-nine permittees graze 1,619 cattle and 12 horses on the unit. The Little Belt Creek Allotment and Highwood Allotment, which account for 6,497 AUMs on the unit, are primarily managed through grazing associations. The Highwood Mountains support a regionally significant elk herd with important winter ranges both on National Forest and private lands.

Major fires burned most of the unit at the turn of the century.

HW-1
Highwood
Geographic Unit



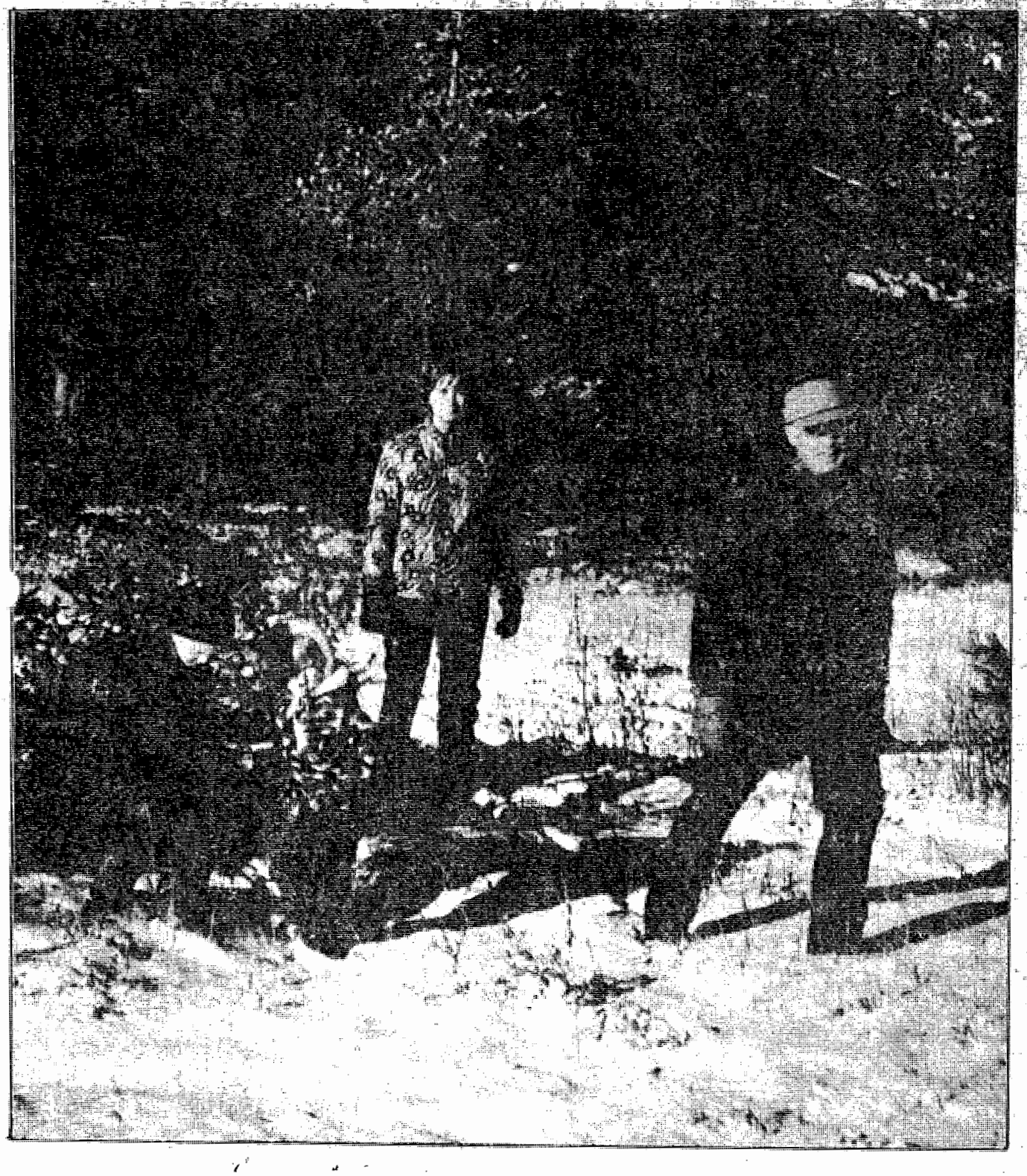
Future Management Activities

Parts of the following management areas, as shown on the geographic unit map, are in the unit.

Mgmt Area	VQO	Recreation Setting
B	Modification	Roaded Natural
D	Partial Retention	Roaded Natural
E	Partial Retention	Roaded Natural
H	Retention/Partial Retention	Roaded Natural & Rural
R	Same as adjacent lands	Same as adjacent lands

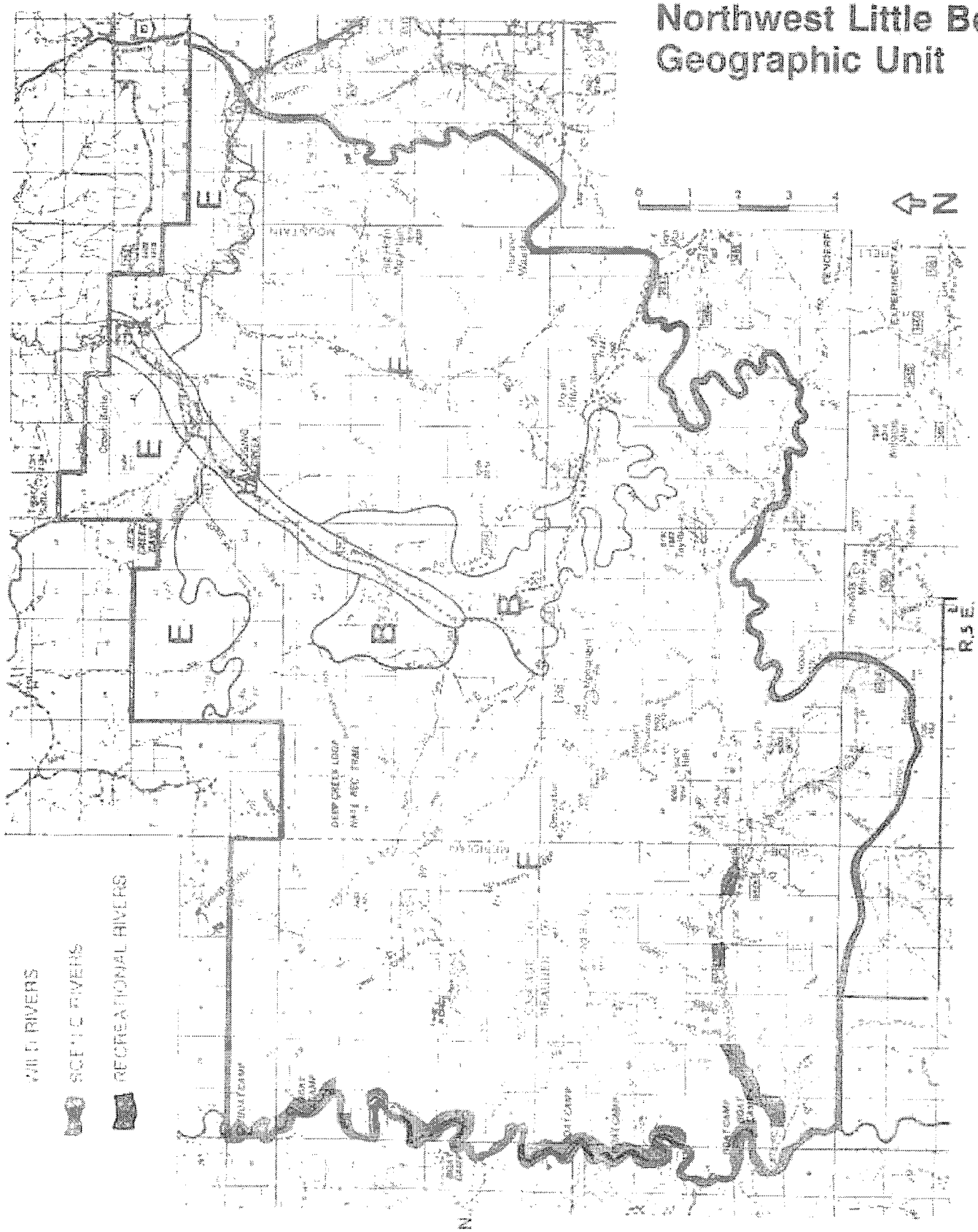
Timber harvest in Management Area is not scheduled until the third decade.

HIGHWOOD MOUNTAINS



Christmas Tree cutting in the Highwood Mountains.

LB-1
Northwest Little Belt
Geographic Unit



NORTHWEST LITTLE BELTS GEOGRAPHIC UNIT DESCRIPTION

Map Number LB-1

The Northwest Little Belts Geographic Unit (LB-1) includes the Tenderfoot, Pilgrim, Logging, and Deep Creek drainages and parts of the Smith River and Belt Creek. It also includes Thunder, Old Baldy, and Desolation Mountains and Monument Peak.

Slopes are moderate to steep with lodgepole pine, Douglas fir, and whitebark pine. Parks intersperse the area, leaving a mosaic of grass and timber. Elevations are from 4,000 feet along the Smith River to over 7,300 feet on Monument Peak.

Lick and Tenderfoot Creeks both have waterfalls, making them notable scenic features. Smith River, Deep Creek, and Belt Creek Canyons are also scenic areas. The Smith River, named after President Jefferson's Secretary of the Navy, provides an excellent float trip through spectacular limestone canyons.

The unit contains major winter ranges for elk and mule deer and important deer and elk summer-fall ranges. Several elk calving areas are also present.

Past Management Activities

The unit has one developed campground, Logging Creek, and several trails including Deep Creek (309), Tenderfoot (342), and Pilgrim (304). The Deep Creek Figure 8 Loop is a National Recreation Trail.

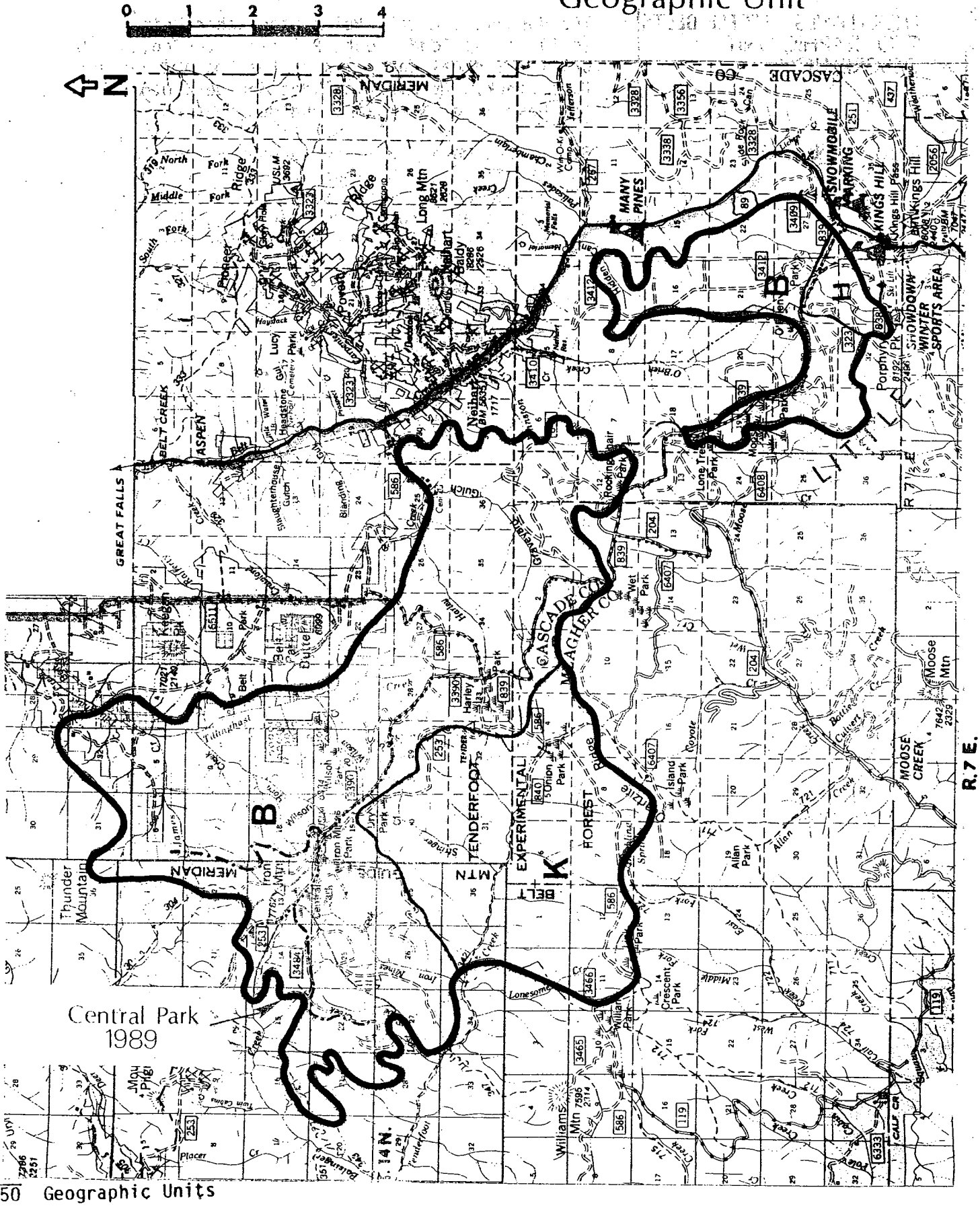
Mining activity has taken place in the past. Oil and gas leases have been issued in the northwest and southwest portions of the unit, however, they have since been relinquished. Several recreational residences are along Logging Creek.

Future Management Activities

Parts of the following management areas, as shown on the geographic unit map, are in the unit.

Mgmt Area	VQO	Recreation Setting
B	Partial Retention	Roaded Natural
E	Partial Retention	Roaded Natural
F	Partial Retention	Semi-Primitive
H	Retention/Partial Retention	Roaded Natural & Rural
R	Same as adjacent lands	Same as adjacent lands

LB-2
Tenderfoot — North Divide Geographic Unit



TENDERFOOT-NORTH DIVIDE GEOGRAPHIC UNIT DESCRIPTION

The Tenderfoot-North Divide Geographic Unit (LB-2) includes Tenderfoot (including the experimental forest), Tillinghast, and Belt Creek drainages. Iron Mountain and Central, Iron Mines, Harley, Onion, and O'Brien Parks are often used for recreation.

Map Number LB-2

Slopes range from gentle to moderate with lodgepole pine, Douglas fir, and spruce in forested areas interspersed with parks and grass stringers along creeks.

The entire unit provides summer-fall range for elk and deer. Numerous trails provide dispersed recreation. There are no developed recreation sites. The unit has a number of archeological sites, including the Neihart/White Sulphur Springs Road.

Past Management Activities

There has been intensive timber management here. Timber in the unit has been heavily harvested and the area is extensively roaded. Numerous sheep and cattle grazing allotments exist. Small fires (less than 100 acres) have burned numerous places in the past.

A number of iron mines and copper prospects are present. Gold placering has taken place as recently as 1982. Recently a 3,000-acre blowdown occurred and red belt killed 20,000 acres.

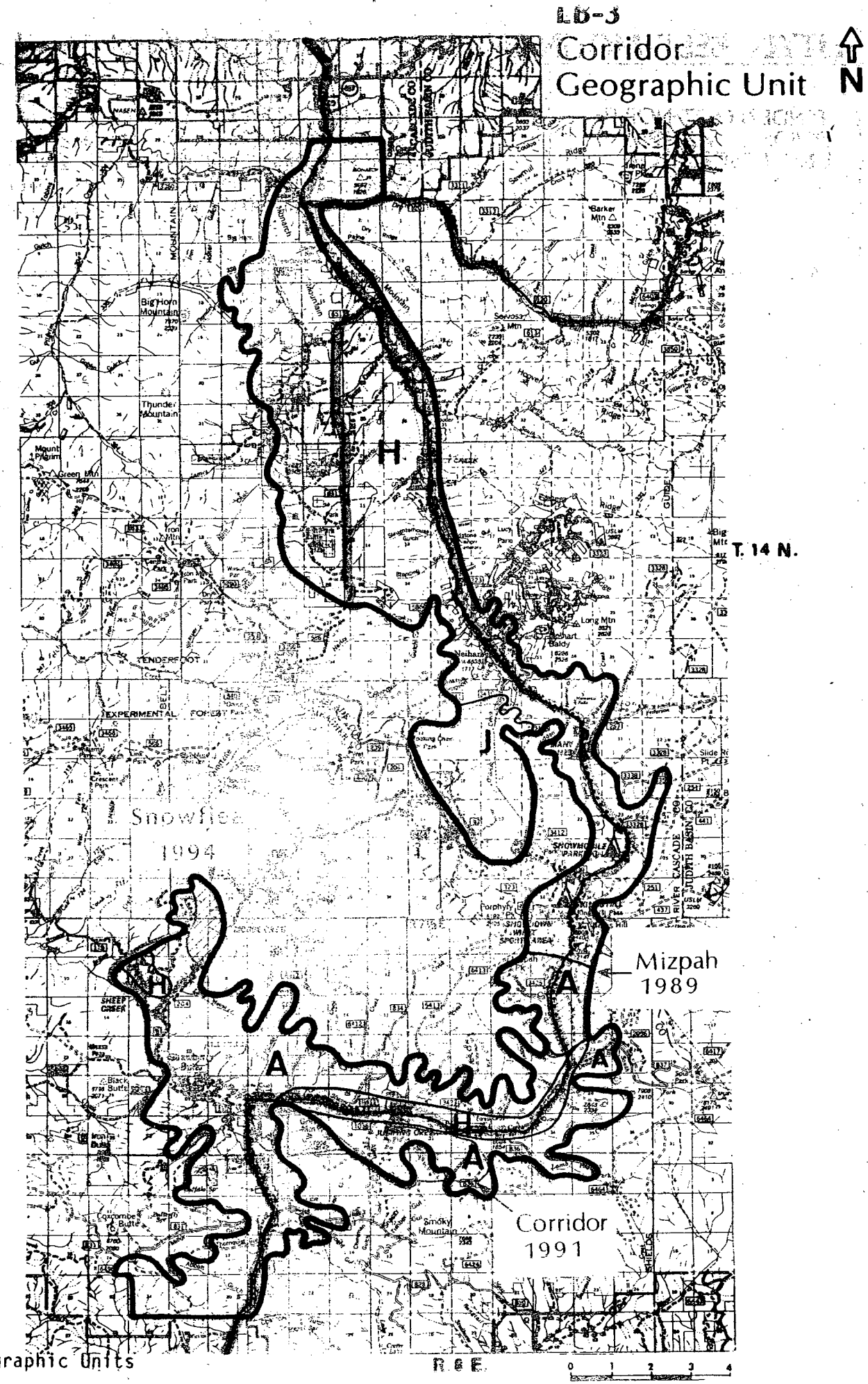
The Tenderfoot Experimental Forest has been an experimental forest since 1961.

Future Management Activities

Parts of the following management areas, as shown on the geographic unit map, are in the unit.

Mgmt Area	VQO	Recreation Setting
B	Modification	Roaded Natural
K	Modification	Roaded Natural
R	Same as adjacent lands	Same as adjacent lands

Timber Sale	Year	Approx. Acres Harvested	Approx. Vol. Million Board Feet
Central Park	1989	225	2.0


LB-3
Corridor
Geographic Unit
N
T. 14 N.
H
J
A
Snowflea
1994
Mizpah
1989
Corridor
1991
R 8 E
0 1 2 3 4

COORIDOR GEOGRAPHIC UNIT DESCRIPTION

Map Number LB-3

The Corridor Geographic Unit (LB-3) is the corridor for U.S. Highway 89. Parts of Belt, Sheep, Newland, and Moose Creek drainages are in the unit.

The unit has steep slopes and rolling mountains, with areas of Douglas fir, lodgepole pine, spruce, aspen, grass, and sagebrush. Minor segments of mule deer winter range are found in the northern end of the unit. Important deer and elk summer-fall ranges are found throughout the unit. A number of trails go from the unit into other areas. The unit contains Sheep Creek fishing access and five campgrounds, Aspen, Kings Hill, Many Pines, Jumping Creek, and Moose Creek. The Showdown Ski Area is at Kings Hill and a snowmobile parking lot is nearby. Several summer homes are in the unit. All major portions of the O'Brien Creek watershed, which is the Neihart municipal water supply, are within this unit. The Belt Creek Information Station is between Neihart and Monarch. The towns of Neihart and Monarch, on private land, are also in the unit as is a large private tract at Belt Park. Mining activity still takes place near these towns.

Past Management Activities

Timber harvesting and livestock grazing have taken place in this unit. Besides the recreation sites, an old railroad grade parallels Belt Creek in the unit. Splash dams are on Sheep Creek and log chutes in Allan Gulch. There has been extensive silver, lead, zinc, and gold mining in the Neihart Mining District. Exploration and production is expected to continue. In the southern part of the unit, two areas are leased for oil and gas exploration, however, they have been relinquished.

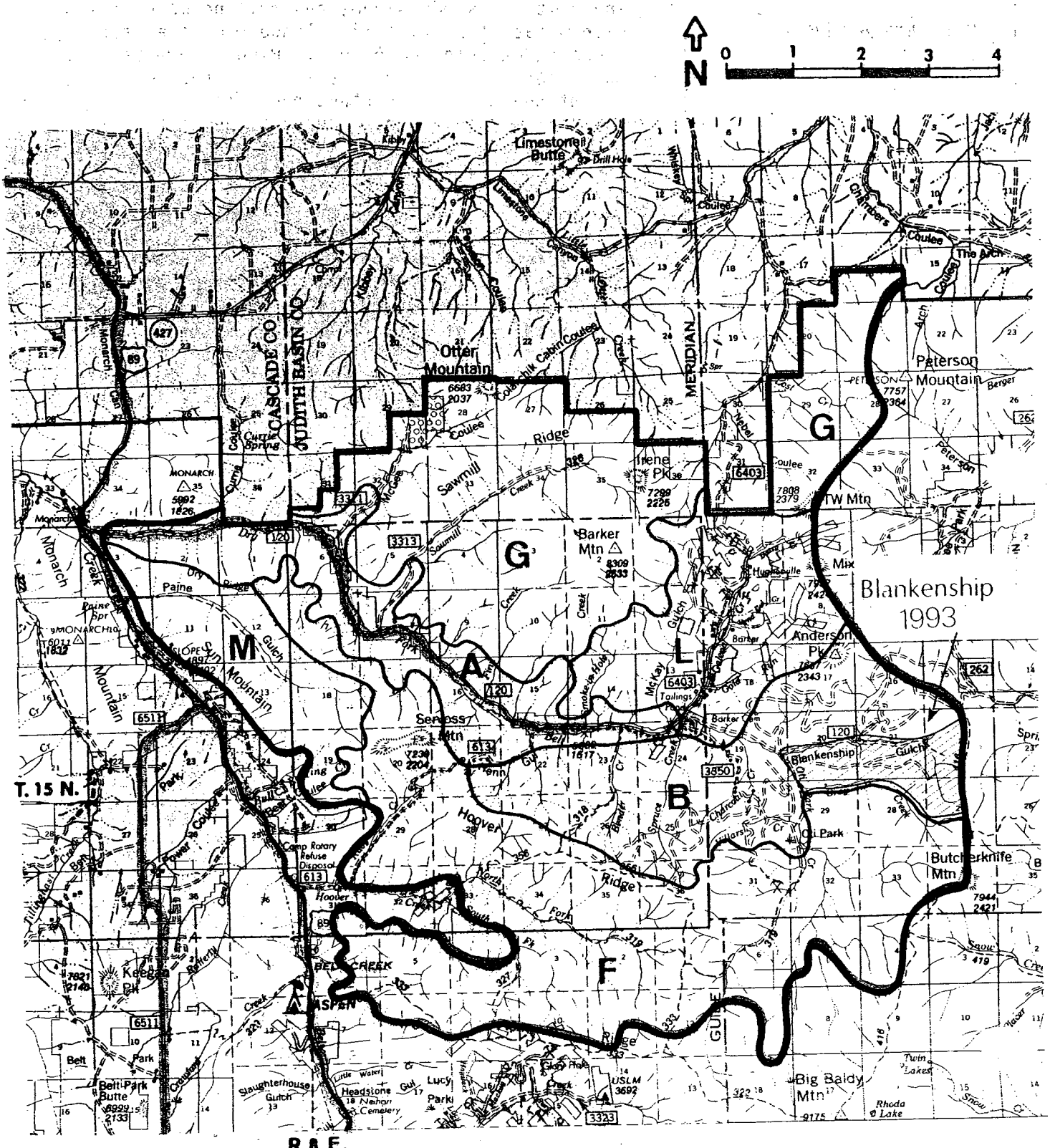
Future Management Activities

Parts of the following management areas, as shown on the geographic unit map, are in the unit.

Mgmt Area	VQO	Recreation Setting
A	Partial Retention	Roaded Natural
H	Retention/Partial Retention	Roaded Natural & Rural
J	Retention	Semi-Primitive
R	Same as adjacent lands	Same as adjacent lands

Timber Sale	Year	Approx. Acres Harvested	Approx. Vol. Million Board Feet
Mizpah	1989	240	2.0
Corridor	1991	460	4.1
Snowflea	1994	450	4.5

LB-4
Hughesville — Oti
Geographic Uni



HUGHSVILLE-OTI GEOGRAPHIC UNIT DESCRIPTION

Map Number LB-4

The Hughesville-Oti Geographic Unit (LB-4) includes all or portions of Paine Gulch, Galena Creek, Sawmill Creek, McGee Coulee, Dry Fork Creek, Oti Creek, Hoover Creek, and Blankenship Gulch drainages. The major mountains are Otter, Barker, Servoss, Butcherknife, Anderson, and Irene Peak.

Slopes in the unit range from gentle to steep, but most are steep. A mosaic of grass and timber is on Hoover Ridge and in Oti Park. Other gentle ridges in the unit are mostly grass, with Douglas fir, lodgepole pine, ponderosa pine, limber pine, and white bark pine on the slopes.

Major trails include Oti Creek Trail (319), Hoover Creek Trail (319), and Pioneer Ridge Trail (333). The unit has no developed recreation sites.

The northern portion of the unit provides winter range for elk and mule deer. Important deer and elk summer-fall ranges are found throughout the unit. Elk calving also occurs in the unit.

Hughesville, an old mining area and a site of present activity, contains many patented mining claims. Mineral exploration increased in the late 1970s and has continued into the early 1980s.

Past Management Activities

The unit has had minor timber harvesting activity, mostly connected with mining activity. Three cattle allotments are also in the unit. An old railroad grade runs from Monarch to Hughesville.

Silver, lead, and zinc have been produced from mines in the Barker-Hughesville and the San Miguel Mining Districts. Production started about 1879 and continued into the 1950s. The mines were closed until the late 1970s, when extensive exploration and development took place. Production was to begin in the early 1980s, however, present market conditions have delayed the project. Exploration is expected in the future, and when market conditions improve there may be production of silver, lead, and zinc.

The Paine Gulch area has been recommended as a research natural area.

Future Management Activities

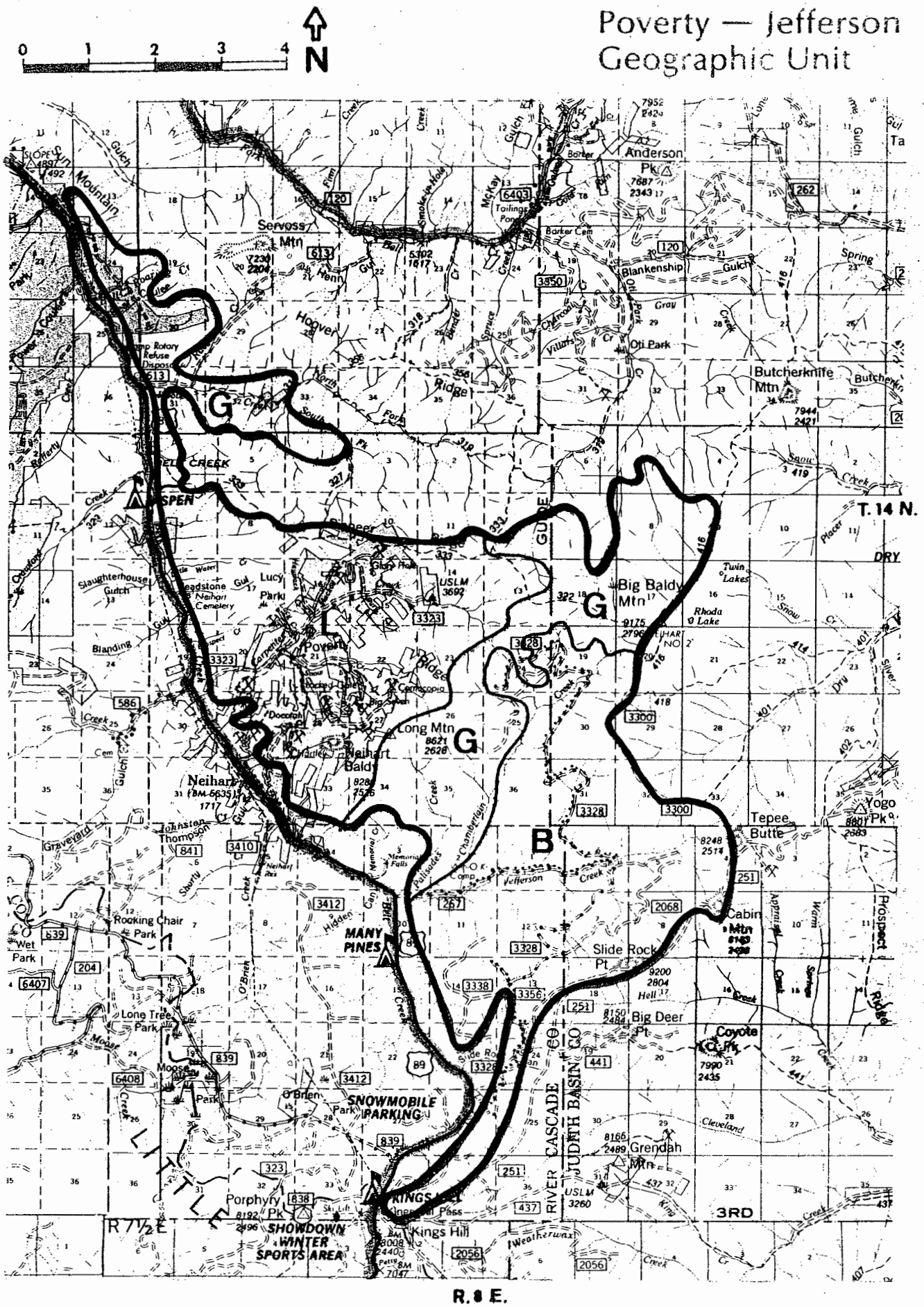
Parts of the following management areas, as shown on the geographic unit map, are in the unit.

Mgmt Area	VQO	Recreation Setting
A	Retention/Partial Retention	Roaded Natural
B	Modification	Roaded Natural
F	Partial Retention	Semi-Primitive
G	Partial Retention	Semi-Primitive
L	Partial Retention/ Modification	Semi-Primitive
M	Preservation	Semi-Primitive
R	Same as adjacent lands	Same as adjacent lands

Timber Sale	Year	Approx. Acres Harvested	Approx. Vol. Million Board Feet
Blankenship	1993	400	3.7

Elk Grazing in the Little Belt Mountains.

LB-5
Poverty — Jefferson Geographic Unit



POVERTY-JEFFERSON GEOGRAPHIC UNIT DESCRIPTION

Map Number LB-5

Past Management Activities

Future Management Activities

The Poverty-Jefferson Geographic Unit (LB-5) includes portions of Hoover, Carpenter, Chamberlain, and Jefferson Creeks, and Poverty Ridge, Neihart Baldy, Long Mountain, and Lucy Park. Important deer and elk summer-fall ranges are found throughout the unit.

Silver, lead, and zinc have been produced from the Neihart Mining District since 1881. Lesser amounts of copper, gold, and molybdenum have also been produced. Active mining is taking place and exploration occurs on a continous basis.

Timber harvest has occurred in the Chamberlain and Jefferson Creeks and throughout the area associated with mining activities.

The unit contains parts of the following management areas, as shown on the geographic unit map:

Mgmt Area	VQO	Recreation Setting
B	Modification	Roaded Natural
G	Partial Retention	Semi-Primitive
L	Partial Retention/ Modification	Roaded Natural
R	Same as adjacent lands	Same as adjacent lands

LB-6
Black Butte Creek Geographic Unit

4-60 Geographic Units

BLACK BUTTE CREEK GEOGRAPHIC UNIT DESCRIPTION

Map Number LB-6

The Black Butte Creek Geographic Unit (LB-6) includes portions of the Black Butte, Whitetail, Moose, Jumping, and Sheep Creek drainages, and Black Butte, Iron Butte, and Williams, Reynolds, and Sheep Mountains. The unit is heavily checkerboarded with private land.

The unit has gentle to moderate slopes of Douglas fir, lodgepole pine, spruce, aspen, mosaics of grass and timber, and large areas of grass.

About half of the southern portion of the unit is winter range for elk. Important deer and elk summer-fall ranges are found throughout the unit. Several elk calving areas are present.

Numerous trails provide dispersed recreation. No developed sites are present.

Past Management Activities

Timber harvest has taken place on the unit with associated roading. Extensive grazing has been done on the unit also.

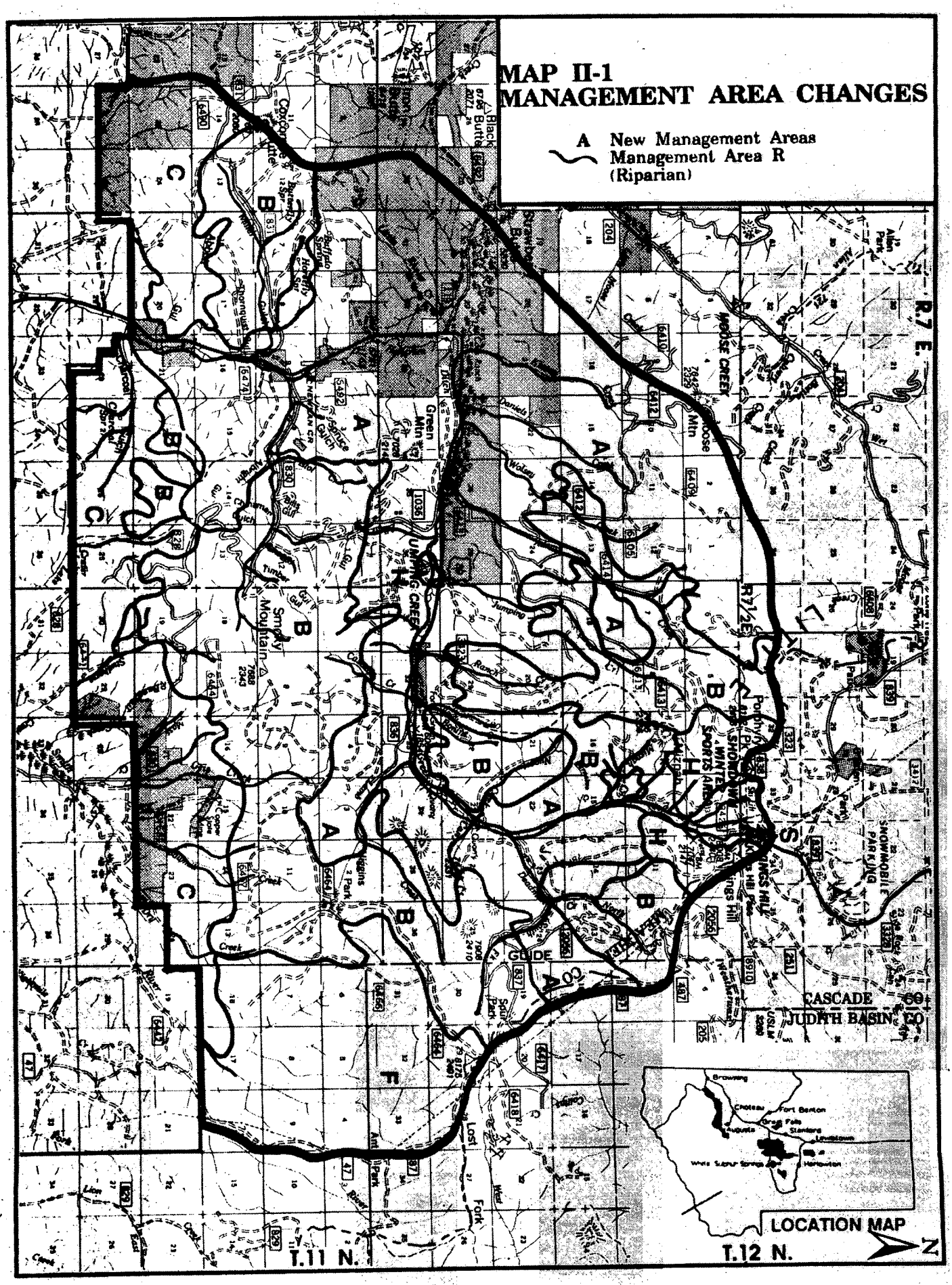
There is a long history of iron production from the unit. Copper is also present. Exploration is ongoing throughout the unit. Four oil and gas leases have been issued, however, they have all been relinquished.

Future Management Activities

The unit contains parts of the following management areas as shown on the geographic unit map with their corresponding management emphasis:

Mgmt Area	VQO	Recreation Setting
B	Modification	Roaded Natural
C	Modification	Roaded Natural
E	Partial Retention	Roaded Natural
F	Partial Retention	Semi-Primitive
H	Retention/Partial Retention	Roaded Natural & Rural
R	Same as adjacent lands	Same as adjacent lands

Timber Sale	Year	Approx. Acres Harvested	Approx. Vol. Million Board Feet
Link Park	1986	250	2.0
Quartzite Moose	1987	500	4.5
Southern Sunrise	1988	460	3.7
Woods Mtn.	1990	460	4.0
Little Moose	1992	450	4.0
Snow Flea	1994	450	4.5
Jack Daniels	1995	500	4.5


MAP II-1
MANAGEMENT AREA CHANGES
A New Management Areas
Management Area R
(Riparian)
R.7 E.
R7½E
T.11 N.
T.12 N.
CASCADE CO.
JUDITH BASIN CO.
LOCATION MAP
Smoky Mountain
Green Mtn
Moose Mtn
Black Butte
Coxcomb Butte
Buffalo Spring
Moose Creek
Jumping Creek
Daniels
Wolsey
Porphyry Peak
Showdown Ski Area
Showdown Winter Sports Area
Kings Hill
Kings Hill Pass
Showmobile Parking
Allen Park
Spruce Gulch
Newman Cr
Higgins Park
Scout Park
Lost Fork
Antelope Park
Deep Creek
Ranch Creek
Hilger
Geyser
Monarch
Stanford
Lewistown
Browning
Choteau
Fort Benton
Great Falls
White Sulphur Springs
Helena

SMOKEY GEOGRAPHIC UNIT DESCRIPTION

Map Number LB-7

The Smokey Geographic Unit (LB-7) includes portions of the Newlan, Lamb, and Jefferson Creeks; Miller Gulch drainage and Smokey Mountain are also in the unit.

Gentle to moderate slopes have lodgepole pine, Douglas fir, and spruce with grassy parks and grass stringers along creeks. Features in the area include the head of the Smith River, Allen Gulch, log chutes, and evidence of early logging activity. The unit contains some mule deer winter range and important elk and deer summer-fall range.

No major trails or campgrounds are in the unit. There is moderate potential for oil and gas.

Past Management Activities

Timber harvesting and livestock grazing occurred in the past.

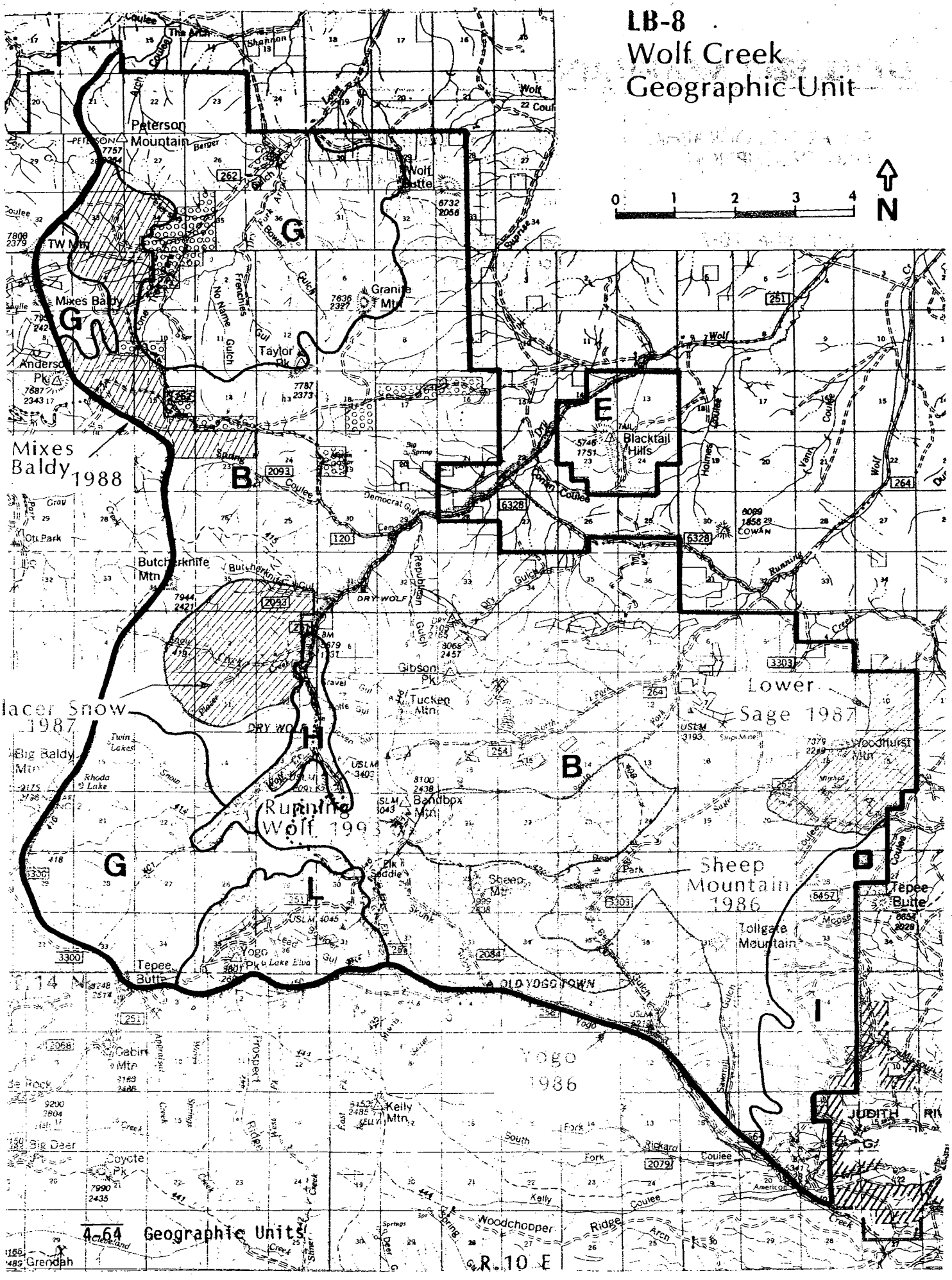
The unit also has a number of summer homes. Mining has taken place in the past. Exploration for copper and other minerals will continue. Oil and gas leases have been issued, however, they have all been relinquished. Some seismic activity took place in the late 1970s and early 1980s.

Future Management Activities

Parts of the following management areas, as shown on the geographic unit map, are in the unit.

Mgmt Area	VQO	Recreation Setting
B	Modification	Roaded Natural
C	Modification	Roaded Natural
E	Partial Retention	Roaded Natural
F	Partial Retention	Semi-Primitive
R	Same as adjacent lands	Same as adjacent lands

Timber Sale	Year	Approx. Acres Harvested	Approx. Vol. Million Board Feet
N.F. Deadman	1986	250	2.0
Southern Sunrise	1988	460	3.7
Corridor	1991	460	4.1


LB-8
Wolf Creek
Geographic Unit
0 1 2 3 4
N
Peterson Mountain
Wolf Butte
TW Mtn
Granite Mtn
Mixes Baldy
Taylor Pk
Blacktail Hills
Mixes Baldy 1988
Butcherknife Mtn
Placer Snow 1987
Lower Sage 1987
Gibson Pk
Tucker Mtn
Big Baldy Mtn
Running Wolf 1993
Bandbox Mtn
Sheep Mountain 1986
Tollgate Mountain
Tepee Butte
Yogo Pk
OLD YOGO TOWN
Yogo 1986
Cabin Mtn
Keily Mtn
Coyote Pk
Big Deer Pk
Grendah
JUDITH
4-64 Geographic Units
R. 10 E

WOLF CREEK GEOGRAPHIC UNIT DESCRIPTION

Map Number LB-8

The Wolf Creek Geographic Unit (LB-8) includes Dry Wolf, Running Wolf, Upper Yogo, and Lone Tree Creek drainages. The major mountain peaks include Big Baldy, Gibson, Woodhurst, Tollgate, Bandbox, Sheep, Granite, and the Blacktail Hills.

Slopes on the northern quarter of the unit are moderately steep, while the remainder are moderate. South-facing slopes are predominately Douglas fir and ponderosa pine, wetter slopes are lodgepole pine and Douglas fir, and drainage bottoms are spruce. Drier non-forested slopes are bunchgrass, while wetter bottoms are timothy-bluegrass. The unit contains important deer and elk summer-fall ranges.

The lower elevations provide winter range for elk and mule deer. Trails in the unit include Dry Wolf Trail (401), Big Baldy Trail (416), and Bear Park Trail (408). Dry Wolf Campground is the only developed recreation site. The unit contains many dispersed campsites, adjacent to roads. The public uses the entire area; however, concentrated use occurs along Yogo Creek and Dry Wolf Creek.

Past Management Activities

Mining of iron, gold, silver, lead, zinc, and sapphires has taken place in the unit and continues at present. Yogo Creek has a history of placer operations. Continued exploration and production can be expected in the future, particularly for sapphires.

Scattered selective timber harvesting has taken place since the early 1900's. Post and pole cutting has also been widespread.

Since the 1960s there has been intensive timber management near Anderson Peak, Dry Wolf, and Skunk Gulch. Timber sales are planned for Bear Park, Lower Sage, Yogo, Placer-Snow, Running Wolf, and Dry Gulch within the next ten years.

Vast areas were burned in the early 1900s. Fires burned on Green Mountain in the 1940s and Anderson Peak in the early 1970s.

Thirteen cattle and horse allotments and a portion of Little Belt Divide sheep and goat allotment lie within the unit. Fifteen permittees graze 3,567 AUMs annually. Management on these allotments varies from season-long systems to extensive rest rotation systems.

Future Management Activities

Some big-game habitat improvement has been done, as well as cooperative habitat improvement work on the Judith Wildlife Management Area, which is owned by the State of Montana.

Major roads include Dry Wolf (251), Dry Fork Belt Creek (120), Lone Tree (262), Yogo Creek (266), and Wolf Divide (264).

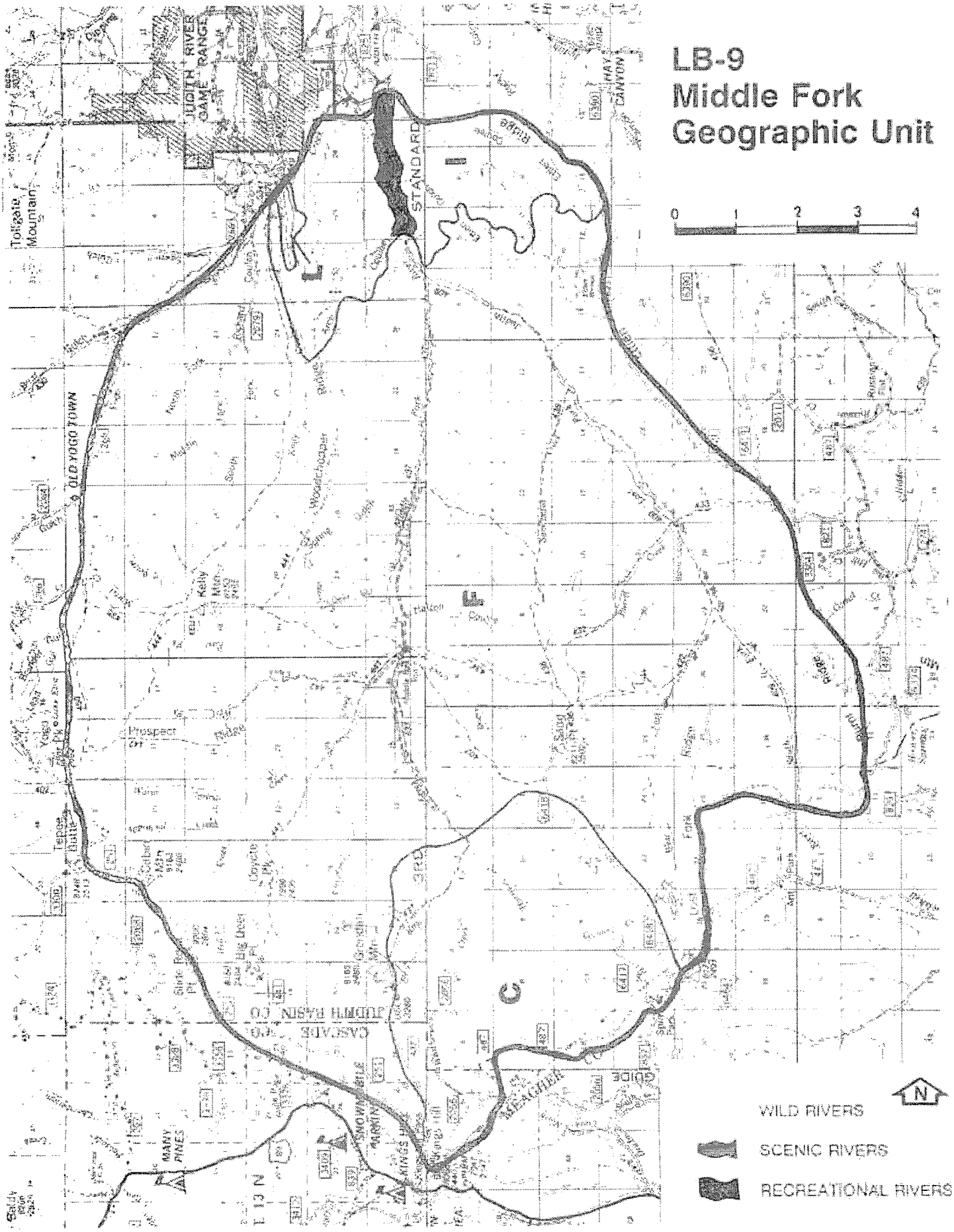
Parts of the following management areas, as shown on the geographic unit map, are in this unit.

Mgmt Area	VQO	Recreation Setting
B	Modification	Roaded Natural
E	Partial Retention	Roaded Natural
G	Partial Retention	Semi-Primitive
H	Retention/Partial Retention	Roaded Natural & Rural
L	Partial Retention/ Modification	Roaded Natural
R	Same as adjacent lands	Same as adjacent lands

Timber Sale	Year	Approx. Acres Harvested	Approx. Vol. Million Board Feet
Yogo	1986	200	1.6
Sheep Mtn	1986	200	1.7
Placer-Snow	1987	310	2.1
Lower Sage	1987	110	0.9
Mixes Baldy	1988	250	1.7
Running Wolf	1993	400	3.3

LITTLE BELT MOUNTAINS

Sheep grazing in the Little Belt Mountains.


LB-9
Middle Fork
Geographic Unit
0 1 2 3 4
JUDITH RIVER GAME RANGE
Tollgate Mountain
STANDARD
MAY CANYON
OLD YOGO TOWN
Kelly Mtn
Prospect
Teepee Butte
Sentinel Mtn
Big Baldy
JUDITH BASIN CO
CASCADE CO
MEAGHER
GUIDE
MANY PINES
KINGS HILL
Sandy
T 13 N
WILD RIVERS
SCENIC RIVERS
RECREATIONAL RIVERS
N

MIDDLE FORK
GEOGRAPHIC UNIT
DESCRIPTION

Map Number LB-9

The Middle Fork Geographic Unit (LB-9) was studied for wilderness classification under the Montana Wilderness Study Act of 1977 (Public Law 95-150). This unit includes the lower Lost Fork and the Middle Fork of the Judith River, Weatherwax Creek, Harrison Creek, Yogo Creek, and Cleveland Creek drainages. The major high points are Woodchopper Ridge, Lost Fork Ridge, High Kings Hill, Yogo Peak, Cabin Mountain, Grendah Mountain, and Sandpoint Mountain.

The Middle Fork Ranch on the Middle Fork of the Judith (1,154 acres of private land) and scattered patented mining claims make up the private land in the unit.

The unit consists of moderate to steep slopes and gentle drainage bottoms with Douglas fir and ponderosa pine on southern slopes, lodgepole pine on protected slopes, and white bark pine at higher elevations. Bunchgrass predominates on open slopes and dry parks; timothy and bluegrass grow in moist bottom areas, with subalpine fir in forested bottoms.

Three range allotments provide 973 AUMs of livestock grazing for five permittees, annually. Cattle graze along the Middle Fork and Lost Fork, while sheep use the high elevation, open ridges along the northwest edge of the unit.

A number of trails are in the unit including Lost Fork Trail (409), Burris Trail (433), Woodchopper Ridge Trail (444), Doerr Creek (407), Cleveland Ridge Trail (441), and King Creek Trail (437).

The unit contains elk winter range at the lower elevations adjacent to the Judith River Game Range and along the south facing slopes in the Harrison and Cleveland Creek drainages. Major elk calving areas and much of the summer-fall habitat for the Judith River elk herd are also in the unit.

The lower two miles of the Middle Fork Judith River are a narrow scenic limestone canyon. There are no developed campgrounds in the unit.

Oil and gas potential is low. Some placer mining takes place near Yogo Creek.

Past Management Activities

Scattered, selective timber has been harvested on private lands and patented mining claims since the early 1900s. Timber was harvested in the 1960s and 1970s in the head of the Harrison and

Weatherwax Creek drainages. A significant amount of firewood is cut each year near the Little Belt Divide.

Gold, silver, lead, and sapphires have been mined in the past. Continued exploration and sapphire production will occur in the future.

A fire at the head of Weatherwax Creek burned about 100 acres in 1970. The Sand Point fire burned over 11,000 acres in 1985. Several large fires also burned the area in the early 1900s.

Four grazing allotments, Middle Fork, Lost Fork, Yogo Creek, and Judith, are still active under deferred and rest rotation systems.

A low standard travelway with 21 fords runs up the Middle Fork. Three other roads, Yogo Creek Road (266), Dry Wolf Road (251), and Memorial Way Road (487), also provide access in the unit.

The management area is part of the Middle Fork Judith Montana Wilderness Study Act area. It will be managed to protect its wilderness characteristics until Congress acts on the Forest Service's recommendation.

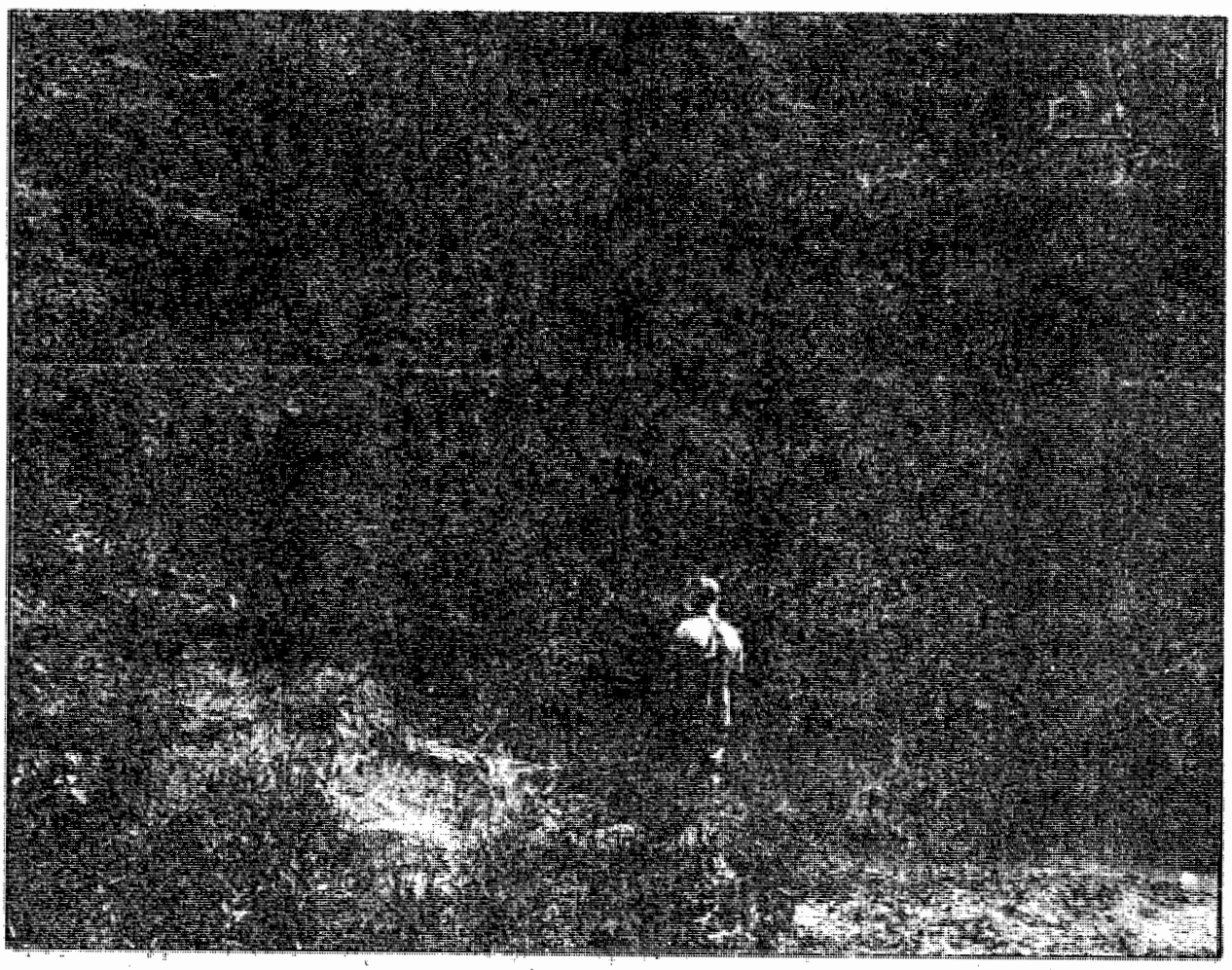
Future Management Activities

Parts of the following management areas, as shown on the geographic unit map, are in the unit.

Mgmt Area	VQO	Recreation Setting
C	Modification	Roaded Natural
F	Partial Retention	Semi-Primitive
I	Partial Retention	Semi-Primitive
L	Partial Retention/ Modification	Roaded Natural
R	Same as adjacent lands	Same as adjacent lands

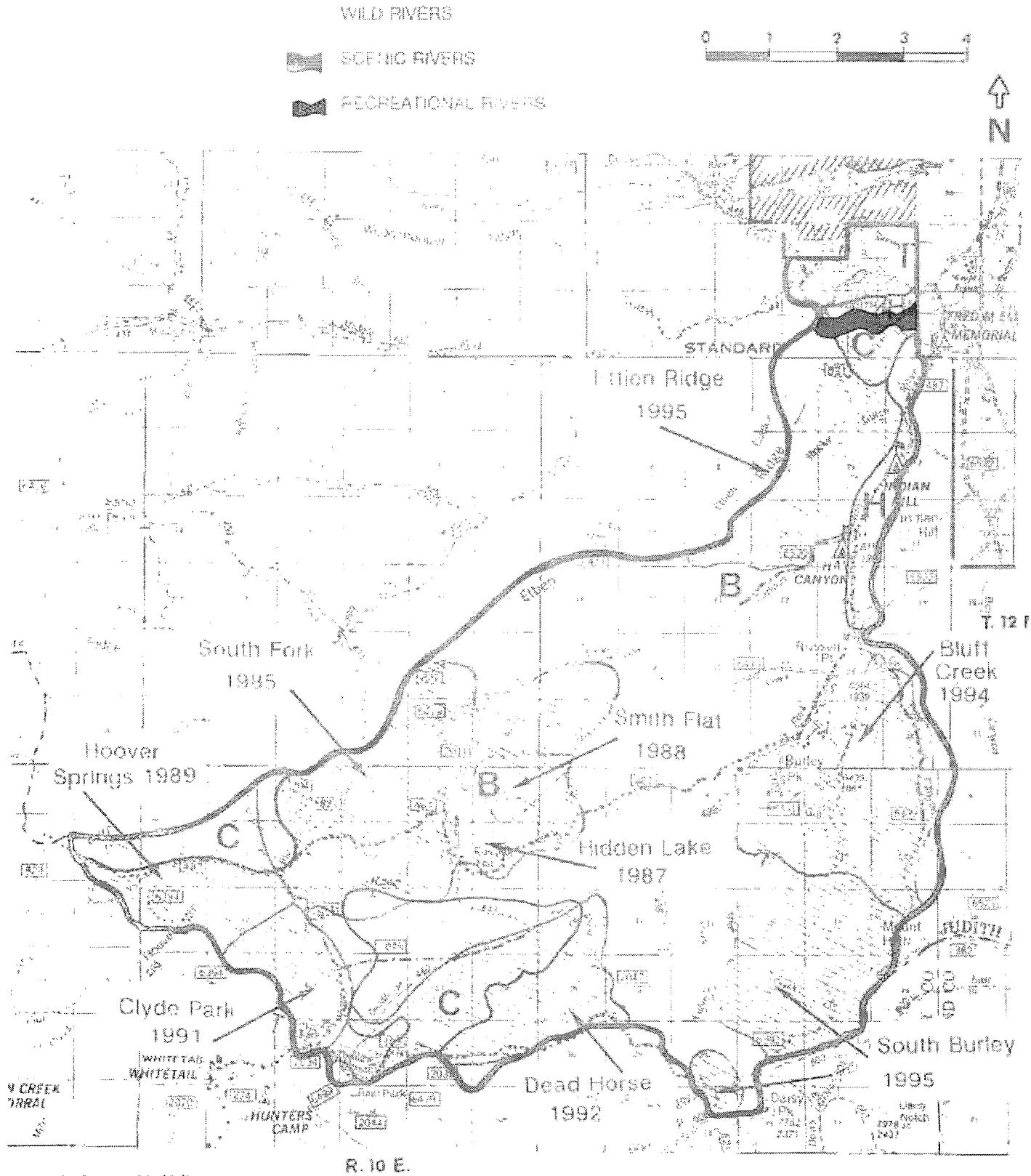
Timber is not scheduled for harvest in Management Area B until the second decade.

LITTLE BELT MOUNTAINS



A perfect Day for Fishing in the Little Belt Mountains.

LB-10
South Fork Judith
Geographic Unit



SOUTH FORK JUDITH GEOGRAPHIC UNIT DESCRIPTION

Map Number LB-10

The South Fork Judith Geographic Unit (LB-10) includes the South Fork of the Judith River drainage, which includes Hay Canyon, High Spring, Russian Creek, Deadhorse Creek, Cabin Creek, Dry Pole Canyon Creek, Trask Gulch, Hoover Spring, Clyde Park, and Willow Park.

The South Fork of the Judith River is a popular summer-fall recreation area. Two campgrounds in the unit, Indian Hill and Hay Canyon, provide developed recreation opportunities. An administrative site, the Judith Guard Station, is within the unit.

Elk and mule deer winter range is at the lower elevations. Important deer and elk summer-fall ranges are found throughout the unit. Some elk calving areas are within the unit.

Trails within the unit include South Fork Judith (439) and Deadhorse (440).

Past Management Activities

Timber has been harvested and intensively managed since the early 1950s. Five allotments provide 2,540 AUMs of livestock grazing for seven permittees annually. Large natural openings and forage, due to timber harvest, provide additional grazing. Mineral exploration has taken place in the past. Oil and gas leases have been issued in the southern part of the unit, however, they have all been relinquished. The unit is a popular place to hunt, especially for big-game.

Future Management Activities

Parts of the following management areas, as shown on the geographic unit map, are in the unit.

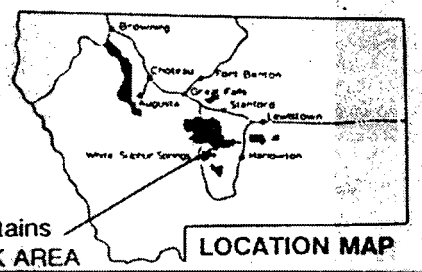
Mgmt Area	VQO	Recreation Setting
B	Modification	Roaded Natural
C	Modification	Roaded Natural
H	Retention/Partial Retention	Roaded Natural & Rural
I	Partial Retention	Semi-Primitive
R	Same as adjacent lands	Same as adjacent lands

Timber Sale	Year	Approx. Acres Harvested	Approx. Vol. Million Board Feet
Hidden Lake	1987	125	1.0
Smith Flat	1988	180	1.2
Hoover Springs	1989	400	3.2
South Burley	1990	450	3.7
Clyde Park	1991	400	3.4
Deadhorse	1992	435	3.6
Bluff Creek	1994	435	3.5
Ettien Ridge	1995	500	3.6

MAP III

NEW MANAGEMENT AREA — SPRING CREEK

G New Management Area Boundary



SPRING CREEK GEOGRAPHIC UNIT DESCRIPTION

Map Number LB-11

The Spring Creek Geographic Unit (LB-11) includes portions of the Spring Creek, Daisy Dean, Whitetail, Mill, and Lion Creek drainages and Hoover Mountain and Daisy Peak.

Slopes in the unit are gentle to moderate with extensive subalpine fir and lodgepole pine east of Whitetail drainage, and Douglas fir with inclusions of subalpine fir and lodgepole pine west of the drainage. Foothills are grass interspersed with patches of Douglas fir and ponderosa pine.

The majority of the unit is important big-game summer range, with winter range for elk and mule deer along the southern edge. Elk calving areas are also present.

The unit has numerous trails, including Whitetail Trail (613), Basin Creek Trail (625), Fawn Creek Trail (609), and East Fork Spring Creek Trail (608) Lower Spring Creek Cliffs are a scenic attraction.

Past Management Activities

The unit has had extensive clearcut harvest in lodgepole pine and some Douglas fir stands. Lodgepole pine harvest began in the mid-1950s for pulpwood export to the Midwest. The Cross Creek fire burned about 600 acres of the unit in 1970.

Roading is extensive in the harvested areas. Sheep have been grazed at higher elevations, with cattle grazing in the foothills and on transitory range created by timber harvest.

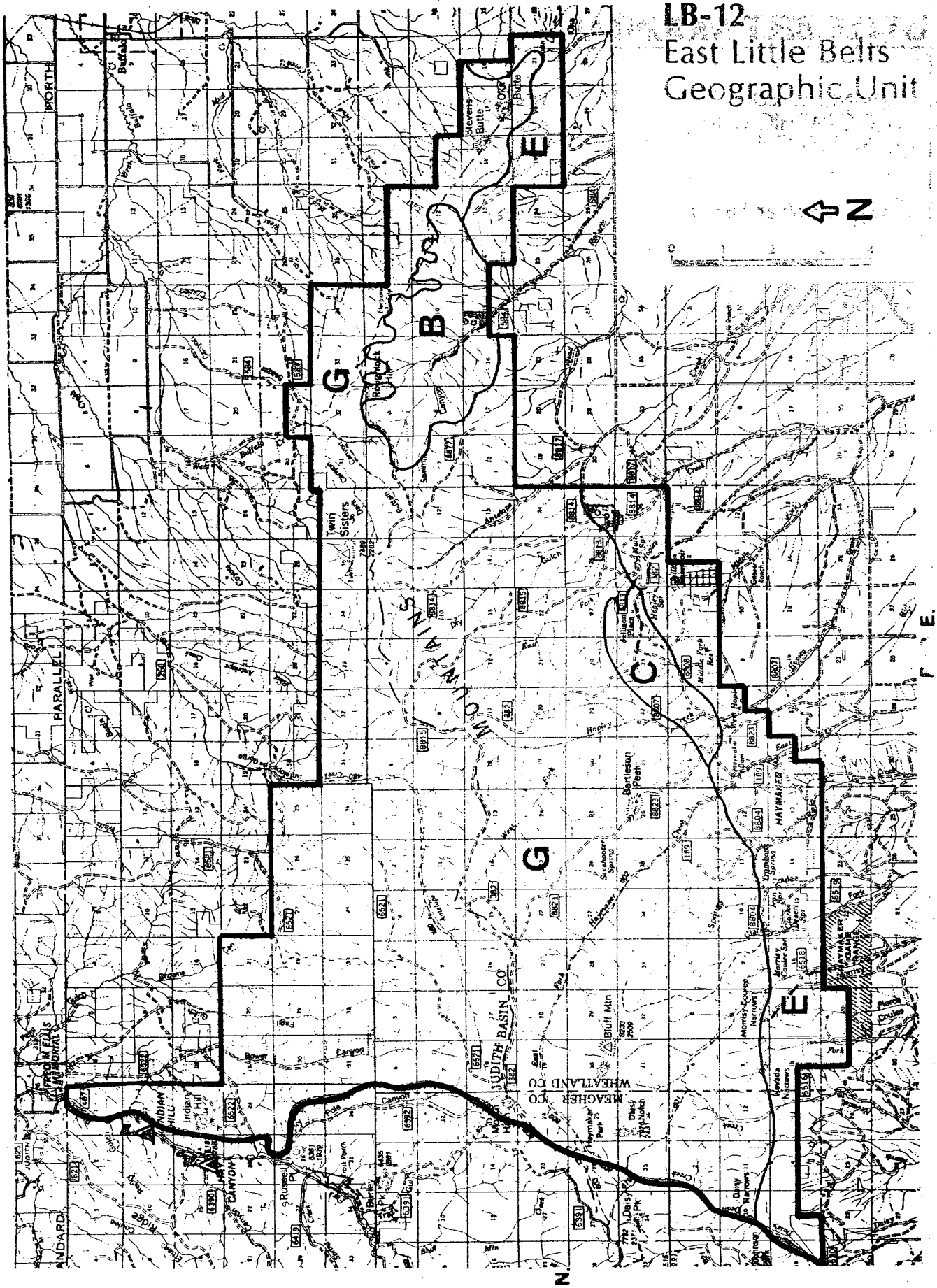
The unit has some summer homes and a developed campground along Spring Creek.

Future Management Activities

Parts of the following management areas, as shown on the geographic unit map, are in the unit.

Mgmt Area	VQO	Recreation Setting
B	Modification	Roaded Natural
C	Modification	Roaded Natural
E	Partial Retention	Roaded Natural
R	Same as adjacent lands	Same as adjacent lands

Timber Sale	Year	Approx. Acres Harvested	Approx. Vol. Million Board Feet
Top of the Hill	1986	50	0.6
Mill-Lion	1989	310	3.0
N.F. Musselshell	1991	300	2.5
East Fork Spring Creek	1992	350	2.8
Green Mountain	1994	400	3.0


LB-12
East Little Belts
Geographic Unit
N
T. 11 N.
R. 7 E.
MOUNTAINS
JUDITH BASIN CO
MEAGHER CO
WHEATLAND CO
PARALLEL
CANYON
RIDGE
Twin Sisters
Bartlett Peak
Bluff Mtn
Indian Hill
Russell Pk
Daisy Pk
HAYMAKER RANGE
B
C
E
G

EAST LITTLE BELTS GEOGRAPHIC UNIT DESCRIPTION

Map Number LB-12

The East Little Belts Geographic Unit (LB-12) includes portions of Haymaker Creek, Roberts Creek, and the forks of Hopley Creek. The major mountains are Mount High, Bluff Mountain, and Daisy Notch.

The unit has moderately sloped foothills, gentle high ridges, and very steep side slopes. Foothills are rolling grasslands with bands of Douglas fir and ponderosa pine. The broad ridges have sparse vegetation. Higher elevations are limber pine, whitebark pine, and spruce. Side slopes are covered with dense stands of lodgepole pine.

Most of the unit is big-game summer range with extensive elk and deer winter range at lower elevations, particularly on southwest slopes.

Few trails are in the unit. There is a dispersed recreation site at Haymaker Creek and wheel track roads on many ridges and in some drainage bottoms.

Past Management Activities

Some selective timber harvest has taken place in the foothills. Pitch posts were harvested in the early 1900s. Wildfire denuded the high elevation ridges in the late 1800s. The entire area was leased for oil and gas exploration. The leases have been relinquished.

Livestock graze throughout the unit, but they are confined primarily to drainage bottoms and grassy hillsides along the foothills. Range use is limited by timber hillsides, limestone outcroppings, and availability of water. Big-game hunting is popular in the unit.

Future Management Activities

Parts of the following management areas, as shown on the geographic unit map, are in the unit:

Mgmt Area	VQO	Recreation Setting
B	Modification	Roaded Natural
C	Modification	Roaded Natural
E	Partial Retention	Roaded Natural
G	Partial Retention	Semi-Primitive
R	Same as adjacent lands	Same as adjacent lands

CA-1
East Castles
Geographic Unit
N
0 1 2 3 4
Pasture Gulch 1986
Robinson Checker-board 1987
Warm Springs 1995
MOUNTAINS
STANDARD
SHIELDS
RICHARDSON CREEK
GRASSHOPPER CREEK
Castle Mtn.
Beartrap Pk.
Wobdchuck Mtn.
Wapiti Pk.
Elk Pk.
Willow Pk.
Mount Howe
Whetstone Ridge
Limestone Ridge
Hall Creek
Horse Park Creek
Richardson Park
Hamilton Creek
Boulder Creek
Meadow Creek
Deer Creek
Corral Creek
Robinson Creek
Sawmill Creek
Dry Creek
Willow Creek
Wanger Park
Bair Reservoir
Chicago Lovell
Milwaukee
Notch
T.
R.8E.

EAST CASTLES GEOGRAPHIC UNIT DESCRIPTION

Map Number CA-1

The East Castles Geographic Unit (CA-1) includes portions of the Warm Springs, Checkerboard, and Flagstaff Creek drainages. Other features are Limestone Ridge, Whetstone Ridge, and Elk Park.

Slopes are mostly moderate in a mosaic of grasslands interspersed with Douglas fir stands. One portion of the area contains extensive unbroken lodgepole pine stands. Large mountain meadows are in the unit.

Most of the area is big-game summer range with some elk and mule deer winter range. Several elk calving areas are also in the unit.

The major trail in the unit is the Warm Springs Creek Trail (618).

A large portion of the Castle Mountain Mining District is within the unit. Significant amounts of lead, zinc, and gold have been produced. Exploration and production are expected to continue. Many patented and unpatented mining claims are present.

Past Management Activities

A small amount of timber has been harvested in Sourdough and Pasture Gulch drainages. Some other harvest associated with past mining activities has also taken place. An area in Pasture Gulch burned in 1971. The entire unit was leased for oil and gas, however, most leases have been dropped.

Cattle used to graze the large mountain meadows.

There has been extensive hardrock mining in the central portion of the unit.

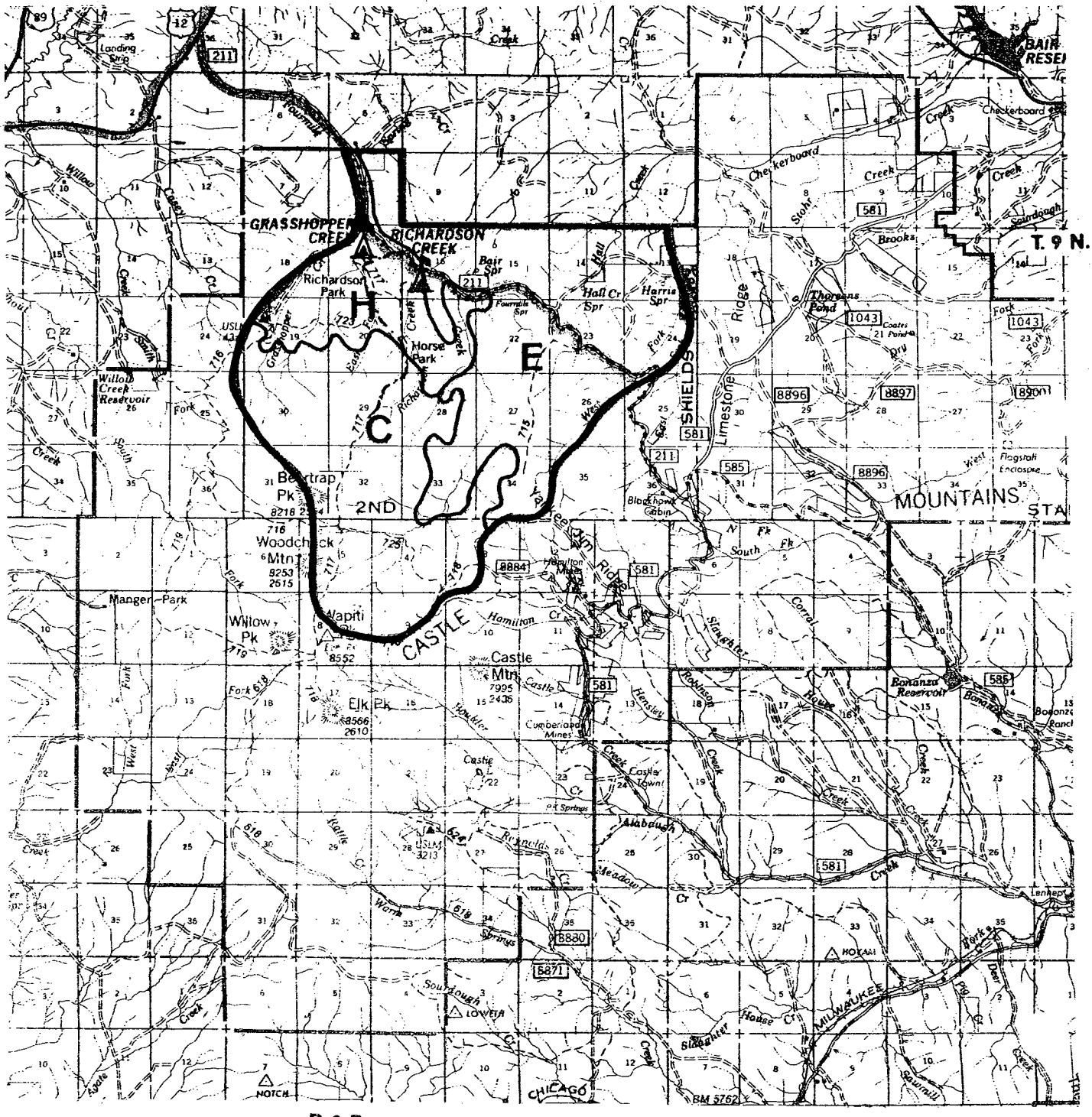
Future Management Activities

Parts of the following management areas, as shown on the geographic unit map, are in the unit.

Mgmt Area	VQO	Recreation Setting
C	Partial Retention	Roaded Natural
L	Partial Retention/ Modification	Roaded Natural
R	Same as adjacent lands	Same as adjacent lands

Timber Sale	Year	Approx. Acres Harvested	Approx. Vol. Million Board Feet
Pasture Gulch	1986	175	1.3
Robinson-Checkerboard	1987	125	1.4
Warm Springs	1995	225	3.0

CA-2
Richardson — Grasshopper Geographic Unit



RICHARDSON-GRASSHOPPER GEOGRAPHIC UNIT DESCRIPTION

Map Number CA-2

The Richardson-Grasshopper Geographic Unit (CA-2) is the north central Castles, which includes portions of Beartrap, Fourmile, Richardson, and Grasshopper Creek drainages.

The unit has moderate slopes with lodgepole, Douglas fir, spruce, aspen, and grass. Notable features are the castle-like rocks and Smith Meadows.

Numerous trails cross the unit. One road, Fourmile Road (211), provides access to the Castle Mountains from U.S. Highway 12. The unit contains two campgrounds, Grasshopper Creek and Richardson Creek.

Past Management Activities

Post, pole, and some sawlog harvesting has taken place. The unit, along with most of the Castles, burned at the turn of the century.

Cattle have been grazed in the past and still graze today.

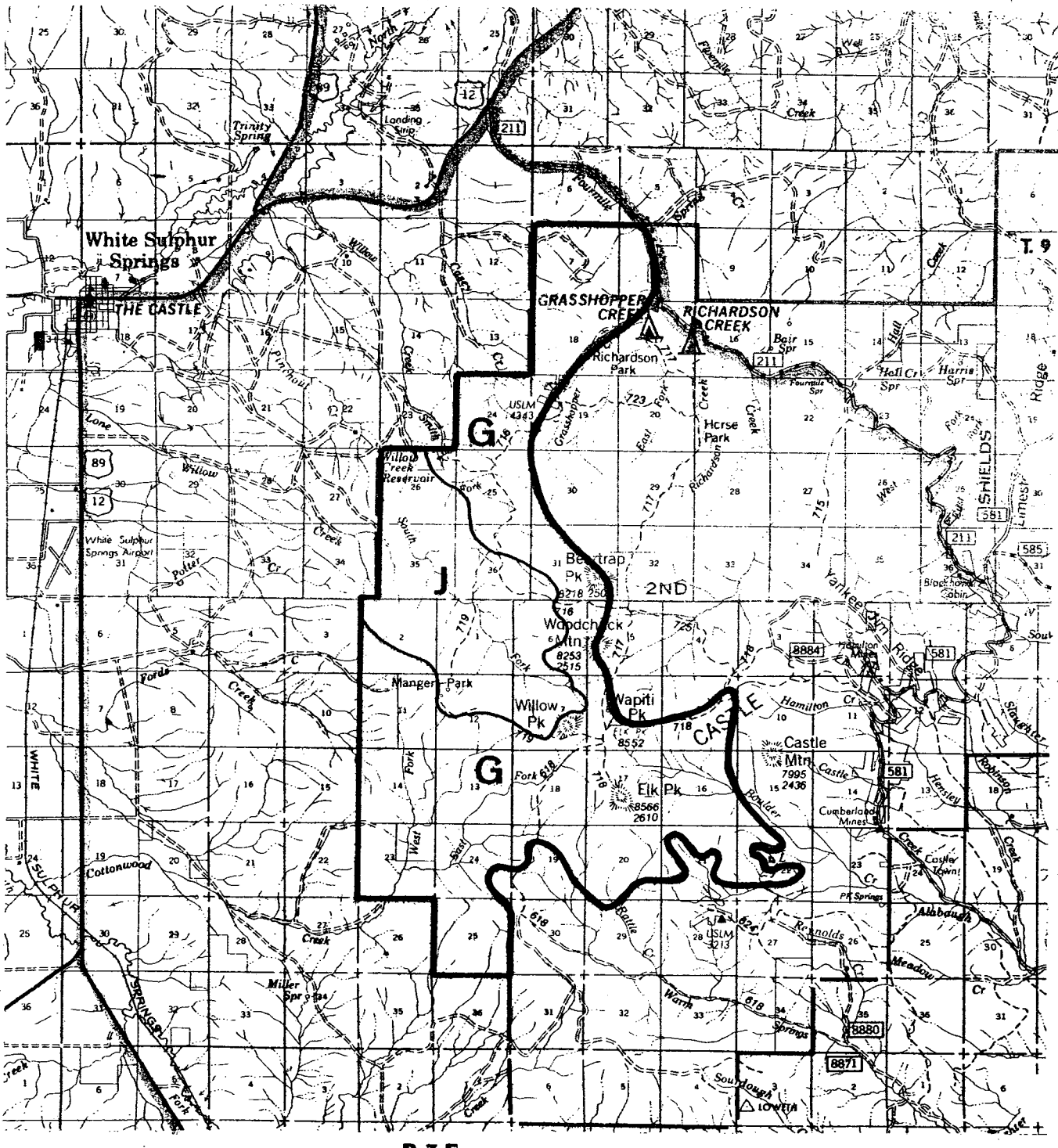
A large portion of the Castle Mountain Mining District is within the unit. Significant amounts of lead, zinc, and gold have been produced. Exploration and production are expected to continue. Many patented and unpatented mining claims are present. The entire unit was leased for oil and gas, however, they have all been dropped.

Future Management Activities

Parts of the following management areas, as shown on the geographic unit map, are in the unit.

Mgmt Area	VQO	Recreation Setting
C	Modification	Roaded Natural
E	Partial Retention	Roaded Natural
H	Retention/Partial Retention	Roaded Natural & Rural
R	Same as adjacent lands	Same as adjacent lands

CA-3
Woodchuck Mountain Geographic Unit



WOODCHUCK MOUNTAIN GEOGRAPHIC UNIT DESCRIPTION

Map Number CA-3

The Woodchuck Mountain Geographic Unit (CA-3) includes the west portion of the Castles; Woodchuck Mountain; portions of Willow, Cottonwood, and Grasshopper Creeks and Manger Park.

The slopes are moderate with lodgepole pine and a small amount of Douglas fir and grass. Big-game summer range exists in the area.

The castle-like rocks and Crystal Cave are noted features of the unit. Numerous trails run through the unit. There are no developed recreation sites.

The Willow Creek watershed is the municipal watershed for White Sulphur Springs.

Past Management Activities

No timber has been harvested in the unit. However, this area, like the rest of the Castles, burned at the turn of the century. Sheep and cattle grazing takes place in the unit.

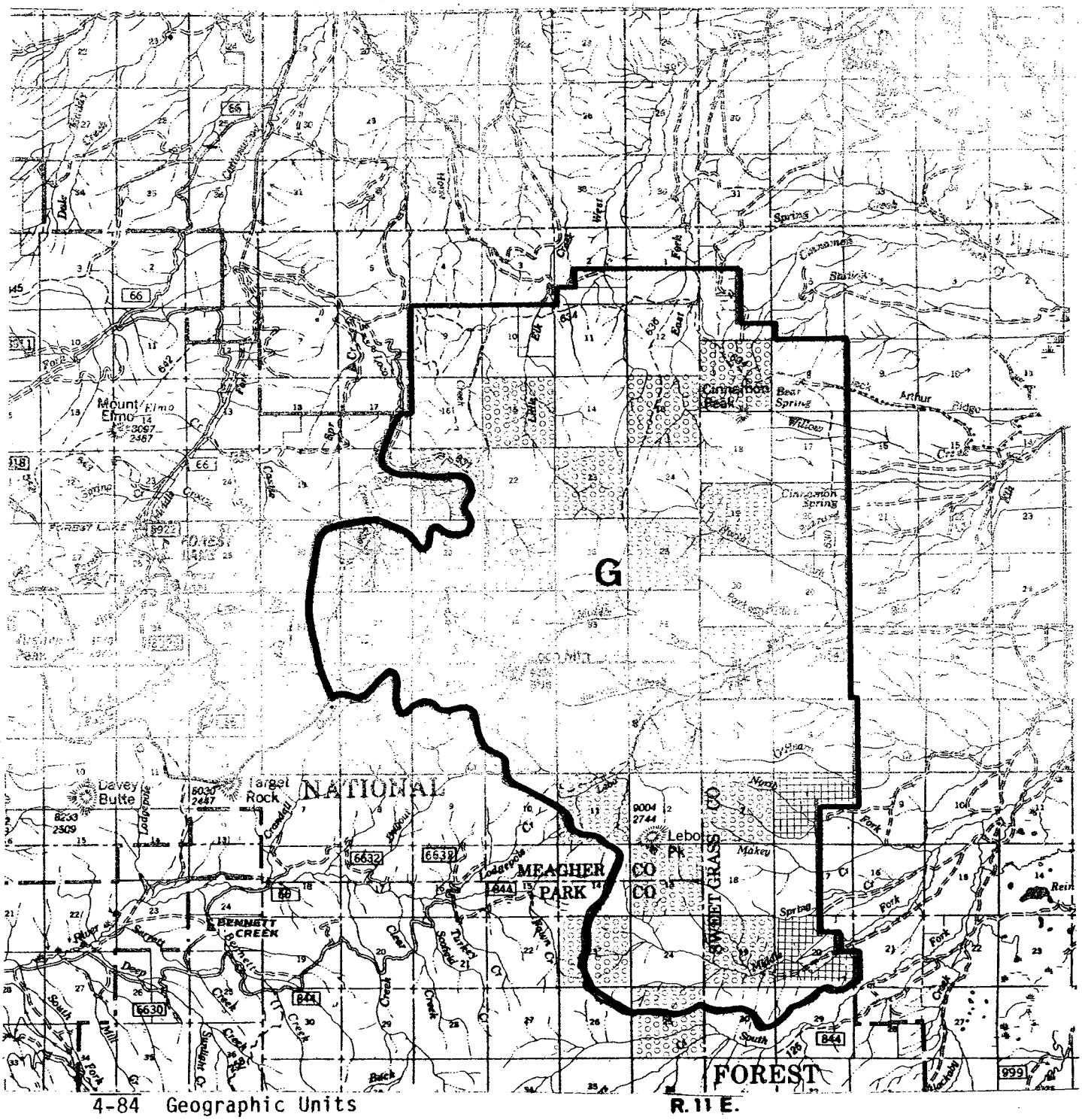
Extensive prospecting has taken place and some prospecting continues. Oil and gas leases have been issued throughout the unit, however, most leases have been dropped.

Future Management Activities

Parts of the following management areas, as shown on the geographic unit map, are in the unit.

Mgmt Area	VQO	Recreation Setting
G	Partial Retention	Semi-Primitive
J	Retention	
R	Same as adjacent lands	Same as adjacent lands

CZ-1
Loco Mountain
Geographic Unit



LOCO MOUNTAIN GEOGRAPHIC UNIT DESCRIPTION

Map Number CZ-1

The Loco Mountain Geographic Unit (CZ-1) includes portions of Big Elk, Miller and American Fork Creek drainages. Major mountains are Loco Mountain, Lebo Peak, and Cinnamon Peak.

The area is very steep. The interior of the unit is high elevation grassland-rock with isolated pockets of lodgepole pine and spruce. Along the boundary of the unit is steep grassland, interspersed with Douglas fir.

The majority of the unit is elk and mule deer summer range, with some winter range along the north and east Forest boundary.

Several trails provide dispersed recreation, including Crow Creek Trail (636), Castle Creek Trail (641), and Loco Creek Trail (632). There are no developed recreation sites in the unit.

Some oil and gas exploration has been done on private lands to the east. The entire area has been leased for oil and gas exploration.

Past Management Activities

Some timber was harvested at the turn of century for homesteads. A small fire burned in O'Hearn Creek in the 1970s.

Access is limited to 4-wheel drive roads along the north and east boundary.

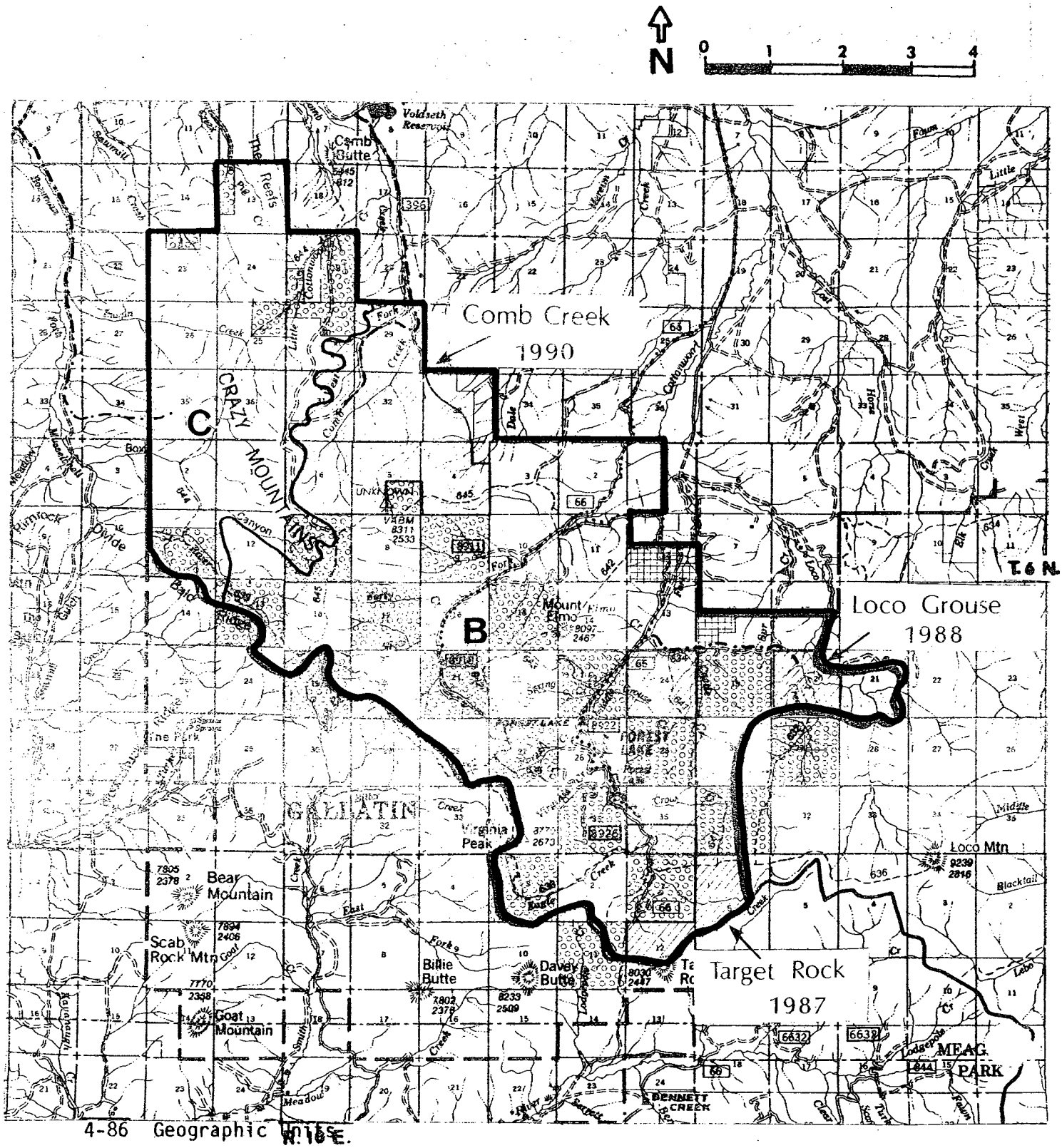
Both sheep and cattle have been grazed in the past, especially along the east and north edges.

Future Management Activities

Parts of the following management areas, as shown on the geographic unit map, are in the unit.

Mgmt Area	VQO	Recreation Setting
G	Partial Retention	Semi-Primitive
R	Same as adjacent lands	Same as adjacent lands

CZ-2
Forest Lake
Geographic Unit



FOREST LAKE GEOGRAPHIC UNIT DESCRIPTION
Map Number CZ-2

The Forest Lake Geographic Unit (CZ-2) includes portions of the Cottonwood and Comb Creek drainages. Prominent mountains are Mt. Elmo, Target Rock, Virginia Peak, and Bald Ridge. The unit is a checkerboard of National Forest and private owned land. Forest Lake is a unique feature, because there are few mountain lakes in the area. The unit has moderate to steep slopes, primarily lodgepole pine and subalpine fir interspersed with high elevation grassland. The majority of the unit is elk and mule deer summer range with some winter range along the north and west boundaries of the unit. Several trails provide dispersed recreation, including Mt. Elmo Trail (642), Virginia Peak Trail (635), and Eagle Creek Trail (638). The Forest Lake campground site is presently undeveloped. One powerline runs through the northwest corner of the area.

Past Management Activities

A moderate amount of timber has been harvested. Timber has also been harvested on private land in the area. The West Fork of Cottonwood Fire burned approximately 600 acres in 1966. Both cattle and sheep have been grazed in the past. Fisheries habitat improvement work is going on in Cottonwood Creek. The north end of the area is crossed by the Colstrip Twin 500 KV transmission line.

The northern portion of the unit has moderate potential for oil and gas. The entire unit is currently under lease for oil and gas.

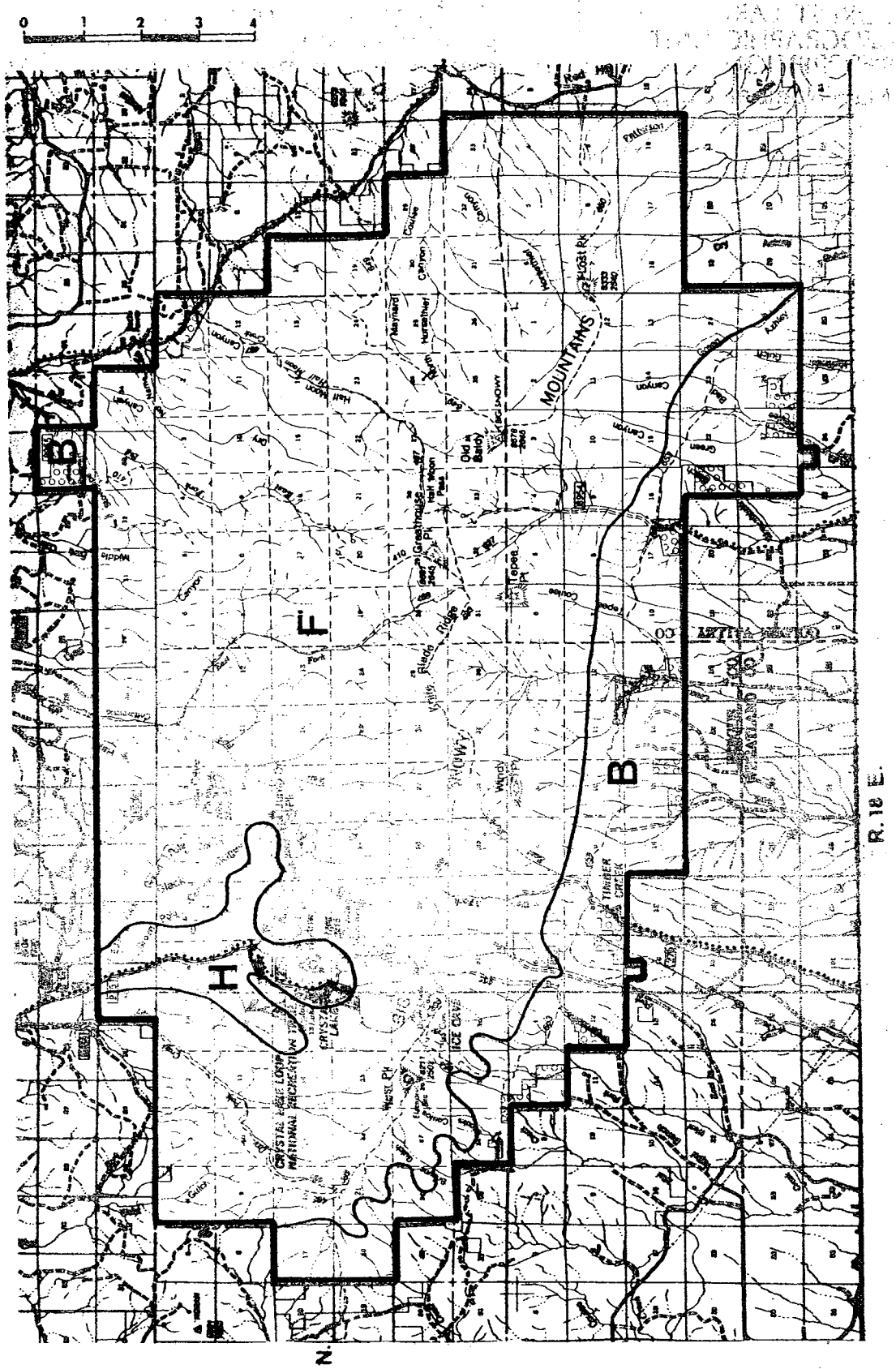
Future Management Activities

Parts of the following management areas, as shown on the geographic unit map, are in the unit.

Mgmt Area	VQO	Recreation Setting
B	Modification	Roaded Natural
C	Modification	Roaded Natural
R	Same as adjacent lands	Same as adjacent lands

Timber Sale	Year	Approx. Acres Harvested	Approx. Vol. Million Board Feet
Target Rock	1987	250	1.6
Loco-Grouse	1988	300	2.4
Comb Creek	1990	500	3.0

SN-1
Big Snowies
Geographic Unit



BIG SNOWIES GEOGRAPHIC UNIT DESCRIPTION

Map Number SN-1

The Big Snowies Geographic Unit (SN-1) includes the National Forest portion of the Big Snowy Mountains, including Careless and Swimming Woman Canyons and Knife Blade Ridge. One of the dominate features of the Big Snowies is Crystal Lake. The Big Snowies Wilderness Study Area is within this geographical unit. It will be managed to protect its wilderness characteristics until Congress acts on the Forest Service's recommendation.

The mountains in the area are flat-topped ridges of alpine tundra, with Douglas fir on slopes and mixed Douglas fir/grassland on lower slopes and benchlands. Slopes vary from steep rocky canyons to gentle benchlands. Major streams include Swimming Woman, Crystal Lake, Careless, Halfmoon, and Timber Creeks. The unit has some winter range for mule deer along the southern slopes and some elk winter range at lower elevations. However, most elk winter on adjacent private lands. A small herd of mountain goats is found at higher elevations.

There has been some prospecting for gold, silver, and copper. However, there has been no production. The southern half of the unit is under application for oil and gas leases. For the last three years, there has been oil and gas exploration. This includes gravity work, magneto telluric, and seismic. Oil and gas potential is high on the south side of the unit.

Past Management Activities

Commercial timber has been harvested in Browns Gulch, Niel Creek, Porcupine Gulch, Blake Creek, and Timber Creek. Accessible foothill lands have traditionally supplied building material, fencing material, and fuelwood to neighboring homesteads. Large areas of benchland in the southern Snowies were planted to ponderosa pine, scotch pine, and Austrian pine from 1911 to 1914. Deer hunting has been popular.

Grazing in the unit is limited by steep, rocky slopes and water availability to drainage bottoms and grassy hillsides along the foothills. Cattle are the primary livestock users; however, 900 sheep graze the eastern edge.

Crystal Lake Campground and Grandview Picnic Area provide developed recreation opportunities. Trails include Crystal Cascade (445), Ice Caves (405), Snowy Crest (493), and Halfmoon (487). The Crystal Lake Loop Trail is a National Recreation Trail.

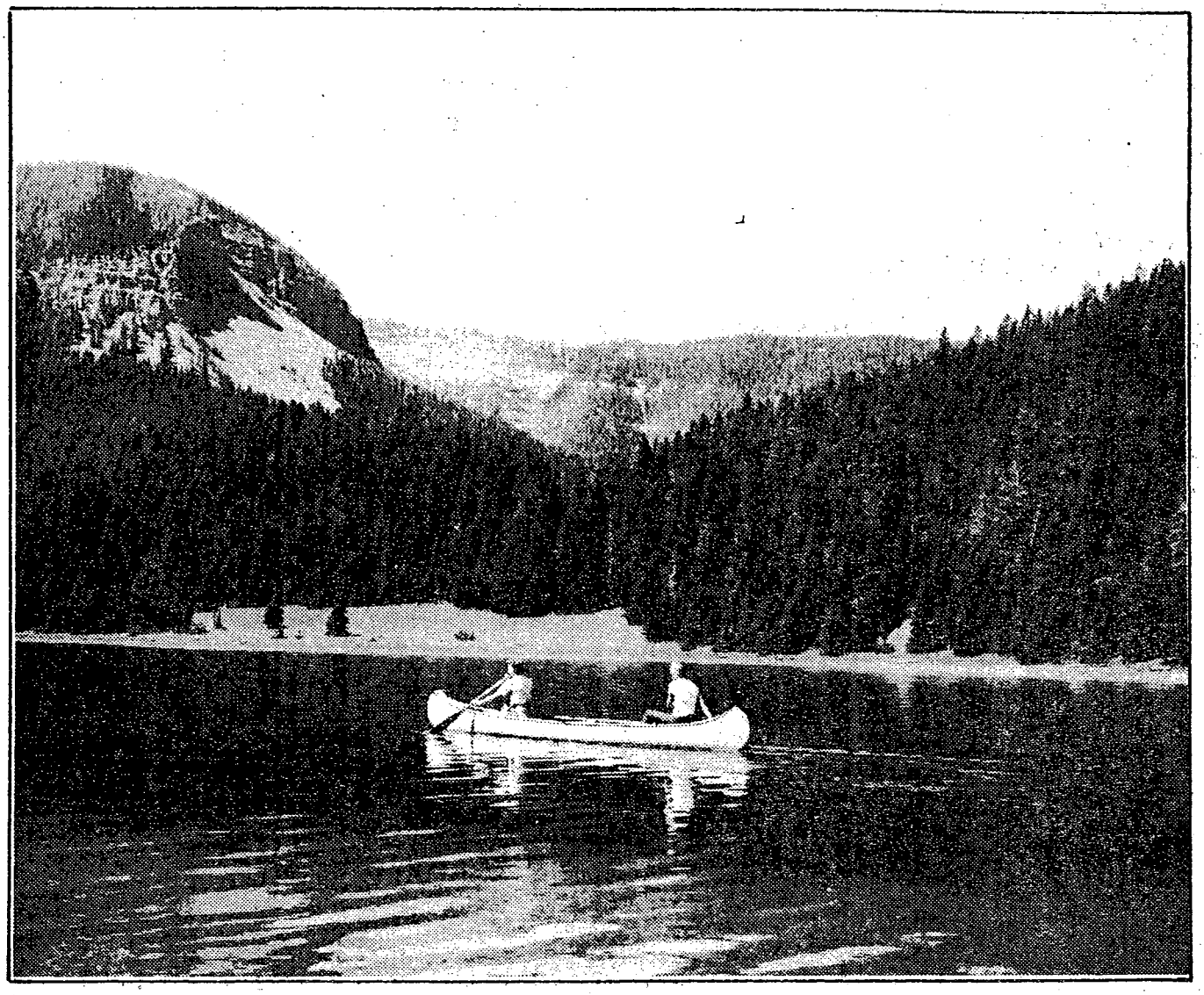
Future Management Activities

Over 1,600 acres in the Swimming Woman drainage was burned by wildfire in 1955. The West Gulch fire burned over 1,200 acres in 1985.

Parts of the following management areas, as shown on the geographic unit map, are in the unit:

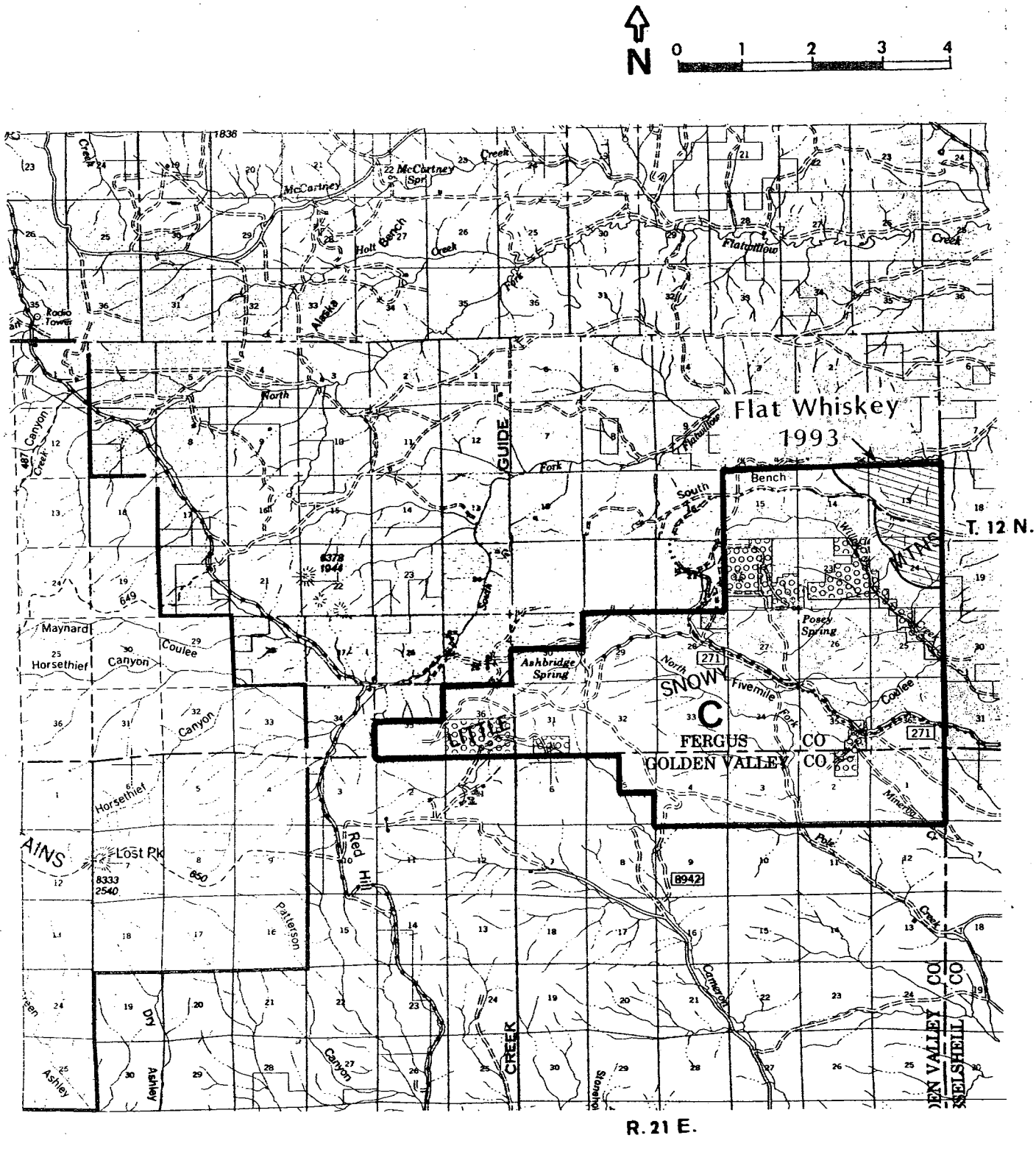
Mgmt Area	VQO	Recreation Setting
B	Modification	Roaded Natural
F	Partial Retention	Semi-Primitive
H	Retention/Partial Retention	Roaded Natural & Rural
R	Same as adjacent lands	Same as adjacent lands

SNOWY MOUNTAINS



Recreationists Enjoying a Day on Crystal Lake In the Big Snowies.

SN-2
Little Snowies
Geographic Unit



4-92 Geographic units

LITTLE SNOWIES GEOGRAPHIC UNIT DESCRIPTION

Map Number SN-2

This Little Snowies Geographic Unit (SN-2) includes the Little Snowy Mountains.

Major drainages are Willow Creek and North Fork of Pole Creek, which drain to the south.

The mountains in the Little Snowies are low rolling areas of ponderosa pine. Most slopes are gentle, often nearly flat, except for moderate slopes where creeks bisect the unit.

The entire unit is summer range for elk, mule and whitetail deer. Winter range for a growing elk herd (over 70 animals) is found along the southern edge. Willow Creek provides winter range for whitetail deer. The unit also has a number of wild turkeys.

The unit has no trails or campgrounds.

Oil and gas potential is low. There are no leases. There is exploration for oil shale and associated trace elements.

Past Management Activities

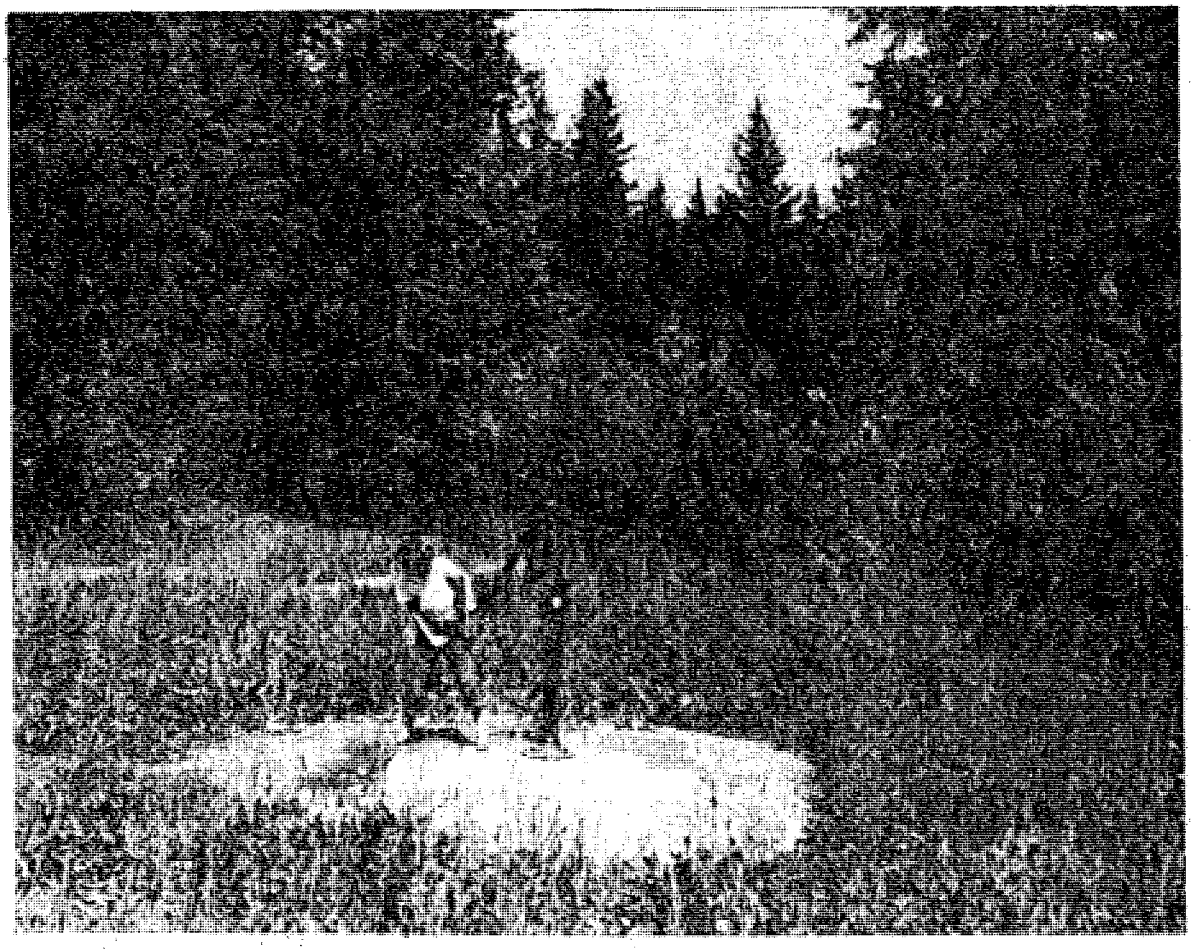
There has been extensive timber harvest. Cattle graze throughout the unit. Big-game hunting is a popular activity.

Future Management Activities

Parts of the following management areas, as shown on the geographic unit map, are in the unit.

Mgmt Area	VQO	Recreation Setting
C	Partial Retention	Roaded Natural
R	Same as adjacent lands	Same as adjacent lands

Timber Sale	Year	Approx. Acres Harvested	Approx. Vol. Million Board Feet
Flat Whiskey	1993	560	2.8



Pumping Water in a Forest Service Campground.

FOREST PLAN

Chapter V
Implementation

Overview

This chapter describes how the Forest Plan will be implemented and lists the monitoring and evaluation requirements to inform Forest managers and the public on the progress of implementing the Forest Plan.

IMPLEMENTATION

IMPLEMENTATION OF THE FOREST PLAN

Implementation of the Lewis and Clark National Forest Plan requires moving from an existing management program, with a budget and "targets" for accomplishment, to a new management program with a budget, goals, and objectives that provide a different way of addressing the issues and concerns people have voiced about Forest management. This Forest Plan provides the direction for management of the Lewis and Clark National Forest for the next 10 to 15 years, when used in conjunction with Forest Service Manuals and Handbooks and the Northern Regional Guide.

The remainder of this chapter explains how management of the Lewis and Clark National Forest moves from the Current Direction and Existing Situation to the Proposed Action, all described in the FEIS. The following sections describe aspects of implementation that are influenced by previous management activities and objectives; the relationship between project planning and this Forest Plan, the goals of and requirements for monitoring and evaluation; and the circumstances which could require the plan to be amended or revised.

Management Standards

As stated in Chapter II, management standards are designed to facilitate achievement of the Forest-wide goals and objectives. Generally, the standards must be utilized if attainment of these goals and objectives is to be realized. However, there will be some instances in which achievement of the goals and objectives is not facilitated by the standards (see Project Planning in this chapter).

Influence of Past Management on Future Options

Chapters III defines management direction for specific areas of the Forest. In some instances, this direction represents a change from current management. Where no previous management activities have occurred, the allocations of this Forest Plan can be brought under management from a neutral point. However, in areas where management activities have occurred to meet objectives other than those now specified by this Plan, some period of adjustment may be required.

In addition to specifying management direction for areas of the Forest, this Plan schedules management activities. In some situations, previous management activities influence the scheduling of future activities.

For example, some areas recommended for wilderness classification have been leased for oil and gas exploration and development. This establishes a valid prior right on the areas which conflicts with wilderness values.

Project Planning

The Forest Plan serves as the single land management plan for the Lewis and Clark National Forest. The 10-Year Timber Sale Program (Appendix A), Land Exchange (Appendix B), Right-of-Way Acquisition (Appendix C), 5-Year Wildlife Habitat Improvement Program (Appendix M), 5-Year Range Improvement Program (Appendix R), and 5-Year Trail Construction/ Reconstruction Program (Appendix S) are incorporated into the Forest Plan as appendices. All other land management plans are replaced by the direction in this Forest Plan.

Similarly, this Forest Plan directs the management of all resources on the Lewis and Clark National Forest. All previous resource management plans are replaced by this document. Resource management objectives are displayed in Chapter II, and schedules of resource management practices for each management area are displayed in Chapter III.

Several documents designed to give further guidance to management activities have been or will be developed under this Forest Plan. They are:

- Forest Travel Plan
- Allotment Management Plans
- Area Transportation Plans
- Fire Management Action Plan
- Activity Coordination Analysis (oil and gas)
- Field Development Plans (oil and gas)

The management direction provided by this Forest Plan comprises the sideboards within which project planning and activities take place. It defines management area goals and management standards that guide project activities toward achieving a desired future condition for the management area and, collectively, for the Forest. It specifies a schedule for project activities. (management practices). It provides guidance concerning potential landtype and habitat constraints, including

assumptions about the appropriate vegetation management practices for timber sale projects. On-the-ground project analysis validates or invalidates the appropriateness of these assumptions.

Within this guidance, projects are developed to most efficiently and effectively accomplish the management goals and objectives and to comply with all NEPA requirements. Project planning should recognize the significant other resource values in an area and manage them to the fullest extent possible compatible with the management goals and projected costs.

If it is determined during project design that the best way to meet the goals of the Forest Plan conflicts with a Forest Plan standard, the Forest Supervisor may approve an exception to that standard for that project; such exceptions must be described in the Finding of No Significant Impact/Decision Notice for the project, and the rationale for making the exception must be documented in the project's Project File or Environmental Assessment.

Forest Plan

Project environmental analyses provide an essential source of information for Forest Plan monitoring. First, as project analyses are completed, new or emerging public issues or management concerns may be identified. Second, the management direction designed to facilitate achievement of the management area goals are validated by the project analyses. Third, the site specific data collected for project environmental analyses serve as a check on the correctness of the land allocation. All of the information included in the environmental analysis is used in the monitoring process to determine when changes should be made in the Forest Plan.

Uneven-Aged Management

Uneven-aged management using individual tree selection was used as the primary silvicultural system in the 1940s and early 1950s. Extensive use of uneven-aged silviculture was found to be ecologically unsound in Northern Rocky Mountain Forests where fire plays a dominate role. All-age stand structures suitable for application of uneven-aged systems are seldom found in Northern Rocky Mountain Forests.

Attempts to create all-aged stand structures from even-aged stands over time results in loss of shade intolerant species such as ponderosa pine and which cannot reproduce in shade. Buildup of fuels as a

result of uneven-aged management inevitably predisposes the stands to fire. Multistoried stands composed of shade tolerant species are also predisposed to natural insect and disease pathogens such as spruce budworm and root rots. Insect and disease problems are compounded by damage to the residual stand and to soils from frequent logging entries which are necessary to implement uneven-aged systems. Frequent logging entries are also disturbing to important Forest wildlife species such as grizzly bear, gray wolf, and elk.

These facts were considered early in the Forest planning process and incorporated into vegetative management standards (see Forest Plan, Appendix A). These standards were used as minimum management requirements for the formulation of alternatives. Extensive use of uneven-aged silviculture systems was considered for the Lewis and Clark National Forest and found to be ecologically unsound (see FEIS, Chapter IV, Timber). As a result, no Forest Plan alternatives were developed in detail featuring selection systems. FORPLAN analysis data for application of selection systems indicates it is not a cost-effective timber harvest method on the Lewis and Clark National Forest. Uneven-aged silviculture is appropriate for relatively small local areas when other values are high such as riparian areas.

Below Cost Timber Sales

Implementation of this Forest Plan will mean there will be some individual timber sales which will have a negative cash flow when all costs (including transportation system development) are considered in relation to revenues from the timber harvest. These sales are referred to as "below-cost timber sales". The Forest Plan analysis shows these sales are needed to achieve both short-term and long-term benefits necessary to maximize net public benefits.

There are several reasons why these individual timber sales are below cost. (1) The construction of roads for access to undeveloped standing timber requires a large initial investment that may exceed the value of the standing timber, but returns from future timber sales will amortize the costs and return a profit. (2) The geographic distribution of mature timber (e.g., the road may have to pass through immature timber with little current value to get to economically mature stands). (3) Usually there are constraints involved with protection or enhancement of nontimber resources which do not permit exploitation of all the economic potential of the existing stands in order to

produce a positive cash flow on the initial entry. Examples of these constraints include design of harvest patterns to produce desired patterns of wildlife forage and cover, visual landscapes, soil and water protection, or fuels management.

Cost-efficient management for the Lewis and Clark National Forest requires that cash flow analysis must be a consideration in the economic analysis and development of project design in order to minimize negative cash flow projects (see Chapter II - Timber). Forest Plan analysis data indicates "below-cost sales" cannot be eliminated entirely and still achieve projected short-term and long-term outputs.

MONITORING AND EVALUATION

MONITORING AND EVALUATION

Monitoring and evaluation compares the results being achieved to those projected in the Plan. Outputs, management prescriptions, environmental effects, and costs are all considered.

Monitoring and evaluation entails comparing the end results being achieved to those projected in the Plan. Costs, outputs, and environmental effects, both experienced and projected, will be considered.

To do this, a comparison will be made, on a sample basis, of overall progress in implementing the Forest Plan as well as whether the overall relationships on which the Plan is based have changed with time. When changes occur, they will be evaluated as to their significance, and appropriate amendments or revisions made.

The goals for monitoring and evaluating this Forest Plan are to determine:

-- How well the Forest is meeting its planned goals and objectives;

-- If existing and emerging public issues and management concerns are being adequately addressed;

-- How closely the Forest Plan's management standards are being followed;

-- If outputs and services are being provided as projected;

-- If the effects of implementing the Forest Plan are occurring as predicted, including significant changes in the productivity of the land;

-- If the costs of implementing the Forest Plan are as predicted;

-- If implementing the Forest Plan is affecting the land, resources, and communities adjacent to or near the Forest;

-- If activities on nearby lands managed by other Federal or other governmental agencies, or under the jurisdiction of local governments, is affecting management of the Forest;

-- If research is needed to support the management of the Forest, beyond that identified in Chapter II of the Forest Plan; and

-- If there is a need to amend or revise the Forest Plan.

The monitoring requirements for this Forest Plan are outlined in Table 5.1, Forest Plan Monitoring Requirements. These requirements address the items to be monitored, data sources, expected precision and reliability, frequency of measurements (schedule and sample size), reporting period, and acceptable variability. Most of the monitoring items are applicable to specific management areas; a listing of applicable monitoring items is included in the direction for each Management Area (Chapter III).

Evaluation of data gathered during monitoring will be guided by the Decision Flow Diagram detailed in Figure 5.1. As indicated in the diagram, the results of this evaluation tend to further actions of the following types:

-- Continuing the management practice;

-- Referring problems to the appropriate line officer for improvement of management practice application;

-- Modifying the management practices as a Plan amendment;

-- Modifying the land allocation as a Plan amendment;

-- Revising the schedule of outputs; or

-- Revising the cost/unit outputs;

-- Initiating revision of the plan.

The document resulting from the use of the Decision Flow Diagram constitutes the evaluation report. As applicable, the following will be included in each evaluation report:

-- A quantitative estimate of performance comparing outputs and services with those projected by the Forest Plan;

-- Documentation of measured effects, including any change in productivity of the land;

-- Unit costs associated with carrying out the planned activities as compared with unit costs estimated during Forest Plan development;

-- Recommendations for changes;

-- A list of needs for continuing evaluation of management systems and for alternative methods of management;

-- A list of additional research needed to support the management of the Forest; and

-- Identification of additional monitoring needs to facilitate achievement of the monitoring goals.

The evaluation report will be made available for public review.

TABLE 5.1 Monitoring Requirements Lewis & Clark Forest Plan

Item	Element	Output, Management Prescription, Effects, To Be Measured	Data Source	Expected Precision	Expected Reliability	Frequency of Measurement	Reporting Period	Variability Which Would Initiate Further Evaluation
A-1	Recreation	Recreation Opportunity Spectrum setting being implemented	RIM Report, Forest Plan data base	Low-Mod	Low-Mod	100% 10 years	Annually	+10% of projected ROS setting
A-2	Recreation	Direction meets expectation of visitor	Visitor contacts, Inspections, Plans	Moderate	Moderate	10% sample annually	Annually	Adverse comments or correspondence
A-3	Recreation	Actual use of developed and dispersed recreation as compares with projected use levels	RIM Report	Low	Low	Annually	Annually	+25% variance yearly or +10% over a 5-year period
A-4	Recreation	Condition of developed sites	RIM Report, Inspections, Compare to standards Site Plans	High	High	Annually	Annually	Less than acceptable standards, public safety hazards not corrected by 1990, poor conditions not corrected by 2005
A-5	Recreation	Recreation Opportunity	Recreation Opportunity Guide	High	High	Annually	Annually	Failure to complete by 1986
A-6	Recreation	Off-road vehicle damage	Travel Plan	Moderate	Moderate	Annually	Annually	Conflicts with Forest Management Area goals
		Travel Plan Effectiveness	Number of Citations Issued and Number of Variances Granted	High	High	Annually	Annually	Increase of 20 or more citations or variances yearly
A-7	Recreation	Condition of visual resource meets objectives in plan	Project EIS/EA	Mod-High	Mod-High	25% sample annually	Annually	Deviation from approved VQOs, ID Team review.
A-8	Recreation	Comparison between Forest projects which needed cultural resources consideration and Forest projects which received consideration of the cultural resources.	Cultural/NEPA project list	High	High	100%	Annually	More than 10% of Forest projects out of compliance.

Item	Element	Output, Management Prescription, Effects To Be Measured	Data Source	Expected Precision	Expected Reliability	Frequency of Measurement	Reporting Period	Variability Which Would Initiate Further Evaluation
A-9	Recreation	Effectiveness of cultural resource mitigation proposed during the FY	Sites requiring mitigation	Moderate	Moderate	20% of sites	Annually	10% or more of inspected sites impacted.
A-10	Recreation	Interpreting, nominating, or protecting cultural resource sites.	Cultural sites interpreted, nominated or protected	High	High	100% of sites	Annually	If no sites have been interpreted, nominated, or protected during the FY.
A-11	Recreation	Inspect interpreted sites for impacts caused by increased public awareness and visitation.	Cultural sites interpreted	Moderate	Moderate	20% sample of interpreted sites	Annually	If an interpreted site was damaged as a result of interpretation.
A-12	Recreation	Effectiveness of Heritage Program and implementation of Forest Plan (assessment of inventory methods used to identify cultural resources as identified in Management Standard A-7).	Cultural resource survey	Moderate	Moderate	5% sample of previously surveyed areas	Annually	If previously unidentified cultural resources are discovered in surveyed areas.
B-1	Wilderness	Maintenance of existing quality of ecosystem	Combined with B-2.	No further	monitoring will	be accomplished	on B-1	during this planning period
B-2	Wilderness	Bob Marshall-Great Bear-Scapegoat Management Direction	Annual Report	High	High	100% sample annually	Annually	Failure to meet Management Direction in Appendix U.
B-3	Wilderness	Change in Roadless Inventory	Forest Plan data base	High	High	100%/10 year	Annually	+10% projected change in roadless inventory
C-1	Wildlife & Fish	T&E Species: Grizzly Bear-Maintain occupied habitat capacity	RMFMP annual reports, MDFW&P annual progress reports, Grizzly Bear Recovery Plan, Program & Project EAs	High	Moderate	100% sample annually	Annually	Any indication of downward trend in grizzly bear population.
C-2	Wildlife & Fish	T&E Species: Gray Wolf, Bald Eagle, Peregrine Falcon - Maintain suitable, unoccupied habitat	RMFMP annual reports, Recovery Plans, Program & project EAs	Moderate	Moderate	100% sample annually	Annually	Deterioration or continuing disturbance on more than 5% of suitable unoccupied habitat

TABLE 5.1

Monitoring Requirements
Lewis and Clark Forest Plan

Item	Element	Output, Management Prescription, Effects, To Be Measured	Data Source	1/ Expected Precision	2/ Expected Reliability	3/ Frequency of Measurement	Reporting Period	Variability Which Would Initiate Further Evaluation
C-8	Wildlife & Fish	Old Growth Habitat (Goshawk): Active nesting territories	Old-growth forest inventory Program & project EA's, special surveys	Moderate	Moderate	100% sample Annually	Annually	Decrease of 10% or more in active nesting territories.
C-9	Wildlife & Fish	Special Interest Species (Golden Eagle, Prairie Falcon): Nesting territories	Known nesting territories RMFMP reports	Moderate	Moderate	100% sample of selected nesting territories Annually	3 years	Reduction in occupied nesting territories of 10% or more from previous reporting period.
C-10	Wildlife & Fish	Cavity Nesting Habitat (Northern 3-Toed Woodpecker) Percent optimum habitat	Forest plan snag mgmt. guidelines, Program & project EA's	Moderate	Low	100% sample Annually	5 years	Reduction in snags to below numbers needed to maintain minimum viable population level in any timber compartment.
C-11	Wildlife & Fish (Coordinate with (F-7 and F-8))	Aquatic Habitat Condition (Cutthroat Trout, Brook Trout, Rainbow Trout): Habitat quality	Water quality monitoring, stream classification and habitat surveys, lake surveys, Program & project EA's	High	Moderate	100% sample Annually	3 years	Predicted decrease of 5% or more (below planned level) in fish habitat capability based on predicted or actual changes in water quality or fish habitat parameters in any stream or lake.
C-12	Wildlife & Fish	T&E Habitat Improvement Outputs	Forest plan, Attainment rpt.	High	High	100% sample Annually	Annually	Accomplishment 10% below Forest Plan level over 5-year average.
		Wildlife & Fish Habitat Improvement Outputs	Forest plan, Attainment rpt.	High	High	100% sample Annually	Annually	Accomplishment 20% below Forest Plan level over 5-year average.
C-13	Wildlife & Fish	Oil & Gas Activity/ Wildlife Monitoring- Rocky Mtn. Front	RMFMP Interim or final mgmt. guidelines	High	High	100% sample Annually	Annually	Any indication of downward population trend in species/mgmt. guidelines related to oil & gas activity.

TABLE 5.1

Monitoring Requirements
Lewis and Clark Forest Plan

Item	Element	Output, Management Prescription, Effects, To Be Measured	Data Source	1/ Expected Precision	2/ Expected Reliability	3/ Frequency of Measurement	Reporting Period	Variability Which Would Initiate Further Evaluation
D-1	Range	Range Outputs	Range Management Information System	Moderate	Moderate	100% sample Annually	Annually	±10% of target
D-2	Range	Range Conditions and Trend.	Range Analysis and condition-trend transects	Moderate	Moderate	25 allotments per year which will allow all Forest allotments to be sampled every 10 years.	Annually	Condition - Acres of range in fair or less condition that have not shown any improvement in condition score during the monitoring interval (10 years). Trend - Any acres in downward trend which were previously (at the last reading) stable or in an upward trend. **Any acres in downward trend which still show a downward trend after another monitoring interval (10 years).**
D-3	Range	Supply	Range Management Information System	Moderate	Moderate	Annually	Annually	More than 1% reduction in suitable range acres from previous year. Cumulatively, any reduction of 3% or more in suitable range acres over a 5-year period.
D-4	Range	Allotment Management Plan Status	Range Management Information System	High	High	100% sample Annually	5-years	More than 10% of the allotment plans are outdated.
E-1	Timber	Assure silvicultural management prescriptions are best suited to management area goals with all resources considered.	Presale and administrative reviews, and specialist involvement from functional areas.	High	High	One Sale Annually	Annually	A departure from management prescription.

TABLE 5.1

Monitoring Requirements
Lewis and Clark Forest Plan

Item	Element	Output, Management Prescription, Effects, To Be Measured	Data Source	1/ Expected Precision	2/ Expected Reliability	3/ Frequency of Measurement	Reporting Period	Variability Which Would Initiate Further Evaluation
E-2	Timber	Assure prescription not primarily chosen on basis of greatest dollar return or greatest timber output.	Silvicultural prescription.	Low	Low	One Sale Annually	5-years	Test management area outputs against those predicted.
E-3	Timber	Assure openings comply with size limits and are periodically evaluated for appropriateness.	Environmental analysis, presale and administrative reviews, and post-project reviews.	Moderate	Moderate	One Sale Annually	Annually	Unacceptable results of an ID Team review.
E-4	Timber	Assure timber offered does not differ from allowable sale quantity for 10-year period.	Allowable Sale Quantity Report - TSMRS	High	High	100% Sample Annually	Annually	±20% Annually or ±10% over a 5-year period.
E-5	Timber	Assure restocking is in progress within 5 years.	Survival exams, TSMRS.	High	High	1, 3, and 5 years	Annually	Unacceptable results of an ID Team review.
E-6	Timber	Assure timber acres harvested are as projected.	TSMRS	High	High	100% Sample Annually	5-years	±10% deviation over a 5-year period.
E-7	Timber	Assure accomplishment of thinning and other silvicultural treatments as projected in plan.	Silvicultural prescriptions, TSMRS.	High	High	100% Sample Annually	5-years	±10% deviation over a 5-year period.
E-8	Timber	Insure harvest by even-age management is compatible with resource values.	Silvicultural Prescription Review	Moderate	Moderate	One Sale Annually	Annually	Unacceptable results of an ID Team review.
E-9	Timber	Firewood removal	Annual Report	Moderate	Moderate	100% Sample Annually	Annually	Use increase exceeds 10% per year.
E-10	Timber	Evaluate availability of lands classified as suitable/unsuitable	Stage I examination; timber sale reports	Moderate	Moderate	5-years	5-years	±5% change in acreage.
E-11	Timber	Projected yields	Growth plots and other placement plots	High	High	5-years	Annually	Standard error of 10% at 1 standard deviation.

TABLE 5.1

Monitoring Requirements
Lewis and Clark Forest Plan

Item	Element	Output, Management Prescription, Effects, To Be Measured	Data Source	1/ Expected Precision	2/ Expected Reliability	3/ Frequency of Measurement	Reporting Period	Variability Which Would Initiate Further Evaluation
F-1	Water & Soil	Adequacy and Cumulative Effects of Project BMP's	EA's & water quality predictions	High-Mod	High-Mod	100% Sample Annually	Annually	Projected deterioration of soil productivity or water usability.
F-2	Water & Soil	Revegetation of temporarily disturbed areas and roads within 5 years	EA's and environmental reviews by ID teams	High	High	75% Sample 2 years after termination	Annually	Unacceptable results of an ID team review.
F-3	Water & Soil	Water quality effects of activities in municipal watersheds	Predictions, administrative reviews, and sampling	High	High	All Projects	Annually	Adverse water quality effects or violates water quality standards.
F-4	Water & Soil	Activities in riparian areas, flood plains, and wetlands	Administrative Reviews	Moderate	Moderate	50% of all projects	Annually	Unacceptable results of an ID team review.
F-5	Water & Soil	Effects of other activities on watershed conditions	Administrative Reviews	Moderate	Moderate	20% of all projects	Annually	Unacceptable management practices or land productivity.
F-6	Water & Soil	Elimination of soil and water restoration backlog	Soil and Water Reports; Mgt. Attainment Reports	Mod-High	Mod-High	Annual	5-Years	less than 50% by 1990; less than 100% by 1995.
F-7	Water & Soil	Water and Stream Quality as affecting fish habitat and other uses: validation of estimations of sediment	Samples of representative streams and intragravel sediment	Low-Mod	Moderate	Seasonal-Continuous and Annual	Annually	Not meeting State or Federal water quality standards or significant (90% confidence) deterioration, by best available indexes.
F-8	Water & Soil	Riparian areas and streams: stream cover and pools	Inventory & Stream Samples	Moderate	Moderate	High-Impact Annually	Annually	Significant (90% confidence) decline in condition.
F-9	Water & Soil	Public Health	Water Systems	High	High	Monthly when in use	Annually	Violates State or Federal drinking water standards per year.
G-1	Minerals	Effect of Mining Activities	Notice of Intent Operating Plans	Moderate	Moderate	100% annually of active operations on a monthly basis	Annually	Adverse effect of Forest Service project on mineral activities or revision or departure from approved operation

TABLE 5.1

Monitoring Requirements Lewis and Clark Forest Plan

Item	Element	Output, Management Prescription, Effects, To Be Measured	Data Source	1/ Expected Precision	2/ Expected Reliability	3/ Frequency of Measurement	Reporting Period	Variability Which Would Initiate Further Evaluation
G-2	Minerals	Effect of Geophysical Seismic Prospecting	Prospecting Permits	High	High	100% of active operations on a biweekly basis.	Annually	Adverse effect upon surface resources or departure from conditions of the approved permit.
G-3	Minerals	Effect of Drilling	Drilling Permits	High	High	100% of active operations on a weekly basis.	Annually	Adverse effect upon surface resources or departure from conditions of the approved permit.
G-4	Minerals	Rehabilitation of disturbed areas	Completion of Operations	High	High	100% of activity on a weekly basis during rehabilitation. A final inspection will be made within 5-years after rehabilitation has been completed.	Annually	Rehabilitate less than 90% of disturbed areas.
G-5	Minerals	Mineral Availability	Areas identified in Table 2.1 - Mineral Category	High	High	100% Sample Annually	Annually	Denial of more than 10% of proposed projects.
J-1	Lands	Compliance with use permits	Case Folders Forest Service Manual	High	High	As Needed	Annually	Unacceptable results or deviation from permits.
J-2	Lands	Right-of-way Easements Accomplishment	5-Year R/W Program & Forest Plan	High	High	100% Sample Annually	Annually	Less than 75% accomplishment of 5-Year Program.
J-3	Lands	Land Ownership Adjustment Accomplishment	Land Adjustment Plan	High	High	100% Sample Annually	Annually	Less than 75% accomplishment of 5-Year Program.

TABLE 5.1

Monitoring Requirements Lewis and Clark Forest Plan

Item	Element	Output, Management Prescription, Effects, To Be Measured	Data Source	1/ Expected Precision	2/ Expected Reliability	3/ Frequency of Measurement	Reporting Period	Variability Which Would Initiate Further Evaluation
L-1	Facilities	Road and Trail Construction/ Reconstruction; Local Roads; Trails; Arterial/Collector Roads	Transportation Inventory System	High	High	100% Sample Annually	Annually	±20% of programmed construction/ reconstruction accomplished.
L-2	Facilities	Miles of Roads Open To Public Use	Travel Plan	High	High	100% Sample Annually	Annually	±20% of target miles to be left open to public.
P-1	Protection 4/	Assure harvest emphasizes the removal of high risk stands for mountain pine beetle attack and that timber sales are located to break-up continous natural fuel accumulations.	Silvicultural prescriptions, survival, and silvicultural exams, ground and aerial surveys, post-sale reviews. TSMRS	Moderate	High	100% Sample Annually	5 Years	Unacceptable results of an ID team review, or if less than 70% of timber volume is programmed from high risk mountain pine beetle stands.
P-2	Protection	Acres and volume of insect and disease infestations	FPM aerial observation by R.O. Entomologists	High	Moderate	Once Annually	5 Years	Introduction of new insect or disease or spread of an existing insect or disease.
P-3	Protection	Management practices to ensure activities do not promote an increase in insect or disease organisms.	Post-sale reviews, insect and disease survey, silvicultural examinations and plantation survival surveys.	Moderate	Moderate	Continuous	Annually	Significant increase in insect and disease organisms.
P-4	Protection	Assure prescribed fire meets air quality standards.	Form R1-5150-1 project reports	High	High	100% Sample Annually	Annually	±10% beyond standard guidelines.
P-5	Protection	Fuel treatment outputs.	Accomplishment Reports.	High	High	100% Sample Annually	Annually	±25% of programmed targets.
P-6	Protection	Wildfire Acres Burned	5100-29	High	Moderate	100% Sample Annually	Annually	+25% above projected average annual wildfire burned acres.
P-7	Protection	Cost of Suppression and Protection Organization	5100-29 and FAMARS	High	High	Once Annually	5 Years	+5% increase in total costs.

Item	Element	Output, Management Prescription, Effects, To Be Measured	Data Source	Expected Precision	Expected Reliability	Frequency of Measurement	Reporting Period	Variability Which Would Initiate Further Evaluation
P-1	Protection	Assure harvest emphasizes the removal of high risk stands for mountain pine beetle attack and that timber sales are located to break-up continuous natural fuel accumulations	Silvicultural prescriptions, survival, and silvicultural exams, ground and aerial surveys, post-sale reviews. TSMRS	Moderate	High	100% sample annually	5 Years	Unacceptable results of an ID team review, or if less than 70% of timber volume is programmed from high risk mountain pine beetle stands
P-2	Protection	Acres and volume of insect and disease infestations	FPM aerial observation by R.O. Entomologists	High	Moderate	Once annually	5 Years	Introduction of new insect or disease or spread of an existing insect or disease
P-3	Protection	Management practices to ensure activities do not promote an increase in insect or disease organisms	Post-Sale reviews, insect and disease survey, silvicuttural examinations and plantation survival surveys	Moderate	Moderate	Continuous	Annually	Significant increase in insect and disease organisms
P-4	Protection	Assure prescribed fire meets air quality standards	Form R1-5150-1 project reports	High	High	100% sample annually	Annually	±10% beyond standard guidelines
P-5	Protection	Fuel treatment outputs	Accomplishment Reports	High	High	100% sample annually	Annually	±25% of programmed targets
P-6	Protection	Wildfire Acres Burned	5100-29	High	Moderate	100% sample annually	Annually	±25% above projected average annual wildlife burned acres
P-7	Protection	Cost of Suppression and Protection Organization	5100-29 and PAMARS	High	High	Once annually	5 Years	+5% increse in total costs
1-1	All	Validation of costs and values used in plan	Timber sale appraisals, contracts, allotments, management plans, cost/output for various projects, PAMARS	High	High	100% sample annually	5 Years	In general, ±25%; however, very large cost items such as stump-truck costs would have a smaller degree of acceptable variability

Table 5.1

MONITORING REQUIREMENTS
LEWIS AND CLARK FOREST PLAN

Item	Element	Output, Management Prescription, Effects to be measured	Data Sources	Expected Precision	Expected Reliability	Frequency of Measurement	Reporting Period	Variability Which Would Initiate Further Evaluation
W-1	Wild and Scenic Rivers	Project-level effects on eligible rivers qualifications (free-flowing and "outstandingly remarkable" resource values) and assigned potential classification	EAs Field Reviews	High	High	100% Sample Annually	Yearly	Any action that would adversely impact of degrade an eligible rivers qualifications and/or potential classification

Item	Element	Output, Management Prescription, Effects, To Be Measured	Data Source	Expected Precision	Expected Reliability	Frequency of Measurement	Reporting Period	Variability Which Would Initiate Further Evaluation
1-2	All	Effects of emerging issues or changing social values	I&I Plan, issue and target group analyses	High	Moderate	100% sample annually	Continuous	If issue cannot be dealt with under the Forest Information and Involvement Plan
1-3	All	Evaluate lands identified as not meeting physical or biological characteristics used in initial allocations	Environmental analysis, ID Team evaluation, Ranger District assessments, timber sale feasibility analyses	High	High	100% sample annually	Continuous	All changes will be evaluated annually
1-4	All	Validation of employment and income projections	Input/Output Model, Montana Population Projections	Moderate	Moderate	5-years	5-years	+20% of predicted changes

AMENDMENTS AND REVISIONS

AMENDMENT	The Forest Supervisor may amend the Forest Plan. Based on an analysis of the objectives, guidelines, and other contents of the Forest Plan, the Forest Supervisor shall determine whether a proposed amendment would result in a significant change in the Plan. If the change resulting from the proposed amendment is determined to be significant, the Forest Supervisor shall follow the same procedure as that required for development and approval of a Forest Plan. If the change resulting from the amendment is determined not to be significant for the purposes of the planning process, the Forest Supervisor may implement the amendment following appropriate public notification and satisfactory completion of NEPA procedures.
REVISION	A Forest Plan shall ordinarily be revised on a 10-year cycle or at least every 15 years. It also may be revised whenever the Forest Supervisor determines that conditions or demands in the area covered by the Plan have changed significantly or when changes in RPA policies, goals, or objectives would have a significant effect on Forest level programs. In the monitoring and evaluation process, the interdisciplinary team may recommend a revision of the Forest Plan at any time. Revisions are not effective until considered and approved in accordance with the requirements for the development and approval of a Forest Plan. The Forest Supervisor shall review the conditions on the land covered by the Plan at least every 5 years to determine whether conditions or demands of the public have changed significantly.

FOREST PLAN

Chapter VI

Summary of Analysis of Management Situation

Overview

The Analysis of the Management Situation summarizes the Forest's capability to supply outputs and uses and projects demands for the outputs or uses over time.

Information is summarized by resource and has been taken from the Forest Plan Data Base; resource and use assessments; FORPLAN model production runs; research publications; and the review of planning and land use policies of other Federal agencies, State and local governments, and Indian tribes. Opportunities, problems, and needs which surfaced in this planning effort are also summarized.

Each resource element (e.g. range, recreation, timber) begins with a discussion of the Current Management situation on the Lewis and Clark National Forest.

Next, the potential of the Forest to produce each resource, without regard to legal and administrative constraints except sustained yield allocation for timber, is analyzed. This is called Maximum Production Potential. The maximum production potential for all resources cannot be met simultaneously, because of the interaction and competitive relationship among resources.

Next, the Projected Use Level for output and uses is estimated and compared to the projected supply under current Forest management direction.

Last, the Review with the Objectives of Other Agencies, Land Management Plans, Policies and Controls is discussed where appropriate.

The Analysis of the Management Situation was updated in April, 1985, to reflect the latest available information to the Forest Plan.

RECREATION

Lands of the Lewis and Clark National Forest have historically served as a summer retreat from the surrounding hot, windy prairie in addition to providing a variety of recreation opportunities for local people. Family camping, auto travel, and hunting are the most popular uses. A significant portion of the 13 central Montana counties with a total population of some 185,000 people is within two hours driving time of the Forest. More recently, out-of-State visitors have discovered the Forest's many attractions and, together with local users, have expanded use to year-long experiences.

The Forest has nationally recognized attractions, such as the Bob Marshall Wilderness, Scapegoat Wilderness, the Sun River Elk Herd, and the State's largest herd of bighorn sheep. Wildlife and fisheries resources provide considerable recreational opportunities for the people of Montana and increasing numbers of nonresident visitors.

DEVELOPED RECREATION

Current Management

Current available developed recreation opportunity is 198,500 Recreation Visitor Days (RVDs) on 29 sites occupying 195 acres. Recreation opportunity is based on optimum use, which is 40 percent of the design capacity during the managed season. These campgrounds and picnic areas provide space and facilities for approximately 2,100 people at one time. In addition, the private sector can provide 56,100 RVDs in downhill skiing at two ski areas, and 33,500 RVDs in use at five resorts and one organization camp. There are 178 recreation residents under special use permit.

Under the current management, developed recreation in the public sector would stay at the current level; no additional facilities are scheduled to be built. The private sector would be encouraged to expand their role in providing developed recreation.

Maximum Production Potential

The maximum available developed recreation opportunity would increase from 198,500 RVDs, in 1985, to 230,100 RVDs, in 2030 (Table 6.1). It would be attained by expanding existing sites and

developing 7 new recreation sites on 36 acres, (National Forest Recreation System Inventory). Additional developed recreation sites may be available, but to identify them the Forest would need to be reinventoried. The Forest's ability to reach the maximum available developed recreation opportunity is limited by demand for additional developed recreation and the cost of developed sites.

Projected Use Level

The developed recreation use in 1984 was 66,000 RVDs. This is projected to increase to 264,600 RVDs by 2030 (see Table 6.1). Use will increase directly proportional to Montana's population growth. No adjustments were made to meet possible changing developed recreation needs, such as an increase in winter camping.

The projected use level will exceed the Forest's ability to provide developed recreation under the current management direction, in about 2005. Season of use could be expanded to meet some of this demand.

TABLE 6.1 DEVELOPED RECREATION OPPORTUNITY (Average Annual RVDs)

	1985-1990	1991-2000	2001-2010	2011-2020	2021-2030
Current Management	198,500	198,500	198,500	198,500	198,500
Maximum Opportunity	230,100	230,100	230,100	230,100	230,100
Projected Use Level	168,900	189,000	211,300	236,500	264,600

DISPERSED RECREATION

Current Management

Recreation opportunity is the projected capacity of an area to provide dispersed recreation, based on the area's recreation setting. Current available dispersed recreation opportunity is 2,369,000 RVDs on the Forest. This includes 47,000 RVDs in a primitive setting, 223,000 RVDs in a semi-primitive setting, 1,905,000 RVDs in a roaded natural setting, and 194,000 RVDs in a rural setting.

Under the current management, the available dispersed recreation opportunity would increase from 2,369,000 RVDs, in 1985, to 2,558,000 RVDs, in 2030 (see Table 6.2). Current management maintains existing trails and roads, and accesses some semi-primitive recreation areas.

Maximum Production Potential

The maximum dispersed recreation opportunity would increase from 2,487,000 RVDs in 1985 to 2,931,000 RVDs, in 2030 (see Table 6.2). Dispersed recreation is maximized by roading undeveloped lands. Roading causes a change in the recreation setting from semi-primitive to roaded natural or rural, which provide more dispersed recreation opportunity per acre but in different settings.

Projected Use Level

The use in 1984 was estimated to be 534,100 RVDs. This is projected to increase to 1,477,000 RVDs, by 2030 (see Table 6.2). Use will increase in direct proportion to Montana's population growth. The projected use is far below the available dispersed recreation opportunity. However, there could be a conflict between different recreational users.

TABLE 6.2

DISPERSED RECREATION OPPORTUNITY
(Average Annual RVDs)

	1985-1990	1991-2000	2001-2010	2011-2020	2021-2030
Current Management	2,369,000	2,433,000	2,475,000	2,516,000	2,558,000
Maximum Opportunity	2,487,000	2,550,000	2,638,000	2,811,000	2,931,000
Projected Use Level	700,000	894,000	1,088,000	1,283,000	1,477,000

VISUAL RESOURCES

VISUAL RESOURCES

Current Management

The Forest manages the visual resource as follows:

Preservation -- Classified Wilderness
-- RARE II Recommended Wilderness
Retention -- RARE II Further Planning and MWSA areas
-- Campgrounds and Ski Areas
Partial Retention -- Major roads and trails (includes rural and semi-primitive recreation settings) as defined in Forest Supervisor's Oct. 1980 memo, 1920, Classification Criteria for Major Roads
Modification -- All other land

This results in the following visual quality objectives.

Preservation	-- 448,000 acres
Retention	-- 231,000 acres
Partial Retention	-- 573,000 acres
Modification	-- 591,000 acres

Maximum Production Potential

In managing for maximum timber or range, all the commercial forest land must be intensively managed. In addition, much of the noncommercial forest and non-forest lands would take a modification VQO for spatial cohesiveness.

Preservation -- Classified Wilderness
Retention -- RARE II Further Planning Area
-- Campgrounds and Ski Areas
Partial Retention -- Rural recreation settings with timber harvest
Modification -- All other lands

Review with the Objective of Other Agencies Land Management Plans, Policies, and Controls

Glacier National Park Natural Resource Management Plan discusses Forest activities which may have a negative visual impact on the Park.

CULTURAL RESOURCES

CULTURAL RESOURCES

The Lewis and Clark National Forest contains numerous significant cultural resources of both the prehistoric and historic eras, although relatively few sites have been located to date. Situated on the east side of the Rocky Mountains, this area is transitional between mountain and plains environments. Prehistorically, it experienced cultural influence from both the Plateau culture to the west and Plains culture to the east.

Human occupation extended back into late Pleistocene times, when Paleo-Indian big-game hunters occupied the plains and adjacent mountains. Sites of the following Archaic Period demonstrate continual human occupation. During the past millennium, this area has been a corridor of cultural influence between the western Plateau groups and eastern Plains tribes. Historically, the Lewis and Clark National Forest experienced ranching, homesteading, and mining influences.

The Lewis and Clark National Forest shows a great variety of site types, which might be expected in view of its location in a transitional zone between mountain and plains. All districts contain significant cultural resources. Primary prehistoric site types identified include pictograph sites and occupation sites. The majority of historic sites are related to mining activities and early settlement.

Current Management

The focus has been: (1) to inventory on a project-by-project basis prior to design and implementation of impacting activities, and (2) to cooperate with the Blackfeet Indian Tribe in identifying possible sacred sites. Both current management and the Forest Plan continue this approach.

WILDERNESS

WILDERNESS

The Forest administers parts of two wildernesses, the Bob Marshall and Scapegoat, totalling 384,407 acres. All of the Bob Marshall Wilderness on the Forest lies immediately east of the Continental Divide in the headwaters of the Sun River, North Fork of the Teton River, and Birch Creek. The Forest portion of the Scapegoat Wilderness, classified in 1972, lies east of the Continental Divide on the southeast corner of the Bob Marshall Wilderness.

The RARE II process recommended an additional 63,304 acres for wilderness classification (Renshaw and Silver King-Falls Creek). Another 41,838 acres were allocated for further planning (Deep Creek-Reservoir North). The Montana Wilderness Study Act (Public Law 95-150), directs that 189,885 acres in the Big Snowy Mountains and the Middle Fork Judith be studied for possible inclusion into the wilderness system. Another 697,378 acres, in 22 separate roadless areas are available for wilderness classification. Therefore, a maximum of 1,386,639 acres could be classified as wilderness.

Current Management

National Forest System Wilderness is managed under Wilderness Act of 1964, the Code of Federal Regulations - Title 35 Part 293 - Wilderness-Primitive Areas, and Forest Service Manual 2320.

The Forest is continuing to gather data on the oil and gas potential of the Deep Creek-Reservoir North further planning area. Once data on oil and gas potential are available, a recommendation on wilderness classification will be made through an amendment to the Forest Plan.

The classified wilderness can provide 47,000 RVDs of primitive recreation based on the FORPLAN analysis of the recreation opportunity system and existing facilities. The estimated 1984 actual use was 69,650 RVDs. Although this analysis shows parts of the wilderness are receiving actual use which exceeds the Forest expectation for a primitive recreation experience such as along major trail corridors, this is an acceptable condition. Resource conditions vary substantially from one part of the wilderness to another. Management of these different conditions must also be different. Parts of the wilderness should not have been classified as primitive, but should have been classified to provide a higher level of recreation use. Through the LAC (Limits of Acceptable Change) process the Forest will determine the ability of the biophysical environment to withstand recreatic use, and the amount and type of use that is consistent with some measure of quality wilderness experience (see Chapter III - Management Area P and Appendix U).

WILDERNESS

Maximum Production Potential

The wildernesses can provide more than current level of primitive recreation without damage, if funds are increased. Increased funds would allow more visitor contact and improved trail maintenance, which would help improve user distribution. With increased funding and management, the current opportunity is 100,800 RVDs. However, even with high intensity management, projected use would exceed maximum opportunity by the year 2000.

The maximum area of the Forest which could be classified as wilderness is 1,386,639 acres (see Table 6.3).

TABLE 6.3 WILDERNESS OPPORTUNITY

Classified Wilderness	384,407 Acres
Recommended Wilderness - RARE II	63,304 Acres
Further Planning - RARE II	41,838 Acres
MWSA Areas	189,885 Acres
Other Roadless Areas	707,205 Acres
TOTAL	1,386,639 Acres

Projected Use Level

Estimated 1984 wilderness use was 69,650 RVDs. Use is projected to reach 148,000 RVDs, in 2030. Use will increase in direct proportion to Montana's population growth (see Table 6.4). If all 1,386,639 acres were classified as wilderness, the Forest could provide 269,500 RVDs of primitive recreation yearly.

TABLE 6.4 PROJECTED WILDERNESS USE LEVEL

	1985-1990	1991-2000	2001-2010	2011-2020	2021-2030
Current Opportunity	58,600	69,400	80,200	90,700	100,800
Maximum Opportunity	269,500	269,500	269,500	269,500	269,500
Projected Use Level	85,000	101,000	116,500	132,000	148,000

Current Management Grizzly Bear(Threatened)	The entire 776,259 acre Rocky Mountain Division is occupied grizzly bear habitat. Most of the area has been classified as Management Situation 1 - which is necessary for the survival and recovery of the grizzly bear. The current population estimate for grizzly bear on the Forest is 85 animals. Habitat improvement projects have been accomplished for grizzly bear during the last five years, including fencing of important habitat and prescribed burning. An average of 60 acres is being treated for grizzly bear habitat improvement annually under the current program.
Gray Wolf (Endangered)	Observations of gray wolves are occasionally reported on the Rocky Mountain Division, primarily from the Sun River drainage, north to Glacier Park. These animals appear to be wolves dispersing southward from Alberta, Canada, although some pair activity has been recently documented. Much of the Rocky Mountain Division provides suitable wolf habitat. Recent population estimates are from 4 to 8 wolves in the general area.
Bald Eagle (Endangered)	Bald eagles are commonly observed in both divisions during spring and fall migrations. No active bald eagle nests are known on the Forest, although there is a small amount of suitable nesting habitat.
Peregrine Falcon (Endangered)	Peregrine falcons are rarely observed on or near the Forest during seasonal migrations. No known active or historic nesting sites occur on the Forest. A considerable amount of suitable nesting habitat for peregrine falcon has been identified, especially on the Rocky Mountain Division.
Monitoring Program	The Interagency Wildlife Monitoring Program was initiated in 1980 on the Rocky Mountain Front with the Lewis and Clark National Forest, Bureau of Land Management-Butte District (now Lewistown District), U.S. Fish and Wildlife Service, and Region 4-Montana Department Fish, Wildlife, and Parks as primary cooperators. (See Appendix H.) The program is scheduled to continue through 1987.
Maximum Habitat Potential	The maximum potential improvement program for grizzly bear habitat would average approximately 640 acres each year. The ability to achieve this maximum is limited by adequate financing, manpower, and the number of days suitable for burning.

Current Management Wildlife and Fish

The Lewis and Clark National Forest provides yearlong or seasonal habitat for 290 wildlife and fish species (see Table 6.5).

TABLE 6.5 NUMBER OF VERTEBRATE SPECIES

	TOTAL SPECIES	GAME SPECIES
Mammals	72	10
Birds	190	24
Reptiles	7	0
Amphibians	8	0
Fishes	13	7
TOTAL	290	41

Estimated 1984 populations of major big-game species on the Lewis and Clark National Forest are:

Elk	8,500
Mule Deer	30,000
Whitetail Deer	4,500
Bighorn Sheep	1,100
Mountain Goat	500
Black Bear	1,050

These figures represent post hunting season population estimates. In addition, populations of moose and antelope inhabit portions of the Forest.

Fish

The Forest has 1,600 miles of streams, of which 535 miles are considered to be fishable. Important game fish species found on the Forest include rainbow, cutthroat trout, brook trout, and mountain whitefish. Trout have been stocked in the more heavily fished streams for many years to supplement native fish populations.

The major fishing streams in the Rocky Mountain Division include the Sun River, Dearborn River, Teton River, Birch Creek, Badger Creek, and the South Fork of Two Medicine Creek. All of these streams were severely damaged by the disastrous floods of 1964 and 1975. Although the stream channels are healing steadily, the fish habitat conditions are not as favorable as those that prevailed prior to the flood.

In the Jefferson Division, float trips are very popular on the Smith River which is a high quality fishing stream. Other popular fishing waters in the Little Belt Mountains include Belt Creek, Logging Creek, Pilgrim Creek, Tenderfoot Creek, Sheep Creek, Newlan Creek, Spring Creek, and the forks of the Judith River. Cottonwood Creek in the Crazy Mountains and the forks of Highwood Creek in the Highwood Mountains also provide some fishing.

There are several small natural and artificial lakes on the Forest supporting fishable populations of trout. Four are accessible by road - Crystal Lake, Forest Lake, Wood Lake, and Diversion Lake. Gibson Dam impounds a large reservoir on the Sun River. It provides only marginal fish habitat due to the major annual fluctuations in the water level. Natural fishing lakes which are reached by trails include Rhoda, Renshaw, Hidden, Bear, and Lake Levale.

Cutthroat trout populations are found in several streams scattered over the Forest. On the Rocky Mountain Division, Badger Creek, South Fork of Two Medicine Creek, Birch Creek, and the North Fork of the Teton River are known to contain cutthroat populations. Streams in the Little Belt Mountains which support cutthroats include Deep Creek, Tenderfoot Creek, Pilgrim Creek, and the headwaters of the Judith River. A few small streams in the Castle Mountains, Crazy Mountains, and Big Snowy Mountains also contain cutthroat trout. Rainbow trout which readily hybridize with cutthroat are present in many of the streams.

Wildlife Habitat

Much of the diverse wildlife habitat found throughout the Forest was created by large wildfires that swept through vast areas of the Forest in the late 1800s and early 1900s.

Elk

Although much could be written about the many diverse wildlife species found throughout the Forest, the elk represents a classic example of wildlife management. Near extinction at the turn of the century, the elk has become one of the most sought after big-game animals on the Forest.

One of the State's largest elk herds ranges in the upper drainages of the Sun River in the Rocky Mountain Division. Establishment of the Sun River Game Reserve in 1913 and removal of summer

livestock use in the North Fork of the Sun River drainage lead to increasing populations. Acquisition by the State of Montana of the Sun River Game Range in 1948 provided needed winter range. Today a stable population of 3500 elk winter along the Forest.

On the Jefferson Division native elk numbers declined to almost nothing in the latter part of the 19th century. Transplants were made in 1915 and 1917. In 1927, 96 elk were transplanted in the South Fork of the Judith. Since then, the Little Belt herd has been one of the most productive in the State. The State Department of Fish, Wildlife, and Parks began acquisition of private lands in the Judith in 1938, this program continued until 1958.

Elk were planted in the Highwood Mountains in 1917. Since this time the population has steadily increased. Elk in the Castle Mountains migrated from the Little Belt and Big Belt Mountains.

Today elk live in all of the mountain ranges of the Forest. The State maintains five winter game ranges adjacent to the Forest boundary. These game ranges are Sun River, Ear Mountain, Blackleaf, Judith, and Haymaker. The Sun River and Judith elk herds are among the major herds in Montana. The Rocky, Little Belt, Highwood, Castle, and Crazy Mountains all support sizeable elk herds. Smaller herds are in the Big and Little Snowies.

Overall, the total carrying capacity of winter-spring range (all landowners) is the limiting factor on elk populations on the Forest. Summer-fall capacity is not a limiting factor. Forest lands are estimated to supply 50 percent of the forage during the winter-spring period (December-May) for elk, which use the Forest during an average year. However, during severe winters, the amount of forage available for elk on the Forest decreases significantly, forcing more of the total winter-spring use onto adjacent lands. Elk population management objectives on all hunting districts on the Forest are based on the overall winter-spring carrying capacity of all landowners.

The Elk-Logging Studies showed that 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.

Mule Deer	Mule deer are scattered over most of the Forest during the spring, summer, and fall months. Important mule deer winter habitat is found on low elevation areas near the Forest boundary, although much of the suitable winter habitat is on private land. The mule deer is the number one big-game animal on the Forest on the basis of total numbers and annual hunter harvest.
Bighorn Sheep	The Sun River bighorn sheep herd, numbering over 900 head, is the largest and most important in the State. In addition to the trophy hunting provided by this herd, it is the source of sheep for transplanting to other suitable habitat in Montana. The herd also provides recreation opportunity for a considerable number of people in the winter and spring months when many of the animals feed along the Sun River and Benchmark Roads where they can be observed and photographed.
Mountain Goat	The Rocky Mountain goat is another big-game species which lives on portions of the Forest. The subalpine and alpine country from the Sun River north to Badger Creek provides good habitat which supports goat populations. A small herd of mountain goats also lives along the crest of the Big Snowies.
Other Big Game	White-tailed deer and black bear are other big-game species which are widely distributed on the Forest and provide a limited amount of hunting. A few moose are found in scattered portions of the Forest.
Wildlife Habitat Improvement	The average wildlife habitat improvement program during the past 5 years has been approximately 300 acres annually.
Maximum Elk Potential	The maximum potential for elk is 12,500 animals, based on the current elk population plus additional National Forest carrying capacity during an average winter. No livestock grazing would be permitted on National Forest big-game winter range. Little or no timber harvest would be programmed on elk winter range. Habitat improvement would be scheduled to enhance forage supplies. In arriving at the maximum potential, there was no consideration of suitability factors such as forage preference, human activity levels, and competition with other big-game species, which may affect elk use of an

area. In order to reach the maximum elk potential, additional winter range capacity would have to be available on adjacent Federal, State, and private lands during a severe winter.

Projected Use Level

Montana has a high demand for hunting, fishing, and most other outdoor sports. In 1982 there were 170,000 out-of-state hunting/fishing licenses sold. Nearly 3 out of 5 Montanans either hunt or fish. Elk hunters have increased from 70,300, in 1971, to 89,800, in 1980. About 13,500 elk are harvested in Montana yearly. Over 70 percent of this harvest is on National Forest land. Other activities, such as wildlife photography, nature study, and bird watching are increasing. All uses of wildlife resources are expected to rise.

Review With the Objectives of Other Agencies Land Management Plans, Policies, and Controls

The Blackfeet Treaty Agreement of 1896 reserved, "the right to hunt upon said lands and to fish in streams thereof so long as the same shall remain public land of the United States under and in accordance with the provision of the game and fish laws of the State of Montana", on the area referred to as the ceded lands on the Rocky Mountain Division (also see Chapter II).

The U.S. Fish and Wildlife Service Grizzly Bear Recovery Plan presents a comprehensive recovery plan for grizzly bears in the United States.

The U.S. Fish and Wildilfe Service Northern Rocky Mountain Wolf Recovery Plan sets a primary objective of re-establishing and maintaining at least two populations of wolf within their former range.

The Montana Department of Fish, Wildlife, and Parks Comprehensive Outdoor Recreation Plan (SCORP) proposes to increase hunter opportunity on the Lewis and Clark National Forest.

Glacier National Park Natural Resource Management Plan discusses Forest activities which may have an impact on animal movement.

Management Indicator Species

NFMA regulations specify that the following wildlife and fish categories will be considered when selecting indicator species.

--Threatened and endangered species identified on State and Federal lists for the planning area.

--Species with special habitat needs that may be influenced significantly by planned management programs.

--Species commonly hunted, fished, or trapped.

--Non-game species of special interest.

--Additional plant or animal species selected because their population changes are believed to indicate the effects of management activities on other species of selected major biological communities or on water quality.

Table 6.6 lists management indicator species for the Lewis and Clark National Forest.

TABLE 6.6 MANAGEMENT INDICATOR SPECIES

Wildlife Category	Indicator Species
Endangered and Threatened	Gray Wolf (E) Bald Eagle (E) Peregrine Falcon (E) Grizzly Bear (T)
Commonly Hunted and Fished	Elk Mule Deer Whitetail Deer Black Bear Bighorn Sheep Mountain Goat Mountain Lion Blue Grouse Cutthroat Trout Brook Trout Rainbow Trout
Commonly Trapped	Beaver Bobcat
Special Interest	Wolverine Lynx Golden Eagle Prairie Falcon
Special Habitat Needs - Old Growth Forest - Tree Cavity-Conifer	 Goshawk Northern 3-Toed Woodpecker

RANGE

Production of forage has been and continues to be a major resource on the Forest. Native grasses, forbs, and shrubs are found in parklike openings throughout the Forest and are used by both livestock and big game. Cattle numbers peaked in 1918 when 32,965 head were under permit. Sheep numbers peaked in 1920 with a total permitted number of 163,125. Deer and elk numbers were at a low ebb at that time. Over the years, livestock numbers have decreased while the number of deer and elk have increased.

Current Management

The number of livestock and permitted AUMs in 1984 are summarized below.

CLASS OF LIVESTOCK	NUMBER	AUMS
Cattle	15,200	65,200
Horses & mules	7,000	2,600
Sheep	5,300	2,900
TOTAL	27,500	70,700

The horses and mules include transportation livestock under paid permit to outfitters and guides, as well as recreation livestock used free by the general public in the backcountry.

Livestock grazing is a major use on 220,000 acres of grass, shrub, and forest land. Livestock grazing is managed on 232 designated allotments; 150 of the allotments have approved allotment management plans. These are predominantly cow/calf operations owned by one family, although corporate ownership is increasing.

Out of the 232 grazing allotments on the Forest, 88 are under some form of intensive management that provides some period of rest during the growing season. This management is designed to maintain or improve range condition and trend and to maximize livestock production. About 20 percent of the suitable range is classified as in fair condition; less than 1 percent is in poor condition.

Under the current management, grazing can be expected to remain at 71,000 AUMs. Current management provides no range deterioration caused by livestock and for improved distribution of animals on existing allotments. Improved range

management is needed on several range allotments. Existing range improvements include 430 miles of fence, 375 water developments, 75 cattleguards, and 15 miles of water transmission pipeline.

There has been steady and continued range improvement over the years resulting first from reduction in numbers of livestock and more recently from establishment of intensive management sytems such as rest rotation. The absence of sheep grazing on some high elevation ranges has resulted in increased summer forage for deer and elk.

Maximum Production Potential

Under maximum production, grazing could increase from the present level of 71,000 AUMs to a high of 90,000 AUMs by 2030 (see Table 6.7). The maximum production levels reflect: (1) the highest consumptive use by livestock that can be made using both structural and nonstructural improvements, and (2) the production which must be left for nonconsumptive allocations.

The increase in forage production is attained by harvesting timber to create transitory range, investing in a high level of range improvements, grazing vacant allotments, grazing riparian areas intensively, and a six-fold increase in the Forest budget.

Projected Use Level

Historically, cattle numbers have fluctuated up and down based on a number of economic conditions. In Montana, cattle numbers are predicted to remain the same or to decrease because of National market trends (Montana Crop and Livestock Reporting Service). Demand for additional livestock grazing on the Lewis and Clark National Forest is shown by the high interest in any available grazing permits and the applications by existing permittees to increase permitted numbers.

TABLE 6.7 RANGE (Average Annual AUMs)

	1985-1990	1991-2000	2001-2010	2011-2020	2021-2030
Current Management	71,000	71,000	71,000	71,000	71,000
Maximum Potential	85,000	90,000	90,000	90,000	90,000

TIMBER

Since the late 1800s, small sawmills have been operating in or adjacent to the Forest, producing limited quantities of lumber for local demand. Fuel, mining timber, ties, posts, and poles, have been cut since homesteading began.

After World War II, part of the pulp market shifted to eastern Montana including the Little Belt Mountains. Most of the timber cut on the Forest from 1950 through 1956 was for pulp. Rising freight rates and use of secondary hardwoods brought pulp operations to an abrupt halt. In the early 1960s there was again a demand for pulpwood which was ended when sawmills began chipping waste products.

After World War II, there was also an increasing demand for sawlogs for housing lumber. Lodgepole pine, once thought as an undesirable species, began to be placed under management. The earliest stands clearcut in the late 1940s and early 1950s have an excellent stocking of young trees. Some of these stands have now been thinned.

In 1964, there were 11 mills with an estimated single shift capacity of 24 million board feet within and near the Little Belt Mountains. During the 1960s, the average volume sold was 20 million board feet. However, timber sales dropped substantially in the 1970s averaging about 8 million board feet. In the 1980s, the Forest has sold about 12 million board feet annually. Since 1980, most of the timber sales offered have been sold.

Current Management

The current timber sales program is 13.0 million board feet per year on a land base of 554,215 acres of available, capable, and suitable Forest lands (see Table 6.8). An additional 10 million board feet of dead trees are removed as firewood. Over 95 percent of the firewood removal is cut by individuals for home use and 5 percent is sold to commercial cutters. About 4,500 Christmas trees are cut annually by local residents. Based on approved timber management plans, with revisions to reflect RARE II and other decisions, the potential yield for the Forest is 17.0 million board feet.

Under the current management, the timber sale program will remain stable, averaging 13 million board feet for the duration of the planning period. Current management provides for a low level timber sale program. About 700 acres will be reforested yearly and 175 acres will be thinned. This will lengthen the time to bring the Forest's commercial forest land under management. Current management maintains the wilderness character of classified wilderness, RARE II recommended wilderness, RARE II further planning area, and Montana Wilderness Study Act areas and maintains the visual resource around developed recreation sites, summer homes, highways, and major roads.

Maximum Production Potential

The maximum timber production potential is 69.5 million board feet per year on 675,690 acres by 2030 (see Table 6.8). The maximum timber production potential does not include the classified wildernesses, RARE II further planning area and the Tenderfoot Experimental Forest.

The maximum production potential is attained by harvesting all possible stands, intensively managing regenerated stands, converting stagnated stands into new stands, planting all non-stocked areas, and a ten-fold increase in budget.

This potential is limited by the Forest's ability to access and market timber; establishment of new reserved land areas; further reduction in the available commercial Forest land base and budget; and the need to protect other resource values. These values include wildlife, especially T&E species, potential campgrounds, visual areas, and semi-primitive recreation areas.

Projected Use Level

State and private timber supply is a factor that influences the Lewis and Clark National Forest's program. During the past 10 years, Montana's total timber harvest has averaged 1.1 billion board feet annually.

The four mills that currently process 75 to 90 percent of the Forest harvest have an annual one-shift capacity of about 50 million board feet. The 1978 East Zone Timber Program Analysis concluded that because the supplies of private timber have been decreasing and the cost of harvesting has risen steadily in relation to National Forest timber costs, the demand for

TIMBER

Forest timber should increase within the next five to ten years. This analysis is currently being updated.

Even with the purchase and liquidation of the mill at White Sulphur Springs, it is anticipated that the demand for timber from the Lewis and Clark National Forest will continue.

TABLE 6.8 TIMBER SALE PROGRAM (Average Million Board Feet Per Year)

	1985-1990	1991-2000	2001-2010	2011-2020	2021-2030
Current Management	13.0	13.0	13.0	13.0	13.0
Maximum Opportunity	24.0	31.2	40.5	52.7	69.5

Review With the Objectives of Other Agencies Land Management Plans, Policies, and Controls

The Blackfeet Treaty Agreement of 1896 reserved the right, "to cut and remove therefrom wood and timber for agency and school purposes, and for their personal uses for houses, fences, and all other domestic purposes", on the area referred to as the ceded lands on the Rocky Mountain Division (also see Chapter III).

WATER AND AIR

The Forest contains 3 percent of the upper Missouri River subbasin, but produces 15-20 percent of the total annual surface waterflow. This water production averages about 1,700,000 acre-feet each year and comes almost entirely from snowpack. About 1,698,000 acre-feet meet minimum State standards. Average annual precipitation ranges from 14 inches at lower elevations on eastern portions of the Forest to 65 inches on the higher mountains in the Rockies.

Many major tributaries of the upper Missouri River originate on the Forest. These are the Teton, Sun, Smith, Judith, and Musselshell Rivers.

On and adjacent to the Forest, reservoirs are also important and provide in excess of 500,000 acre-feet of storage capacity for irrigation. Gibson Reservoir on the Sun River is the largest with 105,000 acre-feet of storage that provides irrigation to 89,000 acres.

Current Management

Water and air quality on the Forest is generally good to excellent. Mine wastes on adjacent private lands and floods within National Forest watersheds cause extensive damage to riparian habitat and to improvements such as roads and bridges, particularly in 1964 and 1975 in the Rocky Mountain Division and in 1953 and 1981 in the Jefferson Division.

Air quality is excellent with no direct point source problems and only occasional regional haze in late summer primarily from forest fires in western Montana or in Canada. Prevention of significant deterioration is Class I for Bob Marshall and Scapegoat Wildernesses and Class II for the Bob Marshall Wilderness Addition and remainder of the Forest.

Water from the National Forest is generally used as fish habitat, with some consumptive use for livestock and two municipal watersheds for the communities of White Sulphur Springs and Neihart. These watersheds are managed specifically to assure a continuous supply of high quality water for the domestic use.

Water yield is predicted by winter snow measurement on 35 snow courses on the Forest. These measurements are made in cooperation with the Soil Conservation Service and the U.S. Geological Surve for streamflow forecasts.

Most available water is used for irrigation in the summer. All water is used for electricity generation downstream on the Missouri River.

Adequate water is available to supply current demands. However, shortages of water occur in places during the late irrigation season and in mid-winter, because of the variable distribution of streamflow through the year and from year to year, with inadequate water storage facilities. This leads, in some cases, to dewatered or partly dewatered streams and creates more public interest in water resource management, including reservoirs.

Water rights claims for Forest purposes, including permittee needs, were filed with the State of Montana on 1,475 consumptive water uses for a total of 600 acre feet. Instream flow needs for channel maintenance, fish habitat, recreation, and other nonconsumptive uses are currently being quantified prior to submission to a reserved rights negotiation commission for the development of a Federal-State compact.

Under current management, water meeting water quality standards would increase to the average water production of 1,700,000 acre feet by the year 2000, as RPA requires elimination of any restoration backlog by that time. Average water yield (all meeting minimum standards) would continue at that level, as increases due to sustained-yield timber harvest would be offset by regeneration of previously harvested areas. No activity that degrades state water quality standards would be allowed.

Maximum Production Potential

The maximum production potential is dependent on water yield increase due to timber harvest. The potential average water yield is 1,710,000 acre feet per year for the first decade and could increase to 1,720,000 acre feet per year (average) by the fifth decade. No other activities are expected to increase water yield significantly.

Projected Use Level

The passage of a State water development plan by the 1981 Montana legislature indicates that the need for water will increase, mostly for industrial development and irrigation, including additional storage or reservoir capacity.

ENERGY FUEL MINERALS

Gas and oil leases were first approved on the Lewis and Clark National Forest in the late 1940s. These were located on the Rocky Mountain Division primarily in the Badger-Two Medicine drainages. In the 1950s, additional leases were issued covering nearly all the nonwilderness lands in the Division.

During the mid-50s, seismic activity began in the Badger-Two Medicine drainages and has continued in varying degrees until the present. Extensive seismic activity occurred from 1968 through 1970 when virtually every drainage from Elk Creek north to U.S. Highway 2 was explored. Gas was discovered in Blackleaf Canyon in 1957. This well was capped because of an insufficient market for natural gas at that time. Since then, three dry holes have been drilled and plugged on National Forest land. In 1982, the gas well in Blackleaf Canyon was re-opened. Applications to drill have been approved on two other sites, although drilling has not started.

Coal has not been mined within the boundaries of the Forest. Other public and private lands adjacent to the Forest had extensive mining in the early 1900s. These operations tapped shallow veins of low grade lignite coal which was used by railroads serving the area and for general domestic use. These activities ceased in the late 1920s, but were active during World War II.

Current Management

Since 1981, oil and gas leases are being processed under the guidelines of the "Environmental Assessment on Oil and Gas Leasing on Nonwilderness Land." This assessment requires that occupancy leasing be recommended for accessible areas that can be adequately protected during oil and gas activity. Lease denial or issuance of a non-surface occupancy lease is recommended when an application is located entirely within an area that could not be adequately protected. Leases partially located in sensitive areas that cannot be protected receive a no-surface occupancy stipulation for those sensitive areas. Timing restrictions, limited surface use, and the activity coordination stipulations are used to protect recreation, soil, water, and wildlife. The Further Planning Stipulation allows for exploration but not production or field development until a decision on wilderness is made.

Based on previous environmental analyses, 423,373 acres of the Forest have been leased. (see Table 6.9.) Another 60,527 acres of lease applications are pending in the Silver King-Falls Creek and Renshaw roadless areas.

In addition, 60,526 acres of leases are pending in the Big Snowies MWSA area. (See Table 6.9).

The Bob Marshall-Scapegoat-Great Bear Wilderness complex was withdrawn from mineral entry on January 1, 1984.

Since 1982, seismic exploration permits are being processed under the standards in the "Environmental Assessment Geophysical Exploration on Nonwilderness Lands". These standards set the timing, spacing, and other requirements necessary to protect surface resources. About 700 miles of seismic lines have been permitted under this assessment.

Maximum Production Potential

The maximum production potential could be attained by dropping the current stipulation on leases.

Projected Use Level

Natural gas use in North America has grown from 9 percent of the total energy consumed in 1950 to 30 percent in 1975. In the U.S., over 40 million households and 3 million businesses rely on natural gas. Energy use projections for the year 2000 for the United States show about the same level of use of natural gas as in 1982 (18.2 quadrillion British Thermal Units). Use of oil is projected to decrease slightly. (From 30.2 to 28.4 quadrillion British Thermal Units.) (Source: U.S. Department of Energy-Office of Policy and Analysis-1983.)

TABLE 6.9 LEASE STATUS AND STIPULATION REQUIREMENTS

	Rocky Mountain Division			
STIPULATIONS:	NON-WILDERNESS	FURTHER PLANNING-DEEP CREEK-RESERVOIR NORTH	SILVER KING FALLS CREEK RARE II RECOMMENDED WILDERNESS	RENSHAW RARE II RECOMMENDED WILDERNESS
ACRES W/PENDING APPLICATIONS	0	0	28,834	31,693
ACRES LEASED	293,849	41,838	0	0
Lease Stipulations No Surface Occupancy	105,785(36%)	34,664(82%)		
Limited Surface Use	58,770(20%)	NA		
Timing Restrictions: Elk & Deer Winter Range	49,954(17%)	17,321(41%)		
Elk Calving	5,877(2%)	3,379(8%)		
Sheep Lambing	5,850(2%)	3,379(8%)		
Migration Routes	11,754(4%)	2,112(5%)		
Raptor Nesting	202(<1%)			
Other	1,931(<1%)			
Activity Coordination	293,849(100%)	41,838(100%)		
FURTHER PLANNING		41,838(100%)		

	Jefferson Division		
STIPULATIONS:	NON-WILDERNESS	MIDDLE FORK JUDITH MWSA	BIG SNOWIES MWSA
ACRES W/PENDING APPLICATIONS	0	0	60,526
ACRES LEASED	87,686	0	0
Lease Stipulations No Surface Occupancy	6,138 (7%)		
Limited Surface Use	5,261 (6%)		
Timing Restrictions: Elk & Deer Winter Range	19,290 (22%)		
Elk Calving	1,753 (2%)		
Sheep Lambing			
Migration Routes	4,383 (5%)		
Raptor Nesting	30 (<1%)		
Other	1,113 (<1%)		
Activity Coordination			
FURTHER PLANNING			

NON-FUEL MINERALS

The Neihart and Barker Districts were important production centers for lead, silver, zinc, and copper until the 1930s. Large quantities of silver were mined from eight mines in the Castles in late 1800s and early 1900s. Gold was discovered in the Yogo drainage in 1870. This discovery ran out in two years. The same area was found to be extremely rich in sapphires. During the late 1800s a flurry of activity from two large operations, the British and the American mines, produced large amounts of the now famous Yogo sapphire. The sapphire operation ceased in 1940; efforts resumed in 1968 and are currently producing commercial quantities. The Newlan Creek drainage north of White Sulphur Springs was the site of extensive exploration for silver and lead in the 1960s.

Nonmetallic minerals, such as building stone, are abundant throughout the Little Belt Mountains. Common varieties, primarily sand and gravel, are generally available over most of the Forest. To date, demands for this material have been limited to sources for use as crushing sites for Forest, county, State, and Federal road systems.

Current Management

The Jefferson Division of the Forest has a long history of silver, zinc, lead, sapphire, and gold mining. Production has been mostly from small mines which produced intermittently up to the 1950s.

There is a moderate level of exploration activity on the Forest. This includes geologic mapping, sampling, and a number of drilling projects every year. Development type work is taking place in the Barker-Hughsville area on patented claims; some development work is taking place on unpatented claims. At present the Forest receives approximately 12-15 plans per year, mostly from small-scale operations. Although the number of operating plans submitted will probably increase in the future, production would not likely increase significantly during the planning period. Production would probably come from the Barker-Hughsville properties.

Withdrawal Review

As required by Federal Land Policy and Management Act, a withdrawal review is presently being conducted. All administrative site withdrawals (32) which meet the criteria established in Management Standard G-3 have been terminated.

All campground withdrawals (8) have also been terminated. Approximately 23 power projects, (1,825 acres), 11 reclamation projects (16,582 acres), 10 administrative sites (1,396 acres), and 1 recreation area (780 acres) remain to be reviewed. The review of power and reclamation projects will be coordinated with the Bureau of Reclamation.

Projected Use Level

For most mineral commodities, except the common varieties, the market is worldwide. As a result, the mineral outputs provided by the Forest will not affect the price. However, quantity produced is influenced by price.

HUMAN AND COMMUNITY DEVELOPMENT

Human and Community Development

The Lewis and Clark National Forest is involved in two categories of Human Resource Programs. Sponsored programs include Youth Conservation Corps (YCC) and the Senior Community Employment Program (SCEP). Sponsored programs are those programs for which funding is appropriated by Congress and allocated either directly or indirectly to the Forest Service. Hosted programs include volunteers that work in the National Forest, Green Thumb, Youth Employment Corp (YEC), and Rural Employment Opportunities (REO).

Work Station in the Rocky Mountains.

SOILS

Current Management

Soils on the Jefferson Division are moderately productive and stable; however, areas of unstable soils exist. Soils on the Rocky Mountain Division are generally shallow, steep, and more sensitive, with many areas of unstable soils.

A landtype survey has been completed on the Lewis and Clark National Forest. The landtype survey is a soil survey using selected properties of landforms and climax vegetation (habitat types) to characterize mapping units. The inventory is a 3rd order soil survey as defined in Forest Service Manual 2550. The survey is not correlated to the National Cooperative Soil Survey.

An estimated 373 acres are in need of restoration to control management-caused erosion. This restoration is being completed as funds become available.

The current management direction is to complete all restoration by the year 2000, in order to control all management-caused erosion presently contributing to water pollution. No new areas of management-caused erosion are expected because all present and future activities will require the application of all reasonable land, soil, and water conservation practices ("Best Management Practices").

LANDS

LANDS

Private in-holdings within the Forest are the result of transactions made under the authority of the General Mining Laws, Homestead Acts, and the Railroad Grants. Down through the years these lands have changed ownership; usually by private sale or through land exchange with the Federal Government.

Current Management

On the Lewis and Clark National Forest the land's function is divided into five subparts: land adjustment; land uses; rights-of-way; land status; and land line location.

Land Adjustment

In 1967, a land adjustment plan was prepared for the Forest. Revisions were started and several were made from time to time, but were not completed. Land adjustment actions stopped because of financing, priority, and need for a more usable plan. Land adjustments are made on a case-by-case basis when an opportunity arises.

Special Land Use

Request for land uses are dealt with on a project-by-project basis. Over 380 special-use permits have been issued on the Forest. Three utility corridors cross the Forest. One potential utility corridor parallels U.S. Highway 2.

Rights-of-Way

Lack of permanent access to National Forest land is a major problem. In order to assure the public the right to use their land, it is necessary to acquire permission to cross private land.

In spite of what appears to be a large system of Forest and county roads and trails, less than one-third of the 1,450 miles of Forest boundary is available to public access. Of the more than 100 miles of the boundary along the east side of the Rocky Mountain Division, only six access routes are available for public use. Similar, or more restrictive situations exist in the Little Belts, Highwoods, Crazies, and Snowies. There are only four trail rights-of-way across private land in and adjacent to the Forest. Routes through private lands traditionally used to reach public lands are gradually being closed because of increasing conflicts between landowner and user.

The Forest is continually obtaining necessary rights-of-way to manage Forest resources.

LANDS

Land Status	The maintenance of land status is an ongoing program at the Regional level. The Forest reviews and supplies information to this program.
Land Line Location	The program consists of locating and monumenting National Forest property boundary corners, as well as marking and posting property line boundaries. Currently, the Forest, in cooperation with the Bureau of Land Management, annually remonuments about 70 corners and posts, an average of 13 miles of boundary.
Review of the Objectives of Other Agencies Land Management Plans, Policies and Controls	The Bureau of Land Management Headwaters Resource Area Management Plan and Billings Resource Area Management Plan describe land uses on adjacent lands. The Bonneville Power Administration Pacific Northwest Long-Range, East-West Energy Corridor Study, Phase I identifies the potential corridors that occur on the Forest (see Chapter I).

ROADS AND TRAILS

The Forest is presently served by six main highways; U.S. 2, U.S. 89, and Interstate 15 carries north-south traffic, and U.S. 12, U.S. 87, and Montana Highway 200 carry east-west traffic. U.S. Highway 89, a major route between Glacier and Yellowstone Parks, has 52 miles of Forest Highway. U.S. Highway 2 borders Glacier National Park for 11 miles.

Approximately 1,000 miles of county road link the existing Forest road network to Federal and State highways. Some of the routes serve the National Defense system of minuteman missile sites in addition to providing access to local residences and Forest users. The North Fork Teton River 109, Benchmark 235, Sun River 108, and Memorial Way 487 (Utica to Forest boundary) are also part of the Forest Highway System.

The existing transporation system within the Forest has resulted from a combination of improvements to early-day wagon trails used by miners and homesteaders, and construction of roads for timber harvest.

Current Management

The current inventoried road system on the Forest consists of 155 miles of arterial roads, 643 miles of collector roads, and 597 miles of local roads. There are an estimated 600 miles of primitive roads, which are not on the inventory.

The current trails system on the Forest consist of 1,677 miles. Most of these trails originated in the early 1900s for fire suppression purposes; a few were cleared and used to move sheep between grazing units. Trails, particularly those in the Rocky Mountains, provide the only routes of travel to much of the Forest. Since the last 1960s, motorbikes and snowmobiles have made extensive use of many of these trails.

There are seven National Recreation Trails totaling 82 miles.. A "segment" of the 3,100-mile CDNST (Continental Divide National Scenic Trail) is on the Rocky Mountain Division. A specific CDNST route will not be identified prior to approval of the comprehensive plan being prepared by the Forest Service and the Secretary of Agriculture Advisory Council (see Management Standard L-3).

Under the current management, the arterial-collector road system would increase about 3 miles per year. Timber support local roads, with the

	timber harvest at 13 million board feet per year, will increase about 15 miles per year. There will be a slight decrease in the miles of trails, as presently unroaded areas become roaded.
Maximum Access Potential	Complete access to Forest lands would require an additional 2,900 miles in the arterial-collector road system, and 5,400 miles in the local system. There would be about 4 miles of road for each square mile of National Forest accessed. Much of the trail system outside of wilderness would be replaced by roads. Maximum access is limited by funding in Forest road budget and the Forest's ability to acquire rights-of-way through private lands.
Review With the Objectives of Other Agencies Land Management Plans, Policies, and Controls	The Blackfeet Treaty Agreement of 1896 reserved, "the right to go upon any portion of the lands hereby conveyed so long as the same shall remain public lands of the United States", on the area referred to as the ceded lands on the Rocky Mountain Division (also see Chapter III). The Forest Service Continental Divide National Scenic Trail: Comprehensive Plan describes the portion of the trail along the Rocky Mountain Division of the Forest.

FIRE

Wildfires burned an average of 492 forest acres a year during 1970-79, at a suppression cost of about $208,000 per year. Over 70 percent of these acres were in the lodgepole pine type of the Little Belt Mountains. As these lodgepole pine stands continue to deteriorate and "unnatural" fuel conditions increase in ponderosa pine and Douglas fir types, larger fires can be expected in the 1980-89 decade. Theoretically, this trend will continue until much of the "old growth" forest has been recycled back to a younger, more fire resistant age class.

Current Management

The Forest is operating under the 1984 Fire Management Action Plan. A Fire Management Plan for the Scapegoat Wilderness/Danaher portion of the Bob Marshall Wilderness was implemented in 1981. A Fire Management Plan for the remainder of the Bob Marshall and Great Bear Wildernesses was implemented in 1983. These plans allows fire to play a more "natural" role in the wilderness ecosystem. The Forest cooperates in the control of wildfire with the BLM, State, and counties through cooperative programs.

Prescribed fire by planned ignitions has, for the most part, been limited to activity-created fuels such as timber sale slash and road construction debris. The use of fire in natural fuels to improve resource production has received very little emphasis. The result of this management is that vegetation and fuels have progressed in many areas beyond the "natural" condition. This "unnatural" condition manifests itself with reduced forage and timber production due to (1) dense conifer growth underneath the forest canopy, which increases competition to crop trees and forage; (2) conifer encroachment into grasslands; (3) a buildup of dead fuels on the forest floor; and (4) in many cases, a decadent grass and shrub condition. This state often leads to "unnaturally" large and destructive wildfires.

A Level I and Level III fire analysis has been completed for the Forest. This Level I report describes in more detail the current fire management situation and the relationship of fire to other resources.

INSECT AND DISEASE

Insects and disease have taken a heavy toll of the Forest. During the 1950s, the spruce budworm infested some 500,000 acres of Douglas fir in the Little Belt, Crazy, and Castle Mountains. Approximately 372,000 acres were treated through 1957. Scattered infestations of the mountain pine beetle have been found in the Little Belts. The most recent attack was in 1969 in the Belt Creek drainage and involved less than 100 acres.

Current Management

Four insects and two diseases are the most damaging agents of the trees of the Lewis and Clark National Forest.

Mountain Pine Beetle

The mountain pine beetle presents the most serious threat to lodgepole pine. Beetle populations periodically increase and kill most large diameter trees in a forest before subsiding. Nearly 200,000 acres of lodgepole pine have been identified as high risk for beetle infestations; that is, the trees on these acres are of the age and size classes, and located in geographic positions, usually associated with beetle outbreaks. The majority of these acres are on the Kings Hill District. Another 87,000 acres are rated moderate risk (Gibson and Dooling, 1983).

Mountain pine beetle also attacks ponderosa pine, especially second growth as is found in the Little Snowies. Currently, infestations in ponderosa pine are in several locations on the Forest and on State and private lands adjacent to it. On the Musselshell Ranger District more than 17,000 acres were observed to have scattered infestations. Although the total number of affected trees is not great, their scattered nature indicates beetle populations are widespread (Gibson and Dooling, 1983).

Spruce Beetle

Spruce beetle attacks stands which are disturbed by blowdown, logging, or fire. The Forest has limited stands of spruce which are susceptible to the spruce beetle, but serious infestations exist on adjacent areas of the Flathead National Forest in the South Fork of the Flathead River drainage (Gibson and Dooling, 1983).

Douglas Fir Beetle

Like the spruce beetle, the Douglas fir beetle prefers blowdown, logging slash, fire-scorched trees, or trees damaged by snow or ice. Now the Douglas fir beetle exists on the Forest in an endemic state only (Gibson and Dooling, 1983).

Western Spruce Budworm

Western spruce budworm attacks spruce, Douglas fir, and subalpine fir. The larvae strips all current needles and some old needles from trees, resulting in growth reduction. Continued defoliation kills the tree. In 1982, over 88,000 acres of visibly defoliated Douglas fir were observed on the Forest and adjacent lands, which was a substantial increase over the 60,600 acres mapped in 1981. Most damage is in the Little Belt Mountains, northeast of White Sulphur Springs (Gibson and Dooling, 1983).

Dwarf Mistletoe

A survey made in 1978 showed 36 percent of the lodgepole pine type (154 thousand acres) to be infested with dwarf mistletoe (Dooling, 1979). Estimated growth loss is 10 cubic feet per acre per year, for an annual Forest loss of more than 1.5 million cubic feet (Gibson and Dooling, 1983).

Root Disease

Root disease occurs extensively in Douglas fir and lodgepole pine on the Forest, especially in the Little Belt Mountains and on the Rocky Mountain Division. There are both recognizable root disease centers and scattered individual trees killed by root disease. Volume impact is not known, but is probably substantial.

Others

Other insects effect growth, decrease the quality of the wood, or kill the tree. Often trees that have been damaged by wind, snow, fire, or lightning are killed by secondary insects or disease. Disease also affects tree growth, damages portions of the tree, and opens the tree to secondary attacks. Several agents, often more than one, affect an individual tree.

Red Belt

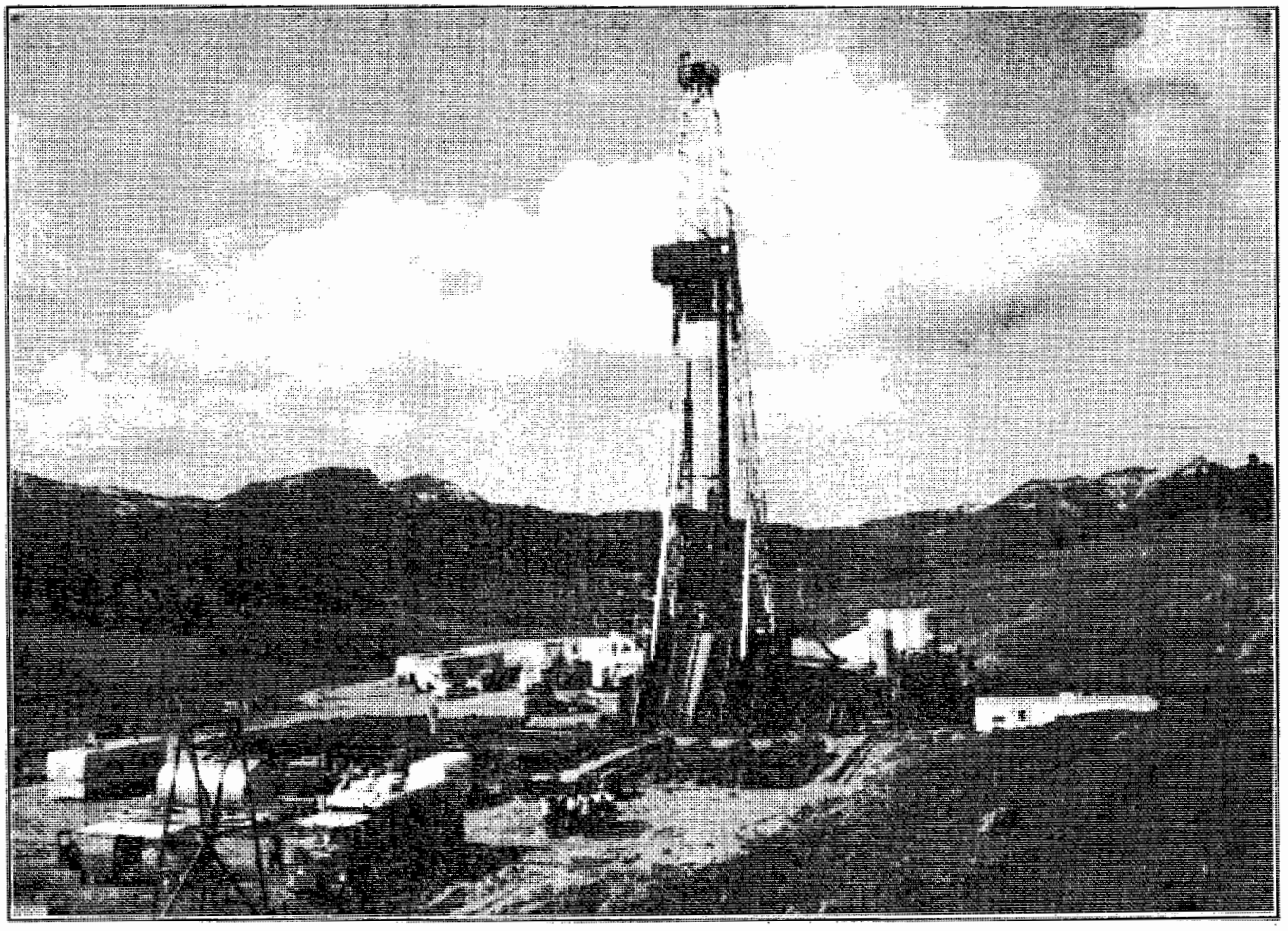
In addition to insects and disease, the Forest has over 20,000 acres of lodgepole pine and Douglas fir which has been damaged by red belt. The name "red belt" is applied to winter drying that occurs in zones or belts more or less following contour lines. Red belt occurs during midwinter or early spring, when large increases in temperature, often accompanied by drying winds (chinook), cause excessive loss of water from the needles. This moisture loss cannot be replaced because the soil moisture is either frozen or too cold, and not available from the roots; or the wood in the stem is frozen and water cannot pass through it. The disease manifests itself by brown needles in the spring.

LAW ENFORCEMENT

LAW ENFORCEMENT

Current Management

The Forest relies on cooperative law enforcement agreements with the counties, in order to provide much of the Forest's law enforcement needs. Currently the Forest has 11 cooperative agreements. The Forest Law Enforcement Plan calls for one Level IV trained employee in the Rocky Mountain Division, one in the Jefferson Division, and one Level III in the Supervisor's Office. Currently, the Forest has one Level IV trained employee on the Musselshell District and one Level III and one Level IV trained employee on the Rocky Mountain District.



Exploration Oil and Gas Drilling adjacent to National Forest Lands on the Rocky Mountain Division.

FOREST PLAN

Glossary

A	
Acre-Foot	A water or sediment volume measurement term, equal to the amount which would cover an area of one acre to a depth of one foot-i.e., 325,851 gallons or 43,560 cubic feet (Thor, Edward C., PSW Forest and Range Experiment Station).
Activity Fuels	Fuels which have been directly generated or altered by management activities (FSM 5150).
Allowable Sale Quantity	The quantity of timber that may be sold from the area of suitable land covered by the Forest Plan for a time period specified by the Plan. This quantity is usually expressed on an annual basis as the average annual allowable sale quantity (NFMA Planning Regulations 36 CFR 219.3).
Animal Unit Month (AUM)	The quantity of forage required by one mature cow (1,000 lbs.) or the equivalent for one month (Dyrland, 1973).
Arterial Roads	Roads comprising the basic access network for National Forest System administrative and management activities. These roads serve all resource elements to a substantial extent, and maintenance is not normally determined by the activities of any one element. They provide service to large land areas and usually connect with public highways or other Forest arterial roads to form an integrated network of primary travel routes. The location and standard are determined often by a demand for maximum mobility and travel efficiency rather than by a specific resource management service. Usually they are developed and operated for long-term land and resource management purposes and constant service (FSM 7710.5).
B	
Base Sale Schedule	The timber sale schedule formulated on the basis of the quantity of timber planned for sale and harvest for any future decade is equal to or greater than the planned sale and harvest for the preceding decade, and this planned sale and harvest for any decade is not greater than long-term sustained yield capacity (NFMA Planning Regulations).

Best Management Practices (BMP)	The set of practices in the Forest Plan which, when applied during implementation of a project, ensures that water related benefical uses are protected and that State water quality standards are met. BMP's can take several forms. Some are defined by State regulation or memoranda of understanding between the Forest Service and the States. Others are defined by the Forest interdisciplinary planning team for application Forest-wide. Both of these kinds of BMP's are included in the Forest Plan as Forest-wide standards. A third kind are identified by the interdisciplinary team for application to specific management areas; these are included as Management Area Standards in the appropriate management areas. A fourth kind, project level BMPs, are based on site specific evaluation and represent the most effective and practicable means of accomplishing the water quality and other goals of the specific area involved in the project. These project level BMP's can either supplement or replace the Forest Plan standards for specific projects.
Big Game Winter Range	The area available to and used by big game through the winter season.
Blackfeet Treaty Rights Area	Those lands on the Rocky Mountain Ranger District in which the Blackfeet Indian Nation retained certain use rights under the Treaty of 1896.
Board Foot (Bd. Ft. or BF)	A unit of timber measurement equaling the amount of wood contained in an unfinished board 1 inch thick, 12 inches long, and 12 inches wide.
Board Foot/Cubic Foot Conversion Ratio	Both board foot and cubic foot volumes can be determined for timber stands. The number of board feet per cubic foot of volume varies with tree species, diameter, and height, and form factors. For the Lewis and Clark the Forest-wide average conversion ratio is 3.4 board feet per cubic foot.
C	
Capability	The potential of an area of land to produce resources, supply goods and services, and allow resources uses under an assumed set of management practices and at a given level of management intensity. Capability depends upon current conditions and site conditions such as climate, slope, landform, soils and geology, as well as the application of management practices, such as silviculture or protection from fires, insects,

GLOSSARY

	and disease (NFMA Planning Regulations).
Carrying Capacity	The number (or weight) of organisms of a given species and quality that can survive in, without causing deterioration of, a given ecosystem through the least favorable environmental conditions that occur within a stated interval of time (Ford-Robertson, 1971).
Catchable Trout	A trout over 6 inches long.
Cave	Any naturally occurring void, cavity, recess, or system of interconnected passages which occurs beneath the surface of the earth or within a cliff or ledge and which is large enough to permit an individual to enter, whether or not the entrance is naturally formed or man-made. Such term shall include any natural pit, sinkhole, or other feature which is an extension of the entrance.
Chargeable Volume	All volume that is included in the growth and yield projections for the selected management prescriptions used to arrive at the allowable sale quantity, based on Regional utilization standards. Consistent with the definition of timber production, planned production of fuelwood is not included in the allowable sale quantity and therefore is nonchargeable. However, in the implementation of the Forest Plan, unforeseen conditions may warrant selling as fuelwood some volume that was included in the allowable sale quantity, for example, timber severely damaged by fire or insects. In such cases, fuelwood volume is chargeable (FSM 2410.5).
Clearcutting System	An even-aged silvicultural system in which the old crop is cleared over a considerable area at one time. Regeneration is generally artificial, but natural regeneration by seeding from the air, from adjacent stands, or from seed and/or advance growth already on the ground (Ford-Robertson, 1971).
Collector Roads	Roads constructed to serve two or more elements but which do not fit into the other two categories (arterial or local). Construction costs of these facilities are prorated to the respective element served. These roads serve smaller land areas and are usually connected to a Forest arterial or public highway. They collect traffic from Forest local roads or terminal facilities. The location and standard are influenced by both long-term multi-resource service needs and travel efficiency. Forest collector roads are operated for constant or intermittent service, depending on land use and resource management objectives for the area served by the facility (FSM 7710.5).

GLOSSARY (continued)

Commercial Forest Land (CFL)	Forest land that is producing or is capable of producing crops of industrial wood and (a) has not been withdrawn by Congress, the Secretary, or the Chief; (b) existing technology and knowledge is available to ensure timber production without irreversible damage to soils, productivity, or watershed conditions; and (c) existing technology and knowledge, as reflected in current research and experience, provides reasonable assurance that adequate restocking can be attained within 5 years after final harvesting (FSM 2410.5).
Cost Efficiency	The usefulness of specified inputs (costs) to produce specified outputs (benefits). In measuring cost efficiency, some outputs, including environmental, economic, or social impacts, are not assigned monetary values but are achieved at specified levels in the least cost manner. Cost efficiency is usually measured using present net value, although use of benefit-cost ratios and rates-of-return may be appropriate (NFMA Planning Regulations).
Culmination of Mean Annual Increment (CMAI)	The age at which the average annual growth is greatest for a stand of trees. Mean annual increment is expressed in cubic feet measure and is based on expected growth according to the management intensities and utilization standards assumed in accordance with 36 CFR 219.16(a)(2)(i) and (ii). Culmination of mean annual increment includes regeneration harvest yields and any additional yields from planned intermediate harvests (FSM 2410.5).
D	
Developed Recreation	The type of recreation that occurs where modifications (improvements) enhance recreation opportunities and accommodate intensive recreation activities in a defined area.
Developed Recreation Site	Relatively small, distinctly defined area where facilities are provided for concentrated public use (campgrounds, picnic areas, swimming areas, and ski areas).
Diameter at Breast Height (d.b.h.)	The diameter of a tree measured four feet, six inches from the ground level. "Ground level" can follow two conventions; either the highest point of the ground touching the stem, or the mean of the highest and lowest points (Ford-Robertson, 1971).

Dispersed Recreation	That type of recreation use that requires few if any improvements and may occur over a wide area. Involves activities related to roads and trails. The activities do not necessarily take place on or adjacent to a road or trail, only in conjunction with it. Activities tend to be day-use oriented and include hunting, fishing, berrypicking, off-road vehicle use, hiking, horseback riding, picniking, camping, viewing scenery, snowmobiling, and many others.
Diversity	The distribution and abundance of different plant and animal communities and species within the area covered by a land and resource management plan (NFMA Planning Regulations).
Dry Forest (DF)	Commercial Forest land that usually receives less than 25 inches of precipitation per year. Includes the following habitat species on the Lewis and Clark National Forest: limber pine, ponderosa pine, Douglas fir/bluebunch wheatgrass, Douglas fir/white spirea, Douglas fir/nine bark, and subalpine fir/virgin's bower. The dry forest produces from 20 to 49 cubic feet/acre/year of wood fiber.
E	
Early Forest Succession	The biotic community that develops immediately following the removal or destruction of the vegetation in an area.
Effective Hiding Cover	Vegetation capable of essentially hiding an adult elk from the view of at a distance equal to or less than 200 feet. Effective hiding cover is based on percentages of PI types which meet this definition as determined by the Montana Cooperative Elk/Logging Study.
Endangered Species	Any species, plant, or animal, which is in danger of extinction throughout all or a significant portion of its' range. Endangered species are identified by the Secretary of the Interior in accordance with the 1973 Endangered Species Act.

Environmental Analysis	A process involving the analysis of alternative actions and their predictable short-and long-term environmental effects, which include physical, biological, economic and social factors and their interactions.
Environmental Assessment	Means a concise public document for which a Federal agency is responsible that serves to: (1) Briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact. (2) Aid an agency's compliance with the Act when no environmental impact statement is necessary. (3) Facilitate preparation of a statement when one is necessary. Shall include brief discussions of the need for the proposal, of alternatives as required by sec. 102(2)(E), of the environmental impacts of the proposed action and alternatives, and a listing of agencies and persons consulted (40 CFR 1508.9).
Even-Aged Management	The application of a combination of actions that results in the creation of stands in which trees of essentially the same age grow together. Managed even-aged forests are characterized by a distribution of stands of varying ages (and, therefore, tree sizes) throughout the forest area. The difference in age between trees forming the main canopy level of stand usually does not exceed 20 percent of the age of the stand at harvest rotation age. Regeneration in a particular stand is obtained during a short period at or near the time that a stand has reached the desire age or size for regeneration and is harvested. Clearcut, shelterwood, or seed tree cutting methods produce even-aged stands (NFMA Planning Regulations).
Even-Aged System	Silvicultural system that produces stands in which all trees are of about the same age. (In normal rotations a difference in age between trees forming the main crown canopy level will usually not exceed 20 percent of the rotation length). Cutting methods producing even-aged stands are clearcut, shelterwood, or seed tree systems (FSM 2470.5).
Existing Visual Condition (EVC)	The present state of visual alternation which is measured in degree of deviation from the natural appearing landscape.
Extensive Timber Management	The practice of forestry on a basis of low operating and investment costs per acre.

F

Facility Condition Class	The rating system used in the Recreation Information Management System to classify the condition and maintenance needs of recreation sites and areas.
Final Cut	See Overwood Removal.
Forest Land Not Appropriate for Timber Production	Lands not selected for timber production in the Forest Plan alternative due to (a) the multiple-use objectives for the alternative preclude timber production; (b) other management objectives for the alternative limit timber production activities to the point where management requirements set forth in 36 CFR 219.27 cannot be met; and (c) the lands are not cost-efficient, over the planning horizon, in meeting forest objectives that include timber production. Lands not appropriate for timber production shall be designated as unsuitable in the preferred alternative and Forest Plan (FSM 2410.5).
Forest Wide Management Standard	An indication or outline of policy or conduct dealing with the basic management of the Forest. Forest-wide management standards apply to all areas of the Forest regardless of the other management prescriptions applied.
Fuel Management	The practice of planning and executing treatment or control of any vegetative material which adversely affects meeting fire management direction based upon resource management goals and objectives (FSM 5150).
Fuels	Wildland vegetative materials which can burn. While usually referring to above ground, living and dead wildland surface vegetation, roots, and organic soils such as peat are often included (FSM 5150).

G

General Forest (GF)	Commercial forest land that usually receives more than 25 inches of precipitation per year. Includes the following habitat types on the Lewis and Clark National Forest: Douglas fir/pinegrass, subalpine fir/twinflower, subalpine fir/blue huckleberry, subalpine fir/grouse whortleberry, subalpine fir/

	sweetscented bedstraw, subalpine fir/menziesiz, and subalpine fir/pinegrass. The general forest is further subdivided into: (1) high productivity (from 50 to 84 cubic feet/acre/year of wood fiber); and (2) low productivity (from 20 to 49 cubic feet/acre/year of wood fiber).
Goal	A concise statement that describes a desired condition to be achieved sometime in the future. It is normally expressed in broad, general terms and is timeless in that it has no specific date by which it is to be completed. Goal statements form the principal basis from which objectives are developed (NFMA Planning Regulations).
Gravity Surveys	Gravity surveys generally involve vehicle supported operations in which gravity-density variations are measured by surface instruments. These surveys are usually limited to roads and gentle terrain.
Group Selection	A modification of the selection system in which trees are removed in small groups at a time. (Ford-Robertson, 1971).
Guideline	See Standard.
H	
Habitat Type	An aggregation of all land areas potentially capable of producing similar plant communities at climax.
Hunter Day	Any part of a day spent hunting.
I	
Indicator Species	A species selected because its population changes indicate effects of management activities on the plant and animal community. A species whose condition can be used to assess the impacts of management actions on a particular area.
Integrated Pest Management	A process for selecting strategies to regulate forest pests in which all aspects of a pest-host system are studied weighed. The information considered in selecting appropriate strategies includes the impact of the unregulated pest population on various resource values, alternative regulatory tactics and strategies, and benefit/

	cost estimates for these alternative strategies. Regulatory strategies are based on sound silvicultural practices and ecology of the pest-host system and consist of a combination of tactics such as timber stand improvement plus selective use of pesticides. A basic principle in the choice of strategy is that it be ecologically compatible or acceptable (NFMA Planning Regulations).
Intensive Grazing	Grazing management that controls distribution of cattle and duration of use on the range, usually by fences, so parts of the range are rested during the growing season.
Intensive Timber Management	The practice of forestry so as to obtain a high level of volume and quality of output per unit of area, through the application of the best techniques of silviculture and management.
Interpretive Services	Visitor information services designed to present inspirational, educational, and recreational values to Forest visitors to provide the utmost in understanding, appreciation, and enjoyment from their Forest experience.
L	
Land Exchange	The conveyance of non-Federal land or interests to the United States in exchange for National Forest System land or interests in land.
Land Line Location	Legal identification and accurate location of National Forest property boundaries.
Land Type	An area of land classified on the basis of gemorphic principles. Geologic processes (as reflected in land surface form and features), individual kinds of soil, and the factors which determine the behavior of ecosystems (i.e., climate, vegetation, relief, parent materials, and time) is used as the basis of this classification system.
Leasable Minerals	See Minerals, Leasable.
Level I Fire Analysis	General fire management analysis to provide historical information that assists the interdisciplinary team in the analysis of the management situation and formulation of alternatives for the Forest Plan (FSH 5109.19).

Level II Fire Analysis	A technical fire management analysis that evaluates fire management program options and levels, and estimates cost and effects through a detailed analytical process (FSH 5109.19).
Level III Fire Analysis	An analytical process which guides the implementation of fire management activities of the Forest Plan (FSH 5109.19).
Limited Surface Use	A mineral lease clause that recognizes an opportunity for occupancy but that requires further evaluation based on site specific proposals.
Local Roads	Roads constructed and maintained for, and frequented by, the activities of a given resource element. Some use may be made by other element activities, but normally maintenance is not affected by such use. These roads connect terminal facilities with Forest collector or Forest arterial roads or public highways. The location and standard usually are determined by the requirement of a specific resource activity rather than by travel efficiency. Forest local roads may be developed and operated for constant or intermittent service depending on land use and resource management objectives for the area served by the facility (FSM 7710.5).
Locatable Minerals	See Minerals, Locatable.
Long-Term Sustained Yield Capacity (LTSYC)	The highest uniform wood yield from lands being managed for timber production that may be sustained under a specified management intensity consistent with multiple use objectives (NFMA Planning Regulations).

M

Management Area	An aggregation of capability areas having common management direction and may be non-contiguous in the Forest. These areas are used to allocate and schedule management practices.
Management Concern	An issue, problem, or a condition which constrains the range of management practices identified by the Forest Service in the planning process (NFMA Planning Regulations).
Management Direction	A statement of multiple use and other goals and objectives, the management prescriptions, and the

	associated standards and guidelines for attaining them (NFMA Planning Regulations).
Management Practice	A specific activity, measure, course of action, or treatment (NFMA Planning Regulations). Proposed - Those scheduled in the first decade of Forest Plan implementation. Probable - Those scheduled in the second decade of Forest Plan implementation.
Management Prescription	Management practices and intensity selected and scheduled for application on a specific area to attain multiple use and other goals and objectives (NFMA Planning Regulations).
Mineral Development	The preparation of a proven deposit for mining.
Mineral Entry	The filing of a mining claim for public land to obtain the right to any minerals it may contain (Thrush, 1968).
Mineral Entry Withdrawal	The exclusion of the right of possession of locatable mineral deposits by the locator on areas required for administrative sites by the Forest Service and other areas highly valued by the public. Public lands are generally withdrawn from entry under the General Mining Laws and/or the mineral leasing laws.
Mineral Exploration	The search for valuable minerals on land open to mineral entry.
Minerals, Common Variety	Earth materials which, although maybe having value for use in trade, manufacture, the sciences, or in the mechanical or ornamental arts, do not possess a distinct, special economic value for such use over and above the normal uses of the general sum of such deposits.
Minerals, Leasable	Types of minerals whose prospecting and development on public lands under permit or lease was authorized by the Mineral Leasing Act of February 25, 1920, as amended and supplemented (41 Stat. 437, 30 USC 181-287). For example, coal, phosphate, sodium, potassium, oil, oil shale, gas, and in some states, sulphur (FSM 2800).
Minerals, Locatable	Those hardrock minerals which are mined and processed for the recovery of the minerals; often metallic. May include certain nonmetallic minerals

	and uncommon varieties of mineral materials such as valuable and distinctive deposits of limestone and silica. May include any solid, natural inorganic substance occurring in the crust of the earth, except for the common varieties of mineral materials and leasable minerals.
Mineral Production	Extraction of mineral deposits.
Multiple Use	The management of all the various renewable surface resources of the National Forest System so that they are utilized in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; that some lands will be used for less than all of the resources; and harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output (NFMA Planning Regulations).
N	
National Forest Landscape Management System	A system of planning and administering the use of forest lands in such ways that the visual effects maintain or upgrade man's psychological welfare. It is the planning and design of the visual aspects of multiple use land management.
National Forest Management Act (NFMA)	A law passed in 1976 as an amendment to the Forest and Rangeland Renewable Resource Planning Act (RPA) that requires the preparation of Regional and Forest plans and the preparation of regulations to guide that development.
National Recreation Trails	Trails designated by the Secretary of the Interior or the Secretary of Agriculture as part of the national system of trails authorized by the National Trails System Act. National recreation trails provide a variety of outdoor recreation uses which are reasonably accessible to urban areas.

National Wilderness Preservation System	All lands covered by the Wilderness Act and subsequent wilderness designations, irrespective of the department or agency having jurisdiction.
Natural Fuels	Fuels not directly generated or altered by management activity. This includes fuels which have accumulated as a result of fire exclusion (FSM 5150).
Nonchargeable Volume	All volume that is not included in the growth and yield projections for the selected management prescriptions used to arrive at the allowable sale quantity (FSM 2410.5).
Nondeclining Sustained Yield (NDSY)	A level of timber production planned so that the planned sale and harvest for any future decade is equal to or greater than the planned sale and harvest for the preceding decade.
Nongame	Species of animals which are not managed as a sport hunting resource.
No-Surface Occupancy Stipulation	A mineral lease clause that permits passive activities such as seismic exploration or directional drilling from adjacent areas, but prohibits the occupancy of the surface with road or drilling.
O	
Objective	A statement of measurable planned results that respond to pre-established goals. An objective forms the basis for further planning to define the precise steps to be taken and the resources to be used in achieving identified goals (NFMA Planning Regulations).
Off-Road Vehicle (ORV)	Any vehicle capable of being operated off an established road or trail.
Old-Growth	A stand of trees that is past full maturity and showing decadence; the last stage in forest succession.
Old Growth Forest	Old growth forest is widely considered to be an essential habitat component for a particular group of wildlife species. However, a standard definition of "old growth" is not available due to great variations in site productivity, species composition, stand history and other variables. Standard criteria used in timber management to classify

mature and overmature stands such as age, volume, and culmination of mean annual increment are not good indicators of old growth as it relates to wildlife. Therefore, the following ecological definition will apply to old growth forest on the Lewis and Clark National Forest:

An old growth forest will normally contain the following characteristics;

- One or more coniferous species which are climax or long-lived seral dominants on the site.
- Two or more layers or age classes.
- A combined overstory-understory tree canopy closure which averages 60 percent or more.
- The dominant tree component generally exceeds 13 inches dbh, 50 feet in height, and has reached or is past full maturity with signs of decadence present and obvious.
- At least 2 snags/acre of 10 inches dbh or greater.
- Sparse understory shrub and herbaceous vegetation with logs and other down material common and well distributed through the stand.

Operations Plan

A written plan, approved by a Forest Officer, prepared by those engaged in mining or prospecting and exploration activity on the Forest, describing mining and mineral processing activities that may cause a significant disturbance of surface resources.

Overmature Timber

Trees that have attained full development, particularly in height and are declining in vigor, health, and soundness.

Overstory

That portion of the trees in a forest, with more than one story forming the upper or uppermost canopy (Ford-Robertson, 1971).

Overwood Removal

Removal of the last seed bearers or shelter trees after regeneration is considered to be established usually under a shelterwood system. This removal is also termed a final cut.

P

Patented Mining Claims	A patent is a legal document which conveys title to land. When patented, a mining claim becomes private property and is land over which the United States has no property rights, except as may be reserved in the patent. After a mining claim is patented, the owner does not have to comply with requirements of the General Mining Law or implementing regulations.
Permit Grazing	Use of National Forest range allotment under the terms of a grazing permit.
Planned Ignitions	A fire started by a deliberated management action (FSM 5105).
Planning Horizon	The overall time period considered in the planning process that spans all activities covered in the analysis or plan and all future conditions and effects of proposed actions which would influence the planning decisions (NFMA Planning Regulations).
Planning Records	The documents that record decisions and activities that result from developing a Forest Plan and its revisions.
Pole	Trees from 5-6.9 inch d.b.h.
Policy	A guiding principle upon which is based a specific decision or set of decisions.
Practice	See Management Practice.
Precommercial Thinning	The selective felling, deadening, or removal of trees in a young stand primarily to accelerate diameter increment on the remaining stems, maintain a specific stocking or stand density range, and improve the vigor and quality of the trees that remain.
Preparatory Cut	Removal of trees near the end of a rotation so as to permanently open the canopy and enlarge the crowns of seed bearers, with a view to improving conditions for seed production and natural regeneration, as typically in shelterwood systems.
Present Net Value (PNV)	The difference between the discounted value (benefits) of all outputs to which monetary values or established market prices are assigned and the total discounted costs of managing the planning area.

Prescribed Fire	A wildland fire burning under specific conditions which will accomplish certain planned objectives. The fire may result from either planned or unplanned ignitions (FSM 5105).
Prescription	See Management Prescription.
Primitive Recreation Setting	A classification of the recreation opportunity spectrum that is characterized by essentially unmodified natural environment of at least 5,000 acres. Interaction between users is very low and evidence of other area users is minimal. The area is managed to be essentially free from evidence of maninduced restrictions and controls. Motorized use within the area is not permitted.
Productivity	See Site Productivity.
Program Planning and Budgeting	The process by which activities for the Forest are proposed and funded.
Public Access	Usually refers to a road or trail route over which a public agency claims a right-of-way available for public use.
Public Issue	A subject or question of widespread public interest relating to management of the National Forest System (NFMA Planning Regulations).
R	
Range	Embraces rangelands and also many forest lands which support an understory or periodic cover of herbaceous or shrubby vegetation amenable to certain range management principles or practices (Kothmann, 1974).
Range Allotment	A designated area of land available for livestock grazing upon which a specified number and kind of livestock may be grazed under a range allotment management plan. It is the basic land unit used to facilitate management of the range resource on National Forest System and associated lands administered by the Forest Service.
Range Condition	The current productivity of a range relative to what it is naturally capable of producing (Kothmann, 1974).

Rangeland	Land on which the native vegetation (climax or natural potential) is predominantly grasses, grass-like plants, forbs or shrubs suitable for grazing or browsing use. Includes lands revegetated naturally or artificially to provide a forage cover that is managed like native vegetation. Rangelands include natural grasslands, savannahs, shrublands, most deserts, tundra, alpine communities, coastal marshes and wet meadows (Kothmann, 1974).
Recreation Capacity	The number of people that can take advantage of the supply of recreation opportunity without substantially diminishing the quality of the experience sought after.
Recreation Opportunity Guide	A catalogue describing the recreation activities available on a particular Ranger District.
Recreation Opportunity Spectrum (ROS)	A system for planning and managing recreation resources that recognizes recreation activity opportunity, recreation setting opportunity, and recreation experience opportunity along a spectrum or continuum.
Recreation Settings	See Primitive, Semi-Primitive, Roaded Natural, and Rural for definitions of the different types of recreation settings.
Recreation Visitor Day (RVD)	One visitor day equals 12 hours (one person for 12 hours, or 12 people for 1 hour, or any combination thereof).
Red Belt	The name "red belt" is applied to winter drying that occurs in zones, or belts, more or less following contour lines. Red belt occurs during midwinter or early spring, often a period of cold weather. Sudden large increases in temperature, often accomplished by drying winds (chinooks), cause excessive loss of water from the needles. This moisture loss cannot be replaced because the soil moisture is either frozen or too cold, is not available from the roots, or because the wood in the stem is frozen and water cannot pass through it. The disease manifests itself by browning of the needles in the spring.
Reforestation	The re-establishment of a tree crop on forest land.
Regeneration	The renewal of a tree crop, whether by natural or artificial means.

Regeneration Cut	Any removal of trees intended to make regeneration possible.
Regulated	The commercial forest land that is organized for timber production under the principle of sustained yield. The harvest of timber from this land will be regulated to achieve multiple long range objectives such as maintaining setting for recreational activities, rotating forage production areas and wildlife habitat, increasing water yield, and increasing the growth and utilization of timber for the Nation's supply.
Research Natural Area	An area is as near condition as possible, which exemplifies typical or unique vegetation and associated biotic, soil, geologic, and aquatic features. The area is set aside to preserve a representative sample of an ecological community primarily for scientific and educational purposes; commercial and general public use is not encouraged.
Right-of-Way	Land authorized to be used or occupied for the construction, operation, maintenance, and termination of a project facility passing over, upon, under, or through such land.
Riparian Areas	Geographically delineated areas, with distinctive resource values and characteristics, that are comprised or the aquatic and riparian ecosystems, floodplains, and wetlands. They include all areas within a horizontal distance of 100 feet from the edge of perennial streams or other water bodies.
Roaded Natural Recreation Setting	A classification of the recreation opportunity spectrum where the area is characterized by predominantly natural appearing environments with moderate evidences of the sights and sounds of man. Such evidences usually harmonize with the natural environment. Interaction between users may be low to moderate, but with evidence of other users prevalent. Resource modification and utilization practices are evident, but harmonize with the natural environment. Conventional motorized use is provided for in construction standards and design of facilities.
Rotation	The number of years required to establish, including the regeneration period, and grow timber crops to a specified condition or maturity for regeneration harvest. Rotation age is based on the selected management prescriptions in the Forest Plan (FSM 2410.5).

Rural Recreation Setting	A classification of recreation opportunity spectrum that is characterized by substantially modified natural environment. Resource modification and utilization practices are to enhance specific recreation activities and to maintain vegetative cover and soil. Sights and sounds of humans are readily evident, and the interaction between users is often moderate to high.
S	
Salvage Cutting	The exploitation of trees that are dead, dying, or deteriorating (e.g. because overmature or materially damaged by fire, wind, insects, fungi, or other injurious agencies) before their timber becomes worthless.
Sanitation Cutting	The removal of dead, damaged, or susceptible trees, essentially to prevent the spread of pests or pathogens and so promote forest hygiene.
Sawtimber	Trees suitable in size and quality that can be processed into lumber. For planning purposes on the Forest, lodgepole pine with a 6-inch d.b.h. and other species with a 7-inch d.b.h. were classified as sawtimber.
Scenic Easement	An interest in the land of another which allows the easement holder specified uses or rights without actual ownership of the land; in this case, control of the use of land adjacent to public highways, parks, and rivers. It may provide something attractive to look at within the easement area, an open area to look through to see something attractive beyond the easement itself, or a screen to block out an unsightly view beyond the easement area.
Seed Cut	Removal of trees in a mature stand so as to affect permanent opening of its canopy (if there is no preparatory cutting to do this) and so provide conditions for securing regeneration from the seed of trees retained for that purpose; the first of the shelterwood cuttings under a shelterwood system.
Seedling/Sapling	A forest successional stage in which trees less than 5 inches in diameter are the predominant vegetation. Seedlings are 0-0.9 inch d.b.h., saplings are 1-4.9 inch d.b.h.

Seismic Methods

Seismic exploration is used to map underground geological features, to obtain more reliable information on the earth's subsurface, and to locate areas where accumulations of oil and gas might occur.

Seismic waves, generated at or near the surface, penetrate the earth's crust and reflect from subsurface rock layers back to the surface. The geophysicist receives a printed record, or seismograph, from which is measured the depth to various strata and from which subsurface structures with a potential for oil and gas accumulation such as faults, anticlines, and folds can be determined.

Portable -

Where access limitations, topography, or other restraints prevent use of trucks, portable operations can be performed. Two portable techniques exist for collecting data.

These are:

(1) Surface charge programs involve the detonation of a series of as much as 50 to 100 pounds of explosives at shot points at intervals along the seismic line. Surface charges are placed directly on a lath above the ground, on snow, or on a variety of stakes or platforms. All necessary equipment to conduct the operation is transported by helicopters and then conveyed by foot travel.

(2) Various kinds of portable drills can be backpacked or delivered by helicopter to the area. A shallow subsurface portable program would involve drilling a pattern or approximately 16 holes about 4 inches in diameter up to 50 feet deep per mile of line. At this depth, a 10 to 40 pound charge of explosive is placed and detonated. Recording cables and geophones are laid out by foot travel.

With both of these portable techniques, shock waves generated by detonation are received and transmitted via geophones and cable to a recording device. Portable methods are generally used on the Forest.

Conventional

The conventional method of collecting seismic data includes the use of truck mounted drills and vehicle-supported crews which generally involves off-road vehicle travel. This technique involves

drilling 5 to 18 (generally 6) 5-inch diameter holes per mile to a depth of 180 to 200 feet. At this depth a 10 to 100 (generally 25 to 50) pound charge of explosive is placed and detonated. Shock waves are received and transmitted via geophones and cable to a truck-mounted recording device. Due to terrain restrictions, this method has limited application on the Forest.

Vibroseis

The vibroseis technique involves using truck-mounted hydraulic pads which generate energy waves through vibration rather than explosives. The vibrator method typically consists of four large trucks each equipped with a vibrator (a steel slab weighing about three tons) mounted between the front and back wheels. The vibrator pads (about four feet square) are lowered to the ground and vibrators on all trucks are triggered electronically from the recorder truck. Energy waves are received and transmitted via cable and geophones to a recorder truck. After the information is recorded, the trucks move forward a short distance and the process is repeated. The vibroseis operation is limited to roads and gentle terrain.

Selection Cutting

The annual or periodic removal of trees (particularly the mature), individually or in small groups, from an uneven-aged forest to achieve the balance among the diameter classes needed for sustained yield and to realize the yield and establish a new crop of irregular structure.

Semi-Primitive Recreation Setting

A classification of recreation opportunity spectrum that characterizes a predominantly natural or natural appearing environment of a moderate to large size. Concentration of users is low, but there is often evidence of other area users. The area is managed in such a way that minimum on-site controls and restrictions may be present, but are subtle. Motorized use may or may not be present, depending on the travel plan for the area.

Shelterwood

Even-aged silvicultural systems in which, in order to provide a source of seed and/or protection for regeneration, the old crop (the shelterwood) is removed in two or more successive shelterwood cuttings, the first of which is ordinarily the seed cutting (though it may be preceded by a preparatory cutting) and the last is the final cutting. Any intervening cuttings is called removal cuttings.

NOTE: Removing the old crop in two successive cuttings, generally a regeneration cut and an overwood removal, is termed a two-step shelterwood. Removing the crop in three successive cuts, generally a preparatory cut, regeneration cut, and an overwood removal, is termed a three-step shelterwood.

Silvicultural System — A management process whereby forests are tended, harvested, and replaced, resulting in a forest of distinctive form. Systems are classified according to the method of carrying out the fellings that remove the mature crop and provide for regeneration and according to the type of forest thereby produced (NFMA Planning Regulations).

Site Preparation — A general term for removing unwanted vegetation, slash, and even roots and stones from a site before reforestation. Preparation of a seedbed on planting site including baring of mineral soil.

Site Productivity — Production capability of specific areas of land.

Slash — The residue left on the ground after felling and other silvicultural operations and/or accumulating there as a result of storm, fire, girdling, or poisoning.

Small Game — Birds and small mammals normally hunted or trapped.

Snag — Standing dead tree larger than 6 inches in diameter at breast height and greater than 20 feet in height.

Soil Productivity — The capacity of a soil to produce a specific crop, such as fiber and forage, under defined levels of management. It is generally dependent on available soil moisture and nutrients and length of growing season.

Special Use Permit — A permit issued under established laws and regulations to an individual, organization, or company for occupancy or use of National Forest land for some special purpose.

Stagnation — A condition where plant growth is markedly reduced or even arrested through competition, state of the soil, or disease.

Standard (Guideline) — Standards specify the desired result in specific enough terms to provide meaningful direction and to permit compliance to be measured or verified.

	Standards can, however, be phrased to require different levels of compliance. In some cases there will be a need to establish absolute limits. In other cases some discretion may be permitted; in these cases the standard can be written to build in the permissable discretion.
Stipulations	The requirements of clauses of a mineral lease.
Structures	Unit of measure to meet wildlife and range habitat management objectives. Count each project as one structure. Where more than 1/2 mile of fence is used, count each 1/2 mile or portion as a structure.
Successional Stage	A phase in the gradual supplanting of one community of plants by another.
Suitability	The appropriateness of applying certain resource management practices to a particular area of land, as determined by an analysis of the economic and environmental consequences and the alternative uses foregone. A unit of land may be suitable for a variety of individual or combined management practices (NFMA Planning Regulations).
Suitable Forest Land	Forest land (as defined in CFR 219.3) for which technology is available that will ensure timber production without irreversible resource damage to soils, productivity, or watershed conditions; for which there is reasonable assurance that such lands can be adequately restocked (as provided in CFR 219.14); and for which there is management direction that indicates that timber production is an appropriate use of the area.
T	
Targets	A quantifiable output.
Tentatively Suitable Forest Land	Forest land that is producing or is capable of producing crops of industrial wood and (a) has not been withdrawn by Congress, the Secretary, or the Chief; (b) existing technology and knowledge is available to ensure timber production without irreversible damage to soils, productivity, or watershed conditions; (c) existing technology and knowledge, as reflected in current research and experience, provides reasonable assurance that

	adequate restocking can be attained within 5 years after final harvest; and (d) adequate information is available to project responses to timber management activities (FSM 2410.5).
Thinning	A felling made in an immature crop or stand in order primarily to accelerate diameter increment but also, by suitable selection, to improve the average form of the trees that remain, without permanently breaking the canopy (FSM 2410.5).
Threatened Species	Any species, plant, or animal, which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its' range. Threatened species are identified by the Secretary of the Interior in accordance with the 1973 Endangered Species Act.
Timber Base	The lands within the Forest capable, available, and suitable for timber production.
Timber Production	The purposeful growing, tending, harvesting, and regeneration of regulated crops of trees to be cut into logs, bolts, or other round sections for industrial or consumer use. For purposes of this subpart, the term "timber production" does not include production of fuelwood (NFMA Planning Regulations).
Timber Sale Program	The volume of timber planned for sale during the first decade of the planning horizon. It includes the allowable sale quantity (chargeable volume) and any additional material (nonchargeable volume) planned for sale. The timber sale program quantity is usually expressed as an annual average for the first decade (FSM 2410.5).
Timber Stand Improvements (TSI)	A loose term comprising all intermediate cuttings made to improve the composition, structure condition, and quality of a timber stand.
Trailheads	The parking, signing, and other facilities available at the terminus of a trail.
Transitory Range	Land that is suitable for grazing use of a nonending nature over a period of time. For example, on particular disturbed lands, grass may cover the area for a period of time before being replaced by trees or shrubs not suitable for forage.
Tree Opening	An opening in the forest cover created by the application of even-aged silvicultural practices.
Trespass	The act of going on another's land or property unlawfully.

U	
Understory	The trees and other woody plants growing under a more or less continuous cover of branches and foilage formed collectively by the upper portion of adjacent trees and other woody growth.
Uneven-aged Management	The application of a combination of actions needed to simultaneously maintain continuous high-forest cover, recurring regeneration of desirable species, and the orderly growth and development of trees through a range of diameter or age classes to provide a sustained yield of forest products. Cutting is usually regulated by specifying the number or proportion of trees of particular sizes to retain within each area, thereby maintaining a planned distribution of size classes. Cutting methods that develop and maintain uneven-aged stands are single tree selection and group selection (NFMA Planning Regulations).
Unplanned Ignition	A fire started at random by either natural or human causes, or a deliberate incendiary fire (FSM 5105).
Unsuitable Forest Land (Not Suited)	Forest land that is not managed for timber production because (a) the land has been withdrawn by Congress, the Secretary, or the Chief; (b) the land is not producing or capable of producing crops of industrial wood; (c) technology is not available to prevent irreversible damage to soils, productivity, or watershed conditions; (d) there is no reasonable assurance that lands can be adequately restocked within 5 years after final harvest, based on existing technology and knowledge, as reflected in current research and experience; (e) there is at present, a lack of adequate information to responses to timber management activities; or (f) timber management is inconsistent with or not cost efficient in meeting the management requirements and multiple-use objectives specified in the Forest Plan (FSM 2410.5).
V	
Viable Populations	A wildlife or fish population of sufficient size to maintain its existence over time, in spite of normal fluctuations in population levels.

Visual Quality Objective (VQO)	A desired degree of acceptable alteration of the landscape based on physical and sociological characteristics of an area. For this plan, these degrees of alteration are classified by preservation, retention, partial retention, and modification.
Preservation	Management activities, except for very low visual-impact recreation facilities, are prohibited. Only ecological changes are allowed.
Retention	Activities must not be visually evident and may only repeat form, line, color, and texture which are frequently found in the characteristic landscape. Changes in the qualities of size, amount, intensity, direction, and land pattern should not be evident. Duration of Visual Impact: Immediate reduction in form, line, color, and texture contrast. Retention should be accomplished either during operation or immediately after. It may be done by such means as seeding vegetative clearings and cut-or-fill slopes, hand planting of large stock, and painting structures, etc.
Partial Retention	Activities remain visually subordinate to the characteristic landscape and may repeat form, line, color, or texture common to the characteristic landscape. However, changes in their qualities of size, amount, intensity, direction, pattern, etc., remain visually subordinate to the characteristic landscape. Duration of Visual Impact: Reduction in form, line, color, and texture should be accomplished as soon after project completion as possible or at a minimum within the first year.
Modification	Activities may visually dominate the original characteristic landscape. However, activities of vegetative and land form alteration must borrow from naturally established form, line, color, or texture so completely and at such a scale that its visual characteristics are those of natural occurrences within the surrounding area or character type. Additional parts of these activities, such as structures, roads, slash, and root wads, must remain visually subordinate until they are compatible with the natural surroundings.

	Duration of Visual Impact: Reduction in form, line, color, and texture should be accomplished in the first year or at a minimum should meet existing regional guidelines.
W	
Wetlands	Areas that are inundated by surface or ground water with the frequency sufficient to support and under normal circumstances does or would support a prevalence of riparian vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, overflows, and mudflats.
Wildfire	Any wildland fire that requires a suppression response.
Withdrawal	An order removing specific land areas from availability for certain uses.
Work Year Equivalents	Approximately 2,000 working hours. May be filled by one person working yearlong or several people filling seasonal positions.

Enjoying a Camp Dinner on the Forest in 1919.

LEWIS AND CLARK NATIONAL FOREST PLAN

Appendices

LEWIS AND CLARK NATIONAL FOREST PLAN
Appendix A
Summary of Timber Information and 10-Year Timber Sale Program

Table 1 shows the land classification for the Lewis and Clark National Forest. Table 2 lists the vegetation management practices. Also described are the apporpriate silvicultural systems for the Lewis and Clark National Forest. Table 3 lists the timber productivity classification. Table 4 shows the allowable sale quantity and timber sale quantity. Figure 1 displays the long term sustained yield and allowable sale quantity. Table 5 shows the present and future Forest conditions. Table 6 lists Timber Sale Program for the next 10 years. Sales are summarized by district, fiscal year, and management area. The Timber Sale Program is subject to revision, upon approval by the Forest Supervisor. The small sales component is not subject to this approval, since they are sold under the District Ranger's authority. Each year the Forest reviews the Timber Sale Program, makes any necessary adjustments, and adds another year's sales to the program.

TABLE 1 LAND CLASSIFICATION

Classification	Acres
1. Non-Forest Land (includes water)	486,860
2. Forest Land	1,356,537
3. Forest Land Withdrawn from Timber Production	393,532
4. Forest Land Not Capable of Producing Crops of Industrial Wood	283,088
5. Forest Land Physically Unsuitable:	
Irreversible Damage Likely to Occur	0
Not Restockable Within 5 Years	0
6. Forest Land - Inadequate Information 1/	0
7. Tentatively Suitable Forest Land	679,917
8. Forest Land Not Appropriate for Timber Production 2/	397,610
9. Unsuitable Forest Land	1,078,538
10. Total Suitable Forest Land	282,307
11. Total National Forest Land	1,843,397

1/ Lands for which current information is inadequate to project responses to timber management. Usually applies to low site lands.

2/ Lands identified as not appropriate for timber production due to: (1) assignment to other resource uses to meet Forest plan objectives; (2) to meet management requirements; and (3) not cost efficient in meeting Forest plan objectives over the planning horizon.

TABLE 2 VEGETATION MANAGEMENT PRACTICES (Annual Average in First Decade for Suitable Lands)

Practice	Acres
Regeneration Harvest:	
Clearcut	743
Shelterwood and Seed Tree	
- Preparatory Cut	0
- Seed Cut	994
- Removal Cut	200
Selection	64
Intermediate Harvest:	
Commercial Thinning	10
Salvage/Sanitation	--
Timber Stand Improvement (Precommercial Thinning)	200
Reforestation 1/	1743

1/ Includes natural and artificial.

Appropriate Silvicultural Systems. The following standards apply to either even or uneven-aged silvicultural systems based on criteria that best meets land and resource management objectives defined in the Lewis and Clark Forest Plan. Also stated is the rationale for applying the various vegetation management practices to the various vegetation types and the conditions under which they will be applied.

The figures do not represent acreage targets, by silvicultural methods under the Forest Plan. Rather, they are the levels projected by the Forest planning model that represents the appropriate way of meeting Forest Plan objectives. The final decision for the vegetative management practice (silvicultural system) chosen for each vegetative type and circumstance shall be made by a certified silviculturist using guidance in this appendix, a review of applicable technical and scientific literature, and practical experience. Using this knowledge, the silviculturist will evaluate the practices for relevance to the specific vegetation and site conditions.

Standards for all silvicultural systems:

A. The system must develop stand conditions required for meeting allocated resource management objectives.

   Stand conditions can be described by stand density, stand structure, tree species composition, and growth rates throughout the life of the stand.

The following descriptions and tables indicate preferred Silvicultural Systems to achieve certain desired forest characteristics.

B. Lodgepole Pine Timber Types. (Essentially pure LPP)

Clearcutting is the preferred and predominant Regeneration Harvest System in the lodgepole pine timber type. Other Regeneration Harvest Systems (selection, shelterwood, seed tree or variations) may be prescribed, where appropriate, to meet on-site constraints. A thorough evaluation of the capabilities and limitations of potential lodgepole pine treatment stands must be made in reference to potential windthrow, insect, disease, and other stand characteristics and prognoses that usually preclude all Regeneration Harvest Systems other than clearcutting in this timber type.

Natural regeneration is the preferred and predominant method for all silvicultural regeneration systems in the lodgepole pine timber types. Silvicultural treatment prescription specifications will be prepared with Natural Regenerations as the objective.

Artifical reforestation will be prescribed only where the natural regeneration objective cannot be achieved due to adverse site or stand conditions etc., or where mistakes or accidents have occurred. Artificial reforestation could also be prescribed in Management Areas A and C to achieve specific visual or wildlife objectives.

Maintain a minimum of 5 percent of the A, B, and C management areas within a timber compartment in an old-growth forest condition. Minimum stand size is 15 acres. Rotation age is 200 years plus.

Regeneration Harvest Systems

Desired Character	Preferred Silvicultural System Even-Aged	Uneven-Aged
1. Continuous Site Occupancy with Trees.	SW 2/	Selection 1/ (Single Tree)
2. Mosaic of Forest and Opening.	CC ST 2/ SW 2/	Selection 1/ (Group)
3. Multi-storied Stand (all components less than rotation age).	CC ST 2/ SW 2/	Selection 1/ (Group and Single Trees)
4. Maximum Species Diversity.	SW 2/	Selection 1/ (Group)
5. Old Growth Character.	SW 2/	Selection 1/ (Group and Single Trees)
6. Closed Canopy.	CC	None

1/ Applicable for resource management objectives other than timber production.
2/ After evaluation of limitations of system in this timber type.

C. Mixed Lodgepole Pine Timber Types. In contrast to the essentially pure lodgepole pine timber types, these mixed lodgepole pine types contain other species mixtures in innumerable variations. The potential species are listed in two categories in order of management significance and resource value for timber production.

Key species mixtures: Douglas fir
Ponderosa pine
Engelmann spruce

Secondary species mixtures: Subalpine fir
Whitebark pine
Limber pine

Removal of the entire merchantable lodgepole pine component is the preferred and predominant Regeneration Harvest System in these mixed lodgepole pine timber types. The proper treatment of the on-site seed and seedbed preparation will insure adequate amounts of lodgepole pine regeneration. The maintenance of the key species mixtures listed above and to a lesser degree the secondary species mixture may be a major treatment objective, if the habitat type is favorable for further establishment and growth of these mixed species. In order to further determine the significance of these species present on the site by habitat type, refer to Forest Habitat Types of Montana, General Technical Report, INT-34, Appendix C-1 and to the Lewis and Clark National Forest Preferred Species List by Habitat Types.

In order to provide for the maintenance or improvement of species diversity on appropriate sites, seed trees or in many cases shelterwood trees, should be reserved to provide an on-site seed source for natural regeneration. Caution should be exercised in selecting windfirm Engelmann spruce leave trees. Whitebark pine seed is a significant grizzly bear feed. The subalpine fir will seed in under the reestablished crown canopy following the regeneration period. Lodgepole pine should not generally be reserved for seed tree or shelterwood tree purposes nor are they usually needed to obtain natural regeneration in this species.

Scheduling the removal of the reserve seed trees or shelterwood trees following the regeneration period would be related to specific on-site management requirements.

Natural regeneration is the preferred and predominant method for all silvicultural systems in the mixed lodgepole pine stands. Silvicultural treatment specifications will be prepared for natural regeneration of both lodgepole pine and mixed species as the objective.

Artificial reforestation will be prescribed only where the natural regeneration objectives cannot be achieved due to adverse site or stand conditions, etc., or where mistakes or accidents have occurred. Artificial reforestation could be prescribed in Management Area A and C to achieve specific visual or wildlife objectives.

Maintain a minimum of 5 percent of the A, B, and C management areas within each timber compartment in an old-growth forest condition. Minimum acreage size class is 15 acres. Rotation age is 200 years plus.

Regeneration Harvest Systems

Desired Character	Preferred Silvicultural System Even-Aged	Uneven-Aged
1. Continuous Site Occupancy with Trees.	SW 3/	Selection 1/
2. Mosaic of Forest and Opening.	CC 2/ ST 3/ SW 3/	Selection 1/
3. Multi-storied Stand (all components less than rotation age).	CC 2/ ST 3/ SW 3/	Selection 1/
4. Maximum Species Diversity.	SW 3/	Selection 1/
5. Old Growth Character.	SW 3/ Extended Rotation	Selection 1/
6. Closed Canopy.	CC 2/ ST SW	Selection 1/

1/ Only applicable for resource management objectives other than timber production.
2/ Preferred Regeneration Harvest System only when the stand diagnosis indicates the reservation of on-site seed source for species diversity is not required for proper management of the stand.
3/ Reserve species other than lodgepole pine as a general rule.

D. Douglas fir Timber Types: These types range from essentially pure Douglas fir to other species mixtures in innumerable variations. The potential species mixtures are listed in categories in order of management significance and resource value for timber production.

Key species mixtures: Lodgepole pine
Ponderosa pine

Secondary species mixtures: Engelmann spruce
Whitebark pine
Limber pine

Note: the secondary species occur only in very minute quantities in these timber types and are limited to very specific sites within the Douglas fir series habitat types. The Engelmann spruce may occur more as an accidental than as a normal component in these Douglas fir timber types.

Maintenance of the key species mixture along with the Douglas fir may be a major treatment objective, if the habitat type is favorable for further establishment and growth of these species. In order to further determine the significance of these species present on the site by habitat type, refer to the Forest Habitat Types of Montana, General Technical Report, INT-34, Appendix C-1 and to the Lewis and Clark National Forest Preferred Species List by Habitat Types.

In order to provide for the maintenance or improvement of species diversity on appropriate sites, shelterwood trees or in some cases seed trees, should be reserved to provide an on-site seed source for natural regeneration. The reserve shelterwood trees should consist predominantly of Douglas fir and ponderosa pine if available. Lodgepole pine should not generally be reserved as shelterwood or seed trees nor are they needed for lodgepole regeneration, if the on-site lodgepole pine seed and site preparation are handled properly.

Scheduling the removal of the reserve shelterwood trees following the regeneration period would be related to specific on-site management requirements.

Natural regeneration is the preferred and predominant method for all silvicultural systems in the Douglas fir timber types. Silvicultural treatment specifications will be prepared for natural regeneration of both Douglas fir and the mixed species as the objective.

Artificial reforestation will be prescribed only where the natural regeneration objectives cannot be achieved due to adverse site or stand conditions, etc., or where mistakes or accidents have occurred. Artificial reforestation could be prescribed in Management Area A and C to achieve specific visual or wildlife objectives.

Maintain a minimum of 5 percent of the A, B, and C management areas within each timber compartment in an old-growth forest condition. Minimum acreage size class is 15 acres. Rotation age is 200 years plus.

The shelterwood regeneration system is the preferred and predominant method for regeneration treatments in the essentially pure Douglas fir timber types. Clearcutting is risky and has resulted in regeneration failures in the past. Strong justification should be made and artificial reforestation prescribed if clearcutting is the specified regeneration system in these Douglas fir timber types.

When lodgepole pine will be a major regeneration species and adjacent seedwalls or reserve seed trees will provide for the Douglas fir/ponderosa pine regeneration, the clearcut or seed tree regeneration systems could be implemented, if the treatment meets management objectives and will also achieve the desired species diversity in the regenerated stand.

– Regeneration Harvest Systems Douglas Fir Timber Types

Desired Character	Preferred Silvicultural System Even-Aged	Uneven-Aged 1/
1. Continuous Site Occupancy with Trees.	SW	Group and Single Tree Selection
2. Mosaic of Forest and Opening.	CC 2/ SW ST 3/	Group Selection
3. Multi-storied Stand (all components less than rotation age).	CC 2/ SW ST 3/	Single Tree and Group Selection
4. Maximum Species Diversity.	SW ST 3/	Group Selection
5. Old Growth Character.	SW Extended Rotation	Single Tree and Group Selection
6. Closed Canopy.	CC 2/ SW ST 3/	None

CC = Clearcut; ST = Seed tree; SW = Shelterwood

1/ Only applicable for resource management objectives other than timber production.

2/ Acceptable if lodgepole pine is a major regenerating species and continued species diversity will be achieved by natural seeding of other species from the adjacent seedwalls.

3/ Acceptable if lodgepole pine is a major regenerating species and the reserve seed trees are Douglas fir and also ponderosa pine is available.

E. Spruce Timber Types: The spruce timber types are located in part on hydric sites, in or adjacent to riparian areas, wet marshes or high water table areas. The maintenance of the existing stand characteristics on these wet sites are important wildlife objectives. Single tree or group selection regeneration treatments will be the principal harvest method in these timber types because of potential water table problems that may develop when the transpirational surface of the timber canopy is reduced due to timber harvest.

On the more well drained habitat types, where rising water table problems are unlikely to develop, even-aged regeneration systems can also be applied.

Natural regeneration will be the preferred and the primary regeneration method. Brush or grass competition, high water table and frost pocket conditions will be the primary regeneration problem concerns.

Regeneration Harvest Systems Spruce Timber Types

Desired Character	Preferred Silvicultural System	
	Even-Aged 2/	Uneven-Aged 1/
1. Continuous Site Occupancy with Trees.	SW	Group and Single Tree Selection
2. Mosaic of Forest and Opening.	CC ST SW	Group Selection
3. Multi-storied Stand (all components less than rotation age).	CC ST SW	Single Tree and Group Selection
4. Maximum Species Diversity.	SW	Group Selection
5. Old Growth Character.	SW	Single Tree and Group Selection
6. Closed Canopy.	CC	None

1/ Hydrologic and wildlife input required.
2/ There must be reasonable assurance that the treatment will not result in a regeneration problem areas.

F. Subalpine Fir Timber Types: There are the timber types that have progressed through the seral stages and contain principally climax subalpine fir and other associated species, such as lodgepole pine, Engelmann spruce, etc. Treatments would be similar to those in the lodgepole pine timber types.

G. Ponderosa Pine Timber Types: A significant portion of the ponderosa pine on the Forest is located on sites where Douglas fir is the climax species and ponderosa pine is a long lived seral associate. On these sites, manage for a good mixture of ponderosa pine, Douglas fir, and other associated species common to the habitat types (see Douglas fir timber types for potential management regimes).

When ponderosa pine is the climax species, the shelterwood regeneration system with natural regeneration specified will be the primary regeneration harvest method.

The selection system is also a viable regeneration harvest method if needed to meet functional objectives other than timber management.

Climax Ponderosa Pine Stands

Desired Character	Preferred Silvicultural System	
	Even-Aged	Uneven-Aged 1/
1. Continuous Site Occupancy with Trees.	SW	Selection Systems
2. Mosaic of Forest and Opening.	SW	Selection Systems
3. Multi-storied Stand (all components less than rotation age).	SW	Selection Systems
4. Maximum Species Diversity.	(Not Applicable)	(Not Applicable)
5. Old Growth Character.	SW	Selection Systems
6. Closed Canopy.	SW	Selection Systems

1/ Objectives other than timber management.

ADDITIONAL GUIDELINES

A. The regeneration system must permit enough control of competing vegetation to allow establishment of an adequate number of trees growing at acceptable rates.

Each site can present special regeneration problems. However, selection of a silvicultural system can be guided by the character of competing vegetation likely to occur and the topographic aspect of the area. General guidance for the more critical regeneration problems on the Lewis and Clark National Forest is summarized in the following table.

Selection of silvicultural system based on common regeneration problems.

Competing Vegetation	Key Habitat Types	Critical Aspect	Most Preferred System Even-Aged	Uneven-Aged
Shrubs/grasses	AF Series	All	CC	Selection Systems
Shrubs/grasses Moist	Spruce Series	All	SW	Selection Systems
Shrubs/grasses Well drained	Spruce Series	All	CC ST SW	Selection Systems
Shrubs/grasses Cool sites	DF Series	All	CC ST SW	Selection Systems
Shrubs/grasses Warm sites	DF Series	All	SW	Selection Systems
Shrubs/grasses Warm sites	PP Series	All	SW	Selection Systems

B. The system must promote stand structure, composition, and conditions that minimize damage from pest organisms, animals, wind, and fire.

Protection of the stand against injuries should be as much a part of applied silviculture as harvesting, regeneration, and tending the crop. Forest protection often involves modification of silvicultural techniques in addition to more spectacular direct measures.

Silvicultural systems will be the keystone in any long range preventive integrated pest management system. The wrong system can lead to or perpetuate pest problems, the right one can ameliorate them (Stark, 1979).

Integrated pest management strategies are derived from an understanding of the ecological relationships in the pest host system. Highly susceptible stand characteristics and workable silvicultural systems for major damaging agents are shown in the following table. In general, silvicultural systems which encourage species diversity, growth and vigor, seral communities, diversity, and between stand size class are preferred.

Preferred Silvicultural Systems for Major Damaging Organisms

Damage Agent	Applicable Cover Types 1/	Highly Susceptible Stand Characteristics	Preferred Silvicultural Systems 2/
Insects			
Western Spruce Budworm	Douglas fir	Pure stands of tolerant tree species, overstocked, or mature, multiple-storied stands.	SW
Mountain Pine Beetle	Lodgepole pine	Lodgepole pine trees greater than 8" dbh and older than 80 years in pure stands.	CC
	Ponderosa pine	Pure even-aged ponderosa pine, 50-100 years, 8-12" dbh. Greater than 150 sq. ft., BA per acre slow growing, live crown ratios less than 1/3.	INT SW Group Selection
Other Bark Beetles	Douglas fir Spruce	Pure or mixed host tree species in old-growth and stressed stands.	SW
Dwarf Mistletoe	Lodgepole pine	Host tree species, multi-storied or pure stands, poor vigor.	CC
Root Diseases	Douglas fir	Pure host tree species.	CC
Commandra Rust	Lodgepole pine	Pure host types near natural openings.	CC

1/ Forest Survey Cover Types. 2/ INT=Intermediate harvest.

The following table displays how fuel treatment may be used to help choose a silvicultural system to minimize fire hazard and damage.

Fuel Treatment Choices for Various Silvicultural Systems

Method of Fuel Treatment	Forest Conditions Necessary for Treatment	Preferred Silvicultural Systems Even-Aged	Uneven-Aged
Underburning	Residual Douglas fir or ponderosa pine over 20 years old.	Shelterwood	None
Broadcast Burn 2/	Slopes generally greater than 35 percent.	Clearcut	None
Jackpot Burn	Continuous forest cover with a high proportion of fire resistant species.	None	Group and Single Tree Selection
Machine Pile and Burn	Stands on <35 percent slopes.	All	All
Hand Pile and Burn	All stands to meet special management objectives only.	All	All
Lopping	All stands on difficult regeneration sites, in light fuels, intermediate harvests or overstory removals.	All	All
Chopping, Trampling	Stands on <35 percent slopes.	All	Group Selection
YUM 1/	All	All	All

1/ Yarding of Unmerchantable Material (e.g., tree tops and limbs).
2/ Artificial reforestation generally required.

C. The system must be compatible with acceptable logging methods so that future stands can be cultured and harvested.

To be acceptable, a logging method must be able to be used to harvest a stand without excessive damage to the desired residual vegetation or other resources. A balance must be achieved between physical constraints, the environmental impacts, and costs of roading. Because of the wide variation of topography, vegetation, and land uses in the Region, logging systems and transportation plans must be designed to meet the cultural constraints of stand tending, the physical spacing of roads, unit shape, topography, and other resource needs.

The following table lists logging methods which are compatible with the even-aged and uneven-aged silvicultural system. In general, costs increase with the silvicultural system from left to right in this table as the number of residual trees increases. Costs also rise as the size of the residual trees decreases because of the added difficulty of protecting the leave stand. Logging costs per unit volume increase reading down the table. Road construction costs must be added to logging costs, with the physical limitation of the logging method controlling road spacing.

Additional standards for clearcutting:

Clearcutting should be used only where it is the optimum system. Optimum is considered to be the best system available to meet the objectives and requirements of the land and resource managment plans.

Additional standards for uneven-aged silviculture:

A. Where timber production and harvesting are to be scheduled on capable and suitable lands, uneven-aged silviculture can be practiced provided it satisfies the following conditions:

   (1) The following factors must be specified and implemented: optimal sustainable diameter distribution, cutting cycle length, optimal species mix, conversion strategy, and conversion period length, and scheduling of treatments and entry dates for the total area of Forest involved (Hann and Bare, 1979).

   (2) Stands to be treated should generally be at least 5 acres or more in size for recognition of planned and accomplished work in the Regional Stand Record System.

   (3) Each treatment must be capable of producing usable products through time.

   (4) The affected ecosystem must be able to withstand frequent harvest activities. The following must be considered: fuel loading in the stand to be managed in conjunction with fuels in the surrounding area; soil compaction and erosion potential of the site; susceptibility of feature tree species to frequent logging damage and resulting stem decay.

   (5) Tree species indigenous to the area must be compatible with stand structures that will occur in uneven-aged stands.

B. Where timber production and harvesting are not an objective of management, uneven-aged silviculture may be practiced on unsuitable lands to meet other resource management objectives provided it satisifies the following conditions:

   (1) Stands to be treated should generally be at least 5 acres or more in size for recognition of planned and accomplished work in the Regional Stand Record System.

   (2) The affected ecosystem must be able to withstand frequent harvest activities. The following must be considered: fuel loading in the stand must be managed in conjunction with fuels in the surrounding area; soil compaction and erosion potential of the site; and susceptibility of feature tree species to frequent logging damage and resulting stem decay.

   (3) Tree species indigenous to the area must be compatible with stand structures that will occur in uneven-aged stands.

TABLE 3 TIMBER PRODUCTIVITY CLASSIFICATION

Potential Growth 1/ (cubic Feet/acre year)	Suitable Lands (acres)	Unsuitable Lands 2/ (acres)
Less than 20	0	491,475
20-49	184,727	266,074
50-84	97,580	316,681
85-119	0	0
120-164	0	0
165-224	0	0
225+	0	0

1/ Based on the potential biological growth of natural stands, with no consideration given to stocking control or other intensive management practices.

2/ Productivity estimates made for lands where data are not available.

TABLE 4 ALLOWABLE SALE QUANTITY AND TIMBER SALE PROGRAM QUANTITY 1/ (Annual Average for First Decade)

Harvest Method	Allowable Sale Quantity 2/ Sawtimber (MM CF)	Other Products (MM CF)
Regeneration Harvest:		
Clearcut	1.8	
Shelterwood and Seed Tree		
- Preparatory Cut		
- Seed Cut	1.7	
- Removal Cut		
Selection		
Intermediate Harvest:		
Commercial Thinning	0	
Salvage/Sanitation		
Totals	3.5	---

	Additional Sales 3/ Sawtimber (MM CF)	Other Products (MM CF)
Total for all Harvest Methods	.4	.2

Allowable Sale Quantity	3.5 (MMCF)	12.0 (MMBF)	4/
Timber Sale Program Quantity 5/	4.1 (MMCF)	14.0 (MMBF)	4/

1/ Rounded to nearest .1 MM board and cubic feet.
2/ Only includes chargeable volumes from suitable lands.
3/ Only includes nonchargeable volumes from suitable and/or unsuitable lands.
4/ Based on local unit of measure.
5/ Total of allowable sale quantity and additional sales.

FIGURE 1
Display of Long-Term Sustained Yield and Allowable Sale Quantity

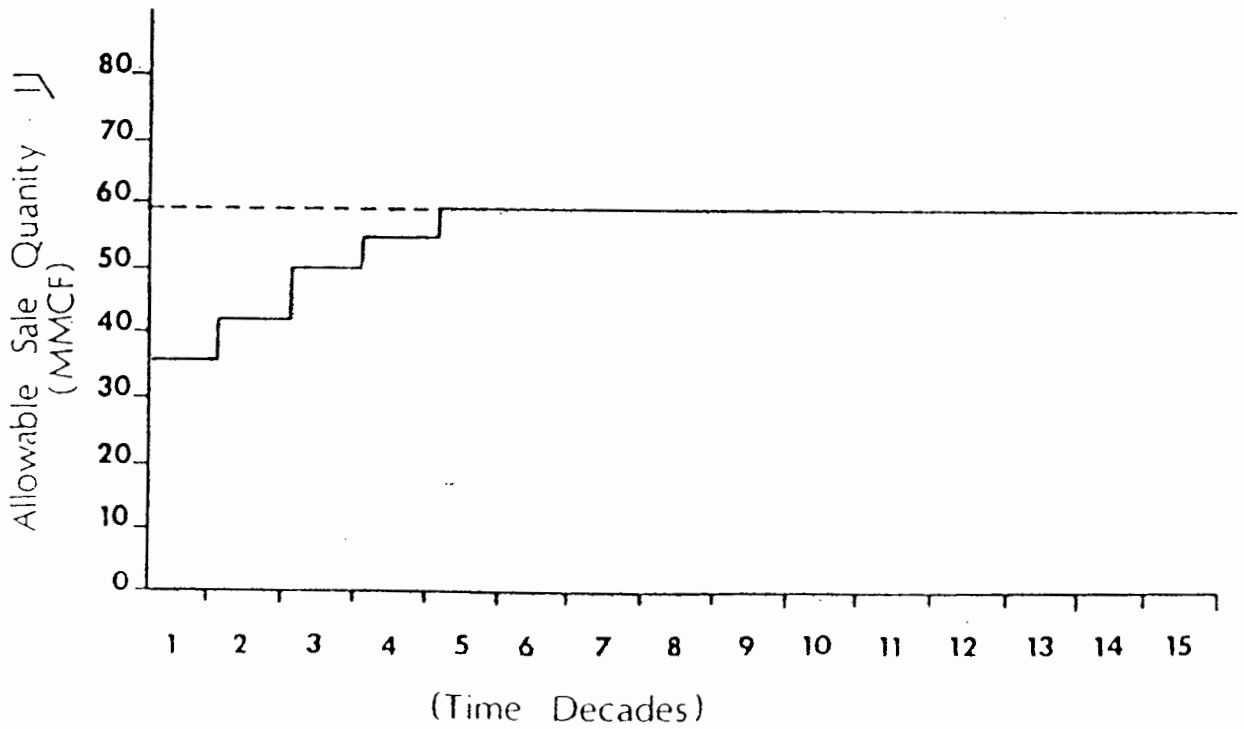


TABLE 5 PRESENT AND FUTURE FOREST CONDITIONS

	Unit of Measure	Suitable Land	Unsuitable Land
Present Forest:			
Growing Stock	MMCF	621.9	---
	MMBF	2114.5	---
Live Cull	MMCF	---	---
	MMBF	---	---
Salvable Dead	MMCF	---	---
	MMBF	---	---
Annual Net Growth	MMCF	4.0	---
	MMBF	13.6	---
Annual Mortality	MMCF	---	---
	MMBF	---	---
Future Forest:			
Growing Stock year 2030:	MMCF	534.9	
year 2130:	MMCF	277.2	
Annual Net Growth			
year 2030:	MMCF	2.0	
year 2130:	MMCF	5.3	
Rotation Age	Years 1/	(General Forest) 95 to 125	
		(Dry Forest) 115 to 145	

Age Class Distribution (Suitable Lands)	AGE CLASS (FORPLAN Age in Decades)	Acres 2/ Present Forest	Acres Future Forest (2130 AD)
	1	---	22,469
	2	---	21,207
	3	3,808	23,410
	4	22,009	22,637
	5	390	22,339
	6	---	21,870
	7	---	20,629
	8	275	20,971
	9	23,544	21,244
	10	4,663	20,299
	11	2,162	19,809
	12	---	24,162
	13	222,302	12,350
	14	3,153	2,292
	15	---	5,874
	16	---	---
	17	---	---
	18	---	---
	19	---	---
	20+	---	746
Total Acres		270,454	270,454

1/ Average rotation age for regenerated stands on lands with timber emphasis by major forest types.

2/ For FORPLAN Modeling it was necessary to aggregate certain stand characteristics into groups. Age was one of the factors that was aggregated. The age class distribution acres displayed here are those used in the Lewis and Clark FORPLAN Model.

APPENDIX A LEWIS AND CLARK 10-YEAR TIMBER SALE PROGRAM

	FY 86			FY 87			FY 88			FY 89		
District	MGMT AREA	SALE	VOL	MGMT AREA	SALE	VOL	MGMT AREA	SALE	VOL	MGMT AREA	SALE	VOL
ROCKY MOUNTAIN	0	Small Sales	0.5	0	Small Sales	0.5	0	Small Sales	0.5	0	Small Sales	0.5
Subtotal			0.5			0.5			0.5			0.5
JUDITH	B	Sheep Mtn.	1.7	B	Hidden Lake	1.0	B	Mixes Baldy	1.7	C	Hoover Spr.	3.2
	B	Yogo	1.6	B	Placer Snow	2.1	B	Smith Flats	1.2		Small Sales	0.8
		Small Sales	0.7	B	Lower Sage	0.9		Small Sales	0.6			
					Small Sales	0.5						
Subtotal			4.0			4.5			3.5			4.0
MUSSELSHELL	C	Pasture Gulch	1.3	B	Target Rock	1.6	B	Local Grouse	2.4	B	Mill-Lion	3.0
	B	Top of the Hill	0.6	C	Robinson-Checkerboard	1.4		Small Sales	1.1		Small Sales	0.5
		Small Sales	1.6		Small Sales	0.5						
Subtotal			3.5			3.5			3.5			3.5
KINGS HILL	B	Link Park	2.0	B	Quartzite-Moose	4.5	B	Southern Sunrise	3.7	A	Mizpah	2.0
	B	N. FK. Deadman	2.0		Small Sales	1.5		Small Sales	2.3	B	Central Park	2.0
		Small Sales	2.0								Small Sales	2.0
Subtotal			6.0			6.0			6.0			6.0
TOTAL			14.0			14.5			13.5			14.0

	FY 90			FY 91			FY 92			FY 93		
District	MGMT AREA	SALE	VOL	MGMT AREA	SALE	VOL	MGMT AREA	SALE	VOL	MGMT AREA	SALE	VOL
ROCKY MOUNTAIN	0	Small Sales	0.5	0	Small Sales	0.5	0	Small Sales	0.5	0	Small Sales	0.5
Subtotal			0.5			0.5			0.5			0.5
JUDITH	B	South Barley	3.7	B	Clyde Park	3.4	C	Deadhorse	3.6	B	Running Wolf	?
		Small Sales	0.3		Small Sales	0.6		Small Sales	0.4		Small Sales	?
Subtotal			4.0			4.0			4.0			4.0
MUSSELSHELL	B	Comb Creek	3.0	B	North Fork Musselshell	2.5	B	East Fork Spring Cr.	2.8	C	Flat Whiskey	2.8
		Small Sales	0.5		Small Sales	1.0		Small Sales	0.7		Small Sales	0.7
Subtotal			3.5			3.5			3.5			3.5
KINGS HILL	B	Woods Mtn.	4.0	A	Corridor	4.1	B	Little Moose	4.0	B	Blankenship	3.7
		Small Sales	2.0		Small Sales	1.9		Small Sales	2.0		Small Sales	2.3
Subtotal			6.0			6.0			6.0			6.0
TOTAL			14.0			14.0			14.0			14.0

	FY 94			FY 95		
District	MGMT AREA	SALE	VOL	MGMT AREA	SALE	VOL
ROCKY MOUNTAIN	0	Small Sales	0.5	0	Small Sales	0.5
Subtotal			0.5			0.5
JUDITH	B	Bluff Creek	3.6	B	Ettien Ridge	3.6
		Small Sales	0.4		Small Sales	0.4
Subtotal			4.0			4.0
MUSSELSHELL	B	Green Mtn.	3.0	C	Warm Springs	3.0
		Small Sales	0.5		Small Sales	0.5
Subtotal			3.5			3.5
KINGS HILL	A&B	Snow Flea	4.5	B	Jack Daniels	4.5
		Small Sales	1.5		Small Sales	1.5
Subtotal			6.0			6.0
TOTAL			14.0			14.0

10-YEAR TIMBER SALE PROGRAM

FISCAL YEAR 1986

Location -Mgmt. Area -Sale Name (District) -Compartment	Areas (Acres)	Volume (MMBF)	Roads (mi.) Construction	Roads (mi.) Reconstruction	Probable Harvest Methods
-MA B -Yogo (4) -Yogo Compartment 60 -See Map LB-8 Geographic Units, Chapter IV	200	1.6	0.4	1.7	Clearcut and Shelterwood
-MA B -Sheep Mtn. (4) -Yogo Compartment 60 -See Map LB-8 Geographic Units, Chapter IV	200	1.7	0.7	1.0	Clearcut and Shelterwood
- MA B -Top of the Hill (6) -Whitetail Compartment 33 -See Map LB-11 Geographic Units, Chapter IV	50	0.6	0	0	Clearcut
-MA B -Link Park (7) -Calf Compartment 12 -See Map LB-6 Geographic Units, Chapter IV	250	2.0	1.3	0.8	Clearcut
-MA B -North Fork Deadman (7) -Deadman Compartment 02 -See Map LB-7 Geographic Units, Chapter IV	250	2.0	0.4	1.7	Clearcut
-MA C -Pasture Gulch (6) -Pasture Gulch Compartment 30 -See Map CA-1 Geographic Units, Chapter IV	175	1.3	0.1	1.3	Shelterwood

FISCAL YEAR 1987

-MA B -Placer-Snow (4) -Placer Compartment 63 -See Map LB-8 Geographic Units, Chapter IV	310	2.1	1.4	1.3	Clearcut & Shelterwood
-MA B -Lower Sage (4) -Sage Compartment 61 -See Map LB-8 Geographic Units, Chapter IV	110	0.9	0.7	0.3	Shelterwood
-MA B -Hidden Lake (4) -Russian Flat Compartment 51 -See Map LB-10 Geographic Units, Chapter IV	125	1.0	0.9	0.2	Clearcut
-MA B -Target Rock (6) -Cottonwood Creek Compartment 22 -See Map CZ-2 Geographic Units, Chapter IV	250	1.6	1.1	1.0	Clearcut
-MA B -Quartzite Moose (7) -Moose Compartment 11 -See Map LB-6 Geographic Units, Chapter IV	500	4.5	1.5	2.8	Clearcut
-MA C -Robinson-Checkerboard (6) -Checkerboard Compartment 28 -Castle Compartment 27 -See Map CA-1 Geographic Units, Chapter IV	125	1.4	1.5	1.1	Shelterwood and Clearcut

10-YEAR TIMBER SALE PROGRAM

FISCAL YEAR 1988

Location -Mgmt. Area -Sale Name (District) -Compartment	Areas (Acres)	Volume (MMBF)	Roads (mi.) Construction	Roads (mi.) Reconstruction	Probable Harvest Methods
-MA B -Mixes Baldy (4) -Lone Tree Compartment 65 -See Map LB-8 Geographic Units, Chapter IV	250	1.7	0.5	1.5	Shelterwood and Clearcut
-MA B -Smith Flat (4) -Russian Flat Compartment 51 -See Map LB-10 Geographic Units, Chapter IV	180	1.2	0.3	1.1	Clearcut
-MA B -Loco Grouse (6) -Loco Creek Compartment 21 -Cottonwood Creek Compartment 22 -See Map CZ-2 Geographic Units, Chapter IV	300	2.4	2.5	0	Clearcut and Shelterwood
-MA B -Southern Sunrise (7) -Miller Compartment 08 -Butte Compartment 10 -See Maps LB-6 and LB-7 Geographic Units, Chapter IV	460	3.7	1.1	2.5	Clearcut and Shelterwood

FISCAL YEAR 1989

Location -Mgmt. Area -Sale Name (District) -Compartment	Areas (Acres)	Volume (MMBF)	Roads (mi.) Construction	Roads (mi.) Reconstruction	Probable Harvest Methods
-MA B -Mill-Lion (6) -Lion Compartment 31 -Trail Compartment 32 -See Map LB-11 Geographic Units, Chapter IV	310	3.0	2.0	1.0	Shelterwood & Clearcut
-MA B -Central Park (7) -Iron Mines Compartment 81 -Bolslinger Compartment 83 -See Map LB-2 Geographic Units, Chapter IV	225	2.0	0.2	1.6	Clearcut
-MA A -Mizpah (7) -Nugget Compartment 03 -See Map LB-3 Geographic Units, Chapter IV	240	2.0	0.4	1.5	Clearcut and Shelterwood
-MA C -Hoover Springs (4) -Hoover Compartment 50 -Russian Flat Compartment 51 -See Map LB-10 Geographic Units, Chapter IV	400	3.2	1.1	2.0	Clearcut & Shelterwood

10-YEAR TIMBER SALE PROGRAM

FISCAL YEAR 1990

Location -Mgmt. Area -Sale Name (District) -Compartment	Areas (Acres)	Volume (MMBF)	Roads (mi.) Construction	Roads (mi.) Reconstruction	Probable Harvest Methods
-MA B -South Burley (4) -Trask Compartment 49 -See Map LB-10 Geographic Units, Chapter IV	450	3.7	2.0	1.5	Clearcut & Shelterwood
-MA B -Comb Creek (6) -Comb Butte Compartment 24 -See Map CZ-2 Geographic Units, Chapter IV	500	3.0	3.0	0	Clearcut & Shelterwood
-MA B -Woods Mtn. (7) -Reynolds Compartment 84 -See Map LB-6 Geographic Units, Chapter IV	460	4.0	1.4	2.2	Clearcut

FISCAL YEAR 1991

Location -Mgmt. Area -Sale Name (District) -Compartment	Areas (Acres)	Volume (MMBF)	Roads (mi.) Construction	Roads (mi.) Reconstruction	Probable Harvest Methods
-MA B -Clyde Park (4) -Hoover Compartment 50 -See Map LB-10 Geographic Units, Chapter IV	400	3.4	1.8	1.2	Clearcut
-MA B -North Fork Musselshell (6) -Lion Compartment 31 -See Map LB-11 Geographic Units, Chapter IV	300	2.5	1.2	1.1	Clearcut & Shelterwood
-MA A -Corridor (7) -Lamb Compartment 05 -See Maps LB-3 and LB-7 Geographic Units, Chapter IV	460	4.1	1.3	2.2	Clearcut and Shelterwood

FISCAL YEAR 1992

Location -Mgmt. Area -Sale Name (District) -Compartment	Areas (Acres)	Volume (MMBF)	Roads (mi.) Construction	Roads (mi.) Reconstruction	Probable Harvest Methods
-MA B -East Fork Spring Creek (6) -East Fork Spring Compartment 36 -See Map LB-11 Geographic Units, Chapter IV	350	2.8	2.7	0	Clearcut & Shelterwood
-MA B -Little Moose (7) -Moose Compartment 11 -See Map LB-6 Geographic Units, Chapter IV	450	4.0	3.5	0	Clearcut & Shelterwood
-MA C -Deadhorse (4) -Hoover Compartment 50 -See Map LB-10 Geographic Units, Chapter IV	435	3.6	0.6	2.7	Clearcut & Shelterwood

10-YEAR TIMBER SALE PROGRAM

FISCAL YEAR 1993

Location -Mgmt. Area -Sale Name (District) -Compartment	Areas (Acres)	Volume (MMBF)	Roads (mi.) Construction	Roads (mi.) Reconstruction	Probable Harvest Methods
-MA B -Running Wolf (4) -Running Wolf Compartment 62 See Map LB-8 Geographic Units, Chapter IV	400	3.3	0.0	3.1	Clearcut & Shelterwood
-MA B -Blankenship (7) -Blankenship Compartment 70 -See Map LB-4 Geographic Units, Chapter IV	400	3.7	0.7	2.4	Clearcut & Shelterwood
-MA C -Flat Whiskey (6) -Willow Compartment 01 -See Map SN-2 Geographic Units, Chapter IV	560	2.8	2.2	2.2	Shelterwood

FISCAL YEAR 1994

Location -Mgmt. Area -Sale Name (District) -Compartment	Areas (Acres)	Volume (MMBF)	Roads (mi.) Construction	Roads (mi.) Reconstruction	Probable Harvest Methods
-MA B -Bluff Mtn. (4) -Trask Compartment 49 -See Map LB-10 Geographic Units, Chapter IV	435	3.6	1.3	2.0	Clearcut and Shelterwood
-MA B -Green Mtn. (6) -Whitetail Compartment 33 -See Map LB-11 Geographic Units, Chapter IV	400	3.0	1.1	2.0	Clearcut and Shelterwood
-MA B -Snow Flea (7) -Moose Compartment 11 -See Maps LB-3 and LB-6 Geographic Units, Chapter IV	450	4.5	1.4	2.1	Clearcut

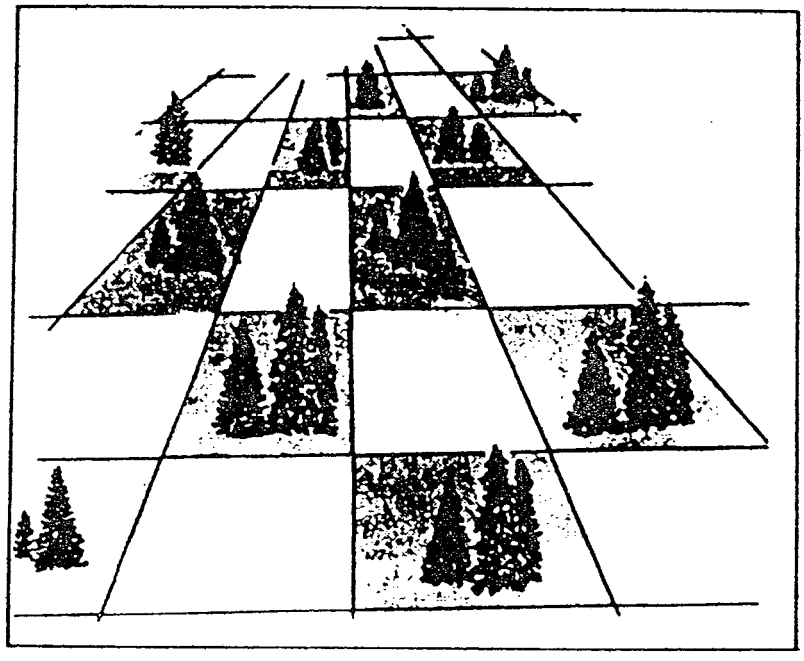
FISCAL YEAR 1995

Location -Mgmt. Area -Sale Name (District) -Compartment	Areas (Acres)	Volume (MMBF)	Roads (mi.) Construction	Roads (mi.) Reconstruction	Probable Harvest Methods
-MA B -Ettien Ridge (4) -Hay Canyon Compartment 52 -Ettien Compartment 53 -See Map LB-10 Geographic Units, Chapter IV	500	3.6	0.0	3.8	Shelterwood
-MA B -Jack Daniels (7) -Moose Compartment 11 -See Map LB-6 Geographic Units, Chapter IV	500	4.5	1.2	2.7	Clearcut
-MA C -Warm Springs (6) -Warm Springs Compartment 26 -See Map CA-1 Geographic Units, Chapter IV	225	3.0	3.0	0	Shelterwood

LEWIS AND CLARK NATIONAL FOREST PLAN

Appendix B

Land Exchange



Acquisition

A Forest-wide management direction for land adjustment is included in the Forest Plan as Forest Management Guideline J-1, Land Ownership Adjustment. The following is the procedure developed by interacting that guideline with the Preferred Alternative.

The procedure initially separates the Forest into 11 land adjustment areas, each containing unique management and/or land adjustment characteristics. Secondly, the procedure considers the needs of six resource elements (recreation, wildlife, range, timber, water, minerals) in each land adjustment. Finally the intensity of management was recognized as a factor which would influence land adjustment desirability.

Following the above procedure and the basic precept that all exchange proposals must meet the public interest requirements of Forest Service Manual 5430.3 and 5434, specific land parcels have been identified and given a priority rating of low (L), moderate (M), or high (H) desirability for exchange. This was done by matching the management prescription assigned to an area by the Preferred Alternative to the Management Guideline. These ratings are shown on Table B-1. The resulting prioritization of parcels is displayed on the geographic area maps and are tabulated by mountain range on Table B-2.

Although the parcels have been determined to be desirable for federal ownership, it is not the intent of the Forest Service to pursue this direction except on a willing grantor basis.

Other private lands which may enhance the management, administration, or production of Forest resources may be desirable for federal ownership. Acquisition of these lands should be examined in the context of specific exchange proposals.

Disposal

Because most land adjustment will occur via exchange with private parties, certain National Forest tracts have been identified as having potential for disposal. These are also shown on the geographic area maps and are tabulated on Table B-3.

Generally, these are small isolated parcels of National Forest surrounded by private land, which do not support Forest Plan direction and are not essential to management of the National Forest. Other areas would be considered for disposal if the offered private land would enhance management, administration, or production of Forest resources.

Some federal lands, administered by agencies other than the Forest Service, may also be available for selection by citizens participating in a land exchange.

Land adjustments have been based on current Forest Service Policy. In the event these policies change, other areas of the Forest could be considered for acquisition or disposal. This acquisition or disposal may be accomplished through land exchange, outright purchase or donation. Any acquisitions or disposal will be tiered to the Environmental Impact Statement existing in the Lewis & Clark National Forest Land Resource Management Plan.

TABLE B-1 DESIRABILITY RATINGS

Management Practice (Resource)	Management Prescription (Intensity)	LAND ADJUSTMENT AREAS No. 1 Hiway 2	No. 2 Rocky Mountains	No. 3 Smith River	No. 4 Tender-foot	No. 5 Mineral Areas	No. 6 Belt Park	No. 7 Sheep Creek	No. 8 Warm Springs and Crazies	No. 9 Hiway 89 Corridor	No. 10 Scattered Patented Land	No. 11 Municipal Water-sheds
TIMBER	High-HH,HL	3	2	3	1	3	3	3	1	3	2	3
	Moderate-MM,ML	3	3	4	2	4	4	4	1	4	3	4
	Low-LH,LL,SWS,SRZ,SNA	4	3	4	3	4	4	4	2	4	4	4
RECREATION	High-HH,MM,LH,SWS,SRZ	1	1	1	1	3	3	2	2	1	1	3
	Moderate-HL,w/o roaded setting,MC	1	1	1	2	4	4	2	2	2	2	4
	Low-LL,HL with roaded setting	2	1	1	2	4	4	3	3	2	3	4
RANGE	High-MM, w/Range, HL w/Range	1	1	1	1	2	1	1	1	2	1	4
	Moderate-ML w/Range	2	2	2	2	3	1	1	1	2	1	4
	Low-HH,LL,SWS,SRZ, All w/Range	3	2	2	2	4	2	2	2	3	2	4
WILDLIFE	High-HH,MM w/o timber LH,SWS,SRZ	1	1	1	1	2	1	1	1	2	1	4
	Moderate-MM with timber	2	1	2	2	4	3	1	2	3	2	4
	Low-HL,ML,LL	3	2	3	3	4	4	2	3	3	3	4
WATERSHED	High-HH,MM,LH,SRZ	3	1	3	3	3	3	3	2	3	2	1
	Moderate-ML,HL,SWS,SNA	3	2	3	3	3	4	3	2	3	3	1
	Low-ML,LL	3	2	4	4	4	4	4	3	4	3	1
MINERALS	High-HH,MM,LH,LL,SWS, SRZ	2	3	3	2	3	4	3	4	2	2	3
	Moderate-NONE	3	3	4	3	3	4	3	4	3	3	4
	Low-HL,ML,SNA	4	4	4	4	4	4	4	4	4	4	4

Desirability Ratings: 1-HIGH 2-MODERATE 3-LOW 4-NOT DESIRABLE
Note: Prescription SWM, SCM, SNC, SXF, and SRN are not available for exchange

TABLE B-2 ACQUISITION

Township	Range	Sections	County	Acres	Reasons for Acquisition(1)	Interest To Be Acquired(2)	Method (3)	Priority Class (4)	Map Refere
ROCKY MOUNTAINS									
30N	13W	MES 724,715	Glacier	319	1A	1	1	2	RM-1
30N	12W	MES 704,712	Glacier	201	1A	1	1	2	RM-1
30N	12W	MES 705	Glacier	149	1A,2A,3A	1	1	2	RM-1
20N	9W	MES 1112	Lewis & Clark	160	2A,5	1	1	3	RM-5
20N	9W	MES 725,717	Lewis & Clark	320	1A	1	1	2	RM-5
20N	9W	MES 714,780,25,36	Lewis & Clark	556	2A,3A,1A	1	1	2	RM-5
18N	8W	1, MES 1115	Lewis & Clark	320	2A,5	1	1	3	RM-6
HIGHWOOD MOUNTAINS									
20N	9E	13,24	Choteau	480	3B	1	1	1	HW-1
20N	9E	14,15	Choteau	160	3B	1	1	2	HW-1
20N	9E	19,20	Choteau	240	4A,3C	1	1	2	HW-1
20N	9E	32,33	Choteau	360	4A,4B	1,2	1,2	1	HW-1
19N	9E	4	Choteau	360	4A,4B	1	1	1	HW-1
19N	9E	4,9,15	Choteau	520	4B,4A,3B,2A	1	1	2	HW-1
20N	10E	19,20,21	Choteau	300	3B	1	1	1	HW-1
BIG SNOWY MOUNTAINS									
13N	19E	28	Fergus	200	4C	1	1	3	SN-1
12N	17E	4	Fergus	40	4C	1	1	3	SN-1
12N	19E	1,12	Fergus	160	4C,4D	1	1	1	SN-1
12N	17E	34,35	Fergus	138-	2B,3D	1	1	2	SN-1
11N	17E	2,12	Fergus	208+	2B,3D	1	1	2	SN-1
11N	18E	7,8,11,12,13,14,15	Fergus	623	2B,3D	1	1	2	SN-1
11N	19E	16,17,21,26,27,28	Golden Valley	640	2B,3D	1	1	3	SN-1
LITTLE SNOWY MOUNTAINS									
12N	20E	36	Fergus	360	2B,3D,1B,6	1	1	3	SN-2
12N	21E	22,23,24,25,28,31,35	Fergus	1060	2B,3D,1B,6	1	1	3	SN-2
11N	21E	2	Golden Valley	60	2B,3D,1B,6	1	1	3	SN-2
LITTLE BELT MOUNTAINS									
10N	11E	8,9,16,17	Meagher	153	2B,3D	1	1	3	LB-11
11N	7E	5,6,10,11	Meagher	320	2B,3D	1	1	2	LB-7
11N	10E,11E	12,7	Judith Basin	160	2B,3D	1	1	2	LB-10
11N	13E	25,36	Wheatland	160	2B,3D	1	1	2	LB-12
11N	14E	15	Wheatland	80	3D,1B	1	1	2	LB-12
12N	6E	1,2,6,7,9,11,12, 13,15,17,19,33	Meagher	7360	3D,1B	1	1	2	LB-6
12N	5E	1,11,13	Meagher	1920	3D,1B	1	1	2	LB-6
13N	9E	35,36	Judith Basin	440	2C,3D	1	1	1	LB-9
13N	10E	1,2,12,31,32,33	Judith Basin	626	2C,3D	1	1	1	LB-9
13N	11E	7,17,18,19,20	Judith Basin	67	2C,3D,4B	1	1	1	LB-8,9
13N	5E	3,5	Meagher	1280	2C,3D,4B	1	1	2	LB-6
13N	8E	19,30	Cascade	154	4A,3B	1	1	2	LB-2,6
13N	8E	21,28,29	Cascade	157	4A,3B	1	1	2	LB-2,6
14N	4E	3,9,11,13,15,17, 21,22,23,25	Meagher	4400	2C,3D,4B	1	1	2	LB-1
14N	5E	29,31,33	Meagher	1255	2C,3D,4B	1	1	2	LB-1
15N	4E	33	Meagher	40	2C,3D,4B	1	1	2	LB-1
15N	3E	13	Meagher	2160	4E	1,2	1,2	1,2	LB-1
14N	3E	25,13							
14N	4E	5,7,30							
14N	4E	24,25	Meagher	80	6	1	1	2	LB-1
14N	5E	13,19,20,24,28,30, 32,33	Meagher	1359	4C	1	1	2	LB-1
14N	6E	18,19	Meagher	63	4C	1	1	2	LB-2
14N	5E	25,36	Meagher						LB-6
14N	6E	30,31	Meagher	157	2B,3D	1	1	2	LB-6
14N	7E	16,17,20,21	Cascade	263	2B,3D	1	1	2	LB-2
14N	9E	13,24	Judith Basin		4D	1	1	2	LB-8
15N	3E	24,25,36	Cascade						LB-1
15N	4E	31		654	4E	2	2	1	LB-1
15N	4E	7,18 &	Cascade						LB-
16N	3E	25 &							LB-
16N	4E	30,31		810	4E	2	2	1	LB-1

TABLE B-2

ACQUISITION

Township	Range	Sections	County	Acres	Reasons for Acquisition(1)	Interest To Be Acquired(2)	Method (3)	Priority Class (4)	Map Reference
E BELT MOUNTAINS									
15N	4E	18,19,30	Cascade	475	4E	2	2	1	LB-1
14N	3E	24	Meagher	20	4E	2	2	1	LB-1
14N	4E	31	Meagher	200	4E	2	2	1	LB-1
14N	3E	24,25	Meagher						LB-1
14N	4E	30	Meagher	190	4E	2	2	1	LB-1
14N	3E	1,2 &							LB-1
14N	4E	6	Meagher	170	4E	2	2	1	LB-1
12N	7E	7	Meagher	320	2C,5	1	2	2	LB-3
15N	4E	15,21,22,23, 26,27,28	Cascade	869	4C,6	1	1	3	LB-1
15N	9E	9,10,14,15	Judith Basin	480	2A,3A	1	1	2	LB-B
15N	9E	2,3	Judith Basin	308	4C,6	1	1	3	LB-B
15N	10E	16,17,18,19	Judith Basin	628	4C,6	1	1	2	LB-B
16N	6E	25,26,35,36	Cascade	420	3A	1	1	1	LB-1
16N	7E	31,32	Cascade	482	3A,4C	1	1	1	LB-1
16N	8E	28,29	Judith Basin	167	4C,6	1	1	3	LB-4
16N	9E	25,34,35	Judith Basin	667	4C,6	1	1	3	LB-B
CRAZY MOUNTAINS									
6N	9E	11,13	Meagher	1120	2A,3A	1	1	3	CZ-2
6N	10E	5,7,9,15,17,19, 21,23,25,27,35	Meagher	6040	2A,3A	1	1	3	CZ-2
6N	11E	13,15,19,21,23,25, 27,29,31,33,35	Meagher	7680	4C	1	1	3	CZ-1
6N	12E	7,19,31	Meagher	1920	4C	1	1	3	CZ-1
5N	10E	1,3,11	Meagher	1400	2A,3A	1	1	3	CZ-2
5N	11E	1,3,5,11,13,23,25	Meagher & Park	4020	4C	1	1	3	CZ-1
5N	12E	7,19	Sweetgrass	1280	4C	1	1	3	CZ-1
6N	12E	6,29	Wheatland	700	4C	1	1	3	CZ-1
7N	9E	13,23	Meagher	203	2A,3A,1A,6	1	1	2	CZ-2
7N	9E	25							
	10E	19,30	Meagher	640	2A,3A,1A,6	1	1	2	CZ-2
CASTLE MOUNTAINS									
9N	7E	26	Meagher	60	7	1	1	1	CA-3
9N	8E	13,24	Meagher	120	2A,3A,1A,6	1	1	2	CA-2
8N	8E	31,33	Meagher	1280	2A,3A,1A,6	1	1	2	CA-1
9N	9E	16,17,18,19,20,21	Meagher	400	2A,3A,1A,6	1	1	2	CA-1
7N	8E	5	Meagher	640	2A,3A,1A,6	1	1	2	CA-1
9N	9E	4,5,15,16	Meagher	320	2A,3A,1A,6	1	1	2	CA-1
9N	10E	4,5,28,29	Meagher	320	2A,3A,1A,6	1	1	1	CA-1

KEY FOR TABLE B-2

Column

(1) Reasons for Acquisition

1. Wildlife
   - A. Values
   - B. Enhancement
2. Timber
   - A. Values
   - B. Management Enhancement
   - C. Exchange Management
3. Grazing
   - A. Values
   - B. Consolidate Management
   - C. Exchange
   - D. Enhancement
4. Recreation
   - A. Values
   - B. Management Enhancement
   - C. Semi-Primitve
   - D. Developed
   - E. Approved Composite
5. Visual
6. Management Enhancement
7. Municipal Watershed

(2) Interest To Be Acquired

1. Fee
2. Fee or Part

(3) Method

1. Exchange
2. Purchase Scenic Easement

(4) Priority Class

1. High
2. Moderate
3. Low

TABLE B-3

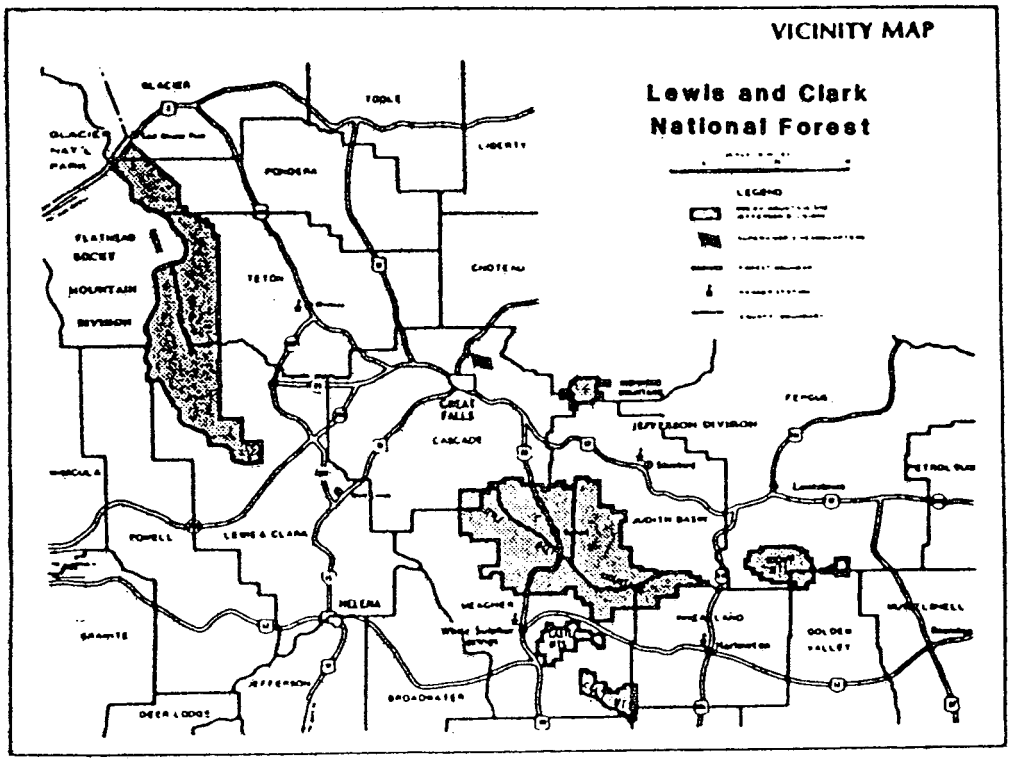
LANDS AVAILABLE FOR SELECTION
Listed by Location, County

CASE AREA	LOCATION	COUNTY	ACRES	REASON FOR DISPOSAL	INTRST TO BE ACQRD	METHOD
Belt Park	T15N. R7E Sec. 26,28,33,35	Cascade	335	Scattered-Isolated	Fee	Exchange
	T14N. R7E Sec. 3,4,10,15	Cascade	520	Scattered-Isolated	Fee	Exchange
Tenderfoot	T14N. R4E Sec. 34	Meagher	160	Scattered-Isolated	Fee	Exchange
Sheep Creek	T13N. R5E Sec. 12 & 24	Meagher	1160	Scattered-Isolated	Fee	Exchange
	T12N. R5E Sec. 24	Meagher	40	Scattered-Isolated	Fee	Exchange
	T12N. R6E Sec. 20,24,26, 27,28	Meagher	1242	Scattered-Isolated	Fee	Exchange
	T12N. R7E Sec. 20,22,26, 28,32	Meagher	520	Scattered-Isolated	Fee	Exchange
	T11N. R7E Sec. 4	Meagher	2.5	Scattered-Isolated	Fee	Exchange
Crazys	T6N. R10E Sec. 12	Meagher	280	Scattered-Isolated	Fee	Exchange
	T6N. R11E Sec. 18	Meagher	155	Scattered-Isolated	Fee	Exchange
	T5N. R12E Sec. 8, 20	Sweetgrass	970	Scattered-Isolated	Fee	Exchange
Highway 2	T30N. R13W Sec. 3,10, 15, & 16	Glacier	81	Scattered-Isolated	Fee	Exchange
	T31N. R13W Sec. 35	Glacier	38	Scattered-Isolated	Fee	Exchange

LEWIS AND CLARK NATIONAL FOREST PLAN

Appendix C

Right of Way Acquisition



APPENDIX C

Permanent right-of-way easements are acquired by the Forest Service as a means of providing long-term road or trail access to the National Forest. Access is needed by the general public for recreation and by the Forest Service for management and administration.

Where access needs are not long-term, temporary agreements can be made with private landowners.

In preparation of the Forest Plan, extensive analysis of transport systems was conducted to determine the most economical road network to support the preferred land management alternative (See Chapter I). Using this preferred road system, right-of-way needs were identified by priority and are shown on the Geographic Unit Maps. In addition, these right-of-way needs are displayed in by mountain range.

The following factors were considered in prioritizing right-of-way needs as high (H), moderate (M), or low (L).

1. Support scheduled commodity management activities.

2. Provide public access to areas large in size and/or with high recreation potential.

3. Provide Forest administrative access.

A precise assessment of total right-of-way needs is not possible at this level of planning. For this reason, some identified rights-of-ways may not be needed, if subsequent project level planning reveals that private land could reasonably be avoided. Conversely, other rights-of-ways not now identified may be required.

Rights-of-way shown on Table C-1 are planned to be acquired from 1983-2020. All proposed rights-of-ways are for public access to the National Forest for multiple purposes of recreation, timber management, range management, and administration.

APPENDIX C

Rights-of-way easements are also needed for trails. Most existing Forest Service trails are partially on private land without the benefit of recorded easements.

Although a detailed assessment of trail right-of-way needs has not been made, the Forest's long term goal is to resolve all trail jurisdictional conflicts through the acquisition of easements, relocation of trails to federal land, or other suitable means.

TABLE C-1 PLANNED RIGHT-OF-WAY ACQUISITION

Project Name	Map Reference	Project Number	Legal Description T	R	Sections	County	No. of Owners	Miles	Type	Purpose	Priority
Rocky Mountains											
Dupuyer Creek	RM-2	9193	27N 27N	9W 8W	13,14,23 18	Teton	2	3.5	Road	Area Access	M
Dearborn River	RM-6, RM-8	206	18N	7W	31,32,33,34	Lewis & Clark	6	2.5	Trail	Area Access	M
Falls Creek	RM-6, RM-8	229	18N	7W	33,34	Lewis & Clark	1	1.5	Trail	Area Access	M
Cyanide	RM-6		18N	7W	6	Lewis & Clark	1	0.4	Road	Area Access	M
Smith Creek	RM-5	215	19N	8W	17,18,19,20	Lewis & Clark	3	2.4	Trail	Area Access	M
Highwood Mountains											
Highwood Baldy	HW-1	8830	19N	8E	13,14	Cascade	3	2.4	Road	Electronic Site Access	M
Highwood Cottonwood	HW-1	8843	20N	10E	32,33, 34,35	Choteau	2	2.2	Road	Area Access and Timber	M
Shonkin Creek	HW-1	8842	20N	9E	13	Choteau	2	1.5	Road	Area Access and Timber	M
Snowy Mountains											
Halfmoon Canyon	SM-1	252	12N	19E	1	Fergus	1	0.5	Road	Area Access	M
Careless Creek	SM-1		11N	18E	11,12,13, 24,25,36	Fergus	1	5.5	Road	Area Access & Recreation	M
Little Snowies	SM-2	574	12N	20E	25,26,27	Fergus	1	2.0	Road	Area Access & Recreation	M
Swimming Women	SM-1	8954	11N	19E	16,17, 20,29	Golden Valley	3	2.2	Road	Area Access & Recreation	M
Cottonwood Creek	SM-1	576	13N	18E	14,23,26	Fergus	2	2.3	Road	Area Access & Recreation	M
Red Hill	SM-1	650	11N	20E	10	Golden Valley	2	0.5	Trail	Area Access & Recreation	M
Crazy Mountains											
Big Elk	CZ-1	654	6N	12E	26,27,33,34	Wheatland	3	2.6	Road	Recreation Access	M
Castle Creek	CZ-1	8923	6N 6N	10E 11E	13 17,18,19,29	Meagher	2	1.8	Road	Timber Sale	M
Comb Butte	CZ-2	396	7N 8N	10E 10E	6,7,8,17,20 31	Meagher	2	4.3	Road	Timber Sale	L
Bozeman Fork/Indian Creek	CZ-2		7N	9E	9,16,21,27, 28,33,34	Meagher	2	7.5	Road	Road Area and Timber Access	L
Bear Springs	CZ-1		6N	12E	14,15,9	Wheatland	3	3.5	Road	Area Access	L
Castle Mountains											
Warm Springs	CA-1	8871	7N 7N 8N 8N	7E 8E 7E 8E	1,11,12,14 5 36 31,33	Meagher	3	6.0	Road	Area Access & Timber Sale	M
Castle-Checkerboard	CA-1	581	9N	9E	1,2,10,11	Meagher			Road	Area Access & Timber Sale	M
Castle-Checkerboard	CA-1	581	8N 8N 9N	8E 9E 8E	11,12,14 6 36	Meagher	40	5.0	Road	Area Access & Timber Sale	L
Eight Mile	CA-1	93740	9N 10N	8E 8E	1 23,24,25,36	Meagher	3	3.2	Road	Area Access & Timber Sale	M
N.F. Whetstone	CA-1	8905	9N	10E	21,28,29	Meagher	2	1.8	Road	Area Access & Timber Sale	M

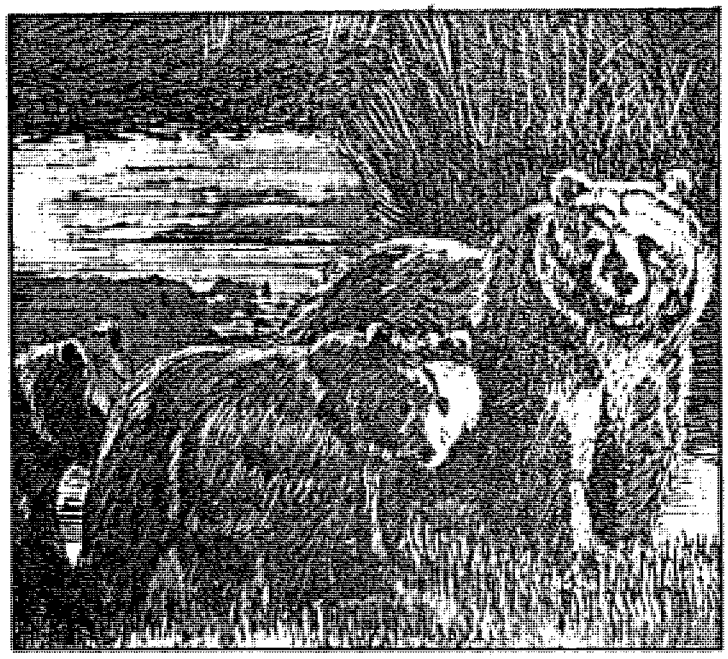
TABLE C-1 PLANNED RIGHT-OF-WAY ACQUISITION

Project Name	Map Reference	Project Number	Legal Description T	R	Sections	County	No. of Owners	Miles	Type	Purpose	Priori
					Little Belt Mountains						
Antelope Canyon	LB-12	6521	12N	12E	14,23	Judith Basin	2	1.0	Road	Area Access	L
Roberts Creek-Roughlock	LB-12	584	12N	14E	10,15,22, 27,28,29	Judith Basin	3	5.0	Road	Area Access & Timber Sale	L
Charcoal Gulch	LB-7	820	11N	7E	29	Meagher	1	0.4	Road	Area Access & Timber Sale	L
Sawmill Creek	LB-7	94040	11N	8E	22,23,27	Meagher	3	2.7	Road	Area Access & Timber Sale	L
McGee Coulee	LB-4	3311	15N	8E	6	Cascade	1	0.2	Road	Area Access & Timber Sale	H
Sawmill Creek	LB-4	3313	15N	8E	8	Cascade	1	0.2	Road	Area Access & Timber Sale	H
Willow-Wood	LB-8	6528	14N	11E	3	Judith Basin	2	1.0	Road	Area Access & Timber Sale	H
Yogo Creek	LB-8	266	13N 13N	10E 11E	1,2,12, 7,17,18	Judith Basin	1	1.3	Road	Area Access & Timber Sale	H
Middle Fork Judith	LB-9	437	13N 13N	9E 10E	35,36 31,32,33	Judith Basin	4	4.8	Trail	Area Access	M
Placer Snow	LB-8	281	14N	9E	1	Judith Basin	1	0.2	Road	Area Access & Timber Sale	H
Upper Dry Wolf	LB-8	9184	14N	9E	13	Judith Basin	1	1.0	Road	Area Access & Timber Sale	H
Wolf Butte	LB-8	93000	16N	10E	29,30	Judith Basin	2	1.4	Road	Area Access	M
Reed Hill		110	14N	11E	24,25,36	Judith Basin	2	2.0	Road	Electronic Site	M
Moose Coulee	LB-8	6457	14N	11E	22,27	Judith Basin	1	0.6	Road	Area Access & Timber Sale	L
Lone Tree	LB-8	262	15N 16N	9E 9E	3 34	Judith Basin	3	0.8	Road	Area Access & Timber Sale	H
Dry Fork Belt Creek	LB-8	253	15N	9E	15	Judith Basin	1	0.2	Road	Area Access & Timber Sale	H
Big Spring	LB-8		15N	10E	17,18	Judith Basin	1	0.5	Road	Area Access & Timber Sale	L
Rafferty Creek	LB-3		14N	7E	11	Cascade	1	0.2	Road	Area Access & Timber Sale	M
Tillinghast Creek	LB-2,3		14N 15N	7E 7E	5,6 21,22,28,32	Cascade	2	3.8	Road	Area Access & Timber Sale	M
Williams Park	LB-6	586	13N	6E	6,7	Meagher	1	0.6	Road	Area Access & Timber Sale	H
Iron Butte	LB-6		12N	6E	26,34,35	Meagher	2	0.5	Road	Area Access	H
Haymaker	LB-12	189	10N	13E	18,19,20	Wheatland	1	1.5	Road	Area Access	M
Clarks Fork Morrisy	LB-12	6519	10N	12E	14,15,23,26	Wheatland	2	2.0	Road	Area Access	H

LEWIS AND CLARK NATIONAL FOREST PLAN

Appendix D

U. S. Fish and Wildlife Biological Opinion on T&E Species



UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
Endangered Species, Field Office
Federal Bldg., U.S. Courthouse
301 South Park
P.O. Box 10023
Helena, Montana 59626

IN REPLY REFER TO:

6-1-85-F-009

August 22, 1985

Mr. Tom Coston
Regional Forester
U.S. Forest Service
Region 1
P.O. Box 7669
Missoula, MT 59807

Dear Mr. Coston:

This is the Fish and Wildlife Service's (FWS) biological opinion prepared in response to your April 10, 1985 request for formal consultation on the Revised Proposed Lewis and Clark National Forest Plan. The consultation period was extended to the end of August by mutual agreement between our agencies in order to prioritize consultation requests from the Lewis and Clark National Forest and to allow the Forest to formulate changes in the proposed Plan that would benefit endangered and threatened species. The FWS has examined the proposed Plan in accordance with the Section 7 Interagency Cooperative Regulations (50 CFR 402, 43 FR 870) and the Endangered Species Act, as amended. This biological opinion refers only to the potential effects on endangered and threatened species and not the overall environmental acceptability of the proposed action.

Project Description

The proposed Lewis and Clark Forest Plan sets forth Forest-wide goals and objectives, land use allocations, management area prescriptions, standards and guidelines, and monitoring and evaluation requirements to establish direction for management of the Lewis and Clark National Forest over the next 50 years.

Biological Opinion

It is the FWS biological opinion that implementation of the revised proposed Lewis and Clark Forest Plan is not likely to jeopardize the continued existance of the grizzly bear or gray wolf. We concur with the conclusion of the biological evaluation prepared for the Forest Plan, that the Plan should not adversely affect the bald eagle and peregrine falcon.

Basis of Opinion

In this consultation, the FWS has reviewed the Forest Plan to determine if the allocation of land resources will preclude the survival and recovery of the grizzly bear and gray wolf and whether the management areas and their management direction and guidelines will provide for their recovery.

While the Forest Plan projects the amount of grazing, timber to be harvested, and facilities to be constructed as well as the acres to developed in the management areas it is impossible to: (1) identify site specific impacts of programs or activities; (2) relate specific project impacts to specific biological components and how they will affect the manner in which endangered species use an affected area; (3) identify cumulative impacts; (4) predict the degree of compliance/coordination with Forest standards and guidelines and the Management Guidelines for Selected Species, Rocky Mountain Front Studies (Interagency Guidelines). Therefore, it is impossible through one consultation to render a biological opinion on all programming and activities identified in the Forest Plan. Thus, additional consultation will be required on each program, activity, or project the Forest Service determines may affect threatened and endangered species at the time it is designed and implemented.

Grizzly Bear

To assure the viability of the Northern Continental Divide Grizzly Bear (NCDGB) population and habitat, forest activities must be at a level and conducted in a manner to assure that (1) bears are not adversely impacted directly, indirectly or cumulatively; (2) important habitat components are not adversely modified or destroyed; and (3) that sufficient space is left undisturbed from detrimental human activities to meet the biological requirements of grizzly bears. These objectives can be met in the Forest planning process by: (1) allocating sufficient space to accommodate grizzly recovery in which grizzly management is the primary use or grizzly bear supportive allocations are made, and (2) prescribing in areas of occupied grizzly habitat that have non-supportive allocations sufficient grizzly prescriptions to assure that the activities are made compatible with the biological requirements of the bear.

The lands allocated to grizzly bear Management Situations 1, 2, and 3, implementation of their attendant management direction, and adherence to the Interagency Guidelines provide a process to assure that the above objectives are met. We believe that if the occupied habitat is managed in accordance with the direction for Management Situations 1, 2 and 3 and that human/bear conflicts are minimized so as to prevent human-induced mortalities, the grizz?

population will respond by expressing the parameters identified for recovery in the Grizzly Bear Recovery Plan. Thus, this opinion is contingent upon the management direction for Management Situations 1, 2, and 3 being fully implemented, that the stratification submitted in this consultation remains in effect, and that the Interagency Guidelines are followed.

The additional information submitted June 3, 1985 by the Lewis and Clark National Forest for this consultation indicates that:

1) Management Areas A (Timber/Visual) and O (Timber/Range) have been eliminated from the North End Geographic Unit, Rocky Mountain Division.

2) The timber program on the Rocky Mountain Division has been reduced to .5 million board feet annually and that permanent roads will not be constructed under this program.

3) Management Area O on the Rocky Mountain Division, which provides for regulated timber harvest, has beer educed from 49,757 to 22,702 acres.

4) An additional 5,500 acres have been added to Management Area I adjacent to the Sun River Game Range. The unleased portion of this area will be available for non-surface occupancy oil and gas leasing during the first decade of the Plan.

In the June 26, 1984 biological opinion on the Hall Creek APD by American Petrofina, we discussed potential impacts that additional roading in the "Ceded Strip" may have on the grizzly and wolf. The impacts were in part due to uncertainies with respect to the legal authorities of the Forest Service to implement and enforce road closures because of access rights Blackfeet Indians have under treaty agreements with the United States. The FWS fully supports the Forest decision to remove Management Areas A and O (allocations that require roading) from the North End Geographic Unit.

These changes to the Forest Plan indicated above will significantly help in maintaining grizzly bear habitat effectiveness at a level that is compatible with recovery objectives. Grizzly habitat management goals will eventually be established for each bear management unit now being identified through the cumulative effects analysis model and will be expressed as a percent habitat effectiveness needed to recover the grizzly. The cumlative effects analysis model will help identify levels of activities and open road densities that are compatible with bear management objectives.

Gray Wolf

Two major factors in managing for wolf recovery include: (1) the maintenance of a year-round prey base (primarily deer, elk, moose and beaver) and (2) avoidance of wolf/human conflicts/encounters that result in mortality. The proposed northwest Montana recovery area generally coincides with the NCDGBE. Review of the grizzly bear guidelines and those for coordinating elk and timber management (Coordinating Elk and Timber Management--Final Report of the Montana Cooperative Elk-Logging Study 1970-1985) indicate that the two are very similar. Thus, the management direction and guidelines developed for grizzlies on the Lewis and Clark National Forest will also have direct beneficial effects on the wolf. This direction plus the Forest-wide guidelines for elk and riparian habitat and the elk guidelines within the Interagency Guidelines helps insure that a year-round prey base for wolves is maintained. The decision to remove Management Area O from the North End Geographic Unit will help in maintaining security for the wolf and minimize the opportunity for human-induced mortalities.

Recommendations

1) Implementation of the Interagency Guidelines (Appendix I) is a key element to the no jeopardy conclusion of this biological opinion. Management Standard C-2 should clearly state that the Interagency Guidelines will be used to coordinate multiple use activities with the biological requirements of endangered and threatened species. Standard #5 would be the appropriate standard to incorporate this language.

2) The Interagency Guidelines represent the most current up-to-date information on how to coordinate oil and gas activities with endangered and threatened species found on the Rocky Mountain Front and are reviewed annually by Technical Committee, Interagency Rocky Mountain Front Wildlife Monitoring/Evaluation Program. The dates for coordinating oil and gas activities on key seasonal ranges identified in Management Guideline G-1 should correspond with those in the Interagency Guidelines.

3) The Interagency Guidelines recommend seasonal restrictions (August 1 - November 30) in the subalpine fir/whitebark pine habitat types and should be included in the list of key seasonal grizzly habitats in Management Guideline G-1.

4) Road closures are an effective management tool to increase security and habitat effectiveness both for the grizzly and for prey species of the wolf. To more fully clarify the Forest's intent to manage roads, we recommend that Management Guideline L-4(26) include the following or similar language:

Implement seasonal or year-round closures on existing and proposed roads if the biological evaluation indicates they are necessary to allow grizzly use of important habitat, to reduce human/bear conflicts, and to meet stated habitat effectiveness objectives.

This completes the FWS biological opinion on the proposed Lewis and Clark National Forest Plan. If the proposed plan should change significantly resulting in impacts not considered in this biological opinion, consultation should be reinitated. Your cooperation and interest in meeting our joint responsibility under ESA is appreciated.

Sincerely,

Wayne G. Brewster
Field Supervisor
Endangered Species

cc: Director, FWS, Washington D.C. (OES)
Regional Director, FWS, Region 6, Denver, CO (FA/SE)
Grizzly Bear Recovery Coordinator, Missoula, MT
Field Supervisor, FWS, Billings, MT (ES)
Forest Supervisor, Lewis & Clark National Forest

Grey Wolf.

BIOLOGICAL ASSESSMENT
REVISED PROPOSED FOREST PLAN
LEWIS AND CLARK NATIONAL FOREST

Introduction

This assessment summarizes and discusses information and management direction contained in the Lewis and Clark National Forest Plan (Revised Proposed) and the Supplement to the Draft Environmental Impact Statement. These documents identify a preferred alternative and propose land allocations and management prescriptions which include both construction and nonconstruction activities during the life of the Plan. The purpose of this assessment is to facilitate the review of the two planning documents in the consultation process.

The Forest Plan recognizes four Federally listed T&E species on the Lewis and Clark National Forest: grizzly bear (threatened), gray wolf (endangered), bald eagle (endangered) and peregrine falcon (endangered). A letter dated August 22, 1984 from Wayne Brewster of the Endangered Species Field Office, U.S. Fish and Wildlife Service in Helena verifies the listed species as those expected to occur on the Forest. No threatened or endangered plant species are known to occur on the Forest. Consideration of these listed species is consistent with previous biological evaluations and formal consultation with the Fish and Wildlife Service.

T&E Species Present and Habitat Identified

Brief discussions of the listed T&E species are found in the Forest Plan (7-8) and in the Draft EIS Supplement (2-46). The information presented in this section will supplement that found in the two documents.

Grizzly Bear (Ursus arctos horribilis) - Occupied grizzly bear habitat on the Rocky Mountain Front includes all of the Rocky Mountain Ranger District (776,259 acres) and extends eastward for several miles onto BLM, State, Nature Conservancy and private ownerships as well as portions of the Blackfeet Indian Reservation. Continuous occupied grizzly habitat extends northward through Glacier National Park into Canada and to the west and south onto the adjoining Flathead, Lolo and Helena National Forests. Essential grizzly bear habitat was initially identified by the Forest Service in 1975-76. This delineation was reviewed and expanded considerably in 1977 when 475,836 acres were identified on the Lewis and Clark Forest. There has been no further refinement of the essential habitat delineation since 1977, and that designation has little significance under the current grizzly bear management situation.

The grizzly bear population was reported to be 100 animals for the Lewis and Clark National Forest on the annual wildlife report through the 1970's. That population estimate was based strictly on scattered visual observations which were recorded each year by agency personnel, outfitter/guides and public recreationists. Since more intensive monitoring studies were initiated on grizzly bear in 1977, better information has been developed on bear

distribution and population densities upon which to base a total population estimate. The Forest has reported a population of 85 bears on the annual report since 1982. Further changes in the estimated population may be made as the monitoring study effort shifts to new areas. The change in population estimate from 100 to 85 reported in 1982 was based entirely on better study data and does not refect any known or documented decline in actual bear numbers. It should also be noted, that many of the bears reported for the Forest spend a portion of the year on other landownerships adjacent to the Forest.

Known grizzly bear mortalities on the Rocky Mountain Front for the period 1977-83 totalled 16 bears or an average of about 2.3 per year (Aune et al. 1984). Half of these mortalities were legal hunting kills and the others were from non hunting causes. In 1984 there were 5 grizzlies known to have been lost to the Rocky Mountain Front population. Of this total, 2 were legal hunting kills, 2 were illegal non-hunting mortalities and 1 bear was relocated to the Flathead National Forest following sheep depradations on private land east of the Forest.

Gray Wolf (Canus lupus) - Suitable occupied gray wolf habitat was delineated on 735,700 acres of the Rocky Mountain Ranger District in 1978. This area was included in a recommendation for gray wolf essential habitat prepared by the Northern Region of the Forest Service early in 1980. No additional review or refinement of the essential habitat delineation has taken place since that time.

During the early 1970's the number of wolf sightings and observations of wolf sign increased steadily to a peak of about 40 reports in 1977 and then dropped rapidly in 1978 and 1979 (Ream and Mattson, 1979). During that period of high wolf observations, Ream and Mattson (1978) estimated a population of 5 to 8 wolves on the Rocky Mountain Front. However, even during the period of apparently higher wolf activity in the mid-1970's, no establishment of territories or pack activity by wolves was documented. There have been very few reliable observations of wolves or their sign along the Rocky Mountain Front since 1979. During the summer of 1984, two observations of probable wolf tracks were reported by Forest Service employees along trails in the upper reaches of the North Fork Sun River in the Bob Marshall Wilderness. The low number of wolf observations in recent years would seem to indicate lone wolves dispersing southward from Alberta, Canada.

Two gray wolf mortalities have been documented on the Rocky Mountain Front during the past 20 years. In December 1968, a wolf was shot on private land along the Middle Fork Dearborn River about 8 miles east of the southern end of the Forest. In November 1974, a hunter found a dead female wolf that had been shot on the North Fork Sun River near Cabin Creek. Both animals were verified as gray wolves by a taxonomist after examination of the skulls (Ream and Mattson, 1978).

Bald Eagle (Haliaeetus leucocephalus) - Bald eagles are observed quite regularly on various parts of the Lewis and Clark National Forest during spring and fall migrations. Most of these observations are made near the Forest

boundary along the larger drainages. There is a major migration corridor for bald eagle east of the Forest on the Rocky Mountain Front. There is also a significant spring migration corridor north from the Shields River valley through the White Sulphur Springs area. High populations of Richardson's ground squirrels provide the major eagle prey species in that area.

There are no winter concentrations of bald eagles on or immediately adjacent to the Forest. A few eagles do winter along the Sun River, Smith River, North Fork Musselshell River and Judith River below the Forest boundary and probably make occasional use of big game winter ranges on the Forest in those areas.

There are no known active or historic bald eagle nest sites on the Forest. A historic nest was located on the Sun River a short distance below the Forest boundary. This nest was last active in the 1950's, and it was located in a snag along the river which has since blown down. (DuBois 1984). An active bald eagle territory was reported in 1983 near the forks of the Two Medicine River on the Blackfeet Indian Reservation. The general location would be several miles east of the Forest boundary, and the status of this territory has not been verified.

The Lewis and Clark Forest identified essential habitat for bald eagle in 1978 for inclusion in the Northern Region's recommendation to the U.S. Fish and Wildlife Service. Two areas of suitable-unoccupied nesting habitat for bald eagles have been delineated on the Forest. The larger of these areas, approximately 10,800 acres, is located on the Rocky Mountain District and includes the country adjacent to the lower Sun River canyon and Gibson Reservoir. A second area, of about 6,000 acres of potential nesting habitat was identified along the Smith River canyon on the Kings Hill District in the Little Belt Mountains. Both of these areas appear to have the natural features, including suitable nesting trees and available food sources, necessary to support bald eagle nesting territories. Additional areas of suitable-unoccupied nesting habitat may be identified in the future on the Forest.

Peregrine Falcon (Falco peregrinus) - Peregrine falcon are occassionally observed during seasonal migrations along the Rocky Mountain Front east of the Forest boundary. There are several sightings of migrating peregrines at Freezout Lake each year (DuBois 1983). A few unconfirmed reports of adult peregrines being observed on the Forest during the breeding season have been received in recent years. An employee of ARCO, Bob Kook, reported that he saw an adult peregrine falcon during a helicopter flight north of the Teton River near the wilderness boundary during the week of June 14, 1984. Mr. Kook is a falconer and felt positive of his observation (R. Escano, pers. comm.).

Essential habitat for peregrine falcon was identified for the Lewis and Clark National Forest in 1978 as a part of the Northern Region's effort to delineate essential habitat for the species. A total of 11 areas in the Rocky Mountains and 5 areas in the Little Belt Mountains were classified as suitable-unoccupied habitat. The areas delineated total about 64,000 acres.

There are no known active or historic peregrine falcon eyries on the Lewis and Clark Forest. Four criteria were used to delineate suitable-unoccupied habitat for peregrine falcon on the Forest:

1. A cliff or series of cliffs over 200 feet high that dominate the landscape.

2. Available nesting sites with an east, south or west exposure below 9,500 feet elevation.

3. Adequate prey base within 10 miles of potential nesting areas.

4. Very little or no human disturbance in vicinity of nesting habitat.

DuBois (1984) evaluated cliff areas along the Rocky Mountain Front for their potential as suitable nesting habitat for peregrine falcon. The areas she felt had the best potential for peregrine falcon nesting were included in the areas identified as essential habitat by the Forest in 1978.

Current T&E Habitat Management Direction

The management of T&E species and their habitat on National Forest System lands is guided by a number of Federal laws, executive orders and implementing regulations. In addition, internal management direction is documented in Chapter 2600 of the Forest Service Manual in the form of habitat management objectives, policy statements and operating procedures. State laws and regulations specify the protection and/or restricted taking of resident wildlife species which are Federally classified as threatened or endangered. The long term management program projected in the Revised Proposed Forest Plan would be implemented within and subject to all of the currently existing management direction described in this section.

The Forest Plan specifies long range goals (2-2) and Forest-wide objectives (2-4) as they relate to habitat management for T&E species. Management Guideline C-2 (2-28) summarizes most of the current management direction for T&E species in effect on the Lewis and Clark National Forest. Further expansion on this direction is found in Appendices H, I, J, K, L and M of the Forest Plan. Much of the management direction and operational procedures discussed are viable and subject to considerable change prior to approval of a Final Forest Plan. As an example, the cumulative effects evaluation process (Appendix L) is evolving rapidly, and it will be developed into a standard format for computer modeling in the near future.

In addition to the foregoing guidance dealing with T&E species, there are several other sources of existing management direction which are not mentioned specifically in the Forest Plan. An Interagency Grizzly Bear Committee (IGBC) was formed in 1983 which includes representatives from the Forest Service, National Park Service, U.S. Fish and Wildlife Service, Bureau of Land Management and State Game Departments in Montana, Wyoming, Idaho and Washington. After the IGBC became functional, sub-committees were formed for the major grizzly bear ecosystems.

Early in 1983, the Northern Region-Forest Service developed a Grizzly Bear Action Plan for 1983-84 which included specific items to be accomplished by the various Forests involved. This Regional Action Plan was updated for 1984, and a Forest Grizzly Bear I and I Plan was prepared as a result.

In addition to the stratification of occupied grizzly bear habitat by management situations according to the "Yellowstone Guidelines", two other levels of grizzly bear habitat mapping are also being completed. Constituent element mapping is available for the Lewis and Clark Forest based on Keith Aune's grizzly monitoring work, but is subject to modification as additional bear data is collected. Habitat component mapping was started in 1984 on the southern portion of the Rocky Mountain Front with a total of 72,000 acres completed of which 32,000 were on National Forest land. It will take several years to complete habitat component mapping on the Rocky Mountain Front using the existing methodology. The possibility of using NASA's landsat imagery to expedite the completion of component mapping is currently being explored. Habitat component mapping is a vital element in the cumulative effects evaluation process.

Recovery plans are in effect for three of the four classified species which are listed for the Forest.

The American Peregrine Falcon Recovery Plan (Rocky Mountain and Southwest Populations) was approved in August 1977. During the past couple of years, this plan has been revised, gone through technical and agency reviews, and is scheduled for approval and release early in 1985. The Pacific States Bald Eagle Recovery Plan has also been through the required review process and should be approved and released early in 1985. Neither of these plans sets recovery objectives which are specific to the Lewis and Clark National Forest. However, the establishment of active nesting territories on the Forest by either species would aid in meeting the over-all recovery plan objectives.

The Northern Rocky Mountain Wolf Recovery Plan was approved in May 1980. A revision of this plan was initiated in 1983 and distributed for technical review late that year. The revised wolf recovery plan still has to go through an agency review before it can be finalized and approved. The original recovery plan set a primary objective --- "To reclassify Canis lupus irremotus to threatened status by re-establishing and maintaining at least two populations within its former range." The Northern Regional Plan which was approved by the Chief of the Forest Service in December 1981 disaggregated wolf population objectives and established a tentative target of 10 wolves for the Lewis and Clark National Forest. The population goal for wolf recovery is likely to be changed when the revised recovery plan is approved and management zone stratification is completed.

The Grizzly Bear Recovery Plan was approved in January 1982. This plan is divided into separate sections for the major grizzly bear ecosystems in the Northern Rocky Mountains. The recovery goal for northwestern Montana is --- "Secure and/or maintain a viable, self-sustaining grizzly bear population in the Northern Continental Divide Grizzly Bear Ecosystem (NCDGBE)." In order to achieve this goal the step-down plan states, "The grizzly bear population in

the NCDGBE will be viable and self-sustaining when monitoring efforts indicate that recruitment, natality, and mortality are at levels supporting a stable or increasing population." The plan also describes a recovered population as the current estimated levels (440-680 bears) or above and/or monitoring efforts which document several reproductive parameters and average annual mortality rates computed as a running six year average. The Northern Regional Plan disaggregated grizzly bear population goals for the NCDGBE based on occupied habitat and established a tentative target of 81 grizzlies for the Lewis and Clark Forest. This population goal is subject to revision based on the collection of additional bear monitoring data and the completion of habitat component mapping.

Effects of Plan Implementation on T&E Species

The discussion in this section will deal with the expected effects of the various resource programs proposed in the Revised Lewis and Clark Forest Plan on the four classified species.

Bald Eagle - The suitable, unoccupied bald eagle nesting habitat found along the Smith River in the Little Belt Mountains is all in Management Area F. The emphasis in the management area is for semi-primitive recreation opportunities, and no road construction or development activities are scheduled for the area. The major activity in the area is and will continue to be river related recreational use along the Smith River corridor. The period of peak floating use on the river is from late May to mid-July which would coincide with the bald eagle nesting season. Potential impacts on the future establishment and occupancy of bald eagle nesting territories will be largely dependant upon their location in relation to site specific recreation activities such as boat camps, day use areas, etc.

The suitable, unoccupied bald eagle nesting habitat located adjacent to Gibson Reservoir and along the lower Sun River canyon in the Rockies lies in portions of several management areas (F, H, I, N and Q). None of these areas contain management direction which emphasizes roading or extensive resource development activities. Management Area H - Developed Recreation is the least compatible with the possible future establishment of bald eagle nesting territories. While this management area provides for the construction of new developed recreation sites or the expansion and improvement of existing sites, there are no plans for such development at this time. The management area currently includes a resort, several recreation summer homes, two campgrounds, an outfitter-guide base facility and a boat launch ramp on Diversion Lake. There is a block of private land in Mortimer Gulch which is also developed primarily for recreational pursuits. No major changes in activities or human use levels are foreseen during the next 10 to 15 years.

Peregrine Falcon - Suitable, unoccupied peregrine falcon nesting habitat identified on the Rocky Mountains and the Little Belt Mountains falls within a number of management areas (E, F, G, H, I, M, N, O, P and Q). The Forest Plan management direction for most of these areas is compatible with the maintenance of the potential peregrine falcon habitat identified. The area along the Smith

River Canyon in the Little Belts appears to have a high potential for the establishment of peregrine falcon eyries. The expected human impacts on peregrines would be similar to those previously described for bald eagle in that area.

A small amount of the delineated peregrine falcon habitat in the Rockies falls within Management Areas H and O. A portion of Area H in the lower Sun River canyon which was identified for peregrines was discussed under the section on bald eagle. The main cliff on Castle Reef which appears to have the highest potential for a peregrine falcon eyrie site, is located about two miles from the heavy recreation use along the Sun River bottom. Potential peregrine habitat is also delineated in H Management Areas along the North and South Forks of the Teton River just inside the Forest boundary. Although the same types of recreation use occur in that area as on the Sun River, the level of human activity is much lower and seasonal in nature. There is also a small portion of Management Area O - Timber/Range delineated as peregrine habitat in the vicinity of Cave Mountain on the North Fork Teton River. However, all of the area involved is very steep and the potential for any timber harvest in the future is low.

Much of the identified suitable, unoccupied peregrine falcon habitat in the Rockies is in areas which have been leased for oil and gas exploration. All of the potential cliff nesting habitat and much of the adjacent area have no surface occupancy stipulations applied due to slope limitations. Most of the exploration completed to date has been by helicopter supported seismic surveys. While such surveys could have temporary impacts on occupied nest sites, no adverse modification of unoccupied habitat will occur.

Potential impacts resulting from the drilling of an exploratory or development well in suitable peregrine habitat would depend upon the specific location of the access road and well site. Indirect impacts from disturbance during drilling activity could occur if a nearby eyrie site were occupied or a territory was being established. In such situations, there could also be varying amounts of long term disturbance associated with a producing well. There would not be any physical destruction of suitable cliff nesting habitat expected as a result of oil and gas exploration or development.

Due to the current unoccupied status of suitable habitat for both peregrine falcon and bald eagle, the Supplement to the Draft EIS discusses both species under non-significant factors in Chapter IV - Environmental Consequences (4-1). The foregoing discussion considers potential impacts to those species assuming future establishment of nesting territories.

Gray Wolf - Considering the current status of the gray wolf population on the Rocky Mountain Front, the most serious impact would result from activities which would increase the potential for human caused wolf mortality. Direct or indirect effects upon wolf habitat are difficult to assess under the current situation, but would become increasingly important if a viable wolf population becomes established. In the event a wolf pack is formed and establishes a territory, the possible adverse effects resulting from proposed human activities on important wolf habitat components such as rendezvous sites,

denning areas and ungulate prey base seasonal ranges would require a thorough evaluation. Such evaluations would need to consider both the potential site specific impacts as well as an analysis of cumulative effects related to the entire pack territory.

Potential effects of resource activities on gray wolves and their habitat are discussed in Chapter IV - Environmental Consequences of the Supplement to the Draft EIS. Specific references to wolves are found in sections on Recreation (4-18), Wilderness (4-23), Fish and Wildlife (4-28 to 4-30), Timber (4-40) and Minerals (4-47 to 4-49).

Grizzly Bear - The effects of implementation of the Forest Plan on grizzly bear can be more clearly identified due to their population status and the increasing amount of data available on the species and its habitat on the Rocky Mountain Front. Potential adverse impacts on grizzlies resulting from various resource activities can be either direct or indirect in nature. Direct effects include illegal bear mortality and the destruction or long term modification of important grizzly habitat components.

Indirect impacts on grizzly bear habitat associated with resource programs scheduled by the Forest Plan will be more widespread, and they have the potential to result in more adverse effects on grizzlies than the direct impacts. Projects which increase human access and use, either temporarily or permanently, will reduce grizzly bear habitat effectiveness. This could result in less use and more selective use of the habitat affected or could completely displace bears from seasonally important habitat components. Another indirect impact is the establishment of food sources by humans which may act as attractants to bears resulting in an increased potential for human/grizzly interactions.

The effects of resource activities on grizzly bears and their habitat are discussed in Chapter IV - Environmental Consequences of the Supplement to the Draft EIS. Specific references to grizzly bears are found in the sections on Recreation (4-18), Wilderness (4-23), Fish and Wildlife (4-27 to 4-29), Range (4-34), Timber (4-40), Minerals (4-47 to 4-49) and Facilities (4-59). A brief discussion of the various resource programs proposed in the Forest Plan as they may affect grizzly bear habitat follows.

Developed recreation use is projected to increase gradually in the Rockies. No new developed sites are scheduled for construction during the first decade. Dispersed recreational use in classified wilderness and roadless areas is also expected to increase gradually. The opportunity for the legal harvest of grizzly bears may be sharply curtailed or eliminated in the near future. Other than that, little change in the effects of recreational uses on grizzly bears or their habitat is projected in the first decade of the Forest Plan.

An increase in the amount of classified wilderness in the Rockies is anticipated in the next few years. The Forest Plan recommends 47,000 acres of additional area be classified as wilderness, but Federal legislation will be necessary to determine the actual amount designated. The management direction

for the Bob Marshall-Great Bear-Scapegoat Wilderness recognizes grizzlies as an important wilderness resource (App. D-11). The fire management policy for the wilderness which allows certain wildfires to burn should provide some long term grizzly bear habitat benefits.

The wildlife and fish program calls for 85 acres of habitat improvement annually for grizzly bear (2-8). Most of the improvement work will consist of prescribed burning to maintain or enhance early successional forage areas. Other types of habitat improvement will be considered if promising opportunities are identified.

The proposed range management program schedules a small increase in permitted livestock grazing of 200 animal unit months by the year 2000 (2-9). This amounts to about 40 cow/calf pairs for the Rocky Mountain District. Forest-wide management guidance calls for the termination of the one remaining sheep grazing allotment at the earliest opportunity (2-36). Emphasis on the protection and/or enhancement of riparian areas for wildlife and fish (2-4 and 2-34) should prove benefical to grizzlies.

The proposed level of timber harvest on the Rockies is 1 million board feet annually through the entire 50 year planning period. This allowable harvest level and the amount of suitable timber acres allocated (2-9) are considerably less than under the current multiple use and timber management plans. Although a 1 1/2 million board foot sale was sold in 1983, the average volume of sawtimber sold in recent years has been less than 1/2 million board feet. In order to support the proposed timber harvest program, up to 8 miles of new roads may be constructed.

Under the minerals program, oil and gas exploration is the major activity in progress on the Rocky Mountain Front. The potential for hard rock mineral exploration or development on the Forest in the Rockies is low. The non-wilderness lands on the Forest are all leased for oil and gas exploration with the exception of the Renshaw and Falls Creek Recommended Wildernesses. Lease applications are pending on those two areas, subject to whether or not they are classified as wilderness. Most of these leases were issued in 1981 and 1982 and they are valid for a 10 year period.

Geophysical exploration for oil and gas became active in the late 1970's and has continued at a moderate to high level since then. A majority of this exploration has been conducted by helicopter supported seismic surveys including both surface charge and porta-drill shot hole methods. Seismic survey activity will continue in 1985 although at a reduced level from that of last year based on current information.

One old gas well was redrilled on the Forest in 1981 and then capped after production testing. This well is located in the mouth of Blackleaf Canyon less than 1/2 mile inside the Forest boundary. An APD was recently approved by BLM for an exploratory well on Hall Creek in the Two Medicine drainage. Another APD has been filed by Woods Petroleum in the mouth of Muddy Creek and is pending approval.

Future activity levels associated with oil and gas exploration are difficult to predict due to numerous external factors which affect the entire industry. Seismic activity is expected to continue at a low to moderate level in the next few years with most of the activity in specific target areas. It also appears likely that the Forest may receive at least 1 to 2 APD's annually in the near future. This number is likely to increase later in the decade as the leases approach expiration. One or more significant oil or gas discoveries on the Forest would also spur the amount of exploration activity.

Coordination and Mitigation Measures

Coordination requirements and procedures established between the Forest Service and other agencies, particulary the U.S. Fish and Wildlife Service, are well documented and summarized in the Forest Plan (2-28 and 2-29). Further expansion on existing coordination direction and processes is found in Appendices I, J, K, L and M of the Plan and was previously discussed in this assessment in the section on Current T&E Habitat Management Direction. The information in Appendix J relating to Forest Service Manual direction was amended in July 1984 with changes being made in objectives, policy and cooperation with other agencies. The amended direction is found in Chapter 2670 of the Forest Service Manual and will be incorporated into the Final Forest Plan.

The cumulative effects evaluation process (Appendix L) is currently being adopted to a computer modelling system for the Rocky Mountain Front by a team of wildlife biologists from the agencies involved. The cumulative effects model will be patterned after one which was developed for the Yellowstone Grizzly Bear Ecosystem which is now operational. Three sub-models will be developed to address grizzly bear habitat quality, habitat effectiveness related to human activities and the risk of human caused grizzly mortality. A conceptual model incorporating these factors will be completed this spring. Habitat component mapping is scheduled on portions of the Rocky Mountain Front this summer, and the cumulative effects model should be operational by sometime next winter.

There have been some additional consultations with the U.S. Fish and Wildlife Service (FWS) besides those discussed in Appendix J, pages 5 and 6. As is noted (Appendix J-6), informal consultation was completed in 1982 on an environmental assessment for geophysical exploration on nonwilderness lands on the Lewis and Clark Forest. Due to reported violations of interagency guidelines in 1984, the FWS requested formal consultation on the Forest's 1985 seismic exploration program in a letter to the Regional Forester dated January 2, 1985.

Formal consultation was recently concluded with the FWS on the Hall Creek APD in the South Fork Two Medicine River drainage. This followed resolution of several issues which had originally resulted in a jeopardy biological opinion for both grizzly bear and gray wolf based on the original EA for the project. Changes in the location of the access road to the site and planned public use

of the area following well drilling were significant factors in resolving the jeopardy situation. The BLM has recently approved the APD based on the revised EA for the Hall Creek site.

Informal consultation has been undertaken with the FWS on a number of additional projects on the Rocky Mountain District in recent years. These include small timber sale proposals, motorcycle races in the Badger-Two Medicine country and the Muddy Creek APD which is currently pending approval by the BLM.

Specific mitigation measures contained in the Forest Plan are largely directed at grizzly bear habitat while more general measures are listed for the other classified species considered. The main emphasis for bald eagle and peregrine falcon is to maintain suitable, unoccupied habitat which has been identified. Should active nest territories or other important habitat components become established for either of these species, a nest management plan or similar site specific management direction would be developed (2-29). The interagency guidelines developed under the Rocky Mountain Front Wildlife Monitoring Program provide guidance for both occupied and potential habitat for these raptor species (Appendix I-14 and 15).

Management emphasis for the gray wolf in the Forest Plan is directed at maintaining a suitable prey base and important habitat components such as rendezvous sites. The Plan also provides guidance for the compilation of all reports of wolf sightings, sign, or other activity in order to gain knowledge on present distribution and population level (2-29). In addition to this general direction, much of the specific management guidance and mitigation measures proposed for the grizzly bear should also prove beneficial in managing gray wolf habitat. Forest-wide management guidelines (2-20 to 2-62) designed to maintain or enhance big game habitats will provide indirect benefits to wolves by maintaining ungulate prey bases. Management guidance for elk and other big game species is also contained in Appendices F, G, H and I.

The Forest Plan contains a significant amount of management direction and guidance for grizzly bear habitat. Specific reference is made to grizzlies in the long range goals (2-2) and Forest-wide objectives (2-4). Projected habitat improvement outputs call for 85 acres to be treated annually for grizzly bear (2-8). Prescribed burning to maintain or enhance early successional foraging areas will be the major type of improvement in the near future. Numerous specific references providing management direction or mitigation measures for grizzlies are contained in the Forest-wide management guidelines (2-28, 2-29, 2-35, 2-36, 2-37, 2-39, 2-40, 2-45, 2-46, 2-50 and 2-61). General or specific guidance for T&E species or grizzly bear is contained in Appendices D, E, H, I, J, K, L and M.

Chapter 3 of the Forest Plan sets forth management prescriptions for the various management areas on the Forest. The Rocky Mountain District which is all occupied grizzly bear habitat contains all of Management Areas N, O, P and Q as well as portions of A, E, F, G, H, I and R. The wildlife practice for operation, protection and maintenance (CW2) calls for either the maintenance or enhancement of T&E species habitat for all management areas with the exception

of H - Developed Recreation. The wildlife management direction in this area specifies that impacts on T&E species habitat will be minimized. Much of Management Area H in the Rockies has been stratified as management situation 3 for grizzly bear. Wildlife habitat improvement practices (CW3) are prescribed for all management areas with the exception of H, P and Q.

Regulated timber harvest is scheduled only in Management Areas A and O. Overall management goals and resource management practices prescribed for these Areas appear to be compatible with grizzly bear habitat management. Oil and gas leases are in effect on all management areas with the exception of P (classified wilderness), Q (recommended wilderness) and areas adjacent to Q which were recommended for wilderness through the RARE II process.

Chapter 4 of the Forest Plan describes various geographic units on the Forest including 10 areas on the Rocky Mountain District (4-1 to 4-40). Brief descriptions of grizzly bear habitat elements present are included for most areas, and a general summary of past activities provides an indication of factors which relate to grizzly bear management. The section on future management activity for each geographic unit is described by management area emphasis.

The monitoring and evaluation portion of the Forest Plan (Chapter 6) establishes the procedures by which the progress and results of implementing the Plan can be measured. The monitoring and evaluation procedure provides for an evaluation report on any item when the established variability goal is exceeded based on the parameter being measured (6-1, 6-2 and 6-12). Monitoring items which relate directly or indirectly (wolf prey base) to T&E species are C-1, C-2, C-3, C-4, C-5, C-12 and C-13 (6-4 and 6-5).

Determination of Affect on T&E Species

Based on the foregoing assessment of permitted and scheduled activities proposed in the Lewis and Clark National Forest Plan, the determination of affect on T&E species is presented as follows.

Bald Eagle and Peregrine Falcon - No Affect.
No measurable adverse or beneficial affects are expected on the suitable, unoccupied habitat identified for these species as a result of Forest Plan implementation. Although temporary or short term reductions in habitat effectiveness may result from resource development activities in the vicinity of suitable nesting habitat, no physical destruction or long term habitat degradation is forseen. Should one or more nesting territories for either of these species be established, it will be appropriate to reevaluate the determination of affect for that species.

Gray Wolf - May Affect.
Adverse affects upon the gray wolf or its habitat may result from individual resource projects or a combination of several projects being conducted concurrently. Such affects could include reductions in habitat effectiveness,

displacement of ungulate prey bases, or increases in the potential for human caused wolf mortality. Habitat improvement programs designed to maintain or enhance big game ranges may provide indirect benefical affects for the wolf by protecting or increasing habitat capacity for ungulate populations.

As was mentioned for the bald eagle and peregrine falcon, the establishment of a viable wolf population would provide a more definitive basis for the determination of potential adverse or beneficial affects. The cumulative effects model currently being developed for grizzly bear habitat evaluation should prove useful as a basis for analyzing effects on wolf habitat related to human activities. If a wolf pack should become established, the pack territory would be the logical unit for the evaluation of cumulative effects.

Grizzly Bear - May Affect.
The potential adverse affects from individual resource projects or a combination of projects on grizzly bear and their habitat would be similar to those discussed for the gray wolf. In addition, the site specific destruction or long term modification of important vegetative habitat components is another potential adverse affect on grizzly habitat. The Forest Plan schedules a continuing habitat improvement program for grizzly bear, primarily prescribed burning of important habitat components, which should result in long term benefical affects for grizzlies.

The Forest Service will continue to prepare a biological evaluation on all proposed resource projects, programs or uses which may have an affect (adverse or beneficial) upon the grizzly bear or its habitat. Such evaluations will consider both site specific impacts as well as a cumulative effects analysis of the entire Bear Evaluation Unit (BEU). The completion of grizzly bear habitat component mapping and the development of the cumulative effects model are important factors in strengthening the biological evaluation process.

The foregoing determination of affects on T&E species relative to the Forest Plan includes the following assumptions:

1. A biological evaluation will be prepared by a qualified wildlife biologist on all proposed projects, programs or uses which may affect any T&E species or their habitat.

2. Should a jeopardy opinion result from formal consultation with the FWS, options to resolve the jeopardy situation include project modification, use of more restrictive stipulations or elimination of the proposed activity.

3. Previous biological evaluations and biolgical opinions completed on oil/gas leasing or exploration activities will remain valid until collection of additional resource data or changes in procedures result in a new evaluation.

ROGER L. EVANS
Wildlife Biologist
March 27, 1985

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Appendix E

Forest Service Wildlife Policies & Objectives

APPENDIX E

FOREST SERVICE WILDLIFE POLICIES AND OBJECTIVES

Specific Forest Service policies and objectives provide the following guidance for fish and wildlife habitat management on National Forest lands (FSM 2602, 2603, and 2634).

Policies:

1. Serve the American people by maintaining diverse and productive wildlife, fish, and sensitive plant habitats as a integral part of managing National Forest ecosystems. This includes recovery of threatened or endangered species, maintenance of viable populations of all vertebrates and plants, and production of featured species commensurate with public demand, multiple-use objectives and resource allocation determined through land management planning process.

2. Maintain a partnership with State fish and wildlife agencies in habitat management efforts. Recognize the State fish and wildlife agencies as responsible for the management of animals and the Forest Service as responsible for the management of habitat. Involve other Federal agenices, concerned conservation groups, and individuals in activities affecting wildlife and fish as appropriate.

3. Resolve habitat management issues, concerns, and opportunities as close to the local level as possible.

4. Specify quantitative wildlife, fish, and sensitive plant habitat objectives and standards in the RPA Program, Regional Guides, Forest Plans and Sikes Act schedules.

5. Develop a balanced program that meets goals by investing directly in habitat improvements when necessary to meet public demand and coordinate management activities that produce other resources to restore or mitigate habitat losses or provide improved habitat.

6. Use Wildlife and Fish Habitat Relationships classifications, models, and procedures in quantitative habitat evaluations, planning for diversity, viable populations, and management indicator species habitat productivity, and to support monitoring of fish and wildlife resources.

7. Give coequal consideration to wildlife and fish habitat with other resources in Forest Service programs.

8. Involve research and other scientists in the development of strategies to resolve major issues and concerns and identify management opportunities in order to foster awareness of management needs and gain timely application of new insights and information.

9. Acquire habitats or adjust ownership patterns to meet wildlife, fish, and plant habitat goals and objectives identified through Forest planning.

10. Where other resource activities or uses are proposed that affect fish or wildlife habitat objectives, habitat examinations shall be conducted, multi-resource prescriptions prepared, and the consequences of alternatives evaluated and displayed. Where opportunity exists to improve the habitat capability for fish and wildlife, it should be included in the multi-resource prescription.

11. Wildlife or fish habitat examinations shall be made or approved by a journeyman wildlife or fisheries biologist.

Objectives

1. Maintain ecosystem diversity and productivity by:

   a. Recovering threatened or endangered species.

   b. Maintaining at least viable populations of all native and desired non-native wildlife, fish, and plants in habitats distributed throughout their geographic range on National Forest System lands.

   c. Producing habitat capability levels to meet sustained yield objectives relative to demand for featured and management indicator species identified in RPA and Forest Plans.

2. Provide diverse opportunities for esthetic, comsumptive, and scientific u of wildlife, fish, and sensitive plant resources in accordance with National, Regional, State and local demands.

3. Gather and document the physical and biological information needed to evaluate the impact of each proposal on fish or wildlife habitat.

4. Evaluate the consequences of each alternative in relation to Forest fish and wildlife objectives.

5. Prepare needed multi-resource prescriptions to be implemented with the project or plan to meet Forest fish and/or wildlife objectives. This is usually done by an interdisciplinary team.

LEWIS AND CLARK NATIONAL FOREST PLAN

Appendix F
Elk Logging Study

Research findings, which have been compiled to date, through the Montana Cooperative Elk-Logging Study are the basis for several tentative management recommendations designed to minimize logging related impacts on elk. Appendix F summarizes research findings and recommendations which have application on the Lewis and Clark National Forest. See Annual Progress Reports of the Montana Cooperative Elk-Logging Study for further discussion of research results or specific study information.

MANAGEMENT RECOMMENDATIONS

Interagency cooperative research on the relationships between elk and logging activities in western Montana was initiated in 1970. Beginning in 1974, this research produced a series of recommendations directed toward influencing the design and conduct of timber sales to minimize adverse effects on elk populations. Over a period of nearly 10 years, the initial recommendations have been modified to improve and clarify the results obtained in management application, and some additional recommendations have been written.

The current recommendations represent a tested and successful composite and are intended as guidelines in the planning and conduct of long-term forest management to maintain elk populations, elk hunting, and timber production. Although each recommendation will stand by itself, combined and thoughtful application of all recommendations will yield more than additive benefits.

Managers are cautioned that literal application of these recommendations should not be substituted for detailed, onsite discussion by timber, wildlife, and other resource specialists. There may be situations in which one or more of these recommendations may not be applicable to local conditions.

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 4 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 2 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 particulary 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:

1. 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 the early summer and move to steeper ground in the late summer and fall.

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

3. Logging activities 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.

4. 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 variation 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, regardless of 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 as part of the lcoation and design of transportation systems, existing habitat occupancy and movement patterns and probably 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:

1. Locate permanent and high-volume traffic roads in those areas least used by elk.

2. Design secondary roads, in both construction and layout, to facilitate eventual closure. This is particulary important where roads enter drainage heads.

3. Maintain frequent dense cover areas adjacent to the road.

4. Avoid road construction in saddles or low divides frequented by elk in crossing ridges between drainages.

5. 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.

6. Dispose of road right-of-way slash so it does not inhibit elk movement.

7. Locate roads, even temporary roads, to avoid disturbance of moist sites and other areas of concentrated use by elk.

8. 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 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 2 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-forth when open road densities are 1 mile per section and by one-half when road densities are 2 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 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 potenitally 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 closures is preferred to seasonal closure, but some specific advantages are possible with certain seasonal closures as noted. High priorities for closure include:

1. Roads in the heads of drainages, saddles, and low divides.
2. Roads through moist areas and wet meadows.
3. Loop roads that encourage through traffic.
4. Trunk roads with many dead-end side roads under one-half mile in length.
5. Midslope roads in the lower two-thirds of the drainages (especially in fall).
6. Roads in known calving areas (especially in spring).
7. Roads in winter range concentration areas (especially in winter).
8. Roads in areas with poor cover (especially in fall).

AREA CLOSURES DURING THE HUNTING SEASON

Recommendation: Elk management goals and objectives should be cleary 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 in 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 size 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:

1. Restrictions will:

   a. Increase the time hunters spend walking, and as a result; increase the number of animals seen; and possibly increase the kill.

   b. Generally be accepted as providing a higher quality hunt.

   c. Make retrieval of downed animals more difficult.

2. 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:

   a. Reduce harassment and emigration of elk.

   b. Reduce the early elk harvest, but increase the uniformity of harvest throughout the season.

3. 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:

1. Slash cleanup inside clearcuts should reduce average slash depths to 1.5 feet. Slash in excess of 1.5 feet will reduce elk use by more than 50 percent.

2. Openings should be small, even though openings up to 100 acres may be acceptable where the adjacent forest edge supplies adequate security.

3. 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.

4. Additional security, which will significantly increase elk use of clearcut openings, can be provided with appropriate road closures.

Findings and Discussion: Graphic analysis 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 behavior 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 pre 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 (Pfister et al. 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-fall vehicular traffic except perhaps for light, intermittent administrative use. Roads th 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/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 has 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/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 usally low to moderate, and elk wintering in these area 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 burning.

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 of these openings should be planned so that adjacent forest cover on benches and finger ridges will provide thermal cover and bedding sites. Slash cleanup and logging should be scheduled outside the winter period.

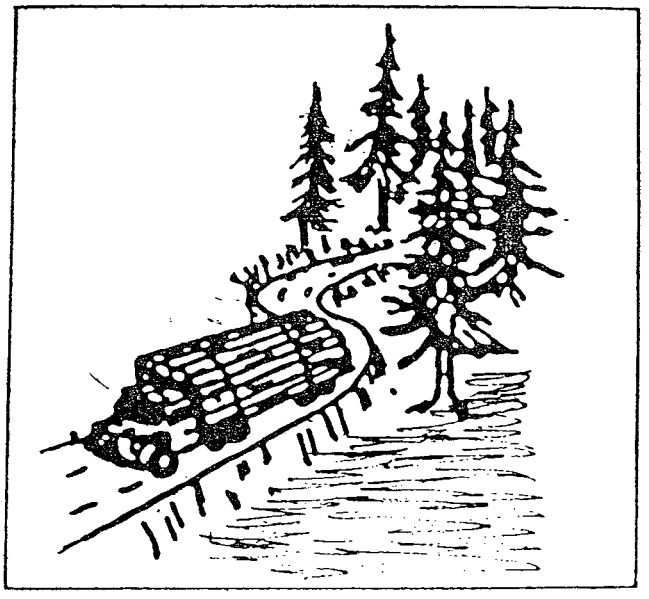
Because of the relative importance of productive elk winter range and the narrow margin for error, any contemplated modification of timber stands should be planned on a site-by-site basis, with primary emphasis on maintaining adequate cover adjacent to productive forage areas. It is unlikely that winter 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.

LEWIS AND CLARK NATIONAL FOREST PLAN

Appendix G

Montana Fish and Game Commission Road Management Policy

The Montana Fish and Game Commission adopted a road management policy on October 13, 1982. The Montana Department of Fish, Wildlife, and Parks will use the policy as their guidelines for coordination with land management agencies in dealing with road management considerations. The Northern Region developed a road management policy on February, 1984. The Lewis and Clark Forest will use this policy to guide the Forests' road management plan (see Forest-wide Management Guidelines L-2).



October 13, 1982

MONTANA FISH AND GAME COMMISSION
ROAD MANAGEMENT POLICY

The management of wildlife is by necessity a joint responsibility of state, federal, and private land managers. States, by assenting acts and long-standing agreement, have direct jurisdiction over resident wildlife populations while management of the habitat is the obligation of the various land managers. The separation of authority regarding wildlife populations and their habitat requires that the state and land managers mutually develop programs that will minimize land use conflicts.

The Montana Fish and Game Commission ("Commission") recognizes that timber and other commodity resources are important to Montana's economy and that activities relating to these commodites will occur on lands supporting wildlife populations. The Commission also realizes that access will be developed to accommodate these resource uses.

The Department of Fish, Wildlife, and Parks ("Department") has identified elk, in forested areas of Montana, as the primary species of big game affected by road access. The present 35-day elk hunting season in Montana provides hunting opportunity that is represented by a diversity of choice for the sportsmen with regard to time, weather conditions, hunter density, and area.

Due to increases in access, escape cover removal and hunter numbers, restrictions such as permit only hunting have been necessary to maintain elk populations. Increases in hunter numbers can be compensated for by a variety of restrictions, but the number and magnitude of these restrictions will be strongly dependent on habitat security. Habitat security is the interaction of topography, hiding cover, and access. Because a strong relationship exists between habitat security and the big game harvest rate during the first week of the general hunting season, the Commission is concerned that new roads proposed for construction when added to existing roads will further impact hunting opportunities. Effects would be shorter seasons and/or hunting by permit only.

Objective

The objective of this road management policy is to maintain current hunting opportunities associated with elk in forested areas of Montana as other resources are developed.

Intent

The intent of this policy is to: 1) develop a uniform approach within the Department to the road management issue, and 2) provide guidelines for Department personnel to coordinate with land managers involved in road management.

Guidelines:

The Commission adopts the following as guidelines to be used by the Department in making recommendations to various land management agencies. The Commission recognizes that exceptions on a case-by-case basis may be necessary for each of the following:

1. To provide for a first week bull harvest of less than 40 percent of the total season bull elk harvest, the Department recommends implementation of a road management program from October 15 through November 30 that will maintain road densities with the following limits.

Existing Percent Hiding Cover*	Open Road Density Range
80	0.0 - 2.4 mi/mi^2
70	0.0 - 1.9 mi/mi^2
60	0.0 - 1.2 mi/mi^2
50	0.0 - 0.1 mi/mi^2

*Hiding cover is defined as any timber stand with 40 percent or more crown canopy coverage. Although a good relationship between harvest rate, road density and hiding cover was found using this definition, it does not preclude refinement if or when better data is available.

The determination of the existing hiding cover - open road density relationship is recommended to be made in analysis areas such as a timber sale boundary area or timber compartment. As an example, in an area of 10 square miles, with an existing 70 percent hiding cover, 19 miles of open road would be allowed.

2. Calving grounds and nursery areas having concentrated elk use should be closed to motorized public use during periods of peak use by elk. Calving usually occurs in late May through mid-June and high mountain meadows are used as nursery areas in late June and July. These should be identified with land managers.

3. All winter range areas should be closed to motorized public use between December 1 and May 15. Exceptions may be established through consultation with land managers.

   Note: Areas involved in travel restrictions under items 2 and 3 are not usually the same areas.

4. A uniform signing program is desirable and the Department recommends the following information be included:

   a. Type of restriction
   b. Reason for restriction
   c. Time period of restriction
   d. Cooperating land managers

5. New roads that eventually will be closed should be signed during construction indicating the effective date and reason for closure.

6. The Commission acknowledges that enforcement is a shared responsibility with land managers. Enforcement needs will be reviewed with land managers.

7. In situations where the needs of other species cannot be provided by these guidelines, evaluation must involve case-by-case analysis.

8. It is recognized that administrative uses of closed roads may be needed. Consideration of these needs should take place on a case-by-case basis with regard to protecting hunter opportunity and wildlife as identified under Items 1-3.

TITLE 7700 - TRANSPORTATION SYSTEM

7731.41 - Road Regulations. Traffic on roads under Forest Service jurisdiction is controlled through the use of regulations in 36 CFR 261.12 and 36 CFR 261.54.

The regulations in 36 CFR 261.12 are applicable to all Forest Service roads and do not require an order to be enforceable.

Classes of vehicles or types of traffic may be restricted or roads may be closed under the authority in 36 CFR 261.54. Restrictions may only be made for those items specifically identified in these regulations. Prior to any restriction or closure, an order must be prepared and signed in accordance with procedures outlined in 36 CFR 261.50.

Road closures and public use restrictions which have an identified annual recurring need should, to the extent possible, be incorporated into the Forest travel planning process. Procedures outlined in 36 CFR 295 and FSM 2355 will be followed in this situation.

Any restriction or closure imposed outside of the Forest travel planning process will require advance public notice, usually 30 days, before the effective date, except in emergency situations. An exception to this would be spring breakup restrictions where the actual needed date cannot be determined 30 days in advance.

The reason for any restriction or closure should be realistic and be based on the approved management objectives for the road or area served by the road. The reason for the use restriction or closure will be included in all advance public notice.

Reduced funding, by itself, should not be used as a reason for road use restrictions. In cases where reduced maintenance would adversely affect the safety of the user or result in unacceptable resource damage, road use restrictions may be necessary.

Use restrictions for wildlife purposes should be based on consultation with State Fish and Game Agency personnel.

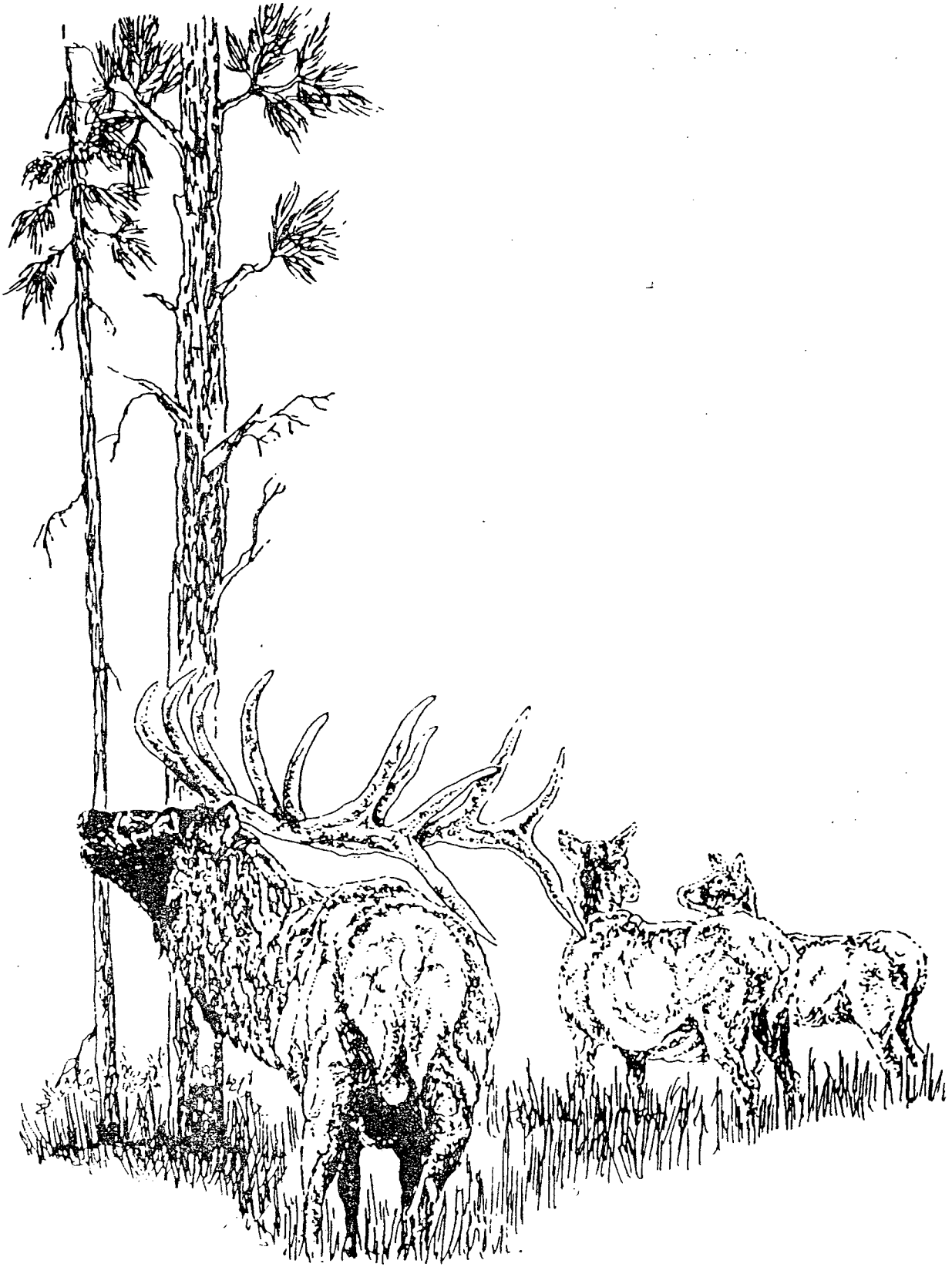
The signing on the road will reflect the actual intent of the order. A "Road Closed" sign will not be used by itself if the order states that some use of the road will be allowed. If, for example, the road is available for administrative use, but all other uses are prohibited, the sign should not simply state "Road Closed." Signing, in this situation, may state "Public Use Restricted" or "Administrative Use Only." A road that is signed as being closed applies to all users including Forest Service administrative traffic. The only exception to this would be for emergency purposes.

When restrictions permit administrative use; i.e., contractors, loggers, force account crews, etc., this use will be closely managed if the restrictions are for wildlife purposes. This is especially true during critical use periods such as nesting, calving or hunting seasons. Preplanning of activities should be done to cause the least disruption during critical time periods.

Generally, the retrieval of downed game in a use restriction area should not be considered either as emergency or administrative use and restrictions should not be lessened to permit vehicular access to retrieve killed game.

It is not mandatory to display the reason for the use restriction or closure on the road. However, where it is not obvious to the user or where there may be public concern it may be beneficial to have a sign near the closure device explaining the reason for the restriction or closure. An example of this would be where road use restrictions are applied for the benefit of elk habitat or hunting diversity.

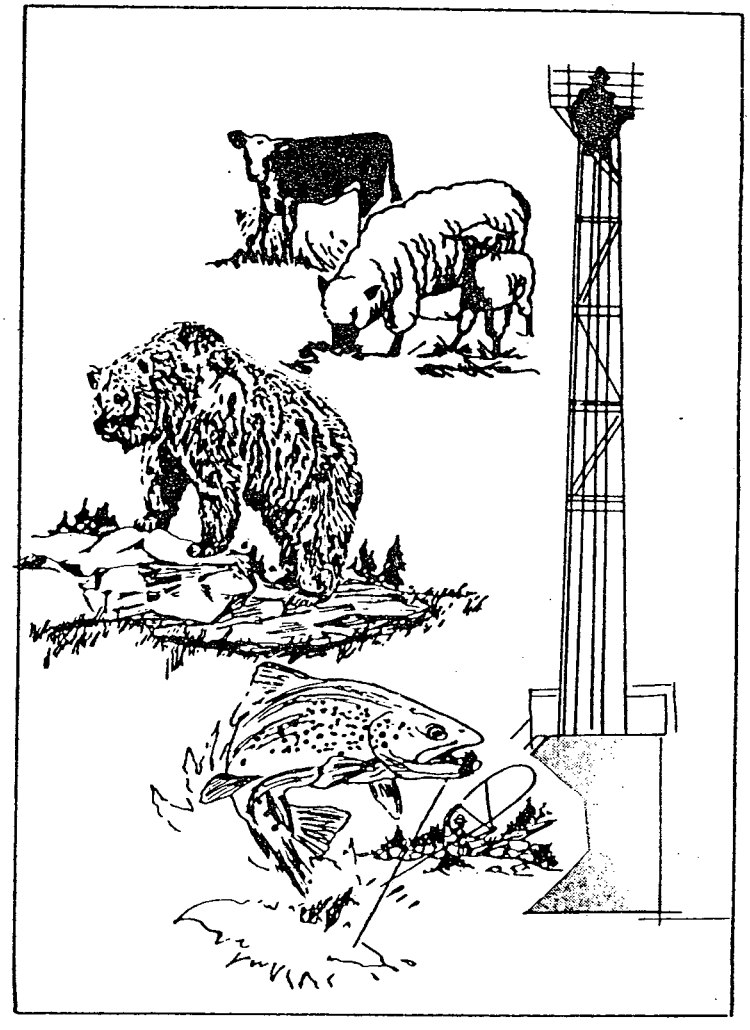
All road use restrictions or closures should be monitored on a regular basis and when the need for the restriction or closure ceases to exist, the order should be rescinded and the road opened to use.



LEWIS AND CLARK NATIONAL FOREST PLAN

Appendix H

Interagency Wildlife Monitor/Evaluation Program



INTERAGENCY WILDLIFE MONITOR/ EVALUATION PROGRAM

ROCKY MOUNTAIN FRONT AREA

NOVEMBER 1980

USDA Forest Service

USDI Bureau of Land Management

USDI Fish and Wildlife Service

Montana Department of Fish, Wildlife and Parks

INTRODUCTION

WILDLIFE MONITOR/EVALUATION PROGRAM

Rocky Mountain Front Area

USDA Forest Service	USDI U.S. Fish and Wildlife Service
USDI Bureau of Land Management	Montana Department of Fish, Wildlife and Parks

As agreed to in the Charter, dated April 18, 1980, this program is needed for the following purposes:

1. To monitor the extent of wildlife displacement, in relation to time and space, caused by various levels of human activity.

2. To monitor wildlife population parameters to determine changes brought about by human activities.

3. To monitor wildlife habitat changes brought about by human activities and determine the effects which result in relation to time and space.

I. Human Activities Identified

A. Human activities in the Rocky Mountain Front area which effect present wildlife populations and values are:

1. Livestock grazing
2. Land Development (subdivision)
3. Timber harvest
4. Mineral exploration
   a. Seismic activity
   b. Exploratory drilling
5. Recreation
   a. Dispersed activity
      (1) Hunting
      (2) Off road vehicles
      (3) Fishing
      (4) Hiking and backpacking
   b. Developed Recreation
      (1) Campgrounds
      (2) Recreation Residences
      (3) Resorts
6. Road construction and access.

B. Two levels of human activity are identified and are related to the activities shown above:

1. Low level
   a. Present livestock grazing
   b. Widely scattered improvements and homebuilding. Little or no subdivision.
   c. Small timber sales, mostly post and poles.
   d. Extensive seismic activity. Annual work on a broad grid.
   e. Infrequent exploratory drilling. One well every two or three years.
   f. Present levels of recreation use.
2. High level
   a. Increase in sub-division and homebuilding.
   b. Increased level of timber harvest with associated roads.
   c. Increased seismic activity. Narrowed to smaller target grid with repeated coverage scheduled over two or three year time period.
   d. Increased exploratory drilling. Two (2) or more wells per year in the same or adjacent topographic area which would inhibit or curtail animal movement.
   e. Production of gas and/or oil.

The area is presently at the low activity level. The monitoring program is affected by the level of activity and the prediction of when activity levels are expected to increase.

II. The April 18, 1980 Charter identified the following objectives:

A. Identify those management indicator species which should be monitored to determine displacement, changes in population characteristics, changes in habitat. (Part III responds to this objective.)

B. For each indicator species:
   1. Recommend monitoring procedures and build an incremental program to start, or continue, to obtain needed information. As part of the program identify: data summarization/review/evaluation target dates and decision target dates for continuing/expanding/reducing/terminating individual indicator species work. (Parts V and VII respond to this objective.)
   2. Recommend specific areas and monitoring needs where the monitoring procedures will be implemented. (Part V responds to this objective.)

C. Recommend which agency or agencies should be responsible for various aspects of the monitor program. (Part VI responds to this objective.)

D. Recommend target dates and personnel for the development of resource management guidelines based on the data obtained from the monitoring procedures. (Parts VIII and IX respond to this objective.)

E. Develop this information into a program format for approval of the agencies involved. (This packet responds to this objective.)

III. Management indicator species identified from the total potential species list are as follows (objective 1):

A. Grizzly Bear

B. Wolf: prey base
   1. Mule Deer
   2. Elk

C. Mountain Goat

D. Bighorn Sheep

E. Furbearers
   1. Mink
   2. Beaver
   3. Muskrat

F. Cliff Raptors
   1. Peregrine falcon
   2. Prairie falcon
   3. Golden eagle

G. Tree Raptors
   1. Merlin falcon
   2. Goshawk
   3. Red tailed hawk
   4. Barred owl

H. Passerine birds and small mammals

IV. Monitoring Results

A. Establish present seasonal species movement patterns in specific areas and subsequently seasonal habitat use.

B. Identify movement patterns caused by human activity. (75% of monitoring/evaluation program will be involved with these two results - A and B.)

C. Establish present age and sex structure of population.

D. Establish present reproductive rate.

E. Establish present habitat vegetative condition.
(25% of monitoring/evaluation program will be involved with these three results - C, D and E.)

F. Review, analyze and summarize all previously accumulated data on the species to be monitored and incorporate it into monitoring program to the extent possible. This will be done by a technical committee made up of interagency specialists and the monitoring work group members in order to establish current baseline information and to help measure monitoring progress.

G. Establish baseline with five or six years of data assembled, summarized, interpreted, and developed into management guidelines.

V. Monitoring Priorities, Procedures and Indicated Cost.
(Objectives 2a and 2b)

A. Grizzly bear - baseline (Sun River North)
1. Area - Sun River main drainage north to Highway 2 with emphasis on trapping and collaring in the Pine Butte swamp, Antelope Butte swamp and Ear Mountain areas.
2. Procedure - 10-12 radios with additional if determined to be necessary.

weekly aerial surveys	April - Nov.	(32)
weekly ground surveys	April - Nov.	(32)
Two flights per month in	March and December	(4)

3. Indicated cost

Equipment and flight costs	$17,000 per year
Personnel, travel and administration (20 on-the-ground work months)	$57,600 per year

October 1980 - September 1984
(18 person year @ GS-9/$22M, $14M Adm., $4M travel)

B. Mule Deer (Wolf Prey Base) - baseline (Sun River North)
1. Area - Sun River main drainage north to Birch Creek with emphasis on collaring on winter-spring concentration areas.
2. Procedure - 20-25 radios
70-75 neckbands
two intensive aerial surveys, one winter - one spring

3. Indicated cost

Equipment and flight costs	$8000 per year
Personnel, travel and administration	$40,000 per year

(12 on-the-ground work months)
October 1980 - September 1984
(1 person year @ GS-9/$22M, $14M Adm., $4M travel)

C. Bighorn Sheep baseline (Teton River North)

1. Area - Main Teton Drainage north to Two Medicine Drainage with collaring emphasis on winter-spring concentration areas.
2. Procedure - 5 radios
   25 neck bands
   Biweekly aerial flights April - Dec. (18)
   On-ground surveys
3. Indicated Costs

Equipment and flight costs	$8500 per year
Personnel, travel and administration	$13,500 per year

(4 on-the-ground work months)
October 1980 - September 1985
(1/4 person year @ GS-9/$7.4M, $4.7M Adm., $1.4M travel)

D. Elk (Wolf Prey Base) - baseline (Telon - Dearborn)

1. Area - Main Teton Drainage south to Dearborn drainage with collar emphasis on winter range and calving areas.
2. Procedure - 10 radios
   20-25 neck bands
   Biweekly flight May - June (18)
   Monthly flight Feb - April (3)
   30 hours helicopter time
   Winter counts monthly-Dec.- April (2)
   Summer air production count
   Winter survival classification biweekly Dec. - April
   Annual vegetation benchmarks for vegetative condition and utilization
3. Indicated costs

Equipment and flights costs	$20,000 per year
Personnel, travel and administration	$23,500 per year

(7 on-the-ground work months)
October 1980 - September 1985
(7/12 person year @ GS-9/$12.9M, $8.2M Adm., $2.4M travel)

E. Mountain Goat - baseline (Sun River North)

1. Area - Sun River north to Birch Creek drainage with collar emphasis on winter-spring range concentration areas.
2. Procedure
   10 radios
   15-20 neckbands
   Aerial flights biweekly yearlong round surveys (26)
3. Indicated Costs
   Equipment and flight costs $10,500 per year
   Personnel, travel and Administration $44,000 per year
   (13 person months on-ground work)

F. Raptor Survey (Entire Front)

Objectives A., B., C., D. in Part IV pertain to Raptors. One additional objective also applies: Identify foraging areas.

1. Area - Rocky Mountain Front starting with the Sun River Drainage and working north and then south.
2. Procedure
   Photo delineation of suitable areas
   Nesting Season surveys April - July
   Fall-winter surveys Nov. - Dec.
3. Indicated Costs
   Equipment costs $2000 first year
   Personnel, travel and Administration $23,200 per year
   (10 person months on-ground work)
   October 1980 - September 1984
   (2 seasonal employees/$12.2M, $6M Adm., $5M travel)

G. Furbearers - baseline (Blackleaf)

1. Area - Blackleaf ponds
2. Procedures - Gauging station
   ground observation
   harvest data
3. Indicated costs
   Equipment and supplies $1,700 per year
   Personnel, travel, adm. $11,500 per year
   (4 on the ground work months)
   October 1981 - September 1984
   (1 seasonal employee - $5M, $5M Adm, $1.5M travel)

H. Passerine Birds and small mammals - baseline (Entire Front)

1. Area - Different habitat types with emphasis in the riparian vegetative types along front.
2. Procedure - Populations will be sampled by predetermined linear transects established in riparian zones and other vegetative types.
3. Indicated Costs

Equipment Costs	$500	per year
Personnel, Travel and administration	$40,000	per year

October 1981 - September 1982
(1 person year @ GS-9/22M, $14M Adm., $4M travel)

I. Grizzly Bear - (Sun River South)

1. Area - Sun River main drainage south to Highway 200 with emphasis on trapping and collaring in the Haystack Butte-Sheep Mountain country.
2. Procedure - 5 or 6 radios with additional if determined to be necessary.

Weekly aerial surveys	April - Nov. (32)
Weekly ground surveys	April - Nov. (32)

Two flights per month in March and December

3. Indicated Cost

Equipment and flight costs	$12,000 per year
Personnel, travel and Administration	$31,000 per year

(8 on-the-ground work months)
October 1981 - September 1987
(3/4 person year @ GS-9/$17M, $11M Adm., $3M travel)

J. Elk (Wolf Prey Base) - baseline (Teton North)

1. Area - Teton River drainage north to Highway 2 drainage with collar emphasis on winter range and calving areas.
2. Procedure

10 radios
20-25 neck bands

Biweekly flight	May - June (18)
Monthly flight	Feb.- April (3)

30 hours helicopter time

Winter counts monthly	Dec.- April (2)

Summer air production count
Winter survival classification biweekly Dec.- April.
Annual vegetation benchmarks for vegetative condition and utilization

3. Indicated Costs

Equipment and flight costs	$20,000 per year
Personnel, travel and Administration	$23,500 per year

(7 on-the-ground work months)
October 1982 - September 1987
(7/12 person year @ GS-9/$12.9M, $8.2M Adm., $2.4M travel)

K. Mule Deer (Wolf Prey Base) - baseline (Sun - Dearborn)
Much of this work should logically be done in conjunction with Elk work in same area.

1. Area - Sun River main drainage south to Dearborn main drainage with collar emphasis on winter-spring concentration areas.
2. Procedure
   10-12 radios
   30-35 neck bands
   Two intensive aerial surveys, one winter-one spring.
   Biweekly aerial surveys year long (26)
   Weekly on-ground classification (52)
   Annual vegetation inventory on benchmark measurements.
3. Indicated Cost
   Equipment and flight costs $8000 per year
   Personnel, travel and Administration $22,000 per year
   (6 on-the-ground work months)
   October 1983 - September 1987
   (1/2 person year @ GS-9/$11M, $7M Adm., $2M travel)

L. Bighorn Sheep - baseline (Teton - Dearborn)

1. Area - Teton River drainage south to the main Dearborn drainage with collaring emphasis on winter-spring range concentration areas.
2. Procedure
   10-15 radios
   40-50 neck bands
   Biweekly flights April - Dec. (18)
   On-ground surveys
3. Indicated Costs
   Equipment and supplies $8000 per year
   Personnel, Travel and Administration $31,000 per year
   9 work months on the ground
   October, 1984 - September, 1989)
   (3/4 person year @ GS-9/$17M, $11M Adm., $3M travel)

M. Mountain Goat - baseline (Birch - North)

1. Area - Main Birch Creek drainage north to Two Medicine drainage with collar emphasis on winter-spring range concentration areas.
2. Procedures - 10 radios
   15-20 neckbands
   Aerial flights biweekly yearlong (26)
   Ground surveys
3. Indicated costs
   Equipment and flight costs $10,500 per year
   Personnel, travel and adm $44,000 per year
   (13 person months work on ground)
   October 1984 - September 1989
   (1 1/12 person year @ GS-9/24M, 16M Adm., 4M travel)

H. Mule Deer (Wolf Prey Base) - baseline (Dearborn South)

1. Area - Dearborn drainage south to Highway 200 with collar emphasis on winter-spring range concentration areas.
2. Procedures - 7-8 radios
   20 - 25 neckbands
   2 intensive aerial surveys, one winter - one spring
   Bi-weekly aerial survey yearlong (26)
   Weekly on ground classification
   Annual vegetation inventory on benchmark measurements
3. Indicated costs

Equipment and flight costs	$8,000 per yr
Personnel, travel and adm.	$15,000 per yr

   4 on the ground work months)
   October 1984 - September 1990
   (1/3 person year @ GS-9/$8M, $5M Adm, $2M travel)

O. Elk (Wolf Prey Base) - baseline (Dearborn - South)

1. Area - Main Dearborn drainage south to Highway 200 with collar emphasis on winter range and calving areas.
2. Procedure - 10 radios
   20-25 neckbands

Biweekly flight	May - June (18)
Monthly flight	Feb - April (3)

   30 hours helicopter time

Winter counts monthly	Dec - April (2)

   Summer air production count
   Winter survival classification weekly Dec-April
   Annual vegetation benchmarks for vegetative condition and utilization.
3. Indicated costs

Equipment and flight costs	$20,000
Personnel, travel, adm.	$23,500

   (7 on the ground work months)
   October 1985 - September 1990
   (7/12 person year @ GS-9/12.9M, $8.2M Adm, $2.4M Travel)

Low Activity Levels - Indicated Total Costs Summary

Tabular Summary & Schedule of Costs

	10/80-9/81	10/81-9/82	10/82-9/83	10/83-9/84	10/84-9/85	10/85-9/86	10/86-9/87	10/87-9/88	10/88-9/89	10/89-9/90
1. Grizzly Bear - Sun	74.6M	74.6M	74.6M	74.6M						
2. Mule Deer - Sun No.	48.0M	48.0M	48.0M	48.0M						
3. Big Horn - Teton No.	22.0M	22.0M	22.0M	22.0M	22.0M					
4. Elk - Teton So.	43.5M	43.5M	43.5M	43.5M	43.5M					
5. Mtn. Goat - Sun North	54.5M	54.5M	54.5M	54.5M						
6. Raptor Survey	25.2M	23.2M	23.2M	23.2M						
7. Furbearers - Blackleaf		13.2M	13.2M	13.2M						
8. Passerine Birds - Sun		40.5M								
9. Grizzly Bear - Haystack		43.0M	43.0M	43.0M	43.0M	43.0M	43.0M			
10. Elk - Teton North			43.5M	43.5M	43.5M	43.5M	43.5M			
11. Mule Deer - Sun So.				30.0M	30.0M	30.0M	30.0M			
12. Big Horn - Teton So.					39.0M	39.0M	39.0M	39.0M	39.0M	
13. Mtn. Goat - Birch No.					54.5M	54.5M	54.5M	54.5M	54.5M	
14. Mule Deer - Dearborn					23.0M	23.0M	23.0M	23.0M	23.0M	23.0
15. Elk - Sun So.					43.5M	43.5M	43.5M	43.5M	43.5M	43.5
Totals	267.8M	362.5M	365.5M	395.5M	342.0M	276.5M	276.5M	160.0M	160.0M	66.5

Monitoring Program Cost Summary Showing Total Costs And Presently Committed Funds 11/90
Tabular Summary & Schedule of Costs with Committed Funds Identified

Priority	Species/Area	FY81 10/80-9/81	FY82 10/81-9/83	FY83 10/82-9/83	FY84 10/83-9/84	FY85 10/84-9/85	FY86 10/85-9/86	FY87 10/86-9/87	FY88 10/87-9/88	FY89 10/88-9/89	FY90 10/89-9/90
1	Grizzly Bear-Sun River North	74.6 40(F)	74.6	74.6	74.6						
2	Mule Deer-Sun River North	48 38(F)	48 19(F)	48	48						
3	Big Horn-Teton River North	22 3(F)	22 3(F)	22 3(F)	22 3(F)	22 3(F)					
4	Elk-Teton River South to Dearborn	43.5 5(F)	43.5 5(F)	43.5 5(F)	43.5 5(F)	43.5 5(F)					
5	Mtn. Goat-Sun River North	54.5 44(F)	54.5	54.5	54.5						
6	Raptor Survey	25.2	23.2	23.2	23.2						
7	Furbearers-Blackleaf		13.2	13.2	13.2						
8	Passerine Birds		40.5								
9	Grizzly Bear-Haystack		43	43	43	43	43	43			
10	Elk-Teton River Highway 210			43.5 5(F)	43.5 5(F)	43.5 5(F)	43.5	43.5			
11	Mule Deer-Sun River South to Dearborn			30	30	30	30				
12	Big Horn-Teton River South					39 9(F)	39	39	39	39	
13	Mtn. Goat-Birch Cr. North					54.5	54.5	54.5	54.5	54.5	
14	Mule Deer-Dearborn River South					23	23	23	23	23	23
15	Elk-Dearborn River South						43.5	43.5	43.5	43.5	43.5
Total		267.3	362.0	365.0	365.0	276.5	276.5	276.5	160.0	160.0	66.5
Presently Funded		130(F)	27(F)	13(F)	22(F)	-	-	-	-	-	-
Additional Funds Needed		137.3	335.0	352.0	352.0	354.5	276.5	276.5	160.0	160.0	66.5

NOTE:
1. All dollars are in thousands.
2. All costs are for low activity level.
3. Amounts followed by a (F) are fairly firm commitments for funds by the four agencie.
4. Do not have flexibility to move presently committed funds between priorities.
5. Total amount in each box includes the funded (F) amount.

The costs addressed above are for baseline objectives at the low activity level. Should a higher activity level occur after the baseline objectives are completed the same monitoring - evaluation process should be re-initiated in order to determine change brought about by high levels of human activity.

Should a higher activity level occur prior to the time a baseline program is scheduled for an area, that baseline program should be initiated two years prior to the time the activity level is permitted.

Should a higher level of activity occur after the initiation of a baseline monitoring program the work group will meet and determine what increases in monitoring efforts, if any, may be needed.

VI. Agency Responsibility (Objective 3)

Due to the land ownership patterns, the land area that is subject to some sort of federal regulation, and the activities and location of activities which are predicted to take place in the next five to ten years, the following funding levels should be sought by the agencies involved:

	10/80-9/81	10/81-9/82	10/82-9/83	10/83-9/84	10/84-9/85	10/85-9/86	10/86-9/87	10/87-9/88	10/88-9/89	10/89-9/90
FS(30%)	80.2M	108.6M	109.5M	109.5M	83.0M	83.0M	82.9M	48.0M	48.0M	20.0M
BLM(30%)	80.3M	108.6M	109.5M	109.5M	83.0M	82.9M	83.0M	48.0M	48.0M	20.0M
USFW(10%)	26.7M	36.2M	36.5M	36.5M	27.6M	27.6M	27.6M	16.0M	16.0M	6.6M
MFWP(30%)	80.3M	108.6M	109.5M	109.5M	82.9M	83.0M	83.0M	48.0M	48.0M	19.9M
TOTAL	267.5M	362.0M	365.0M	365.0M	276.5M	276.5M	276.5M	160.0M	160.0M	66.5M

The major portion of the field data will be obtained through sources outside of the Federal agencies. The Montana Department of Fish, Wildlife, and Parks has the capability to tap sources for obtaining this data and will be the main pivot for data collection. Annual programs of work will be worked out with MDFWP for the funds they receive from the Federal agencies. These programs will be based on the monitoring program priorities as agreed to.

All funds are not intended to reach MDFWP. These funds will also be used for administration and time spent by the various agencies as a part of this monitor/evaluation program. Dollars needed to accomplish the "on-the-ground" work are identified in Section V.

VII. Data Summarization - Evaluation (Objective 2)

A work group consisting of the individuals involved in the data gathering, or their spokesman, as well as other individuals designated by the agencies involved will meet each February or March to review and evaluate the data gathered to date and determine what monitoring procedures might need to be modified.

Annual data reports must be prepared no later than January 15. Data reports are to be summarized on a two inch per mile map base with the necessary overlays. The map base will contain the landtypes and/or habitat delineations of each agency, to the extent possible.

VIII. Data Interpretation for Management Guidelines (Objective 4)
A work group will be assigned by the four agencies to interpret the data obtained from the monitoring procedures and formulate management guide lines for the area using this data as a base. Interim guideline proposals will be formulated following the second year of any monitoring effort. These management guidelines will be proposed and/or modified in February or March each year.

Final guideline proposals will be formulated within one year of the completion or termination of any specific monitoring effort. All guidelines will be subject to periodic review as appropriate to determine the extent of use and applicability of the guidelines to the management direction indicated for the area.

IX. Management Guideline Approval (Objective 4)
The Forest Supervisor (FS), District Manager (BLM), Regional Director (FWP), and Area Manager (FWS), or their assigned representatives, will meet in April-May each year to review proposed guidelines, make modifications as necessary, and approve management guidelines for implementation.

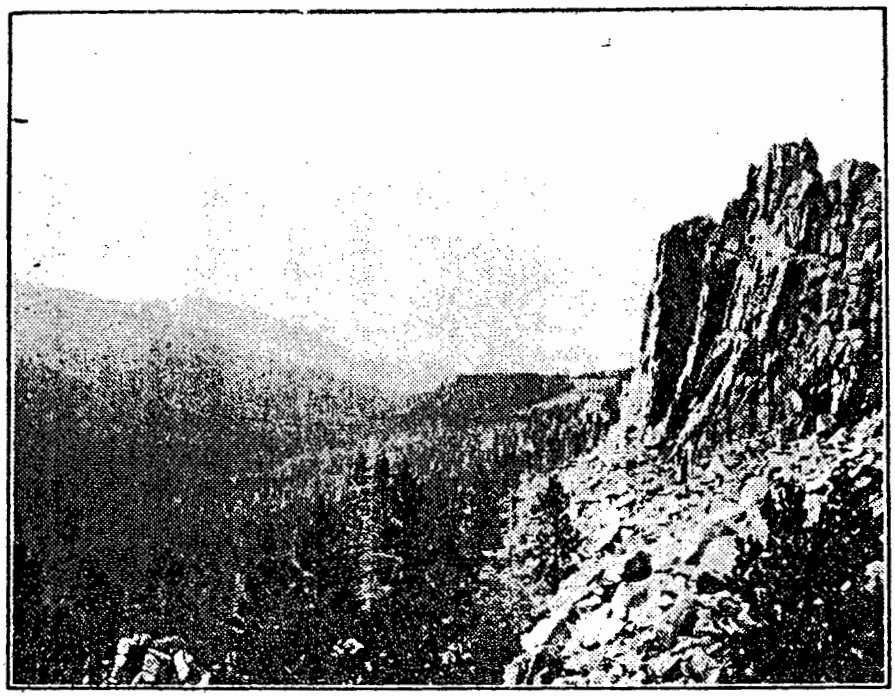
X. Rocky Mountain Front Area Wildlife Monitor/Evaluation Program
Agreed to by:

J. DALE CORMAN — Date 12/12/80
Forest Supervisor
Lewis & Clark NF
U.S.F.S

Wally Steucke — Date 12-18-80
Area Manager
U.S.FWS

Jack A. McIntosh — Date
District Manager
Butte District
B.L.M.

Nels A. Thorson — Date
Regional Supervisor
MDF, W and P

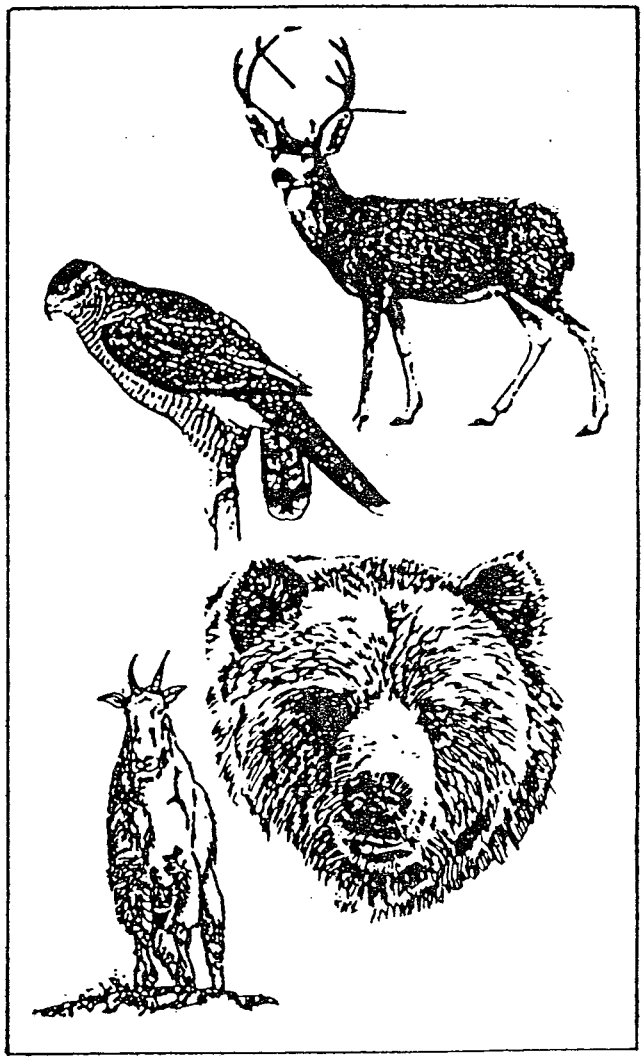


A Scenic View of the Little Belt Mountains.

LEWIS AND CLARK NATIONAL FOREST PLAN

Appendix I

Interagency Wildlife Management Guidelines



Interagency Rocky Mountain Front
Wildlife Monitoring/Evaluation Program

Management Guidelines

Grizzly Bear	Elk
Mountain Goat	Mule Deer
Bighorn Sheep	Raptors

Approved by:

Dale Gorman — 4/2/84
John D. Gorman, Forest Supervisor, Date
Lewis and Clark National Forest

Glenn W Freeman — 4/6/84
Glen Freeman, District Manager, Date
Bureau of Land Management, Lewistown District

Wayne H Brewster — 4-3-84
Wayne Brewster, Field Supervisor, Date
U.S. Fish and Wildlife Service

Daniel Vincent — 4/5/84
Daniel Vincent, Regional Supervisor, Date
Montana Department Fish, Wildlife and Parks

Introduction

The Interagency Rocky Mountain Front Wildlife Monitoring/Evaluation Program was initiated in 1980. A principal goal of this program was to sponsor study efforts; whereby wildlife management guidelines, based on sound scientific findings, could be developed to aid land managers in their planning of human activities along the Rocky Mountain Front.

The original charter for this program specified that management guidelines were to be considered "interim" until five years of study had been incorporated into them. However, the guidelines developed thus far are currently being used as firm guidance by the involved agencies. Further, at the end of this five year period these guidelines should not be locked in concrete by the term "final". It is highly likely that studies will continue and additional findings will dictate new or revised guidelines. Therefore, these two terms will not be used and the management guideline development process and associated document are to be considered part of a dynamic planning process subject to periodic review and modification as additional study findings become available and as long as the need for them is present.

In the event that on-going monitoring results in the need for a new guideline or the modification of an existing guideline, it can be submitted at anytime by the procedures described and on the form given on the last two pages of this document.

The following management guidelines are based on the best information currently available. They are a result of current or recently completed studies on selected wildlife species. Field investigators conducting the studies have completed extensive literature reviews on the various species considered. The guidelines which have been formulated and presented in this document are not only the result of study findings and literature review, but incorporate the professional judgement of the technical personnel involved.

Objective

The need for management guidelines is predicated on management concerns involving the effects of existing and proposed land uses and human activities upon various wildlife species and their habitat. The objective of the development and application of management guidelines is to avoid or minimize the following effects of human related activities which may adversely impact some or all of the selected wildlife species being considered:

A. Physical destruction of important wildlife habitat components.
B. Human disturbance that would displace various wildlife species from important seasonal use areas.
C. Increased direct human caused mortality.
D. Increased stress due to higher human activity levels.
E. Direct mortality or physical impairment resulting from environmental (chemical) contaminates.
F. Increased wildlife/human interaction resulting from habitat intrusion or displacement.

Management Guidelines

Management guidelines provide coordination measures designed to avoid or minimize the potential conflicts previously identified between human related activities and wildlife. Although many of the guidelines are applicable to a variety of human activities, some of them are specific to a single activity. Oil and gas exploration and development has received special emphasis due to the relatively high level of activity in recent years. As a result, some of the guidelines apply specifically to that activity.

Approved management guidelines will be included in permits, contracts or other formal authorizations for human activities as applicable. Omissions or modifications of applicable guidelines in such authorizations will be documented in an EA report or other appropriate document concerning the activity involved.

Monitoring

A majority of the radio tracking and habitat survey data collected to date has been baseline information including the identification of seasonal ranges, reproduction areas, breeding areas and migration corridors. Future studies will place increasing emphasis on the monitoring of effects of increased human activity levels, particularly those associated with oil and gas exploration, on the wildlife species being studied. The management guidelines presented in this document are only partially based on monitoring information collected during the current studies on the Rocky Mountain Front. An important consideration in further monitoring efforts will be to test and validate the guidelines as to their effectiveness and applicability.

PART A. General Management Guidelines

The following general management guidelines are applicable coordination measures that will be considered when evaluating the effects of existing and proposed human activities in identified seasonally important habitats for a variety of wildlife species.

1. Identify and evaluate for each project proposal the cumulative effects of all activities, both existing uses and other planned projects. Potential site specific effects of the project being analyzed are a part of the cumulative effects evaluation which will apply to all lands within a designated biological unit. A biological unit is an area of land which is ecologically similar and includes all of the yearlong habitat requirements for a sub-population of one or more selected wildlife species.

2. Avoid human activities or combinations of activities on seasonally important wildlife habitats which may adversely impact the species or reduce the habitat effectiveness.

3. Space concurrently active seismographic lines at least nine (9) air miles apart to allow an undisturbed corridor into which wildlife can move when displaced. One line survey crew will be allowed to work between active lines in order to reduce the total time of activity in any one area (Olson, G., 1981).

4. Establish helicopter flight patterns of not more than one-half (1/2) mile in width along all seismographic lines, between landing zones and the lines, and between landing zones and other operations, unless flying conditions dictate deviations due to safety factors.

5. Because helicopters produce a more pronounced behavioral reaction by big game and raptors than do fixed-wing aircraft, helicopters will maintain a minimum altitude of 600 feet (183 meters) above ground level when flying between landing zones and work areas where landing zones are not located on seismic lines, unless species specific guidelines recommend otherwise (Hinman, H., 1974; McCourt, K.H., et al 1974; Klein, D.R., 1973; Miller, F.L. and A. Gunn, 1979).

6. Designate landing zones for helicopters in areas where helicopter traffic and associated human disturbances will have the minimum impact on wildlife populations. Adequate visual and/or topographic barriers should be located between landing zones and occupied seasonal use areas.

7. The use of helicopters instead of new road construction to accomplish energy exploration and development is encouraged.

8. Base road construction proposals on a completed transportation plan which considers important wildlife habitat components and seasonal use areas in relation to road location, construction period, road standards, seasons of heavy vehicle use, road management requirements, etc.

9. Use minimum road and site construction specifications based on projected transportation needs. Schedule construction times to avoid seasonal use periods for wildlife as designated in the species specific guidelines.

10. Locate roads, drill sites, landing zones, etc. to avoid important wildlife habitat components based on a site specific evaluation.

11. Insert "dog-legs" or visual barriers on pipelines and roads built through dense vegetative cover areas to prevent straight corridors exceeding one-forth (1/4) mile where vegetation has been removed (Stubbs, C.W. and B.J. Markham, 1979).

12. Roads which are not compatible with area management objectives and are no longer needed for the purpose for which they were built will be closed and reclaimed. Native plant species will be used whenever possible to provide proper watershed protection on disturbed areas. Wildlife forage and/or cover species will be utilized in rehabilitation projects where deemed appropriate.

13. Keep roads which are in use during oil and gas exploration and development activity closed to unauthorized use. Place locked gates and/or road guards at strategic locations to deter unauthorized use when activities are occurring on key seasonal ranges.

14. Impose seasonal closures and/or vehicle restrictions based on wildlife or other resource needs on roads which remain open.

15. Bus crews to and from drill sites to reduce activity levels on roads. Shift changes should be scheduled to avoid morning and evening wildlife feeding periods.

16. Keep noise levels at a minimum by muffling such things as engines, generators and energy production facilities.

17. Prohibit dogs during work periods.

18. Prohibit firearms during work periods or in vehicles traveling to and from work locations.

19. Seismographic and exploration companies should keep a daily log of activities. Items such as shift changes, shut down/start up times, major changes in noises or activity levels, and the location on the line where seismic crews are working should be recorded.

PART B: Species Specific Management Guidelines

The species specific management guidelines which follow provide coordination measures necessary to protect important habitats or seasonal use areas for several wildlife species which were selected for intensive baseline surveys on the Rocky Mountain Front Study Area. Monitoring of the effects of human activities on these species and their habitats will continue to receive special study emphasis.

Maps which delineate the seasonally important habitats for which timing restrictions are specified have not been included in the management guideline document and are not available for general distribution. Copies of these maps are available for inspection at the offices of the four Agencies involved in the Rocky Mountain Front Wildlife Monitoring Program.

These guidelines together with the "general management guidelines" will minimize, but not eliminate, the impacts of disturbances caused by human activities on these species. Species specific guidelines are currently available for grizzly bear, mountain goat, bighorn sheep, elk, mule deer and raptors.

Study results documented to date along the east Rocky Mountain Front are the basis for the development of management guidelines for grizzly bear and their habitat. During the period from 1977-1979, research was carried out by the Border Grizzly Project under a contract with the Bureau of Land Management.

Since 1980 the Montana Department of Fish, Wildlife and Parks has assumed the intensive grizzly bear monitoring work with funding continuing from the Interagency Monitoring Group, private industry (American Petrofina, Williams Exploration, Sun Exploration) and the Nature Conservancy.

These guidelines are based on the intensive grizzly bear monitoring information collected in recent years on the Rocky Mountain Front Study Area. They will be considered tentative and subject to revision as long as radio monitoring studies and associated habitat surveys are continued on grizzly bear in the area. Much of the information collected to date is concentrated in the area between the Teton River and the North Fork Dupuyer Creek. Intensive monitoring work will be expanded to other areas as funding becomes available. These guidelines were developed as a direct result of grizzly bear monitoring conducted on the east front. They represent guidelines that, when followed, will mitigate but not eliminate influences of human activities on grizzly bears and grizzly bear habitat. Human activities within grizzly bear range will have effects, however subtle, on grizzly bears.

All previously mentioned "general management guidelines" are applicable coordination measures that should be considered when evaluating human activities in grizzly bear habitat. The following are additional species specific guidelines.

1. Avoid human activities in identified grizzly bear habitat constituent elements or portions of constituent elements containing specific habitat values during the following seasonal use periods (see data summarization):

   A. Spring habitat (concentrated use areas) ----- April 1 - June 30
   B. Breeding areas ---------- May 1 - July 15
      (Currently identified breeding areas include upper Muddy Creek, the head of Rinkers Creek, the Ear Mountain area, and the head of the North Fork Dupuyer Creek)
   C. Alpine feeding sites ---------- July 1 - September 15
   D. Subalpine fir/whitebark pine habitat types -- August 1 - November 30
   E. Denning habitat ---------- October 15 - April 15.

2. Avoid human activities in grizzly bear habitat components which provide important food sources during spring and early summer, April 1 - July 15. These habitat components include riparian shrub types, Populus stands, wet meadows, sidehill parks, and avalanche chutes. Maintain an undisturbed zone of at least 1/2 mile between activities and the edge of these habitat components where many important bear foods occur.

3. Establish flight patterns in advance when activities require the use of helicopters. Flight patterns should be located to avoid seasonally important grizzly bear habitat constituent elements and habitat components during the designated seasonal use periods.

4. No seismic or exploratory drilling activities should be conducted within a minimum of one mile of den sites during the October 15 - April 15 period (Reynolds, P.E., et al, 1983).

5. Seismic permits should include a clause providing for cancellation or temporary cessation of activities, if necessary, to prevent grizzly/human conflicts.

6. Scheduling of well drilling on adjacent sites, within important grizzly bear use areas, should be staggered to provide a disturbance free area for displaced bears.

7. Pipeline construction required for the development of a gas or oil field should be condensed into the shortest time frame possible and subject to seasonal restrictions when conducted in important grizzly bear habitat.

8. Field operation centers associated with seismic or oil/gas exploration activities should be placed carefully to avoid seasonally important habitat components or constituent elements. Such placement of sites is necessary in order to avoid direct or potential conflicts between man and grizzly bear.

9. Retain frequent dense cover areas adjacent to roads for travel corridors and security cover necessary to protect important habitat components. Three sight distances are desirable to provide visual security for grizzlies. A sight distance is the average distance at which a grizzly or other large animal is essentially hidden from the view of an observer by vegetation cover. The same security cover guidelines also applies to timber harvest units.

10. No off-duty work camps will be allowed within occupied seasonally important constituent elements.

11. Incinerate garbage daily or store in bear proof containers and remove to local landfill dumps daily.

12. Commercial activities permitted on public land should be planned and coordinated to avoid conflicts with grizzly bear trapping operations being conducted under the monitoring program. General public use of areas where trapping operations are active will be controlled through appropriate administrative actions by the agencies involved.

The following are grizzly bear management guidelines specifically oriented toward livestock grazing:

1. Livestock grazing on important spring habitat for grizzly bears should be deferred until after July 1.

2. Boneyards and livestock dumps are prevalent along the east front and are frequented by grizzly bears. Ranchers and landowners should be encouraged to place carcasses of dead livestock and garbage on remote areas of their land. Dead cows and calves should be hauled a considerable distance from calving grounds to discourage bears from feeding on carion and newborn calves.

3. Sheep grazing allotments in management situation No. 1, as defined in the Yellowstone Guidelines, on lands administered by government agencies should be eliminated.

4. In riparian habitats that receive high amounts of bear use, fencing to exclude livestock grazing and trampling may be necessary where livestock turn-out dates prior to July 1 are allowed.

The Montana Mountain Goat Investigations along the East Front of the Rocky Mountains, funded by the Montana Department of Fish, Wildife and Parks, the Lewis and Clark National Forest and the Allen Foundation, is the basis for formulating management guidelines (Thompson 1980; Tomasko 1980; Joslin 1984, 1983, 1982, 1981). Literature concerning wildlife (primarily mountain goats) and land use conflicts was also used in developing some of the guidelines.

The guidelines are heavily oriented toward disturbance related to oil and gas activity since that is the primary activity of concern now, however, other activities which may influence mountain goats are also addressed. The following guidelines are based on historic information from this area and data collected duirng the last four years. These guidelines represent the best information now available.

All previously mentioned "general management guidelines" are coordination measures that should be considered when evaluating human activities in mountain goat habitat. The following is adapted from the mountain goat investigations annual report (Joslin, 1984) and provides species specific guidelines which are applicable to a variety of human activities.

1. Avoid human activities in identified mountain goat habitat during the following seasonal use periods:

   A. Occupied yearlong mountain goat habitat
      1) Kidding - nursery areas ---------- May 1 - July 15
      2) Breeding areas ---------- November 1 - December 31
      3) Winter range ---------- October 15 - May 15

   B. Suitable low occupancy mountain goat habitat
      (Appropriate surveys of suitable mountain goat habitat will be made by a wildlife biologist to determine whether goats are present prior to initiation of a planned activity. If goat use is documented, the stratification will be changed to occupied yearlong mountain goat habitat and the listed guidelines will apply. If mountain goat use is not documented, then guidelines listed for transitional areas will apply).

   C. Transitional mountain goat habitat
      (The area between occupied yearlong habitat through which mountain goats travel. Timing restrictions apply to exploratory drilling, road construction and maintenance, timber harvest, off-road and trail vehicle travel, and any other mechanized activity which extends beyond one week in duration).

      ---------- October 15 - December 31
      and
      May 1 - June 30

2. Mineral licks used by mountain goats should have a no surface occupancy stipulation for a one-mile radius around the site (Joslin, 1984).

3. New mineral licks within mountain goat habitat should not be established without considering the safety of goats (Rideout, 1974).

4. Establish helicopter flight patterns at least one mile from mountain goat mineral licks during the May 1 - July 31 period (Joslin, 1984).

5. Restrict use of roads and trails which cross or come to within one-half mile of a mountain goat mineral lick to nonmotorized use during the May 1 - July 31 period.

6. Avoid constructing wells, pipelines or roads within 1 mile of occupied yearlong habitat.

7. Establish flight patterns in advance when activities require the use of helicopters. Flight patterns should be located to avoid seasonally important mountain goat habitat during the use periods designated above.

8. Exploratory well drilling should not occur within occupied habitat. Exploratory drilling on adjacent sites within Suitable and/or Transitional mountain goat habitat should be staggered to provide a disturbance-free area for displaced mountain goats.

9. Livestock use of mineral licks used by mountain goats should occur after July 1 or pasture use staggered so that adjacent licks are not used simultaneously by livestock.

10. In occupied yearlong habitat, livestock grazing should be restricted to the period July 1 - October 15.

11. The level of livestock use in occupied habitat should not be increased, and grazing of domestic sheep should not occur.

12. No suppression of insects and disease should occur in occupied habitat unless adjacent resource values are threatened.

13. Timber harvest and road construction within occupied mountain goat habitat should be closely coordinated with the Montana Department of Fish, Wildlife and Parks to address the needs of mountain goats.

Bighorn Sheep

The following guidelines are based on the best information available and are subject to change and/or modification. The majority of the guidelines are based on work done between Birch Creek and the Teton River by Andryk, 1983; between the Teton and Dearborn Rivers as part of the Rocky Mountain Front Wildlife Studies by Hook, 1981, 1982 and 1983; and on Region 4, Montana Department of Fish, Wildlife and Parks game management surveys.

The cumulative effects of all disturbances; oil and gas exploration and development, timber harvesting, livestock grazing and recreation must be considered when evaluating proposed activities. Potential conflicts can be minimized by adhering to the following guidelines.

1. Avoid disturbance related to human activities on identified important bighorn sheep habitat during the following seasonal use periods:

   A. Winter ranges and rutting areas ---------- November 1 - May 15
   B. Lambing areas and mineral licks ---------- April 15 - June 30

2. Provide a one mile zone of no activity to separate each disturbance activity from an occupied bighorn sheep seasonal use area.

3. Require helicopters to maintain heights of not less than 1,300 feet (400 meters) from all ground surfaces, except in designated landing zones.

4. Avoid well drilling or pipeline construction within one mile of bighorn sheep winter ranges and rutting, lambing and mineral lick areas.

5. Avoid road construction within one mile of winter ranges and rutting, lambing and mineral lick areas, unless access is restricted during bighorn sheep seasonal use periods.

6. Restrict cattle grazing to the period of July 1 to October 15 on bighorn sheep habitat.

7. Continue to protect bighorn sheep winter-spring ranges from domestic livestock grazing.

8. Avoid timber harvest or firewood cutting on winter ranges and rutting, lambing and mineral lick areas during bighorn sheep seasonal use periods.

The guidelines described below are heavily oriented toward disturbance related to oil and gas activity (including seismographic work) since that is the primary activity of concern now. As the monitoring program proceeds, additional information will be gathered pertaining to other activities which may influence elk and elk habitat. We anticipate expanding the guidelines to address other disturbance related activities such as livestock grazing, hard rock mining, and increased recreation, etc. The Montana Cooperative Elk-Logging Study management recommendations and these guidelines will be followed as appropriate when considering elk and timber harvesting proposals.

The following guidelines are based on the best information available at this time and are considered tentative and subject to change. The majority of the guidelines are based on work done in the Badger-Two Medicine area of the Rocky Mountain Front by G. Olson (1981) in cooperation with the Rocky Mountain Front Wildlife Monitoring/Evaluation Program (1980). This report is also referenced for the "data summarization" portion of the elk guidelines.

All previously mentioned "general management guidelines" are applicable coordination measures that should be considered when evaluating human activities in elk habitat. The following are additional species specific guidelines.

1. Avoid disturbance related to human activities on identified important elk habitat during the following seasonal use periods:

   A. Winter ranges ---------- December 1 - May 15
   B. Calving areas and spring migration corridors -- May 1 - June 30

2. Increased levels of disturbance caused by human activities (i.e., seismographic surveys, timber harvesting, exploratory well drilling, etc.) should not be permitted to occur simultaneously in adjacent drainages within seasonally important elk habitat.

The East Slope Rocky Mountain Front Mule Deer Study and Investigation is the basis for formulating management guidelines. Other information available for developing guidelines includes Region 4 MDFW&P game management surveys and various surveys by the BLM and FS.

The guidelines are heavily oriented toward disturbance related to oil and gas activity since that is the primary activity of concern at present. We anticipate expanding the guidelines to other activities such as livestock grazing, recreational use and timber harvesting.

Studies to date have identified primary and secondary winter range, transitional range, migration corridors, and the tentative yearlong herd ranges associated with each wintering population unit. Population information applies only to units with winter ranges along the east slope from Montana Highway #200 to Birch Creek.

The following guidelines are based on the best information available at this time and are considered tentative and subject to change. We anticipate periodic updates as new data become available.

All previously mentioned "general management guidelines", unless specifically identified as inapplicable to mule deer, should be considered when evaluating human activities in mule deer habitat. The following are additional species-specific guidelines:

1. Avoid disturbance related to human activities on identified important mule deer habitat during the following seasonal use periods:

   A. Primary and secondary winter ranges ---------- December 1 - May 15.
   B. Transitional ranges ---------- October 15 - December 31.
   C. Migration corridors ---------- May 15 - June 15.

2. Population units should be closely monitored to detect changes in population size, productivity, mortality, and distribution associated with changes in land use. Intensive or high level monitoring of a population unit (with comparable monitoring of at least one other unit as a control) should be initiated if production density equals or exceeds one well per section on at least 25% of a primary, secondary, or transitional range or 10% of a high density primary winter range.

The raptor guidelines are based upon studies conducted in 1982 and 1983 by the Montana Department of Fish, Wildlife and Parks, and previous studies by the BLM, U.S. Forest Service, and The Nature Conservancy. They will be considered subject to revision as raptor studies and habitat inventories are continuing in the area.

Most of the information was collected in the area between Birch Creek and the Sun River. The area between the Sun River and Montana Highway 200 will be surveyed in 1984. Most of these guidelines are based upon reported impacts of activities on raptors and recommendations from the literature. This study has not been funded at a level to provide data on actual impacts related to human activities within the area surveyed to date.

1. Avoid human activities in seasonally important areas for raptors, including nesting, foraging and wintering areas.

2. To prevent lowered reproductive rates due to eggshell thinning, prohibit the use of chlorinated hydrocarbon pesticides.

3. To reduce accidental raptor mortality, prohibit the use of exposed poison baits or traps for predator control.

4. Raptor nest location information should be restricted to qualified researchers and appropriate personnel from the land management agencies directly involved.

5. Plan power and telephone line locations to reduce the possibility of raptor mortality from collisions.

6. Electrical transmission lines should be constructed or existing lines modified to reduce or eliminate the potential for large raptor electrocutions. Specific techniques and detailed design instructions are contained in "Suggested Practices for Raptor Protection on Powerlines - The State of the Art in 1981 (Raptor Research Report No. 4, Raptor Research Foundation, Inc., 1981)." Copies may be obtained for $5.00 from Raptor Research Foundation, Department of Veterinary Biology, University of Minnesota, St. Paul, Minnesota 55108.

Type 1. Areas occupied by nesting bald eagles or peregrine falcons:

No endangered raptor species are known to nest on the Rocky Mountain Front. Should nesting peregrine falcons or bald eagles be discovered, a site specific nest management plan should be developed. These guidelines were developed by the Greater Yellowstone Ecosystem Bald Eagle Working Team (1983). Guidelines developed by the Montana bald eagle and peregrine falcon working groups should be used when they are completed.

1. Nesting season (February 1 - July 31)

   A. Prohibit human activities within 800 meters of occupied nests, with the exception of existing low level activity such as hiking trails and necessary surveys by qualified biologists.

B. Prohibit helicopter or jet overflights within the Nesting Zone (400 meters) and restrict overflights to above 600 meters in the Primary Use Area (400-800 meters).

2. Non-nesting season (August 1 - January 31)

A. Human activities that do not degrade nesting and foraging habitat are permitted within 800 meters of the nest. These include dispersed recreation and properly - conducted seismic exploration.
B. Housing developments, exploratory drilling, heavy construction, additional campgrounds and boat landings, and other activities which degrade habitat quality of increase human activity levels are prohibited within 800 meters of bald eagle and peregrine falcon nests.
C. Prohibit all timber harvest within 800 meters and in important foraging habitat within 4 kilometers of bald eagle nests, including firewood cutting, snag removal, and thinning.
D. Timber harvest may be permitted within 800 meters of peregrine falcon nests during the non-nesting season if a site evaluation determines no detrimental impacts on the peregrines. Associated roads should be closed and reclaimed upon completion of the harvest.
E. Habitat alterations within 400 meters of bald eagle and peregrine falcon nests should be restricted to projects specifically designed to maintain or enhance bald eagle or peregrine falcon habitat.
F. Power and telephone lines should not be constructed within 800 meters of bald eagle or peregrine falcon nests. Existing structures should be modified if they pose a hazard to raptors.

Type 2. Potential nesting habitat for bald eagles and peregrine falcons:

1. Prohibit disturbing human activities within 800 meters of historic nest sites during the nest site selection period (February 1 - April 30).

2. Prohibit human activities that cause habitat loss or an increase in human activity within potential nesting habitat. This includes additional campgrounds and boat landings, housing developments, oil and gas fields, and additional roads.

Type 3. Areas occupied by nesting special interest species including the golden eagle, northern goshawk, ferruginous hawk, prairie falcon and merlin (Flath, 1981).

Management goals are to protect occupied nest sites from disturbance and maintain habitat quality.

1. Prohibit human activities that have the potential to disrupt nesting activities within the dates and buffer zones listed below:

Species	Approximate Dates of Nesting Season	Recommended Buffer Zone (Meters)
Golden Eagle	February 1 - July 30	600 m
Northern Goshawk	April 15 - August 15	400 m
Ferruginous Hawk	April 1 - July 30	600 m
Merlin	April 15 - August 15	500 m
Prairie Falcon	February 15 - July 30	500 m

The buffer zones may be adjusted to allow for topographic features which offer screening from disturbance, or for less tolerant individual raptors, but buffer zones should not be less than 300 meters in any case. Types of activities which should be restricted include heavy construction, timber harvest, exploratory drilling, seismic exploration, and helicopter flight patterns.

2. Activity patterns that have been established for at least three years can continue within buffer zones at current levels. These include established roads, pack trails, campgrounds, and dwellings.

3. Timber harvest, including firewood cutting, snag removal, and thinning should be prohibited within 300 meters of goshawk nests yearlong.

Type 4. Potential nesting habitat for the northern goshawk, prairie falcon, golden eagle, merlin, ferruginous hawk, Swainson's hawk, red-tailed hawk, northern harrier, and great horned owl.

1. Employ timber harvest levels and rotation periods which maintain and regenerate current levels of mature to overmature stands of conifers.

2. Avoid placing roads, drill pads, campgrounds, and other habitat disrupting developments in potential nesting habitat.

Type 5. Areas not used for nesting (includes foraging and wintering areas).

1. Prohibit disturbing human activities such as heavy construction seismic exploration, exploratory drilling, and timber harvest in bald eagle winter concentration areas from December 1 - April 15.

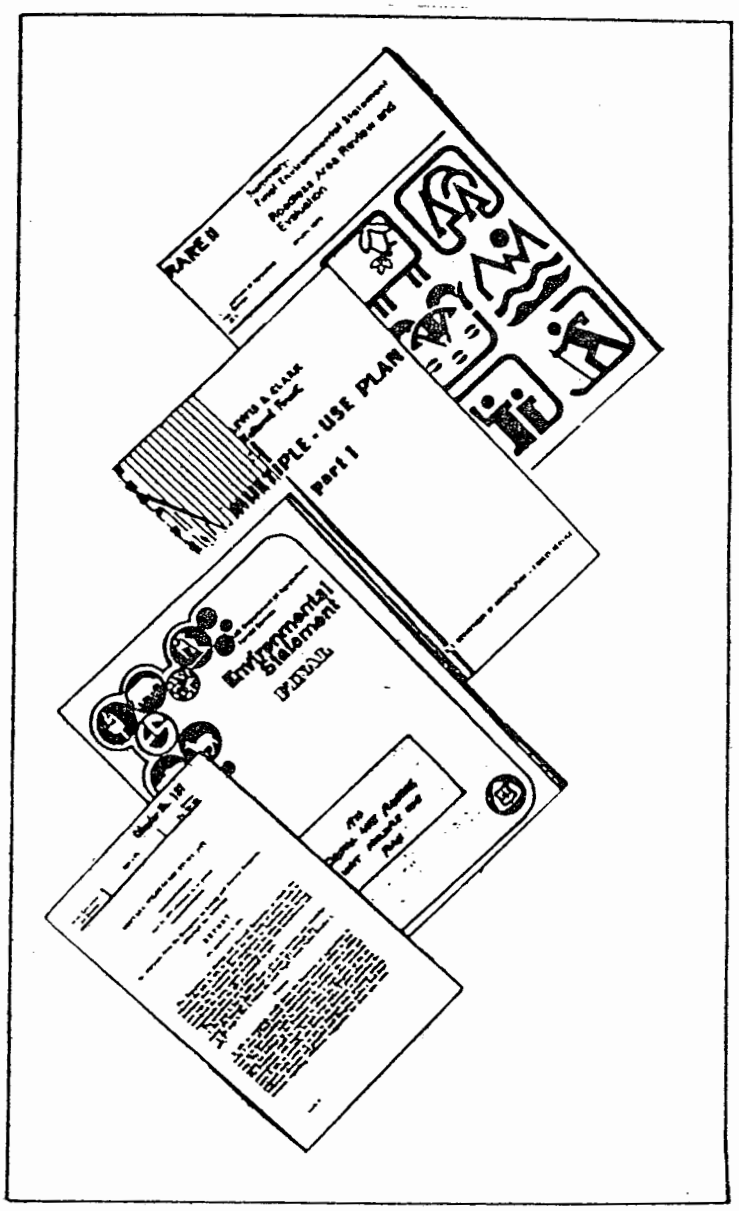
2. Prohibit disturbing human activities in important foraging areas.

3. Reclamation of areas disturbed during development should be designed to enhance prey populations.

LEWIS AND CLARK NATIONAL FOREST PLAN

Appendix J

Laws, Policies, Other Related Legal Requirements, Recovery Plans, & Special Studies



APPENDIX J

Laws, Policies, Other Related Legal Requirements,
Recovery Plans, and Special Studies

The Forest Service management of T&E species is guided by a large number of laws, executive orders, Forest Service Manual Direction, implementing regulations of the National Forest Management Act, legal decisions that have a bearing on the Forest Service T&E Program, consultation with the Fish and Wildlife Service, recovery plans, and special studies.

LAWS AND EXECUTIVE ORDERS

The primary law relating to T&E species is the Endangered Species Act. The following Forest Service Manual (FSM) sections describe the Endangered Species Act and related acts and orders.

2670.11 - Endangered Species Act. Section 2 of the Endangered Species Act of 1973, as amended (1978, 1979, and 1982; hereinafter referred to as the Act), superseded similar acts passed in 1966 and 1969. Section 2 of the act declares that "... all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of this Act."

In section 5, the Secretary of Agriculture is directed to "establish and implement a program to conserve fish, wildlife, and plants," including federally listed species. Section 7 directs Federal department and agencies to ensure that actions authorized, funded, or carried out by them are not likely to jeopardize the continued existence of any threatened or endangered species or result in the destruction or adverse modification of their critical habitats. Federal agencies also must consult with the Secretary of the Interior (on non-marine species) or the Secretary of Commerce (on marine species) whenever an action authorized by such agency is likely to affect a species listed as threatened or endangered or to affect its critical habitat. The Act mandates conference with the appropriate Secretary whenever an action is likely to jeopardize the continued existence of any species proposed for listing as threatened or endangered, or whenever an action might result in destruction or adverse modification of critical habitat proposed for listing (50 CFR 402).

2601.1 - Laws and Orders. The major laws and Executive Orders that provide authority to manage wildlife, fish, and plant resources on National Forests and Grasslands are listed as follows:

1. Agricultural Appropriation Act.
2. Fish and Wildlife Coordination Act.
3. Multiple-Use, Sustained-Yield Act.
4. National Environmental Policy Act.
5. Endangered Species Act.
6. Forest and Rangeland Renewable Resources Planning Act.
7. Federal Water Pollution Control Act.
8. National Forest Management Act.
9. Federal Land Policy and Management Act.
10. Preservation of Tule Elk.

11. Bald Eagle Protection Act.
12. Executive Order 11990, Protection of Wetlands.
13. Sikes Act.

FOREST SERVICE MANUAL DIRECTION

On National Forest System lands the objectives and policies regarding threatened and endangered species are:

2670.2 - Objectives.

2670.21 - Threatened and Endangered Species. Manage National Forest System habitats and activities for threatened and endangered species to achieve recovery objectives so that special protection measures provided under the Endangered Species Act are no longer necessary. Promote recovery efforts through Research and State and Private Forestry programs.

2670.3 - Policy.

2670.31 - Threatened and Endangered Species.

1. Place top priority on conservation and recovery of endangered, threatened, and proposed species and their habitats through relevant National Forest System, State and Private Forestry, and Research activities and programs.

2. Establish through the Forest planning process objectives for habitat management and/or recovery of populations, in cooperation with states, the Fi and Wildlife Service (FWS) (or National Marine Fisheries Service (NMFS)), and other Federal agencies.

3. Through the biological evaluation process, review actions and programs authorized, funded, or carried out by the Forest Service to determine their potential for effect on threatened and endangered species and species proposed for listing.

4. Avoid all adverse impacts on threatened and endangered species and their habitats except when it is possible to compensate adverse effects totally through alternatives identified in a biological opinion rendered by the FWS; when an exemption has been granted under the act, or when the FWS biological opinion recognizes an incidental taking. Avoid adverse impacts on species proposed for listing during the conference period and while their Federal status is being determined.

5. Initiate consultation or conference with the FWS or NMFS, when the Forest Service determines that proposed activities may have an adverse effect on threatened, endangered, or proposed species or when Forest Service projects are for the specific benefit of a threatened or endangered species.

6. Identify and prescribe measures to prevent adverse modification or destruction of critical habitat and other habitats essential for the conservation of endangered, threatened, and proposed species. Protect individual organisms or populations from harm or harassment as appropriate.

NFMA IMPLEMENTING REGULATIONS

The implementation regulation (September 30, 1982) of the National Forest Management Act of 1976 contain direction for endangered or threatened species. Section 219.19 and subsection (1), (6), (7) are specifically related to T&E species.

(1) In order to estimate the effects of each alternative on fish and wildlife populations, certain vertebrate and/or invertebrate species present in the area shall be identified and selected as management indicator species and the reasons for their selection will be stated. These species shall be selected because their population changes are believed to indicate the effects of management activities. In the selection of management indicator species, the following categories shall be represented where appropriate: endangered and threatened plant and animal species identified on State and Federal lists for the planning area; species with special habitat needs that may be influenced significantly by planned management programs; species commonly hunted, fished, or trapped; non-game species of special interest; and additional plant or animal species selected because their population changes are believed to indicate the effects of management activities on other species of selected major biological communities or on water quality. On the basis of available scientific information, the interdisciplinary team shall estimate the effects of changes in vegetation type, timber age classes, community composition, rotation age, and year-long suitability of habitat related to mobility of management indicator species. When appropriate, measures to mitigate adverse effects shall be prescribed.

Fish and wildlife habitats shall be managed to maintain viable populations of existing native and desired non-native vertebrate species in the planning area. To meet this goal, management planning for the fish and wildlife resource will meet the requirements set forth in paragraphs (1) through (7) of this paragraph and be guided by Chapter 2620, Forest Service Manual.

(6) Population trends of the management indicator species will be monitored and relationships to habitat changes determined. This monitoring will be done in cooperation with State fish and wildlife agencies, to the extent practicable.

(7) Habitat determined to be critical for threatened and endangered species shall be identified and measures shall be prescribed to prevent the destruction or adverse modification of such habitat. Objectives shall be determined for threatened and endangered species that shall provide for, where possible, their removal from listing as threatened and endangered species through appropriate conservation measures, including the designation of special areas to meet the protection and management needs of such species.

Section 219.13, Management Standards and Guidelines, paragraph (a) states that management of National Forest System lands requires adherence to the planning principles given in 219.1 and one of the specific management requirements that must be met as a minimum is (b)(9), include measures for preventing the destruction or adverse modification of critical habitat for threatened and endangered species.

LEGAL DECISIONS

Two recent legal actions influence Forest Service management of T&E species. The decision in a recent court case clearly established that a biological assessment/evaluation must consider all subsequent phases at each project phase

for the determination of effect. Known as the Beaufort Sea Case, it changed t' previous position that oil and gas leasing was not a ground disturbing activi and therefore required no formal consultation. An earlier opinion, July 19, 1978, from the Office of the Solicitor, Department of the Interior, committed the Fish and Wildlife Service, and thus the Forest Service indirectly, to consider the cumulative impacts of all projects which can reasonably be expected to be completed and operational during the life of the project under consideration.

Jersey Jack Case (No. 84-3837)

The Forest Service approved a timber road in the Jersey Jack area of the Nezperce National Forest in Idaho. The area is adjacent to the Salmon River, a congressionally-designated Wild and Scenic River, and is bounded on the west by the designated Gosple Hump Wilderness and on the east by the River of No Return Wilderness. The area lies in a "recovery corridor" identified by the U.S. Fish and Wildlife Service for the Rocky Mountain Gray Wolf, an endangered species.

An EA (Environmental Assessment) was prepared on the project. The decision notice stated that "no known threatened or endangered plant or animal species have been found within the area, but the EA contained no discussion of endangered species.

On February 11, 1985, United States Court of Appeals for the Ninth Circuit ruled, "(3) The Endangered Species Act (ESA) requires the Forest Service to prepare a biological assessment to determine whether the road and the timber sales that the road is designed to facilitate are likely to affect the endangered Rocky Mountain Gray Wolf, and construction of the road should be enjoined pending compliance with the ESA".

CONSULTATION WITH THE FISH AND WILDLIFE SERVICE

2671.45 - Consultation and Conference. The consultation process may encompass informal consultation, conference, formal consultation, early consultation, and further discussion. Biological assessments are mandatory when any major construction activity that requires an environmental impact statement affects an area that may contain listed or proposed species or critical habitat or proposed critical habitat. By identifying such species and possible effects resulting from the action, the Federal agency determines whether formal consultation or conference is required. Four interrelated factors determine the type of review and consultation procedures to follow in determining effects on listed or proposed species. They are:

1. Presence of listed or proposed species or their critical habitat.

2. Forest Service determination of effect in the biological evaluation.

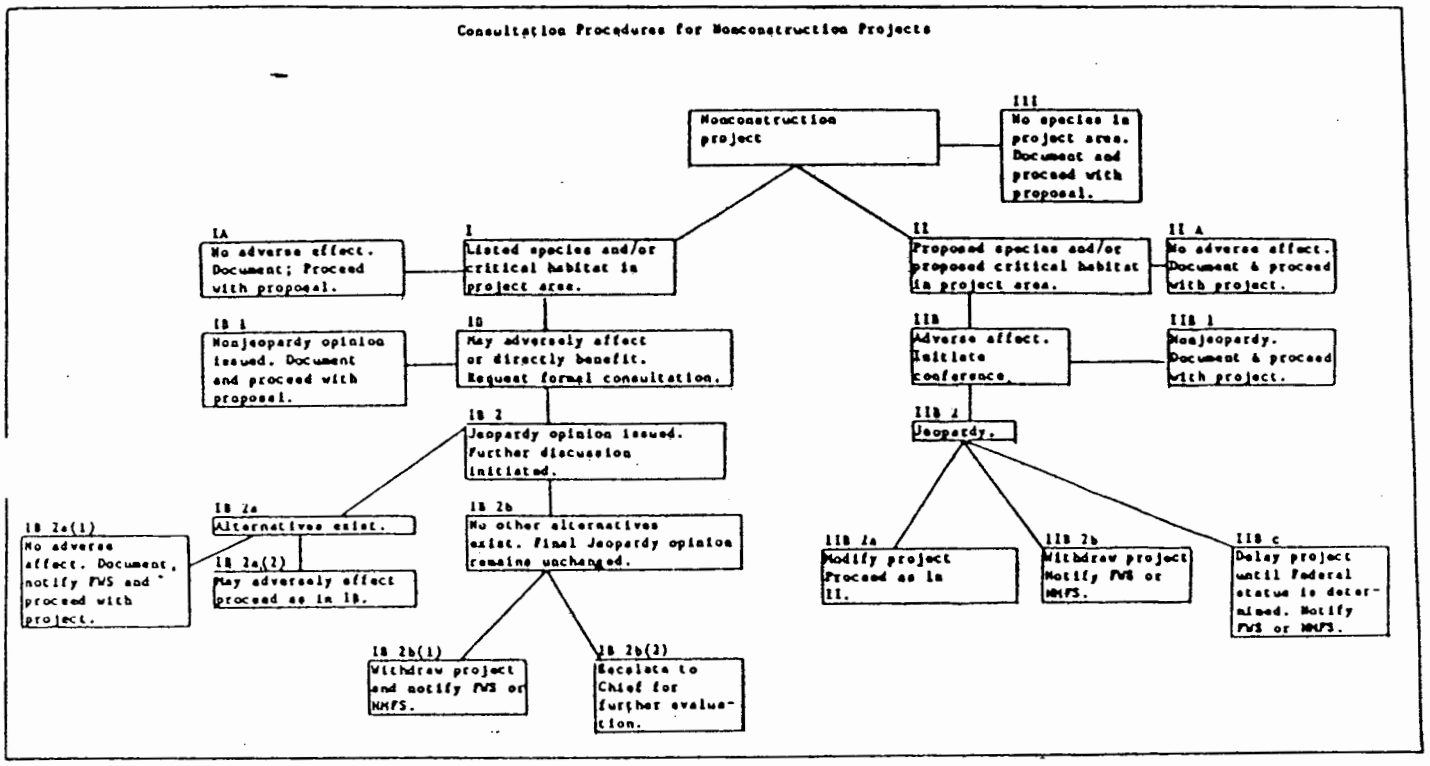
3. Whether action is "construction" or "nonconstruction project" as defined by the Endangered Species Act.

4. Extent of environmental impact.

The procedures are diagramed in exhibits 1 and 2.

TITLE 2600 - WILDLIFE, FISH AND SENSITIVE PLANT HABITAT MANAGEMENT

*-Exhibit 1



-FSH 7/84 AMEND 49-

TITLE 2600 - WILDLIFE, FISH AND SENSITIVE PLANT HABITAT MANAGEMENT

*-Exhibit 1 -- Continued

CONSULTATION PROCEDURES FOR NONCONSTRUCTION PROJECTS

Determine if the action is a nonconstruction project. A nonconstruction project is any action authorized or conducted by a Federal agency which is not designed primarily to result in the erection of human-made structures and which would not require an environmental impact statement.

1. No listed or proposed species present in project area or no adverse effect or direct beneficial effect on species

For determination IA, IIA, and III, document the findings of the biological evaluation in the decision notice when an environmental assessment has been prepared (FSM 1950). If an action is excluded categorically from preparation of an EA or EIS, document the findings in the unit files and proceed with the proposal.

2. Listed species and/or critical habitat "may be adversely affected" or benefited (IB)

When the biological evaluation concludes that the proposed action or program "may benefit or may adversely affect" listed species or critical habitat, formal consultation will be initiated. Informal consultation is not a substitute for formal consultation. However, the proposed action may be modified to avoid adverse effects, if this is done before consultation is initiated.

3. Proposed species or proposed critical habitat "may be adversely affected" (IIB)

Once the determination of "adverse effect" is made, regardless of the type of National Environmental Policy Act document, initiate "conference" with the Fish and Wildlife Service.

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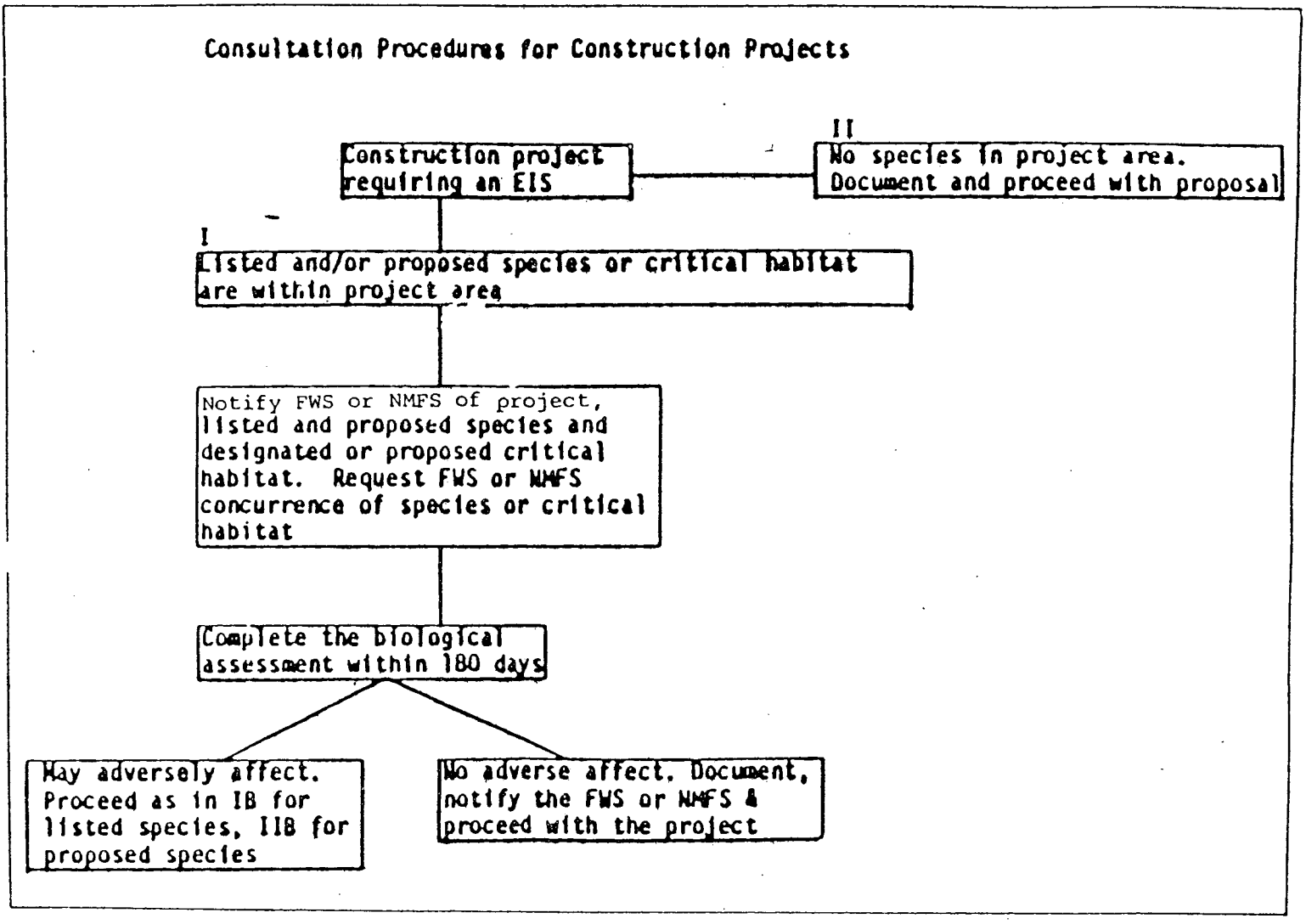
TITLE 2600 - WILDLIFE, FISH AND SENSITIVE
PLANT HABITAT MANAGEMENT

*- Exhibit 2



-FSH 7/84 AMEND 49-

TITLE 2600 - WILDLIFE, FISH AND SENSITIVE PLANT HABITAT MANAGEMENT

*- Exhibit 2 -- Continued

CONSULTATION PROCEDURES FOR CONSTRUCTION PROJECTS REQUIRING AN ENVIRONMENTAL IMPACT STATEMENT

Determine if the project is a construction project. For the purposes of endangered and threatened species management, the Fish and Wildlife Service defines a construction project as one designed to result in the erection of human-made structures, such as dams, buildings, and roads, which are major Federal actions requiring an environmental impact statement.

1. No listed or proposed species or critical habitat present in the project area

For determination II, document the findings of the biological evaluation in the record of decision or text of the environmental impact statement. Proceed with the project. Informal consultation is advised in order to ensure concurrence with the Fish and Wildlife Service (FWS) or the National Marine Fisheries Service (NMFS).

2. Listed or proposed species or critical habitat may occur in the project area

The confirmed or suspected presence of such species (1) requires a "biological assessment" regardless of the determination of the effect of the project on the species.

Forest Service units, with the concurrence of the FWS or NMFS, shall utilize the "biological evaluation" or modify it as needed to meet requirements of the biological assessment.

If the decision has been made to prepare an environmental impact statement, the preparing unit must notify the FWS or NMFS in writing, of the following:

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TITLE 2600 - WILDLIFE, FISH AND SENSITIVE
PLANT HABITAT MANAGEMENT

*-Exhibit 2 -- Continued

CONSULTATION PROCEDURES FOR CONSTRUCTION PROJECTS
REQUIRING AN ENVIRONMENTAL IMPACT STATEMENT

a. A description of the project and the proposed action.

b. Listed species or critical habitats that are known or expected in the project area.

c. Results of the biological evaluation.

If the FWS or NMFS concurs and the Forest Service determination is "no adverse affect," then document and proceed with the project.

Where the determination is "may benefit or may adversely affect," initiate formal consultation and prepare a biological assessment. Biological assessments must be completed within 180 days. The Forest Service cannot make an "irreversible or irretrievable commitment of resources" under the Endangered Species Act, until the biological opinion is rendered.

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FISH AND WILDLIFE SERVICE BIOLOGICAL OPINIONS

In May 1980, an environmental assessment for oil and gas leasing in Deep Creek and Reservoir North RARE II Further Planning Areas was published.

The biological opinion of the Fish and Wildlife Service contained four main points:

1. Leasing, with the T&E species and Controlled Activities Stipulations, will not jeopardize threatened and endangered species.

2. Currently not enough information is available, relative to subsequent oil and gas activities, or T&E species needs and use of the area, to evaluate the potential effects of subsequent oil and gas activities on T&E species.

3. Each subsequent step of the oil and gas leasing and development process will have to be analyzed and consultation reinitiated, if a "may affect" situation exists.

4. Additional surveys and data collection relative to T&E species use of the area should be initiated now, so that there is enough known about such use when future oil and gas activities are proposed.

In 1977, in response to a request for consultation on the draft of the Rocky Mountain Front Land Management Plan, the U.S. Fish and Wildlife Service issued a biological opinion that oil and gas leasing in the Two Medicine Management Unit was likely to jeopardize the continued existence of the grizzly bear and gray wolf. This biological opinion was superceded by the biological opinion for the 1981 Environmental Assessment for Oil and Gas Leasing on Nonwilderness Lands on the Lewis and Clark National Forest.

The nonwilderness leasing biological opinion contained several points:

1. Leasing for oil and gas on nonwilderness lands as prescribed under the selected alternative is not likely to jeopardize the continued existence of the listed species.

2. The biological opinion is restricted to the leasing action because insufficient information is available to provide an opinion on all subsequent activities.

3. Consultation is required for subsequent phases of oil and gas activity when the biological evaluation/assessment determines a may affect situation exists.

4. The Forest Service ability to further restrict, modify, or deny a proposal (post-leasing activity) is essential to insure that listed species will not be jeopardized.

5. The leasing process does not take a positive approach for the conservation of listed species. Leasing of areas known to be extremely important to listed species, with little or no information on key habitat components and use patterns, is setting the stage for possible future conflicts between energy development and the conservation of endangered and threatened species.

6. Additional data on T&E species should be collected prior to receipt of specific applications for activities of subsequent phases of oil and gas.

7. The desired effects of the stipulations will be only as good as the degree to which they are adhered to and enforced, and the biological opinion is based on the assumption that the stipulations can be legally applied, enforced, and adhered to.

In 1982, an environmental assessment was completed that addressed geophysical exploration on nonwilderness lands on the Lewis and Clark National Forest. The selected alternative provided for a programmatic approach which results in issuing prospecting permits for geophysical exploration (seismic) following established guidelines without individual environmental assessments. The biological evaluation determined that use of the guidelines and applicable permit stipulations, combined with effective administration would result in no effect to listed species. Through informal consultation, the Fish and Wildlife Service agreed that if the procedure and permit stipulations are applied and enforced, the seismic activity should be compatible with listed species, but deviation or exemptions from the guidelines and permit stipulations would result in a may affect situation and formal consultation would be required. These guidelines are the basis for Forest-Wide standard C-2 in the Forest Plan. In January 1985 the U.S. Fish and Wildlife Service requested formal consultation on the 1985 seismic exploration program.

Following information consultation on the Hall Creek proposal, the U.S. Fish and Wildlife Service issued a jeopardy biological opinion in 1984.

The FWS specifically identified the following concerns that led to the "jeopardy" opinion.

1. The inability based on the data presented in the review copy of the EA and Biological Evaluation to assess the reasonable likelihood that the entire project will comply with Section 7(a)(2).

2. The inability to assess the effects of potential production from the Hall Creek well or possible field development to determine if any irreversible or irretrievable commitment of resources would occur.

3. The lack of clear direction and requirements for analyzing future uses of the project road, including exercise of rights granted to the Blackfeet in Treaties and Agreements with the United States.

Specific points that resulted from discussion among American Petrofina, the Forest Service, the Fish and Wildlife Service, and the Bureau of Land Management, and agreed to by all involved included:

1. Additional access alternatives must be designed to avoid important grizzly bear habitat components and use vegetative screening to aid in reducing the effects of road use.

2. To assess the possible effects of production and further development should a discovery occur, American Petrofina agreed to supply a plan of operations for its Hall Creek prospect.

3. The effects of mortality risk included in the cumulative effects model obscure the effects of existing and proposed activities on habitat effectiveness. To provide a more accurate assessment of habitat effectiveness and to identify the effects of mortality risk, the cumulative effects model must be revised.

4. To address mortality risk and effects of illegal mortality, the FWS, FS, and other involved agencies agreed to meet and formally discuss needs for cooperative, interagency law enforcement. This program will be aimed at reducing illegal mortality using covert, overt, and information methods.

5. Forest Service authorities to close roads must be presented in a concise document.

It was further agreed that these requirements would be incorporated into the environmental analysis and documentation (EA and Biological Evaluation).

A revised analysis and environmental assessment were forwarded to the FWS. The FWS issued an Amendment to their June 26, 1984 Biological Opinion on January 14, 1985. This amendment, based on the revised analysis and Biological Evaluation, concluded that the project's impact on the numbers, reproduction, and distribution of the grizzly bear and gray wolf should not be at a level that is likely to jeopardize these species. This opinion was predicated on (1) the Forest Service's legal authority to close roads and enforce road management restrictions and (2) the implementation of an active law enforcement program.

RECOVERY PLANS

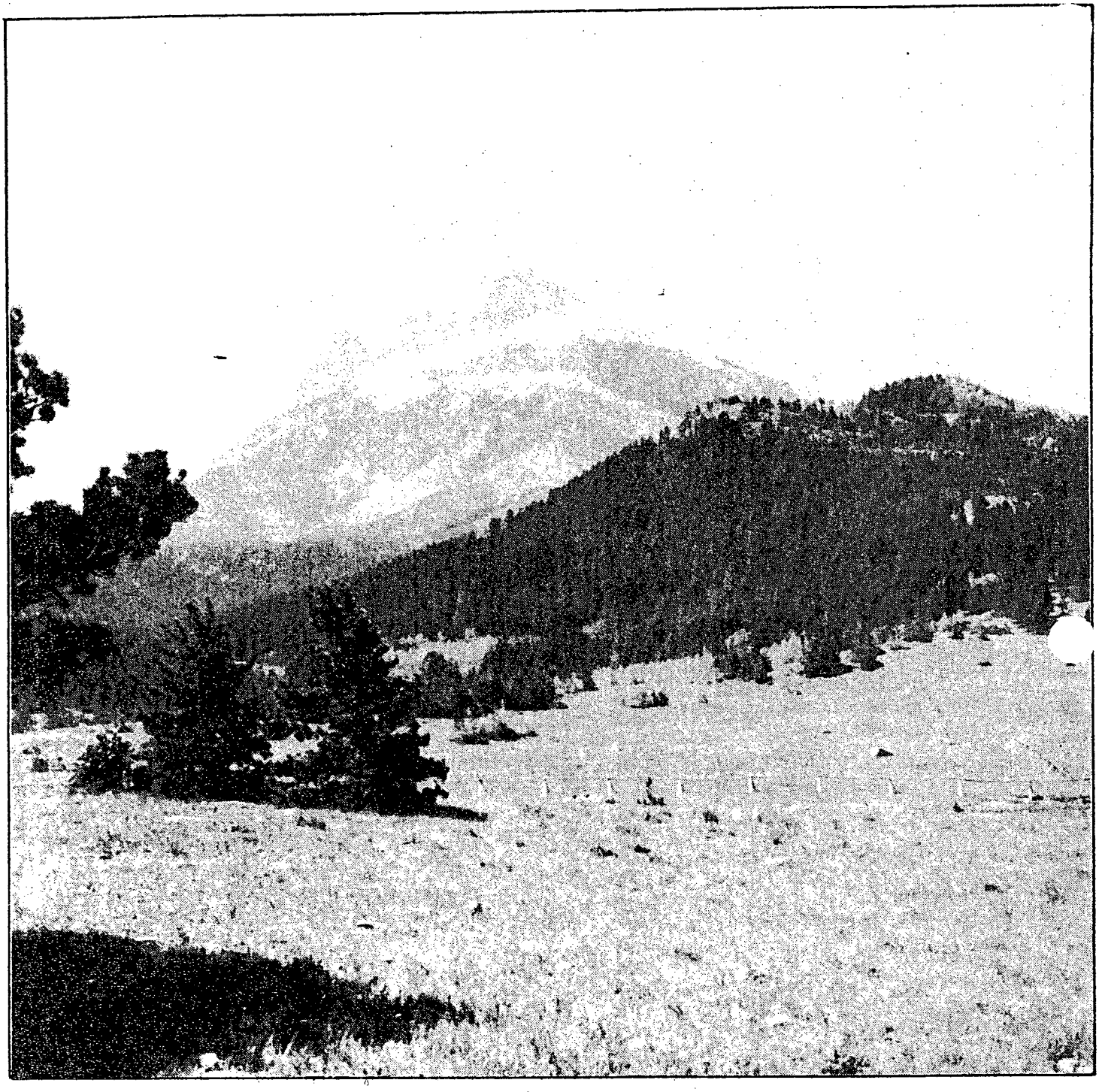
Recovery plans outline the actions necessary to maintain existing populations and enhance or re-establish populations that would eventually allow the removal from the T&E species list. Recovery plans are prepared by a team appointed by the Fish and Wildlife Service and approved by the director. Of the four listed T&E species on the Lewis and Clark National Forest, recovery plans have been prepared for three species; one plan is in the draft stage.

The American Peregrine Falcon Recovery Plan for Rocky Mountain and Southwest populations, the Northern Rocky Mountain Wolf Recovery Plan, and Grizzly Bear Recovery Plan were published in 1977, 1980, and 1982, respectively. A recovery plan for the Pacific States Bald Eagle population (which includes Montana) was undergoing final Agency review in May 1985.

SPECIAL STUDIES

Greater Yellowstone Guidelines in 1979, Grand Teton and Yellowstone National Parks and five adjacent national forests published an interagency effort titled "Guidelines for Management Involving Grizzly Bears in the Greater Yellowstone Area." The occupied grizzly bear habitat (all of the Rocky Mountain Division) has been stratified according to these guidelines. Appendix K describes this stratification. Forest management on occupied grizzly bear habitat will comply with this management direction.

Interagency Grizzly Bear Guidelines for the Rocky Mountain Front, the Interagency Wildlife Monitoring/Evaluation Program has prepared a set of grizzly bear management guidelines based on data gathered thus far. These guidelines are in Appendix K.



Scenic view of the Forest.

LEWIS AND CLARK NATIONAL FOREST

Appendix K

Grizzly Bear Stratification

APPENDIX K

GRIZZLY BEAR STRATIFICATION

The Lewis and Clark National Forest has stratified occupied grizzly bear habitat (all of the Rocky Mountain Division) according to "The Guidelines For Management Involving Grizzly Bears in The Greater Yellowstone Ecosystem," (USFS, 1979).

The Yellowstone Guideline identifies three management situations which are applicable to the Rocky Mountain Division. These management situations and acres are as follows:

A. Management Situation 1 - 763,889 Acres (Remainder of the Division)

1. Population and habitat conditions The area contains grizzly population centers (areas key to the survival of grizzlies where seasonal or year-long grizzly activity, under natural, free-ranging conditions is common) and habitat components needed for the survival and recovery of the species or a segment of its population. The probability is very great that major Federal activities or programs may affect (have direct or indirect relationships to the conservation and recovery of) the grizzly.

2. Management direction Grizzly habitat maintenance and improvement (improvement applies to Forest Service only), and grizzly-human conflict minimization will receive the highest management priority (FSM 2603). Management decisions will favor the needs of the grizzly bear when grizzly habitat and other land use values compete. Land uses which can affect grizzlies and/or their habitat will be made compatible with grizzly needs or such uses will be disallowed or eliminated. Grizzly-human conflicts will be resolved in favor of grizzlies unless the bear involved is determined to be a nuisance. Nuisance bears may be controlled through either relocation or removal but only if such control would result in a more natural free-ranging grizzly population and all reasonable measures have been taken to protect the bear and/or its habitat (including area closures and/or activity curtailments).

3. Management standards All of the general and species specific (grizzly bear) management guidelines included in the Interagency Rocky Mountain Front Wildlife Monitoring/Evaluation Program (Appendix I) will apply as appropriate to existing and proposed human activities in Management Situation 1 areas. In addition, Forest-Wide Management Standards (2-24 to 2-73) which apply specifically to grizzly bear or T&E species will be applicable in Management Situation 1 as appropriate.

B. Management Situation 2 - 4,070 Acres (Buffalo Lake, Summit-Flattop)

1. Population and habitat conditions The area lacks distinct grizzly population centers; highly suitable habitat does not generally occur, although some grizzly habitat components exist and grizzlies may be present occasionally. The definition, management situation 2 areas are those considered unnecessary for species survival and recovery, although the status of such areas is subject to review and change according to demonstrated grizzly populations and habitat needs. The effects of major Federal activities or programs on the conservation and recovery of the species are not generally predictable.

2. Management direction The grizzly bear is an important but not the primary use on the area. Habitat maintenance and improvement, and grizzly-human conflict minimization may be, in some cases, important, but not the most important management considerations. Demonstrated grizzly populations and/or grizzly habitat use will be accomodated in other land use activities if feasible, but not to the extent of exclusion of other use needs. A feasible accomodation is one which is compatible with (does not make unobtainable) the major goals and/or objectives of other uses. When grizzly population and/or grizzly habitat use and other land use needs are mutually exclusive, the other land use needs will prevail in management considerations. If grizzly population and/or habitat use represents demonstrated needs that are so great (necessary to the normal needs of survival of the species or a segment of its population) that they should prevail in management considerations, then the area should be reclassified under Management Situation 1. Nuisance grizzlies will be controlled.

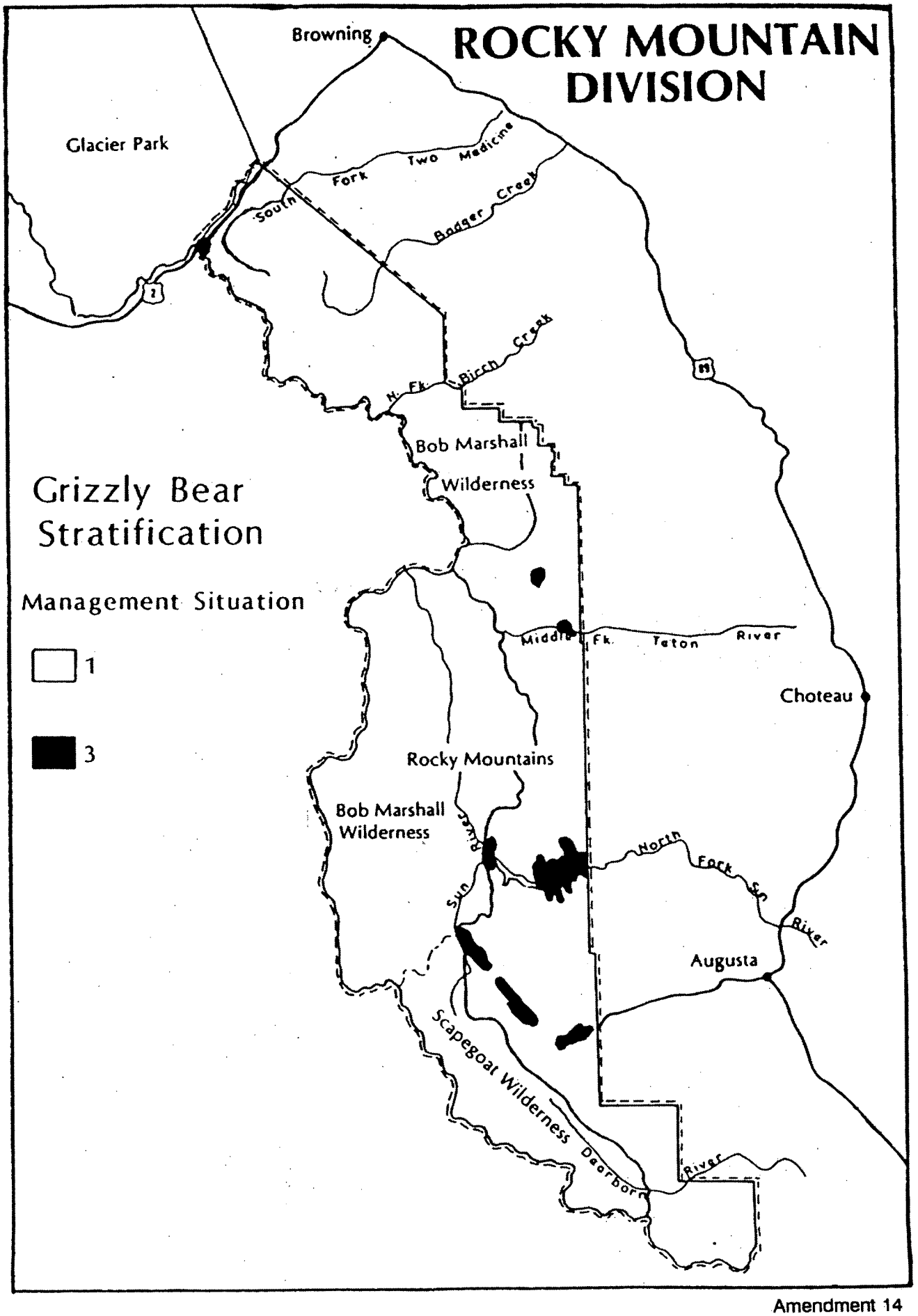
3. Management standards All of the management guidelines and standards which are applicable to Management Situation 1 will be applied to the extent they are compatible with other resource uses emphasized in the area. Management guidelines or standards will not be applied if they individually or in combination would exclude the accomplishment of primary resource management objectives in Management Situation 2 areas.

C. Management Situation 3 - 8,300 Acres (Summit Campground, North Fork Teton, Klicks Upper Camp, Lower Sun Canyon, Benchmark Ford Creek, Wood Lake, a West-Fork Teton)

1. Population and habitat conditions Grizzly presence is possible but infrequent. Developments, such as campgrounds, resorts or other high human use associated facilities, and human presence result in conditions which make grizzly presence untenable for humans and/or grizzlies. There is a high probability that major Federal activities or programs may affect the species' conservation and recovery.

2. Management direction Grizzly habitat maintenance and improvement are not management considerations. Grizzly-human conflict minimization is a high priority management consideration. Grizzly bear presence and factors contributing to their presence will be actively discouraged. Any grizzly involved in a grizzly-human conflict will be controlled. Any grizzly frequenting an area will be controlled.

3. Management standards Management guidelines and standards which are designed to protect, maintain or enhance grizzly bear habitat will not be applicable in Management Situation 3. The avoidance of grizzly bear-human interactions is a primary management objective in these areas. Management guidelines or standards aimed at the elimination of grizzly bear attractants or the avoidance of grizzly-human conflicts are applicable in Management Situation 3.



Amendment 14

LEWIS AND CLARK NATIONAL FOREST PLAN

Appendix L

Wildlife Habitat Activity Coordination Analysis Process

APPENDIX L

WILDLIFE HABITAT ACTIVITY COORDINATION ANALYSIS PROCESS

The diverse population of high-value wildlife species dependent on habitat along the Rocky Mountain Front requires that special consideration be given to coordination of wildlife needs with other resource uses. This has become particulary important with interest in oil and gas development along the Front in an area which overlaps habitat needed for recovery of the threatened grizzly bear and which overlaps important habitat for populations of deer, elk, bighorn sheep, mountain goats, and many other species. Because of the complexity of coordinating the needs of all these species with management activities during different seasons of the year, a rather sophisticated analysis process is required.

Therefore, an analysis process is being developed which has been termed "Activity Coordination Analysis". This analysis process utilizes computer technology to overlay and compare maps of suitability for different management activities with habitat maps of various wildlife species to define suitable operating areas and suitable timing windows for management activities under consideration. The computer overlay and comparison process uses GIS (Geographical Information System) technology to make the necessary comparisons.

Using GIS technology allows the manager to digitize any type of information that can be mapped and enter it into the computer as an overlay. The computer can then combine various overlays to produce a map of the information desired. For example, it could combine overlays of mapped seasonal restrictions for a particular wildlife species with maps of terrain suitability for a particular activity. The computer could then produce a map showing the area which has terrain suitable for the activity that does not conflict with the area seasonally restricted for wildlife. Using GIS technology it is possible to combine large numbers of overlays for a wide range of wildlife species and compare them to terrain suitability for various types of activities.

Activity Coordination Analysis is the process the Forest Service and other land management agencies along the Front will use as a basis for management decisions relating proposed management activities to wildlife needs. A GIS System is being developed with at least the following layers (or overlays) to use as a basis for the analysis.

(1) Land ownership boundaries and administrative boundaries.
(2) Maps of oil and gas leases.
(3) Maps of lease stipulation restrictions (for example, no surface occupancy areas).
(4) Maps of existing management features and activities (roads, outfitter camps, trail, range allotments, timber sales, etc.).
(5) A digital terrain model which enables predictive determinations based on slope, elevation, and aspect (for example, the model could produce a map of all areas with slopes less than 60 percent which might show potentially suitable areas for road building).

(6) Maps of existing seasonal restrictions for various activities which are defined in the Interagency Wildlife Guidelines.
(7) Maps of grizzly habitat components and BEU (bear evaulation units).
(8) Map of grizzly protein sources.
(9) Map of landtypes on the Lewis and Clark National Forest.
(10) Other layers as needed.

The Forest Service will use Activity Coordination Analysis to implement the Forest Plan. Basically the analysis will assemble pertinent management direction from the Forest Plan and will assemble the information from other implementation documents such as the Interagency Wildlife Guidelines in mapping overlays. The manager can then use GIS technology to compare these overlays and provide information for decisions. The computer will provide the capability to compare various schedules for management actions and to define the schedule which best implements the Final Plan direction. In a sense the computer will take physical requirements for a particular management activity and compare them to the guidelines for wildlife habitat management at the time of year being proposed. The computer will then generate a map showing the suitable areas for that activity that comply with the wildlife guidelines for that season of the year. Different activities can be added or subtracted and different locations/times of the year can be compared to define the effects of various schedules.

For most wildlife species the computer analysis will be complete once the physical suitability for the activity is compared to the Interagency Wildlife Guidelines and similar direction. However, in the case of the threatened grizzly bear, a more sophisticated process will be used. In order to effectively meet goals to recover the grizzly bear population in the Northern Continental Divide Grizzly Bear Ecosystem and to meet the needs for formal consultation with U.S. Fish and Wildlife Service, the analysis will be carried further using a computer model to predict the cumulative effects of management activities on the grizzly bear. This cumulative effects analysis will be completed on a BEU basis. Each of the six BEU's on the Forest are considered to contain a distinct sub-populations of grizzly bears (at least distinct enough for analysis purposes).

This Cumulative Effects Model will draw certain information from the GIS and use that information to make calculations concerning the cumulative effects of management activities on the grizzly bear. The Cumulative Effects Model really is composed of three submodels which combine to produce the final output. These submodels are: (1) the habitat submodel, (2) the displacement submodel, and (3) the mortality submodel. These are discussed more fully below but the discussion presented is a summary. The actual models are much more involved than presented here.

The habitat submodel is based on a map of grizzly bear habitat components generated either by field mapping, mapping on aerial photographs, or digital maps prepared from LANDSAT imagry or other sources. An interagency team of wildlife biologists has defined the habitat components and the mapping is now underway. Each habitat component was assigned a coefficient between 0 and 1 by the interagency wildlife team. This rating defines the usefulness of the com-

ponent as both food and cover (a separate rating for food and cover). Each component was given a food and a cover rating for the spring, summer, and fall season of use by grizzly bears. Some adjustments were then made in the ratings to account for the increased habitat value which occurs when good cover is immediately adjacent to a good food source.

Further adjustments were made in food ratings where the particular habitat component coincides with good bear protein sources (such as deer and elk winter ranges where carrion is a protein source in the spring). The output of the habitat submodel is a quantitative rating of the BEU in terms of bear habitat quality.

The displacement submodel quantifies the effects of displacement associated with human uses or activities on the grizzly bear's ability to use a specific habitat. Interaction of the displacement submodel with the habitat submodel results in an index of habitat effectiveness.

To develop the displacement submodel, human activities and uses which occur along the Rocky Mountain Front were stratified into groups having similar displacement potentials. Fourteen activity groups were identified using the following criteria as applicable:

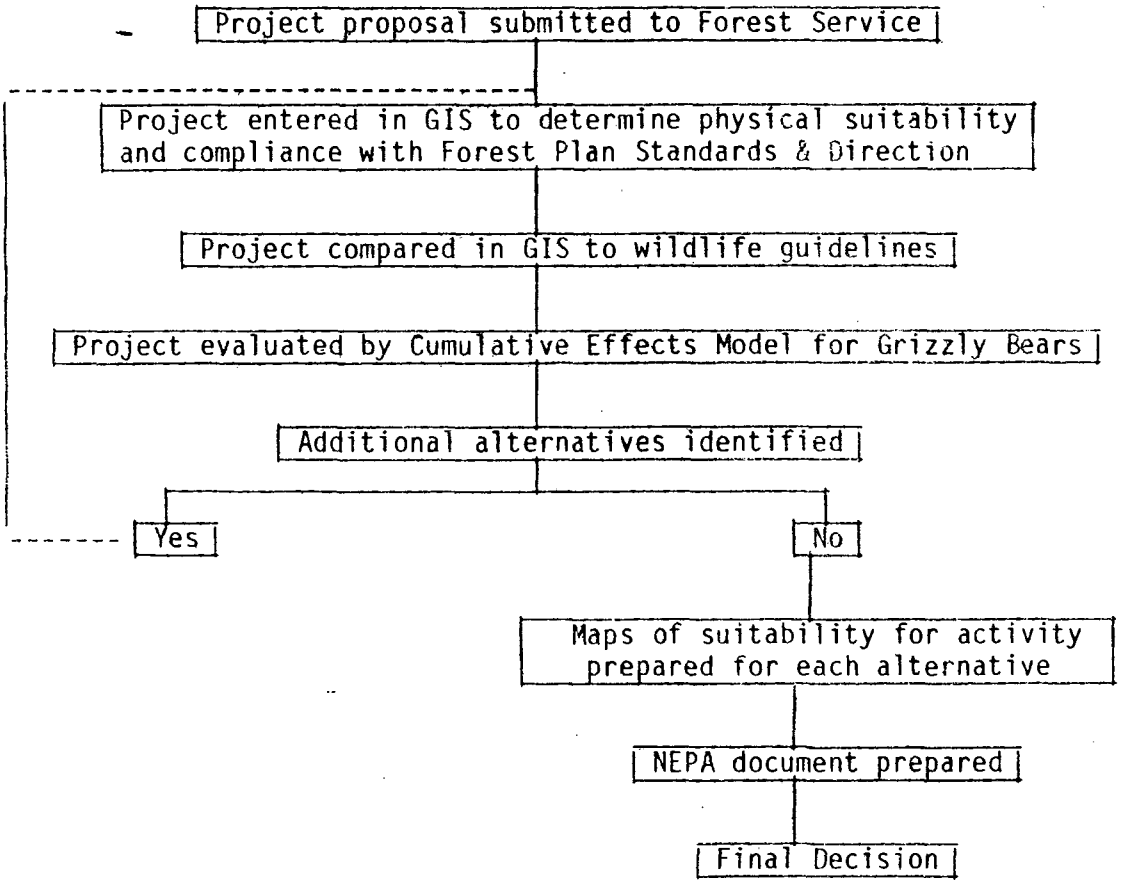
(1) Type of activity (motorized, non-motorized, or explosive)
(2) Nature of activity (linear, point, or dispersed)
(3) Length of activity (diurnal or 24 hour)
(4) Displacement intensity (high or low).

Each activity group was then assigned by the interagency biologist team a zone of influence (either a given distance or the distance to an intervening ridgeline whichever came first). Displacement coefficients (0-1) were also assigned to each of the activities. A rating of 0 meant that bears would not be displaced, while a rating of 1 meant that none of the zone of influence would be available for bears.

The results of the displacement submodel and the habitat submodel are then merged to develop an index of habitat effectiveness. These changes in habitat effectiveness can be used to display the effects of various management activities or to display changes in effects resulting from changing the timing of an activity (spring habitat effectiveness might increase by scheduling the activity during the summer for example).

The third submodel quantifies the risk of mortality associated with human activities in bear habitat. Three broad stratifications were used to describe human activities and associated risks of mortality. These are point, linear and dispersed categories similar to those in the displacement submodel. These were then further characterized by the type of use (for example: Attractant - no regulations). Each was then assigned a coefficient of 0-1 with 1 having the highest risk of mortality. This coefficient was then modified by the amount of cover in the area (more cover reduces the risk of mortality). This can then be merged with the other two submodels to provide an overall rating of the cumulative effects on grizzly bears.

The results of the Activity Coordination Analysis (including the cumulative effects analysis for grizzly bears) will be used as information to display the effects of alternatives in the NEPA process. Therefore, for any proposed management activity on the Front, this analysis will be done and the information will be used to prepare the necessary NEPA document. The NEPA document will be the decision document. Activity Coordination Analysis merely provides an analysis process for displaying the effects of various management practices on the unique wildlife resources on the Front. That information will become part of the NEPA process for the proposed activity and will be used as a basis for management decision. The overall process could be summarized are follows:



It should be noted that the discussion above relates to use of the information by the Forest Service. However, the Activity Coordination Analysis for BEU (including the Cumulative Effects Process) involves all landownerships in each BEU. Therefore, the analysis process is being developed as an interagency effort and hopefully will apply on all ownerships along the Front. A detailed writeup of the Activity Coordination Analysis Process and the Cumulative Effects Process is available at the Supervisor's Office in Great Falls.

LEWIS AND CLARK NATIONAL FOREST PLAN

Appendix M

5 Year Wildlife Habitat Improvement Program

WILDLIFE AND FISHERIES HABITAT MANAGEMENT PROGRAM

LEWIS AND CLARK NATIONAL FOREST

The recurrent wildlife and fisheries habitat management program on the Lewis and Clark National Forest is divided into three broad areas; (1) Habitat surveys, inventories, and monitoring, (2) Coordination with other resource activities and uses, and (3) Direct wildlife and fish habitat improvement projects. Each of these sub-programs requires effective, on-going cooperation between the Forest Service and Montana Department of Fish, Wildlife, and Parks due to the joint responsibilities for wildlife management shared by the two agencies on Forest lands. The involvement of other Federal and State Agencies and public organizations is also necessary for various portions of the Forest habitat management program. A brief description of the major activities involved with the broad program areas follows.

Wildlife/Fish Habitat Surveys, Inventories, and Monitoring

A major wildlife habitat inventory and monitoring program has been in progress on the Rocky Mountain District of the Forest since 1980. This cooperative effort is known as the Rocky Mountain Front Interagency Wildlife Monitoring/Evaluation Program, and involves the Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service, and Montana Department of Fish, Wildlife, and Parks. Study segments have been completed or are in progress on several wildlife species including mule deer, bighorn sheep, elk, mountain goat, raptors, black bear, and grizzly bear. Some phases of this program will continue for several more years. The study findings completed to date are the basis for a set of general and species specific management guidelines which have been adopted by the cooperating agencies (Appendix I).

With the implementation of the Forest Plan, monitoring of management indicator species of wildlife and fish will assume increased emphasis. This will involve annual field surveys of selected raptor nesting sites as well as recurrent inventories of habitat quantity and quality for cavity-dependent species. The summarization and evaluation of data presented in annual progress reports prepared by the Montana Department of Fish, Wildlife, and Parks will be the primary means of monitoring population trends of major big-game, small-game and furbearer species.

Special species habitat management surveys and inventories will continue to be undertaken as a result of Regional or Washington Office requests, cooperative interagency survey efforts, and to meet specific resource coordination needs. Recent examples of such surveys or inventories include winter boreal owl surveys, annual mid-winter bald eagle surveys, inventories of bald eagle and other raptor nesting territories, and the Northwest River Study inventories.

Coordination With Other Resource Activities

The coordination of wildlife and fish habitat requirements with other resource activities and uses (existing and proposed) is an important portion of the overall Forest wildlife habitat management program. Wildlife biologists accomplish the resource coordination effort through program and project level support

during planning for timber sales, oil and gas exploration activities, range allotment management plans, watershed rehabilitation projects, range improvement programs, dispersed recreational uses, and other resource management activities.

Wildlife and fish habitat coordination with the timber management program, primarily proposed timber sales, is a major support activity on the Forest. Wildlife biologists participate in pre-sale work as Interdisciplinary Team members through meetings and written habitat evaluations which are included in the environmental analysis. Management recommendations and procedures developed through the Montana Cooperative Elk-Logging Study are used to evaluate elk habitat effectiveness and important elk seasonal use areas. Road management controls including seasonal vehicle closures, class of vehicle restrictions, etc., are the primary means of mitigating reductions in habitat effectiveness. Management area practices set objectives for open road densities according to resource emphasis. In addition, Forest-wide management standards provide objectives for old-growth forest management and direction for the maintenance of wildlife trees for cavity-dependent species. Fisheries biologists are also involved on those proposed sales which may affect stream fish habitat. See Appendix A for a summary of the 10-year timber sale program.

Oil and gas exploration has been a major resource activity on the Rocky Mountain Front portion of the Forest in recent years. A cumulative effect modelling process is currently being developed to evaluate grizzly bear seasonal habitat values in relation to proposed oil and gas exploration activities (Appendix L) Grizzly bear habitat component mapping is now in progress and will provide the vegetation map for use in the model. The evaluation of habitat for other wildlife and fish species will generally be accomplished using similar procedures to those described for the timber program.

Direct Wildlife and Fish Habitat Improvement Projects

A five-year direct habitat improvement program has been developed for wildlife, fish, and T&E species. A summary of this program by type of project is found on the last page of this appendix.

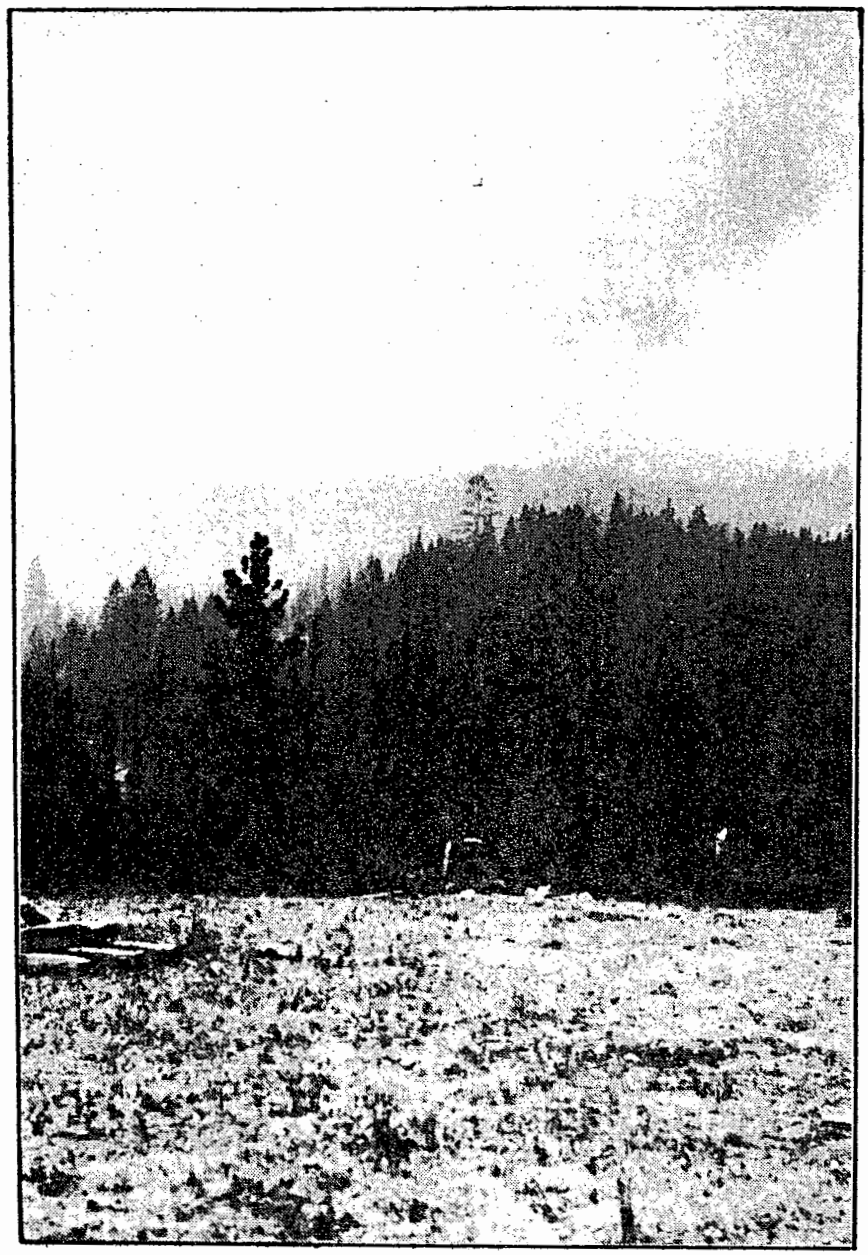
Based on past experience with wildlife habitat improvement work on the Forest, the most economical and effective type of program for big-game habitat management is the use of prescribed fire on important seasonal ranges. The primary long-term benefit from prescribed burning is the creation and/or maintenance of early successional stages of vegetation which provide important big-game forage areas, especially on winter ranges. Prescribed burning is also felt to be beneficial in the management of important spring ranges for the threatened grizzly bear.

The best opportunity for fish habitat improvement on the Forest is the installation of stream channel structures to provide pools and resting areas for trout. The type of structures used in various situations include log dams, gabion deflectors, and the placement of large boulders or rock clusters in the channel. The planting of willows or other vegetation for channel stabilization and the fencing of sensitive stream habitat areas are other types of fisheries improvment work planned on the Forest.

5-YEAR WILDLIFE HABITAT IMPROVEMENT PROGRAM SUMMARY
LEWIS AND CLARK NATIONAL FOREST

Project Type	District	FY86 M$	FY86 Ac	FY87 M$	FY87 Ac	FY88 M$	FY88 Ac	FY89 M$	FY89 Ac	FY90 M$	FY90 Ac
606 Seeding	D-4				2						
	D-6	.7	20	.7	20	.7	20	.7	20	.7	20
	Forest	.7	20	.7	22	.7	20	.7	20	.7	20
607 Presc. Fire	D-1	1.5	100	1.5	100	1.5	100	1.5	100	1.5	100
	D-4	3.5	330	3.0	280	3.0	280	3.5	280	3.5	280
	D-6	2.5	250	2.5	200	2.5	200	2.5	200	3.0	200
	D-7			1.5	100	1.5	100	1.5	100	1.5	100
	Forest	7.5	680	8.5	680	8.5	680	9.0	680	9.5	680
620 W. Dev.	D-4	1.5	1*								
	D-6	1.0	6*	6.5	10*	4.5	8*	5.0	9*	5.0	9*
	Forest	2.5	7*	6.5	10*	4.5	8*	5.0	9*	5.0	9*
622 Fence	D-4					1.0	2*	.5	1*	.5	1*
	D-6	2.0	3*								
	Forest	2.0	3*			1.0	2*	.5	1*	.5	1*
612 Fish Cont.	D-4					1.0	5	1.0	5	1.0	5
	D-6	1.0	5	1.0	5						
	Forest	1.0	5	1.0	5	1.0	5	1.0	5	1.0	5
625 Fish Cover	D-1	2.0	15*	2.0	15*	2.0	15*	2.0	15*	2.5	15*
	D-6	1.0	10*	1.0	10*	1.5	10*	1.5	10*	1.5	10*
	Forest	3.0	25*	3.0	25*	3.5	25*	3.5	25*	4.0	25*

*Structures



Hannah Gulch 1919

LEWIS AND CLARK NATIONAL FOREST PLAN

Appendix N

Existing Visual Condition

APPENDIX N

EXISTING VISUAL CONDITION

EVC (Existing Visual Condition) is the visual change from the natural landscape, which is measured in degrees of deviation from the natural appearing landscape. To estimate the environmental effects of implementing alternatives, the landscapes predicted future visual condition is compared to the existing visual situation. Therefore, the existing visual condition inventory is the baseline for comparisons and serves as a historical record of the physical alteration. It may be used as part of the Recreation Opportunity Inventory to the delineate the "Evidence of Man." The inventory will also serve as a rough guide in identifying areas where visual resource improvement activities may be desirable.

The following are the premises upon which the inventory is made:

a. Measurements will be judged as to the degree of alteration from a desired visual goal of "natural appearing" landscape, since research indicates that this is the public's expected image of the National Forest lands.

b. Measurements must be capable of direct comparison with the predicted future visual condition that would result from implementation of alternatives.

c. It is a three dimensional physical inventory primarily developed from aerial photographs. It will measure the physical size and location of the alteration by degrees or amounts of change.

d. The existing visual condition will not establish priorities for rehabilitation. It only indicates what alterations are present.

e. Existing visual condition has no relationship to numbers of viewers nor their degree of sensitivity to visual alterations.

f. Existing visual condition is independent of variety classes and sensitivity levels or specific observer positions.

g. The inventory should be updated whenever the Forest Land Management Plan is updated.

EXISTING VISUAL CONDITION CLASSES

Existing visual condition classes are described below. Land is inventoried from a physical, aerial viewpoint rather than from the ground.

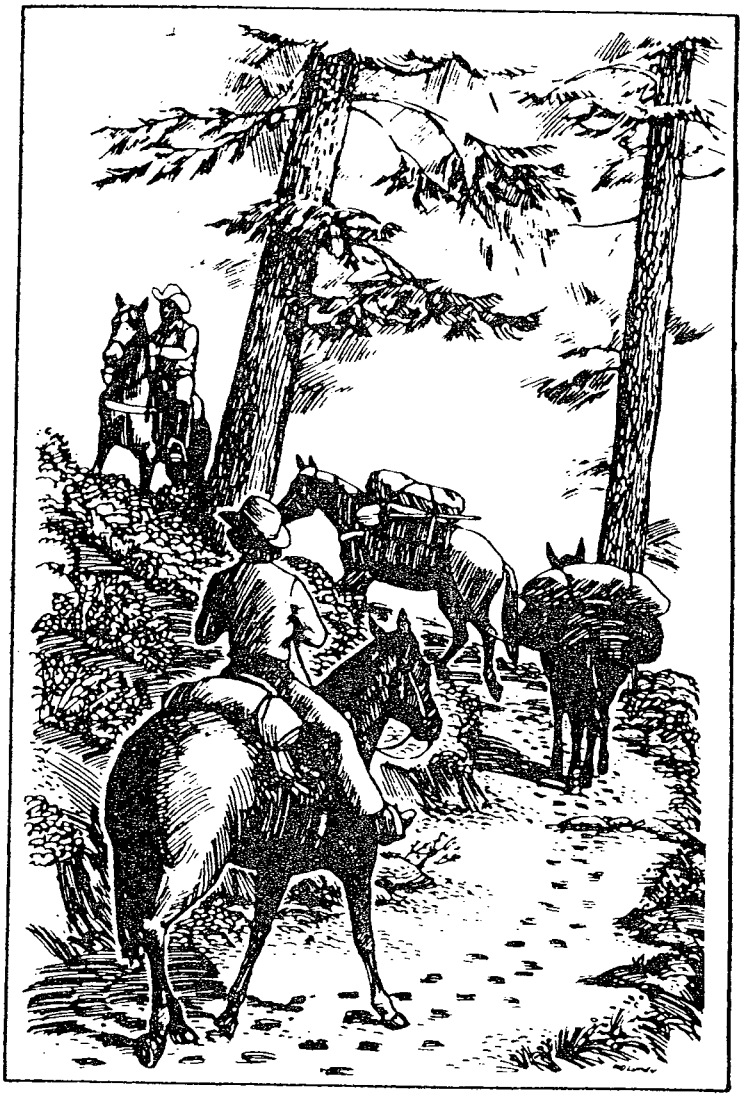
CLASS		DEFINITION
EVC 1	Untouched:	Areas of ± 5000 acres in which only ecological changes have taken place, except for low impact rails and fences.

EVC 2 Unnoticed:	Changes in the landscape are not visually evident to the average person unless pointed out. This also includes low visual impact 2-track trails and roads that may or may not be visible on most aerial photo's.
EVC 3 Minor Disturbance:	Changes in the landscape are noticed by the average person, but they do not attract attention. The natural appearance of the landscape still remains dominant. This includes developed pastures and roads and fields not associated with farmsteads.
EVC 4 Disturbed:	Changes in the landscape are easily noticed by the average person and may attract attention. This includes cropland or highly developed hayfields (structural irrigation and canals). Well-designed oil fields are almost always included, as their size and influence over the landscape is not entirely mitigatable. The natural appearance of the landscape is definitely impacted in fields with well spacing at 160 acres or less.
EVC 5 Major Disturbance:	Changes in the landscape are strong and would be obvious to anyone. These changes stand out as a dominating impression of the landscape. Oil fields that are not designed or have no mitigating measures, as well as other activities that have major landscape impacts, are included.
EVC 6 Drastic Disturbance:	Changes in the landscape are in glaring contrast to the natural appearance. Almost anyone would be displeased with the effect and agree that rehabilitation is required.

LEWIS AND CLARK NATIONAL FOREST PLAN

Appendix O

Road and Trail Management

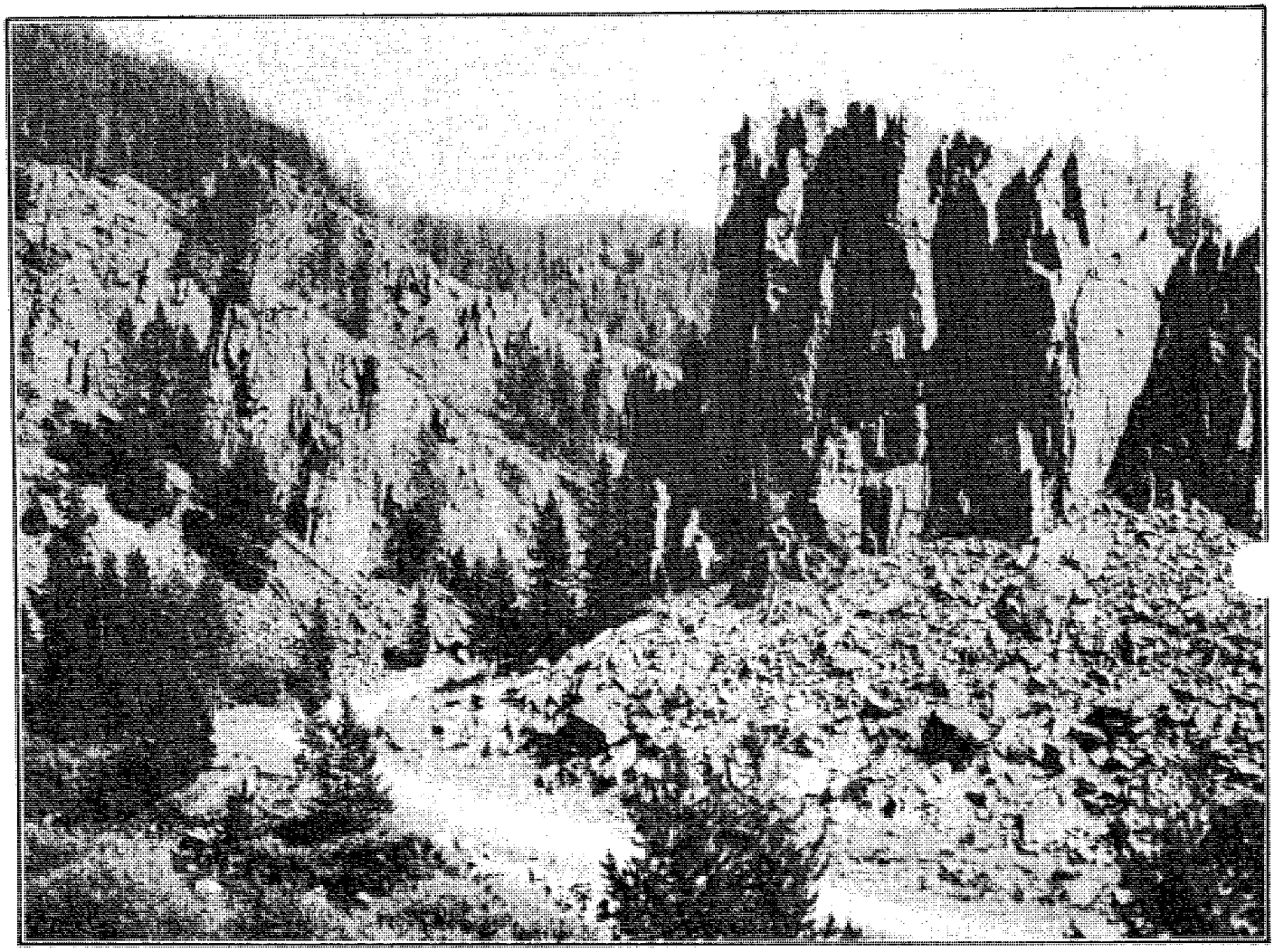


APPENDIX O — ROAD AND TRAIL MANAGEMENT

1	2	PUBLIC ACCESS				TRAIL MANAGEMENT			
		d	c	b	a	a	b	c	d
MGMT AREA	PRIMARY RESOURCE OBJECTIVE	MIN Existing	LOW 0.5 to 1.5 miles	MODERATE 1.5 to 3.0 miles	HIGH	OPEN	RESTRICTED (Seasonal)	WILDERNESS	CLOSED (Year-Round)
A	Visual/ Timber			X			X		
B	Timber/ Range			X			X		
C	Wildlife/ Timber		X				X		
D	Range		X			X			
E	Range/ Wildlife		X				X		
F	Semi-Prim. Recreation	X					Jefferson Div X		Rocky Mtn. Div** X
G	Custodial Management	X					X		
H	Developed Recreation				X		X		
I	Wildlife		X				X		
J	Municipal Watersheds								X
K	Experimental Forest	X					X		
L	Locatable Minerals				X	X			
M	Research Natural Area						X		
N	Wilderness Study	X					X		
O	Timber/Range Rocky Mt. Division	X					X		
P	Wilderness							X	
Q	Recommended Wilderness						X		
R	Riparian	*	*	*	*	*	*	*	*

* The Riparian Management Area will be managed to be compatible with adjacent road and trail management.

** Except designated routes.

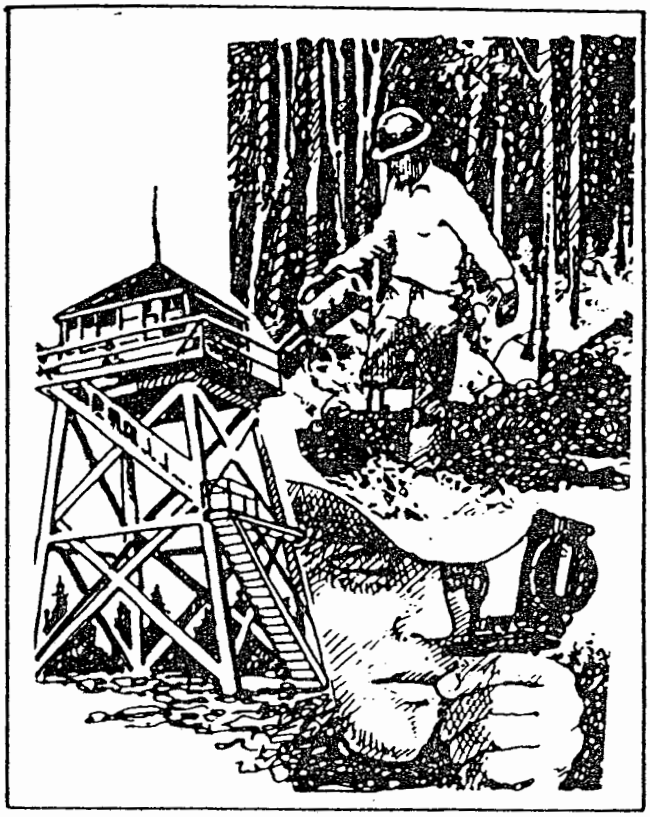


Road on Kings Hill Above Niehart.

LEWIS AND CLARK NATIONAL FOREST PLAN

Appendix P

Fire Management



FIRE MANAGEMENT

I. FIRE MANAGEMENT DIRECTION

Each National Forest will provide for resource protection from fire and the use of fire, where appropriate, to protect, maintain, and enhance the resources and to attain land management goals and objectives.

The Fire Management Program is a support function integrated with and responsive to the land and resource management direction established in the Forest Plan.

The following summary of the Forest Plan's fire management direction will guide the Level III Fire Management Analysis and Preparation of the Fire Management Action Plan. The Level III analysis is used to identify specific elements of the fire management program as they will be proposed and implemented through the annual program planning and budgeting systems. The Fire Management Action Plan establishes and documents the fire program which most cost efficiently meets the fire management direction established in this Forest Plan.

All Forest resources are affected by fire; therefore, all managers must carefully consider these basic concepts when forming plans, decisions, and actions.

1. Fire has been an integral part of all ecosystems on the Lewis and Clark National Forest and the exclusion of fire from these ecosystems may cause undesirable effects.

2. As a result of fire protection, natural fuels in some areas have increased in amount and continuity to a hazardous level.

3. Prescribed fire can be used to achieve many of the Forest's land management objectives.

4. To disregard fire ecology in land management plans and project plans would reduce the effectiveness of land management.

Direction to Insure that Fire Use and Suppression Programs are Compatible with the Role of Fire in Forest Ecosystems.

1. Prescribe fire to maintain healthy and dynamically stable ecosystems that are inherently fire dependent.
   a. Develop adequate plans that prescribe fire to achieve land management objectives.
   b. Develop a well-trained cadre of master prescribed burners. Apply both theoretical knowledge and field experience in fulfilling this need.

2. Consider fire ecology implications when applying prescribed fire.
   a. Use fire ecology and fire management reference documents (like the following) to guide project development, execution, and evaluation.
      (1) Fire Ecology of Eastern Montana Forest Habitat Types, 1983. Clayton and Fisher.

(2) Level I Fire Management Analysis, Lewis and Clark National Forest, 1980. Stiger.
(3) The Role and Use of Fire in Sagebrush-Grass and Pinyon-Juniper Plant Communities, 1979. Wright, Neuenschwander, and Britton.
(4) Fuel Management Planning and Treatment Guides, July 1981, North Region, USDA Forest Service.

b. Integrate an understanding of the role fire plays in regulating stand structure into the development of silvicultural prescriptions.

c. Integrate an understanding of the role fire plays in range and wildlife management into the development of range and wildlife improvement projects.

3. Reduce the cost of presuppression and suppression activities by integrating the total fire management program.
   a. Manage fuels by reducing activity fuels and natural fuels to acceptable levels, through the scheduling and placement of timber sales to "breakup" large expenses of natural fuel accumulation.
   b. Maintain an aggressive fire suppression capability to support land management objectives and prescribed fire programs.
   c. Be cost conscious in the presuppression and suppression activities by recognizing the beneficial role of fire when selecting the appropriate suppression response.

4. Fire should be permitted in wilderness to the maximum possible.

5. Prescribed fire objectives will be met within the constraints established by Montana State Airshed Group's Memorandum of Understanding.

6. Gain greater public involvement, understanding, and approval of our fire management practices.

Direction to Insure that the Fire Suppression Program is Cost-Effective and Responsive to the Forest Plan.

1. Let land management plans establish direction for fire management actions.

   The fire management organization will provide cost-effective and well balanced suppression actions, by implementing the fire management direction documented in the Forest's approved Forest Management Plan.

2. Permit reason, logic, resource objecitves, and economics to guide suppression actions on fires that have escaped initial attack.

   Line officers will make an Escaped Fire Situation Analysis for all escaped fires and review and/or revise the analysis each shift until the fire is controlled. (An escaped fire is defined as a fire that exceeds the first calculation of initial attack resources and reasonable reinforcements necessary for prompt control, or exceed its fire prescription).

3. Reduce presuppression expenditures where possible. Determine the most cost-effective fire management organization based on sound analytical methods.

   The economic analysis made by the Gallatin and Helena (Sample Forests) w be used to determine a cost-effective fire management organization that meets the objectives of the Lewis and Clark Forest Plan.

4. Reduce suppression costs. Certain unplanned ignitions should be managed as prescribed fire in predetermined areas under predetermined conditions; the judicial use of containment and confinement suppression strategies will reduce costs.

5. Achieve resource benefits from fires that are managed according to established prescriptions.

A summary of fire management direction for each management area is contained in Table 1.

The fire management organization is responsible for preparing a Fire Management Action Plan for the Forest, to ensure compliance with the direction established in the Forest Plan. This action plan will contain decision criteria for selecting the appropriate suppression response allowed by the Forest Plan for each management area and for the use of prescribed fire with unplanned ignitions.

TABLE 1 — FIRE MANAGEMENT DIRECTION Decade 1

MGMT AREA	Primary Resource Emphasis	-WILDFIRE 1/ Strategies Allowed: Control	Contain	Confine	Expected 3/ Average Annual Acres Burned	-PRESCRIBED FIRE 2/ Natural Fuels (Acres)	MIH P12 +	Unplanned Ignitions (Acres)	Priority	Activity Fuels (Acres)	MIH P11 +	Unplanned Ignitions (Acres)	FIRE MGMT CATEGORY
A	Visual/ Timber	Yes	No	No	10	70	D03	-----	12	700 100	E04 E05	----- -----	Control
B	Timber/ Range	Yes	Yes	No	10	4,710 200	D03 C03	-----	10	14,730 1,690	E04 E05	----- -----	Operational
C	Wildlife/ Timber	Yes	Yes	Yes	112	200 2,680 1,020	E05 D03 C03	(3,170) (1,130)	5	1,900 230	E04 E05	(2,095) -----	Operational
D	Range	Yes	Yes	Yes	25	720 200	D03 C03	(790) (100)	4	Unplanned	E04	-----	Operational
E	Range/ Wildlife	Yes	Yes	Yes	99	2,540 1,820	D03 C03	(2,910) (1,020)	3	Unplanned	E04	-----	Operational
F	Semi-Prim. Recreation	Yes	Yes	Yes	223	970 1,440	D03 C03	(880) (440)	6	Unplanned	E04	-----	Operational
G	Custodial Management	Yes	Yes	Yes	310	1,190 1,550	D03 C03	(1,060) (550)	7	Unplanned	E04	-----	Operational
H	Developed Recreation	Yes	No	No	10	100	D03	-----	---	Unplanned	---	-----	Control
I	Wildlife	Yes	Yes	Yes	25	50 420	D03 C03	----- (390)	2	Unplanned	---	-----	Operational
J	Municipal Watersheds	Yes	No	No	10	Unplan	D03	-----	---	Unplanned Unplanned	E04 E05	-----	Control
K	Experimental Forest	Yes	No	No	10	-----	---	-----	---	Unplanned	E04	-----	Special
L	Locatable Minerals	Yes	No	No	10	-----	---	-----	---	Unplanned	E04	-----	Control
M	Research Natural Area	Yes	Yes	Yes	10	-----	D03	Unplanned	13	----	---	-----	Special
N	Wilderness Study	Yes	Yes	Yes	25	40	C03	(40)	9	----	---	-----	Observation
O	Timber/Range Rocky Mt. Div	Yes	Yes	No	10	260 100	D03 C03	-----	11	----	---	-----	Operational
P	Wilderness	Yes	Yes	Yes	384	-----	B03	Unplanned	1	----	---	-----	Wilderness
Q	Recommended Wilderness	Yes	Yes	Yes	37	-----	B03	Unplanned	8	----	---	-----	Observation
R	Riparian	Yes	Yes	No	10	100	C03	-----	---	70	E04	-----	Special
TOTALS	XXXXXXXX XXXXXXXX	XXX XXX	XXX XXX	XXX XXX	1,330	20,380*	XXX XXX	(12,480)*	XXX XXX	18,420	XXX XXX	(2,095)	XXXXXXXXXX XXXXXXXXXX

* Due to rounding as in Forest Plan

FOOTNOTES:

1/ Wildfire. Any wildland fire that requires a suppression response.

The following are suppression strategies. Each wildfire ignition requires an appropriate suppression response. The most cost efficient suppression strategy that meets management direction will be used.

CONTROL (CONTROL A FIRE). To complete the control line around a fire, any spot fires and any interior islands to be saved; burn out any unburned area adjacent to the fire side of the control line; and cool down all hot spots that are immediate threats to the control line, until the line can reasonably be expected to hold under foreseeable conditions.

CONTAIN (CONTAIN A FIRE). To surround a fire, and any spot fires with control line, as needed, which can reasonably be expected to check the fire's spread under prevailing and predicted conditions.

CONFINE (CONFINE A FIRE). To restrict the fire within determined boundaries established either prior to the fire, during the fire, or in an escaped fire situation analysis. Surveillance may be appropriate when the fire will be self confined within a defined perimeter.

2/ Prescribed Fire. A wildland fire burning under specified conditions, which will accomplish certain planned objectives. The fire may result from either planned or unplanned ignitions. Acres shown are per decade. (Activity fuels may be treated by methods other than burning, see Management Practice PS11.)

3/ These acres are general guidelines that the line officer may need to modify depending upon the time of year, terrain, weather, and other site specific conditions, in order to meet land management objectives. These are acres burned sufficiently by wildfire to impair their ability to meet the resource emphasis for the management area.

II. FIRE MANAGEMENT UNITS CONCEPT

1. Background

The fire management unit concept stems from the primary fire management objective (FSH 5102) which states: "..... fire management will assure that land management objectives are met through a fire protection and use program which is responsive to resource management goals and objectives identified in the Forest Plan."

To help meet this objective, Management Areas have been grouped into fire management units. Management Areas in the same group have similar fire management direction in that the same wildfire suppression strategies are allowed, and similar prescribed fire direction applies. For specific planning purposes the Management Areas are further grouped into fire management categories. Each category will be associated with one or more different fire prescriptions which describe the conditions and limits under which fire will be managed. These fire management prescriptions will be contained in the Forest Fire Management Action Plan.

2. Boundary Generator Criteria

The boundaries for fire management units are drawn on the basis of existing and projected land use prescriptions. While these broader land management prescriptions (such as timber, wildlife, or primitive recreation) served as boundary generators for the five major units (See Table 1), subdivisions of the major units may be made on a District basis to make practical the implementation of the plan on the ground. Boundaries for these subdivisions will be made whenever possible on hydrologic divides or other geographical features which could be expected to contain fires with similar fire behavior characteristics.

3. Definitions

The five fire management categories used Forest-wide are Control, Operational, Observation, Wilderness, and Special.

a. Definition: Control

Areas where all unplanned ignitions will be attacked immediately to gain control as soon as possible. Prescribed fire will continue to be allowed with appropriate burning plans and state permits.

In the context of land management classification, the areas within the Control category are all state and privately owned land protected by the Lewis and Clark National Forest and those land management areas where the appropriate suppression response is exclusively aggressive control.

Much of the private land is being logged, subdivided, or sold as separate tracts. In either case, the fire hazard is increasing through the accumulation of logging slash and/or the increased number of people living in a forest environment.

b. Definition: Operational

Areas where various Forest management activities such as timber harvest, slash disposal, range, and wildlife habitat improvement will be carried out. Most management activity associated with timber production is within this fire management category. Operational areas will receive the greatest application of prescribed fire for range, wildlife, silvicultural, and hazard reduction purposes. Normally fire use is limited to planned ignitions in operational areas; however, when burning plans have been prepared and approved, unplanned ignitions may be used if allowed in the Forest Plan for the management area when the objectives of the approved burning plan can be achieved with the unplanned ignition. Otherwise unplanned ignitions will be suppressed as wildfires.

c. Definition: Observation

Lands within this fire management category are not in the regulated timber program. It is often higher elevation (or otherwise lower productivity) areas where vegetation communities are discontinuous and may be interspersed with rock landforms. Fire effects are variable, depending on time of year, fuel complex present, and species present on the site. Fire prescriptions can generally be less strict than in Operational areas.

In addition to prescribed fire with planned ignitions, unplanned ignitions, both person-caused and natural, may be managed as prescribed fires when within established prescriptions and when achieving desired results described by objectives for prescribed fires in these areas. All unwanted fires will be suppressed.

d. Definition: Wilderness

Lands within this category are within the National Wilderness Preservation System and are managed under the Wilderness Act of 1964. The Bob Marshall and Scapegoat Wildernesses are within this classification. Unplanned ignitions burning within established prescriptions and fulfilling desired objectives may be managed as prescribed fires. Otherwise, they will be treated as wildfires. All person-caused fires are treated as wildfires in Wilderness.

e. Definition: Special

This fire management category includes lands that do not logically fall within the previously described categories and require special attention. Prescribed fire may be used for hazard reduction and unplanned ignitions may be managed as prescribed fires when achieving results described in the objectives for the area.

Specific fire management direction and prescriptions for each fire management unit will be detailed in an Annual Fire Management Action Plan within the above guidelines. Future modification of the fire management units with corresponding fire prescriptions, or the addition of new units may occur as the need arises. All fire management prescriptions are reviewed annually and are adjusted as needed.

III. PRESCRIPTION CRITERIA FOR PRESCRIBED FIRES

A prescribed fire is a fire burning in a specified area under predetermined conditions and which is achieving management objectives. Each fire management unit will have prescription criteria written for the time of year, land uses, vegetation types, and fuel situations encountered. The criteria are displayed in the Fire Management Action Plan.

IV. FIRE PREVENTION PLANNING CRITERIA

The objective of fire prevention is to eliminate preventable fires. The Fire Management Action Plan will provide direction by describing problem areas that need attention during the annual planning process.

The fire prevention effort will be based on historical fire occurrence and trends in hazard and risk. The Fire Management Analysis Level I Report indicates expected occurrence based on historical trends under the current fire prevention effort.

1980-1989 EXPECTED OCCURRENCE
ANNUAL AVERAGE NO. OF FIRES

Lightning:	15
Person-caused:	12
Annual Total	27

V. PRESUPPRESSION PLANNING CRITERIA

Presuppression involves all activities planned and accomplished in advance of a wildfire ignition, to ensure effective suppression actions to meet land management goals and objectives.

The objective is to plan, implement, and maintain an organization capable of protecting resources and values from fires, and to accomplish land management goals and objectives according to the Forest Plan.

The presuppression plan consists of a collection of implementation plans and specific direction to the fire manager. This direction is taken from the Forest Plan and brought together in the annual Fire Management Action Plan.

The Fire Management Analysis Level I Report indicates expected annual average acres burned by wildfire with the current fire suppression organization and budget. This projection is based on changing fuel conditions attributable to natural succession and insect and disease activity.

1980-1989 Estimated Annual Average Wildfire Acres Burned: 1,328

VI. FIRE MANAGEMENT PROGRAM

The National Fire Management Analysis (Level II) process identifies the most cost efficient fire management program which meets land and resource management objectives. The information developed through this analysis is used in developing individual Forest budget requests; however, where fire problems are not complex, a Forest may elect to use budget data developed by "Sample" Forests designated by the Chief as representative units for the economic efficiency analysis. During coordination meetings with the Regional Office Staff, it was decided that the Lewis and Clark National Forest could adequately address their fire management issues without the detailed Level II Analysis. The assigned representative Forests for the Lewis and Clark are the Helena, the Gallatin, and the Kootenai National Forests. These Forests represent 60%, 30%, and 10% of the L&C, respectively. The Helena and the Gallatin National Forests found the "current" base financing to be the most cost efficient program. The Kootenai found that a 20% increase in the "current" base financing would be the most cost efficient. Figures 1, 2, and 3 illustrate the Level II Analysis. The analysis documentation is part of Helena, Gallatin, and Kootenai National Forest planning records.

The 1978 base protection budget (FFP) for the Lewis and Clark National Forest was $269,404.00 and included only prevention, detection, attack, and air operations.

The Lewis and Clark National Forest has joined with the Bureau of Land Management (BLM) in a cooperative agreement to provide more cost-effective fire management. This agreement provides for the BLM to protect National Forest lands in the Big and Little Snowies. In return, the Forest Service will protect BLM lands within and near the boundary of the remaining Lewis and Clark National Forest lands.

Glacier, Pondera, Teton, Lewis and Clark, Choteau, Meagher, Wheatland, and Golden Valley Counties participate in the Montana County Cooperative Fire Protection Program. Each of these counties has a fire plan which covers private land adjacent to or intermingled with National Forest lands. Contacts with these counties should be made through the Central Land Office, Department of State Lands, Helena, Montana.

VII. MONITORING AND EVALUATION

Annually the Forest will document the results of monitoring and evaluating the Forest Plan. The evaluation will determine how well the objectives of the plan are being met and measure the deviation from the expected costs and outputs of the Fire Management Analysis process. This measurement and evaluation must recognize when plan performance (based on the analysis process) differs from that described by the Forest Plan in terms of average annual outputs. Actual annual performance will vary from this due to weather and other natural, variable factors. This variation should, if the plan is valid, average out to the planned performance over each five year review and update period designated for the Forest Plan.

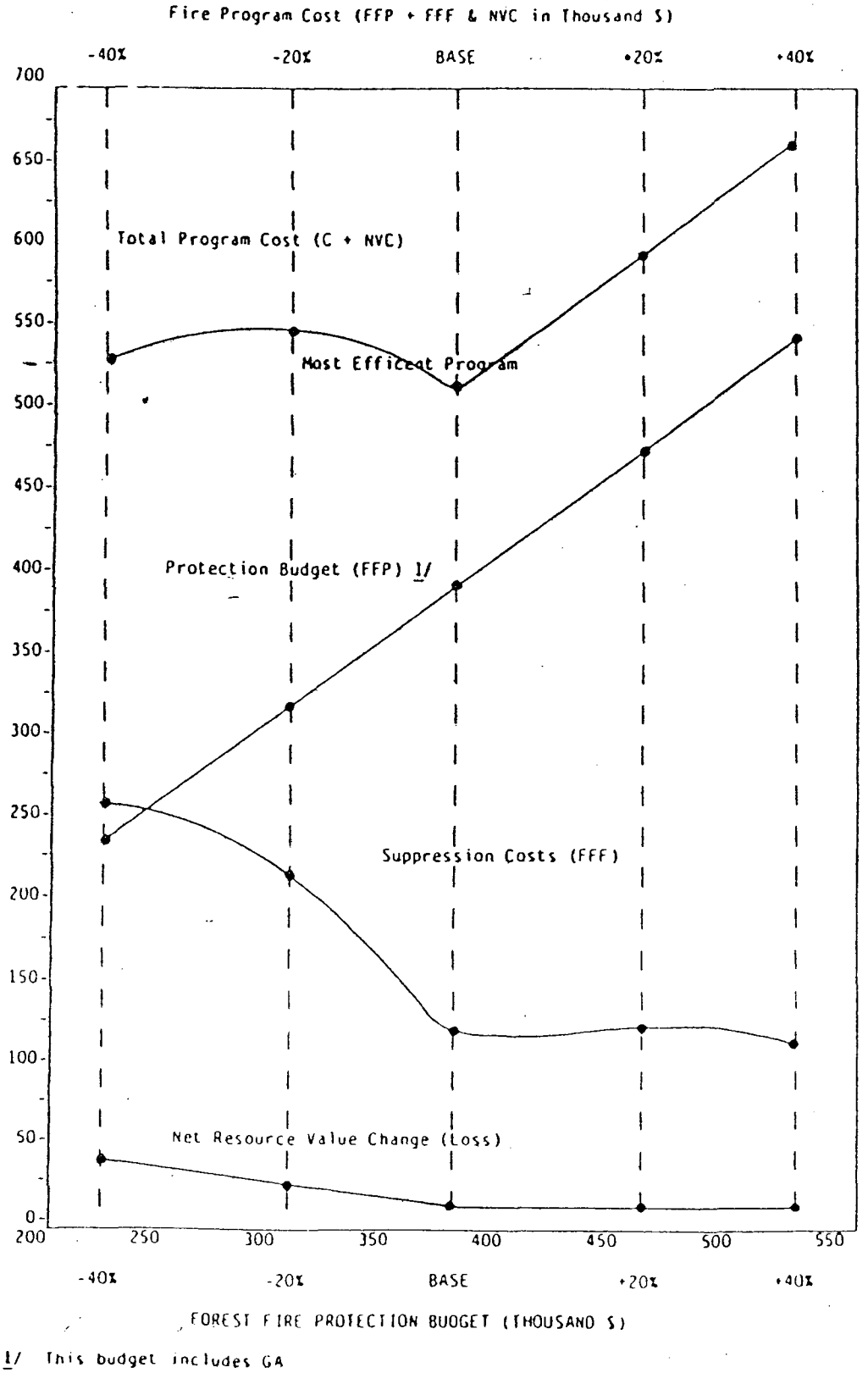
An annual report will be submitted to the appropriate line officer.

Data for this evaluation will be collected to the same level of detail and resolution as that used in the Forest Planning process. Individual Fire Reports (FS 5100-29) will be maintained in accordance with FSH 5109.14.

Relationship of FFP, FFF, and NVC

Helena National Forest

FIGURE 1

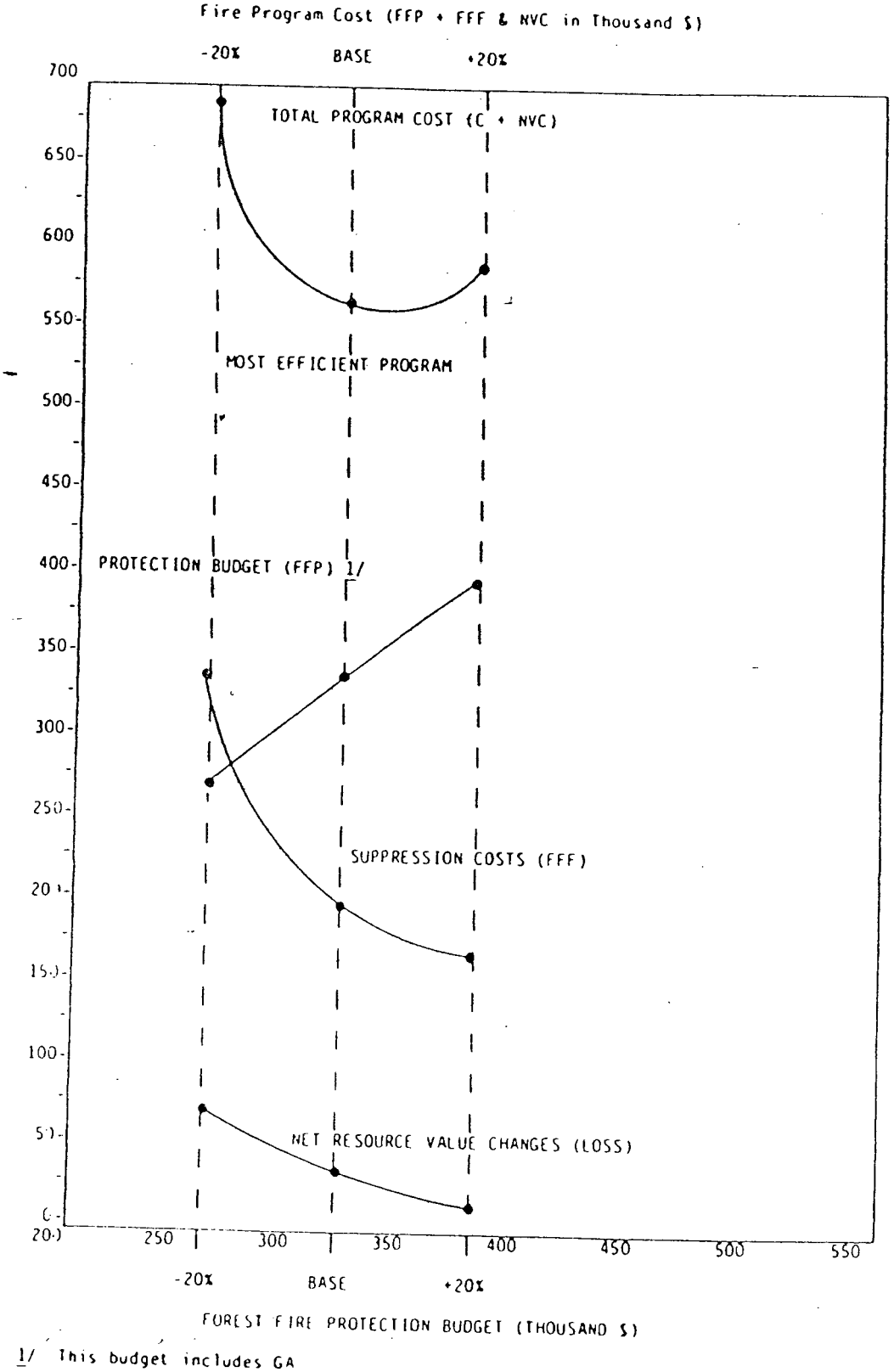


1/ This budget includes GA

Relationship of FFP, FFF, and NVC

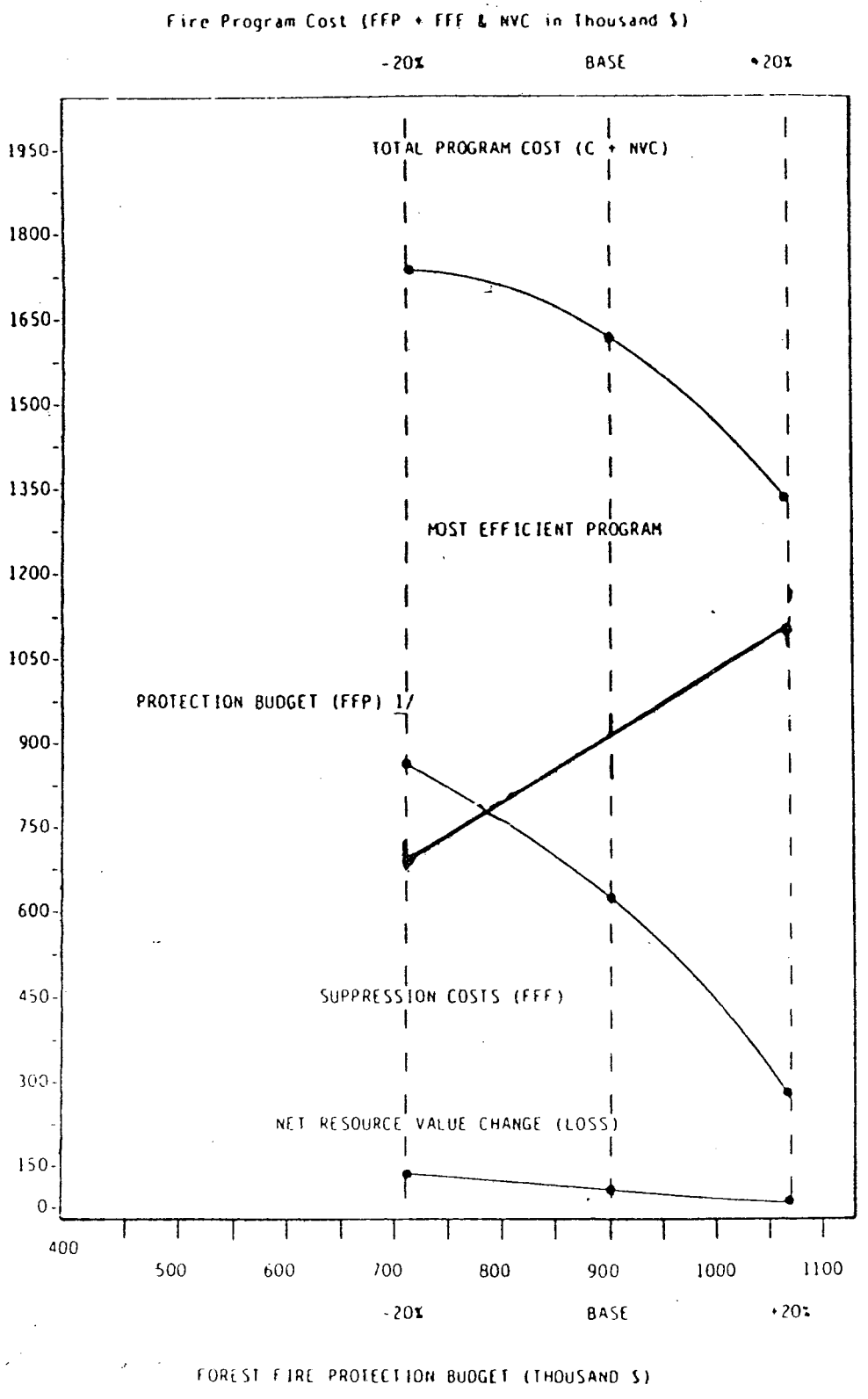
Gallatin National Forest

FIGURE 2



1/ This budget includes GA

Kootenai National Forest FIGURE 3



1/ This budget includes GA

The evaluation will include at least the following in addition to that contained in Table 6.1 of the Forest Plan.

A. Where fuel conditions have been altered by management practices, monitor the changes in fire activity (acres burned by size and intensity) and compare with the predictions derived in the Level I Fire Management Analysis.

B. Determine the adequacy of the prevention program projections for person-caused fires, based on trends in the fire occurrence statistics.

C. Determine the adequacy of the fire management organization to meet the fire frequency and size distribution at the expected costs and net value changes as projected by the Sample Forests. This should be compared on both an annual basis and for the cumulative planning period.

D. Determine the adequacy of the values change analysis (performed by the Sample Forests) by comparing the reported annual value change from the Individual Fire Reports (Form 5100-29) with the projected analysis. This will require that acres of loss are recorded separately from total acres burned.

Looking for a fire using an Early Day Fire Finder.

LEWIS AND CLARK NATIONAL FOREST PLAN

Appendix Q

Range Allotment Summary and Areas Presently Excluded From Livestock Grazing

Table 1 lists the current range allotments.
Table 2 lists areas presently excluded from livestock grazing.

TABLE 1 CURRENT RANGE ALLOTMENTS/AUMs

Allotment Name	Allotment 1/ Type	Current 2/ Management	Suitable Range (Acres)	Current Grazing (AUMs)
RANGE ALLOTMENTS - ROCKY MOUNTAIN RD				
Biggs Creek	A	B	1921	74
Cow Creek	A	C	1814	292
Deep Creek	A	C	1839	329
Dupuyer	A	C	1516	265
Heart Butte	A	C	772	214
Jones Creek Admin	P	B	202	72
Lubec-Badger	A	C	9417	1618
Middle Fork	A	B	699	40
Gates Park	A	B	141	37
Little Badger	A	C	2051	600
Salmond	A	B	409	48
Sawmill	A	B	1278	231
Scoffin Creek	A	C	1514	288
Wrong Cr Admin	P	B	50	5
Chicken Coulee	A	C	356	141
Blackleaf Admin.	P	B	251	48
Palookaville Admin.	P	B	112	22
Gates Park Admin.	P	B	192	48
Ear Mtn Admin.	P	B	280	56
Badger Admin.	P	B	84	20
Birch Creek	A	B	124	30
West Fork Admin.	P	B	10	6
Beaver Creek	A	C	1299	927
Blacktail Dearborn	A	B	268	10
Steamboat	A	C	458	170
Cyanide-Bailey	A	C	252	82
East Fork Falls Creek	A	B	793	436
Elk Creek	A	C	285	186
Fairview Benchmark	A	B	2020	67
Halfmoon	A	B	356	30
Home Gulch	A	B	1516	176
Lime Gulch	A	B	259	140
Main Falls Creek	A	C	1017	206
Mortimer Gulch	A	B	716	72
Smith Creek	A	C	967	396
Sun Butte	A	C	1414	227
Whitetail	V	B	350	23
Willow Creek	A	B	7992	2633
Cutrock	A	C	90	43
Benchmark Admin	P	C	1420	36
Cabin Creek Admin	P	B	12	5
Elk Creek Admin	P	B	184	72
Hannan Gulch Admin	P	B	2240	66
Willow Creek Admin	P	C	912	216
Welcome Creek Admin	P	B	22	14
Augusta Lsk Asso	A	B	155	30
A B Cobb Jr Spec Use Past	A	B	55	21
RANGE ALLOTMENTS - JUDITH RD				
Antelope Canyon	A	C	165	103
Arrow Creek	A	B	192	185
Beaver Creek	A	B	480	317
Big Spring	A	B	568	375
Blacktail Hills	A	B	521	322
Buffalo Canyon	A	B	249	143
Dry Pole	A	C	170	137
Dry Wolf	A	C	203	145
East Fork	A	B	610	355
Flat Willow	A	B	230	28
Granite Mtn	A	C	460	116
Green Pole	A	B	55	9
Harlow	A	C	1320	423
Hay Canyon	A	B	469	213
Highwood	A	B	10050	5457
Judith	A	C	1514	185
Little Belt Creek	A	B	1576	1040
Logan	A	B	150	101
Lone Tree	A	B	1958	760
Lost Fork	A	C	1599	392
Lyon Mcvey	A	B	144	44
Martin Creek	A	B	210	157
Middle Fork	A	C	990	454
Middle Peak	A	B	398	263
Pig Eye	A	B	170	111
Pritchard	A	B	288	76
Running Wolf	A	B	683	264
Russell Track	A	C	840	623
Sage Creek	A	C	260	106
Shed Creek	A	B	400	263
South Fork	A	C	1500	1320

TABLE 1 CURRENT RANGE ALLOTMENTS/AUMs

Allotment Name	Allotment 1/ Type	Current 2/ Management	Suitable Range (Acres)	Current Grazing (AUMs)
RANGE ALLOTMENTS - JUDITH RD (cont'd)				
South Peak	A	B	222	147
Taylor Mtn	A	C	389	227
Thomas Corner	A	B	438	343
Waite Creek	A	B	700	265
Wolf Butte	A	B	247	107
Yogo Creek	A	C	814	396
Burnt Ridge	A	C	2243	338
High Springs Ridge	V	A	640	0
Spring Creek	A	B	1240	270
Maynard Ridge	A	B	81	55
Butchfrknife	A	C	979	158
Bear Park	A	C	263	277
Dry Wolf	P	A	740	0
Highwood	P	A	13	0
Judith Station	P	A	68	0
Stanford	P	A	7	0
Yendrick	A	C	36	30
Halfmoon	A	C	36	30
Highwood Association S U	A	B	62	36
Highwood Association S U	A	B	34	24
Kolar S V	A	B	246	71
McKay David S V	A	B	5	4
Perry Kennth	A	B	120	8
Montana FWP S V	X	A	222	0
Taylor Ranch Co S V	A	B	5	4
Everly S V	A	B	13	7
Outfitter Guide	K			47
Recreation Use	K			240
RANGE ALLOTMENTS - MUSSELSHELL RD				
Mill Creek	A	C	2063	363
Whitetail	A	B	2862	355
Upper Spring Creek	A	B	5682	759
Lower Spring Creek	A	B	1078	308
Wood Gulch	A	C	1196	337
Mud Creek	A	B	715	304
Morris Creek	A	B	554	277
Dry Fork	A	C	1410	351
Haymaker	A	B	3672	739
Haymaker Creek	A	B	560	231
Hopley Creek	A	C	4400	966
Sawmill	A	B	691	211
Stevens Gulch	A	B	1453	296
Dawes	A	C	914	344
Myers	A	B	215	107
Warm Springs Loweth	A	B	1712	487
Alabaugh	A	B	1600	462
Blackhawk	A	C	1886	1779
Checkerboard	A	B	1478	486
Bonanza	A	B	270	102
Flagstaff	A	C	6917	3328
Gorge	A	C	458	106
Sourdough	A	C	1279	424
Pasture Gulch	A	C	956	238
Cooper Creek	A	C	1066	322
Townsend Gulch	A	B	289	144
Comb Butte	A	B	4778	2717
Upper Cottonwood	A	C	1630	436
Cottonwood	A	C	991	891
Lost Horse	A	B	400	277
Little Elk	A	B	180	115
Miller Creek	A	B	340	87
Station	A	C	215	55
Cinnamon	A	C	406	215
Big Elk	A	B	85	103
American Fork	A	B	660	117
Brooks Coulee	A	B	60	42
Porcupine	A	B	565	238
Timber Creek	A	C	1145	554
Careless Canyon	A	C	870	218
Careless Breaks	A	C	229	227
Swimming Woman	A	C	1826	792
Wood Chuck	A	C	566	158
Dry Coulee	A	B	2041	147
Horsethief	A	B	102	38
Morrison	A	C	334	178
Cameron Creek	A	C	375	180
Little Snowies	A	B	2140	700
Willow Creek	A	B	420	297
Musselshell	P	A	250	50
Forest Lake	P	A	19	5
Pasture Holley Anderson	A	B	10	13

TABLE 1 CURRENT RANGE ALLOTMENTS/AUMs

Allotment Name	Allotment 1/ Type	Current 2/ Management	Suitable Range (Acres)	Current Grazing (AUMs)
RANGE ALLOTMENTS - MUSSELSHELL RD (cont'd)				
Pasture IV Ranch	A	B	1	1
Pasture Big Elk Ranch	A	B	134	26
Pasture Willis Cotant	A	B	60	24
Pasture Willis Cotant	A	B	36	8
Pasture Eiselein	A	B	110	27
Pasture Ernest Fries	A	B	54	13
Pasture John Swanz	A	B	6	1
Pasture Knute Hereim	A	B	77	24
Pasture Knute Hereim	A	B	28	1
Pasture Richard Indrelan	A	B	85	22
Pasture Rath Ranch	A	B	3	1
Pasture Orville Rostad	A	B	25	4
Pasture Clarence Saylor	A	B	50	8
Pasture Iver Sondeno	A	B	45	16
Pasture Stone-Haynes Lvs	A	B	11	4
Pasture TG Ranch	A	B	156	18
Pasture William Weber	A	B	3	1
RANGE ALLOTMENTS - KINGS HILL RD				
Baldhills	A	C	2270	891
Deep Creek Park	A	C	2713	1188
Dry Fork	A	C	1761	583
Logging Creek	A	C	711	223
Lower Tenderfoot	A	C	999	139
Ming Coulee	A	B	280	99
Monarch Park	A	B	519	277
Oti Park	A	C	831	227
Otter Creek	A	B	1000	403
Robertson	A	B	170	83
Sand Coulee	A	B	101	100
Sawmill	A	C	544	137
Smith River	A	B	135	67
Little Belt Divide	A	C	15825	1020
Deep Iron	A	C	4996	540
Moose O'Brien	A	C	713	480
Tenderfoot	A	C	2155	198
Sun Mtn	A	B	51	36
South Park	A	B	839	820
Wilson Creek	A	B	356	531
Tillinghast	A	B	329	157
Horseshoe	A	B	418	314
Belt Creek	P	C	95	20
Meade Station	P	B	10	1
Bodkins Ira & Lola	A	B	16	7
Bodkins Ira & Lola	A	B	6	20
Bodkins Ira	A	B	31	34
Croff Henry I Estate	A	B	21	34
Galt Oliver J	A	B	31	20
Gray Orville	A	B	12	4
Hunt Francis & Archie	A	B	6	7
McCafferty George & Marg	A	B	22	36
Miller Robert W	A	B	32	26
Nolan Barry D	A	B	81	12
Nollan Barry D	A	B	4	1
Ruf Percy R	A	B	36	16
Sederholm W C	A	B	78	34
Zentner Bros	A	B	40	40
Zentner Bros	A	B	155	40
Boundary	A	C	126	106
Butte Creek	A	B	4534	1649
Cabin Creek	A	C	1505	682
Calf & Indian Island	A	C	1172	486
Chapman	A	C	413	220
Copper Creek	A	C	3225	1849
Eagle Creek	A	C	515	601
Fourmile	A	C	2148	1056
Gies Creek	A	C	825	198
Green Mtn	A	C	946	453

TABLE 1 CURRENT RANGE ALLOTMENTS/AUMs

Allotment Name	Allotment 1/ Type	Current 2/ Management	Suitable Range (Acres)	Current Grazing (AUMs)
RANGE ALLOTMENTS - KINGS HILL RD (cont'd)				
Horse Prarie	A	C	865	201
Jumping Creek	A	C	195	238
Moose Mtn	A	C	564	686
Newland Creek	A	C	2806	1016
Reynolds Park	A	C	324	265
Rimrock	A	C	485	139
Studhorse	A	C	1298	218
West Checkerboard	A	C	650	231
Fiasco	A	C	105	44
Field 46	A	B	63	28
Manger Park	A	B	180	53
Calf Creek	P	B	13	1
Four Mile	P	B	85	40
Newlan	P	B	28	6
Flying S Ranch Inc	A	B	240	84
Potter & Borland	A	B	156	33
Sheep Creek Ranch	A	B	30	4
Ward Paper Box Co	A	B	160	53

1/ Allotment Type:
- A - Livestock Grazing Allotment including Pack & Saddle stock allotments
- K - Packer Use Areas identified for use by commercial packers
- P - Administrative Pasture
- V - Vacant
- X - Miscellaneous Use

2/ Current Management:

A - No Livestock
Management excludes livestock grazing to protect other values or eliminate conflicts with uses.

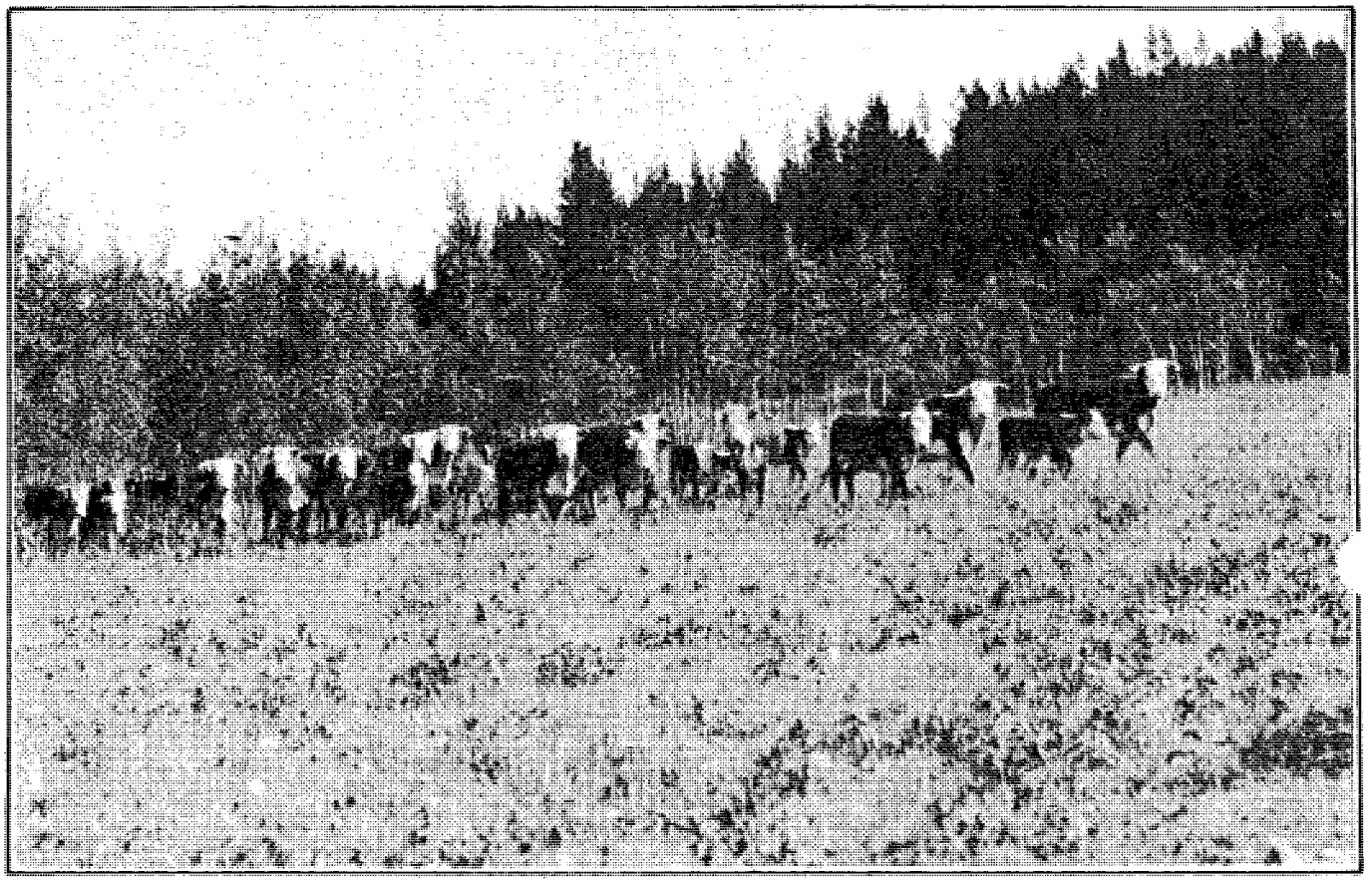
B - Low Management Intensity, such as season long grazing systems. Management controls livestock numbers so that livestock use is within present grazing capacity. Distribution is achieved through riding, herding, and/or salting. Improvements are minimal and constructed only to the extent needed to cost effectively maintain stewardship of the range in the presence of grazing.

C - Extensive Range Management
Management seeks full utilization of forage allocated to livestock. Cost-effective systems and techniques, including fencing and water developments, are designed and applied to obtain relatively uniform livestock distribution and use of forage and to maintain plant vigor.

D - Intensive Range Management
Management seeks to maximize production and utilization of forage allocated for livestock use consistent with maintaining the environment and providing for multiple use of the range. From all existing range and livestock management technology, practices may be selected and used to develop cost-effective methods for achieving improved forage supplies and uniform livestock distribution and forage use. Culture practices, such as brush control, type conversion, fertilization, site preparation, and seeding of improved forage species, may be used to improve the quality and quantity of forage. The cultural practices may be combined with fencing and water developments to implement complex grazing systems.

TABLE 2 AREA PRESENTLY EXCLUDED FOM LIVESTOCK GRAZING

MGMT AREA	AREA NAME	Total Area (Acres)	Suitable Range (Acres)	Potential Grazing (AUMs)
MUNICIPAL WATERSHED				
J	O'Brien Creek	2,680	120	38
J	Willow Creek	4,720	360	125
	SUBTOTAL	(7,400)	(480)	(163)
RESEARCH AREAS				
K	Tenderfoot Experimental Forest	9,125	200	101
M	Paine Gulch Research Natural Area	3,281	80	19
	SUBTOTAL	(12,406)	(280)	(120)
RIPARIAN-FISHERY				
C	Lake Creek	730	160	56
B,E	Lion Creek	2,000	92	48
G	Pilgrim Creek	15,290	176	41
B	Jefferson Creek	46	46	10
	SUBTOTAL	(18,066)	(474)	(155)
WILDLIFE/WATERSHED				
Q,F	Lange Falls	1,500	200	45
N,F	Big George Gulch	4,600	800	250
N,I,H	Castle Reef-Wagner	3,600	500	185
I,C	Judith Game Range	250	250	100
G	Antelope	4,175	3,178	276
G	Bluff Mountain	9,829	5,281	156
G	Haymaker	9,125	3,708	428
G	East Hopley	5,586	4,139	352
G,B	Mt. High	480	420	10
G,B	Sawmill	8,090	7,146	420
G,B,F,E	Little Belt Divide	74,300	7,408	1,441
	SUBTOTAL	(121,535)	(33,030)	(3,663)
TOTALS		159,407	34,264	4,101

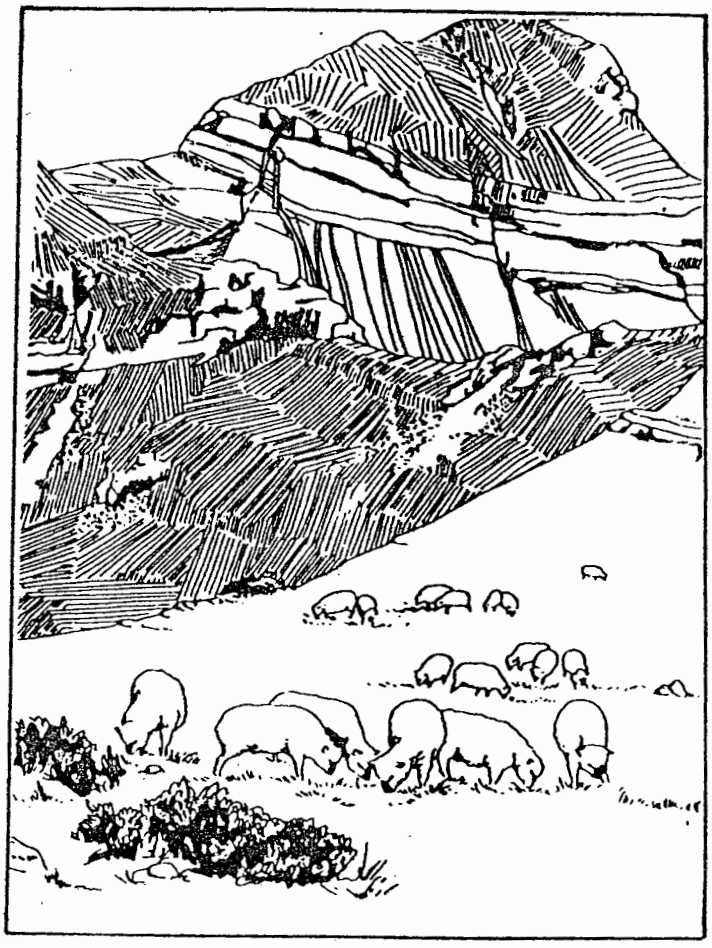


Cattle Grazing in the Rocky Mountains.

LEWIS AND CLARK NATIONAL FOREST PLAN

Appendix R

5-Year Range Improvement Program

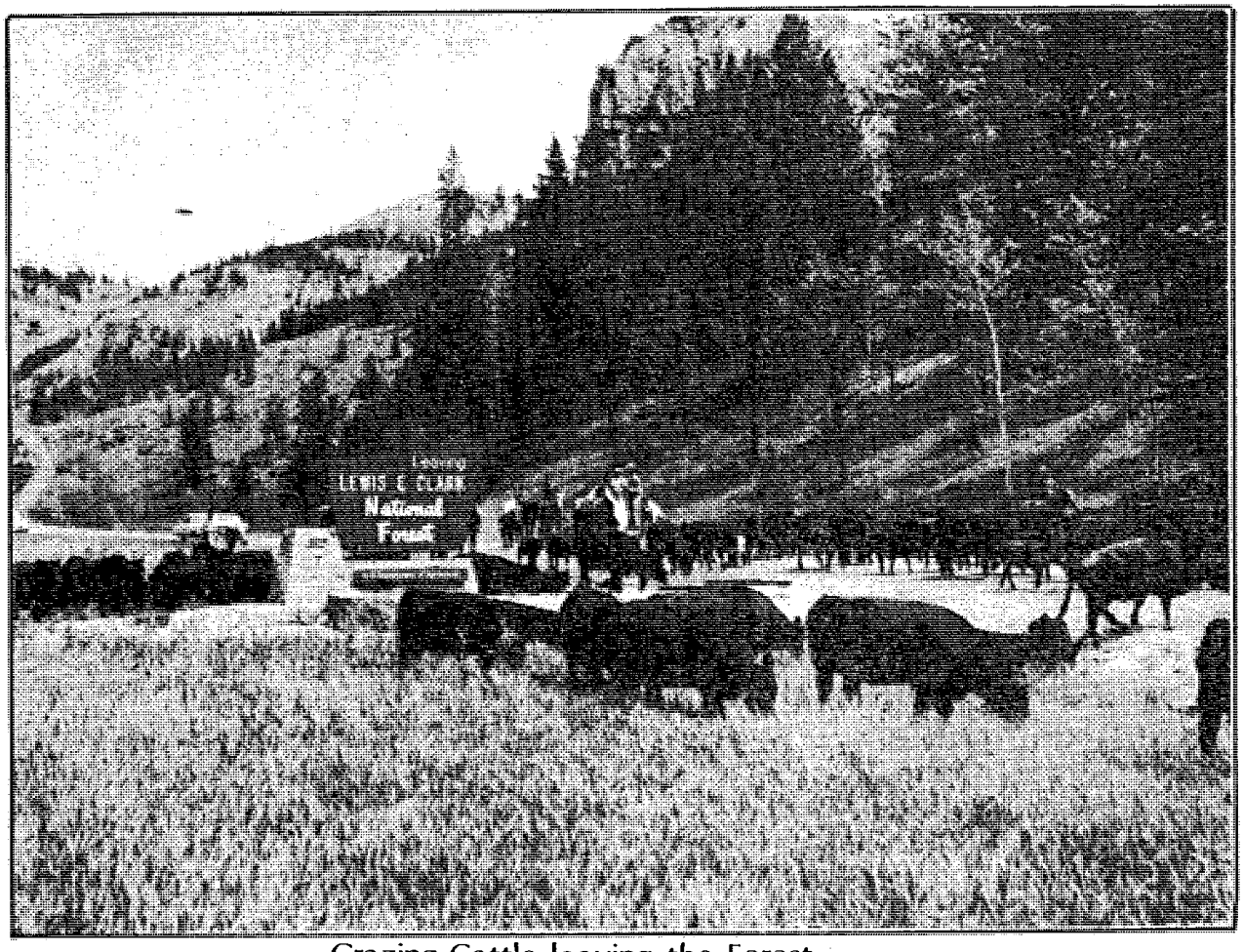


FIVE YEAR

RANGE IMPROVEMENT PROGRAM SUMMARY
Fiscal Year 84 Dollars

Act Type	Unit	FY 86 M$	FY 86 units	FY 87 M$	FY 87 units	FY 88 M$	FY 88 units	FY 89 M$	FY 89 units	FY 90 M$	FY 90 units
230 fence miles	D1	1.4	0.7	3.0	2.2	2.7	1.5	2.7	1.4	7.0	4.0
	D4	6.9	2.7	9.9	3.0	10.2	2.7	9.0	2.4	8.3	1.9
	D6	2.0	1.2	12.6	5.0	20.7	10.6	9.3	4.6	9.2	5.7
	D7	1.5	1.5	3.0	1.0	2.0	0.1	9.0	4.0	9.0	4.0
	Forest	11.8	6.1	28.5	11.2	35.6	14.9	30.0	12.4	33.5	15.6
410 water dev each	D1	0	0	0	0	0.5	1 ea	0	0	0	0
	D4	12.3	8 ea	7.2	6 ea	5.3	6 ea	3.7	4 ea	3.8	4 ea
	D6	10.6	9 ea	6.0	3 ea	3.6	3 ea	6.0	5 ea	6.0	5 ea
	D7	2.4	3 ea	1.6	4 ea	0.6	3 ea	0.4	2 ea	2.5	1 ea
	Forest	25.3	20 ea	14.8	13 ea	10.0	13 ea	10.1	11 ea	12.3	10 ea
420 water system miles	D1										
	D4			2.0	0.5			2.0	0.5	3.5	1.0
	D6										
	D7										
	Forest			2.0	0.5			2.0	0.5	3.5	1.0
611 Cattle guard each	D1										
	D4	2.5	1 ea	2.5	1 ea						
	D6										
	D7										
	Forest	2.5	1 ea	2.5	1 ea						
Subtotal D05	Struct. Improv.	39.6	33.2*	47.8	37.4*	45.6	42.8*	42.1	36.8*	49.3	43.2*
950 Presc. fire acres	D1	3.0	300	2.5	200	3.5	300	3.0	200	3.0	200
	D4	3.7	372	2.8	282	3.9	385	4.1	407	6.5	650
	D6	2.7	220	2.0	150	4.0	350	2.0	200	5.0	400
	D7	5.0	500	5.1	510	3.5	350	4.4	440	3.5	300
	Forest	14.4	1392	12.4	1142	14.9	1385	13.5	1247	18.0	1550
970 nox. weed acres	D1	4.7	47	1.7	17	1.2	12	1.5	15	1.1	11
	D4	17.3	128	12.5	113	8.3	94	7.9	45	6.8	80
	D6	5.4	83	6.0	98	2.8	40	11.0	149	2.8	40
	D7	8.2	100	8.2	100	8.2	100	8.2	100	8.2	100
	Forest	35.6	358	28.4	328	20.5	246	28.6	309	18.9	231
Subtotal D03/ D04	NonStr. Improv.	50.0	1750	40.8	1470	35.4	1631	42.1	1556	36.9	1781
TOTAL	Range Impr.	89.6	NA	88.6	NA	81.0	NA	84.2	NA	86.2	NA

*Unit is "Structures". Fence and water system miles are doubled (i.e. 1/2 mi. = 1 structure).



Grazing Cattle leaving the Forest.

LEWIS AND CLARK NATIONAL FOREST PLAN

Appendix S

5-Year Trail Construction /Reconstruction Program

1986

Rocky Mountain District

Dearborn River Trail No. 206

Design Class - Mainline: Reconstruction
Category - Trail Hazard (2)
Transportation Category - #1 (Recommended Wilderness)
Length - 1.5 miles
Season of Use - Summer and Fall
Present Use and Type - Heavy: Foot and Stock
Right-of-Way Needs - None
Estimated Cost - $5000

North Wall Trail No. 175

Design Class - Mainline: Reconstruction
Category - Trail Hazard (2)
Transportation Category - #1 (Wilderness)
Length - 2.0 miles
Season of Use - Summer and Fall
Present Use and Type - Heavy: Foot and Stock
Right-of-Way Needs - None
Estimated Cost - $9200

Judith District

West Fork of Lost Fork Trail No. 422

Design Class - Mainline: Construction
Category - Resource Damage (3)
Transportation Category - #1 (Management Area F)
Length - 2.0 miles
Season of Use - Summer and Fall
Present Use and Type - Moderate: Foot, Stock, and Trailbikes
Right-of-Way Needs - None
Estimated Cost - $13,000 (Phase 1)

Kings Hill District

Pilgrim Creek Trail No. 304

Design Class - Mainline: Construction
Category - Trail Hazard (2)
Transportation Category - #2 (Management Area F)
Length - 2.0 miles
Season of Use - Summer and Fall
Present Use and Type - Heavy: Foot and Trailbike
Right-of-Way Needs - None
Estimated Cost - $8,000

1987

Rocky Mountain District

South Fork Glenn Creek Trail No. 250

Design Class - Mainline: Reconstruction
Category - Trail Hazard (2)
Transportation Category - #1 (Wilderness)
Length - 2.5 miles
Season of Use - Summer and Fall
Present Use and Type - Light: Foot and Stock
Right-of-Way Needs - None
Estimated Cost - $15,000

Green Gulch Trail No. 217

Design Class - Mainline: Reconstruction
Category - Resource Damage (3)
Transportation Category - #3 (Management Area O)
Length - 1.3 miles
Season of Use - Summer, Fall, and Winter
Present Use - Moderate: Foot, Stock, Trailbike and Snowmobile
Right-of-Way Needs - None
Estimated Cost - $15,000

Judith District

West Fork of Lost Fork Trail No. 422

Design Class - Mainline: Construction
Category - Resource Damage (3)
Transportation Category - #1 (Management Area F)
Length - 2.0 miles
Season Of Use - Summer and Fall
Present Use and Type - Moderate: Foot, Stock, and Trailbikes
Right-of-Way Needs - None
Estimated Cost - $10,000 (Phase 2)

Musselshell District

Nevada Creek Trail No. 601

Design Class - Mainline: Reconstruction
Category - Resource Damage (3)
Transportation Category - #1 (Management Area G)
Length - 4.5 miles
Season of Use - Summer and Fall
Present Use and Type - Moderate: Foot, Stock and Trailbike
Right-of-Way Needs - None
Estimated Cost - $13,500

1988

Rocky Mountain District

Elbow Pass Trail No. 248

Design Class - Mainline: Reconstruction
Category - Trail Hazard (2)
Transportation Category - #1 (Wilderness)
Length - 2.0 miles
Season of Use - Summer and Fall
Present Use and Type - Moderate: Foot and Stock
Right-of-Way Needs - None
Estimated Cost - $11,100

Riendon-Willow Trail No. 178

Design Class - Secondary: Reconstruction
Category - Trail Hazard (2)
Transportation Category - #1 (Management Area G)
Length - 2.0 miles
Season of Use - Summer and Fall
Present Use and Type - Light: Foot, Stock and Trailbike
Right-of-Way Needs - None
Estimated Cost - $10,200

Musselshell District

Upper Daisy Trail No. 606

Design Class - Mainline: Reconstruction
Category - Resource Damage (3)
Transportation Category #1 (Management Area G)
Length - 1.5 miles
Season of Use - Summer and Fall
Present Use and Type - Moderate: Foot, Stock and Trailbike
Right-of-Way Needs - None
Estimated Cost - $7,500

East Fork of Spring Creek Trail No. 608

Design Class - Mainline: Reconstruction
Category - Resource Damage (3)
Transportation Category - #3 (Management Area B)
Length - 3.0 miles
Season of Use - Summer and Fall
Present Use and Type - Foot, Trailbike
Right-of-Way Needs - None
Estimated Cost - $15,000

Judith District	West Fork of Lost Fork Trail No. 422 Design Class - Mainline: Construction Category - Resource Damage (3) Transportation Category - #1 (Management Area F) Length - 2.0 miles Season of Use - Summer and Fall Present Use and Type - Moderate: Foot, Stock, and Trailbikes Right-of-Way Needs - None Estimated Cost - $10,000 (Phase 3)
Kings Hill District	Smart Fork Trail No. 317 Design Class - Mainline: Construction Category - Resource Damage (3) Transportation Category - #1 (Management Area F) Length - 1.5 miles Season of Use - Summer and Fall Present Use and Type - Light: Foot, Trailbike Right-of-Way Needs - Have Trail R/W Estimated Cost - $12,000
1989	
Rocky Mountain District	Lange Creek Trail No. 243 Design Class - Mainline: Reconstruction Category - Resource Damage (3) Transportation Category - #1 (Management Area O) Length - 3.0 miles Season of Use - Summer and Fall Present Use and Type - Light: Foot and Stock Right-of-Way Needs - None Estimated Cost - $17,500
Judith District	Middle Fork Trail No. 437 Design Class - Mainline: Construction and Reconstruction Category - Resource Damage (3) Transportation Category - #2 (Management Area I) Length - 2.0 miles (C), 3.0 miles (R) Season of Use - Summer and Fall Present Use and Type - Moderate: Foot, Stock and Trailbike Right-of-Way Needs - None Estimated Cost - $20,000

Kings Hill District	North Fork Deep Creek No. 303 Design Class - Mainline: Construction and Reconstruction Category - Trail Hazard (2) Transportation Category - #1 (Management Area F) Length - 1.5 miles (C), 3.5 miles (R) Season of Use - Summer and Fall Present Use and Type - Moderate: Foot, Stock and Trailbike Right-of-Way Needs - None Estimated Cost - $24,500
1990 **Rocky Mountain District**	Beartop Mountain Trail No. 129 Design Class - Secondary: Reconstruction Category - Trail Hazard (2) Transportation Category - #1 (Management Area P) Length - 2.0 miles Season of Use - Summer and Fall Present Use and Type - Moderate: Foot and Stock Right-of-Way Needs - None Estimated Cost - $13,000
	East Side Sun River Trail No. 109 Design Class - Mainline: Reconstruction Category - Trail Hazard (2) Transportation Category - #1 (Management Area P) Length - 1.5 miles Season of Use - Summer and Fall Present Use and Type - Heavy: Foot and Stock Right-of-Way Needs - None Estimated Cost - $8,000
Judith District	Dry Wolf Trail No. 401 Design Class - Mainline: Construction Category - Resource Damage (3) Transportation Category - #1 (Management Area G) Length - 4.0 miles Season of Use - Summer and Fall Present Use and Type - Moderate: Foot, Stock, and Trailbike Right-of-Way Needs - None Estimated Cost - $32,000

Musselshell District

Mud Creek Trail No. 621

Design Class - Secondary: Reconstruction
Category - Resource Damage (3)
Transportation Category - #2 (Management Area C)
Length - 2.5 miles
Season of Use - Summer and Fall
Present Use and Type - Foot, Stock, and Trailbike
Right-of-Way Needs - None
Estimated Cost - $12,500

Daisy Canyon Trail No. 619

Design Class - Mainline: Reconstruction
Category - Resource Damage (3)
Transportation Category - #1 (Management Area G)
Length - 2.5 miles
Season of Use - Summer and Fall
Present Use and Type - Foot, Stock, and Trailbike
Right-of-Way Needs - None
Estimated Cost - $12,500

Kings Hill District

Blankenbaker Trail No. 320

Design Class - Mainline: Construction and Reconstruction
Category - Resource Damage (3)
Transportation Category - #1 (Management Area F)
Length - 4.0 miles (C), 2.0 miles (R)
Season of Use - Summer and Fall
Present Use and Type - Foot, Stock, and Trailbike
Right-of-Way Needs - None
Estimated Cost - $28,000

1991

Rocky Mountain District

Prairie Creek Trail No. 262

Design Class - Secondary: Reconstruction
Category - Resource Damage (2)
Transportation Category - #1 (Management Area P)
Length - 3.0 miles
Season of Use - Summer and Fall
Present Use and Type - Impassable
Right-of-Way Needs - None
Estimated Cost - $20,500

Musselshell District

Nevade Daisy Trail No. 610

Design Class - Mainline: Reconstruction
Category - Resource Damage (2)
Transportation Category - #1 (Management Area G)
Length - 1.5 miles
Season of Use - Summer and Fall
Present Use and Type - Moderate: Foot, Stock and Trailbike
Right-of-Way Needs - None
Estimated Cost - $10,500

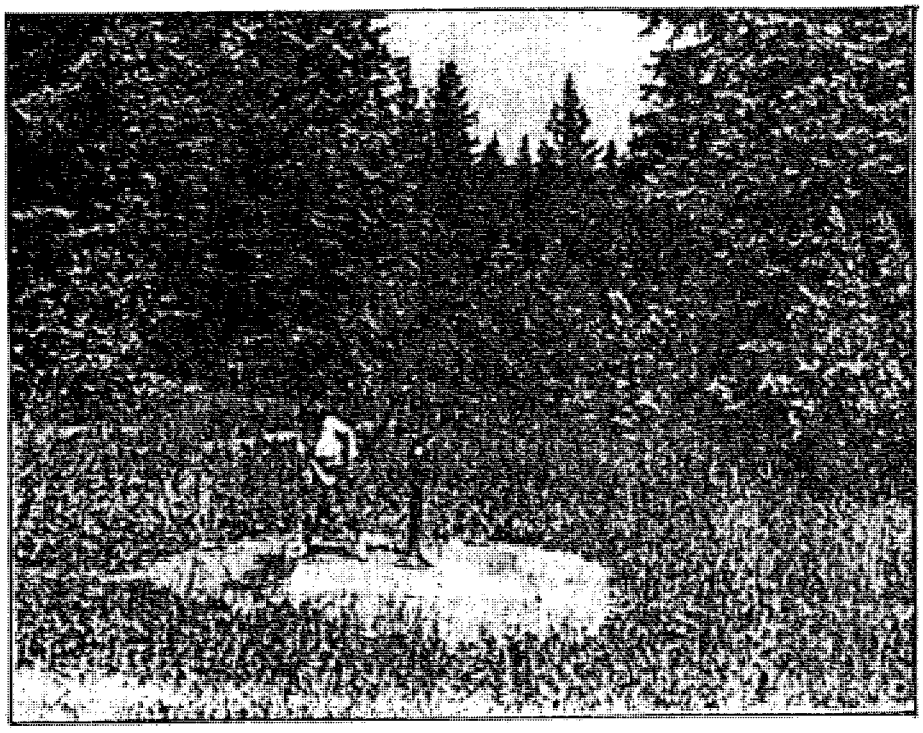
Morrisy Canyon Trail No. 612

Design Class - Mainline: Reconstruction
Category - Resource Damage (2)
Transportation Category - #1 (Management Area G)
Length - 2.5 miles
Season of Use - Summer and Fall
Present Use and Type - Moderate: Foot, Stock and Motorbike
Right-of-Way Needs - None
Estimated Cost - $12,500

Kings Hill District

South Fork Deep Creek

Design Class - Mainline: Construction and Reconstruction
Category - Resource Damage (3)
Transportation Category - #1 (Management Area F)
Length - 3.5 miles (R), 1.5 miles (C)
Season of Use - Summer and Fall
Present Use and Type - Moderate: Foot, Stock and Motorbikes
Right-of-Way Needs - None
Estimated Cost - $21,000

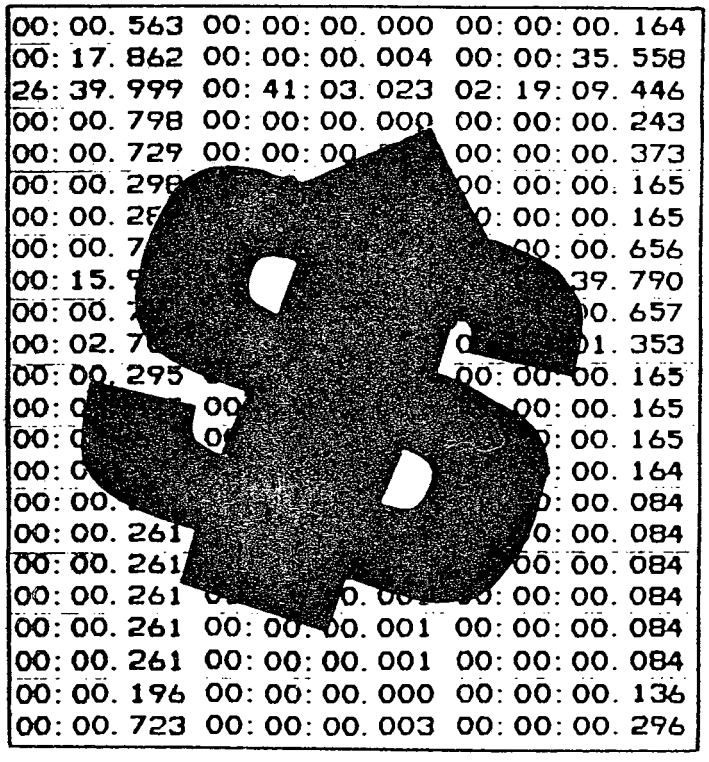


Pumping water on a Summer Day.

LEWIS AND CLARK NATIONAL FOREST PLAN

Appendix T

Projected Budget Required to Implement Forest Plan



PROJECTED BUDGET REQUIRED TO IMPLEMENT THE FOREST PLAN
(Average Annual in Thousands of Dollars for the First Decade)

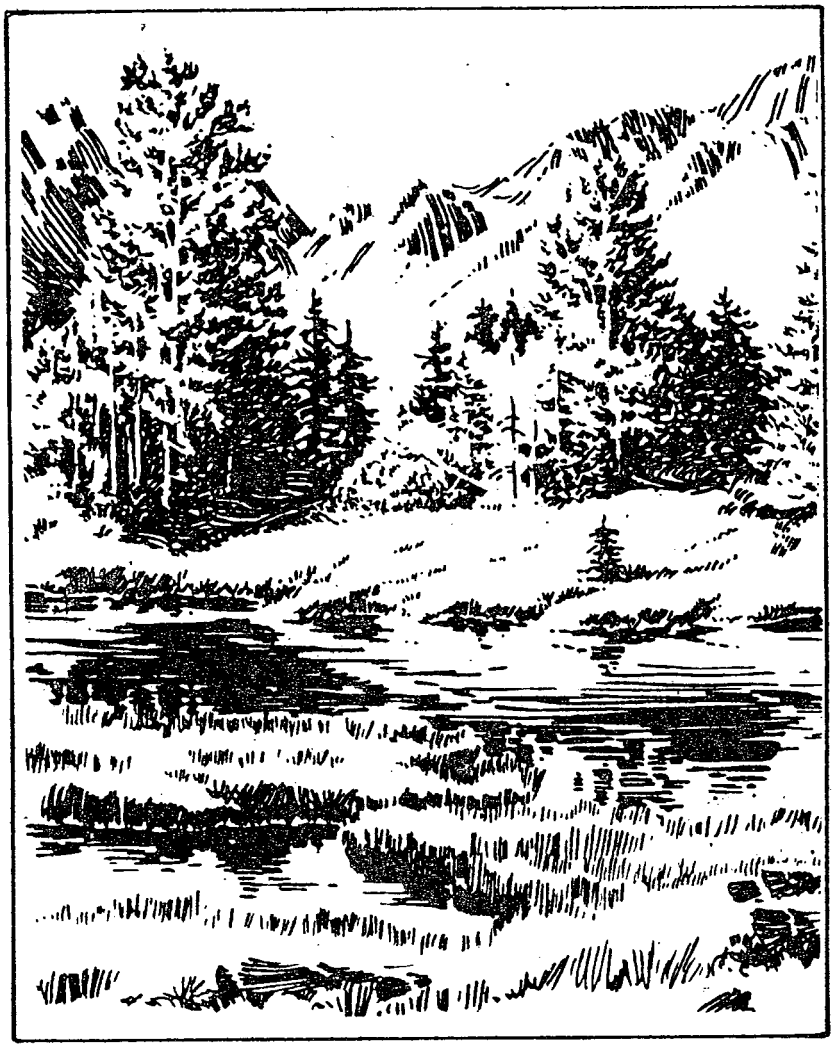
Funding Item	Budget Activity	FY78 Dollars 1/	(x1.47 =) FY 84 Dollars
00	General Administration	610	897
01	Fire	190	279
02	Fuels	19	28
03	Sales Prep/Admin	155	228
04	Timber Planning	93	137
05	Silvicultural Exams	122	179
06,07	Range	255	375
08	Minerals	280	412
09	Recreation	324	476
10	Wildlife and Fish	293	431
11	Soil, Water, and Air	101	148
12	Facilities Maintenance	71	104
13	Special Uses	32	47
14	Geometronics	7	10
15	Land Exchange	30	44
16	Landline Location	57	84
17	Road Maintenance	242	356
18	Trail Maintenance	177	260
19	Co-op Law Enforcement	26	38
20	Reforestation - Appropriated	36	53
21	TSI - Appropriated	18	26
23	Tree Improvement	5	7
26-28	KV - (Trust Fund)	64	94
29	CWFS - Other (Trust Fund)	15	22
30	Timber Salv. Sales (Perm Fund)	20	29
31	Brush Disposal (Perm Fund)	15	22
32	Range Improvement	31	46
33	Recreation Construction	29	43
34	Facilities Construction - FA&O	0	0
35	Eng. Construction Support	285	419
36	Const. Capital Investment Rds	328	482
37	Trail Const/Reconstruction	83	122
42	Land Status	24	35
43	Land Acquisition	98	144
	TOTAL BUDGET	4,135	6,077
24,38	Timber Purchaser Rd. Credits	135	198
	TOTAL COSTS	4,270	6,275

1/ FY 1978 is the base year for costs used in Forest planning.

LEWIS AND CLARK NATIONAL FOREST PLAN

Appendix U

Wilderness Recreation Opportunity Class Descriptions and Guidelines



DECISION NOTICE

AND

FINDING OF NO SIGNIFICANT IMPACT

AND

NONSIGNIFICANT AMENDMENT TO THE FLATHEAD NATIONAL FOREST PLAN LEWIS AND CLARK NATIONAL FOREST PLAN HELENA NATIONAL FOREST PLAN LOLO NATIONAL FOREST PLAN

Amending:

Recreation Management Direction

for the

Bob Marshall, Great Bear, and Scapegoat Wildernesses

April 1987

What is being decided?

This decision notice documents our decision to amend the Flathead, Helena, Lewis and Clark, and Lolo National Forest Plans to incorporate recreation management direction for the Bob Marshall, Great Bear, and Scapegoat Wildernesses, known as the Bob Marshall Wilderness Complex (BMWC). This recreation management direction will replace the following appendices:

Appendix R of the Flathead National Forest
Appendix S of the Helena National Forest
Appendix U of the Lewis and Clark National Forest
Appendix O-2 of the Lolo National Forest

These Forest Plans are amended by the document titled Bob Marshall, Great Bear, Scapegoat Wildernesses - Recreation Management Direction, dated April 1987. This decision notice also documents our rationale for selecting Alternative D as the strategy for modifying current recreation management direction in these wildernesses. The analysis of alternatives and public comments we considered in making this decision can be found in the Environmental Assessment.

What is the goal of this Amendment?

Our goals in preparing this amendment are to secure preservation of the integrity of the wilderness resource and minimize human induced impacts while still permitting appropriate levels of recreational use.

What will happen to the existing recreation management direction for these Wildernesses?

This amendment complements and supplements existing Management Area direction for managing recreational use as displayed in the Forest Plans.

What is the duration of the Amendment, and can it be changed?

The management direction contained in this Amendment is subject to the same revision period as the Forest Plans themselves. The Forest Plan will normally be revised every 10 years, but must be revised every 15 years. In the case of this Amendment, more frequent revision may be necessary to incorporate additional direction with respect to wildlife management issues.

What is not being decided?

While this Amendment contains specific management actions that will be used to rehabilitate and/or prevent unacceptable resource and social conditions, no site specific actions are identified, with the exception of the Schafer Meadows Airstrip area and those areas identified in Table 9. The Amendment lists the management actions that may be undertaken and the process managers will use to employ them on specific sites within the Wildernesses. The Amendment directs that additional consideration be given to wildlife issues, in cooperation with the Montana Department of Fish, Wildlife and Parks, but does not identify specific wildlife management direction. Decisions about outfitter service levels will be made in the future.

PUBLIC INVOLVEMENT, ISSUES, AND MANAGMENT CONCERNS

Public involvment on issues, management direction, and development of alternatives was an essential part of the process of identifying this recreation management direction. A task force composed of about 45 citizens, managers, and researchers was formed in February 1982 to jointly compose this Amendment. The full Task Force met a total of nine times between February 1982 and June 1986. In addition, numerous meetings were held with subgroups of the task force during this period to help resolve issues and identify alternatives. A formal public comment period on the draft recreation management direction began in July 1985 and ended in December 1985. Approximately 1600 wilderness visitors participated in a study of visitor preferences and attitudes toward management policy in 1982. The results of this study were also used in developing the Amendment.

In dealing with the array of 15 issues listed in the environmental assessment, six of them surfaced as major concerns warranting indepth discussion and attention. These major issues were identified from the informal and formal public involvement and from the interdisciplinary team's identification of issues following publication of the draft Amendment:

1. Management of Schafer Meadows Airstrip and nearby recreation facilities: How should aircraft use be managed and what level of recreation facilities is appropriate?

2. Outfitter base camps in the Argosy Creek and Silver Tip Creek drainages: Can these base camps continue to operate and meet the resource standards proposed for these areas?

3. Communication and administrative facilities: What administrative facilities are appropriate in the Wildernesses and where should communication facilities be located?

4. Trail construction and maintenance: What is the appropriate standard for trail construction and maintenance in different areas of the Wildernesses?

5. Wildlife: What is the effect of the Amendment on threatened and endangered species, and how should wildlife be managed in the Wildernesses?

6. Opportunity Class Allocations: Should changes in the proposed opportunity class designations be made?

A number of relatively minor issues were also identified, but those concerns were either resolved during the planning phase, or are addressed in Appendix I of the Environmental Assessment (Response to Public Comments).

During the planning process, task force members considered and evaluated a wide variety of alternative ways of managing recreational use in these Wildernesses. The Limits of Acceptable Change wilderness planning system provided the overall framework for examining and discussing issues and concerns, proposing alternatives and evaluating them. Alternatives were considered for the following:

1. Descriptions of the wilderness recreation opportunity classes

2. Indicators of wilderness resource and social conditions

3. Standards for the above indicators

4. Wilderness recreation opportunity class allocations

5. Management actions to respond to wilderness resource and social impact problems.

Because the overriding driving concern in this regime of wilderness management is the designation of opportunity classes, the Environmental Assessment addresses various alternative designations, which include:

1. Alternative A -- No Action

   Do not amend the recreation management direction for wilderness at this time. Continue using the direction provided in the Forest Plans.

2. Alternative B -- Emphasize Opportunities for Wilderness Dependent Recreation

   This alternative would maximize the capability of the Wildernesses to provide opportunities for appropriate recreation. It would increase from the present situation the amount of allowable use and impact.

3. Alternative C -- Emphasize Preservation of the Wildernesses's Pristine Conditions

   This alternative would maximize the area in the Wildernesses where no human impact would be permitted. Consequently, it would allow substantially less impact and use than is currently permitted.

4. Alternative D -- The Proposed Action

   This alternative allows somewhat more impact than alternative C around the currently heavily used travel corridors. It would permit considerably less impact over the entire wilderness than Alternatives A and C.

THE DECISION

It is our decision to amend the Forest Plans with implementation of Alternative D as the recreation management direction for the Bob Marshall Wilderness Complex. This Amendment will guide management of recreation use of the Complex until the Forest Plans are revised.

This Amendment establishes a basis to resolve several concerns and issues within these Wildernesses, and directs the following:

1. Specific Wilderness Recreation Opportunity Classes are designated in the wilderness. These are areas of land managed to provide opportunity for similar wilderness dependent recreation experiences. Each of the four Opportunity Classes provides for a specific type of recreation experience, and establishes an overall management regime to restore, enhance or maintain those experiences.

2 Indicators (and standards) of wilderness resource and social conditions are established. These indicators will be periodically monitored to detect changes in wilderness conditions. Negative changes in conditions will be followed by management actions to prevent conditions from violating standards (or becoming unacceptable).

3. A regime of management actions. For each major type of resource or social condition impact problem, a list of management actions to be employed, by Opportunity Class is identified. Generally, these actions are listed, and will be used, in order of increasing restrictiveness. Non-regulatory actions will be used first. If these actions fail to adequately correct the problem, more restrictive and regulatory actions may then be implemented.

RATIONALE FOR THE DECISION

The factors we used to determine which alternative best protects the integrity of the wilderness resource include response to issues, concerns and opportunities, response to laws and national policy; environmental quality; and other agency goals.

In making this decision, we recognize the limitations of the physical and biological systems of the wilderness, and that the Complex cannot provide everything each individual or group would like. Our reasoning for the decision is as follows:

Response to Issues and Concerns

1. Issue: **Management of Schafer Meadows Airstrip and Nearby Recreation Facilities**

   The Schafer Meadows area is placed in Opportunity Class IV because of the extensive amount of recreation and administrative activity found there. Placing this area in any other Opportunity Class would have made the management job unrealistically difficult. Congressional direction mandates that the airstrip remain open for public use, but that aircraft use of the

airstrip be managed to protect wilderness values. Standards for such use are adopted in the Amendment, and the number of aircraft flights into the area will be monitored. Educational efforts to reduce unnecessary training flights will be implemented to reduce the noise generated by such. Pilots will also be informed that the principal purpose of the airstrip is as a wilderness access. The campground mid-way along the airstrip will be removed as facilities deteriorate. The campground receives little use and the one located at the end of the airstrip will suffice. We selected Alternative D because it provides specific direction on management of the Schafer area.

2. Issue: **Outfitter base camps in Argosy Creek and Silver Tip Creek drainages**

Nearly all those who commented on this issue, both in the formal comment period and in Task Force deliberations felt that these drainages should be designated as Opportunity Class I. These are truly pristine areas and should remain so. We believe that outfitter base camps can be managed to meet the standards in the Amendment. Alternative D was selected because it minimizes the potential economic effects to outfitters, while maintaining much of the BMWC in the most pristine opportunity classes. Managers will work with outfitters in these areas, as well as others, to cooperatively develop a plan of action, outlined in the camp operation plan, to ensure that standards will be met. If after a trial period, standards cannot be met, managers will work with outfitters and affected publics to develop suitable alternatives. These alternatives may include moving the camp to a different location, changing the standards, or changing the Opportunity Class designation for these areas. Our intent in maintaining these areas in Class I was to first implement actions that would allow these camps to remain, prior to the consideration of any possible changes in Opportunity Class designations, or moving the camps to a different location.

3. Issue: **Appropriateness and Location of Communication and Administrative Facilities in the Wildernesses**

The intent of the Amendment is to provide overall management direction for recreation within the Complex. Management of administrative and communication facilities was not intended to be a component of this Amendment. However, such facilities do have an impact on wilderness recreation experiences, either serving as an attraction to some recreationists, or as an intrusion into other's experiences. The Amendment directs that an analysis of communication facilities be completed to determine communication needs and location of communication facilities, basically repeater stations. Such facilities are normally very small, and not intrusive to wilderness experiences. Never-the-less, every attempt will be made to minimize the number of repeater stations and to locate them outside of the Complex or outside of Class I areas.

Because of the size of the Complex, some administrative facilities are needed to house wilderness rangers and trail crews. These facilities also represent a former way of wilderness management that has important historical value. Many facilities themselves are eligible for nomination on the National Register of Historical Places. However, some of these facilities are in poor condition, of little value for administrative purposes, serve to concentrate wilderness visitors, or act as an

unneccessary intrusion into wilderness experiences. The Amendment directs that no new facilities be constructed in the Wildernesses and that no expansion of existing ones be permitted. We are further directing that an analysis of the need for administrative sites be conducted to determine if some can be eliminated, reduced in size or moved to less obtrusive locations. Any decision to relocate or remove existing structures will be made in consultation with the State Historic Preservation Office.

4. Issue: Appropriate Standards for Trail Construction and Maintenance in Different Areas of the Wildernesses

Some individuals and groups expressed the opinion that trails be constructed and maintained to a high standard. Others felt that how trails are built and the frequency and type of maintenance they receive should be influenced by the Opportunity Class in which they are located. We have decided that trails exist primarily to provide opportunities for wilderness dependent recreation experiences. By adopting a specific allocation of Opportunity Classes to different areas of the Complex, we are providing opportunities for a range of those experiences. Thus, we feel that there should be different standards for construction and maintenance in the different Opportunity Classes. To the extent that budgets will allow, all trails in the Complex will be maintained according to the guidelines established in the Amendment. The Amendment provides overall guidelines for these standards.

5. Issue: Relationships between Wildlife and Recreation Management Direction

We believe that native wildlife is both an important component of wilderness and an essential component of many wilderness recreation experiences. The Complex contains four listed threatened and endangered species. A biological evaluation was conducted to determine if the proposed recreation management direction would adversely affect these species. The biological evaluation contained several recommendations concerning implementation of management actions at specific sites within the complex. We will ensure that these recommendations are followed if it is necessary to implement those actions.

There are innumerable relationships between recreationists and wildlife: some seek wildlife as game, others as appreciation, still others view wildlife as a way to learn more about natural processes. These considerations were identified in the public involvement process, and the Montana Department of Fish, Wildlife and Parks was requested to take the leadership in developing a program of wildlife managment in the Complex. A draft of the work plan to develop the proposed program was written and presented to a number of public groups and individuals. While that program has not been implemented at this time, we felt it was necessary to implement the recreation management direction now in order to prevent any further degradation of the wilderness and to begin restoration of deteriorated areas. We will work with the Department in providing appropriate input into their program. When that program is developed, the salient components will be incorporated into the recreation management direction for the BMWC as wildlife goals and objectives. Specific indicators and standards may be developed if applicable, and implementable, for wildlife protection and management.

6. Issue: Changes in Opportunity Class Allocations

Following release of the draft Amendment, several Ranger Districts proposed changes in some Opportunity Class allocations. These were presented to the LAC Task Force in February 1986. We concur with these recommended changes. Some of the changes were recommended because of mistakes in the original mapping, others because the draft did not accurately reflect actual resource conditions, still others were made to provide greater flexibility in management or to enhance opportunities to distribute recreational use. We feel, however, that the allocation identified in the Amendment is now relatively permanent, that is, it should be changed only with very good reason, such as suggested in the discussion under Issue 2.

Response to Laws and National Policy

All three Wildernesses in the Complex are managed under the provisions of the Wilderness Act of 1964. Section 4(a) of the Wilderness Act requires that the Forest Service manage these Wildernesses to preserve the wilderness character for which they were established. We believe designation of Opportunity Classes and the allocation in the Amendment does the best job of meeting this mandate of all the alternatives considered. The Amendment will prevent any further deterioration in the wilderness resource as a result of recreation use.

The Amendment also responds to regulations promulgated under the provisions of the National Forest Management Act of 1976 which state:

> "...Provide for limiting and distributing visitor use of specific portions in accord with periodic estimates of the maximum levels of use that allow natural processes to operate fully and that do not impair the values for which wildernesses were created."

The Amendment responds to this direction by establishing specific standards of acceptability of resource impact and through implementation of a non-degradation policy. In addition, limits on visitor use are provided for should they become necessary.

Environmental Quality

Environmental quality was an important consideration in selecting Alternative D. Indicators and standards established for important resource parameters will help to control, reduce and minimize impacts from recreation. The non-degradation policy limits the total amount of impact. Alternative D places about 80% of the Complex in the two most pristine Opportunity Classes, while Class IV is limited to approximately 6% of the area. Important habitat components are substantially avoided in Class IV. The Biological Evaluation determines that threatened and endangered wildlife species are not adversely impacted. Alternative D will result in an improvement of resource conditions over time, compared to Alternative A, because the standards do not permit much of the impact now found. Fish habitat impacts do not vary by any alternative.

Compatibility With Other Public Agency Goals

The planning effort included representatives of other agencies, primarily the Montana Department of Fish, Wildlife and Parks. Fish and Wildlife management in the Wildernesses is guided by a Memorandum of Understanding between the Forest Service and the Department. During the writing of the Biological Evaluation, the Fish and Wildlife Service was informally consulted. They determined the evaluation was consistent with Threatened and Endangered Species recovery goals.

IMPLEMENTATION AND MONITORING

Implementation of this Amendment will begin immediately after signing of this decision. Implementation requires moving from the current wilderness recreation management direction as found in the respective Forest Plans to the managment regime found in the Amendment.

Monitoring and evaluation are explicit components of the Amendment. The monitoring program provides us with information on the progress of implementation. Such information will provide feedback into the Forest Planning process for future change if necessary.

RECORDS

The supporting records for the Amendment are contained in a project file located at the Supervisor's Office, Flathead National Forest. They contain detailed records and information concerning the process and data used in developing the Amendment.

All documentation chronicling the amendment process is available for inspection during regular business hours at:

Supervisor's Office
Flathead National Forest
1935 Third Avenue East
Kalispell, MT 59901
(406) 755-5401

DOCUMENTATION OF NONSIGNIFICANT AMENDMENT

This Amendment to the management direction for Wildernesses in the Bob Marshall Wilderness Complex of the respective Forest Plans constitutes a nonsignificant change to these plans according to 36 CFR 219.10(f), and the Forest Service Manual 1922.33a, item 4, (minor changes in standards and guidelines). The factors used to determine if the proposed change was significant or nonsignificant were timing; location; goals, objectives, and outputs; and management prescriptions.

Timing

The possibility of implementing management actions that may have significant impacts, such as use rationing, would likely not occur within the near future.

Location

Only lands designated Wilderness will be affected by the Amendment. Further, a relatively small part of the wilderness, campsites and trails will be immediately affected.

Goals, Objectives, and Outputs

The Amendment is consistent with goals and objectives established in the respective Forest Plans, and in a sense, is an implementation of those goals and objectives. The Amendment does not alter long-term relationships among the levels of goods and services projected by the respective Forest Plans. Recreation opportunities provided in the Complex are not foregone, nor are other wilderness dependent resources.

Management Prescriptions

The changes in management presribed by the Amendment are neither irreversible or irretrievable.

FINDING OF NO SIGNIFICANT IMPACT

We have determined through the Environmental Assessment that this is not a major Federal action that would significantly affect the quality of the human environment; therefore, an environmental impact statement is not needed. This determination is based on the following factors:

1. There are no irreversible resource committments.

2. There are no significant cumulative effects.

3. The impacts resulting from this Amendment should not adversely affect the well being of threatened and endangered species.

4. The Amendment is within the scope of the Environmental Impact Statements prepared for the Flathead, Helena, Lewis and Clark, and Lolo Forest Land and Resource Management Plans.

APPEAL RIGHTS

This decision is subject to appeal pursuant to 36 CFR 211.18. Notice of Appeal must be in writing and submitted to anyone of the following officials:

Edgar B. Brannon, Jr., Forest Supervisor
Flathead National Forest
PO Box 147
Kalispell, MT 59901

Robert S. Gibson, Forest Supervisor
Helena National Forest
Federal Office Bldg., Room 334
Helena, MT 59626

Orville L. Daniels, Forest Supervisor
Lolo National Forest
Bldg. 24, Fort Missoula
Missoula, MT 59801

John D. Gorman, Forest Supervisor
Lewis and Clark National Forest
PO Box 871
Great Falls, MT 59403

Notice of appeal must be submitted to one of the above officials within 45 days from the date of this decision. The latest date given below will be used to determine the beginning of the appeal period. A statement of reasons to support the appeal and any request for oral presentation must be filed within the 45-day appeal period for filing notice of appeal.

Edgar B. Brannon, Jr.
Forest Supervisor

March 31, 1987
Date

Robert S. Gibson
Forest Supervisor

April 6, 1987
Date

John D. Gorman
Forest Supervisor

4-2-87
Date

Orville L. Daniels
Forest Supervisor

April 1, 1987
Date

LEWIS AND CLARK NATIONAL FOREST PLAN

Appendix V

Interagency Grizzly Bear Guidelines, 1986, is hereby made a part of this Appendix. This document has not been included due to its size and the fact that it is a public document.

LEWIS AND CLARK NATIONAL FOREST PLAN

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Packed for a day in the field.