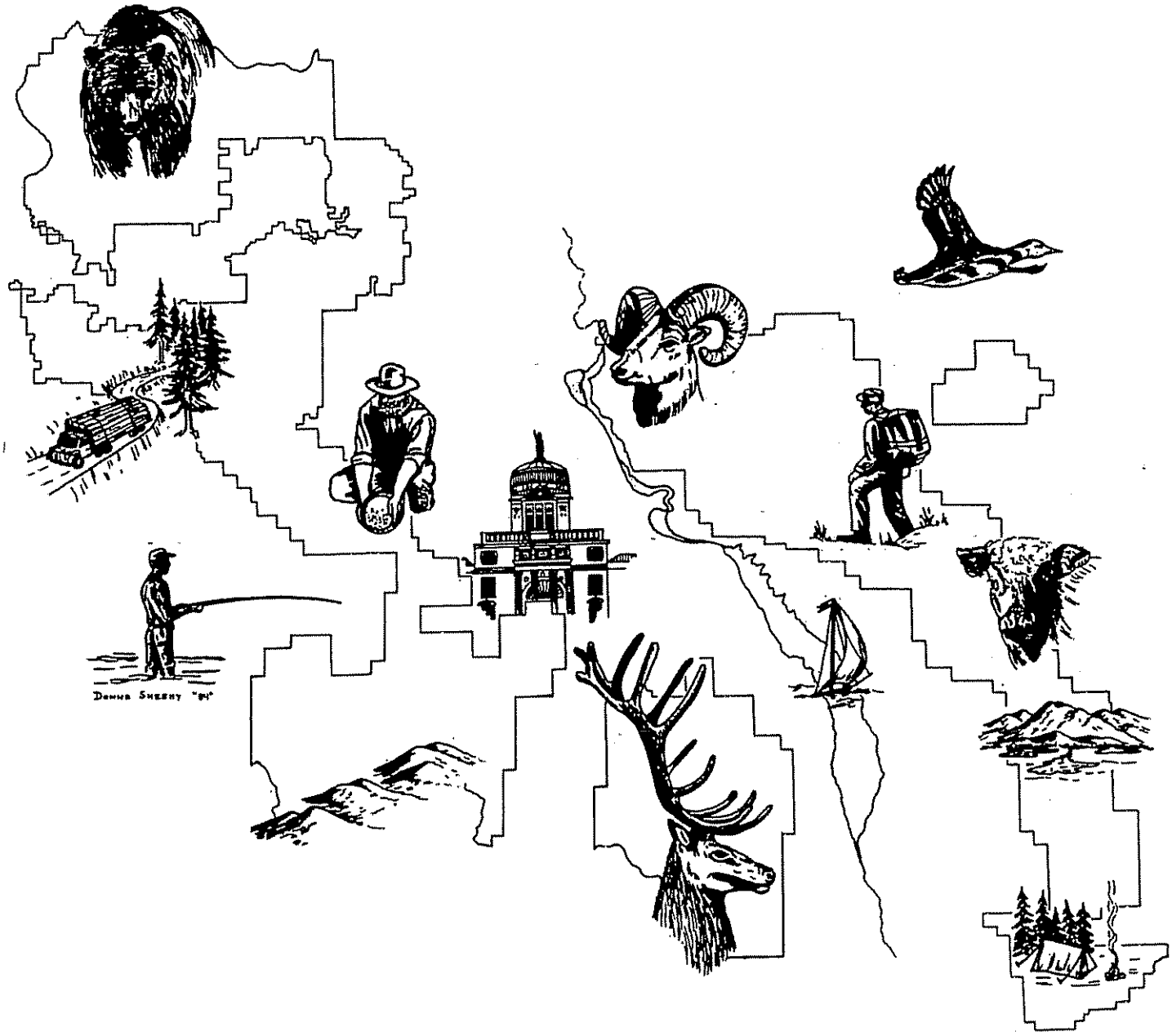
United Stator
Department of
Agriculture

Forest Service
Helena
National Forest

Forest Plan



forest Plan Helena National Forest **April *86***

PREFACE

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

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I. INTRODUCTION

A. PURPOSE

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

B. MANAGEMENT DIRECTION

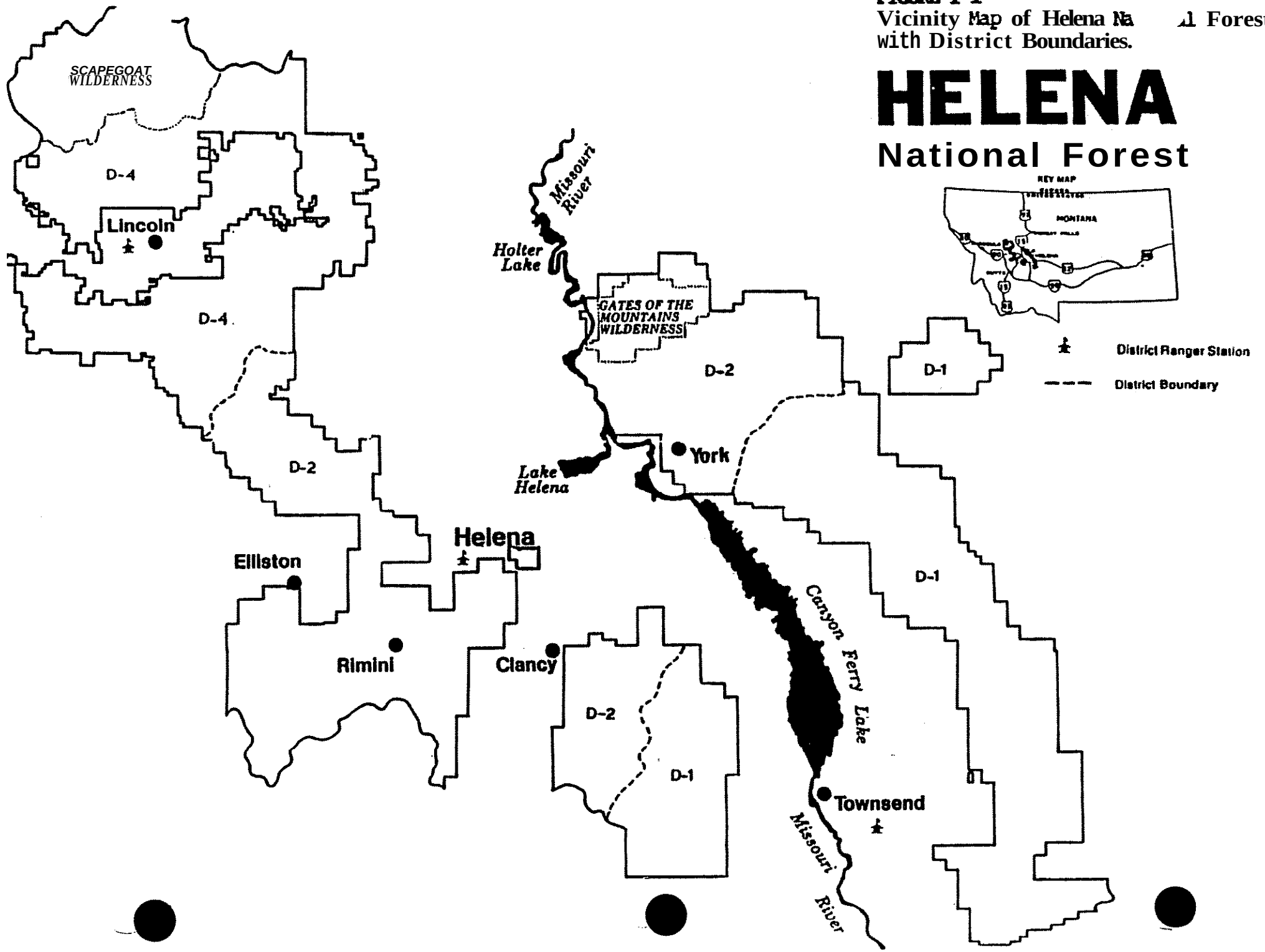
The goals, objectives, standards, schedule of management practices and monitoring and evaluation requirements comprise the Plan's management direction. However, the projected outputs, services, and rates of implementation are dependent on the annual budgeting process.

C. RELATIONSHIP TO OTHER DOCUMENTS

Environmental Impact Statement--The Forest Plan is based on the various considerations which have been addressed in the accompanying Environmental Impact Statement (EIS), and represents the proposed action in that EIS (modified as required by the Record of Decision). The planning process and the analysis procedure used in developing this Plan, as well as tbe other alternatives that were considered, are described or referenced in the EIS. 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.

Regional Guide--The Regional Guide displays the Northern Regions's portion of the Forest and Rangeland Renewable Resources Planning Act (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.

FIGURE I-1
Vicinity Map of Helena National Forest with District Boundaries.



II. FOREST-WIDE MANAGEMENT DIRECTION

A. GOALS

The Forest goals were developed from the issues and concerns identified at the beginning of the planning process. Appendix A lists the 15 major issues and concerns and explains how each is addressed in the Forest Plan.

The Forest-Wide standards and management area direction have been designed to meet the following goals:

1. Provide a range of quality outdoor recreation opportunities within a forest environment that can be developed for visitor use and satisfaction.

2. Provide a range of quality recreation, including motorized and nonmotorized opportunities, in an undeveloped forest environment.

3. Protect and provide the benefits of wilderness values for the public in accordance with the Wilderness Act of 1964.

4. Maintain and improve the habitat over time to support big game and other wildlife species.

5. Determine, through monitoring, the relationship between wildlife populations, their habitat, and various land use activities in the Elkhorn Mountains that could be applied to benefit wildlife in other areas of the National Forest System Lands.

6. Manage vegetation to provide optimum forage conditions for livestock.

7. Maintain or enhance sufficient grizzly bear habitat to meet the population recovery goals established in the Grizzly Bear Recovery Plan for the Helena Forest.

8. Maintain or enhance all identified bald eagle nesting sites and seasonal use sites, and potential nesting sites to facilitate the recovery of bald eagles. Maintain or enhance all identified gray wolf habitat to facilitate recovery. Identify and maintain peregrine falcon habitat to facilitate recovery.

9. Provide Forest visitors with visually appealing scenery.

10. Maintain high quality water to protect fisheries habitat, water based recreation opportunities, and municipal water supplies and to meet or exceed state and Federal water quality standards.

11. Provide a sustained timber yield that is responsive to local industry and national needs.

12. Provide firewood as an energy resource for personal and commercial uses.

13. Provide for exploration, development, and production of mineral and energy sources on the Forest.

14. Provide a fire protection and use program which is responsive to land and resource management goals and objectives.

15. Develop and implement a road management program with road use and travel restrictions that are responsive to resource protection needs and public concerns.

16. Manage the Forest in a manner that is sensitive to economic efficiency.

17. Coordinate Forest management activities with the land and resource management efforts of other Federal agencies, state and local governments, and adjacent private landowners.

18. Emphasize educational and public information programs to increase public awareness and understanding of Forest Service management activities.

B. OBJECTIVES

1. Resource Activity/Summaries

Following are brief summaries of how the various resources and activities will be managed under the Forest Plan. A more complete understanding of the management direction can be attained by reading the Forest-wide goals and standards in this chapter, and the management area goals and standards in Chapter III.

Recreation

To keep the public informed of recreation possibilities, a Recreation Opportunity Guide for each District will he completed by 1987. These Recreation Opportunity Guides will be available for viewing at each District Office and the Forest Supervisors Office. Dispersed recreation opportunities, including both motorized and nomnotorized. in the general forest environment will be emphasized. About 40 percent of the Forest will be managed in a way that provides opportunities for primitive or semi-primitive recreation. The existing recreation residence permits at Forest Heights (near MacDonald Pass) will be continued, unless substantial conflicts with public needs or resource values develop. Efforts will be made to terminate most recrestion cabin permits at the earliest opportunity.

Cooperative efforts will be implemented and maintained with interested organizations. clubs, and other public agencies, to provide for development and maintenance of trails needed for winter activities.

The Forest will work with private. state and other federal land managers to encourage developing new camping, picnicking, and other developed site opportunities to meet future demands. Existing 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.

Visual

Landscape management will be practiced throughout the Forest and will have special emphasis in areas seen from identified visually sensitive roads and trails. Landscape management mitigation principles will be applied to resource activities that may affect the visual setting.

Cultural

The cultural resource will be inventoried, evaluated, and protected, as appropriate. The Forest will undertake a systematic program of cultural resource inventory, evaluation, and preservation aimed at the enhancement and protection of significant cultural resource values. An inventory survey for cultural resources will be made for all significant ground disturbing activities. Cultural resources evaluated as "significant" will be preserved in place whenever possible and be protected from damage or destruction. An overview of the Forest's prehistory and history will be completed.

Wilderness

Designated wildernesses will be managed according to the Wilderness Act of 1964. Important wildlife habitat for big game species, significant nongame species, and threatened and endangered (T&E) species (especially the grizzly bear) will be maintained by natural processes. Existing grazing use on allotments will be maintained.

Studies will be conducted to determine the limit on the types and amount of recreation use that can be tolerated while maintaining long-term opportunities for wilderness dependent experiences.

Fire Management Direction has been prepared and implemented for the Scapegoat Wilderness. The direction allows unplanned naturally-caused fire to burn as prescribed fire, if within predetermined criteria. The criteria are in the Fire Management Direction in Appendix R. Unplanned person-caused fires will. be suppressed. Fire Management Direction will be prepared for other designated wildernesses, by 1990.

Roadless

Throughout the life of this plan approximately 79,200 acres of undeveloped area outside of wilderness will remain undeveloped and he managed for semi-primitive recreation and wildlife values. The areas are:

Nevada Mountain	12,000 acres
Mount Helena	4,600 acres
Vigilante-Hanging Valley	3,300 acres
Elkhorns	44,900 acres
Camas Creek	4,200 acres
Silver King/Falls Creek	7,200 acres
Indian Meadows	2,000 acres
Gates-of-the-Mountains	1,000 acres

In addition 203,900 acres of undeveloped areas in blocks over 5,000 acres assigned to other resource management goals such as wildlife. grazing or minimum level management will provide additional semi-primitive recreation opportunities. This roadless resource is well distributed throughout the Forest and currently provides a variety of recreation experiences to Forest users.

Wildlife and Fish

Management will emphasize meeting tbe recovery target of 18 grizzly bears on the essential habitat, and the maintenance or enhancement of elk and coldwater fish habitat throughout the Forest. Programs will also be conducted to provide habitat for small game, furbearers. and other existing wildlife and fish species.

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. Peregrine falcon habitat will be maintained. Forest Service work will be coordinated with the efforts of other Federal, State, and private groups that are trying to re-introduce the peregrine. Bald eagle winter use and nesting habitat will be maintained by implementing current habitat management guidelines. To maintain elk habitat capacity, an annual program of habitat improvement will be implemented. Emphasis will center on prescribed burning on the winter range and a road management program to decrease human disturbance. To achieve the catchable trout (six inches or longer) objective. an annual program of habitat improvement is planned along with special riparian management.

nteragency monitoring and evaluation with Montana Department of Fish, Wildlife and Parks (MDFWP) will continue to be stressed in the Elkhorn Mountains. by implementing programs to enhance or maintain wildlife values. Data and information gathered in the Elkhorns could be extrapolated, where appropriate, to other National Forest System Lands.

Range

Forage production will be continued at a level that slightly increases available forage for a portion of the year-round needs of the local livestock industry. Potential use will increase from the current 48,500 to 50,000 AUMs, by the end of the decade. This increase will result from range improvement practices, such as prescribed fire and more intensive management. Grazing management will protect soil and water resources, riparian areas, and T&E species. Noxious weed control will be emphasized. Soil and water conservation practices will be applied during Plan implementation to ensure that Forest water quality goals will be met.

Timber

Management activities will increase the timber productivity on the approximately 251,000 acres of suitable timberland. Annual sale quantity will be 15 million board feet. The sale program depends on managing suitable acres with stocking control techniques, such as precommercial and commercial thinning, and successfully managing any insect or disease outbreaks. Timber

management activities and projects will be coordinated with other resources through an interdisciplinary process. Appendicies H thru M and V summarize the timber volumes and scheduled activities. Opportunities to gather firewood will be increased by temporarily expanding access, by not burning slash piles in potential woodcutting areas for at least one season, and by developing a public awareness program. Soil and water conservation practices will be applied during Plan implementation to ensure that Forest water quality goals will be met.

Water

The water currently meeting state water quality standards will be maintained, by applying soil and water conservation practices that have been developed cooperatively by the State Water Quality agency and the Forest Service and displayed in the Soil and Water Conservation Handbook (FSH 2509.22). To help identify the minimum requirements for projects that could degrade water quality, the effectiveness of state and local bmps will be identified. The quality of water coming from degraded watershed situations (backlog) on Forest lands will be improved through restoration projects (see soil objective).

Water needed for National Forest purposes will be filed for and protected through state water rights procedures.

Minerals

Approximately 830,700 acres (85%) on the Forest will remain open to mineral entry. Sixty-seven percent of the high potential oil and gas lands have standard leasing stipulations (see Appendix N), and 64 percent of the high potential hardrock lands have surface protection stipulations. Ten percent of high oil and gas potential land lands are withdrawn from mineral entry, because of wilderness designation. The remainder of the high potential lands are available, with standard access restrictions.

Mineral access, exploration, and development activities will be consistent with Plan requirements for managing other resources and uses. The Plan provides for resource coordination and identifies stipulations and restrictions to ensure that oil and gas activities are in compliance.

Activities authorized under the mining laws will be administered under the appropriate regulations and according to direction in this Plan. Common mineral materials will be administered on a permit basis. Soil and water conservation practices will be applied during Plan implementation to ensure that Forest water quality goals will be met.

Soils

Soil productivity will be maintained and sediment will be minimized by applying soil and water conservation practices. When soil productivity is being decreased or sediment is approaching unacceptable levels, project design will be changed and more intensive conservation practices will be applied. Soil and water conservation practices will be applied during Plan implementation to ensure that Forest water quality goals will be met.

Lands

As opportunities occur, seek landownership adjustments such as land exchange, donations of fee simple, or easements, on a willing grantor basis to support Forest goals and objectives. Obtain the necessary rights-of-way to manage Forest resources.

Complete a new land ownership adjustment plan by 1990 which will show the nonfederal lands desirable for acquisition and the National Forest System lands available for disposal.

Facilities .

Transportation facilities such as roads and trails will be constructed, managed, and maintained to cost effectively meet the Forest land and resource objectives and visitors' needs.

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 1,600 miles, will increase an average of 22 miles per year over the next decade. The present trail system of approximately 730 miles will have about 8 miles a year of construction or reconstruction. Soil and water conservation practices will be applied during Plan implementation to ensure that Forest water quality goals will be met.

Protection

The Fire Management Direction, completed May 1985, established a cost efficient fire program and is incorporated in the Forest Plan. As part of the direction a fire suppression program will be implemented with the objective to limit the area burned by wildfire to an annual average of 390 acres or less. (See Appendix R)

Maintain the existing air quality on the Forest. The Proposed Forest Plan provides for no significant deterioration in Class I areas for designated wildernesses and Class II for the remainder of the Forest. Requirements of the Montana Smoke Management Plan will be met.

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.

The Forest will be evaluated annually for significant insect and disease problems. Epidemic levels will be controlled through silvicultural, biological or chemical means depending on the resource values involved.

2. Projected Outputs and Activities by Time Periods

Projected outputs and activities that will be used for programming, budgeting, and attainment reporting are displayed in Table II-1. The projected budget required to implement the Forest Plan is shown in Appendix Y.

Table III-2, at the end of Chapter III, shows the schedule of management practices by management area. Appendices U, V, W and X contain the activity schedules for prescribed burning, timber sales, fisheries improvements, and noxious weed control, respectively. Projects will be added to these activity schedules 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. (See Chapter IV, Section C, for a discussion of project planning.)

TABLE II-1 1/

Projected Outputs **and** Activities **by** ***Time*** Period
(Average **Annual** Units)

Target Item	Output of Activity	Unit of Measure	Planned Program 1986–1995	Projected Programs 1996–2005	2006–2015	2016–2025	2026–2035
Recreation							
To1	Developed Use	**M** RVD	95.6	114.1	134.5	156.7	180.7
TO2	Dispersed Use		261.9	293.2	342.5	409.9	447.9
	Wilderness	M RVD	20.9	23.4	27.4	32.8	35.8
	Non-wilderness	M RVD	241.0	269.8	315.1	377.1	412.1
Wildlife & Fish							
To3	Wildlife Hab Imp.	Acres	645	645	645	645	645
T04	Fish Habitat Imp.	Acres	20	20	20	20	20
To5	T&E Habitat Imp.	Acres	25	25	25	25	25
T33	Fish Structures	Structures	20	20	20	20	20
Range							
TO6	Permitted Graze Use	**M** AUM	48.5	48.5	50.0	50.1	50.6
To7	Range Improvement	Acres	1300	1300	1300	1300	1300
To8	Range Resource Plans	**Plans**	10	10	10	10	10
To9	Noxious Weed Control	Acres	700	700	700	700	700
Lands							
T11	Land Exchange	Acres	40	40	40	40	40
Minerals							
T12	Minerals Mgt	Cases	300	300	300	300	300
Timber							
T13	Total Vol Offered	MM BF	**15**	15	15	15	15
T15	Silv. Exams	M Ac.	23	23	23	23	23
T16–17	Reforest - Approp	M Ac.	0.150	0.150	0.150	.150	.150
T18–19	Reforest - **KV**	M Ac.	0.450	0.450	0.450	.450	.450
T20*	Tbr Std Imp - Approp	*M* Ac.	0.190	0.190	0.190	.190	.190
T21*	Tbr Std Imp - **KV**	M Ac.	0.090	0.090	0.090	.090	.090
T22	Landline Location	Miles	13	13	13	13	13
T44	Fuel Mgt. - BD	Acres	1800	1800	1800	1800	1800

Protection							
T23	Fuels Mgt - Act/Nat	Acres	1300	1300	1300	1300	1300
Facilities							
T81-82	Road Const/Reconst						
	Arterial	Miles	0/0	0/0	0/0	0/0	0/0
	Collector	Miles	9/4	9/4	9/4	9/4	9/4
	Local	Miles	13/5	13/5	13/5	13/5	13/5
T83	Trail. Const/Reconst	Miles	8	8	8	8	8

* Precommercial thinning only.

1/ Outputs shown for the first time period are actually planned while the later time periods reflect the projected outputs if the Forest Plan were to continue beyond the first period.

3. Research Natural Area objectives

There are no existing Research Natural Areas on the Forest. However, two candidate areas, Red Mountain and Granite Butte, were identified prior to the Forest Planning Process. The Regional habitat types listed in Table II-2 have been assigned by the Northern Regional Guide as the Forest's objectives for Research Natural Area (RNA) recommendations. The table also lists proposed areas representative of most of the assigned types. Establishment reports will be prepared for each area.

Table 11-2 also lists target habitat types that are not represented in a proposed RNA. The presence of these habitat types have been identified in the Forest Data Base, but have not been specifically located and field mapped.

To meet the targets not yet represented by a candidate RNA, the Forest will make field checks in areas where habitat types are tentatively identified. If these areas appear to have the potential of becoming RNAs, the Forest will consult with the Regional Natural Area Specialist for field verification. For habitat types that are poorly represented or nonexistent on the Helena Forest, efforts will be made to meet the targets through cooperation with adjacent Forests or other Federal land management agencies.

TABLE 11-2

Research Eatural Area (RNA) Objectives

Habitat Type Code	Vegetative	Occurrence**	Proposed RNA
Forested Types			
010	SCREE	M	Red Mountain
210	PSME/AGSP	m	Kingsberry Gulch
230	PSME/FESC	m	Kingsberry Gulch
280	PSME/VAGL	m	
320	PSME/CARU	M	
650	ABLA/CACA	M	Red Mountain
670	ABLA/MEFE	m	Red Mountain
690	ABLA/XETE	m	Red Mountain & Granite Butte
720	ABLA/VAGL	M	
730	ABLA/VASC	M	Granite Butte
820	ABLA-PIAL/VASC	M	Red Mountain
830	ABLA/LUHI	m	Red Mountain
850	PIAL/ABLA	M	Red Mountain
870	PIAL	m	Granite Butte
Nonforest Types			
	Alpine Types	M	Red Mountain
	STCO/BOGR	M	
	FESC/AGSP	M	Granite Butte
	FESC/FEID	M	Granite Butte
	ARTR/FESC	m	Kingsberry Gulch
	RHTR/AGSP	m	
	RHTR/FEID	m	
Aquatic Type and Subtypes			
	Type 1 Stream		Red Mountain
	Type 11 Stream		Red Mountain
	Beaver Ponds		
	Wet Meadows		Granite Butte
	Thermal Springs		

*
** These vegetative descriptions are abbreviations of species names.
M = Major representative in a zone.
m = Minor representative in a zone.

4. Additional Data Requirements and Accomplishment Schedule

Table 11-3 identifies additional requirements needed to improve the Forest's data base, revise current data base inventories to new standards, and to incorporate new data base requirements that have recently been identified.

TABLE II-3
Additional Data Requirements and Accomplishment Schedule

Data Requirement	Data Level	Accomplishment Schedule
Recreation Opportunity Spectrum Inventory (Convert from ROI)	ROS users guide or General Technical Report PNW-98	1990
Recreation Opportunity Guide	Regional Standard	1987
Cultural Resource Overview	Regional Standard	1995
Timber Stand Delineation	Regional Standard	1987
Locate and verify old growth stands on the Forest	Regional Standard	1990
Inventory cutthroat trout populations	Regional Standard	1990
Determine limits of acceptable change for Gates-of-the-Mountains Wilderness	Regional Standard	1995
Helena N.F. Soil Survey Update	National Standard	1988
Micro-climate Relationship to Forest Regeneration	Regional Standard	1995
Fish Habitat Conditions Within Allotments	Regional Standard	1995
Project related sediment yield data for various watersheds and soil types on the Forest	Regional Standard	1995
Precipitation and water-yield data from various parts of the Forest	Regional Standard	1995

C. 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 needs will become apparent during the monitoring and evaluation of the Forest Plan as it is implemented.

Determine erosion sediment production in watersheds east of the Continental Divide.

Determine grizzly bear habitat use on lands in the Grizzly Bear Recovery Plan.

Establish base level nutrient needs for tree species in northern Rocky Mountains

D. DESIRED FUTURE CONDITION OF THE FOREST

This section describes what the future Forest should be like if the Forest Plan management direction 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).

ecade One

By the end of the first decade there will be some noticeable changes on the Forest.

During the decade, the timber program will harvest 150 million board feet on 19,400 acres scattered throughout the Forest. To support this activity up to 130 miles of local roads and 90 miles of collector roads will be constructed. About 6,000 acres will have been planted with the remaining cutover areas regenerating naturally and nearly 2,800 acres will have been thinned. These activities will result in slight changes in the recreation setting. visual quality, and wildlife habitat effectiveness. Road restrictions will be used to resolve user conflicts, promote user safety, or protect resources. Opportunities to gather firewood will increase.

The age class distribution on the suitable timberland will start to shift from a predominance of mature age class to a small, but greater than now, percentage of seedling, saplings, and pole sized material. There will still be a larger percentage of old growth than other age classes and it will be well distributed over the Forest.

Both wildlife and livestock range will be improved to increase forage production. By the end of the first decade 6,700 acres will be treated specifically for wildlife habitat improvement and 13,000 acres for wildlife and livestock forage production. Most treatment will be prescribed burning.

Potential livestock AUMs should increase from 48,500 to 50,000 because of improving forage production by burning, providing some transitory range from timber harvest, and improving livestock distribution. The wildlife potential on winter range should increase slightly because of the habitat improvement on winter range. The wildlife potential on summer range should remain at current levels. About 200 fish habitat improvement structures will be constructed and about 200 acres of non-structural habitat will occur by the end of the decade.

There will be little noticeable change in the Gates of the Mountains and Scapegoat Wildernesses, although there will be a slight increase in visitor use. Fire will play a more natural role in both of those areas and may introduce some noticeable vegetation changes. During this decade, the 10,000 acre Big Log recommended addition to the Gates-of-the-Mountains, 14,300 acre Electric Peak and 8,600 acre Mt. Baldy will be considered for wilderness by Congress.

Primitive recreation use will increase by about 6500 visitor days through the decade. Semi-primitive motorized and nonmotorized use will increase by 20,000 visitor days by the end of the decade. Roaded natural recreation opportunities will increase by 20,000 visitor days. The capacity exceeds expected demands for all dispersed recreation types. The Forest should have three research natural areas by the end of this decade.

Oil and gas exploration will affect the quality of the recreation setting. Pad sites 2nd road construction will temporarily lower the visual quality and may affect wildlife use patterns. Most of the seismic and oil and gas activity is expected in the Big Belt Mountains and along the Continental Divide on the north end of the Forest. Hardrock mineral exploration will continue at present levels.

.he roadless resource will decrease 33,900 acres due to timber harvesting and mineral exploration during the first decade. However, there will be 303,000 acres of roadless area remaining on the Forest, outside of wilderness, by the end of the first decade. Sediment yield will slightly increase because of road construction, timber harvest, and mining activities. However, state water quality standards will continue to be met because soil and water conservation practices will he defined and applied. Present air quality will not be altered from slash burning, burning for wildlife and range improvement projects, or prescribed fire in wilderness.

Decade Five

The fifth decade describes what the Helena Forest would be like if the management direction for the Forest Plan was extended beyond the first decade to the fifth decade. There could be as many as five revisions of the Plan by the end of the fifth decade. By the end of the fifth decade of implementing the Proposed Forest Plan there will be many noticeable changes on the Forest.

The timber program will have harvested 750 million board feet of timber on 97,000 acres scattered throughout the Forest. About 30,000 acres will have been planted with the remaining cutover area regenerating naturally, and nearly 14,000 acres will have been thinned. In support of the timber program about 450 miles of collector and 650 miles of local roads would have been constructed. By the end of this decade, all of the collector roads will be in place. These activities will cause a decrease in semi-primitive recreation opportunities, but an increase in roaded natural recreation opportunities. In many areas on the Forest the landscape will have noticeable management activities. Opportunities to gather firewood will be increased. Age class distribution of timber will take a major shift away from the sawtimber size stands. A good balance of old growth will be scattered throughout the Forest, and the seedling, sapling, and pole sized stands vill comprise about 60 percent of the suitable timberlands.

By the end of the fifth decade 32,400 acres will have been treated to maintain or enhance wildlife habitat and 65.000 acres to increase forage production for livestock and big game. The Forest's ability to support elk on winter range will increase, while the ability to support elk on summer range will decrease slightly due to loss of habitat effectiveness from timber harvest and increased miles of road. Livestock grazing levels will increase to 52,800 AUMs by the end of the decade and 1,000 fish habitat improvement structures will be in place and 1,000 acres of non-structural fish habitat improvement will have been completed.

Primitive recreation use in the Gates of the Mountains and Scapegoat Wildernesses will nearly double from the first decade. Visitor use may need to be controlled by a permit system to avoid resource damage. The roadless resource will be decreased by nearly 119,000 acres by the end of this decade, however, no further reduction is anticipated since most of the area planned for timber management will have roads in place. There will still be about 220,000 acres of roadless area on the Forest that is outside of wilderness. Semi-primitive motorized recreation will increase from 40,800 RVDs in the first decade to 76,900 RVDs.

Roaded natural recreation use will increase to 170,000 RVDs per year by the end of this decade. There will be more restrictions on road and trail use.

Demand for semi-primitive nonmotorized recreation will nearly double from the first decade. The capacity exceeds expected demands for all dispersed recreation types.

Exploration for oil and gas and hardrock minerals will continue. Oil and gas exploration will probably decrease unless some positive oil fields are discovered. If oil fields are discovered, field development, production, and rehabilitation will be common activities. Hardrock exploration is expected to remain about the same as in earlier decades.

E FOREST-WIDE STANDARDS

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

1. As soon as practicable, and subject to valid existing rights, all outstanding and future permits, contracts, cooperative agreements, and other instruments for occupancy and use of lands of the Helena National Forest will be made consistent with the Proposed Forest Plan.

2. Subsequent activities affecting the Forest, including budget proposals, will be based on the Plan. Proposed implementation schedules may be changed to reflect differences between proposed annual budgets and appropriated funds. Such scheduled changes will be considered an amendment to the Plan, but shall 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.

3. 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.

4. Whenever possible, use public education and information programs as well as public involvement to help gain support and understanding of our management objectives and activities.

Recreation

1. New campgrounds and other developed recreation facilities, such as boat ramps or picnic areas, will generally not be constructed. Continue to maintain existing developed sites, but emphasize providing dispersed recreation opportunities. Removal of existing sites may be necessarp. in some cases, due to site deterioration or excessive maintenance cost.

2. Encourage ski-touring trail development by locating and marking additional trails and by encouraging the private sector to develop trails.

3. Complete a Recreation Opportunity Guide (ROG) for each Ranger District, to make recreation opportunities more visible to the public.

4. A specific Continental Divide National Scenic Trail (CDNST) route will not be identified prior to approval of the comprehensive plan being prepared by the Forest Service and the Secretary of Agriculture's Advisory Council. Once the comprehensive plan is approved, the management direction will be incorporated further in this plan. Based on the Comprehensive Plan, a more detailed analysis will be completed to show trail segments, objectives and specific route locations.

The legislation authorizing the CDNST specifically intended that the trail would **not** adversely affect or preclude the application of normal management practices on lands adjacent to or within the trail corridor (both public and private). It is not the intent of the legislation that a separate "management plan" be developed for the CDNST, but to provide for the development and management of the trail as a management practice which **is** integrated into the overall prescription for the land through which the trail passes.

5. Emphasize "Pack-In Pack-Out" use in dispersed recreation areas and in wilderness to reduce resource impacts and management costs.

6. Provide information to users of remote areas and wilderness about potential conflicts with humans and bears and proper camping methods to avoid such conflicts.

7. Outfitter and guide use will generally be maintained at a level determined from the highest 2 years of actual use experienced during the period 1979 through 1983. Application for additional or **new** use will be considered on a case-by-case basis, with consideration of resource limitations and public need.

/isual

1. A visual quality objective (VQO) is stated for each management area. These visual quality objectives provide the guidelines for altering the Landscape. Portions of each management area may have a more or less restrictive VQO. Appendix **B** lists roads, trails, campgrounds, etc., that are within sensitive viewing areas. The VQO for these areas is noted in Appendix B.

The VQO's for the Continental Divide National Scenic Trail will be the same as the Management Areas through which the trail passes.

Cultural Resources

The Forest will undertake a systematic program of cultural resource inventory, evaluation, and preservation aimed at the enhancement and protection of significant cultural resource values, as prescribed for Federal Agencies by Section 106 of the National Historic Preservation Act and 36 CFR 800.

Cultural resource sites evaluated as significant will be preserved in place whenever possible. When such resources are threatened by project development, an effort to avoid or minimize adverse impact by project redesign will be made. When avoidance is judged by the Forest Supervisor to he imprudent or infeasible, the values of the site will be conserved through proper scientific excavation, recordation, analysis, and reporting.

An inventory survey for cultural resources will be made for all significant ground-disturbing activities. Forest inventory efforts will be focused in three areas including:

a. Areas where specific project activities, such as timber sales, road developments, range improvements, or mineral development activities, result in significant ground disturbance.

b. Large areas where substantial development impact is anticipated, such as oil- and gas-planning areas.

c. Areas where formal archaeological surveys may provide management data that are broadly applicable to ecologically similar areas and which will facilitate the development of predictive models capable of addressing issues of cultural site density, distribution, and significance.

The Forest will encourage scientific research by privately funded universities as a means of acquiring additional inventory and interpretive data. Such projects will be coordinated with the State Historic Preservation Officer and the Advisory Council on Historic Preservation. Cultural resource site information is exempt from disclosure under the Freedom of Information Act. Following Forest Supervisor written approval, site locational data may be released on a need-to-know basis to consultants, universities, or museums.

Discovered cultural resources will be evaluated in relation to published Advisory Council on Historic Preservation (ACHP) criteria for eligibility to the Naitonal Register of Historic Places. Cultural resource sites determined eligible will be nominated to the National Register.

The Forest will coordinate cultural resource issues and concerns with the Appropriate Native American groups to ensure that Forest management activities are not detrimental to the protection and preservation of Native American religious and cultural sites, treaty rights, and religious and cultural practices.

The Forest will enhance and interpret significant cultural sites for the education and enjoyment of the public when such development will not degrade the cultural property or conflict with other resource considerations. Known significant cultural resource sites on the Forest will be protected from inadvertent or intentional damage or destruction.

Portions of the Lewis and Clark National Historic Trail are on the Helena Forest. Some interpretive signing has been placed along the trail. Normal management practices can still access land adjacent to or within the trail corridor, however, project activities will be conducted to minimize disturbance to the cultural site.

Wildlife and Fisheries

Indicator Species

Populations of wildlife "indicator species" will be monitored to measure the effect of management activities on representative wildlife habitats with the objective of ensuring that viable populations of existing native and desireable non-native plant and animal species are maintained. See Chapter IV, part D Monitoring and Evaluation for specific monitoring requirements.

Indicator species have been identified for those species groups whose habitat is most likely to be changed by Forest management activities. The mature tree dependent group indicator species is the marten; the old growth dependent group is represented by the piliated woodpecker and the goshawks; the snag dependent species group is represented by the hairy woodpecker; the threatened and endangered species include grizzly bear, gray wolf, bald eagle and peregrine falcon; commonly hunted indicator species are elk, mule deer and bighorn sheep; fish indicator species is the cutthroat trout.

Big Game

1. On important summer (see Glossary) and winter range, adequate thermal and hiding cover will be maintained to support the habitat potential.

2. An environmental analysis for project work will include a cover analysis. The cover analysis should be done on a drainage or elk herd unit basis. (See Montana Cooperative Elk-Logging Study in Appendix C for recommendations and research findings on how to maintain adequate cover during project work.)

3. Subject to hydrologic and other resource constraints, elk summer range will be maintained at 35 percent or greater hiding cover and areas of winter range will be maintained at 25 percent or greater thermal cover in drainages or elk herd units.

4. Implement an aggressive road management program to maintain or improve big game security.

To decide which roads, trails, and areas should be restricted and opened, the Forest will use the following guidelines developed with the Montana Department of Fish, Wildlife. and Parks (MDFWP). The Forest visitor map will document the road management program.

a. Road management will be implemented to at least maintain big game habitat capability and bunting opportunity. To provide for a first week bull elk harvest that does not exceed 40 percent of the total bull harvest, roads will be managed during the general big game hunting season to maintain open road densities with the following limits.

Existing Percent Hiding cover (according to FS definition of hiding cover)[1]	Existing Percent Hiding Cover (according to MDFWP definition of iding cover[2]	Max Open Road Densitv
56	80	*2.4* mi/mi^2
49	70	1.9 mi/mi^2
42	60	1.2 mi/mi^2
35	50	0.1 mi/mi^2

[1] A timber stand which conceals 90 percent **or** more of a standing elk at 200 feet.

[2] A stand of coniferous trees having a crown closure of greater than 40 percent.

The existing hiding cover to open road density ratio should he determined over a large geographic area, such as a timber sale analysis area, a third order drainage, **or** an elk herd unit.

b. Elk calving grounds and nursery areas will be closed to motorized vehicles during peak use by elk. Calving is usually in late May through mid-June and nursery areas are used in late June through July.

c. All winter range areas will be closed to vehicles between December 1 and May 15. Exceptions (i.e., access through the winter range to facilitate land management **or** public use activities on other lands) may be granted.

d. At restricted roads, trails, and areas, **signs** will be posted which tell:

1. Type of restriction.
2. Reason for restriction.
3. Time period of restriction.
4. Cooperating agencies.

e. Roads that will be closed will- be signed during construction **or** reconstruction telling the closure date and the reason for closure.

f. Enforcement is a shared responsibility. Enforcement needs will be coordinated with the MDFWP.

g. Opened Forest roads will normally have a designed speed of less than **15** miles per hour. Exact design speeds will be determined through project planning. Loop roads are not recommended and will be avoided in most cases.

h. The Forest Road Management Program will be developed in conjunction with MDFWP and interested groups or individuals. The Road Management Program will contain the specific seasonal and yearlong road, trail, and area restrictions and will be based on the goals and objectives of the management areas in Chapter III of the Forest Plan.

i. Representatives from the Helena Forest and MDFWP will meet annually to review the existing Travel Plan.

5. On elk summer range the minimum size area for hiding cover will be 40 acres and the minimum size area on winter range for thermal cover will be 15 acres.

6. Montana Cooperative Elk-Logging Study Recommendations, in Appendix C, will be followed during timber sale and road construction projects.

7. Inventorying and mapping important big game summer/fall and winter ranges will continue.

8. Any proposed sagebrush reduction programs will be analyzed on a case-by-case basis for the possible impact on big game winter range.

9. Occupied bighorn sheep and mountain goat range will be protected during resource activities. Project plans for livestock, timber, or other resource development will include stipulations to avoid or mitigate impacts on their range. Conflicts between livestock and these wildlife species will be resolved in favor of the big game.

10. Moose habitat will be managed to provide adequate browse species diversity and quantity to support current moose populations.

Threatened and Endangered (T&E) Species

1. A biological evaluation will be written for all projects that have potential to impact any T&E species or its habitat. All evaluations will address each projects potential to adversely modify a listed species habitat or behavior. If an adverse impact is determined, mitigation measures will be developed to avoid any adverse modification of a listed species habitat or behavior. If all possible mitigation measures do not result in a no affect determination, then informal and/or formal consultation with the U.S. Fish and Wildlife Service will be initiated.

2. Grizzly bear -- Apply the guidelines in Appendix D to the Management Situation 1 and 2 (referred to essential and occupied prior to 1984) grizzly bear habitat on the Forest (see map in Appendix D).

Initiate field studies in undesignated areas known to be used by grizzlies, to determine if the areas should be designated as grizzly habitat. Until sufficient evidence is available to determine the status of these areas, manage them according to Appendix E, Grizzly Management Guidelines Outside of Recovery Areas.

3. In occupied grizzly habitat, to minimize man-caused mortality the open road density will not exceed the 1980 density of 0.55 miles per square mile, which was determined to have little effect on habitat capability.

4. Research activity on grizzly bears or their habitat will be reviewed by the Research Subcommittee of the Interagency Grizzly Bear Committee.

5. Bald Eagle and Peregrine Falcon -- Continue working with the MDFWP, the USFWS, and the BLM to identify nesting and wintering areas. Identify nesting territories and roosting sites, and protect both from adverse habitat alteration. (Guidelines for how to identify bald eagle habitat are in the Wildlife Planning Records.) Powerlines constructed within bald eagle or peregrine falcon habitat will be designed to protect raptors from electrocution. See Appendix D for bald eagle and peregrine falcon habitat maps.

6. Gray Wolf -- With the USFWS and MDFWP, investigate reported gray wolf observations to confirm or deny gray wolf presence. If presence of gray wolf is confirmed, determine if the habitat is necessary for the wolves recovery. If the habitat is necessary, coordinate with the MDFWP and the USFWS to implement the Wolf Recovery Plan. See Appendix D for gray wolf habitat map.

7. No known threatened or endangered plants are on the Eelena National Forest.

8. Species of Special Concern

There are habitats on the Forest where the following species of special concern may be found (Plant Species of Special Concern, USDA-FS, 1980)

Lemhi penstemon (Penstemon lemhiensis)
Howell's gumweed (Grindelia howellii)
Missoula phlox (Phlox missoulensia)
Cliff toothwort (Cardamine rupicola

Missoula phlox and cliff toothwort have been located on the Helena Forest.

Other Plants that are termed rare have also been located on the Helena Forest. They are Klaus' bladderpod (Lesquerella plausii) and Long-styled thistle (Cirsium longistylum). Two additional rare plants , Moschatel (Adoxa moschalellina) and Lesser rushy milkvetch (Astragalus convallarius) are believed to occur on the Eelena Forest but currently have no occurrence records.

If any of these species are verified on the Helena Forest, appropriate measures, pursuant to Section 7 of the Endanger Species Act, will be taken.

Old Growth

An old growth stand is generally characterized by a high level of standing and down, dead and rotting woody material; two or more levels of tree canopies and a high degree of decadence indicated by heart rot, mistletoe, dead or broken tree tops, and moss.

Five percent of each third order drainage should be managed for old growth. The priority for old growth acres within each drainage is: first, land below 6000 feet in elevation; second, riparian zones and mesic drainage heads; and

third, management areas emphasizing wildlife habitat. These areas will normally be managed on a 240 year rotation and will range from 10 acres to several hundred acres.

Management areas other than T-1 through T-5 will be the primary source for old growth. However, if adequate old growth area cannot be achieved then the T management areas will be considered to meet old growth objectives.

Snags

1. To keep an adequate snag resource (standing dead trees) through the planning horizon, snags should be managed at 70 percent of optimum (average of 2 snags/acre) within each third order drainage.

2. Snag management guidelines need not be applied within a quarter mile of riparian areas, because riparian standards should provide for adequate snags.

3. Larch. ponderosa pine, Douglas-fir, spruce, and subalpine fir, in that priority, are the preferred species for snags and replacement trees (live trees left to replace existing snags).

4. Management areas other than T-1 should be the primary source for snag management. However, if adequate snags cannot be found outside of T-1, then the following numbers and sizes of snags should be retained in cutting units, if available.

A. In units with snags, keep a minimum of 20 snags and 10 replacement trees per 10 acres, if available. If 20 snags are not available, then any combination totaling 30 should be left, by the following dbh classes:

13 snags and 6 replacement trees from 7-11 inches
5 snags and 3 replacement trees from 12-19 inches
2 snags and 1 replacement trees 20+ inches

B. In units--except those of pure lodgepole--without snags keep a minimum of 30 wind firm trees per 10 acres, if available, by the following dbh classes:

21 trees from 7-11 inches
7 trees from 12-19 inches
2 trees from 20+ inches

If wildlife funds are available, a third of the replacement trees should he girdled or otherwise killed to provide snags, by the following dbh classes:

7 trees from 7-11 inches dbh
2 trees form 12-19 inches dbh
1 tree form 20+ inches dbh

Fisheries

1. Maintain quality water and habitat for fish by coordinating Forest ctivities and by direct habitat improvement (see Forest Wide Standards for .iparian).

2. Instream activities should allow for maximum protection of spring and fall spawning habitats.

3. Structures installed within streams supporting fisheries will be designed to allow upstream fish movement, especially to spawning areas.

Range

1. Riparian condition within livestock allotments will be mapped and become part of the Allotment Management Plan.

2. Where analysis shows range resource damage, the cause will be identified and corrective action will be initiated through an allotment management plan.

3. Chemical spraying should not be used on sagebrush control projects if other control methods are feasible.

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

5. Allotment management plans will specify the utilization standards of key plant species needed to protect the soil and water quality. Allowable forage tilization of these plants should be based on local range conditions, soil ability, and known individual plant requirements. The guides for allowable utilization of key species, by condition classes, are in the Range Management Handbook (FSH 2209.21).

6. Allotment Management Plans will be developed using the interdisciplinary process.

Noxious Weeds

1. Implement an integrated weed control program in cooperation with the state of Montana and County Weed Boards to confine present infestations and prevent establishing new areas of noxious weeds. Noxious weeds are listed in the Montana Weed Law and designated by County Weed Boards. (See Appendix X, Noxious Weeds.)

2. Integrated Pest Management, which uses chemical, biological, and mechanical methods, will be the principal control method. Spot herbicide treatment of identified weeds will be emphasized. Biological control methods will. be considered as they become available.

3. Funding for weed control on disturbed sites will be provided by the resource which causes the disturbance.

Revegetation

1. Seeding will be done in a timely manner on disturbed areas, to prevent erosion and to achieve best revegetation results.

2. Seeding mixtures of native plants (naturally occurring) should be used, if practical, in all revegetation projects greater than two acres. On smaller disturbances, the responsible official may authorize the use of exotic species.

3. Seeding guidelines, based on elevation, soil type, parent material, habitat type, and reasonable cost, are listed in Appendix F.

Timber

1. Silvicultural examinations and prescriptions will be required before any timber manipulation or silvicultural treatment takes place. 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 free use, and cutting personal firewood. Final determination of what silvicultural system will be used for a particular project will be made by a certified silviculturist after an on-the-ground site analysis. This site specific analysis will determine the appropriate even or un-even age silvicultural system that best meets the goals and objectives of the management area. Standards for applying all silvicultural systems, as well as supporting research references are in the Northern Region guide (June 10, 1983). In addition, broad guidelines are found in Appendix H and M. Even aged management methods will be used only where it is determined to be appropriate to meet objectives. Clearcutting will be used only where it is the optimum method.

2. Tree improvement will be conducted in accordance with the current Regional and Forest level tree improvement plans.

3. Transportation plans and logging systems must be designed jointly to provide for long-term stand management, with full consideration given to topography and slope, the overall economic efficiency of roading and yarding costs, and the needs of other resources.

4. Timber stand openings created by even-aged silvicultural systems will normally be 40 acres or less. Creation of larger openings will require a 60-day public review and Regional Forester approval. Exceptions are listed in the Northern Regional Guide.

5. A feasibility analysis of each sale over one million board feet will be made to assure that it has been designed with the most cost-effective measure possible in keeping with environmental concerns. This analysis will examine strategic items in the sale design process to assure consideration of economic

impacts of these items on the sale value. A cash flow analysis will be done to determine the viability of the sale with current market conditions. If anticipated costs are higher than predicted high bids, consider the following:

a. Defer the sale until economic conditions would indicate receiving higher bids.

b. Proceed to sell the timber and provide proper documentation that benefits, other than immediate monitary return from the timber, are of importance.

Firewood

1. The Helena Forest will generally charge a fee for personal use firewood. The Regional Office will annually determine the fee. Designated free firewood areas will continue only as long as demand is less than supply.

2. Logging areas will be open to public firewood gathering after the sale is closed and prior to burning logging debris and closing roads, if wood is available and other resource values, such as wildlife snags, downed logs, and soils, can be protected.

3. Promote a green firewood program where desirable for resource management for both commercial and private firewood gatherers.

4. The public will be informed of firewood gathering opportunities through the local media. Maps and directions to firewood gathering areas will be available at Forest Service offices.

5. Permits will be required whenever tractors, rubber-tired skidders, jammers, or other yarding equipment normally used by the logging industry are used for yarding firewood.

6. Providing firewood will be emphasized as a slash treatment method.

Water, Soil, and Air

Municipal Watershed Guidance

1. Municipal watersheds will be managed under multiple-use concepts and direction. Management area guidelines will identify permissible land uses, restrictions on land uses, and special measures required to ensure a high quality and quantity municipal water supply. Presently, there are two municipal watersheds on the Forest, Tenmile and McClellan.

2. Design and implementation of projects within the watershed will be guided by FSM 2542.12, as well as specific management area standards and guidelines.

3. An environmental analysis will be prepared in coordination with the concerned municipality and the State Water Quality Bureau for each new project proposed within the municipal watershed which could potentially result in degradation of water quality.

4. Each project implemented in the municipal watersheds will have a designated Forest Service representative responsible for maintenance of water quality within appropriate state standards. Each contractor will designate a representative, who will normally be at the project site, with the authority to take whatever action necessary to remedy any situation which might result in violation of state water quality standards.

5. Plans and specifications for projects proposed for municipal watersheds will be coordinated with the municipality involved and submitted to the Montana State Department of Health and Environmental Sciences for review and approval as required by Montana Laws regarding public water supply as amended by Chapter No. 556, 1979, 75-6-112.

General Watershed Guidance

1. Coordination with the State of Montana, as required by the Clean Water Act (33 U.S.C. 1323), concerning stream channels and water quality protection is detailed in the Cooperative Agreement to Implement the 208 Program on National Forests in the State of Montana. The agreement is in FSM 2563.11, R.O. Supplement.

2. Watershed improvement projects will be identified, prioritized, and developed on a watershed basis (see Appendix T).

3. A project which causes excessive water pollution, undesirable water yield, soil erosion. or site deterioration will be corrected where feasible. or the project will be re-evaluated or terminated.

4. Projects involving significant vegetation removal will, prior to including them on implementation schedules, require a watershed cumulative effects feasibility analysis to ensure that water yield or sediment will not increase beyond acceptable Limits. The analysis will also identify opportunities, if any exist, for mitigating adverse effects on water-related beneficial uses.

5. Practices in the Soil and Water Conservation Practices Handbook (FSH 2509.22) developed cooperatively by the State Water Quality Agency and the Forest Service will be incorporated, where appropriate. into all land use and project plans as a principal mechanism for controlling non-point pollution sources and meeting soil, State water quality standards and other resource goals.

6. Water rights for non-consumptive water uses (instream flows) necessary to maintain fisheries habitat, recreational uses, or other beneficial water uses will be claimed for appropriate waterbodies and streams.

7. An environmental analysis, following the process in FSMs 2526 and 2527, will be made for all management actions planned for flood plains, wetlands, riparian areas, or bodies of water prior to implementation. This analysis will determine the short- and long-term adverse impacts and mitigating measures associated with the planned management actions.

8. Water transmission lines, dams, and hydro-meteorological data sites will be maintained by the permittee in a safe 2nd serviceable condition. Unsafe or unserviceable facilities will be repaired to approved engineering standards or removed from service.

9. Activities that might affect the validity of data collected at hydro-meteorological data sites will be coordinated with the permittee or cooperating agency before implementation of the project.

10. Applications for hydropower, water diversion. water storage, or other water-related facilities will he evaluated 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 will be sought.

11. Instream flows adequate to protect the aquatic environment will be maintained during any project which removes water from any stream.

Airshed Guidance

1. Management activities that affect air quality will comply with Federal and state standards and the Montana Cooperative Smoke Management Plan. (The Plan is part of Fire Planning Records.)

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

Soil Guidance

1. 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.

2. Areas of decomposed granite soils will be identified and erosion control measures planned prior to any ground disturbing activities.

3. To reduce sedimentation associated with management activities, the highly sensitive granitic soils, which cover about 20 percent of the Forest. will have first priority for soil erosion control.

Minerals

General

1. The 1964 Wilderness Act stipulates that effective December 31, 1983, no further mineral entry would be permitted in existing wilderness areas. This includes leasing for oil and gas, applying for patent on existing claims, and staking new claims. However, citizens' rights to enter public land for prospecting or working valid existing claims is unchanged.

2. Areas withdrawn from mineral entry should be reevaluated every five years in accordance with Federal Land Policy and Management Act (FLPMA) to determine if the withdrawal. is still necessary. (See Appendix Q.)

3. Access for development of locatable and leasable minerals will be allowed on a case-by-case basis. Access should he directed toward minimizing resource impacts and be coordinated with other land uses.

Locatable Minerals

1. Consistent with the Mining and Mineral Policy Act of 1970, continue to encourage the responsible development of mineral resources on National Forest lands. Concurrently, require mitigation measures to protect surface resources.

2. Provide guidance to miners and prospectors for planning reclamation and to minimize environmental damage.

3. Increase I&I efforts through publicizing the appropriate laws, regulations, and policies, to reduce cases of non-compliance from lack of knowledge of mining rules.

4. Increase compliance inspections commensurate with mineral activities.

5. When every reasonable attempt has failed to correct mining operations that are unnecessarily or unreasonably causing or threatening to cause irrepairable injury, loss, or damage to surface resources, the Forest Service will seek judicial relief.

6. Maintain a liaison with local mining industry and mining associations. Cooperate with Federal and State agencies which administer mineral laws.

7. Following mineral development the Forest Service will require reclamation of surface disturbance to prevent or control on- and off-site damage. Reclamation includes, but is *not* limited to:

a. Control of erosion and landslides.

b. Control of water runoff.

c. Isolation, removal, or control of toxic materials.

d. Reshaping and revegetation of disturbed areas.

e. Rehabilitation of fisheries and wildlife habitat.

Saleable Minerals

1. Common variety mineral permits will be considered on a case-by-case basis and will be issued only if consistent with the management area goals.

Leasable Minerals

1. All oil and gas lease applications outside wilderness and wilderness study areas will be recommended to the BLM for issuance. The recommendation will include appropriate stipulations, as defined by the management area direction or site specific information. Before action is recommended on any lease application, site specific analysis of environmental effects will be done in accordance with the NEPA process. Stipulations displayed in Appendix N which are based upon the Environmental Analysis for Oil and Gas Leasing on the Helena National Forest, 1981, will be recommended in accord with management area direction in Chapter III.

2. Stipulations on current leases apply until the lease expires. If the lease is reissued, stipulations will be changed to meet management area goals.

3. The BLM and/or Forest Service will complete an environmental analysis on applications for permit to drill (APD). The analysis will identify any stipulations applicable to the permit.

Seismic Exploration

1. An environmental analysis will be completed for each application. A prospecting permit will be issued on a case by case basis and will contain stipulations designed to coordinate surface resource values. The following apply where appropriate:

a. Water quality and quantity: Stipulations may be issued to limit activities within 100 feet of all streams, lakes, springs, and ponds.

b. Threatened and endangered species habitat: Stipulations will be issued to protect threatened and endangered species by limiting activities during critical periods, and protecting important habitat elements.

c. Nongame habitat: Stipulations may be used to limit surface use as a coordination and/or mitigation measure for species listed in State of Montana, Species of Special Interest and Concern. (The State species list is part of the Wildlife Planning Records.)

d. Big game habitat: To protect key areas for big game (i.e., winter range, summer concentration habitats. calving areas, lambing areas, big game travel routes, etc.), stipulations may be used during critical periods.

e. Archeological and Eistoric Resources: Proposed seismic survey work which may impact identified cultural and paleontological resources will be required to skip portions of the work or to relocate survey lines around known resource areas. Other resource threatening work will be required to fully comply with the Antiquities Act of 1906 and other related Acts pertaining to cultural resources.

f. Special Uses, Leases, and Permits: To protect authorized special uses, leases, and permits, include stipulations to restrict occupancy by timing and location on a case-by-case basis.

g. Fire: Seismic work during periods of high fire danger may not be allowed. To prevent wildfire, stipulations may be included to restrict timing and location of seismic operations. Stipulations may also be used to specify procedures and fire fighting equipment required by seismic crews.

h. Land Stability and Erosion: Surface occupancy stipulations may be used to prohibit occupancy on lands subject to mass wasting and on slopes 60 percent and greater.

i. Recreation: To accommodate concentrated recreational areas (i.e., picnic grounds and campgrounds), stipulations may be used to restrict seismic activities by location and timing.

Lands

Land Uses

1. Approve special use permits only when they comply with the goals of the management area affected. Appendix 0 provides guidelines for special uses and subdivisions.

2. Enhance resource management by working with other agencies and Landowners to develop and achieve common resource objectives.

3. The Forest will encourage governing entities to proceed with land use planning and zoning prior to subdivision development on lands adjacent to or within the Forest boundary.

4. Developers should provide for all necessary services within the limits of the subdivision without infringing on adjacent National Forest lands. But National Forest lands adjacent to subdivisions can be used for services associated with primary access and/or primary utility corridors if tbese services cannot reasonably be incorporated within the subdivision, or on other adjacent or nearby properties not administered by the Forest Service.

5. The Forest Service will attempt to inform non-Federal landowners and land developers adjacent to the Forest of the management direction on the Forest land.

6. Adjacent private lands will not preclude multiple use management of lands administered by the Forest Service. But management of Forest Service land willbe modified where appropriate and necessary to complement land uses on adjacent non-Federal property.

7. When an environmental analysis for a proposed Forest project indicates Chat activities on adjacent land will require Forest Service management activities to be restricted to protect soil. water, and wildlife resources, the necessary restrictions will be determined. If no activity on Forest land is possible, the desired management will be scheduled for later decades when sufficient recovery bas occurred on adjacent lands to permit the proposed activities on Forest Service land to continue. Exceptions to this policy will be considered on a case-by-case basis, when deferring management would result in adverse impacts to other Forest resources.

Landownership Adjustment

1. A landownership adjustment schedule for the Helena Forest will be developed using the following criteria:

a. The priority for acquisition will be for lands with assessed high wildlife, recreation, and watershed values. Acquisition may entail purchase or donation of fee simple or partial interests, such as conservation and scenic easements, or exchange procedures.

b. Emphasize acquisition of land and interests in land to allow access to all Helena National Forest lands.

c. Emphasize acquisition of trailhead facilities and trail rights-of-ways, especially to wilderness and dispersed recreation areas.

d. Consider disposal of tracts where past patenting has resulted in isolated, intermingled National Forest ownerships, such as at York, Rimini, and Unionville.

Facilities

Administration Facilities

1. Provide a cost effective program of maintenance to necessary administrative facilities. This will protect the investment, provide for public and employee's health and safety in accordance with current building codes and standards, and present a neat, well kept appearance in harmony with its surroundings.

2. Construct new administrative facilities to replace existing structures that are no longer cost effective to maintain or expand or are inadequate to serve the needs of resource management.

Road Standards

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

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

3. Forest Specialists representing soils, watershed, and fisheries shall identify potential soil erosion, water quality and fisheries problems and provide input to the development of road design standards. Mitigating measures which will be considered in developing these standards include but not limited to:

a. Reestablishing vegetation on exposed soils.

b. Protecting the road surface through surface stabilization techniques such as dust oil or gravel, especially on decomposed granitic soils.

c. Preventing downslope movement of sediment with the use of slash winrows below the fill slopes near stream crossings, baled straw in ditches and catch basins at culvert inlets.

d. Reducing soil disturbance in or near streams by diverting clear water around culvert installation sites, especially in important fisheries streams.

e. Controlling the concentration of water flow by insloping, outsloping and using minimum grades at stream crossings.

4. Short term local roads will be used for one time road access needs.

5. Coordinate transportation planning and road management with State and local agencies and owners of intermingled land.

Road Management

1. The Helena 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.) The Forest Road Management Program will be used to review, evaluate, and implement the goals and standards of the management areas in the Forest Plan with regard to road, trail, and area wide motorized vehicle use.

2. Road management decisions will he based on user needs, public safety, resource protection, and economics. Most existing roads will be left open. But most new roads will be closed, at least during critical periods for big game.

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

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

b. 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.

c. Economics - Restrictions will he considered if maintenance costs exceed benefits.

d. Conflicting Use - Conflicts between user groups (especially motorized vs. non-motorized) may require restrictions.

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

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

g. Management Objectives - Road management will he used to achieve land management objectives.

3. The travel restrictions will be reviewed annually and revised as necessary to meet the goals and objectives of the Forest Plan.

4. Enforcement of the Road Management Program will be a high priority. Weekend patrolling, signing, gating, obliterating unnecessary roads, and public education will be used to improve enforcement. Enforcement will he coordinated with the MDFWP and other State and local agencies.

Road Maintenance

1. Roads will he maintained in accordance with direction provided in FSH 7709.15 (Transportation System Maintenance Handbook) and will be at a level commensurate with the need for the following operational objectives: resource protection, road investment protection, user safety, user comfort, and travel efficiency.

2. Assigned maintenance levels will be reviewed annually and revised if management objectives change.

3. A Forest Road Maintenance Schedule will be prepared annually and be responsive to the long term needs of the Forest Transportation System.

4. Forest specialists representing soils and watershed shall provide input to the road maintenance planning process to verify maintenance standards, identify ehababilitation needs, and designate roads which should be permanently closed for resource protection. Specialists will annually submit capital investment project proposals for major road reconstruction needs.

Trails

1. Trail management, such as trail standards, maintenance schedules, funding, trail use, construction, and reconstruction, will follow the guidance in Trails Management Handbook, FSH 2309.18.

2. Generally, trail maintenance work priorities will be established as follows:

a. Priority 1. Activities to correct unsafe conditions relative to management objectives.

b. Priority 2. Activities to minimize unacceptable resource and trail damage.

c. Priority 3. Activities that restore the trail to planned design standards.

3. Trail construction/reconstruction will be designed and accomplished to be compatible with the recreation settings and management area goals.

4. Trails may be abandoned or rerouted when a road changes the character of the trail or when the maintenance cost exceeds the benefit.

Protection

Insect and Disease

1. Silvicultural systems will be the primary tool for preventative pest management. Use silvicultural systems to: (1) improve species diversity, growth, and vigor for stands and (2) increase 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. Biological practices will be considered in controlling insect and disease infestations.

4. If possible, harvest stands which are a high risk for mountain pine beetle attack before harvesting moderate or low risk stands.

Wildfire

1. The appropriate suppression response(s) is discussed by management area. See Table I in Appendix R, Fire Management, for suppression summaries.

2. Locate timber sales, or cutting units within a sale, to break-up contiguous natural fuel.

Law Enforcement

1. Law enforcement agreements will be maintained with cooperating counties.

2. Each Ranger District should maintain at least one employee qualified in advanced law enforcement (Level III).

3. Across the Forest, two full-range law enforcement positions (Level IV) should be maintained.

Prescribed Fire

Prescribed fire provides the opportunity to manipulate vegetation for the benefit of timber, wildlife, and range management and reduces the potential for damaging wildfire. The following guidelines should be followed when planning a prescribed burn on the Helena. See Appendix R, Table I, for a summary of prescribed fire by management area.

General

1. A burning schedule and specific objectives should be completed for each project.

2. The burning prescription should be plant specific (i.e., burning may set back such species as bitterbrush and Idaho or rough fescue, if done with insufficient soil moisture or wben "greening up").

3. Prescribed burning should not exceed the natural fire frequency of the Fire Group.

4. Use prescribed fire only during periods of adequate smoke dispersal and in areas wbere water quality can be adequately maintained.

5. The Helena National Forest Soil Survey will be used to assist with individual site selection, to avoid potential soil and/or watershed degradation.

6. Smoke sensitive areas will be identified and burning prescriptions developed accordingly.

7. The MDFWP should be invited to participate in selecting treatment sites, executing burning plans, and monitoring and evaluating the overall program.

Timber

1. Where timber production is a primary land use, prescribed burning will only be applied where timber production can be maintained or enhanced by burning.

2. Prescribed fire, when used as a fuels management or site preparation technique after harvest, should be coordinated with the timber stand's silvicultural prescription.

.ange and Wildlife

1. Areas that have a demonstrated need to maintain or increase forage because of conifer encroachment, shrub invasion, and imbalance in forb/grass ratios, and/or where grass and shrubs are deteriorating should be recommended for prescribed burning.

2. Where livestock and wildlife share sagebrush areas, prescribed fire will be designed to produce a mosaic of burned and unburned islands.

3. Just prior to and following a prescribed burn on grassland, livestock use should be withheld to ensure that adequate fine fuels are available for burning and to prevent overuse of new growth.

Riparian

1. Riparian areas will be delineated prior to implementing any management activities. Riparian areas include:

a. Aquatic ecosystems (water, streambed, banks)
b. Floodplains
c. Riparian ecosystems (area dominated by riparian vegetation)
d. One hundred feet from edges of all perennial streams, lakes, and other water bodies, including a, b, and c above.

2. Discourage concentrated use, such as campsites and roads, in riparian areas. Close wet meadows and wet areas to nonsnow ORVs.

3. Identify, prioritize, and develop riparian area rehabilitation projects by watershed.

4. Roads should not be constructed in the riparian area except to cross them. Use the appropriate soil and water conservation practices to minimize sedimentation during instream construction activities and include them in road construction contracts.

5. Assure that road construction in riparian areas is substantially completed or winterized during winter shut down to minimize peak flow sediment yield during spring thaw.

6. Generally, avoid lateral fills within normal high water marks.

7. Generally, avoid stream course encroachment and channelization.

8. Use of chemicals within the riparian area will be minimized to the extent feasible, will be coordinated with wildlife, watershed, and fisheries personnel and a certified pesticide applicator.

9. Riparian areas will be managed to be compatible with dependent wildlife species.

10. The timing and type of machinery used in riparian areas should he planned to minimize site damage.

11. Provide vegetative cover adjacent to streams to serve as a filter strip for sediment and maintain optimum water temperatures, as well as provide large debris for long-term instream fish cover and pooling. Where vegetative manipulation is possible, the activities will strive to achieve a balance of age classes and desired species composition.

12. Provide for stream crossing structure design that allows free water flow and fish passage.

13. Emphasize off-stream watering in range allotments to prevent damage to the riparian area.

14. Livestock grazing in riparian areas will be controlled at the following levels of utilization:

Vegetative Type	Grazing System	Vegetative Condition Class	Forage Utilization by Weight	Browse Utilization by % of Leader Use
Grass/Grasslike/ Forb	Continuous	Good	40%	N.A.
		Fair	30%	N.A.
		Poor	20%	N.A.
	Rest-Rotation	Heavy Use Pasture 1/	60%	N.A.
		Light Use Pasture	40%	N.A.
	Defer-Rotation	Heavy Use Pasture	50%	N.A.
		Light Use Pasture	35%	N.A.
Willow/Grass/ Grasslike and Willow/Forest	Continuous	Good	55%	50%
		Fair	40%	50%
		Poor	30%	50%
	Rest-Rotation	Heavy Use Pasture 2/	70%	50%
		Light Use Pasture	50%	50%
	Defer-Rotation	Heavy Use Pasture	60%	50%
		Light Use Pasture	40%	50%

1/ Trampled areas and streambank damage caused during heavy use year should be healed or stabilized within the following rest year.

2/ Disturbance on heavy use pasture should be stabilized or healed prior to use the following year.

III. MANAGEMENT AREA DIRECTION

The National Forest land within the Helena National Forest has been divided into 23 management areas each with different management goals, resource potentials, and limitations. The management areas are shown on the accompanying map, which can be used for reference. The management area maps of record consist of a set of larger scale (2.64"/mi.) maps on file in the Forest Supervisors Office.

Four of the areas (Elkhorns-1 thru Elkhorns-4) are unique to the Elkhorns Wildlife Management Unit. The McClellan Creek municipal watershed is included in the Elkhorn Wildlife Management Unit. Two of the areas H-1 and H-2 consist of the Ten Mile Municipal Watershed which provides about half of the City of Helenas' water supply. The remaining 17 are spread throughout the Forest.

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 reconnaissance and project level planning.

The Forest-Wide management direction in Chapter II applies to all management areas. In addition, standards which apply to just the Elkhorns are listed at the introduction to the Elkhorn management areas.

This chapter describes each management area and lists the goals, management standards, schedules of management practices, and monitoring requirements for each area. The schedules of management practices and monitoring requirements are in Tables III-2 and 111-3 at the end of this chapter. See Table IV-1 on page IV-6 for a complete discussion of the monitoring items.

TABLE III-1

MANAGEMENT AREAS AND NET ACRES

	Net Acres	Percent of Forest
A-1	500	<1%
M-1	183,500	19%
N-1	2,600	<1%
L-1	78,700	8%
L-2	15,200	2%
H-1	15,100	2%
B-2	4,500	<1%
R-1	34,300	4%
R-2	100	<1%
T-1	156,000	16%
T-2	7,500	<1%
T-3	37,700	4%
T-4	10,100	1%
T-5	40,300	42
W-1	86,100	9%
w-2	29,500	3%
P-I	83,000	9%
P-2	28,600	3%
P-3	32,900	3%
Elkhorns-1	48,600	5%
Elkhorns-2	44,900	5%
Elkhorns-3	22,200	2%
Elkhorns-4	13,200	1%

Description

These sites are the ranger stations, guard stations, and service sites administered by the Helena National Forest.

Ranger Stations	Guard Stations		Service Sites
Lincoln	Indian Meadows	Thompson Gulch	Townsend
Helena	Tizer	Kading	
	Indian Flats	Meriwether	
	Deep Creek	Moose Creek	
	Eagle	Webb Lake	
		Elliston	

Management Goal

Provide and maintain sites or facilities necessary for administering the Helena National Forest.

Management Standards

In addition to the Forest-Wide Standards, the following management standards apply to this management area.

Recreation

- Dispersed recreation activities that do not interfere with administrative functions are permitted.

Visual

- Administrative sites are assigned the partial retention VQO. Deviations may occur during construction or reconstruction of facilities. [See Forest Landscape Management Book, Vo. 2 (Ag. Hdbk. No. 462) for definitions of VQOs and how they are applied.]

Wildlife and Fisheries

- Habitat improvement activities will emphasize nongame species.

Range

- Livestock grazing will be allowed if compatible with administrative functions.

Timber

- Timber may be removed for administrative purposes if compatible with adjacent management areas. Timber removal will be under administrative use rather than commercial timber sale authority, and is therefore classified as unsuitable.

Water and Soils

- Water for domestic use will meet State standards.

Minerals

- Sites will be recommended for mineral withdrawal where feasible. Recommend no surface occupancy on all oil and gas leases.

Lands

- This management area is an avoidance area for utility corridors (see Appendix P).

Facilities

- Roads may be constructed to provide access to and within the sites as necessary for administrative purposes and if compatible with adjacent management areas.

- Structures and improvements may be constructed as needed for Forest administration.

Protection

- Wildfire will be controlled immediately.

- Prescribed fire with planned ignition can be used for treatment of natural fuels or slash.

-*See* Forest-Wide Standards for insect and disease guidance.

Riparian

- *See* Forest-Wide Standards.

Management Practices

- See Table III-2 at the end of this chapter.

Monitoring Requirements

- *See* Table 111-3 at the end of this chapter.

Description

These areas are nonforest and forested land where timber management and range or wildlife habitat improvements are currently uneconomical or environmentally infeasible. The area is scattered throughout the Forest and is found at all elevations and slopes ranging from 10 percent to over 60 percent. The parcels range in size from **20** to 500 acres.

Management Goal

Maintain the present condition with minimal investment for resource activities, while protecting the basic soil, water, and wildlife resources.

Management Standards

In addition to the Forest-Wide Standards, the following management standards apply to this management area.

Recreation

- Dispersed recreation can be supported by constructing trails, trailhead facilities, and sanitation facilities.

Visual

- Because of the lack of activity, the general visual quality objective (VQO) is retention. Less restrictive VQOs may be considered on a case-by-case basis, if project level planning on an adjacent management area effects a M-1 management area. [See Forest Landscape Management Book, Vol. 2 (Ag. Hdbk. No. *462)* for definitions of VQOs and how they are applied.]

Wildlife and Fisheries

- Management practices to maintain or improve wildlife habitat will be permitted where necessary to meet the objectives of adjacent management areas.

Range

- Livestock use may remain at the 1983 level if the area is within existing allotments. Maintain range improvements and build new improvements, if they are needed to facilitate management of adjacent areas.

Timber

- Timber harvest, such as salvage and firewood removal, may occur where access exists. Slash created by any management practice will be disposed of in a manner consistent with the management area goals. Forested lands are classified as unsuitable for timber management.

Facilities

- Roads will be allowed for special uses, mineral development, or to provide access to other management areas, consistent with protection of soil and water values. Roads may he opened or closed, depending on the objectives of the adjacent management areas.

- Existing roads and trails will be maintained as needed.

Lands

- See Forest-Wide Standards.

Water and **Soils**

- See Forest-Wide Standards.

Minerals

- Locatable -- See Forest-Wide Standards.

- Leasable -- The following standard stipulations (described in detail in Appendix N) will normally apply to the applicable portions of lease areas in this management area. Those involving tbreatened and endangered species only apply to the portions of the management area within identified essential or occupied habitat.

Water Quality - I

&E Species - 2a, 2c, 2e, 2f, 2g

Wildlife and Fisheries - 3a (1), 3a (2), 3b (4), 3c

Land stability and erosion - 5a, 5b

Social and Economic concerns - 6a, 6b

Other stipulations may apply, based on site specific knowledge of the lease site, to assure resource protection or to meet the management area goals and objectives.

- Seismic -- See Forest-Wide Standards.

Protection

- Salvage of dead, dying, or high-hazard trees is permitted to prevent disease and insect population build-up.

- The appropriate fire suppression response ranges from control to confinement depending upon location, expected fire behavior, and other decision criteria related to values at risk. These criteria are stated in the Fire Management Direction in Appendix R.

- Prescribed fire with planned ignitions may be used in this management area, for the enhancement and maintenance of resources.

- 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. These criteria are stated in the Fire Management Direction in Appendix R.

-Evaluate areas periodically for significant insect and disease problems. Endemic levels will be accepted as normal. If epidemic levels develop and control is necessary, tbe control method should minimize impacts on watershed and other resource values.

Riparian

-See Forest-Wide Standards

Management Practices

- See Table III-2 at end of this chapter.

Monitoring Requirements

- *See* Table 111-3 at the end of this chapter.

Description

This management area consists of three proposed research natural areas (RNA) identified on the Helena National Forest to meet Regional targets. Table II-2 on page 11-8 lists the Forest RNA targets. The three proposed areas fill 18 of the 26 targets. Target ecosystems not yet represented by a proposed RNA are: PSME/VAGL (Douglas-fir/blue huckleberry), PSME/CARU (Douglas-fir/ pinegrass), ABLA/VAGL (subalpine fir/blue huckleberry), STCO/BOGR (needle and thread/blue grama), RHTR/AGSP (skunkbrush/bluebunch wheatgrass), RHTR/FEID (skunkbrush/Idaho fescue), beaver ponds, thermal springs. As more target ecosystems are identified on the ground, more RNAs could be proposed and added to this management area-

The three areas on the Helena—Red Mountain, Granite Butte, and Kingsberry Gulch--typify important ecosystems in southwestern Montana. The ecosystems are listed below by proposed RNA.

Red Mountain (1,800 acres)

SCREE
ABLA/CACA (subalpine fir/bluejoint)
ABLA/MEFE (subalpine fir/menziesia)
ABLA/XETE (subalpine fir/beargrass)
ABLA/PIAL/VASC (subalpine fir-whitebark pine/grouse whortleberry)
ABLA/LUHI (subalpine fir/smooth wood-rush)
PIAL/ABLA (whitebark pine-subalpine fir)
lpine types
ype I and Type II streams

Granite Butte (500 acres)

ABLA/XETE (subalpine fir/beargrass)
ABLA/VASC (subalpine fir/ grouse whortleberry)
PIAL (whitepine bark
FESC/AGSP (rough fescue/bluebunch wheatgrass)
FESC/FEID (sough fescue/Idaho fescue)
wet meadows

Kingsberry Gulch (300 acres)

PSME/AGSP (Douglas-fir/bluebunch)
PSME/FESC (Douglas-fir/rough fescue)
ARTR/FESC (sagebrush/rough fescue)

Management Goal

Provide areas for research, observation, and study of undisturbed ecosystems which typify important forest, shrubland, grassland, alpine. aquatic, and geologic types on the Helena National Forest.

Management Standards

The Forest-Wide Standards apply to this management area. Specific direction for protection and management will not change the natural processes in the ecosystems. Improvements, such as fences or buildings, are generally ***not*** permitted, except where needed to meet RNA objectives.

Recreation

- Developed recreation facilities will not be allowed.

- Dispersed recreation facilities, such as trails or trailhead developments, will not be allowed.

Visual

- Management practices will follow the guidelines for the retention VQO. [See Forest Landscape Management **Book,** Vol. 2 (Ag. Hdbk. **No.** 462) for definitions of VQOs and how they are applied.]

Wildlife and Fisheries

- Wildlife habitat improvements are not permitted.

Range

- Livestock grazing will not be permitted.

Timber

- Timber harvest will not be permitted.

Water and Soils

- See Forest-Wide Standards.

Minerals

- Common variety minerals will not be sold. This management area will be recommended for withdrawal from mineral entry. Recommend no surface occupancy on oil and gas leases.

Lands

- Only nonoccupancy special **use** permits will be allowed.

- This management area is an avoidance area for utility corridors (see Appendix P).

Facilities

- Road construction is not permitted.

Protection

- Generally, insect and disease levels will not be controlled unless epidemic populations exist and adjacent lands are severely threatened.

- Fire suppression methods will be selected to minimize or prevent soil and vegetative disturbance.

- Prescribed burning with either planned or unplanned ignitions may be used, where feasible, to perpetuate the natural diversity of plant communities.

- The appropriate fire suppression response ranges from control to confinement depending upon location, expected fire behavior, and other decision criteria related to values at risk. These decision criteria are stated in the Fire Management Direction in Appendix R.

Riparian

- See Forest-Wide Standards.

Management Practices

- See Table III-2 at the end of this chapter.

Monitoring Requirements

- See Table III-3 at the end of this chapter.

MANAGEMENT AREA L-1 — 78,700 ACRES

Description

These lands are within grazing allotments and are generally nonforested consisting of bunchgrasses, sage and other shrubs or sparsely forested areas with Douglas fir or ponderosa pine as the dominant species. Slopes vary from 10 percent to greater than 60. This management area contains inclusions of elk calving areas, hiding cover, and summer range, but excludes identified elk winter range.

Management Goals

Maintain or improve vegetative conditions and livestock forage productivity.

Optimize livestock production through intensive grazing systems, while maintaining other resource uses.

Management Standards

In addition to the Forest-Wide Standards, the following management standards apply to this management area.

Recreation

- Motorized and nonmotorized dispersed recreation activities are permitted and may be encouraged by constructing or maintaining trails and trailhead facilities. Existing trails and facilities will be maintained, unless they are no longer needed.

- Controls on motorized recreation will be implemented where necessary to protect the vegetation, soil, water, and wildlife resources and to prevent road damage.

Visual

- Management practices will generally follow guidelines for the maximum modification VQO. The portions of this area (if any) that are within the sensitive viewing areas of the roads, trails, and areas listed in Appendix B will be managed to meet the more restrictive VQOs noted in the appendix. [See Forest Landscape Management Book, Vol. 2 (Ag. Hdbk. No. 462) for definitions of VQOs and how they are applied.]

Wildlife and Fisheries

- Specific wildlife and fisheries needs will be identified and considered when developing allotment management plans, provided the needs are compatable with area goals.

- Habitat improvement projects will be scheduled when they would help achieve the area goals.

Range

- Livestock grazing will generally be maintained at or above 1983 levels, unless a range analysis or monitoring indicates there is a need to change.

- Vacant allotments will be restocked if a range analysis shows it to be feasible and a demand exists for additional AUMs.

- Intensive management systems will be implemented, where cost-effective, to sustain forage production. Management systems will be designed to minimize conflicts with wildlife.

- Forage improvement projects such as sagebrush burning, tree encroachment burning, and noxious plant control will be carried out on a scheduled basis. The schedule will be developed as part of the allotment management plans.

- Improvements, such as cattleguards, fences, and watering facilities, will be maintained and reconstructed as needed to continue present levels of grazing. New improvements may be constructed if the need is identified in an approved allotment management plan.

Timber

- Timber harvest may be used as a tool to improve forage production. However, forested land is classified as unsuitable for timber management.

Water and Soils

- See Forest-Wide Standards.

Minerals

- Locatable -- See Forest-Wide Standards.

- Leasable -- The following standard stipulations (described in detail in Appendix N) will normally apply to the applicable portions of lease areas in this management area. Those involving threatened and endangered species only apply to the portions of this management area within identified essential or occupied habitat.

Water Quality - 1

T&E Species - 2g

Wildlife and Fisheries - 3a (2), 3b(4), 3c

Land stability and erosion - 5a, 5b

Social and Economic concerns - 6a, 6b, 6c

Other stipulations may apply, based on site specific knowledge of the lease site, to assure resource protection or to meet the management area goals and objectives.

- Seismic -- See Forest-Wide Standards.

Lands

- See Forest-Wide Standards.

Facilities

- Roads normally will not be constructed for range management activities, but may be constructed for other activities, such as mining, or to provide access to adjacent management areas. When an existing barrier is intersected, the necessary structures to prevent cattle drift (fences, gates, cattleguards, etc.) will be installed during road construction.

- Where existing trails are intersected by new road construction, the trail will be evaluated to determine if it should be retained on the system or abandoned.

Protection

- Use prescribed fire as a tool to increase the quality and quantity of forage.

- The appropriate fire suppression response ranges from control to confinement depending upon location, expected fire behavior, and other decision logic criteria related to values at risk. These decision criteria are stated in the Fire Management Direction in Appendix R.

- Prescribed fire with planned ignitions will be used in this management area, for the enhancement and maintenance of resources.

- 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. These criteria are detailed in the Fire Management Direction in Appendix R.

Riparian

- See Forest-Wide Standards.

Management Practices

- See Table III-2 at the end of this chapter.

Monitoring Requirements

- See Table III-3 at the end of this chapter.

cription

This management area is land which is both identified big game winter range and within existing grazing allotments. The land is generally nonforest with bunchgrass, sage and other shrubs or sparsely forested areas of Douglas fir and ponderosa pine. The area is usually at lower elevations in the foothills and has slopes from 10 to 60 percent. The area provides thermal and hiding cover on identified winter range.

Management Goals

Maintain or improve range vegetative conditions and forage production for livestock and elk.

Management Standards

In addition to the Forest-Wide Standards, the following management standards apply to this management area:

Recreation

- Motorized access will be prohibited or limited to designated routes during ering periods, generally from December 1 to May 15.

- Nonmotorized dispersed recreation may be supported by constructing trails and trailhead facilities when compatible with area goals.

Visual

- Management practices will generally follow the guidelines for the modification VQO. The portions of this area (if any) that are within the sensitive viewing areas of the roads, trails. and areas listed in Appendix B will be managed to meet the more restrictive VQOs noted in the appendix [See Forest Landscape Management Book. Vol. 2 (Ag. Hdbk. *No. 462)* for definitions of VQOs and how they are applied].

Wildlife and Fisheries

- Wildlife habitat improvement practices, including road management, prescribed fire, and other techniques, may be used to maintain and/or enhance the quality of big game winter range. Projects will be coordinated for livestock and big game needs.

- Maintain adequate thermal and hiding cover adjacent to forage areas. Generally this means providing at least 25 percent thermal cover, where available. on identified winter range.

Range

- Livestock grazing will be maintained at the 1983 level, however, the level may be increased or decreased if monitoring or range analysis shows a need or opportunity to change.

- Chemical or mechanical control of invading vegetation should be considered only if needed to improve or maintain forage production.

- Forage improvement projects, such as sagebrush burning, tree encroachment burning, and noxious plant control, will be carried out on a scheduled basis. The schedule will be developed as part of the allotment management plans and in coordination with a wildlife biologist.

- When an existing harrier is intersected by structural improvements, such as cattleguards, fences, and watering facilities, will he maintained or reconstructed as needed to continue present levels of grazing. New improvements will be constructed if the need is identified in an approved allotment management plan.

Timber

- Timber harvest may be used as a tool to improve forage production. However, forested land is classified as unsuitable for timber management.

Water and Soils

- See Forest-Wide Standards.

Minerals

- Locatable -- To the extent feasible, timing of mineral activities will be coordinated with the needs of wildlife on winter range. This generally will require negotiations during development of operating plans for no surface activity from December 1 to May 15.

- Leasable -- The following standard stipulations (described in detail in Appendix N) will normally apply to the applicable portions of lease areas in this management area. Those involving threatened and endangered species only apply to the portions of the management area within identified essential or occupied habitat.

Water Quality -1

T&E Species - 2g

Wildlife and Fisheries-3a (1), 3a (2), 3b (4), 3c

Land stability and erosion - 5a, 5b

Social and Economic concerns - 6a, 6b, 6c

Other stipulations may apply, based on site specific knowledge of the lease site, to assure resource protection or to meet the management area goals and objectives.

- Seismic -- See Forest-Wide Standards.

Lands

- See Forest-Wide Standards.

Facilities

- Roads normally will not be constructed for range or wildlife management activities, but may be constructed for other activities, such as mining, or to provide access to adjacent management areas. The necessary structures to prevent cattle drift (fences, gates, cattleguards, etc.) will be installed during road construction.

Protection

- Evaluate areas periodically for significant insect and disease problems. Endemic levels will be accepted as normal. If epidemic levels develop and control is necessary, the control method should minimize impacts on big game and other wildlife values.

- The appropriate fire suppression response ranges from control to confinement depending upon location, expected fire behavior, and other decision logic criteria related to values at risk. These decision criteria are stated in the Fire Management Direction in Appendix R.

- 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. These criteria are detailed in the Fire Management Direction in Appendix R.

- Prescribed fire may be used as a tool to reduce fuels and increase the productivity of forage for wildlife and livestock.

Riparian

- See Forest-Wide Standards.

Management Practices

- See Table 111-2 at tbe end of this chapter.

Monitoring Requirements

- See Table III-3 at the end of this chapter.

Description

This management area consists of about 75% of the National Forest Land in the Tenmile municipal watershed which lies about 10 air miles southwest of Helena. The entire watershed currently supplies about one half of Helena's domestic water. About 25 percent of this watershed management area is in private ownership, consisting mostly of patented mining claims. Some of these mines are currently active. The town of Rimini also lies within this management area. Vegetative cover varies from dense lodgepole and brush on north and east slopes to open scattered Douglas-fir and ponderosa pine on south and west slopes. This area provides a variety of recreational opportunities as well as habitat for wildlife. This management area contains trail segments that will likely be proposed as part of the Continental Divide National Scenic Trail System.

Management Goals

Provide a quantity and quality of water which will, with adequate treatment, result in a satisfactory and safe domestic water supply for the City of Helena.

Provide cover and forage for big game animals and necessary habitat components for nongame animals.

Provide for dispersed recreation opportunities.

Management Standards

In addition to the Forest-Wide Standards, the following management standards apply to this management area:

Recreation

- Nonmotorized dispersed recreation will continue within the drainage; however no addtional facilities will be constructed to support the use.

- Developed recreation facilities will not be constructed.

Visual

- Management practices will generally follow guidelines for the modification VQO. The portions of this area (if any) that are within the sensitive viewing areas of the roads, trails, and areas listed in Appendix B will be managed to meet the VQOs noted in the appendix. *[See* Forest Landscape Management Book, Vol. 2 (Ag. Hdbk. No. 462) for definitions of VQOs and how they are applied.]

Wildlife and Fisheries

- Wildlife habitat improvement practices, including road management. prescribed fire, and other techniques, will be used to maintain and/or enhance the diversity of wildlife habitat.

- Maintain adequate thermal. and hiding cover adjacent to forage areas as determined by a wildlife biologist. Generally this means providing at least 25 percent thermal cover, on identified winter range.

Range

- The area grazed and the number of AUMs permitted in the watershed will not he increased. However, if livestock grazing decreases the water quality, then the grazing practices will he changed to maintain the water quality.

Timber

- Timber harvest should be implemented only if it can be used as a tool to maintain or enhance watershed and wildlife habitat values. Forested land is classified as unsuitable for timber management.

Water and Soils

– Watershed improvement needs have been inventoried in the Tenmile watershed and priority projects identified. The drainage has the top priority for implementation of watershed improvement projects as funding becomes available. (See Appendix T).

Minerals

- Locatable -- To the extent feasible, timing of mineral activities will be coordinated with the needs of wildlife and water quality standards. This generally will require negotiations during development of operating plans for no surface occupancy, from December 1 to May 15 on winter range and during peak runoff.

– Leasable -- The following standard stipulations (described in detail in Appendix N) will normally apply to the applicable portions of lease areas in this management area.

Water Quality – 1

Wildlife and Fisheries - 3a (2), 3b (2), 3b (4). 3c

Special Uses, Leases and Permits –4

Land stability and erosion - 5a, 5b

Social and Economic concerns - 6a, 6b, 6c

Other stipulations may apply, based on site specific knowledge of the lease site, to assure resource protection or to meet the management area goals and objectives.

- Seismic -- See Forest-Wide Standards.

Lands

- This management area is an avoidance area for utility corridors (see Appendix P).

Facilities

-Roads will be constructed as needed to meet the management objectives of the area. Minimizing road length, grade and amount of disturbed area will be primary project design criteria.

-Portions of existing roads that are reconstructed will be maintained at a standard that will prevent unacceptable erosion or will be closed and stabilized.

- All new roads will be closed and stabilized when projects are terminated.

Protection

- Evaluate areas periodically for significant insect and disease problems. Endemic levels will be accepted as normal. If epidemic levels develop and control is necessary, the control method should minimize impacts on watershed and wildlife values.

- Use rapid and aggressive fire control methods in this management area.

- Prescribed fire may be used as a tool to reduce natural fuels and improve quantity and quality of wildlife forage.

- Fire suppression methods will be selected to minimize or eliminate soil disturbance of the watershed.

Riparian

- See Forest-Wide Standards.

Management Practices

- See Table III-2 at the end of this chapter.

Monitoring Requirements

- See Table 111-3 at the end of this chapter.

Description

This management area consists of about 25% of the Tenmile Municipal watershed which lies about 10 air miles south west of Helena. The entire watershed supplies about one half of Helena's domestic water. This management area contains parcels of productive timber stands of lodgepole pine and Douglas-fir. These parcels are found in Tenmile, Minnehaha, and Walker Creeks on the west side of the watershed and in Beaver and Banner Creek on the east side. This area provides winter and summer habitat for a variety of wildlife species. This management area contains trail segments that will likely be proposed as part of the Continental Divide National Scenic Trail System.

Management Goals

Provide a quantity and quality of water which will, with adequate treatment, result in a satisfactory and safe domestic water supply for the City of Helena.

Provide cover and forage for big game animals and necessary habitat components for nongame animals.

Provide healthy timber stands and optimize growing potential over the planning horizon while protecting the soil and water resources.

Provide for dispersed recreation opportunities.

Management Standards

In addition to the Forest-Wide Standards, the following management standards apply to this management area.

Recreation

- Nonmotorized dispersed recreation will continue within the drainage, however no additional facilities will be constructed to support the use.

- Developed recreation facilities will not be constructed.

- Controls on motorized recreation will be implemented where necessary, to protect the vegetation, soil, and water resources and to prevent road damage.

Visual

- Management practices will generally follow guidelines for the modification VQO. The portions of this area (if any) that are within the sensitive viewing areas of the roads, trails, and areas listed in Appendix B will be managed to meet the VQOs noted in the appendix. [See Forest Landscape Management Book, Vol. 2 (Ag. Hdbk. No. 462) for definitions of VQOs and how they are applied.]

Wildlife and Fisheries

- Wildlife habitat improvement practices, including road management, prescribed fire, and other techniques, will be used to maintain and/or enhance the diversity of wildlife habitat.

- Forest-wide Standards and Appendix D contain guidance for T&E species habitat.

- Maintain adequate thermal and hiding cover adjacent to forage areas as determined by a wildlife biologist. Generally this means providing at least 25 percent thermal cover, on identified winter range.

Range

- See Forest-wide Standards.

Timber

- This management area is suitable for timber management activities.

- Timber harvest practices include clearcutting, group selection, and shelterwood harvest, depending on habitat group, physical site conditions, and silvicultural objectives. Precommercial thinning and intermediate harvest may occur where needed as determined by silvicultural objectives and project planning. (Appendies H and M provide broad guidelines for various habitat groups.)

- As a minimum, a cutover area will not be considered an opening when: (1) a new forest stand is established and certified as stocked, (2) vegetative conditions reach the point where harvest of additional timber can occur and the combined area can still meet watershed management objectives.

- Prescribed burning or other techniques may be used for slash disposal, site preparation, and silvicultural objectives. In habitat groups where fire is not a useful treatment tool, lopping and scattering, yarding unmerchantable material (YUM), or other methods will be used to reduce fuel accumulations and prepare sites for regeneration.

- Project level planning will provide for stand regeneration within five years of final harvest.

- Even-aged stands will be scheduled for final regeneration harvest when they generally have reached the culmination of mean annual increment (CMAI) of growth. Exceptions include thinning or other stand improvement measures, salvage or sanitation harvest, management for experimental or research purposes and to meet other resource objectives. CMAI for primary species on the Helena National. Forest is shown in Appendix H.

Water and Soils

-Watershed improvement needs have been inventoried in tbe Tenmile watershed and priority projects identified. The drainage bas the top prioriity for implementation of watershed improvement projects as funding becomes available (See Appendix T).

Timber harvest will not create runoff increases which are likely to result in stream channel degradation. All timber sale proposals will include an analysis of current conditions and potential sediment production. The project proposal will analyze and evaluate the potential water quantity and quality, and soil productivity impacts; mitigation measures will be developed to minimize adverse effects. If a proposal shows the water quality can not be maintained within State standards for A-1 watersheds and public water supplies the project will be redesigned to meet the standards or terminated. Water quality monitoring will be an integral part of all timber harvest proposals.

Minerals

- Locatable -- To the extent feasible, timing of mineral activities will be coordinated with the needs of wildlife and water quality standards. This generally will require negotiations during development of operating plans for no surface occupancy, from December 1 to May 15 on winter range and during peak runoff. All minerals operations will be closely monitored to insure that water quality standards are maintained.

- Leasable -- The following standard stipulations (described in detail in Appendix N) will normally apply to the applicable portions of lease areas in this management area.

later Quality -1

Wildlife and Fisheries - 3a (2), 3b (2), 3h (4), 3c

Special Uses, Leases and Permits - 4

Land stability and erosion - 5a, 5b

Social and Economic concerns - 6a, 6b, 6c

Other stipulations may apply, based on site specific knowledge of the lease site, to assure resource protection or to meet the management area goals and objectives.

-Seismic -- See Forest-Wide Standards.

Lands

- This management area is an avoidance area for utility corridors (see Appendix P).

Facilities

- Portions of existing roads that are reconstructed will be maintained at a standard that will prevent unacceptable erosion or will be closed and stabilized.

- Roads will be constructed as needed to meet the management objectives of the area. Minimizing road width, grade and amount of disturbed area will be primary project design criteria.

- All new roads will be closed and stabilized when projects are terminated to minimize erosion.

- Where existing trails or nonsystem roads are intersected by new road construction, the trail or nonsystem road will be evaluated to determine if it should be retained on the system or abandoned.

Protection

- Insect and disease control should emphasize reduction and prevention through timber harvest and timber stand improvement. The use of other approved pest management techniques consistent with municipal watershed goals may be necessary at times.

- Use rapid and aggressive fire control methods in this management area.

- Prescribed fire may be used as a tool to reduce natural fuels and improve quantity and quality of wildlife forage.

- Fire suppression methods will be selected to minimize or eliminate soil disturbance of the watershed.

Riparian

- Timber harvest will be on a 240 year rotation and harvest types will generally be selection or group selection.

Management Practices

- See Table III-2 at the end of this chapter.

Monitoring Requirements

- See Table 111-3 at the end of this chapter.

Description

This management area consists of large blocks--greater than 3,000 acres--of undeveloped Land suited for dispersed recreation. These Lands include Mount Helena, Trout Creek Canyon, Indian Meadows, Nevada Mountain, Camas Lakes, and Silver King/Falls Creek. The Silver King/Falls Creek area has been identified by the **USGS** as having a high potential for oil and gas. These areas provide opportunities for semi-primitive non-motorized recreation and are characterized predominately by natural or natural appearing environment where there is a high probability of isolation from man's activites.

Management *Goals*

Provide a variety of semi-primitive and primitive nonmotorized recreation opportunities.

Provide for maintenance and/or enhancement of fishery, big game, and nongame habitat, grazing allotments, visual quality, and water quality.

Management Standards

In addition to the Forest-Wide Standards, the following management standards apply to this management area:

Recreation

- Motorized vehicles are not allowed in the management area. Exceptions may be allowed on a case-by-case basis where motorized vehicles are needed for legitimate mineral use.

- Recreation facilities will be permitted to preserve or enhance dispersed recreation opportunities. Portals, shelters. toilets, trail signs, etc., may be constructed if a need is identified. Existing facilities may be maintained or reconstructed as needed to expand dispersed recreation opportunities.

- Developed campgrounds will not be constructed in this area.

Visual

- Management practices will follow the guidelines for the retention **VQO.** Short term deviations may occur during construction or reconstruction of facilities **or** from management activities. [See Forest Landscape Management Book, Vol. 2 (Ag. Hdbk. No. 462) for definitions of VQOs and how they are applied.]

Wildlife and Fisheries

- Habitat improvement projects, such as prescribed fire and water developments, may he used to maintain or improve the fish and wildlife habitat, if the projects are compatible with the area's goals.

Range

- Livestock grazing will be maintained at the 1983 level within existing allotments, however, the level may be increased or decreased if monitoring or range analysis shows a need or opportunity to change.

- Range improvements, such as salting, water developments, etc., may be implemented to disperse livestock use.

Timber

- Forested lands are classified as unsuitable for timber management.

Water and Soils

- See Forest-Wide Standards.

Minerals

- Locatable -- Maintain an unroaded environment to the extent practical under the mining laws and the Mining Act Use Regulations. Use of motorized vehicles and timing of mineral activities will be coordinated with dispersed recreation and wildlife needs during development of the operating plan.

- Leasable -- The following standard stipulations (described in detail in Appendix N) will normally apply to the applicable portions of lease areas in this management area. Those involving threatened and endangered species only apply to the portions of the management area within identified essential or occupied habitat.

Water Quality - 1

T&E Species - 2a, 2c 2d, 2e, 2f, 2g

Wildlife and Fisheries - 3a (1), 3b (2), 3b (3), 3b (4), 3c

Land stability and erosion - 5a, 5b

Social and Economic conerns - 6a, 6b, 6c

Other stipulations may apply, based on site specific knowledge of the lease site, to assure resource protection or to meet the management area goals and objectives.

- Seismic -- See Forest-Wide Standards.

Lands

- This management area is an avoidance area for utility corridors (see Appendix P).

Facilities

- Roads will not be constructed for surface management purposes unless absolutely necessary for mineral activity or to access private land.

- Trailhead facilities may be constructed to increase accessibility and enhance recreation opportunities.

Protection

- Evaluate areas periodically for significant insect and disease problems. Endemic levels will be accepted as normal. If epidemic levels develop and control is necessary, the control method should minimize impacts on the dispersed recreation values.

- Wildfire suppression should minimize the use of heavy equipment.

- The appropriate fire suppression response ranges from control to confinement depending upon location, expected fire behavior, and other decision criteria related to values at risk. These decision criteria are stated in the Fire Management Direction in Appendix R.

- Prescribed fire with planned ignitions may be used in this management area, for the enhancement and maintenance of resources.

- Prescribed fire with unplanned ignitions may be used in this management area, for the enhancement and maintenance of resources, wben within preestablished prescribed fire criteria. These criteria are detailed in the Fire Management Direction in Appendix R.

'iparian

- See Forest Wide Standards

Management Practices

- See Table III-2 at the end of this chapter.

Monitoring Requirements

- See Table III-3 at the end of this chapter.

Description

This management area consists of all the campgrounds, picnic areas, boat ramps, and visitor information sites throughout the Eelena Forest. Because of the small size of the individual sites they are shown by map symbols on the Forest Plan map.

Campgrounds	Picnic Areas	Boating Sites	Visitor Info Sites
Aspen Grove	Ten Mile	Meriwether	MacDonald Pass
Copper Creek	Meriwether	Coulter	
Cromwell-Dixon	Deep Creek		
Kading			
Moose Creek			
Park Lake			
Porcupine			
Coulter			
Pikes Gulch			
Skidway			
Vigilante			
Blackfoot Canyon			

Management Goals

Maintain the present range and quality of developed recreation sites, to contribute to the public's enjoyment of the National Forest.

Management Standards

In addition to the Forest-Wide Standards, the following management standards apply to this management area:

Recreation

- Developed campgrounds or picnic areas will be maintained and rehabilitated, but generally not expanded beyond present capacity.

- Funds vill be allocated for tbe rehabilitation of existing sites on a cost-effective basis, considering the following criteria:

  a. Existing and projected use levels.
  b. Proximity to popular lakes and streams and major travel routes.
  c. Opportunity to provide savings of fossil fuels.
  d. Investment and maintenance costs.
  e. Opportunity to provide for a wide range of needs.

- Encourage the private sector, through concessions or volunteer programs, to aid in operating or maintaining developed sites.

- Sites that are not considered cost-effective based on the above criteria may be closed.

- Pathways, picnic and camp units, toilets, and boat launches should be constructed or modified to accomodate wheelchairs where possible.

Visual

- Management practices will generally follow the partial retention VQO. However, some deviation from this may be allowed during construction or reconstruction of needed facilities. [See Forest Landscape Management Book, Vol. 2 (Ag. Hdbk. No. 462) for definitions of VQOs and how they are applied.)

Wildlife and Fisheries

- Habitat improvement projects tbat are compatible with campground use will be encouraged.

Range

- Livestock grazing will not be permitted.

Timber

- This area is classified as unsuitable for timber management. Tree removal should only be for safety or to maintain healthy and diverse vegetation.

Water and Soils

- Keep individual camping units away from shorelines, so the public has the use of shorelines.

- All state and Federal standards for potable water and sanitation will be met.

Minerals

- Locatable -- These areas will he recommended for withdrawal from mineral entry. Common variety mineral permits will not be issued for these areas.

- Leasable -- Surface occupancy for oil and gas exploration and development will not be permitted within 400 feet of developed recreation sites.

- Seismic -- See Forest-Wide Standards.

Lands

- This management area is an avoidance area for utility corridors (see Appendix p).

Facilities

- Construct roads to a standard that will protect the sites and serve the recreation needs.

- Vehicular travel should be restricted to established roads.

Protection

- Evaluate developed sites periodically for significant insect and disease problems. Endemic levels will be accepted as normal. If epidemic levels develop, controls which minimize disturbance to the sites should be taken.

- Wildfire will be controlled to protect the investment in the sites and provide public safety. Minimize impact of fire suppression equipment.

- Prescribed fire with planned ignitions may be used to reduce fire hazards or enhance the appearance of the area.

- The use of fire prevention contacts will be emphasized in this management area.

Riparian

- See Forest-Wide Standards.

Management Practices

- See Table III-2 at the end of this chapter.

Monitoring Requirements

- See Table III-3 at the end of this chapter.

Description

This management area consists of lands available and suitable for timber management with varying physical and biological environments as determined by soil, slope, aspect, elevation, and climatic factors. Vegetation varies from ponderosa pine on the drier sites to spruce in the more mesic sites with nearly all slopes and aspects represented. Although this area consists primarily of suitable forest land, there are inclusions of nonforest and nonproductive forest lands. This area includes some small ponds and marshes which are considered unique to this part of Montana.

Management Goals

Provide healthy timber stands and optimize timber growing potential over the planning horizon.

Emphasize cost-effective timber production, while protecting the soil productivity.

Maintain water quality and stream bank stability.

Provide for dispersed recreation opportunities, wildlife habitat, and livestock use, when consistent with the timber management goals.

Management Standards

In addition to the Forest-Wide Standards, the following management standards apply to this management area.

Recreation

- Motorized and nonmotorized dispersed recreation activities are permitted and may be supported by constructing or maintaining trails and trailhead facilities. Existing trails and facilities will be maintained unless they are no longer needed.

- Controls on motorized recreation will be implemented where necessary, to protect the vegetation, soil, and water resources and to prevent road damage.

Visual

- Management practices will generally follow guidelines for the maximum modification VQO. The portions of this area (if any) that are within the sensitive viewing areas of the roads, trails, and areas listed in Appendix B will be managed to meet more restrictive VQOs noted in the appendix. [See Forest Management Book, Vol. 2 (Ag. Hdbk, No. 462) for definitions of VQOs and how they are applied.]

Wildlife and Fisheries

- Wildlife and fisheries habitat improvement projects may he implemented, provided they are compatible with the management area goals.

- Forest-Wide Standards and Appendix D contain guidance for T&E species habitat.

Range

- Livestock grazing is compatible, except where it conflicts with stand establishment. Fencing, temporary herding, or other techniques may be used to protect regeneration where needed.

- Pasture and allotment boundaries should be maintained during and following timber harvest. This may require additional fencing, where natural barriers are breached by timber sale activities.

- Livestock grazing will he maintained at the 1983 levels within existing allotments, however, the level may be increased or decreased if monitoring or range analysis shows a need or opportunity to change.

Timber

- This management area is suitable for timber management activities.

- Timber harvest practices include clearcut, group selection, and shelterwood harvest, depending on habitat group, physical site conditions, and silvicultural objectives. Precommercial thinning and intermediate harvest may occur where needed as determined by silvicultural objectives and project planning. (Appendies H and M provide broad guidelines for various habitat groups.)

- As a minimum, a cutover area will not be considered an opening when: (1) a new forest stand is established and certified as stocked, and (2) vegetative conditions reach the point where harvest of additional timber can occur and the combined area can still meet watershed management objectives.

- Prescribed burning or other techniques may be used for slash disposal, site preparation, silvicultural, and livestock objectives. In habitat groups where fire is not a useful treatment tool, lopping and scattering, yarding unmerchantable material (YUM), or other methods will he used to reduce fuel accumulations and prepare sites for regeneration.

- Project level planning will provide for stand regeneration within five years of final harvest.

- Even-aged stands will be scheduled for final regeneration harvest when they generally have reached the culmination of mean annual increment (CMAI) of growth. Exceptions include thinning or other stand improvement measures, salvage or sanitation harvest, management for experimental or research purposes and to meet other resource objectives. CMAI for primary species on the Helena National Forest is shown in Appendix H.

Water and Soils

- Timber harvest will not Create runoff increases which are likely to result in long term stream channel degradation. All timber sale proposals will include an analysis of the current and projected status of sediment produced. The project proposal will analyze and evaluate the potential water quantity and quality, and soil productivity impacts; mitigation measures should be developed to minimize adverse effects. If a proposal shows the water quality can not be maintained, the project will be reevaluated or terminated.

Minerals

- Locatable -- See Forest-Wide Standards.

- Leasable -- The following standard stipulations (described in detail in Appendix N) will normally apply to the applicable portiona of lease areas in this management area. Those involving threatened and endangered species only apply to the portions of the management area within identified essential or occupied habitat.

Water Quality - 1

T&E species - 2a, 2e, 2f, 2g

Wildlife and Fisheries - 3a (2), 3b (4), 3c

Land stability and erosion - 5a, 5b

Social and Economic concerns - 6a, 6b, 6c

Other stipulations may apply, based on site specific knowledge of the lease site, to assure resource protection or to meet the management area goals and objectives.

Seismic -- See Forest-Wide Standards.

Lands

- See Forest-Wide Standards.

Facilities

- Roads will be constructed as needed to meet the management objectives of the area.

- Where existing trails are intersected by new road construction, the trail will be evaluated to determine if it should be retained on the system or abandoned.

Protection

- Insect and disease control should emphasize reduction and prevention through timber harvest and timber stand improvement. The use of other approved integrated pest management techniques may be necessary at times.

- The appropriate fire suppression response ranges from control to containment depending upon location, expected fire behavior, and other decision logic criteria related to values at risk. These decision criteria are stated in the Fire Management Direction in Appendix R.

- Prescribed fire with planned ignitions may be used in this management area, for the enhancement and maintenance of resources.

- Fuel reduction methods for activity created fuels include burning, removing residue, or rearranging, such as dozer trampling.

Riparian

- Generally, harvesting will only occur in riparian areas in conjunction with sale activity on adjacent lands.

- In riparian areas, any timber harvest should be on a 240 year rotation, and harvest types should be selection or group selection.

- See Forest Wide Standards for grazing in riparian.

- The small ponds and marshes in Section 15, 16, 21, and 22 of T8N, R6W PMM are unique to this part of Montana and will be protected in project design and implementation.

Management Practices

- See Table III-2 at the end of this chapter.

Monitoring Requirements

- See Table III-3 at the end of this chapter.

MANAGEMENT AREA T-2 — 7,500 ACRES

Description

This management area occurs where big game winter range and timber values are present. Most of the area is in the lower elevations, below 6,000 feet. Vegetation varies from ponderosa pine on the dry south aspects to spruce in the riparian portions of the management area. Although this area consists primarily of forested lands, there are inclusions of grassland interspersed throughout.

Management Goals

Provide for the maintenance and enhancement of big game winter range.

Harvest timber on a programmed basis, consistent with big game winter range values.

Emphasize cost-effective timber production, while protecting the soil productivity.

Maintain water quality and stream bank stability.

Provide for other resource uses as long as these uses are compatible with timber and big game winter range management goals.

Management Standards

In addition to the Forest-Wide Standards, the following management standards apply to this management area:

Recreation

- Motorized and nonmotorized dispersed recreation activities are permitted and may be supported by constructing or maintaining trails and trailhead facilities. Existing trails and facilities will be maintained unless they are no longer needed.

- Controls over motorized recreation will be implemented from December 1 to May 15, where necessary, to protect the vegetation, soil. water, and wildlife resources and prevent damage to roads.

Visual

- Management practices will generally follow guidelines for the modification VQO. The portions of this area (if any) that are within sensitive viewing areas of the roads, trails, and areas listed in Appendix B will be managed to meet the more restrictive VQOs noted in the appendix. [See Forest Landscape Management Book, Vol. 2 (Ag. Hdbk. No. 462) for definitions of VQOs and how they are applied.]

Wildlife and Fish

- Wildlife habitat improvement practices, including road management, prescribed fire, and other techniques, may he used to maintain and/or enhance the quality of big game winter habitat.

- Maintain adequate thermal and hiding cover adjacent to forage areas. Generally this means providing at least 25 percent thermal cover. on identified winter range.

Range

- Livestock grazing will generally he maintained at the 1983 levels in existing allotments, however, the level may be increased or decreased if monitoring or range analysis shows a need or opportunity to change.

- Grazing systems will be designed to be compatible with wildlife needs.

- Improvements for livestock management, such as fencing and water developments, will be designed in cooperation with a wildlife biologist.

- Pasture and allotment boundaries should be maintained during and following timber harvest. This may require additional fencing where natural barriers are breached by timber sale activity.

- Chemical or mechanical control of invading vegetation will be considered in this area only if needed to maintain or improve big game winter range values.

Timber

- This management area is suitable for timber management activities.

- Timber harvest methods and volumes will be adjusted as necessary to meet big game winter range needs. Even- or uneven-aged silvicultural systems may be used. (Appendix M provides guidance for vegetative management practices by habitat groups.)

- Openings created by timber harvest should meet hiding cover requirements of big game before adjacent areas can be harvested.

- Schedule sale activities outside winter periods (December 1 to May 15).

- No more than 25 percent of the timber-perimeter around natural or artificial parks should be nonthermal cover at one time.

- Even-aged stands will be scheduled for final regeneration harvest when they generally have reached the culmination of mean annual increment (CMAI) of growth. Exceptions include thinning or other stand improvement measures, salvage or sanitation harvest, and management for experimental or research purposes and to meet other resource objectives. CMAI for primary species on the Belena National Forest is shown in Appendix H.

Water and Soils

- Timber harvest will not create runoff increases which are likely to result in long term channel degradation. All timber sale proposals will include an analysis of the current and projected status of sediment produced. The project proposal will analyze and evaluate the potential water quantity and quality and soil productivity impacts; mitigation measures should be developed to minimize adverse effects. If a proposal shows the water quality can not be maintained, the project will be reevaluated or terminated.

Minerals

- Locatable -- To the extent feasible, timing of mineral activities will be coordinated with the needs of wildlife on winter range. This generally will require negotiations during development of operating plans for no surface occupancy from December 1 to May 15.

- Leasable -- The following standard stipulations (described in detail in Appendix N) will normally apply to the applicable portions of lease areas in this management area- Those involving threatened and endangered species only apply to the portions of the management area within identified essential or occupied habitat.

Water Quality - 1

T&E Species - 2c, 2e, 2f

Wildlife and Fisheries - 3a (2), 3b (4), 3c

,and stability and erosion - 5a, 5b

Social and Economic concerns - 6a, 6b, 6c

Other stipulations may apply, based on site specific knowledge of the lease site, to assure resource protection or to meet the management area goals and objectives.

- Seismic -- See Forest-Wide Standards.

Lands

- See Forest-Wide Standards.

Facilities

- Roads may be constructed as needed to meet the management area goals.

- Where existing trails are intersected by new road construction, the trail will be evaluated to determine if it should be retained on the system or abandoned.

Protection

- Insect and disease control should emphasize reduction and prevention through timber harvest and timber stand improvement. The use of other approved integrated pest management techniques may be necessary at times.

- The appropriate fire suppression response ranges from control to containment depending upon location, expected fire behavior, and other decision criteria related to values at risk. These decision criteria are stated in the Fire Management Direction in Appendix R.

- Prescribed fire with planned ignitions may be used in this management area, for the enhancement and maintenance of resources.

- Fuel reduction methods for activity created fuels include burning, removing residue, or rearranging, such as dozer trampling. Disposal activities will meet visual quality objectives.

Riparian

- Generally, harvesting will only occur in riparian areas if in conjunction with large sale activity on adjacent lands.

- In riparian areas, any timber harvest should be on a 240 rotation, and harvest types should be selection or group selection.

- See Forest Wide Standards for grazing in riparian.

Management Practices

- See Table III-2 at tbe end of this chapter.

Monitoring Requirements

- See Table III-3 at the end of this chapter.

Description

This management area consists of lands that have primary forage, resting, and security characteristics that provide important spring and summer requirements for all big game species. These lands also supply the habitat needs of a wide variety of nongame forest dwelling wildlife. In addition lands within this management area contain productive timber sites that are available and suitable for timber management. The variation in elevation, topography, slope, and aspect, in addition to the often abundant surface water (seeps, springs, etc.), make these areas rich in species diversity and total numbers within species groups. This area also has inclusions of small grassland parks.

Management Goals

Maintain and/or enhance habitat characteristics favored by elk and other big game species.

Provide for healthy timber stands and a timber harvest program compatible with wildlife habitat goals for this area.

Emphasize cost-effective timber production, while protecting the soil productivity.

Maintain water quality and stream bank stability.

Provide for other resource objectives where compatible with the big game summer range and timber goals.

Management Standards

In addition to the Forest-Wide Standards, the following management standards apply to this management area:

Recreation

- Controls over motorized dispersed recreation will be implemented where necessary to protect wildlife habitat values.

- Nonmotorized dispersed recreation may be supported by constructing trails and trailhead facilities when compatible with management area goals.

Visual

- Management practices will generally follow guidelines for the modification VQO. The portions of this area (if any) that are within the sensitive viewing areas of the roads, trails, and areas listed in Appendix B will be managed to

meet the more restrictive VQOs noted in the appendix. [See Forest Landscape Management Book, Vol. 2 (Ag. Hdbk. No. 462) for definitions of VQOs and how they are applied.]

Wildlife and Fisheries

- Maintain a minimum of 35 percent hiding cover for big game.

- Maintain thermal cover adjacent to forage areas. Appendix C provides guidance for thermal cover.

- Wildlife habitat improvement practices, including road management, prescribed fire, and timber harvest, may be used to maintain and/or enhance the quality of big game summer habitat.

Range

- Livestock grazing will be maintained at the 1983 levels within existing allotments, however, the level may be increased or decreased if monitoring or range analysis show a need or opportunity to change.

- Grazing systems will be designed to be compatible with wildlife needs.

- Improvements for livestock management, such as fencing and water developments. will be implemented unless they are a detriment to big game.

Timber

- This management area is suitable for timber management activities.

- Timber harvest methods and volumes may be modified as necessary to achieve the management area goals.

- Even-aged stands will be scheduled for final regeneration harvest when they generally have reached the culmination of mean annual increment (CMAI) of growth. Exceptions include salvage or sanitation harvest and management for experimental or research purposes and to meet other resource objectives. CMAI for primary species on the Helena National Forest is shown in Appendix H. Appendix M provides guidance for various vegetative management practices by habitat group.

- Stocking control may be maintained through precommercial and commercial thinnings. The timing and planning of thinning operations will be coordinated with a wildlife biologist.

- Vegetative diversity will be encouraged.

- Openings created by timber harvest will be reforested to the extent necessary to meet the hiding cover requirements of big game before harvesting adjacent areas.

Water and Soils

- Timber harvest will not create runoff increases which are likely to result in long term channel degradation. All timber sale proposals will include an analysis of the current and projected status of sediment produced. The project proposal will analyze and evaluate the potential water quantity and quality and soil productivity impacts; mitigation measures should be developed to minimize adverse effects. If a project proposal shows the water quality can not be maintained, the project will be reevaluated or terminated.

Minerals

- Locatable -- To the extent feasible, timing of activities will be coordinated with the needs of wildlife on summer range. This will require negotiations during development of operating plans for minimum disturbance to wildlife.

- Leasable -- The following standard stipulations (described in detail in Appendix N) will normally apply to the applicable portions of lease areas in this management area. Those involving threatened and endangered species only apply to the portions of the management area within identified essential or occupied habitat.

Water Quality - 1

T&E Species - 2a, 2e, 2f, 2g

Wildlife and Fisheries - 3a (2), 3b (2), 3b (4), 3c

Land stability and erosion - 5a. 5b

Social and Economic concerns - 6a, 6b, 6c

Other stipulations may apply, based on site specific knowledge of the lease site, to assure resource protection or to meet the management area goals and objectives.

- Seismic -- See Forest-Wide Standards.

Lands

See Forest-Wide Standards.

Facilities

- Roads will be constructed as needed to meet the management area goals.

- Where existing trails are intersected by new road construction, the trail will be evaluated to determine if it should be retained on the system or abandoned.

Protection

- Insect and disease control should emphasize reduction and prevention through timber harvest and timber stand improvement. The use of other approved integrated pest management techniques may be necessary at times.

- The appropriate fire suppression response ranges from control to containment depending upon location, expected fire behavior, and other decision criteria related to values at risk. These decision criteria are stated in the Fire Management Direction in Appendix R.

- Prescribed fire with planned ignitions may be used in this management area, for the enhancement and maintenance of resources.

- Fuel reduction methods for activity created fuels include burning, removing residue, or rearranging, such as dozer trampling. Disposal activities will meet visual quality objectives.

Riparian

- See Forest Wide Standards for grazing in riparing.

- Generally, harvesting will only occur in riparian areas if in conjunction with sale activity on adjacent lands.

- In riparian areas, any timber harvest should be on a 240 year rotation and harvest types should be selection or group selection.

Management Practices

- See Table III-2 at the end of this chapter.

Monitoring Requirements

- See Table III-3 at the end of this chapter.

MANAGEMENT AREA T-4 — 10.100 ACRES

Description

This management area is productive timberland within the sensitive viewing area of many major travel routes, use areas, and water bodies. Vegetation varies from ponderosa pine, on the drier sites, to spruce in the moistest areas. Nearly all slopes and aspects are represented. Most of the area is suitable forest land, but there are some inclusions of nonforest and nonproductive forest land.

Management Goals

Maintain healthy stands of timber within the visual quality objective of retention and partial retention.

Provide for other resource uses as long as they are compatible with visual quality objectives.

Emphasize cost-effective timber production, while protecting the soil productivity.

Maintain water quality and stream bank stability.

Management Standards

In addition to the Forest-Wide Standards, the following management standards apply to this management area:

Recreation

- Motorized and nonmotorized dispersed recreation activities are permitted and may be supported by constructing or maintaining trails and trailhead facilities.

- Controls over motorized recreation will be implemented where necessary to protect resource values such as vegetation, soil, water, and VQOs.

Visual

- Management practices will generally follow guidelines for partial retention and retention depending upon the particular portion of the management area being entered. (Refer to Appendix B, Sensitive Viewing Areas, for most heavily used roads and recreation areas.) Departures from these VQOs will be considered on a case-by-case basis after an environmental analysis bas been completed. [See Forest Landscape Book, Vol 2 (Ag. Hdbk. No. 462) for definitions of VQOs and how they are applied.]

Wildlife and Fisheries

- Where elk habitat exists, project design will incorporate management practices to maintain or enhance summer and winter habitat, to the extent that the VQOs for the area are met.

- Wildlife and fisheries habitat improvement projects may be implemented, provided they are compatible with the management area goals.

Range

- Pasture and allotment boundaries should he maintained during and following timber harvest. This may require additional fencing where natural barriers are breached by timber sale activities.

- Livestock grazing will be maintained at the 1983 levels within existing allotments, however, the level may be increased or decreased if monitoring or range analysis shows a need or opportunity to change.

Timber

- This management area is suitable for timber management activities.

- Even-aged stands may he scheduled for final regeneration harvest when they generally have reached the culmination of mean annual increment (CMAI) of growth. Exceptions include thinning or other stand improvement measures, salvage or sanitation harvest, and management for experimental or research purposes and to meet other resource objectives. CMAI for primary species on the Helena National Forest is shown in Appendix H.

- Timber harvest practices include clearcutting, group selection, and shelterwood harvest, depending on habitat group, physical site conditions, and visual quality objectives. Precommercial thinnings and intermediate harvest will occur where needed as determined by silvicultural objectives, project planning, and visual quality objective. (Appendies H and M provide broad guidelines for various habitat groups.)

- Openings created by timber harvest will be reforested to the point where harvest of adjacent timber can occur and the combined area can still meet the VQOs of the area.

- Use timber harvest to rehabilitate existing harvest units, to improve the VQO.

- Prescribed burning will be used to accomplish slash disposal, site preparation, and silvicultural objectives. In habitat groups where fire is not a useful treatment tool, loping and scattering, YUM yarding, or other methods will be used to reduce fuel accumulations and prepare sites for regeneration provided the area goals are met.

Water and Soils

- Timber harvest will not create runoff increases which are likely to result in long term channel degradation. All timber sale proposals will include an analysis of the current and projected status of sediment produced. The project proposal will analyze and evaluate the potential water quantity and quality and soil productivity impacts; mitigation measures should be developed to minimize adverse effects. If a project proposal shows the water quality can not be maintained, the project will he reevaluated or terminated.

Minerals

- Locatable -- Plans of operation will include measures to maintain the VQO of the area.

- Leasable -- The following standard stipulations (described in detail in Appendix N) will normally apply to the applicable portions of lease areas in this management area. Those involving threatened and endangered species only apply to the portions of the management area within identified essential or occupied habitat.

Water Quality - 1

T&E Species - 2a, 2c, 2e, 2f, 2g

Wildlife and Fisheries - 3a (2), 3b (4), 3c

Land Stability and erosion - 5a, 5b

Social and Economic concerns - 6a, 6b, 6c

Other stipulations may apply, based on site specific knowledge of the lease site, to assure resource protection or to meet the management area goals and objectives.

1, 2a, 2b, 2c, 2e, 2f, 2g, 3a(2), 3b(4), 3c, 5a, 5b. 6a, 6b, 6c

- Seismic -- See Forest-Wide Standards.

Lands

- See Forest--Wide Standards.

Facilities

- Roads will be constructed as needed to meet the management objectives of the area.

- Where existing trails are intersected by new road construction, the trail will be evaluated to determine if it should be retained on the system or abandoned.

Protection

- Insect and disease control should emphasize reduction and prevention through timber harvest and timber stand improvement. The use of other approved integrated pest management techniques may be necessary at times.

- Aggressive control will normally be the appropriate fire suppression response in this management area.

- Prescribed fire with planned ignitions will be used in this management area, for the enhancement and maintenance of resources.

- Fuel reduction methods for activity created fuels include burning, removing residue, or rearranging, such as dozer trampling. Disposal activities will meet visual quality objectives.

- Wildfires will be suppressed in a manner that minimizes the use of heavy equipment.

Riparian

- See Forest Wide Standards for grazing in riparian.

- Generally, harvesting will only occur in riparian areas in conjunction with large sale activity on adjacent lands.

- In riparian areas, any timber harvest should be on a 240 year rotation, and harvest types should be selection or group selection.

anagement Practices

- See Table III-2 at the end of this chapter.

Monitoring Requirements

- See Table III-3 at the end of this chapter.

Description

This management area consists of suitable timber stands interspersed with natural openings, generally with existing livestock allotments. Forage is provided by natural meadows and transitory range. The area consists of mostly Douglas-fir, with some lodgepole pine. It encompasses lower elevations and dry sites on the Forest usually on the fringes of native grasslands.

Management Goals

Increase production and quality of forage.

Manage timber sites cost-effectively, by selecting the most economical harvest system and managing for natural regeneration.

Provide for healthy stands of timber and timber products consistent with increasing quality and quantity of forage.

Emphasize cost-effective timber production, while protecting the soil productivity.

Maintain water quality and stream bank stability.

Provide for other resource uses that are compatible with the other goals.

Management Standards

In addition to the Forest-Wide Standards, the following management standards apply to this management area:

Recreation

- Motorized and nonmotorized dispersed recreation activities are permitted and may be supported by constructing or maintaining trails and trailhead facilities. Existing trails and facilities will be maintained unless they are no longer needed.

- Controls on motorized recreation will be implemented where necessary, to protect the vegetation, soil, water, and wildlife resources and to prevent road damage.

Visual

- Management practices will generally follow guidelines for the modification VQO. The portions of this area (if any) that are within the sensitive viewing areas of the roads, trails, and areas listed in Appendix B will be managed to meet the more restrictive VQOs noted in the appendix. [See Forest Landscape Book, Vol. 2 (Ag. Hdbk. No. 461) for definitions of VQOs and how they are applied.]

Wildlife and Fisheries

- Wildlife and fisheries habitat improvement projects may be implemented, provided they are compatible with the management area goals.

- Maintain adequate thermal and biding cover adjacent to forage areas, provided timber harvest volumes are not significantly reduced over the rotation period.

Range

- Livestock grazing will generally be maintained at or above 1983 levels, unless a range analysis indicates there is a need to change.

- Vacant allotments will be restocked if a range analysis shows it to be feasible and a demand exists.

- Transitory range resulting from timber harvest will be integrated into the allotment planning process.

- Intensive management systems will be implemented, where cost-effective, to develop the range resource for sustained forage production. Management systems will be designed to minimize conflicts with wildlife.

- Forage improvement projects such as sagebrush burning, tree encroachment burning, and noxious plant control may be carried out on a scheduled basis. The schedule will be developed as part of allotment plans.

- Existing structural improvements, such as cattleguards, fences, and watering 'acilities. will be maintained or reconstructed as needed to continue present levels of grazing. Additional improvements may be built if the need is identified in an approved allotment management plan.

Timber

- This management area is suitable for timber management.

- Timber harvest methods include clearcutting. group selection, and shelterwood harvest, but may be modified to favor forage production. Clearcuts will be designed to ensure natural regeneration. Appendix M provides guidance for various vegetative management practices in the habitat groups on the Forest.

- Regeneration will be by natural means and will occur within 5 years of final harvest.

- As a minimum. a cutover area will not be considered an opening when: (1) a new forest stand is established and certified as stocked, and (2) vegetative conditions reach the point where harvest of additional timber can occur and the combined area can still meet watershed management objectives.

- Final entry of a shelterwood harvest may be delayed up to four decades to provide transitory range and to ensure regeneration.

- Animal control may be required on a case by case basis to ensure regeneration within 5 years of final harvest.

Water and Soils

- Timber harvest will not create runoff increases which are likely to result in long term channel degradation. All timber sale proposals will include an analysis of the current and projected status of sediment produced. The project proposal will analyze and evaluate the potential water quantity and quality and soil productivity impacts; mitigation measures should be developed to minimize adverse effects. If a project proposal shows the water quality can not he maintained, the project will be reevaluated or terminated.

Minerals

- Locatable -- See Forest-Wide Standards.

- Leasable -- The following standard stipulations (described in detail in Appendix N) will normally apply to the applicable portions of lease areas in this management area.

Water Quality - 1

Wildlife and Fisheries - 3a (2), 3b (2), 3b (4), 3c

Land stability and erosion - 5a, 5b

Social and Economic concerns - 6a. 6b, 6c

Other stipulations may apply, based on site specific knowledge of the lease site, to assure resource protection or to meet the management area goals and objectives.

- Seismic -- See Forest-Wide Standards.

Lands

- See Forest-Wide Standards.

Facilities

- Roads will be constructed as needed to meet the management area goals.

- Where existing trails are intersected by new road construction, the trail will be evaluated to determine if it should be retained on the system or abandoned.

Protection

- Insect and disease control should emphazise reduction and prevention through timber harvest and timber stand improvement. The use of other approved integrated pest management techniques may be necessary at times.

- The appropriate fire suppression response ranges from control to containment in this management area depending upon location, expected fire behavior, and other decision criteria related to values at risk. These decision criteria are stated in the Fire Management Direction in Appendix R

- Prescribed fire with planned ignitions may be used in this management area, for the enhancement and maintenance of resources.

- Prescribed fire with unplanned ignitions may be used in this management area, for the enhancement and maintenance of resource, when within preestablished prescribed fire criteria. These criteria are detailed in the Fire Management Direction in Appendix R.

- Fuel reduction methods for activity created fuels include burning, removing residue, or rearranging, such as dozer trampling.

Riparian

- Generally, harvesting will only occur in riparian areas in conjunction with sale activity on adjacent lands.

- In riparian areas, any timber harvest should be on a *240* year rotation, and harvest types should be selection or group selection.

- See Forest Wide Standards for grazing in riparian.

Management Practices

- *See* Table III-2 at the end of this chapter.

Monitoring Requirements

- See Table III-3 at the end of this chapter.

Description

This management area contains a variety of wildlife habitat ranging from important big game summer range to big game winter range. It has a variety of physical environments including riparian, calving or fawning areas, and hiding cover. All slopes, aspects and elevations are represented as well as a wide variety of vegetation ranging from grasslands to densely timbered areas.

Management Goals

Optimize wildlife habitat potential, including old growth, over the long term.

Provide for other resource uses, if they are compatible with wildlife management goals.

Management Standards

In addition to the Forest-Wide Standards, the following management standards apply to this management area:

Recreation

- Controls over motorized recreation will he implemented where necessary to protect wildlife habitat values of this area.

- Nonmotorized dispersed recreation may be supported by constructing trails and trailhead facilities when compatible with management area goals.

Visual

- Management practices will generally follow guidelines for the partial retention VQO. Exceptions may occur on a case-by-case basis to meet wildlife objectives. The portions of this area (if any) that are within the sensitive viewing areas of the roads, trails, and areas listed in Appendix B will be managed to meet the VQOs noted in the appendix. [See Forest Landscape Book, Vol. 2 (Ag. Hdbk. No. 462) for definitions of VQOs and how they are applied.]

Wildlife and Fisheries

- Wildlife habitat improvement practices, including road management, prescribed fire, and other techniques, will be used to maintain and/or enhance the quality of big game and nongame habitat.

- Maintain adequate thermal and hiding cover adjacent to forage areas. Generally this means providing at Least 25 percent cover, where available, on identified winter range.

Range

- Livestock grazing generally does not occur in this management area, except for minor amounts within existing allotments. Livestock grazing will continue within active allotments, however, the level may he increased or decreased if monitoring or range analysis show a need or opportunity to change.

Timber

- Timber will be harvested only if it can be used as a tool to maintain or enhance wildlife habitat values. Productive forest land is classified as unsuitable for timber management.

Water and Soils

- See Forest-Wide Standards.

Minerals

- Locatable -- Timing of mineral activities will be coordinated where practical with the needs of wildlife. This generally will require negotiations during development of operating plans for no surface occupancy during critical wildlife use.

- Leasable -- The following standard stipulations (described in detail in Appendix N) will normally apply to the applicable portions of lease areas in this management area. Those involving threatened and endangered species only apply to the portions of the management area within identified essential or occupied habitat.

dater Quality - 1.

T&E Species - 2a, 2e, 2f, 2g

Wildlife and Fisheries - 3a (1), 3a (2), 3b (1), 3b (2), 3b (3), 3b (4), 3c

Land stability and erosion - 5a, 5b

Social and Economic concerns - 6a, 6b, 6c

Other stipulations may apply, based on site specific knowledge of the lease site, to assure resource protection or to meet the management area goals and objectives.

- Seismic -- See Forest-Wide Standards.

Lands

- See Forest-Wide Standards.

Facilities

- Roads will generally not be constructed for surface management activities within this area. Exceptions may occur if needed for wildlife improvement projects. Roads through this area, which provide access to adjacent areas, are permitted only if project planning indicates it is the most feasible access.

- Road construction should avoid important big game areas, such as wet, boggy areas.

Protection

- Areas will be evaluated periodically for significant insect and disease problems. Endemic levels will be accepted as normal. If epidemic levels develop and control is necessary, the control method should minimize impacts on big game and other wildlife values.

- The appropriate fire suppression response ranges from control to confinement in this management area depending upon location, expected fire behavior, and other decision criteria related to values at risk. These decision criteria are stated in the Fire Management Direction in Appendix R.

- Prescribed fire with planned ignitions will be used in this management area, for the enhancement and maintenance of resources.

- 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. These criteria are detailed in the Fire Management Direction in Appendix R.

Prescribed fire may be used as a tool to reduce natural fuels and improve quantity and quality of wildlife forage.

Riparian

- See Forest-Wide Standards for grazing in riparian.

Management Practices

- See Table 111-2 at the end of this chapter.

Monitoring Requirements

- See Table 111-3 at the end of this chapter.

Description

This management area consists of riparian and other lands that have forage, resting, and security characteristics and provide important spring, summer, and fall requirements for all big game species. Range allotments are in parts of the area. The variations in elevation, topography, slope, and aspect make these areas rich in species diversity.

Management Goals

Maintain and/or enhance habitat characteristics favored by elk and other big game species during spring, summer, and fall.

Provide habitat diversity for non game wildlife species.

Provide forage for both big game acd livestock.

Provide for other resource objectives as long as their uses are compatible with the wildlife and livestock objectives.

Uanagement Standards

In addition to the Forest-Wide Standards, the following management standards apply to this management area.

recreation

- Controls over motorized recreation will be implemented where necessary to protect wildlife habitat values of this area.

- Nonmotorized dispersed recreation may be supported by constructing trails and trailhead facilities when compatible with management area goals.

Visual

- Management practices generally will follow guidelines for the partial retention VQO. Exceptions may occur on a case-by-case basis where necessary to meet the area goals. [See Forest Landscape Book, Vol. 2 (Ag. Hdhk. No. 462) for definitions of VQOs and how they are applied.]

Wildlife and Fisheries

- Most new roads and about 50% of existing roads will be closed, at least seasonally.

- Wildlife habitat improvement practices, including road management, prescribed fire, and other techniques, will be used to maintain and/or enhance big game calving and summer habitat.
- Maintain adequate thermal and hiding cover adjacent to forage areas.

Range

- Livestock grazing will generally be maintained near the 1983 **levels** within existing allotments, unless monitoring **or** a range analysis indicates a need to hange.

- Livestock grazing will not be expanded into new areas.

- Planning for livestock improvements, such as fencing and water developments, will be coordinated with the wildlife biologist.

Timber

- Forested land is classified ***as*** unsuitable for timber management.

- Timber harvest will be used only to maintain or enhance habitat values.

Water and Soils

- ***See*** Forest-Wide Standards.

Minerals

- Locatable -- To the extent feasible, timing of mineral activities will be coordinated with the needs of wildlife and water. This generally will require negotiation during development of operating plans from May **15** to **June** 30.

- Leasable -- **The** following standard stipulations (described in detail in Appendix N) will normally apply to the applicable portions of lease areas in his management area. **Those** involving threatened and endangered species only pply to the portions of the management area within identified essential or occupied habitat.

Water Quality - 1

T&E Species - 2a, 2g

Wildlife and Fisheries - 3a (2), 3b (2), 3b (4), 3c

Land stability and erosion - 5a, 5b

Social and Economic concerns - 6a, 6b, 6c

Other stipulations may apply, based on site specific knowledge of the lease site, to assure resource protection or to meet the management **area** goals **and** objectives.

1, 2a. 2g, 3a(2), 3b(2), 3b(4), 3c, 5a, 5b, 6a, 6b, 6c

- Seismic -- See Forest-Wide Standards.

Lands

- See Forest-Wide Standards.

Facilities

- Road construction should not be necessary for surface management, however, roads can be built through the area to access other management areas or for minerals development.

- Road construction should avoid important big game areas, such as wet buggy areas.

- Road management will be used to minimize disturbance to big game during critical periods.

Protection

- Areas will be evaluated periodically for significant insect and disease problems. Endemic levels will be accepted as normal. If epidemic levels develop and control is necessary, the control method should minimize impacts on the big game summer range values.

- The appropriate fire suppression response ranges from control to confinement in this management area depending upon location, expected fire behavior, and other decision criteria related to values at risk. These decision criteria are stated in the Fire Management Direction in Appendix R.

- Prescribed fire with planned ignitions will be used in this management area, for the enhancement and maintenance of resources.

- Prescribed fire with unplanned ignitions may be used in this management area, fur the enhancement and maintenance of resources, when within preestablished prescribed fire criteria. These criteria are detailed in the Fire Management irection in Appendix R.

Riparian

- *See* Forest Wide Standards for grazing.

Management Practices

- *See* Table III-2 at the end of this chapter.

Monitoring Requirements

- See Table III-3 at the end of this chapter.

MANAGEMENT AREA P-1 — 83,000 ACRES

Description

This management area consists of the Helena National Forest portion of Scapegoat Wilderness designated in 1972 by the U.S. Congress. The Helena Forest, Lincoln Ranger District, manages about 34 percent of the Scapegoat Wilderness. Management of the remaining 66 percent is provided by the Lewis 2nd Clark National Forest and the Lolo National Forest.

Management Goals

Manage these areas in accordance with the Wilderness Act of 1964 to maintain an enduring system of high quality wilderness representative of National Forest ecotypes.

Ferpetuate 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 natural dynamic equilibrium associated with natural, complete ecosystems.

Accommodate and administer those "nonconforming but accepted" uses provided in ıe 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.

Management Standards

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.

In addition to the Forest-wide Management Direction included in Chapter II of this Plan, the following standards will apply to this Management Area.

Visitor Use Management

-Management action for limiting and/or distributing visitor use in these wildernesses will be based on application of the Limits of Acceptable Change (LAC) 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 sociel ·nd 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 or 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 R. The management emphasis for each opportunity class is stated in the Managerial Setting portion of the description. The emphasis will be Opportunity Classes I and 11 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 S), immediate closure will be considered. Outfitters will be given 1 year's 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 boards requesting visitors' cooprration in refraining from disturbing archeological resources.

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

a. 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.

b.Managers will concentrate on improving conditions at campsites with ucacceptable impacts such as the following:

1. 50 percent or more of the available ground cover reduced or removed in the immediate area,

2 absence of seedlings and saplings,

3 tree roots exposed; tree boles defaced,

4 abundance of non-native plant species,

5 lack of fuelwood,

6 rock, fire rings,

7 trails radiating from the site to latrine locations, and creeks.

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

1. 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.

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

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

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

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

6. 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.

7. 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. These documents are part of the Forest planning records in the Helena Forest supervisors office.

Insects/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. This document is part of the Forest Planning records in the Helena Forest Supervisors office.

-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 arid disease activity will be the only agents permitted to influence vegetation and its associated wildlife in the wilderness. 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 ublic 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 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 arid 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. Fermanent reference markings within caves are not permitted. Flagging may be used if promptly removed after it has served its purpose. Fermanent or semipermanent 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. Fermenent caches will not be permitted.

The appropriate wilderness manager will establish contact with local caving Jubs. Prior to any group's 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 stny; exploration methods; removal of equipment; and campsite cleanup. Groups will be encouraged to avoid publicizing or 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 to 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, 2nd bleaches. whether biodegradable or not, will not be permitted in lakes.

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

Grazing

- Forest Service Manual directives govern livestock management in wilderness. This direction includes:

a. 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.

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

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

d. The construction of new improvements or replacement of deteriorated facilities is permissible if in accordance with appropriate management direction.

-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 (refer to Appendix S). Managers will establish this process direction for:

a. spring and early summer grazing dates (generally not before July 1) based on range readiness checks;

b. determination of carrying capacity, condition, and trend;

c. monitoring of actual use Levels.

-Livestock grazing rill 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 horses 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 will inform persons using stock in the wilderness of the noxious weed problem. When supplemental feed is required, encourage the use of weed-free hay and pellets. Wilderness manager-public contacts should emphasize the relationship between overused, disturbed sites and noxious weed establishment. Stock users will be encouraged to use weed-free hay, but certification will not be mandatory.

-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.

-In the interim, trail stardards and trail maintenance priorities are described in Chapter II, Forest-wide Standards.

-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 R-1 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.

-The following signs will be permitted: wilderness boundary signs, directional signs at trail junctions, and administrative signs. Trail signs will contain the trail nene and number. Destinations and/or mileage will not be included on trail signs within wilderness.

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 rescurces 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 Forest. Service Manual 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. The decision will include at least the following:

a. type and amount of services;

b. existing operations to determine how they meet identified needs;

c. 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 R-1 National Forest Outfitters and Guides Task Force recommendations and the LAC process. The standards should delineate acceptable developments and the extent of development, including:

a. camp locations relative to trails, streams, lakes, and features;

b. permanent and temporary improvements authorized;

c. 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 cccsidered during this planning period.

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

Administrative Coordination

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

-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 can not 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 the 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

-These management areas are exclusion areas for utility corridors (See Appendix P).

MANAGEMENT AREA P-2

28,600 Acres

Description

This management area consists of the Gates-of-the-Mountains Wilderness designated in 1964 by the U.S. Congress. The Helena Ranger District of the Helena National Forest manages the entire wilderness.

The area is composed of Madison limestone and paleozoic shales. These parent rocks have weathered and eroded into bold cliffs, bluffs, and massive outcrops. The deep plunging canyons, limestone cliffs, peaks and knife-like ridges have created spectacular scenery over a large part of the area. In a few places, the higher country has smoothed into open meadows and rolling bald ridges. The elevation rises from a low of 3,700 feet near the Missouri River to a high of 8,000 feet on Moors Mountain. Some of the higher peaks in the Wilderness include Willow, Candle, Cap and Sheep Mountains. Panoramic views of the Belena Valley, Smith River drainage and the Big Belt Mountains can be seen from the Wilderness.

The vegetation of the area varies with soil type, slope, aspect and elevation. The riparian zones contain cottonwood, spruce and similar moisture-loving species. The lower slopes, are occupied by ponderosa pine and juniper. Higher up there is a transition to Douglas-fir, lodgepole pine and limber and whitebark pine at the highest elevations. The higher reaches of the Wilderness are characterized by the presence of several large wildflower-filled meadows. Fire scars from recent large fires (i.e., North Hills, Mann Gulch and Candle Mountain) and older burns are readily evident in the timber stands.

Management Goals

Manage these areas 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 natural 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.

Management Standards

In addition to the Forest-wide Standards, the following management standards apply to this management area:

ECOLOGICAL COMPONENTS

Wilderness

Perpetuate the quality of the existing wilderness. Work toward restoration of the wilderness resource to a near natural condition where it has been degraded by man. The wilderness resource will not be modified unless the modification is clearly supported by an environmental assessment and compatible with the mandates of the Wilderness Act.

Direct management toward retaining and, wherever appropriate, enhancing solitude and primitive unconfined recreation.

Sound and Air

Where manageable or negotiable, identify and mitigate outside influences.

The airshed in the Gates-of-the-Mountains will be managed to meet Class I air quality standards.

Scenic

Manage over-used campsites to allow for their recovery. Through education and enforcement, reduce the level of convenience features (i.e., fire rings, wood piles, chair rocks, logs, tables, hitching rails, temporary corrals, etc.) around hunting camps and other popular campsites.

Fisheries

Streams within the wilderness will be assessed for fisheries resource potential.

Fisheries habitat improvement projects outside the wilderness will be assessed for potential impacts upon the wilderness resource.

Wildlife

Allow natural processes, as far as possible, to control wilderness ecosystems and wildlife.

Seek natural distribution, numbers and interactions of species now inhabiting the wilderness.

Develop a joint resource management plan with the Montana Department of Fish, Wildlife, and Parks for the Beartooth Game Management Area and the Gates of the Mountains Wilderness.

Encourage viewing, photographing, and hunting where such activities are legal, biologically sound, and carried out in the spirit of the wilderness experience.

Manage for the preservation of rare, threatened, and endangered species dependent on wilderness conditions.

Forest Cover

Reduce vegetative and soil disturbance at campsites by managing visitor use and by educating user groups and individuals in low impact camping and stock use. Develop a fire management plan to restore fire to its natural role in plant community succession.

Develop and implement grazing allotment management plans that will permit livestock grazing while maintaining existing plant communities.

Watershed

Through user group education programs, campers will be encouraged to use biodegradable soap and to dispose of human waste and waste water from cooking and washing at least 100 feet from streams.

Water diversion barriers built of native material shall be installed on trails to divert sediment-laden runoff from flowing directly into stream courses.

Water developments necessitated by re-stocking of the Moors Mountain Allotment will be constructed of native materials where possible and will be camouflaged to protect wilderness visual qualities.

The Kennedy Spring water development will be renovated and maintained as needed, with native materials where possible, to guarantee a supply of potable water.

Cultural and Historical Resources

Conduct a cultural resource inventory to identify sites and nominate to the National Register of Historic Places those sites meeting the Register's requirements.

Insure compliance with the Antiquities Act once sites of archeological or historical significance are identified.

LAND USES AND PROTECTION

Recreation

Implement a study to be completed by 1990 to gather baseline data to establish carrying capacity and to facilitate public contact and education. Minimize man-made change to the wilderness character due to fire suppression and recreation activity. The limits of acceptable change (LAC) process may be used to identify the problem areas and identify the needed management activities.

Limit groups to 15 people. Groups larger than 15 will be approved in writing by the local District Ranger and be encouraged to disperse.

Develop and implement an education program on minimal impact camping techniques and wilderness skills. This program would encourage the use of self-contained stares, discourage the cutting of green trees and the practice of caching camp supplies, encourage visitors to remove fire rings and scatter remaining charcoal, and include enforcement of the Pack-In/Pack-Out policy.

Develop a users group list which would identify target publics for the wilderness education program.

Initiate an I&I Program to inform users that caches are inconsistent with the wilderness. Caches will be impounded and packed out by the Forest Service after allowing a reasonable time for voluntary removal.

Pack and Saddle Stock

Provide information to, and work with, horse users on how to use stock in harmony with the wilderness environment.

Remove the metal post and wire fence at: Bear Prairie.

Remove the barb wire drift fence on Upper Big Log Gulch.

Remove or relocate, if possible, those corrals and hitching rails which are within 100 feet of live streams or which are highly visible from trails and high use campsites.

When supplemental feed is used, encourage the use of certified weed-free hay nd feed.

Special Uses

Applications for outfitter-guide permits will he considered consistent with FSM 2721.53 policy and regulations. No permits for these services will be issued for the months of October and November, to avoid overuse of the resources and conflicts with private non-outfitted users.

Grazing

Permit the grazing of sheep and cattle on the Moors Mountain Allotment. Grazing improvements necessitated by re-stocking the allotment will be considered only if they protect or enhance the wilderness resource.

The Forest Service and Montana Department of Fish, Wildlife, and Parks will develop joint resource management direction for the Willow Creek and Cochran Fields Allotments, Beartooth Game Management Area, and the Gates of the Mountains Wilderness.

Mining and Leasing

All requests for prospecting permits, approval of Notices of Intent, and Plans of Operation for lands within the wilderness will be denied. Applications for

permits to drill and petroleum prospecting activities likewise will be denied. Use portal signing to inform prospectors that the area has been withdrawn from mining and leasing authorities.

Consider requests for scientific study of the wilderness mineral character if the study can be conducted in a manner that will not impact the wilderness resources. These requests will be considered scientific uses and administered accordingly.

Aircraft

Provide a liaison with the Federal, Aviation Administration, Helena Airport Authority, the Montana Air National Guard, and the United States Air Force, Malstrom, A.F.B., to advise pilots of the **3,000** feet advisory limit in an effort to reduce low flights over the Gates.

Allow helispot clearing/construction when necessary and permit helicopter landings within the wilderness when requests for such landings are in accordance with FSM **2326** instructions.

Exterior Concerns

Special efforts will be made to increase nearby residents awareness of wilderness ethics to minimize impacts.

Fire prevention efforts will be directed toward areas where high risk exists.

Investigate the possibility of relocating the trailhead for trail **No. 257.**

Fire

Prior to approval of fire management direction, initial attack will be taken on all fires. If fire escapes initial attack, an escaped fire situation analysis will be made by the District Ranger to determine the level of suppression action. Demobilization of firefighters will he by primitive means, unless approved **by** the Forest Supervisor due to emergency situations.

Do not construct helispots except for emergency situations.

Develop fire management direction by 1990. The objective will be to use fire to promote the natural ecosystem in the wilderness. This direction should include the following:

- Objectives **or** Introduction
- Fire History and Natural Fire Regime
- Fuels
- Weather Regime
- Potential Impacts Outside the Wilderness
- The Action Plan
- Line Responsibility
- Cooperation
- I&I Program

Insects and Disease

Allow epidemics of insects and diseases to abate naturally. Control measures would be initiated only as a last resort if epidemics do not subside naturally and continue to threaten lands outside the wilderness.

Visitor Safety

Mechanized equipment, such as helicopters, may be used for emergency situations with the Forest Supervisor's approval.

To reduce the frequency of accidents, have pamphlets on wilderness safety available, and make personal contactss informing visitors of hazards.

User Controls

Rules, regulations, and policies shall be the minimum necessary to achieve management direction.

Initiate an active program to inform the public about proper use of wilderness.

Provide additional law enforcement personnel during hunting seasons and during periods of high off-road vehicle use.

ADMINISTRATIVE ACTIVITIES AND IMPROVEMENTS

Access System

Relocate and reconstruct those trails identified in the Helena District Trail Maintenance Plan that are eroding, deemed unsafe, and unstable.

Monitor the development of manways, but construct no new trails unless use levels indicate the need.

Do not plan further development of trailhead facilities until use levels indicate a need for additional facilities.

Signs

The following signs will be permitted: wilderness boundary signs, directional signs at trail junctions, and necessary administrative signs.

Remove or replace all signs within the wilderness that do not meet the requirements of FSH 7109.11. This includes mileage markers.

Install standard Northern Region wilderness information boards at all entrances.

Administration

Construct no permanent structures for administering the wilderness.

Provide for the hiring of one seasonal wilderness ranger during periods of heavy use during July and August, and October and November.

Yearly Action Plans will be developed by the District Ranger to accomplish anagement goals such a signing, wilderness education, trail maintenance, and ampsite rehabilitation.

Research, Studies, and Monitoring

Results of research should be implemented through education and guidance by researchers and wilderness managers. Actual on-site monitoring and response to over use will be used to off-set site damage.

Research and studies will be conducted in a manner that protects the integrity of the wilderness resource. All research projects must have prior approval of the Regional Forester.

Research and monitoring should be conducted to determine the following:

- Visitor Use Capacity
- The presence of threatened and endangered species.
- The role that natural fire may play in this wilderness.
- The presence of historical and archeological values.
- Water quality.

Management Area P–3 **32.900** Acres

'Description

This management area includes the following areas recommended by the Helena National Forest for Congressional designation as wilderness. 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 it self.

Electric Peak **14,300** Acres

The Electric Peak Roadless Area is in Powell and Jefferson Counties in southwestern Montana, approximately 30 air miles southwest of Helena and 25 air miles north of Butte. About 60 percent of the area is on the Helena Forest; the remainder is on the Deerlodge Forest.

The area lies along the Continental Divide and includes Bison Mountain, Thunderbolt Mountain, Cliff Mountain, and Electric Peak, which are over 8,000 feet in elevation. The Little Blackfoot River crosses the northern portion of the area. A prominent feature in the center of the area is Blackfoot Meadows, containing a group of beaver ponds at the head of the Little Blackfoot River. The meadows are popular for camping and fishing. Remnants of Leadville, a historic mining town, south of Electric Peak, still remain. Cottonwood Lake, which lies to the south east of Electric Peak, is a major water hole for elk, leer, and moose that summer in the area.

Lodgepole pine is the dominant overstory species, with Englemann spruce established on wet sites, Douglas fir on dry south–to–southwest aspects, and subalpine fir at the higher elevations. Open meadows are scattered throughout the area and Bison Mountain, Thunderbolt Mountain, and Electric Peak are above timberline.

Topography changes from approximately 5,700 feet at the northeastern corner, to 8,597 feet at Thunderbolt Mountain. Annual precipitation varies from 24–30 inches.

Wildlife include elk, moose, black bear, mule deer, grouse, and numerous non-game animals and birds. The Little Blackfoot River supports a cutthroat and brook trout fishery.

The area receives light recreational use, except during hunting season when use increases substantially. Portions of the area show evidence of prospecting. The area contains an estimated 15 miles of two-wheel track roads. Kading Campground is situated in a narrow exclusion to the area, at the end of the Little Blackfoot River Road.

Big Log — 10,000 Acres

The Big Log Roadless Area is in Lewis and Clark County on the Helena National Forest, approximately 20 air miles from Helena, Montana. The area includes three noncontiguous parcels adjacent to the west and south sides of the Gates-of-the-Mountain Wilderness.

Vegetation varies from dry ponderosa pine, Douglas fir sites with juniper stands on the south slopes, to dense stands of Douglas fir with limber pine and alpine fir on the higher and cooler sites. The unit is predominately covered with vegetation; however, some meadows are present, as well as areas of bitterbrush stands. A large portion of this area was burned in the 1984 North Hills fire. Severe erosion also occurred as a result of a flash flood immediately following the fire. Rehabilitation efforts have included log erosion barriers, and reseeding with native grasses.

Topography changes from 3,700 feet along the lower stretches of Beaver Creek (south end of the area) to 5,400 feet along the ridges of Upper Big Log Gulch. The narrow valley bottoms rise sharply to a knife edge limestone ridge. Annual precipitation ranges from 15 to 20 inces per year.

Wildlife species include elk, mule deer, whitetail deer, bighorn sheep, mountain goats, and black bear. Grouse and turkey can be found at the lower elevations, as well as several non-game animals. The Missouri River, along the west side of the area, is bald eagle and peregrine falcon habitat. Osprey and their nests are found near this area.

There are no live streams, lakes, or ponds within the unit. Primitive and semi-primitive recreation use in a natural setting are the main values people associate with the area.

Mount Baldy — 8,600 Acres

The Mount Baldy Roadless Area is in the western portion of Meagher County and the eastern portion of Broadwater County, about 40 miles southeast of Helena, Montana. Townsend, Montana is about 20 miles to the'southwest, and White Sulphur Springs, Montana is about 20 miles to the east.

The Mount Baldy Roadless Area is part of the Big Belt Mountains and ranges from 6,000 to 9,480 feet in elevation with 80 percent of the area over 7,000 feet. Mount 'Edith and Mount Baldy are two of the more dominant features along the Big Belt Divide. Birch Creek Basin drops abruptly from the main ridge and contains several lakes at the head of Big Birch Creek. Alpine lakes are unique in the Big Belt Mountains.

The prominent and most popular lakes are Hidden Lake, Grace Lake, Upper Baldy Lake, and Edith Lake. Several smaller unnamed lakes are also in the Basin. There are two small water falls along Big Birch Creek.

The Needles, a small area of protruding granite rock formations, is another unique feature within the Birch Creek Basin. Gypsy Lake is along the north boundary and is an attraction to picnickers and fisherman.

Vegetation varies from heavily forested at lower elevations to treeless alpine types on Mount Baldy and Mount Edith. In Birch Creek Basin, Engelmann spruce types dominate the riparian zones. Douglas fir and lodgepole pine occupy the drier middle slopes. Alpine fir and whitehark pine characterize the higher elevations approaching timberline.

Wildlife species include elk, moose, mountain goats, black bear, mule deer, grouse, and numerous non-game animals and birds. Big game use the area during the summer and into late fall. Birch Creek, Gypsy Creek, and the deeper lakes have trout fishing.

Management Goals

Manage the recommended wilderness additions to protect the wilderness characteristics and to the extent possible allow existing uses, pending Congressional classification.

Management Standards

In addition to the Forest-Wide Standards, the following management standards apply to this management area:

Recreation

-Vistor use may be restricted to prevent loss of solitude or unacceptable depreciation of the wilderness qualities.

The limits of acceptable change (LAC) process may be used to determine if management actions are necessary to preserve natural environments and provide wilderness experiences.

Visual

-Management practices will follow the guidelines for the preservation VQO.

Wilderness

-If the recommended Big Log addition receives wilderness classification, wilderness management direction will be the same as for the rest of the Gates of the Mountains, in Management Area P-2.

-Existing structures will he retained. If major rehabilitation or maintenance is needed, an assessment of the continued need and cultural significance will be completed.

Wildlife and Fisheries

-Wildlife habitat improvement projects will conform to Forest Service wilderness policy (FSM 2320).

-Fish stocking will conform to Forest Service wilderness policy. Stocking can continue in lakes where there is a history of such activity.

Range

-Natural vegetative composition will be maintained. All existing range allotments may be maintained and managed in accordance with wilderness values.

Existing livestock management improvements may be maintained.

-Additional structural improvements may be built only when necessary to maintain the wilderness values.

Timber

-Timber harvest is not permitted. The management area is classified as unsuitable for timber management.

Water and Soils

-*See* Forest-Wide Standards.

Minerals

-Areas recommended for wilderness, Electric Peak and Mount Baldy, that currently have oil and gas leases will be managed under the stipulation of the lease until the lease expires. Applications for further oil and gas leasing will be accepted, but not processed until the wilderness classification has been determined.

Lands

-This management area is an exclusion area for utility corridors (see Appendix

Facilities

- Facilities and structures may be constructed to ensure the protection of the wilderness resource and safety of users. However, facilities may not be constructed solely to provide convenience to users.

- Trail constructiion is permitted and should be accomplished with minimal disturbance of the natural environment.

-Roads will not be constructed in this management area.

Protection

-Areas will be evaluated periodically for significant insect and disease problems, such as mountain pine beetle. Endemic levels of insects and most disease agents that do not normally pose threats to adjacent lands will be accepted as naturally occurring. Control measure would be initiated only as a last resort if epidemics do not subside naturally and continue to threaten lands outside the proposed wilderness.

-Fire Management Direction in Appendix R will be implemented that permits unplanned ignitions to burn when within prescription, to perpetuate the natural plant and animal diversity. Suppression actions need to be compatible with wilderness management objectives.

-The appropriate fire suppression response ranges from control to confinement in this management area depending upon location, expected fire behavior, and other decision criteria related to values at risk. These decision criteria will be stated in a Fire Management Action Plan.

Management Practices

-See Table III-2 at the end of this chapter.

Monitoring Requirements

-See Table III-3 at the end of this chapter.

ELKHORN WILDLIFE MANAGEMENT UNIT

The Elkhorn Wildlife Management Unit was established as a result of the Final Elkhorn Wilderness Study Report (1982). The wilderness study was made in compliance with Public Law 94-557. In addition to making the study, this law required that the land's present wilderness character and potential for inclusion into the National Wilderness Preservation System be maintained for four years after the study is submitted to Congress, September 1986, or until Congress acts on the study's recommendation, whichever comes first. The Final Report (and FEIS) recommended no area be designated for wilderness but that a Wildlife Management Unit be established in the Helena and Deerlodge Forest Plans using the following criteria:

* Wildlife habitat will be managed to maintain viable populations of species associated with existing ecosystems, with emphasis on selected species that have seclusion as one of their habitat requirements.

* Vehicular access will be restricted as necessary to maintain wildlife habitat values and to provide seclusion for selected species, particularly within outlined mountain goat and moose habitat areas.

* Management controls over the use of motorized vehicles will be implemented, whenever necessary to protect the wildlife habitat and other natural resources. This will include the closure and restoration of roads that are under Forest Service control, or that can be placed under Forest Service control, which are not necessary to the use and management of the area.

* A transmountain road will not be considered.

* Land management activities for other resource values will be considered when they are compatible with management direction for wildlife.

* The Elkhorn Study has evaluated wilderness for the Study Area. Therefore, the Forest Plans did not consider a wilderness alternative for the Elkhorn Study Area.

* To the degree possible, the High Visual Resource Area around Elkhorn and Crow Peaks and the two areas proposed for wilderness area around Tizer Basin and Crazy Peak (in Alternative E of the Elkhorn FEIS) will be managed so as to maintain existing roadless and visual resource values and to minimize the impact of human activities. (See Final Elkhorn Wilderness Study Report and FEIS.)

* To the extent that manpower, funding, and legal limitations allow, interim management pending congressional action will include steps to remove structures and signs of human activity that are not of historical significance.

Developing management guidelines for the Elkhorn Mountains has involved the active participation of the Montana Department of Fish, Wildlife and Parks (MDFWP). In addition to developing management guidelines, both agencies have also initiated a cooperative Elkhorn Wildlife Monitoring Program (1982).

Objectives of the program are to: (1) evaluate management direction provided in Forest Plans; (2) provide recommendations to maintain and improve wildlife habitat; and (3) continue to monitor habitat conditions and wildlife populations to determine the effectiveness and applicability of existing and prescribed management. Management practices may be modified based on information in the monitoring program.

Over the past three years, extensive information has been gathered on the wildlife habitat and land management activities in the Elkhorns. The management direction was prepared considering this information.

The following direction applies to all Elkhorn management areas, both on the Helena and Deerlodge National Forests.

General Management

- The opportunity for MDFWP to actively participate in planning activities affecting management in the Elkhorns, as described in the Memorandum of Dnderstanding (1983) will continue.

- The MDFWP and the Helena and Deerlodge National Forests will jointly prepare an annual report that is based on and discusses the results of the Elkhorn Wildlife Monitoring Program (1982). This report will include wildlife population information relative to habitat and land uses; evaluate exisiting and prescribed land management; update recommendations and work plans to implement wildlife habitat improvement measures; and recommend new standards when needed.

- The Forest wildlife biologist and MDFWP Elkhorn Coordinator will be involved in proposed project work. The Forest biologist and the Elkhorn Coordinator will be on interdisciplinary teams which conduct environmental analyses pertinent to the Elkhorns.

Timber

- All commercial forest land in the Elkhorns is classified as unsuitable for timber management, because the land is proposed for resource use that precludes timber harvest on the programmed basis.

Water and Soils

- The McClellan Creek Municipal Watershed lies in the northern portion of the Elkhorn Wildlife Management Unit and will be managed in accordance with the Forest wide standards for municipal watersheds.

Roads and Minerals

- Reasonable access to private in-holdings and valid mining claims will he permitted as required by applicable laws and regulations. An environmental analysis will be made to identify alternative measures to reduce the impact on wildlife and other resources.

- Roads which were constructed for mineral activities and there is no forseeable use for will be closed and revegetated.

Lands and Special Uses

- Privately owned land within the Forest boundary which has high wildlife and recreation values has a high priority for acquisition, contingent upon a willing-seller or exchange basis.

- Unauthorized occupancy cabins will be removed.

- Special uses, land exchanges, and right-of-way proposals will be carefully reviewed to ensure maintenance or enhancement of wildlife values.

- The level of outfitter/guide use during the fall hunting season will not be increased above the level determined from the average of the highest two of the last five years of actual use experienced during the period 1980 through 1984. The use level was determined to be 439 service days during the general hunting season (10/20 to 12/1) and 100 service days during the archery season (9/1 to 10/15).

Protection

- The appropriate fire suppression response ranges from control to confinement depending upon location, expected fire behavior, and other decision logic criteria related to values at risk. These decision criteria are stated in the Fire Management Direction in Appendix R.

- Evaluate the area periodically for insect and disease problems. Endemic levels will be accepted as normal. If epidemic levels develop and control is necessary, the control method will minimize the impacts on wildlife and other resources involved.

Riparian

- *See* Riparian in Forest-Wide Standards.

MANAGEMENT AREA ELKHORN-1 — 48,600 ACRES

Description

Management area Elkhorn-1 is on the northern, southern and eastern portions of the Elkhorns. The area includes the lower Crow Creek, Johnny Gulch, Slim Sam, lower Indian Creek, Kimher Gulch, Whitehorse Creek, Spokane Creek and Sheep Creek drainages. The terrain is largely rolling grasslands at elevations from 5,000 to 7,000 feet, with timbered north slopes and creek bottoms. A small portion of the McClellan Creek Municipal Watershed is included in this area. The gentle slopes, predominantly southern aspect, and low elevations, combined with low snow accumulation, make elk winter range the primary wildlife use. It is estimated that at least 1,000 elk winter in the management area. Some yearlong elk use and mule deer summer use occur. This management area has resource characteristics similar to management area C-5 in the Deerlodge Forest Plan.

Management Goals

Optimize elk winter range.

Maintain or improve the vegetative condition and production through livestock management and by emphasizing direct habitat improvement through techniques such as prescribed fire.

Maintain livestock AUMs at 1983 levels.

·ovide for other resources as long as their uses are compatible with aintaining elk winter range.

Management Standards

In addition to the Forest-Wide Standards and general Elkhorn direction, the following management standards apply to this management area.

Recreation

- A variety of dispersed recreation activities are permitted and may be supported by constructing trails and trailhead facilities. Motorized winter recreation will be restricted to provide security to wintering elk populations. (See Elkhorn Travel Plan, Figure III-1.)

Visual Quality

- Management practices will generally follow guidelines for the modification VQO. [See Forest Landscape Book, Vol. 2 (Ag. Hdbk. No. 462) for definitions of VQOs and how they are applied.]

Wildlife

- Implement wildlife habitat improvement practices, particularly prescribed fire, to maintain and enhance the quality of elk winter range. Suggested habitat improvement projects will he discussed in the Elkhorn Wildlife onitoring Program annual progress reports, prepared jointly by the Helena and Deerlodge National Forests and MDFWP.

Range

- Livestock AUMs will remain at 1983 levels, unless deterioration (see glossary) of range condition occurs. Modifications in grazing systems, schedules, practices, and developments may be made to ensure compatibility with elk winter range management goals.

Timber

- Timber in this management area is classified as unsuitable and will only be harvested as a management tool to maintain and enhance elk winter range values.

- Other forest products, such as Christmas trees and post and poles, may be harvested from existing roads between 5/16 and 11/30. These activities must be compatible with elk winter range management goals, including maintenance of thermal cover.

- Firewood gathering from open roads is allowed.

Water and Soils

See Forest-Wide Standards.

Minerals

- Seismic -- Surface occupancy will be restricted from 12/1 to 5/15, for all seismic operations. Other restrictions may apply on a case-by-case basis.

- Leasable -- The following standard stipulations (described in detail in Appendix N) will normally apply to the applicable portions of lease areas in this management area.

Water Quality - 1

Wildlife and Fisheries - 3a (2), 3b (1), 3b (4), 3c

Land stability and erosion - 5a, 5b

Social and Economic concerns - 6a, 6b, 6c

Other stipulations may apply, based on site specific knowledge of the lease site, to assure resource protection or to meet the management area goals and objectives.

- Locatable Minerals -- To the extent possible, the timing of mineral activities will be coordinated with wildlife needs during development of operating plans. This will generally require negotiation with the claimant for restricted surface occupancy from 12/1 to 5/15.

Protection

- Prescribed fire from planned ignition may be used to maintain and improve elk winter range.

- Prescribed fire with unplanned ignitions may be used, for the enhancement and maintenance of resources, when within pre-established prescribed fire criteria. These criteria are detailed in the Fire Management Direction in Appendix R.

- Evaluate areas periodically for significant insect and disease problems. Endemic levels of insects and disease will be accepted as normal. If epidemic levels develop and control is necessary, the control method will minimize impacts on elk winter range values.

Facilities

- The area will be opened to motorized vehicles, except during the elk wintering period (12/1 to 5/15) when the area will he closed to all motorized vehicles. (See Elkhorn Travel Management Direction, Figure III-1.)

- During the 5/16 to 11/30 period, open road densities will not exceed levels of approximately 2 miles per section.

- New roads may he constructed for surface resource activities which are needed to maintain or improve elk winter range values.

Riparian

- See Forest-Wide Standards.

Management Practices

- *See* Table III-2 at the end of this chapter.

Monitoring Requirements

- *See* Table III-3 at the end of this chapter.

Description

Management area Elkhorn-2 is in the central and western portion of the Elkhorns, which is unroaded. The area includes the higher elevations ranging from approximately 6,500 to 9,400 feet, including upper Beaver Creek drainage, Casey Peak, High Peak, Casey Meadows, the upper Tizer Basin, Crow Peak, and Elkhorn Peak. Part of the McClellan Creek Municipal Watershed is included in this area. An important wildlife use of this area is mountain goats, which were introduced in the 1950s. The area is also intensively used by elk during the summer. Moose and mule deer use the area as well. Because of the high elevations, the area includes the headwaters of most of the Elkhorn's major drainages. This management area has resource characteristics similar to management area C-6 in the Deerlodge Forest Plan.

Management Goals

Optimize mountain goat and summer elk habitat.

Provide high quality nonmotorized recreational opportunities.

Maintain or enhance moose and mule deer summer and fall habitat, to the extent that mountain goat and summer elk habitat quality is not diminished.

Manage to maintain or enhance nongame wildlife species, visual quality, old growth timber, and water quality.

Provide for other resource objectives, if they can be accomplished with minimal development of the area and are compatible with maintaining high quality mountain goat and summer elk habitat.

Management Standards

In addition to the Forest-Wide Standards and general Elkhorn direction, the following management standards apply also to this management area:

Recreation

- A variety of nonmotorized dispersed recreation activities are permitted and may be supported by constructing trails and trailhead facilities.

Visual Quality

- Management practices will generally follow guidelines for the retention visual quality objective. [See Forest Landscape Book, Vol. 2 (Ag. Hdbk. No. 462) for definitions of VQOs and how they area applied.]

Wildlife

- Implement wildlife habitat improvement practices to maintain and enhance mountain goat and summer elk habitat. Suggested habitat improvement projects will be provided in the Elkhorn Wildlife Monitoring Program annual progress reports prepared jointly by the Helena and Deerlodge National Forests and MDFWP.

- Maintain the existing quality of mountain goat and summer elk habitat by providing security from human conflicts through yearlong restrictions on all motorized vehicles.

Range

- Livestock AUMs will remain at 1983 levels, unless deterioration of range condition occurs. Modifications in grazing systems, schedules, practices, and developments may be made to ensure compatibility with mountain goat and elk management goals.

Timber

- Timber in this management area is classified as unsuitable for management and harvest will not occur. Opportunities to improve mountain goat habitat through timber harvest are very limited.

Water and Soils

- See Forest-Wide Standards

Minerals

- Seismic -- Upon receiving applications for seismic operations, stipulations will be determined on a case-by-case basis. Restrictions on timing by activities and surface occupancy will be applied where necessary to mitigate impacts on mountain goat and summer elk habitat and non-motorized recreation.

- Leasable -- The following standard stipulations (described in detail. in Appendix N) will normally apply to the applicable portions of lease areas in this management area.

Water Quality - 1

Wildlife and Fisheries - 3a (2), 3h (3), 3h (4), 3c

Land stability and erosion - 5a, 5b

Social and Economic concerns - 6a, 6b, 6c

Other stipulations may apply, based on site specific knowledge of the lease site, to assure resource protection or to meet the management area goals and objectives.

-Locatable Minerals -- Maintain an unroaded environment to the extent practical under the mining laws and the Mining Act Use Regulations. Use of motorized vehicles and timing of mineral activities will be coordinated with wildlife needs during development of the operating plan. If roads or other developments are necessary and justified on the basis of mineral information, then restoration and revegetation will be required as soon as each phase of mineral exploration, development, and production has ended.

Lands

- This management area is an avoidance area for utility corridors (see Appendix P).

Protection

- Prescribed fire from planned ignition may be used, to perpetuate the natural diversity of plant communities.

- Prescribed fire with unplanned ignitions may be used, for the enhancement and maintenance of resources, when within pre-established fire criteria. These criteria are detailed in the Fire Management Direction in Appendix R.

- Wildfires will be suppressed in a manner that minimizes the use of heavy equipment.

- Evaluate areas periodically for significant insect and disease problems. Endemic levels of insect and disease will be accepted as normal. If epidemic levels develop and control is necessary, the control method will minimize impacts on wildlife and nonmotorized recreation.

Facilities

- This management area is closed to motorized vehicles. (See Elkhorn Travel Management Direction, Figure III-1.)

- Roads constructed for minerals activities will be closed to public use and restored to near the natural contour and revegetated when they are no longer needed,

- New roads will not be constructed for surface resource management.

Riparian

- See Forest-Wide Standards.

Management Practices

- See Table III-2 at the end of this chapter.

Monitoring Requirements

- See Table III-3 at the end of this chapter.

MANAGEMENT AREA ELKHORN-3 — 22,200 ACRES

Description

Management area Elkhorn-3 includes the east-central and northeast corner of the Elkhorns, which are generally between 6,000 and 7,000 feet. The area includes portions of the Tizer Basin, Crow Creek drainage, and numerous smaller drainages. This area is heavily used by elk during the calving and summering periods. Moose and mule deer also use this area. This management area has resource characteristics similar to management area C-7 in the Deerlodge Forest Plan.

Management Goals

Optimize elk calving and summer range.

Maintain or enhance moose, mule deer, and other wildlife habitat and visual quality, to the extent that elk calving and summer habitat quality is not diminished. Provide for other resource objectives if they are compatible with the elk calving and summer range objectives.

Management Standards

In addition to the Forest-Wide Standards and general Elkhorn direction, the following management standards also apply to this management area:

Recreation

- A variety of nonmotorized dispersed recreation activities are permitted and may be supported by constructing or maintaining trails and trailhead facilities.

- Motorized dispersed recreation activities will be limited to specific roads. (See Elkhorn Travel Plan, Figure III-1.)

Visual Quality

- Management practices will generally follow guidelines for the partial retention VQO. Short term deviations from the VQO are permitted, if the resulting resource management meets the management area's goals. [See Forest Landscape Book, Vol. 2 (Ag. Hdbk. No. 462) for definitions of VQOs and how they area applied.]

Wildlife

- Implement wildlife habitat improvement practices, including prescribed fire and timber management, to maintain and enhance the quality of elk calving and summer habitat. Suggested habitat improvement projects will be provided in the Elkhorn Wildlife Monitoring Program annual progress reports, prepared jointly by the Helena and Deerlodge National Forests and MDFWP.

Range

- Livestock AUMs will remain at 1983 levels, unless deterioration of range conditions occurs. Modifications in grazing systems, schedules, practices, and ievelopments may be made to ensure compatibility with elk calving and summer range management goals.

Timber

- Timber in this management area is classified as unsuitable for management and will only be harvested as a management tool to maintain or enhance elk calving and summer habitat.

- Other forest products, such as Christmas trees and posts and poles, may be harvested from open roads. These activities must be compatible with elk calving and summer range management goals.

- Firewood gathering from open roads is allowed.

Water and Soils

- See Forest-Wide Standards.

Minerals

- Seismic -- Surface occupancy will be restricted from 5/15 to 6/30, for all seismic operations. Other restrictions may apply on a case-by-case basis.

- Leasable -- The following standard stipulations (described in detail in \ppendix N) will normally apply to the applicable portions of lease areas in his management area.

Water Quality - 1

Wildlife and Fisheries - 3a (2), 3b (2), 3b (3), 3b (4), 3c

Land stability and erosion - 5a, 5b

Social and Economic concerns - 6a, 6b, 6c

Other stipulations may apply, based on site specific knowledge of the lease site, to assure resource protection or to meet the management area goals and objectives.

- Locatable Minerals -- To the extent possible, the timing of mineral activities will be coordinated with the wildlife needs during the development of the operating plans. This will require negotiation with the claimant for no-surface occupancy from **5/15** to **7/30.**

Protection

- The use of prescribed fire from planned ignition may be used, to perpetuate the natural diversity of plant communities.

- Prescribed fire within unplanned ignitions may be used, for the enhancement and maintenance of resources, when within pre-established fire criteria. These criteria are detailed in the Fire Management Direction in Appendix R.

- Wildfires will be suppressed in a manner that minimizes the impact of heavy equipment use.

- Evaluate areas periodically for significant insect and disease problems. Endemic levels of insect and disease will be accepted as normal. If epidemic levels develop and control is necessary, the control ,method will minimize impacts on elk calving and summer range.

Facilities

- Motorized vehicles will be allowed on designated routes. The entire area is open to snowmobiles, except from 10/15 to 11/30 when snowmobiles are restricted to designated routes. (See Elkhorn Travel Management Direction, Figure III-1.)

- Open road densities will be maintained at not more than 1983 levels (approximately 0.5 miles/section).

- New roads may be constructed for surface management activities for projects needed to maintain wildlife habitat values and are compatible with elk calving and summer range management goals.

Riparian

- See Forest-Wide Standards.

Management Practices

- See Table III-2 at the end of this chapter.

Monitoring Requirements

- See Table 111-3 at the end of this chapter.

Description

Management area Elkhorn-4 emphasizes big game habitat management. Moose, elk, and mule deer occur in the area yearlong. This area is in the northwest portion of the mountain range and includes primarily the McClellan Creek drainage together with smaller drainages draining west into Prickly Pear Creek. The area includes portions of the McClellan Creek municipal watershed ocurring on the Helena National Forest. Elevations are characteristically low, although the area does include Strawberry Butte, Burnt Mountain, and Lava Mountain, which are all above 6,000 feet. Portions of this management area have resource characteristics that are similar to management area C-7 in the Deerlodge Forest Plan.

Management Goals

Optimize moose, elk, and mule deer habitat.

Maintain or improve water quality and stream stability particularly in McClellan Creek, which contributes to the East Helena municipal water supply.

Provide for other resource objectives as long as these uses are compatible with maintaining big game habitat.

Management Standards

In addition to the Forest-Wide Standards and general Elkhorn direction, the following management standards also apply to this management area:

Recreation

- A variety of dispersed recreation activities are permitted and may be supported by constructing trails and trailhead facilities.

Visual Quality

- Management practices will generally follow guidelines for the modification VQO. [See Forest Landscape Book, Vol. 2 (Ag. Hdbk. No. 462) for definitions of VQOs and how they are applied.]

Wildlife

- Implement wildlife habitat improvement practices, including prescribed fire and timber manipulation, to maintain and enhance aspen and willow regeneration and other forested areas, for wildlife habitat. Suggested habitat improvement projects will be provided in the Elkhorn Wildlife Monitoring Program annual progress reports, prepared jointly by the Relena and Deerlodge National Forests and MDFWP.

Range

- Livestock AUMs will remain at 1983 levels, **unless** deterioration of range condition occurs. Modifications in grazing systems, scheduling, practices, and developments may be made to ensure compatibility with wildlife habitat management goals.

Timber

- Timber in this management area is classified as unsuitable for management, however, silvicultural practices may be used as a management tool to maintain and improve vegetation diversity. These activities must be carefully reviewed to ensure compatibility with wildlife habitat management goals.

- Firewood gatbering from existing roads is allowed.

- Other forest products, such as Christmas trees and posts and poles, may he harvested. These activities must be compatible with wildlife habitat management goals.

Water and Soils

- See Forest-Wide Standards.

Minerals

- Seismic -- Surface occupancy will be restricted from 12/1 to 5/15 for all seismic operations. Other restrictions may apply on a case-by-case basis.

Leasable -- The following standard stipulations (described in detail in Appendix N) will normally apply to this management area.

Water quality -1.

Wildlife and Fisheries - 3a (2), 3b (1), 3b (2), 3b (3), 3b (4), 3c

Land stability and erosion - 5a, 5b

Social and economic concerns - 6a, 6b, 6c

Other stipulations may apply, based on site specific knowledge of the lease site, to assure resource protection or to meet the management area goals and objectives.

- Locatable Minerals -- To the extent possible the timing of mineral activities will be coordinated with wildlife needs during development of operating plans. This will generally require negotiation with the claimant for restricted surface occupancy from 12/1 to **5/15.**

Water

- Apply watershed improvement practices to existing problem areas to maintain water quality in McClellan Creek municipal watershed.

- Establish necessary baseline water quality stations in the McClellan Creek municipal watershed. Update water-right inventories as needed.

Protection

- Prescribed fire from planned ignition may be used to maintain and improve wildlife habitat.

- Prescribed fire with unplanned ignitions may be used, for the enhancement and maintenance of resources, when within pre-established fire criteria. These criteria are detailed in the Fire Management Direction in Appendix R.

- Wildfires will be suppressed in a manner that minimizes the impact of heavy equipment use.

- Evaluate areas periodically for significant insect and disease problems. Endemic levels of insects and disease will be accepted as normal. If epidemic levels develop and control is necessary, the control method will minimize impacts on wildlife habitat.

Facilities

- If motorized use adversely affects winter big game populations, roads will be closed to motorized vehicles.

- Open road densities of not more than approximately 1.5 miles per section will be maintained.

- New roads may be constructed for surface management activities for projects eeded to maintain or improve wildlife habitat values.

Riparian

- See Forest-Wide Standards.

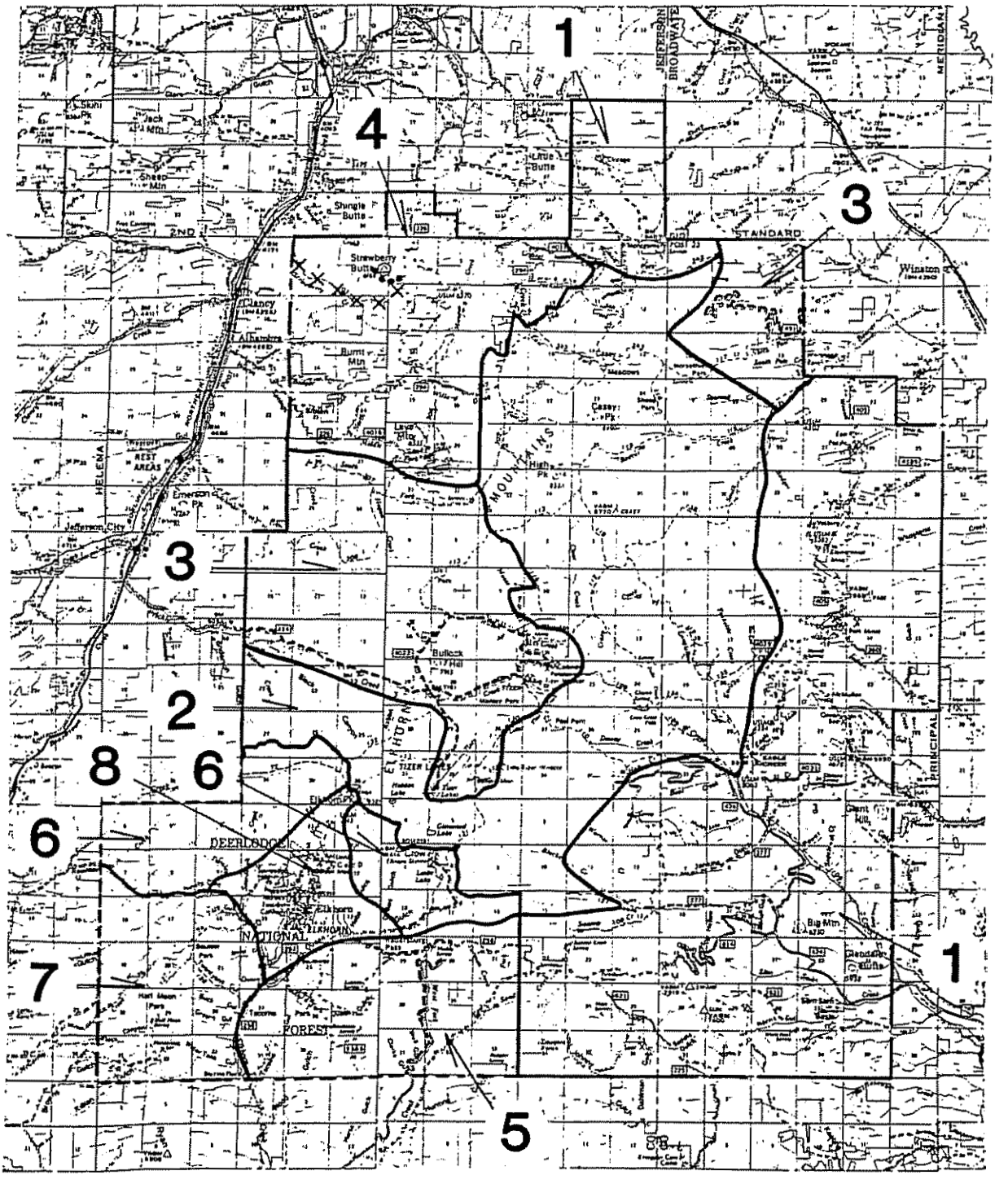
Management Practices

- See Table III-2 at the end of this chapter.

Monitoring Requirements

- See Table 111-3 at the end of this chapter.

FIGURE III-1
Elkhorn Management Areas **and Travel** Management **Direction**



Elkborn-I: 5/16 to **11/30** open to motorized vehicles. 12/1 to 5/15 closed to all motorized vehicles.

Elkborn-2, C-6, **and** northern **most** b l a k of **Elkborn-1: Closed yearlong,** except designated routes that **are open yearlong (----).**

Elkborn-3: Open to motorized vehicles **on** designated **routes only (----). Entire area** opened to snowmobiles, except **from 10/15 to 11/30 when** snowmobiles **are** restricted to designated **routes (----).**

Elkborn-4, C-7, and C-8: Open yearlong to all motorized vehicles, **except** designated **routes** closed **yearlong (xxxx) or from 9/1 to 6/30 (....).**

C-5: 5/16 to **11/30** open to motorized vehicles. 12/1 to 5/15 closed to motorired vehicles, except snowmobiles **on** designated routes (----).

NOTE: **Management areas C-5** thru **C-8** are **on the** Deerlodge Nat'l. Forest.

Schedule of Management Practices by Management Area (average annual outputs)

Mgmt. Area	Decade*	Roads Cnr/Rec** Miles	Cutting Methods*** CC Acres/Vol	SW Acres/Vol	SEL (MMBF)	TSI**** (Acres)	Reforestation Natural (Acres)	Reforestation Artificial (Acres)	Range Improvement (Acres)	Range Permitted (AUMs)	Wildlife Improvement T&E (Acres)	Wildlife Improvement Other (Acres)
A-1	1											
	2											
N-1	1									1.200		
	2									1,200		
N-1	1											
	2											
L-1	1								850	20.100		
	2								850	20,800		
L-2	1								100	6.200		
	2								100	6.200		
H-1	1											
	2											
H-2	1											
	2											
R-1	1									100		
	2									100		
R-2	1											
	2											
T-1	1	14.7/6.3	755/6.4	588/4.0		410	965	380		3,500		
	2	11.5/4.9	828/7.0	264/1.8		150	678	414		3.600		
T-2	1	.8/.4	52/.4	29/.2		0	55	26		100		5
	2	11.1	90/.8	29/.2		0	74	45		100		5
1-3	1	3.6/1.5	190/1.6	14711.0		0	242	95		400		75
	2	1.51.6	201.2	1151.8		160	28	10		400		75
1-4	1	.8/.5	40/.3	57/.39	20/.01	0	97	20		200		
	2	1.7/.8	631.5	701.49	201.01	0	124	32		200		
T-5	1	1.3/.5	10/.09	88/.6	20/.01	0	113	5	90	4.100		
	2	5.3/2.3	401.4	42512.89	20/.01	0	465	20	90	4.200		
W-1	1										25	360
	2										25	160
W-2	1											50
	2											50
P-1	1									100		
	2									100		

P-2	1					
	2					
P-3	1					
	2					
Elk-1	1		50	9,600		155
	2		50	9,600		155
Elk-2	1		0	1,900		
	2		0	1,900		
Elk-3	1			900		
	2			900		
Elk-4	1			700		
	2			700		

* 1st decade is planned average annual output.
2nd decade is projected average annual output.

**Construction and Reconstruction.

***The proposed 10-year timber sale acedule is presented in Appendix V.
Cutting methods are discussed in Appendix H (Vegetative Management Practices).

**** Timber Stand Improvement. Includes commercial and precommercial thinning.

TABLE III-3
Monitoring Requirements Applicable to Management Areas

The monitoring requirements from Chapter IV that apply to the management areas are listed below. The procedures outlined in Chapter IV will be followed to evaluate the data gathered during monitoring.

	Monitoring Item	Management Areas																				
		A-1	M-1	N-1	L-1	L-2	H-1	H-2	R-1	R-2	T-1	T-2	T-3	T-4	T-5	W-1	W-2	P-1	P-2	P-3	E1	E2	E3	E4
A1	Developed Recreation Use									X														
A2	Dispersed Recreation Use		X		X	X	X	X	X		X	X												
A3	Off Road Vehicle Use		X		X	X	X	X	X		X	X	X	X	X	X	X				X	X	■	■
B1	Wilderness Use																	X	X	X				
C1	Elkhorns-Seasonal Dist.																				X	X	X	X
C2	Elkhorns-Habitat Eval.																				X	X	X	X
C3	Elkhorns-Land Use Effects																				X	X	X	X
C4	Elk/Mule Deer Habitat Effectiveness					X	X	X				X	X			X	X				X	X	X	X
C5	Big Horn Sheep Habitat Suitability															X		X	X					
C6	Grizzly Habitat** Effectiveness		X				X	X	X		X	X	X	X	X	X	X			X				
C7	Old Growth Suitability								X												X	X	X	X
C9	Bald Eagle Habitat Suitability									X						X			X					
C8	Mature Conifer Suitability										X	X	X	X	X	X	X				X	X	X	X
C10	Instream Debris Pools/ Fish Hos.				X	X	X	X			X	X	X	X	X	X	X				X	X	X	X
C11	Intro-Gravel Sediment/ Fish Hos.				X	X	X	X			X	X	X	X	X	X	X				X	X	X	X
C12	Riparian *																							
C13	Acquatic Invertebrate Populations				X	X		X	X		X	X	X	X	X	X	X				X	X	X	X
D1	Forage Utilization***		X		X	X	X		X		X	X	X	X	X		X	X	X	X	X	X	X	X
D2	Allotment Mgt. Plans***		X		X	X	X		X		X	X	X	X	X		X	X	X	X	X	X	X	X
D3	Weed Infestations	X	X		X	X			X	X	X	X	X	X	X		X	X	X	X	X	X	X	X
D4	Condition and Trend***		X		X	X	X		X		X	X	X	X	X		X	X	X	X	X	X	X	X
D5	Permit Compliance		X		X	X	X		X		X	X	X	X	X		X	X	X	X	X	X	X	X
E1	Regulated Volume Prepared							X			X	X	X	X	X									
E2	Timber Assumptions							X			X	X	X	X	X									
E3	Silvicultural Assumptions							X			X	X	X	X	X									
E4	Firewood Removal							X			X	X	X	X	X									
E5	Size of Openings							X			X	X	X	X	X									
E6	Regenerated Yields							X			X	X	X	X	X									
E7	Reforestation Practices							X			X	X	X	X	X									
E8	TSI Assumptions							X			X	X	X	X	X									
E9	Suitable Lands Eval.		X		X	X	X	X	X		X	X	X	X	X	X	X				X	X	X	X
F1	Water Quality*																							
F2	Soil/Water Improvement							X			X	X	X	X	X									
F3	Soil Productivity							X			X	X	X	X	X									
F4	Water Rights/ Instream Flow*																							
G1	Mineral Activities*																							

TABLE III-3
Monitoring Requirements Applicable to Management Areas

The monitoring requirements from Chapter IV that **apply** to the **management areas are** listed below. The procedures outlined **in** Chapter IV will be followed to **evaluate** the **data** gathered during monitoring.

Monitoring **Item**	Management Areas																						
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1	E2	E3	E4
P1 Insect **and** Disease **Infestations***																							
P2 **Air Quality***																							
P3 **Fuel Treatment** Output.				X	X		X			X	X	X	X	X	X	X				X	X	X	X
P4 Wildfire **Acre** PARs*																							
P5 Suppression/Protection Cost*																							
L1 Local/Collector **Roads**							X			X	X	X	X	X									
L2 **Road Management**				X	X	X	X		X	X	X	X	X	X		X				X	X	X	X
11 Unit Cost **Verification***																							
T2 affect. of FS/PVT **Land Management**																							
T3 Effects of Emerging **Issues***																							
T4 **Evaluate** Plan Allocations*																							

*** These monitoring items are Forest-Wide in nature and are not applicable to specific management areas.**
**** These items will be monitored in management areas that occur in essential and occupied grizzly habitat.**
***** These items will be monitored in management areas where livestock allotments occur.**

IV. IMPLEMENTATION

A INTRODUCTION

Implementation of the Helena 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. Public support and cooperation is essential to plan implementation. This Plan establishes the direction for the Helena 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 Helena 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.

B. INFLUENCE OF PAST MANAGEMENT ON FUTURE OPTIONS

Chapter III defines management direction for specific areas of the Forest. In some instances, this direction represents a change from current management direction. Where no previous management activities have occurred, the direction in this Forest Plan can be put into effect from a neutral point. However, in areas where management activities have occurred to meet objectives other than those now specified, a transition period may be required to bring management fully into line with this Plan.

Past road construction, timber harvest. and mining have increased stream sedimentation and affected fish habitat in some watersheds. Because of these past management activities, it will be difficult to improve existing fish habitat potential to a level that represents the natural carrying capacity.

Parts of the Forest with existing adequate road systems have been heavily harvested in the past. To meet this Plan's objective for wildlife cover and water quality, many of the areas already developed will be able to sustain only a limited harvest in the early decades. This means that to meet timber objectives, some of the harvest in the first two decades must come from previously unroaded and undeveloped areas.

In addition to specifying management direction for areas of the Forest, this Plan also schedules management activities. In some situations, previous management activities influence the scheduling of future activities.

Some watersheds have been temporarily excluded from Forest management options in the near future because of past timber harvest. Parts of these drainages have not fully revegetated or recovered. With streams in these watersheds apparently near their hydrologic limits, loss of channel stability and integrity may occur if harvesting were to take place in the near future.

Some visual travel corridors, for example, have been impacted. Management direction may not be achievable until these areas have recovered so that the visual quality objective can be met.

C. PROJECT PLANNING

The Forest Plan serves as the single land management plan for the Helena National Forest. 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 Helena 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 the umbrella of" this Forest Plan. They are:

*Ten-Year Timber Sale Schedule
*Forest Road Management Program
*Bob Marshall/Great Bear/Scapegoat Wilderness Complex Fire Management Direction
*Allotment Management Plans
*Fire Management Direction
*Area Transportation Analysis
*Watershed Rehabilitation Schedule
*Gates-of-the-Mountains Fire Management Direction
*Landownership Adjustment Schedule

The management direction provided by this Forest Plan comprise8 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 land-type and habitat type constraints, including assumptions about the appropriate vegetation management practices for timber sale projects. It calls for continued use of public involvement and education programs. On-the-ground project analysis validates or invalidates the appropriateness of those assumptions.

Within this guidance, projects are developed to most efficiently and effectively accomplish the management goals and objectives. All NEPA requirements will be complied with in all projects. This includes appropriate public participation in the development and the results of the analysis done on the projects.

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 project environmental analyses is used in the monitoring process to determine when changes should be made in the Forest Plan.

As part of project planning, site specific water quality effects will be evaluated and control measures designed to ensure that the project will meet Forest water quality goals; projects that will not meet State water quality standards will be redesigned, rescheduled, or dropped.

D. MONITORING AND EVALUATION

Monitoring and evaluation comprises the management control system for the Forest Plan. It will provide the decision maker and the public, information on the progress and results of implementing the Forest Plan.

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 tbe Plan as well as whether the overall relationships on which the Plan is based have changed over 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 occuring as predicted, including significant changes in the productivity of the land;
- if the dollar and manpower cost 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 private, other Federal or other governmental agencies, or under the jurisdiction of local goverments, 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.

Phe monitoring requirements for this Forest Plan are outlined in Table IV-1, Forest Plan Monitoring Requirements. These requirements address the items to be monitored, data sources, cost, expected precision and reliability, frequency of measurement, reporting period, and acceptable variability. Most items apply to specific management areas, as shown on Table III-3.

Other monitoring items apply Forest-wide and will be evaluated from such sources as the data base, Forest attainment reports, public involvement, and non-Forest Service sources. These items include:

F1	Water Quality	P2	Air Quality
F4	Water Rights/Instream Flows	P4	Wildfire Acre PARs
GI	Mineral Activities	P5	Suppressions/Protection Cost
P1	Insect and Disease Infestation	TI	Unit Cost Verification
		T3	Effects of Emerging Issues
		T4	Evaluate Plan Designations

Evaluation of data gathered during monitoring will be guided by the Decision Flow Diagram, Figure IV-I. As indicated in the diagram, the results of this evaluation lead to decisions on further action of the following types:

- continuing the management practice;

- referring problem to the appropriate line officer for improvement of the application of the management practice;

- modifying the management practice as a Plan amendment;

- modifying the land management prescription as a Plan amendment;

- revising the schedule of outputs;

- revising the cost/unit output; or

- 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 monitorng goals.

E AMENDMENT AND REVISION

The Forest Supervisor may amend the Forest Plan. Based on an analysis of the objectives, standards, 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 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.

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 the 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.

ATTACHMENT IV-1
Forest Plan Monitoring Requirements

RESOURCE ELEMENT	ACTION, EFFECTS, OR RESOURCES TO BE MONITORED	INTENT	DATA SOURCES	RESPONSIBILITY	MEASUREMENT FREQUENCY 1/	ANNUAL COST 2/	PRECISION 3/	RELIABILITY 4/	REPORT TIME	VARIABILITY (±) WHICH WOULD INITIATE ACTION
Recreation A1	Actual use and condition of developed recreation facilities	a. Check projection accuracy.	RIM Reports, Forest Plan Projections	Recreation Staff Officer	Annual, 100% RIM Reports	No added cost	L	L	5yrs	a. ± 20% difference between projected and actual
		b. Monitor closeness to capacities.								b Capacity + 10%
		c. Check if developed facilities are maintained to existing capacity and standards.								c. Loss of 10% of developed facility capacity
A2	Spectrum of dispersed recreation opportunities and uses	Insure maintenance and enhancement of a wide variety of recreation opportunities.	RIM Reports, Rec. Opp. Guides, public contacts, field observation, trail conditions. public hearing on travel plan updates	Recreation and Planning Staff Officer.	Annual: 100% RIM & Public Comments	No added cost	L	L	5 yrs	± 25% of projected base by ROS preference type
A3	ORV compliance and damage	Insure travel plan updates are realistic, understandable and enforcable. Travel plan adequately protects the resources and meets assigned prescriptions of the Plan.	Field observations, trail conditions, public comments, and comments on travel plan updates	District Ranger	Annual review of data	No added cost	L	L	Continuous	I.D. team or District review indicates unacceptable resource damage from ORV use or an unenforceable situation.
A4	Measure change in status of roadless acres.	Compare acres and distribution of the roadless resource with that projected.	Project Plans, EA's Transportation analysis, 10 year timber schedule.	Recreation Staff Officer	Annual, 100% of data sources.	No added cost	M	M	5 yrs.	A loss of more than 20,000 acres by 1991 requires analysis and review of the trend

Wilderness B1	Trail conditions, visitor encounters, range condition, trend and actual use levels, campsite impacts	Achieve high level of wilderness rec. experience & high quality wilderness resource.	Limits of accept. change, field observations inspections, research	District Ranger	Annual 25% of heavy use areas & trails	4,000	M	M	Annual	20% deviation from management plans is acceptable.
Wildlife C1	Seasonal distribution, movement patterns, population structure and density of elk, mule deer, moose and mountain goat populations.	Identify ungulate population segments and year long range of each segment in the Elkhorns.	Ground and aerial observations; radio tracking; annual Elkhorn wildlife monitoring report.	Wildlife Staff Officer	Annual 10-100% of herd units	11,000	□	H	Annual	± 10% from previous measurements.
C2	Habitat evaluation on the basis of topographic and physiographic features, vegetation and climate for elk, mule deer, moose and goat.	To determine habitat preference by species of wildlife.	Aerial photos; habitat type inventory; land type inventory; field transects; annual Elkhorn wildlife monitoring report.	Wildlife Staff Officer	5 yrs, 100% data review	7,000	H	H	Annual	± 10% from previous measurements.
C3	Past, present, and future land use activities and their effect on the populations (includes livestock grazing, timber harvest, fire, vehicle use, mining, and hunting).	Evaluate response to man imposed activities by various ungulate populations.	Field observations; aerial observation; radio tracking; hunter check stations; field transects; annual Elkhorn wildlife monitoring report.	Wildlife Staff Officer	Annual, 100% data review	11,000	H	H	Annual	± 10% from previous measurements.

1/ Represents the frequency of measurement schedule and sample size.

2/ Annual Cost for first 5 years (1978 dollars). "No additional cost" indicates the cost is included in the budget request. These costs are included in the projected budget required to implement the Forest Plan shown in Appendix Y.

3/ Precision is the expected accuracy with which the data will be collected. L = Low, M = Moderate, H = High

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TABLE IV-1
Forest Plan Monitoring Requirements

RESOURCE ELEMENT	ACTION, EFFECTS. OR RESOURCES TO BE MONITORED	INTENT	DATA SOURCES	RESPONSIBILITY	MEASUREMENT FREQUENCY 1/	ANNUAL COST 2/	PRECISION 3/	RELIABILITY 4/	REPORT TIME	VARIABILITY (±) WHICH WOULD INITIATE ACTION
C4	Indicator specie. Elk/mule deer habitat effectiveness (cover/ forage, open road density, and livestock impacts on elk habitat potential)	To be able t- respond to any unacceptable deviation from past measurement.	Project EAs; herd unit sampling; forage/ browse transects.	Wildlife Staff Officer	Bi-annual, 20% of herd units	2.000	H	H	Bi-Annual	- 10% from previous measurements.
C5	Indicator species Bighorn sheep habitat witability.	To be able to respond to any unacceptable deviation from past measurement.	Hoot. Dept. of Fish, Wildlife and Parks Region 4 aerial survey..	Wildlife Staff Officer	Annual, 1001 of winter habitat	100	H	H	Annual	- 101 from previous measurements.
C6	Indicator specie. Grizzly bear habitat effectiveness/population (habitat diversity, open road density).	To be able to respond to any unacceptable deviation from past measurement.	Project EAs, grizzly habitat measurements.	Wildlife Staff Officer	Annual. 1001 of habitat	400	H	H	Annual	- 10% from previous measurements.
C7	Old growth habitat (Indicator species Pileated and Hairy Woodpeckers and Goshawk)	To be able to respond to any unacceptable deviation fro. past measurement.	Project EAs, habitat sampling by transects of specie. density, TSMRS (Timber Std, Mgmt, Rcd. System)	Wildlife Staff Officer	Annual. 20% of old growth habitat units	1,500	H	H	5 yrs	- 10% from previous measurements.
Wildlife C8	Mature conifer suitability (Indicator species pine marten track counts)	To be able to respond to any unacceptable deviation fro. past measurement.	Project EAs, habitat sampling by transects of marten use, TSMRS	Wildlife Staff Officer	Annual, 501 of transects	400	L	L	5 yrs	- 101 from previous measurements.
C9	River and lake system suitability (Indicator species bald eagle winter nesting occurrence)	To be able to respond to any unacceptable deviation from past measurement.	Project EAs, habitat surveys of nesting areas.	Wildlife Staff Officer	Annual, 100% data review & nesting habitat	400	H	H	Annual	Any loss of an eagle nest.

Yildlife and Fish C10	Pools formed by instream debris (Indicator species cutthroat trout)	Insure that our management practices do not decrease pools farmed by woody debris.	Field data from 10, 1,000 ft. sample sections above sod within Timber harvest areas.	Wildlife Staff Officer	Twice every 5 yrs	1,100	H	B	5 yrs	Decrease in pools from present (902 confidence)
C11	Intra-gravel sediment.	Determine if the quality of spawning habitat is being decreased.	Field data from thirty 1,000 ft. sample sections.	Yildlife Staff Officer	Annual 9 sample/ sections	6.000	M	H	Annual	Decrease in the Fredle index. from present (90% confidence).
Riparian (all Resources) C12	Stre — aide cover for fish (overhanging vegetation sod under cut banks); plant b animal communities; forage utilization and streambank trampliog.	Assure management activities do not degrade the habitat of riparian dependant species. 1. shading for streams 2. fish habitat 3. song bird habitat 4. forage and browse 5. diversity.	Project EAs; habitat sampling by transects; allotment inspections; utilization studies; inspection of canopy and understory vegetation; watershed inventory end monitoring plan; timber sale contracts; information from 25, 1,000 foot sections.	Watershed Staff Off.. District Ranger, Yildlife Staff Officer	Annual. after cow removal. 5 transects per section	3,000	B		Annual	Decline in the habitat suitability index from present, (HSI) as measured by cow/fish (902 confidence) or a HSI of less than .6 as measured by cow/fish
Fish C13	Aquatic Invertebrats Populations	Insure thst fish populations are not impacted by assuring no impact on invertebrate communities.	Data from 30, 1,000 ft. sections. (Same as Intra-gravel sediment sections	Yildlife Staff Officer	Annual. 6 samples per section	1.400	M	H	Annual	Decrease fro. present in Biotic condition index (902 confidence).

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Range/ Timber D1	Utilization of forage in transitory range.	Determine correlation between level of forage utilization and mechanical damage to seedlings.	Range inspections, forage utilization exams, regen. surveys, 22 transects	District Ranger, Range and Timber Staff Officer	As per established schedule, 100% of exams in allotment. S areas requiring reforestation	1,500	H	H	1,3,5 yrs. after reforestation	95 +% correlation between level of utilization and plantation failure.
	Percent of available forage utilized by livestock.	Determine actual use by livestock and if utilization constraints of Forest Plan are met.	Range inspection records, utilization studies, range analysis.	District Ranger, Range Staff Officer	5 yrs, 100% of inspection record. 6 utilization studies	1.700	H	H	5 yrs	± 10% variance from present over a sustained (3 yr) period.
Range D2	Allotment Management planning and update	Insure update at 15 yr intervals, plan is being adhered to, management objective. are being met. improvements are maintamed.	FSRAMIS (range inspection reports)	Range Staff Off., District Rangers	Annual, Forest Wide	No added cost	H	H	5 yrs	Less than 4 plans updated annually, planned objectives are not being met.
Range/ Road Mtnc/ Timber D3	Weed infestations	Monitor weed infestation effectiveness of control measures activities responsible, implementation of IPM techniques.	Allotment inspection records, reforestation exams, range analysis mining projects, road inspections.	District Ranger, Range, Timber. and Engineering Staff Officer. ,	Annual, 100% of inspection reports exams & analysis	1,700	H	M	Annual	Noxious weeds increase distribution by 52; other reedy species by 10%; infestations appear in previously unaffected areas.

Range D4	Condition and trend of range; and forage availability.	Identify long term changes in range condition and trend, recommend change in management strategies and/or stocking levels. Determine encroachment by conifers/bush to grassland aspect.	FRAMIS; Allotment inspection records; transect data; photo plots; wildlife surveys; burn area monitoring.	District Ranger, Range Staff Officer	100% of FSRAMIS records 100% of photo plots	No added cost	M	H	10 yr	5% increase in acres with downward trend or a 5% decline in acres by condition class. 5% decline in acres with a grass aspect. 5% less of grass/brush to a conifer overstory.
Range D5	Permit Compliance	Insure livestock use complies with range readiness, proper utilization and permit requirements.	Allotment Inspection	District Ranger	Annual, 100% of allotment	No added cost	□	H	Annual	± 10% change from annual plan.
Regulated volume E1	prepared for sale.	Insure that the base harvest schedule is followed and that 10 year timber sale schedule is adhered to.	10-year sale program, quarterly cut and sold, Form 2400-27, accomplishment reports.	Timber Staff Officer	Annual, 100%	No added cost	H	W	5 yr	± 10% change in volume from 5 yr base harvest schedule. No more than 25% of sales located out side of scheduled 10 year plan.

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Timber E2	Timber assumptions: volume, productivity, condition class, slope, recovery, logging. acres harvested.	Insure that: 1. Board foot/cubic foot ratios are correct. 2. Volume/acre yield is correct. 3. Working groups accurately reflect productivity. 6. Condition class assignments are correct.. 5. Scheduled logging system (cable and tractor) are used. 6. Schedule of acres harvested is correct.	Sale review, EAs, cruise summaries, TSMRS	Timber and Planning Staff Officer.	Annual, 1 sale per District	1,300	H	M	5 yrs	Sale reviews question validity of assumptions ± 15% of Forest averages.
E3	Silvicultural assumptions and practices.	Insure that: 1. Uneven-aged as well as even-aged mgmt is applied to elk winter and summer range, retention zones and riparian areas. 2. Rotation age and CMI assumptions are correct. 3. Silvicultural prescriptions follow mgmt. area standards.	Silvicultural prescriptions, EAs, TSMRS Review of Forests silviculture program.	Timber & Planning Staff Officers	Annual, 100% data review 1 review	No added cost	H	M	5 yrs	Silviculture program review questions validity of assumptions. ± 152 of Forest averages.

		4. Silvicultural prescriptions precede all vegetative manipulation 5. Silvicultural prescriptions achieve desired results.								
E4	Firewood removal	Insure that potential firewood from timber sales and road building is made available to the general public before slash disposal.	Post sale review	Timber Staff Officer	Annual, 75% of timber sales	No added cost	H	H	Annual	Sale review questions validity of assumptions.
E5	Size of openings	Insure openings conform with stds.	EAs	Timber Staff Officer	Annual, 1002	No added cost	M	M	5 yrs	Unacceptable results of an ID team or administration review.
E6	Regenerated yield projections	Insure that regenerated yield projections are correct.	Permanent plots in regenerated stands	Timber Staff Officer	First decade. 60 permanent plots to be established	2.700	H	H	5 yrs	Less than 50% accomplishment of scheduled permanent plot..

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E7	Reforestation practices and assumptions	Insure that: 1. Regeneration is obtained within 5 yrs after final harvest cut. 2. Scheduled planting is accomplished.	Silvicultural prescriptions, reforestation records. post sale administrative review, TSMRS	Timber Staff	As scheduled, 100% reforestation surveys	No added cost	H	H	5 yrs	1. Less than 751 accomplishment of scheduled planting in 5 yrs, less than 501 accomplishment per year. 2. No more than ± 10% in scheduled planting over 5 year period.
E8	Timber stand improvements and assumptions	Insure that scheduled TSI project. are accomplished	Silvicultural prescriptions, accomplishment report.	Timber Staff Officer	Annual, 100% review of prescriptions	No added cost	M	M	5 yrs	Less than 751 accomplishment of scheduled TSI in 5 yrs, or less than 501 accomplishment per year
Timber E9	Lands suitable for timber production	Evaluate the accuracy of suitable timberlands classification in the Forest Plan; periodically re-examine lands identified as not suited for timber production to determine if they have besoms suited and could be returned to timber production.	EAs; stand exams project plan.; timber planning process.	Timber Staff Officer	Annual, 100% review of data sources	No added cost	H	M	5 yrs	± 5% change in acreage of suitable lands.

Soil and Water F1	Monitor for compliance with local, state and Federal water quality standards.	To insure compliance with local, state. and Federal water quality statute..	Flow measurements and measurement of selected water quality parameters (24 stations) throughout the Forest.	Watershed Staff Officer	Annual. 10% of timber sale. or other projects that create soil disturbance	12.100	H	H	Annual	Activities not meeting water quality standards or that would lead to long-term watershed degradation.
F2	Soil end water improvement projects.	To eliminate backlog of soil and voter restoration acres by year 2000.	Project EAs accomplishment reports.	Watersbed Staff Officer	Annual , 100%	2,000	H	a	Annual	< 80% accomplishment of target in 5 year period.
F3	Productivity changes in sensitive soils	Insure that management practice. do not adversely effect soil productivity	EAs and review of proposed activities. Field examinations and laboratory testing	Watershed Staff Officer	Annual, 10-15 sites	1,700	a	M	5 yrs	When changes of baseline levels of the soil's chemical and physical properties exceed 20% as determined by lab analysis.
1'4	Insure availability of adequate water to maintain mgmt. options, water right.	Maintain existing water right. and update Water Uses Eeq. and Rights file	Project EAs, AMPs Accomplishment Rpts., Water Uses Req. and Eights File	Watershed Staff Officer	Annual, 100% review of data sources	1.000	a	E	Annual	Any change which would require acquisition of additional water rights

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Forest Plan Monitoring Requirements

RESOURCE ELEMENT	ACTION, EFFECTS. OR RESOURCES TO BE MONITORED	INTENT	DATA SOURCES	RESPONSIBILITY	MEASUREMENT FREQUENCY 1/	ANNUAL COST 2/	PRECISION 3/	RELIABILITY 4/	Report TIME	VARIABILITY (±) WHICH WOULD INITIATE ACTION
Minerals G1	Forest Service land uses that may have an effect on minerals activities; minerals activities that have an effect on surface resources.	Check that recommended stipulations are adequate to protect resources but not severely restrictive. Conversely, to check that resources are not severely restrictive on the mineral activities.	EAs, operating plans, prospecting permits, lease applications, review by ID Team	Minerals Staff Officer	Annual, 10 reviews per year	No added cost	L	L	5 yrs	1. Departure from approved operating plan or violation of assigned stipulations. 2. Unacceptable review of lease application by ID Team 3. Unacceptable restrictions on mineral development.
Protection P1	Acres and volumes of insect and disease infestation.	Assure harvest emphasizes removal of high risk for mountain pine beetle attack. Keep ongoing inventory of acres of high risk stands of insect and disease infestations	Silvicultural prescriptions, survival and silvicultural exams, ground and aerial surveys. past sale reviewing, TSMRS. FPM aerial observation by R.O. Etomologists	Timber Staff Officer	Annual, 100% review of data sources	No added cost	M	H	5 yrs	Unacceptable results of an ID Team review or if less than 70% of timber volume in programmed from high risk to mountain pine beetle stands. Introduction of or spread of insect or disease
P2	Air Quality	Assure prescribed fire meet. State and Federal air quality standards.	Farm R1-5150-1, Project report.	Timber Staff Officer	Annual, 100% review of project report.	No added cost	H	H	Annual	± 10% beyond standards and guide.
P3	Fuel Treatment output.	Assure a balanced fuel treatment reports	Accomplishment Reports	Timber Staff Officer	Annual, 100% review of report.	No added cost	H	N	Annual	± 25% of programmed targets.

P4	Wildfire acre PARS	Assume wildfire acres are within projected annual burned *scree* and determine the adequacy of the fire management organization to meet PARS	Form R1-5100-29 Reports	Timber Staff Officer	Annual, 100% review of reports	No added cost	H	M	5 yrs ± 25% above projected average annual wildfire buroed acres.
P5	Cost of suppression, protection. organization, and net value change.	Keep Eire management program cost effective	Form 81-5000-29 and PAMARs	Timber Staff Officer	Annual. 100%	No added cost	H	H	5 yrs ± 5% increase in real costs.
Facilities L1	Local roads in place and collector roads constructed.	Insure that assumptions are valid concerning: 1. Local/ collector road density 2. Local/ collector road standard.	TIS Inventory. accomplishment report.. EAs, Transporation Plans, Accomplishment Reports, final construction report..	Engineering Staff Officer	Annual, 100% review of reports	No added cost	H	H	5 yrs ± 20% of predicted miles of road.
L2	Road Management	Insure that assumptions are valid concerning: 1. Collector roads a. yearlong closures b. seasonal closures 2. local roads a. yearlong closures b. seasonal closures	TIS Inventory maintenance plans plans, travel plan.	Engineering Staff Officer	Annual, 100% review of report..	No added cost	M	M	5 yrs t 30% of miles of predicted road closed either seasonally or year long.

1/ Represents the frequency of measurement schedule and sample size.

2/ Annual Cost for first 5 years (1978 dollars). "No additional cost" indicates the cost is included in the budget request. These costs are included in the projected budget required to implement the Forest Plan shown in Appendix Y.

3/ Precision is the expected accuracy with which the data will he collected. L = Law, H = Moderate, H = Bigh

4/ Reliability is the expected degree the monitoring accurately reflects the Forest situation.

L = Lor, M = Moderate, H = Bigh.

TABLE IV-1
Forest Plan Monitoring Requirements

RESOURCE ELEMENT	ACTION, EFFECTS, OR RESOURCES TO BE MONITORED	INFEHI	DATA SOURCES	BBSPONSI-BILITY	MEASURE-MENT FRE-1/ QUENCY	ANNUAL2/ COST	FRE-3/ CISION	RELI-4/ ABILITY	RE-POET TIME	VARIABILITY (±) WHICH WOULD INITIATE ACTION
Economics T1	Verification of unit cost used in Plan compared to on-the-ground cost	Acquire accurate cost data.	Timber sale appraisal, contracts, allotments, management plans, cost/output for various resource programs, sale area better-ment plan, timber sale report.	Planning and Admin. Staff Officer.	Annual, 100% review of data	No added cost	H	H	5 yrs	In general. ± 25% However, very large cost items, such as road constructions and logging cost, would have a smaller degree of acceptable vari-bility, i.e. ± 10%
Adjacent Lands, Resources, and Com-munities T2	Effect of National Forest management on local economy recreation oppor-tunities, down-stream water uses, Visual quality, local air quality	Determine effects of Forest Plan on other ownership	Reports from appropriate resource moni-toring items. New public issues and management concerns.	Planning Staff Officer	Annual, 100% review of data	No added cost	M	H	5 yrs	Unacceptable results of an ID Team Review
	Effects of manage-ment on adjacent lands on National Forest lands goals 6 objectives,	Determine effects of management of other owner-ship on Forest Plan	Reports from appropriate resource monitor-ing items, review of other Agency plans, new public issues and man-agement concerns.	Planning Staff Officer	Every 5 yrs, 100% reveiw of data	No added cost	M	M	5 yrs	Unacceptable results of an ID Team Review
All Resources T3	Effect. of emerging issues or or changing social values.	Keep public. informed, through educa-tional and en-vironmental programs, raise FS awareness to public concerns.	EA public involvement. issue end target group analysis.	Planning Staff Officer	Annual, 100% review of data	No added cost	R	M	Con-tin-ous	If issues cannot be dealt with under the Forest Plan.

All Resources T4	Evaluate lands identified as not meeting physical or biological characteristics	Verify allocations in the Forest Plan.	RAs, ID Team evaluation, Ranger District assessments, timber sale feasibility analysis	District Ranger, Planning Staff Officer	Annual, 100% review of data	No added cost	H	H	Continuous	All changes will be evaluated annually.

1/ Represents the frequency of measurement schedule and sample size.

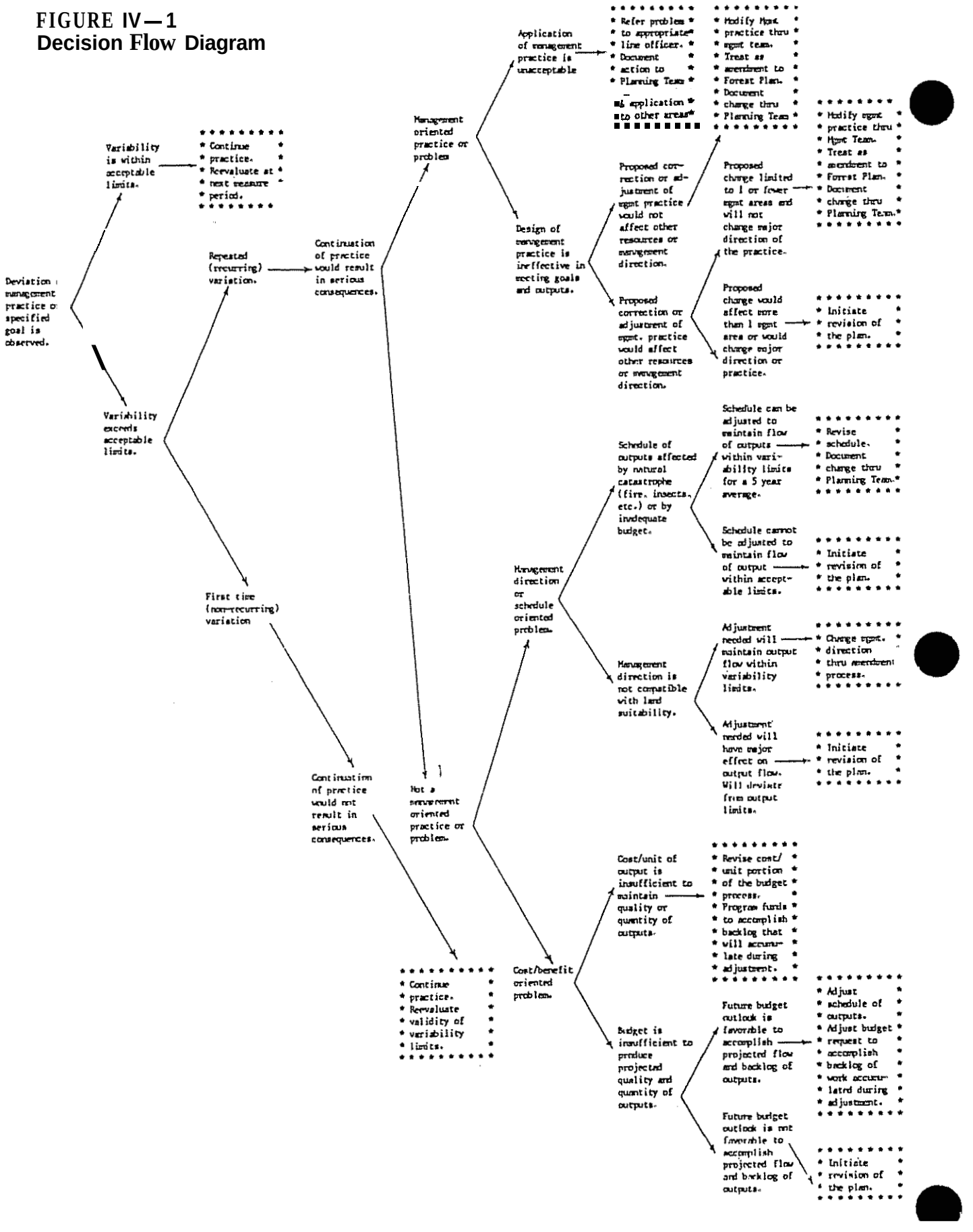
2/ Annual Cost for first 5 years (1978 dollars). "No additional cost" indicates the cost is included in the budget request. These costs are included in the projected budget required to implement the Forest Plan shown in Appendix Y.

3/ Precision is the expected accuracy with which the data will be collected. L = Low, M = Moderate, H = High

4/ Reliability is the expected degree the monitoring accurately reflects the Forest situation.

L = Low, M = Moderate, H = High.

FIGURE IV—1
Decision Flow Diagram



V. ANALYSIS OF TEE MANAGEMENT SITUATION SUMMARY

4. INTRODUCTION

The Analysis of the Management Situation (AMS) is a determination of the ability of the Forest to supply goods and services in response to society's demand. The primary purpose of this analysis is to provide a basis for formulating a range of reasonable alternatives (36 CFR 219.12 (e)).

The basis for formulating alternatives was established in part by "benchmark levels" which were determined using various objectives, constraints, and assumptions in the FORPLAN computer model. Four types of benchmarks were developed for the Helena Forest:

Resource benchmarks -- define the maximum potentials for each resource. They include maximization of timber, range, wilderness, and wildlife.

Maximum present net value (PNV) benchmarks -- maximizes present net value for the Forest and displays the associated resource outputs. Two runs using market and/or assigned values were made.

Minimum level benchmark -- displays the minimum outputs associated with custodial management of the Forest.

Current direction - displays the projected outputs if land management practices remain the same.

Information is summarized by resource and has been taken from the Forest 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.

Each resource element (e.g. range, recreation, timber) has a discussion about demand, supply under current management situation, maximum production potential, and opportunities for use and development.

The potential of the Forest to produce each resource, without regard to legal and administrative constraints, cannot be met simultaneously because of the interaction and competitive relationship among resources.

The Analysis of the Management Situation was updated to reflect the latest available information to the Forest Plan.

B. RESOURCE AND SUPPORT PROGRAM ELEMENTS

1. Recreation

a. Demand

Within dispersed recreation, both nonmotorized and motorized recreation use is expected to increase.

DEMAND PROJECTIONS - HELENA NATIONAL FOREST

	1981-1990	1991-2000	2001-2010	2011-2020	2021-2030
Developed Recreation (MRVDs) (Rural/Roaded Natural)	95.6	114.1	134.5	156.7	180.7
Dispersed Recreation (MRVDs)	182.5	224.0	270.2	320.1	374.4
(Roaded Natural)	93.8	115.6	138.9	165.0	192.5
(Semi-primitive Motorized)	39.2	48.4	58.1	69.0	80.5
(Semi-primitive Nonmotorized)	49.5	60.0	73.0	86.0	101.0
(Primitive)	17.5	20.1	22.9	26.0	29.4

b. Supply

Recreation use increased 44 percent from 1975-1981. Use by recreation type is shown below.

	1981	1980	1979	1977	1975
Developed Recreation (MRVDs) (Rural/Roaded Natural)	84.7	84.7	85.6	99.9	60.6
ispersed Recreation (MRVDs)	176.1	190.0	154.9	118.6	122.3
(Roaded Natural)	90.5	112.1	79.6	60.0	62.9
(Semi-primitive Motorized)	37.9	24.7	33.3	25.5	26.3
(Semi-primitive Nonmotorized)	47.7	36.1	42.0	32.2	33.1
(Primitive)		17.1	14.6	11.9	14.1

c. Production Potential

The developed recreation sites on the Forest have potential to produce 122,000 RVDs per year and are adequate to meet projected use through year 2000. By then it is expected that private landowners or other agencies will provide developed sites near the Missouri River and associated reservoirs to meet projected demand.

The benchmark analysis shows there is ample capacity, 1,728,300 RVDs per year to supply anticipated roaded natural, semi-primitive motorized, and nonmotorized recreation use for the next 100 years and primitive recreation, with a potential of 42,400 RVDs, beyond year 2030.

b. Development and Use Opportunities

The Forest has an abundant opportunity to provide a wide spectrum of outdoor recreation experience. In developed recreation the opportunity for additional use of existing facilities occurs until the year 2000. At that time more facilities will have to be constructed either by the Forest or other agencies who manage lands along the Missouri.

2. Wilderness

a. Demand

The Region's 1980 RPA objective says to increase wilderness acres from 4.8 million to 7.1 acres recommended for wilderness, RARE II further study areas, and Montana Wilderness Study Areas.

The Helena National Forest was not assigned an objective for wilderness. One area (9,974 acres) is recommended for wilderness classifications as an addition to the Gates of the Mountains Wilderness.

b. Supply

There are two wildernesses on the Helena Forest: the Gates of the Mountains Wilderness, 20 miles northeast of Helena, and the Scapegoat Wilderness, 15 miles northwest of Lincoln.

The Gates of the Mountains Wilderness contains 28,492 acres. It is bound on the north by the Beartooth Game Management Area and nearly bound on the west by the Missouri River. There are no private lands within the Gates of the Mountain Wilderness.

A draft management plan has been completed for tbe Gates of the Mountains Wilderness. The management direction from the plan is in Appendix S.

The Scapegoat Wilderness contains 239,936 acres and lies in three National Forests: the Lolo, the Lewis and Clark, and the Helena. It is contiguous to the Bob Marshall Wilderness to the north. There are 82,958 acres of the Scapegoat in the Helena Forest. There are no private inholdings on the Eelena portion of the Scapegoat. A Wilderness Fire Management Plan was approved in 1981. A combined wilderness management plan has been prepared for the Scapegoat, Bob Marshall, and Great Bear Wilderness Complex. The direction that applies on the Helena National Forest portion of the Complex is in Appendix T.

Currently the Helena Forest has 24 areas of undeveloped land totaling 443,300 acres.

c. Production Potential

The Forest has the capability of providing 554,800 acres of wilderness from the 24 inventoried roadless areas plus the two existing wilderness areas.

d. Development and Use Opportunities

The Forest has the opportunity to recommend an additional 430,000 acres of land for wilderness classification.

. Threatened and Endangered Species

a. Demand

Regional recovery plans have been written for grizzly bear, gray wolf, and peregrine falcon. A recovery plan for the bald eagle is currently being programmed. A population target of 18 grizzly bear has been established for the Helena National Forest. No population targets have been established for the gray wolf, peregrine falcon, or bald eagle.

b. Supply

Habitat has been identified on the Helena National Forest for four threatened (T) and endangered (E) species:

	Status	(O) = Occupied Babitat (E) = Essential Habitat		General Locations
Grizzly Bear	T	(E) (O)	120,000 acres 70,000 acres	Scapegoat Wilderness & Rogers Pass Area
Gray Wolf	E	(E) (O)	167,868 acres 0 acres	North of U.S. Highway 200 in Lincoln area
Peregrine Falcon	E	(E) (O)	8,389 acres 0 acres	Corridor along Missouri River
Bald Eagle	E	(E) (O)	12,492 acres 12,548 acres	Corridor along Missouri & Blackfoot Rivers

There are no known threatened or endangered plant species on the Helena National Forest according to the U.S. Fish and Wildlife Service listing.

c. Production Potential

The current population of 19 bears represents the estimated potential.

d. Development and Use Opportunities

The Forest has the opportunity to reintroduce the peregrine falcon along the Missouri River.

4. Wildlife

a. Demand

The Northern Region Guide outlined state population goals for elk. The Montana goals were derived from the 1978 Montana Statewide Comprehensive Outdoor Pl (SCORP).

The population targets for the Helena Forest are:

	1981	1990	
Elk	4900	5480	*6400*

Combined resident and limited nonresident demand for harvestable elk is expected to exceed the available supply prior to 1985 ***(SCOW).*** State goals include providing a 22 percent increase in elk hunter recreation days during 1980–1990, while maintaining an average 15 percent success rate and an average of 53 days bunted per elk harvested (SCORP).

b. Supply

Wildlife habitat on the Helena National Forest is diverse. Types range from needlegrass grassland at low elevations, about 5,000 feet, on the east slope of the Continental Divide, to limited areas of krummholz and alpine tundra at 9,000 feet.

Big game species include elk, mule and white-tailed deer, bighorn sheep, grizzly bear, black bear, antelope, moose, mountain lions, and mountain goats. Small game species include cottontail rabbits, snowshoe bares, and several species of upland birds. Furbearers include beaver, muskrat, marten, fisher, and river otter. Nongame species of interest include the osprey, which nests on the Missouri River and its reservoirs, and the pileated woodpecker, which occurs primarily west of the Continental Divide.

Current (1980) population estimates and hunter visitor days (HVDs) for big game species are listed below. These are just estimates and are included primarily as a point of reference for comparison of various benchmark runs.

Species	Population Estimate	HVDs
Elk	5008	47,896
Mule deer	3075	32,322
White-tailed deer	1203	4,696
Moose	64	23
Mountain goat	135	87
Black bear	368	6,540
Bighorn sheep	210	3
	Total	91,567

In total, the Forest provides habitat for at least 267 species of birds, 74 mammals, 16 reptiles and amphibians, and 20 fish--totalling 377 vertebrates. There are no wild and free-roaming horses and burros on the Forest although 'here are lands capable of producing suitable food and cover.

Indicator species *for* the Belena Forest include bald eagle, grizzly bear, elk, bighorn sheep, mule deer, pileated woodpecker, hairy woodpecker, marten, cutthroat trout, and goshawk.

c. Production Potential

The capability of the Eelena Forest to support elk is modeled in the *AMS* benchmarks. As expected, on winter range the most elk are supported by the maximum wildlife benchmark and the least are supported by the maximum range benchmark. The different assignments of forage and access appear to cause this relationship.

The maximum wildlife benchmark supports the largest number of elk (6,700 in the first decade) on summer range, while the maximum range (4,800) and maximum timber (5,100) both support low numbers of elk. The high degree of accessibility and low amount of cover in these runs cause the decrease in elk supported.

The minimum level benchmark provides the most hunter days. The maximum wildlife benchmark, although producing more elk than the minimum level, reduces hunter days slightly below minimum level because of a loss of some security cover. The maximum timber benchmark produces least hunter visitor days because increased road access and reduced security cover would make elk easier to kill and eventually reduces total recreational opportunity for hunting.

For species requiring old growth habitat, the minimum level benchmark provides the most habitat and the maximum timber the least. It is estimated that to maintain viable populations of old growth species, 10 percent of commercial forest riparian and 5 percent of dry mix and cool working groups must he in old growth.

d. Development and Use Opportunities

The opportunity exists to improve habitat for big game to help meet the demand for hunting recreation and state population goals. Prescribed burning, timber harvest, and other vegetation changes could be used to increase forage. However, care must be taken to assure that sufficient cover and security are maintained. The level of road management (road closures) employed can have either positive or negative effects on security.

5. Fisheries

a. Demand

The Northern Region Guide outlines state population goals for catchable trout. The goals for Montana were derived from the 1978 Montana Statewide Comprehensive Outdoor Recreation Management Plan (SCORP), Montana Department of Fish and Game.

The population targets for the Helena Forest are:

		1990	2000
Catchable Trout (1000s)	145	174	242

Fishing pressure within the Forest is estimated to be 5,500 RVDs with an annual harvest of about 33,000 catachable trout (six inches or larger). This is an overall harvest of about 12.5 percent. An estimated harvest of 105,000 catchable trout could occur without depleting the current population. This level of harvest is equivalent to 17,500 RVDs or an increase of over 300 percent from current levels. However, it is possible that demand may exceed supply on several streams within the Forest that have easy access and currently good trout populations.

b. Supply

The Helena National Forest has 320 acres of mountain lakes and 1,173 miles of streams, of which 582 miles are considered fish habitat. In addition, the Forest boundary includes 8.6 miles of the Missouri River: one half mile of shoreline is Upper Holter Reservoir (10 percent) and 2 miles of shoreline on Hauser Reservoir (4 percent).

A recent estimate of 178,000 catchable trout on the Helena Forest was developed by fishery personnel from the Forest Service and Montana Department of Fish, Wildlife and Parks.

Fish numbers (catchable) varied from 15 per mile to 430 per mile, depending upon stream width, stream gradient, and percent granitic makeup in the drainage. Estimates for the Missouri are 2,100 catchables/miles. It is estimated that fish densities for both Holter and Bauser Reservoirs are 20 trout and 20 warm water fish (primarily perch) per surface acre. Populations in mountain lakes were based upon 50 catchables per surface acre[1/]. The gamefish populations were determined from the above information.

Mountain Streams	= 134,000	
Mountain Lakes	= 14,000	(assuming 90 percent of the lakes are supporting fish)
Missouri River	= 18,000	
Hauser/Holter (Forest's share)	= 12,000	
Forest Total	178,000	

Any changes in fish species within the Forest are very slight. The Missouri River and its reservoirs are still producing large numbers of rainbow of consistently large sizes. Yellow perch are well established. State management of the mountain lakes and streams is tending toward increasing the existing range of indigenous species such as the arctic grayling and cutthroat. This is particularly true with the Elkhorns.

1/ USDA-Forest Service, Wildlife and Fisheries Staff. The Sport Fishing Resource of the National Forests, Washington, DC; May 1982.

c. Production Potential

The biological potential is defined as the maximum number of fish the Forest is apable of producing regardless of costs. For a habitat to support a fishery, .t is assumed that it has the ability to overwinter aquatic life and, ideally, support natural reproduction. To come up with the biological potential for the Forest, reductions in fish numbers as a result of existing land use activities were determined, as were potential numbers that could result from aquatic habitat improvement projects.

	Base yr 1980	1981-1990	1991-2000	2001-2010	2011-2020	2021-2030
Total Fish Numbers	178,000	197,500	**200,000**	200,000	**200,000**	**200,000**

A biological goal of 200,000 fish could be reached in 20 years. If utilization by cattle of grass-forb types in riparian zones was reduced from the present 60 to 40 percent and use of grass-willow types was reduced from 60 percent to 50 percent then fish numbers could be increased by 8,500 by the end of the first decade. Also, by the end of the first decade maximum production from lakes would produce an additional 11,000 fish. Stream improvements by the end of the second decade will provide 2,400 more fish, giving an overall increase in fish numbers of 12 percent after two decades. This gain will level out after the second decade.

d. Development and Use Opportunities

Most opportunities exist in direct habitat improvement and improved livestock management in riparian areas.

6. Range

a. Demand

Demand for Forest permits presently exceeds the grazing permits available. This situation is expected to continue in the future.

b. Supply

Grazing use on National Forest lands has continued to be an important component of Local ranching operations. As of FY 1985, there were approximately 48,586 AUMs produced on 100 allotments--about 142 permittees grazing 10,130 cattle and 6,350 sheep. Forage-producing lands consist of about 116,100 acres or 12

percent of the Forest. This does not include transitory range. The range condition is estimated to be 58 percent excellent to good, 36 percent fair, and 6 percent poor.

c. Production Potential

The Forest has the capacity to increase grazing over current direction and to meet the RPA grazing objectives. Increase in the maximum range run in the first three decades is primarily due to the change in land use from current direction and associated prescribed burning. The maximum range run provides 85,200 AUMs by the fifth decade, while the maximum wildlife provides only 11,500 AUMs. The minimum level benchmark has no AUMs in the 5th decade. To a lesser extent, timber harvest and the production of transitory range provide additional output.

d. Development and Use Opportunities

The opportunity exists to nearly double the existing AUMs on the Forest. Doing this would be at the expense of other resources, especially wildlife. *The* opportunity exists to increase AUMs by taking advantage of transitory range produced through timber harvest and by using more intensive grazing systems on existing allotments.

7. **Timber**

a. Demand

The two shift capacity for companies operating in the Helena National Forest working circle is 105 MMBF sawlog scale or 155 MMBF lumber production. These companies are in Silver City, Livingston, Deerlodge, Townsend, Seeley Lake, and Lincoln. Much of the timber harvested in the past has come from private ownership. As private sources are depleted, there will be an increasing demand for timber on National Forest lands.

The demand for wood in the future is expected to increase nationally and Region-Wide. Historically the total Regional harvest has remained relatively constant regardless of price variations. If this trend continues and demand increases, stumpage prices may increase. Any increases in harvest levels may offset moderate price increases.

b. Supply

The 1969 Timber Management Plan (adjusted 1974) showed a potential yield of 40.9 MMBF, assuming full access, and intensive management. In the last five years the Forest has offered for sale approximately 17 MMBF.

Current management direction is to continue the harvest of timber under the constraints needed to protect other resource values.

c. Production Potential

The maximum timber and range runs maximized timber harvest in the first five decades. Points of interest are:

- None of the benchmark runs meet tbe RPA objectives in the fifth decade.
- The decline of timber harvest in all the runs from periods four through eight is due to the Forest's age class distribution.

The Helena Forest's suitable acres for timber harvest for the benchmark runs are listed below. Suitable acres are those lands available for regulated timber harvest as a result of a physical/biological and economic screening process [36 CFR 219.12(b) and R-1 screening process].

Benchmark	Suitable (M) Acres	Long-Term Sustained Yield Capacity (MMBF/YR)
Current Direction	480	30.3
Maximum-PNV (assigned)	400	35.2
Maximum-PNV (mkt)	390	35.2
Maximum Timber	540	42.5
Maximum Range	470	40.3
Maximum Wildlife	275	26.0
Minimum Level	0	0
Maximum Wilderness	258	18.3

d. Development and Use Opportunities

The opportunity exists to increase timber harvest to meet the RPA objectives in periods 1-4. The opportunity also exists to reduce the area considered suitable for timber management so that the timber program would be more cost efficient. This is indicated by the PNV benchmarks. Timber harvest could also be adjusted to reflect more concern for wildlife cover, roadless recreation, and land management on adjacent non-Forest Service lands.

8. Minerals

a. Demand

(1) Energy Minerals

In spite of tbe upturn in the economy in 1983 and a fall in crude oil prices, domestic petroleum consumption decreased for the fifth straight year, averaging 15.2 million barrels per day. With reduced demand for natural gas in electric power generation, natural gas consumption fell to 17.0 trillion cubic feet in 1983 from 18.0 trillion cubic feet in 1982. Conservation has played a major role in the slackening demand for energy, as evidenced by a drop in per capita energy consumption as well as a decline in energy consumption per dollar of Gross National Product.

Under the Department of Energy's midprice scenario, petroleum consumption is forecast to grow at an average rate of 1.15 percent per year between 1983 and 1995. Natural gas consumption is projected to increase by about five percent in 1984, remain relatively stable through 1990, and then fall back to 1983 levels by 1995.

Even though not at the peak levels reached a couple of years ago, crude oil prices are still high enough to generate interest in exploration, development, and production activities in promising areas. The Overthrust Belt is one such area and the Helena National Forest lies within this geologic province. Major discoveries of oil and natural gas have been made in the Overthrust Belt in Canada, Utah, and Wyoming. On the Helena National Forest, considerable mapping has been done, source and reservoir rocks are known to be present and industry has been conducting seismic surveys for some time.

(2) Nonenergy Minerals

For nonenergy minerals, historical and future demand patterns vary by commodity. Considering, for example, minerals which occur on the Helena National Forest, the domestic consumption of copper, silver and zinc rose between 1982 and 1983, while demand for gold, lead, molybdenum, and tungsten decreased.

Over the long term, rather rapid growth in the demand for molybdenum and tungsten is forecast with somewhat slower rates of growth for the other minerals. Given the depressed prices for most mineral commodities, however, it is likely that exploration, development, and production efforts will be focused primarily on gold and silver until at least the late 1980s.

Supply

(1) Energy Minerals

As of July 1984, the Forest has received approximately 425 oil and gas lease offers covering approximately 629,325 acres of National Forest lands. The Forest has recommended issuance of 414 leases covering 511,283 acres.

One wildcat well has been drilled on Hogback Mountain, 20 miles northeast of Helena. Seismic activity on the Forest has been occurring in the past three years and is expected to increase significantly.

The Helena National Forest has completed an environmental assessment (EA) of oil and gas leasing. The preferred alternative was to lease with appropriate stipulations. The EA did not include the Wilderness areas, the proposed additions to wilderness, or the Elkhorn Mountains in the recommendation.

(2) Nonenergy Minerals

Approximately 500 patented mining claims lie within the Forest boundaries, and about 15,000 unpatented mining claims have been staked on the National Forest.

The Districts were actively involved with about 70 Plans of Operation in 1981. This present workload has more than doubled in the past year. If metal prices increase, the minerals workload is expected to increase also.

c. Production Potential

Indicative of the mining history in the planning area, the Forest mineral potential is high on several portions of the area. These areas are given below.

(1) Energy Minerals

The high potential areas based on seismic activity and drilling are the Big Belt Mountains and the Rogers Pass area on the Lincoln District.

(2) Nonenergy Minerals

The high potential areas are Frohner Basin (southwest of Helena), Rimini (west of Helena), Mike Horse (east of Lincoln), and Tizer Basin Area (southeast of Helena).

d. Development and Use Opportunities

The opportunity exists to increase cooperation in management and administration of exploration and development of mineral resources.

9. Insect and Disease

No insect or disease pests are currently affecting management on the Helena, but those having the potential are:

1. Mountain pine beetle in lodgepole pine
2. Western spruce budworm in Douglas-fir
3. Douglas-fir bark beetle in Douglas-fir
4. Dwarf mistletoe in lodgepole pine
5. Root diseases of conifers, especially Douglas-fir
6. Stem rusts of lodgepole and ponderosa pine
7. Stem decay of conifers

Factors which influence potential levels of insect and disease infestations are the level of timber harvest, fire control activities, and in particular. the harvesting of susceptible stands. Increased timber harvest will reduce the volume which will be of high risk and provide for a mosaic canopy, thus reducing infiltration. The timber program element shows this data. Fire can also reduce the risk of insect and disease infestations. Any increased harvest to treat insect infestations may have an impact on other resources such as visual quality and wildlife.

Development and Use Opportunity - The opportunity exists to increase timber harvest in susceptabe stands, to decrease the potential loss of volume due to insects and disease. Opportunities for other ways to reduce potential losses are currently being analyzed.

10. Facilities: Roads and Trails

a. Demand

There is an identified need to revise the present Forest Travel Plan, develop road management criteria, and improve enforcement of travel restrictions. There is also an opportunity for improving maintenance and reconstruction of the trail system. Demand for new roads is directly related to timber harvesting.

b. Supply

The Forest transportation system consists of 1,600 miles of roads.

The present road system has been expanding at approximately 40 miles per year. The biggest share of this mileage is constructed under timber sale contracts by timber purchasers. The remaining mileage is being constructed by a public works contract that is also associated with timber access. Approximately 1,100 miles of the road are being maintained for annual public use.

The Helena National Forest is presently constructing about 10 miles of collector roads each year to access previously unroaded areas. The remaining 30 miles of annual road development are local roads.

The capital investment program or other form of supplemental funding is relied on heavily to augment the Helena National Forest sale program.

The Forest presently has 733 miles on the trail system. A minimum level of maintenance is performed yearly on approximately 400 miles of trails. Little rail construction or reconstruction bas occurred in the past few years.

(1) Road Management

User restrictions of National Forest lands is an expressed concern of Helena National Forest users (Public Meeting Issues, 1980).

Each National Forest is to display to the public those Forest lands which are open, restricted, or closed to off-road vehicles (FSM 2355.11); and restrictions and closures of developed Forest roads and trails will be made public (FSM 7731.41d).

In 1975-76 the Helena National Forest responded to the above FSM direction and Executive Order #11644 by preparing a Travel Plan Environmental Analysis Report (FAR). The Travel Plan Map (1984) represents the implementation of the EARs preferred alternative.

(2) Road Standards

Users of the National Forest lands are concerned that Forest roads are constructed at too high standards, and therefore are too costly.

c. Production Potential

The following table shows the total miles of local roads that will be in place for each of the benchmark runs. Points of interest include:

- The increase in local roads over current direction is due to increases in timber harvest.
- The minimum level reflects existing roads in place which would only be maintained for the basic protection of resources.

The table below also shows the total miles of collector rdads that would be in place. It is assumed that all new collector roads would be in place by the sixth decade. The number of miles of new collectors will be in proportion to the amount of timber harvest scheduled.

	Local	Collector
Maximum Timber	4500	950
Maximum Range	4200	890
Current Direction	3800	860
Maximum PNV-Assigned	3700	730
Maximum PNV-Market	3500	710
Maximum Wildlife	2800	450
Minimum Level	1000	570
Maximum Wilderness	2236	658

.. Development and Use Opportunities

The opportunity exists to increase road management to provide security for wildlife and to provide a wide range of dispersed recreation activities. The need for this will become greater as additional areas of the Forest are developed.

The Forest Travel Plan needs to be revised to reflect land management decisions and to increase public understanding and compliance.

The amount of roading necessary on the Forest will vary based on what resources are being emphasized and will be analyzed during alternative development.

Opportunities exist, in tbe future, to improve the design of the Forest transportation system and to establish road standards that will meet resource needs and increase cost efficiency. There is also an opportunity to increase trail maintenance and reconstruction on the Forest.

VI. GLOSSARY

ACRE-EQUIVALENT A unit of habitat output related to fish or wildlife habitat improvement projects. Acre equivalents are based on the number of acres of habitat that are influenced by one acre actually modified by the habitat improvement project. For example, an acre of winter range actually burned is credited with influencing four acres of summer range.

ADMINISTRATIVE SITE Those sites or facilities, such as ranger stations, work centers, and cabins, that are used by the Forest Service in the management of the National Forest.

AIRSHED Any of 10 geographical divisions of Montana that were delineated by the State Airshed Group for the purpose of organizing and operating the Montana Cooperative Smoke Management Plan. Each airshed has similar weather patterns for smoke dispersal.

ALLOTMENT *See* Range Allotment.

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."

ANALYSIS OF MANAGEMENT SITUATIOB (AMS) A determination of the ability of the planning area to supply goods and services in response to society's demand for those goods and services.

ANIMAL UNIT MONTH The quantity of forage required by one mature cow (1000 lbs.), or the equivalent, for *one* month.

ANTIQUITIES ACT *(34* STAT. 225) The Antiquities Act of 1906 provides for the protection of historic or prehistoric remains, or any object of antiquity, on Federal lands, and establishes criminal sanctions for unauthorized destruction or appropriation of antiquities and authorizes scientific investigation of antiquities on Federal lands, subject to permit and regulations.

AVAILABLE FOREST LAND Land that has not been legislatively or administratively withdrawn from timber production by the Secretary of Agriculture or Forest Service Chief.

BANK DAHAGE (% bank disturbed) The amount of streambank with physical danage or active erosion.

BASE SALE SCHEDULE A timber sale schedule formulated on the basis that 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 the long-term sustained yield capacity.

BENCHMARK Reference points that define the bonds within which feasible management alternatives can be developed. Benchmarks may be defined by resource output or economic measures.

BIOLOGICAL GROWTH POTENTIAL The average net growth attainable in a fully stocked natural forest stand.

BOARD FOOT Lumber or timber measurement term. The amount of wood contained in an unfinished board one inch thick, 12 inches long, and 12 inches wide.

CAPABILITY The potential of an area of land to produce resources, supply goods and services, and allow resource uses under an assumed set of management practices and at given levels 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 fire, insects, and disease.

CAPITAL INVESTMENT An input that increases the stock of natural or manmade resources (assets) needed to maintain or increase the flow of outputs in the future. Benefits resulting from capital investments are normally recouped in excess of 1 year.

CATCHABLE TROUT A trout over six inches long.

CHARGEABLE VOLUME All volume that is included in the growth and yield projections for the selected management presciptions used to arrive at the allowable sales quantity based on Regional utilization standards.

CLEARCUTTING *See* Silviculture Systems.

CMAI See Culmination of Mean Annual Increment.

CONCERN See Management Concern.

CORRIDOR A linear strip of land identified for the present or future location of transportation or utility rights-of-way within its boundaries.

COST, CAPITAL INVESTMENT The cost of man-made structures, facilities, or improvements in natural resources used as inputs in production processes to produce outputs over one or more planning periods.

COVER/FORAGE RATIO The ratio of tree cover (usually conifer types) to foraging areas (natural openings, clearcuts, etc.).

COVER, BIDING Vegetation capable of hiding 90 percent of a standing adult deer or elk from the view of a human at a distance equal to or less than 200 feet, and having a minimum size of 40 acres.

COVER, THERMAL Cover used by animals to ameliorate effects of weather; a stand of coniferous trees 40 feet or more tall with an average crown closure of 70 percent or more, and having a minimum size of 15 acres.

CULMINATION OF MEAN ANNUAL INCREMENT (CMAI) The age at which the volume of a timber stand no longer increases.

CULTURAL RESOURCES The physical remains (artifacts, ruins, burial mounds, petroglyphs) and conceptual content or context (as a setting for legendary, historic, or prehistoric events; as a sacred area of native peoples) of an area of prehistoric or historic occupation.

DBH **See** Diameter At Breast Height.

DIAMETER AT BREAST HEIGBT The diameter of a tree at *4.5* feet above ground level. Abbreviated dbh. The additional abbreviations, ob and ib, are used to designate whether the diameter refers to the measurement outside or inside the bark.

DIVERSITY The distribution and abundance of different plant and animal communities and species within the area covered by a land and resource management plan.

ECONOMIC EFFICIENCY **See** Cost Efficiency.

EDGE EFFECT **The** increased richness of flora and fauna resulting from the mixing of two communities where they join.

EFFECT (IMPACT), PHYSICAL, BIOLOGICAL The change, positive or negative, in the physical or biological conditions which directly or indirectly results from an activity, project, or program.

EFFECT (IMPACT), ECONOMIC The change, positive or negative, in economic conditions, including the distribution and stability of employment and income in affected local, regional, and national economies, which directly or indirectly results from an activity, project, or program.

EFFECT (IMPACT), **SOCIAL** The change, positive or negative, in social and cultural conditions which directly or indirectly result from an activity, project, or program.

ENDANGERED SPECIES An endangered species, or subspecies, of animal or plant is one whose prospects of survival and reproduction are in immediate jeopardy. Its peril may result from one or many causes--loss of habitat or change in habitat, over-exploitation, predation, competition, disease, or even unknown reasons. An endangered species **must** have help or extinction may follow. It must be designated in the Federal Register by the appropriate secretary as an "endangered species."

ENDANGERED SPECIES ACT **OF 1973** An act to provide a means **whereby** ecosystems upon which endangered species and threatened species depend may **be** conserved, to provide a program for the conservation of such endangered species, and to take such steps as may **be** appropriate to achieve the purposes of the (relevant) treaties and conventions. Repeals and replaces the Endangered Species Conservation Act of 1969.

ENDEMIC Applied to populations of potentially injurious plants, animals, or viruses that are at their normal, balanced level; in contrast to epidemic.

ENVIRONMENTAL ANALYSIS An analysis of alternative actions and their predictable short- and long-term environmental effects, which include physical, biological, economic, social, and environmental design factors and their interactions.

ENVIRONMENTAL ASSESSMENT A concise public document which provides sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement or Finding of No Significant Impact and aids in compliance with the NEPA when no Environmental Impact Statement is needed.

ENVIRONMENTAL IMPACT STATEMENT A document prepared by a Federal Agency in which anticipated environmental effects of a planned course of action or development are evaluated.

EPIDEMIC Of populations of plants, animals, and viruses that build-up, often rapidly, to highly abnormal and generally injurious levels.

FINDING OF HO SIGNIFICANT IMPACT (FONSI) A document by a federal agency briefly presenting the reasons why an action, not otherwise excluded, will not have a significant effect on the human environment and for which an environmental impact statement therefore will not be prepared.

FORAGE/NON-COVER AREAS Areas of browse and nonwoody plants that are available to livstock or game animals and used for grazing or harvested for feeding, and having a minimum size of 3 acres.

FOREST LAND Land at least 10 percent occupied by forest trees of any size or formerly having had such tree cover and not currently developed for nonforest use. Lands developed for nonforest use include areas for crops, improved pasture, residential, or administrative areas, improved roads of any width, and adjoining road clearing and powerline clearing of any width.

FOREST AND RANGELAND RENEWABLE RESOURCE PLANNING ACT OF 1974 (RPA) An act requiring the preparation of a program for the management of the National Forest's renewable resources and of land and resource management plans for units of the National Forest Systen. It also requires a continuing inventory of all National Forest System lands 2nd renewable resources.

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 principle basis from which objectives are developed.

HABITAT CAPABILITY The estimated ability of an area, given existing or predicted habitat conditions, to support a wildlife, fish or plant population. It is measured in terms of potential population numbers.

HABITAT EFFECTIVENESS For elk a measure of habitat quality expressed as a percent of optimum or potential that incorporates cover-forage ratio, open road density, and cattle density as each and in combination may influence use of elk habitat by elk.

HABITAT TYPE An aggregation of all land areas potentially capable of producing similar plant communities at climax.

HARDROCK MIEING *See* Locatable Mining.

HARVEST, TIMBER **See** Silvicultural System.

HERD UNIT The total area used by a herd of elk in the course of one years movement from summer to winter range.

HORIZONAL DEMAND CURVE Demand will remain at a constant level.

HUNTER VISITOR DAY (HVD) ***See*** Recreation Visitor Day.

INDICATOR SPECIES A plant *or* animal species **so** highly adapted to *a particular* kind of environment that its mere presence is sufficient indication that specific conditions are also present. Indicator species on the Helena National Forest are: bald eagle, grizzly bear, elk, bighorn sheep, mule deer, pileated woodpecker, hairy woodpecker, marten, goshawk, and cutthroat trout.

INTEGRATED PEST MANAGEMENT A process for selecting strategies **to** regulate forest pests in which all aspects of a pest-host system are studied and weighed. The information considered in selecting appropriate strategies includes the impact of the unregulated pest population on various resources 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.

KV (KNUTSON-VANDENBERG ACT) **An** act of Congress which among other things authorized the Forest Service to **use** funds collected from timber sales for tree planting, timber stand improvement, and other forest **uses.**

KRUMMHOLZ A stunted forest characteristic of most alpine regions.

LANDSCAPE MANAGEMENT **A** portion of the land **use** planning process which deals with physical (i.e., biological, geological, and hydrologic) values, aesthetic and culture (i.e., historical and anthropological) values, and with the relationships between these values and land uses.

LANDTYPE Visually identifiable unit areas resulting from homogeneous geomorphic and climatic processes and having defined patterns of soil and vegetative potential. Landtype units range in size from about one-tenth to one square mile. Their size and composition depend upon the significance of physical characteristics which can **be** readily interpreted to identify hazard, capability, and productivity potentials that are reliable for land **use** planning purposes. Landtype units generally have uniform management response characteristics and so can **be** used to identify areas for which zoning and resource allocation **on** decisions can **be** made.

LONG-TERM SUSTAINED-YIELD TIMBER CAPACITY 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.

LOW IMPACT USE This is the use of an area with a minimum of physical and social disturbance to the natural environment and where, at the end of the use period, minimal evidence remains of human activity.

MANAGEMENT AREA An area with similar management objectives and a common management prescription.

MANAGEMENT CONCERN An issue, problem, or a condition which constrains the range of management practices identified by the Forest Service in the planning process.

MANAGEMENT DIRECTION A statement of multiple-use and other goals and objectives, the associated management prescriptions, and standards and guidelines for attaining them.

MANAGEMENT PRACTICE A specific activity, measure, course of action, or treatment.
Proposed--Those scheduled in the first decade of Forest Plan implementation.
Probable— Those scheduled in the second decade of Forst Plan implementation.

MANAGEMENT STANDARDS A principle requiring a specific level of attainment; a rule to measure against.

MBF Thousand board feet.

MCF Thousand cubic feet.

MEAN ANNUAL INCREMENT (MAI) The total increase in girth, diameter, basal area, height, or volume of individual trees or a stand up to a given age divided by that age.

MINERAL, SAIABLE (COMMON VARIETY) Earth material that, although may be 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. For example, sand and gravel are frequently present in abundance in most areas and that makes them a common variety mineral. Neither mining claims nor mining claim patents can be filed for common variety deposits.

MINERAL, 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. For example, coal, phosphate, sodium, potassium, oil, oil shale, gas, and, in some states, sulfer.

MINERAL, LOCATABLE Precious or semi-precious minerals that are not considered to be common variety minerals--i.e., not such material a8 sand or gravel. Locatable mineral deposits can be claimed and the mining claim patented, thus converting it to private ownership.

MINERAL, ENERGY Those minerals (generally leasable) used to produce energy and usually measured in BTU's. Included are oil, gas, coal, geothermal steam, and uranium.

MINERAL, NONENERGY Those minerals (leasable, locatable or salable) thet do not produce energy.

MINERAL ENTRY, WITHDRAWALS The exclusion of mining locations and mineral development work on areas required for administrative sites by the Forest Service and other areas highly valued by the public.

MINING CUM, PATENTED A mining claim to which a patent has been secured from the government by compliance with the laws relating to such claims. The patent is a legal document that conveys the title to the ground (i.e., ownership) to the claim's owner. No further annual assessment work need be done, but property taxes must be paid.

MINING CUM, UNPATENTED The portion of mining ground held under the Federal and local laws by one claimant or association, by virtue of one location and record. A lode claim's maximum size is 600 by 1500 feet and a placer claim's 600 by 1320 feet. A "claim" is sometimes called a "location" but these terns may often mean different things--e.g., "mining claim" may refer to a parcel of land containing soil or rock which has value because of its chemical composition, while "location" is the act of appropriating such land according to certain established rules.

MITIGATING MEASURE A measure that minimizes impacts by limiting the degree or magnitude of the action and its implementation.

MMBF Million board feet.

MMCF Million cubic feet.

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 the 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.

MULTIPLE USE-SUSTAINED YIELD ACT Authorizes and directs that the National Forests be managed under principles of multiple use for outdoor recreation, range, timber, watershed, and wildlife and fish purposes, and to produce a sustained yield of products and services, and for other purposes. This act does not affect the use or administration of the mineral resources of National Forest lands not within National Forests.

NATIONAL ENVIRONMENTAL POLICY ACT OF 1969 (NEPA) An act to declare a national policy which will encourage productive and enjoyable harmony between man and his environment, to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man, to enrich the understanding of the ecological systems and natural resources important to the Nation and to establish a Council on Environmental Quality (CEQ).

NATIONAL FOREST MANAGEMENT ACT OF 1976 (NFMA) A law passed in 1976 as amendments to the Forest and Rangeland Renewable Resources Planning Act that requires the preparation of Regional and Forest Plans and the preparation of regulations to guide the development.

NATIONAL FOREST SYSTEMS All National Forest lands reserved or withdrawn from the public domain of the United States, all National Forest lands acquired through purchase, exchange, donation, or other means, the National Grasslands, and land utilization projects administered under Title III of the Bankhead-Jones Farm Tenant Act (50 Stat. 525, 7 USC 1010-1012), and other lands, waters, or interests therein which are administered by the Forest Service or are designated for administration through the Forest Service as a part of the system.

NATIONAL REGISTER OF HISTORIC PLACES A listing (maintained by the U.S. National Park Service) of areas that have been designated as being of historical significance. The Register includes places of local and state significance as well as those of value to the Nation as a whole.

NATIONAL RECREATION TRAIL A component of the National Trails System which is established, as provided in 16 USC 1242, and which will provide a day-use or extended trail experience for the enjoyment of a variety of outdoor recreation opportunities reasonably accessible to population centers.

NATIONAL SCENIC TRAIL A component of the National Trails System which is designated by Congress, as provided in 16 USC 1242, and which is an extended trail so located as to provide for maximum outdoor recreation potential and for the conservation and enjoyment of National significance scenic, historic, natural, or cultural qualities of the areas through which such trails may pass.

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. It also includes all volume removed from nonsuitable lands.

NONFOREST LAND Land that is less than 10 percent occupied by forest or trees. The land may be developed for nonforest uses, or not capable of growing trees.

NONGAME WILDLIFE All wild terrestrial vertebrates not subject to sport hunting.

NON-POINT POLLUTION Pollution whose source is a general rather than specific in location. It is widely used in reference to agriculture and related pollutants. For example, logging operations, production of sediments, agricultural pesticide applications, automobile exhaust pollution, etc.

NOXIOUS WEED (NOXIOUS SPECIES) A plant species that is undesirable because it conflicts, restricts, or otherwise causes problems under the management objectives, not to be confused with species declared noxious by laws concerned with plants that are weedy in cultivated crops and on range.

OBJECTIVE A concise, time-specific statement of measurable planned results that respond to preestablished 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.

OLD GROWTH STAND A stand that is past full maturity and showing decadence. The last stage in forest succession. Stands should be below 6,000 feet, with a minimum of 100 trees per acre. Old growth conditions start at 180 years and contain dead and down material.

OPPORTUNITY A proposal that is considered in developing alternative activities, projects, or programs where an option exists to invest profitably to improve or maintain a present condition.

ORV Off road vehicle.

OUTPUT A good, service, or on-site use that is produced from forest end rangeland resources. *See* FSH 1309.11 for forest and rangeland outputs codes and units measure. Examples: X06-Softwood Sawtimber Production *MBF;* X80-Increased Water Yield - Acre Feet; W01-Primitive Recreation Use RVDs.

OVEKEANGING COVER (% effectiveness) The percent of streambank with shrubs or grasses overhanging the stream channel within 18 inches of the water surface.

PLANNING AREA The area of the National Forest System covered by a Regional guide or forest plan.

PLANNING EORIZON 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.

PLANNING PERIOD One decade. The time interval within the planning horizon that is used to show incremental changes in yields, costs, effects, and benefits.

POLICY A guiding principle upon which is based a specific decision or set of decisions.

PRESCRIBED BURN Intentional application of fire to wildland fuels in either their natural or modified state, under such condition of weather, fuel moisture, soil moisture, etc., to allow the fire to be confined to a predetermined area and at the same time to produce the intensity of heat and rate of spread required to further certain planned objectives of silviculture, wildlife management, grazing, fire-hazard reduction, etc. It seeks to employ fire scientifically so as to realize maximum net benefits with minimum damage and at acceptable cost.

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PRESCRIBED **FIRE** ***See*** Prescribed Burn,

PROGRAM Sets of activities or projects with specific objectives, defined in terms of specific results and responsibilities for accomplishments.

PROGRAM BUDGET A plan that allocates annual funds, work force ceilings, and targets among agency management units.

PROGRAM BUDGET LEVEL A single, comprehensive integrated program responsive to the Chief's direction that specifies a level of production attainable from a given investment of dollars and other resources. Each budget level represents a complete, full, and independent package within the criteria and constraints identified.

PROGRAM ELEMENT An individual Forest Service area of responsibility, which in combination with other elements, comprises the statutory or Executive directed mission of the Forest Service. Specific Forest Service program elements are defined in the Management Information Handbook (FSH 1309.11).

PROGRAM PROPOSALS A multiyear course of action proposed under a given set of assumptions and constraints.

PROJECT An organized effort to achieve an objective identified by location, activities, outputs, effects, and time period and responsibilities for execution.

PROJECT DESIGN The process of developing specific information necessary to describe the location, timing, activities, outputs, effects, accountability, and control of a project.

PROPOSED ACTION In terns of the National Environmental Policy Act, the project, activity, or action that a Federal agency intends to implement or undertake and which is the subject of an environmental assessment.

PUBLIC ISSUE A subject or question of widespread public interest relating to management of the National Forest System.

RANGE ALLOTMENT An area designated for the **use** of a prescribed number and kind of livestock plan of management.

RANGE, PRIMARY AND SECONDARY

Primary **range** - The range that livestock prefer to **use** or will use first under minimum management. Primary range is readily accessible to livestock, has available water, and will **be** grazed until depleted before cattle make significant **use** of secondary range.

Secondary range - The remainder of the suitable range. **It** will be used only lightly by domestic livestock when primary range is properly grazed. **Due** to steeper slopes (over 30 percent), inaccessibility, lack of available water and/or other factors, cattle do not prefer to graze these range areas.

RANGE DETERIORATION A decline in the vegetative potential or condition of a range. Deterioration is measured by range condition and trend.

RANGE CONDITION The character of the vegetative cover and soil under man's use in relation to what it should to be. It has also been defined as the health of the range based on what the range is naturally capable of producing. The purpose in classifying range condition is to measure any deterioration that has taken place, and/or provide a basis for predicting the degree of improvement that is possible. Depending upon the degree of departure from site potential, range condition is divided into five classes: ekcellent (E); good (G); fair (F); poor (P); and very poor (VP). Thus "excellent" condition designates little or no departure from potential, whereas "very poor" designates extreme deterioration of vegetation and/or soils.

RANGE TREND A change in condition. If the change is toward climax or site potential, the range is improving and the trend is up. If the change is away from site potential, the range is deteriorating and the trend is down. Drought or wet cycles can cause rapid change in trend which has little to do with management or grazing. pressure.

RECORD OF DECISION A document separate from, but asociated with, an environmental. impact statement that publicly and officially discloses the responsible official's decision on the proposed action.

RECREATION INFOXMATION MANAGEMENT (RIM) The Forest Service system for recording recreation facility condition and use.

RECREATION OPPORTUNITY GUIDE (BOG) 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 opportunity, recreation setting opportunity, and recreation experience opportunity along a spectrum or continum.

BECREATION SETTINGS

PRIMITIVE RECREATION SETTING--A classification of the recreation opportunity spectrum that characterizes an essentially unmodified natural environment of a size or remoteness that provide significant opportunity for isolation from the sights and sounds of man and a feeling of vastness of scale. Visitors have opportunity to be part of the natural environment, encounter a high degree of challenge, and use a maximum of outdoor skills, but have minimum opportunity for social interaction.

SEMI-PRIMITIVE RECREATION SETTING--A classification of recreation opportunity spectrum that characterizes a predominately 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 onsite controls and restrictions may be present, but are subtle.

ROADED NATURAL RECREATION SETTING--A classification of the recreation opportunity spectrum where timber harvest or other surfaces use practices are evident. Motorized vehicles are permitted on all parts of the road system.

RIJRAL 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.

RECREATION TYPES

DEVELOPED RECREATION--The type of recreation that occurs where modifications (improvements) enhance recreation opportunities and accommodate intensive recreation activities in a defined area.

DISPERSED RECREATION--The type of recreation use related to and in conjunction with roads and trails that requires few, if any, improvements and may occur over a wide area. Activities tend to be day-use oriented and include hunting, fishing, berry picking, off-road vehicle use, hiking, horseback riding, picnicking, camping, viewing scenery, snowmobiling, and many others.

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).

REGENERATION The renewal of a tree crop, whether by natural or artificial means.

REGION An area covered by a Regional Guide.

REGIONAL FORESTER lhe official responsible for administering a single Region of the Forest Service.

REGIONAL GUIDE Document providing broad management direction to the Northern Region's 15 National Forests and 4 National Grasslands and to provide coordination with State and Private Forestry and Research programs.

REGULATED The commercial forest land that is organized for timber production under the principle of sustained yield. The harvest of timber from this land is regulated to achieve multiple long range objectives, such as maintaining setting for recreational activities, rotating forage production areas and wildlife habitat, increasing water production yield, and increasing the growth and utilization of timber for the Nation's supply.

RESEARCE NATURAL AREA (RNA) Designated areas representing as many as possible of the major, natural timber types or other plant communities in unmodified condition. Other forest or range conditions that have special or unique characteristics of scientific or educational interest, such as examples of grass or timber types near the limits of their environmental range, unique bog associations, or unusual combinations of flora may also be set aside. To whatever extent is feasible, animal life should also he present in unmodified

condition. As a general guide, these areas should show evidence of no major disturbance by man, such as timber cutting, for at least the past 50 years. On rare occasions, however, in a valuable plant community that should be preserved, the most suitable area that approached these conditions should be selected. The criterion for management of these areas is for protection against unnatural encroachments. Logging activities and uncontrolled grazing by domestic livestock are not permitted.

RESEARCH SUBCOMMITTEE OF THE INTERAGENCY GRIZZLY BEAR COMMITTEE Subcommittee in charge of review and direction of grizzly bear research efforts in the six grizzly bear ecosystems.

RESPONSIBLE LINE OFFICER For land management planning purposes, the Forest Service employee who has been delegated the authority to carry out a specific planning action.

RIGET-OF-WAY In its strict meaning, it is the right of passage over another man's ground; and in its legal and generally accepted meaning, in reference to a roadway, it is a mere easement in the lands of others, obtained by lawful condemnation for public use or by the purchase. It is unusual to use the tern to apply to an absolute ownership of land to be used for a roadway or other kind of way.

RIPARIAN AREA In loose usage, referring to the land bordering a stream or lake. More specifically:

a. Aquatic ecosystems (water, stream beds, banks)
b. Floodplains
c. Riparian ecosystems (area dominates by riparian vegetation)
d. One hundred feet from edges of all perennial streams, lakes and other water bodies, including a, b, and c above.

ROAD MAINTENANCE LEVELS A formal established set of objectives that describes the conditions necessary to achieve the planned operation or a road.

ROAD MANAGEMENT The continuous process of analyzing, controlling, and regulating its use and maintenance to accomplish National Forest objectives.

ROADS

FOREST DEVELOPMENT **ROAD--A** Forest road under the jurisdiction of the Forest Service.

ARTERIAL ROADS--Provides 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 often determined by a demand for maximum mobility and travel efficiency rather than specific resource management service. It is usually developed and operated for long-term land and resource management purposes and constant service.

COLLECTOR ROADS -- Serves smaller land areas than a Forest arterial road, and is usually connected to a Forest arterial or public highway. Collects traffic from Forest local roads and/or terminal facilities. The location and standard are influenced by both long-term multi-resource service needs, as well as travel efficiency. May be operated for either constant or intermittent service, depending on land use and resource management objectives for the area served by the facility.

LOCAL RCADS--Connects terminal facilities with collector or arterial roads, or public highways. The location and standard are usually controlled by a specific resource activity rather than travel efficiency. Forest local roads may be developed and operated for either long- or short-term service

RPA See Forest and Rangeland Renewable Resources Planning Act.

SALE SCHEDULE The quantity of timber planned for sale by time period, from the area of suitable land covered by a Forest Plan. The first period, usually a decade, of the selected sale schedule provides the allowable sale quantity. Future periods are shown to establish that long-term sustained yield will be achieved and maintained.

SDIMENT

(1) Particles derived from rocks or biological materials that have been transported by a fluid.
(2) Solid material (sludges) suspended in or settled from water.

SEDIMENT YIELD The average quantity of sediment, mass or volume, but usually mass, passing a section in a unit of time. The term may be qualified as, for example, suspended-sediment discharge, or total sediment discharge.

SEDIMENTATION The percent of streambed covered with fine sediment in probable spawning areas.

SENSITIVITY ANALYSIS A determination of the consequences of varying the level of one or several factors while holding other factors constant.

SHELTERWOOD *See* Silvicultural Systems.

SEORT-TERM LOCAL A road developed and operated for a limited period of time that will cease to exist as a transportation facility after the purpose for which it was constructed is completed, and the occupied land is reclaimed and managed for natural resources purposes.

SHRUB USE Low--Less than 50 percent use of current years growth.
Moderate--50 to 70 percent use of current years growth.
High--More than 75 percent use of current years growth.

SILVICULTURAL EXAMINATION The process used to gather the detailed in-place field data needed *to* determine management opportunities and direction for the timber resource within a small subdivision of a forest area, such as a stand.

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.

Even-Aged Management--Applying a combination of actions that result in stands with trees of essentially the same age. Managed even-aged forests are characterized by a distribution of the stands (usually less than five acres) of varying ages (and, therefore, tree sizes) throughout the forested area. The age difference between trees forming the main canopy does not usually exceed 20 percent of the stand's age at rotation. Regeneration in a particular stand is obtained during a short period at or near the time that a stand has reached the desired age or size for regeneration and is harvested. Cutting methods include:

Clearcutting: The removal, in a single cut, of all trees in stands (40 acres or less) in one cutting operation.

Shelterwood Cutting: The removal of all trees in a series of two or more cuts; the first is ordinarily the seed tree cutting and the last is the final cutting.

Seed Tree Cutting: Similar to clearcutting, except that a few of the better trees of the desired species are left scattered over the area to provide seed for regeneration.

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 include:

Individual Tree Selection Cutting: The selection of harvest trees based on individual tree characteristics rather than stand characteristics.

Group Selection Cutting: The removal of small groups--up to three acres--of trees to meet a predetermined goal of site distribution and species in the remaining stand.

SNAGS A standing section of the stem of a tree, at least 6 inches dbh, broken off at a height of 20 or more feet above the ground.

SOIL AND WATER CONSERVATION PEACTICES (swcps) The set of practices in the Forest Plan which, when applied during implementation of a project, ensures that water related beneficial uses are protected and that State water quality standards are met. BMPs 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 bmps are included in the

Forest Plan as Forest-Wide Standards. A third kind is 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 bmps can either supplement or replace the Forest Plan standards for specific projects.

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.

STOCKED, CERTIFIED A regenerated area containing an acceptable number of well established seedlings as determined by a certified silviculturalist.

STREAM ORDER A method of numbering streams as part of a drainage basin network. The smallest unbranched mapped tributary is called first order, the stream receiving the tributary is called second order, and so on.

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.

SUMMER RANGE, BIG GAME A range, usually at higher elevation, used by deer and elk during the summer; a summer range is usually much more extensive than a winter range.

SUMMER RANGE, IMPORTANT Moist sites often found at the heads of drainages, bordering streams, marshy meadows, swales or benches that are preferred by elk during the summer months (June through September), Primarily important because of the high forage production, good nutritional quality, diverse species and high cover values.

SWCP *See* Soil and Water Conservation Practices

TARGETS A clear and concise statement used to express planned results to be reached within a stated time period. Results must be measured in terms of some specific indicators, may include standards, and must be relatable to some criteria for how well they were achieved. Often one or more separate targets are used to make an objective explicit and to achieve its desired state or purpose.

THINNING, COMMERCIAL AND PRECOMMERCIAL Cutting made in an immature crop or stand in order primarily to accelerate the diameter increment (annual growth) of the residual trees but also, by suitable selection, to improve the average form of the trees that remain, without (at least according to classical concepts) permanently breaking the canopy.

Commercial--Any type of thinning producing merchantable material at least to the value of the direct costs of harvesting.

Precommercial--Any type of thinning that takes place in a stand of trees before the size or condition of the material cut or killed makes it of sufficient value to meet the cost of the activity.

THREATENED SPECIES Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range and which has been designated in the Federal Register by the Secretary of Interior as a threatened species.

TIMBER HARVEST See Silvicultural System.

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 planning purposes, the term "timber production" does not include production of fuelwood.

TIMBER STAND IMPROVEMENT All noncommercial intermediate cuttings and other treatments to improve composition, condition, and increment of a timber stand.

TRAILS, MAINLINE A mainline trail is located and constructed for primary access providing unimpeded, convenient travel. It is safe for a wide range of user skill levels in all ROS classes. Annual or more frequent maintenance may be required.

TRAILS, SECONDARY A secondary trail is located and constructed to provide secondary access and dispersion in primitive, semi-primitive nonmotorized, semi-primitive motorized, and roaded natural appearing ROS classes. Users are expected to have the skills required for wildland travel in primitive and semi-primitive settings, but no unusual difficulties are presented. Maintenance may be annual or every second and third year.

TRANSITORY RANGE Land that is suitable for grazing use of a nonenduring or temporary 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.

UNEVEN-AGED MANAGEMENT See Silvicultural System.

UNREGULATED Timber which was not considered (because of allocation or condition of trees) in calculating a base sale schedule or departure. They include salvage of epidemic mortality, volumes of cull material, or green volume from unsuited lands.

UNSUITABLE TIMBERLAND 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 is inconsistent with or not cost efficient in meetng the management requirements and multiple-use objectives specified in the Forest Plan.

VIABLE POPULATION A population which has adequate numbers and dispersion of reproductive individuals to ensure the continued existence of the species population on the planning area.

VISUAL QUALITY OBJECTIVES (VQO) A desired level of excellence based on physical and sociological characteristics of an area. Refers to the degree of acceptable alternation of the characteristic landscape.

Preservation--A VQO that provides for ecological change only.

Retention--A VQO that in general means man's activities are not evident to the casual forest visitor.

Partial Retention--A VQO that in general means man's activities may be evident but must remain subordinate to the characteristic landscape.

Modification--A VQO meaning man's activity may dominate the characteristic landscape, but must, at the same time, use naturally established form, line, color, and texture. It should appear as a natural occurence when viewed in foreground or middleground.

Maximum Modification--A VQO meaning man's activity may dominate the characteristic landscape, but should appear as a natural occurance when viewed as background.

WILDERNESS Lands designated by law as wilderness; no road building or timber harvesting is allowed on such lands; they are intentionally managed to maintain their primitive character.

WILDERNESS ACT OF 1964 Establishes a National Wilderness Preservation System to be composed of Federally owned areas designated by Congress as wilderness areas, and these shall be administered for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness.

WILDFIRE A free-burning fire. Any fire other than a controlled burn or a prescribed burn, occuring on wildland.

WINTER RANGE (BIG GAME) A range, usually at lower elevation, used by migratory deer and elk during the winter months, usually better defined and smaller than summer ranges.

WINTERIZING (ROAD CONSTRUCTION) Preparing a roadbed for winter and subsequent spring runoff, to eliminate or minimize resource damage. Work may include ditching, clearing culverts, installing berms or dips, and restricting motorized vehicles.

WOLF **RECOVERY** PLAN The U.S. Fish and Wildlife Service document that describes the tasks and responsibilities for wolf recovery.

Appendices

A. Resolution of Issues and Concerns
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APPENDIX A

Resolution of Issues and Concerns

Following are the 15 major issues and concerns and an explanation of how the Forest Plan resolves each. A more detailed explanation of the issue resolution process is in Appendix A of the Final Environmental Impact Statement, printed as a separate document from the **Plan.**

Issues and Concerns

1. How much developed recreation should be provided and vhere should it be?

No new campgrounds are scheduled to be built, however, existing campgrounds will continue to be maintained. The expected increased demand for developed camping can be met off Forest, near the major lakes in the Helena area. The Forest will focus on providing more primitive, undeveloped camping opportunities.

2. Where and how can the Forest Service provide opportunities for high quality dispersed recreation activities?

Motorized recreation opportunities are provided by the approximately 1,500 miles of road that are scheduled to remain open yearlong. Nonmotorized recreation opportunities are provided by the Gates of the Mountains and Scapegoat Willderness areas, portions of the Elkhorns Wildlife Management Area, and designated non-motorized recreation areas as follows: Nevada Mountain, Tamas Lakes, Indian Meadows, Silver King-Falls Creek, Mount Helena, and Vigilante-Hanging Valley.

In addition, another 203,900 acres of undeveloped land occur in blocks of 5,000 acres or more. The Forest Service considers 5,000 acre blocks large enough to provide semi-primitive recreation opportunities.

The Forest estimates that there should be ample capacity to meet expected demand for both motorized and nonmotorized recreation use for the next decade.

3. How can the visual quality of the Forest be maintained or improved, especially along utility and transportation corridors?

On the Forest as a whole, the following visual quality objectives apply:

Preservation	144,400 acres
Retention	280,300 acres
Partial Retention	258,200 acres
Modification & Max Modification	292,200 acres

Special attention to visual quality has been given to areas visible from heavy use campgrounds, picnic areas, major waterways, and major highways, U.S. 12 and Montana 200.

4. How much timber harvest, where, what sale sizes and what cutting practices should be used on the Helena Forest?

The Helena Forest will he offering for sale approximately 15 million hoard feet of timber per year. This is down slightly from the 15.8 million board feet average sold annually over the past 10 years. Approximately 251,000 acres of land are considered suitable for timber management. These acres are designated as "T" management areas on the Forest Plan map.

Sales will be both small post and pole offerings and larger sawtimber sales. Harvest techniques will generally be 60 percent clearcut, 39 percent shelterwood, and less than 1 percent selection cuts. Harvest openings will be *40* acres or less with a total yearly harvest of *1,940* acres a year.

5. What cultural practices would enhance wood fiber production and reforestation on the Helena Forest?

Logging methods will be *97* percent tractor skidding and 3 percent cable skidding. Out of the *1,940* acres harvested each year, approximately 600 acres will require tree planting, while in the remaining acreage, natural regeneration should suffice. Intensive management will occur only on the most productive portions of the suitable land base, with 280 acres of precommercial thinning and 130 acres of commercial thinning scheduled per year.

6. How much firewood should be provided and how can this material be made available to the public?

About 22 miles of new road associated with timber sales will be built per year, in the first decade. Whenever practical, firewood generated by the road construction and timber sales will be made available to the public for at least one year before the roads are closed. Logging and slash disposal methods will he modified where feasible to maximize the availability of firewood. A charge firewood permit system will be continued, and designated standing green firewood cutting areas will continue to be offered.

7. How can wildlife habitat be maintained or improved and conflicts with other resources he reduced?

Winter elk potential will be increased about 25 percent above current levels. Summer elk potential will he maintained near or slightly below current levels. This *is* accomplished by retaining sufficient forage on winter range for elk, adopting the Montana Department of Fish, Wildlife and Parks road management guidelines, maintaining adequate security cover on summer and winter range, and following the Montana Cooperative Elk–Logging Study (Appendix C).

Also approximately 301,000 acres of old growth timber will remian on the Forest. Most old growth is in areas not scheduled for timber harvest. If scheduled for harvest, the rotation age would be 240 years. At least five ercent of each major drainage on the Forest would remain in old growth ndition. Catchable fish will decline slightly from current levels because, ven with best management practices applied, there will he some sediment increases associated with new road construction.

8. H w can the Helena National Forest best manage threatened and endangered species habitat?

Essential and occupied grizzly habitat will be managed to meet the Forest's recovery goal, 18 bears. Most of this grizzly habitat is in the Scapegoat Wilderness, where management options are limited. Primary emphasis is on reducing the likelihood of grizzly bear-human encounters.

Forest standards have also been developed to govern how potential habitat for bald eagle, gray wolf, and peregrine falcon would be managed if the species are documented to occur on the Forest. Bald eagles presently winter on the Forest, but no active nest sites have been documented to date.

9. H w much livestock grazing should be provided and what management changes should be made?

Livestock grazing is projected to increase slightly over current levels. The grazing schedules and forage designation between wildlife and livestock were designed to keep the livestock AUMs and winter elk potential at or above current levels. Guidelines have been developed to manage livestock grazing in iparian areas. Approximately 94,000 acres will be managed primarily for grazing, but grazing also will occur at less intensity on other parts of the Forest.

10. How should exploration and development of minerals and energy resources be administered while protecting other resources?

Approximately 830,700 acres on the Forest would remain open to mineral entry. Forest-Wide standards govern oil and gas leasing, seismic exploration, and hardrock mining. Sixty-seven percent of the high potential oil and gas lands have only standard leasing stipulations (see Appendix N), and 64 percent of the high potential hardrock lands have only standard surface protection stipulations. Ten percent of high oil and gas potential land and none of &he high potential hardrock lands are withdrawn from mineral entry, because of wilderness designation. The remainder of the high potential lands are available, but with seasonal or yearlong access restrictions.

11. What travel restrictions are needed and how should they he conveyed to the public?

'otal inventoried road miles on the Forest will increase from the present 1,600 iles to an eventual 2,520 miles. Approximately 1,500 miles will be open yearlong to vehicle use in the first decade.. The remainder would be closed seasonally or yearlong, except to those with permits.

Thus, the average open road density over the next decade is expected to increase slightly from the current 1,400 miles open yearlong. Travel restrictions are displayed on the 1984 Forest Travel Management-Visitor Map, which was based on the Forest Plan direction.

12. How can the Helena National Forest increase its opportunities for cooperative fire management?

The Helena Forest has worked with the Montana Department of State Lands and the Bureau of Land Management to develop an interagency fire dispatch and attack center. The Fire Center will serve all public lands in the greater Helena area. The three agencies will be using a "closest crew concept" -- the crew closest to the wildfire will respond, regardless of administrative boundaries. This should improve the effectiveness of wildfire suppression and reduce costs for all three agencies.

13. What road and trail rights-of-ways are needed across private land and to private land within the Forest?

phasis on right-of-way aquisition will be access timber management and public ecreational access to the Forest boundary. Based on the Forest Plan, 44 tentative right-of-way needs have been identified. A map showing these is available in the Forest planning records. Detailed right-of-way needs will be verified on a case-by-case basis, following site specific transportation system analyses.

14. What roadless areas should be managed for wilderness and how should the areas not recommended for vilderness be managed?

About 427,500 acres of the Helena Forest will remain roadless and undeveloped according to direction in the Forest Plan. Approximately 144,400 acres of this would be in wilderness (includes existing wilderness and the proposed 10,000 acre Big Log addition to the Gates of the Mountains Wilderness, 14,300 acres in Upper Little Blackfoot, and the 8,600 acre Mount Baldy proposed for wilderness). Another 79,200 acres occur in designated non-motorized recreation areas (management areas R-1 and a portion of the Elkhorns).

The balance, 203,900 acres, are in blocks of 5,000 acres or more across the Forest. These lands have a wildlife, grazing, or minimum development management emphasis. Lands with these emphases ordinarily would not have roads constructed in them, except for mineral access. Approximately 70,300 currently roadless acres will be managed for timber productions.

Areas receiving specific non motorized recreation emphasis include:

Nevada Mountain	12,000 acres
Mount Helena	4,600 acres
Trout Creek Canyon/ Banging Valley Trail	3,300 acres
Camas Lake/Boulder Baldy	4,200 acres
Elkhorn -- roadless recreation/wildlife area	44,900 acres
Gates-of-the-Mountains	1,000 acres
silver King/ Indian Meadows	9,200 acres

15. How should the Elkhorns Wildlife Management Area he implemented?

The entire 160,000 acres of Helena and Deerlodge National Forest lands in the Elkhorn Mountains will be managed with wildlife **as** the principal resource value. Other resource activities will be allowed to the extent they are compatible with maintaining **or** enhancing wildlife values. The Helena Forest portion of the Elkhorns will be divided into four management areas as follows:

Managed for elk winter range and livestock grazing.	48,600 acres
Roadless recreation and mountain goat habitat, with secondary emphasis on elk and mule deer summer range.	44,900 acres
Elk calving and summer range.	22,200 acres
Moose range with secondary emphasis on elk mule deer summer range.	13,200 acres

APPENDIX B

Sensitive Viewing Areas [1]

The following areas are heavily used roads or popular recreation areas. The Visual Quality Objectives have been assigned according to directions contained in the National Forest Landscape Management Book, Volume 2 (Ag. Handbook No. 462, April, 1984).

Area	Sensitivity Level	Fore-Ground [2]	Mid-Ground [2]	Back-Ground [2]
Townsend District				
Canyon Ferry Lake	1	R	PR	PR
Deep Creek Campground	1	R	PR	PR
Duck Creek Pass Road	1	R	PR	PR
Edith Lake	1	R	PR	PR
Grace Lake	1	R	PR	PR
Hidden Lake	1	R	PR	PR
Missouri River	1	R	PR	PR
Skidway Campground	1	R	PR	PR
State Road 284 North	1	R	PR	PR
Upper Baldy Lake	1	R	PR	PR
U.S. Highway 12	1	R	PR	PR
U.S. Highway 287	1	R	PR	PR
Helena District				
Canyon Ferry Lake	1	R	PR	PR
Colorado Gulch Road	1	R	PR	PR
Colter Campground	1	R	PR	PR
Cromwell Dixon Campground	1	R	PR	PR
F.S. Road #4000 - (Unionville)	1	R	PR	PR
Meriwether Picnic Area	1	R	PR	PR
Gates of the Mountains Wilderness	1	R	PR	PR
Glenwood Lake	1	R	PR	PR
Hanging Valley Recreation Trail	1	R	PR	PR
Hauser Lake	1	R	PR	PR
Hidden Lake	1	R	PR	PR
Holter Lake	1	R	PR	PR
Interstate 15	1	R	PR	PR
Kading Campground	1	R	PR	PR
Missouri River	1	R	PR	PR
Moose Creek Campground	1	R	PR	PR
Mt. Helena Recreation Trail	1	R	PR	PR
Orofino Gulch	1	R	PR	PR

Area	Sensitivity Level	Fore-Ground 2/	Mid-Ground 2/	Back-Ground 2/
Helena District				
Park Lake and Campground	1	R	PR	PR
Pikes Gulch Campground	1	R	PR	PR
Ten Mile Picnic Area	1	R	PR	PR
Tizer Lakes	1	R	PR	PR
Trout Creek Canyon Trail	1	R	PR	PR
Vigilante Campground	1	R	PR	PR
U.S. Highway 12	1	R	PR	PR
U.S. Highway 287	1	R	PR	PR
Lincoln District				
Aspen Grove Campground	1	R	PR	PR
Big Nelson Campground	1	R	PR	PR
Copper Creek Campground	1	R	PR	PR
District Office Use Area	2	PR	M	M
F.S. Road #330	1	R	PR	PR
Indian Meadows	1	R	PR	PR
Snowbank Lake	1	R	PR	PR
State Highway 200	2	R	PR	M
State Highway 279	2	PR	M	M

1/ This assumes a variety class B for all areas listed. If an area is found to be class A or C then the VQO would be assigned according to direction contained in the National Forest Landscape Management Book.

2/ See National Forest Landscape Management Book for definitions and further explanation.

APPENDIX C

Recommendations from the Final Report of the Hontana Cooperative Elk–Logging Study. 1970-1985 for Coordinating Elk and Timber Management

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.

These recommendations are directed at wild, free ranging, hunted, elk populations and will not necessarily apply to artificial elk ranching, captive herds, or Park situations. The recommendations are intended primarily to influence habitat quality for elk. Converting habitat quality variables to population numbers is not likely to be meaningful because population levels are largely determined by hunting regulations and security during the hunting season.

Managers are cautioned that literal application of these recommendations should not be substituted for detailed, on-site discussion by timber, wildlife, and other resource specialists. There may be situations in which one or more of these recommendations may not he 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.

isplacement of elk was detected as far as 4 miles from the cutting units in large timber sales in which roads were open to non-logging traffic. In one study, herd displacement was to an adjacent drainage and then beyond that drainage when the ridgeline was disturbed. In another investigation, displacement was down a ridgeline for two miles through undisturbed timber and over a point. In both cases, topographic features provided line-of-sight barriers between elk and the logging activity. Conversely, during relatively small timber sales, and particularly when roads were only open to the logging contractor, displacement of elk was generally less than 1/2 mile from the center of logging activities. In all studies, the time required for elk to return to the disturbed habitat was directly related to the distance they were displaced.

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

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

- adjacent drainages or areas into which elk might be expected to move can be ade more secure by road closures.

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

- displacement of elk is significantly reduced where access to the timber sale area is limited and non-logging traffic is controlled. Recreational use of firearms by anyone working within an area closed to the general public should he 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 Discussions:

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. Eome range size and shape vary considerably among individuals and areas, but there is comparatively little variation in the size and shape of home ranges used by the same animal from year to year. This is true for individuals and for herds as well. Data from frequent relocations of many elk over the course of several years has demonstrated annual home ranges varying from about 5 to nearly 200 square miles, but variations in the location of individual animals in consecutive seasons was very low. Individual elk usually use the same winter and summer areas from year to year throughout their lifetime, regardless of disturbance and habitat alternation.

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 poineer and become established in a new area, local elimination may require many years before high elk use is reestablished.

Road Construction and Design

Recommendation:

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

Findings and Discussion:

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

While any road constructed will tend to reduce the security level of existing elk habitat, losses in security can be significantly reduced if initial road designs and locations recognize existing elk behavior, habitat use, and probable response to new roads. A number of considerations can help to minimize the loss of habitat security:

locate permanent and high volume traffic roads in those areas least used by elk.

- design secondary roads, in both construction and layout, to facilitate eventual closure. This is particularly important where roads enter drainage heads.

- maintain frequent dense cover areas adjacent to the road.

- avoid road construction in saddles or low divides frequented by elk in crossing ridges between drainages.

- construct roads to the lowest standard that will meet management objectives. In important elk range this usually implies a low speed, single track construction without large cut slopes, fills, or straight stretches.

High priority for closure:

- dispose of road right-of-way slash so it does not inhibit elk movement.
- locate roads, even temporary roads, to avoid disturbance of moist sites and other areas of concentrated use by elk.
- avoid areas of important elk winter range.

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-fourth 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 he 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 ıitigation 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 potentially negative influence for elk. It is also clear that some roads are more disturbing than others. When choices are possible, the following criteria are suggested as guides for selection of roads to be closed in areas where elk habitat is an important consideration. As a general rule, yearlong closure is preferred to seasonal closure, but some specific advanntages are possible with certain seasonal closures as noted. High priorities for closure includ:

- roads in the heads of drainages, saddles, and low divides
- roads through moist areas and wet meadows
- loop roads that encourage through traffic
- trunk roads with many dead-end side roads under one-half mile in length
- midslope roads in the lower two-thirds of the drainages (especially in fall)

- roads in known calving areas (especially in spring)
- roads in winter range concentration areas (especially in winter)
- roads in areas with poor cover (especially in fall)

Area Closures During the Hunting Season

Recommendation:

Elk management goals and objectives should be clearly defined before imposing travel restrictions.

Findings and Discussion:

Two studies in Montana involved area closures that restricted motor vehicles to a few selected roads during the general hunting season. Several other studies involved radio tracking of one or more elk during the hunting season.

The Judith Road Closure Study indicated that travel restrictions did not change elk distribution or temporal distribution of hunters. Apparently this area closure was not needed to "protect" elk where excape cover was adequate and well distributed (at least two-thirds cover to one-third open). Hunters spent more time walking; consequently they reported seeing and killing more elk under the restrictions than during the unrestricted control seasons. Their unsolicited comments showed a preference for limited access because of the "higher quality" hunt it afforded.

The Ruby Road Closure Study, on the other hand, showed that area closures can cause significant changes in elk distribution and hunter use of an area. This area was characterized by a relatively open, broken forest, with gentle terrain and easy access (one-third cover to two-thirds open). During seasons of restricted vehicle access, elk stayed in the restricted area longer and in greater numbers than during seasons of unrestricted access. This resulted in a more even distribution of hunting pressure, elk sightings, and elk harvest through the season, but did not increase total. amounts. Hunters also spent more time walking during the restriction period. Most hunters interviewed believed that the area closure had increased the quality of their hunt.

Road density and pattern, including off-road travel, play in important role in determining the security level an area provides to elk during the hunting season. An area with sparse cover and low road densities may provide as much security as the same sized area with heavy cover and high road densities. In the Ruby portion of this study, the security level was significantly increased by reducing the number of open roads and eliminating off-road travel. Road density and cover quality are both important when considering adequate elk security during the hunting season.

Managers should be especially cognizant of the following:

I. Restrictions will:

1. increase the time spent walking by hunters, and as a result:
   a. increase the number of animals seen.
   b. possibly increase the kill.

2. generally be accepted as providing a higher quality hunt.

3. make retrieval of downed animals more difficult.

4. require time and money for implementation and enforcement.

II. Where cover is poor (1/3 or less of total area) and road densities are high (more than 0.5 mile of road per square mile), restrictions will likely:

1. reduce harrassment and emigration of elk.

2. reduce the early elk harvest, but increase the uniformity of harvest throughout the season.

III. Where cover is good (at least 2/3 of total area) and open road densities are low (less than 0.5 mile of road per square mile), restrictions will probably have less influence on elk distribution and elk harvest. Where possible, elk will seek security at least a mile from open roads.

Clearcuts

Recommendation:

In order *to* assure that forage produced in clearcuts *is,* in fact, available for use by elk, openings should satisfy the following criteria:

- slash cleanup inside clearcuts should reduce average slash depths below 1.5 feet. Slash in excess of 1.5 feet will reduce elk use by more than 50 percent.

- openings should be small, even though openings up to 100 acres may be acceptable where the adjacent forest edge supplies adequate security.

- in western Montana, some security cover is provided within openings by vegetation growth, and elk use increases in older cuttings. In central Montana, the younger openings are preferred by elk; security should be provided by designing clearcuts so that the best available cover occurs at the uncut edge. Thinning adjacent to clearcuts is not recommended.

- additional security, which will significantly increase elk use of clearcut openings, can be provided with appropriate road closures.

Findings and Discussion:

Graphic analyses of the density of elk pellet groups inside clearcuts in central and western Montana have identified several variables that influence elk use of these openings. The relative importance of different variables *depends* on the environment available to elk and the behavioral patterns associated with their use of that environment.

In central Montana, large natural openings are a normal component of both summer and winter ranges. Elk inhabiting these areas are far more tolerant of large clearcuts than elk in western Montana where large natural openings are unusual. A preference for small openings was indicated, particularly in western Montana, hut 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. However, broadcast burning 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 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, tbe 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.

Recommendation:
Moist summer range sites in combination with other habitat components which are heavily used by elk should be identified and the overall integrity of these habitat components should be maintained.

Findings and Discussion:

Findings from all study areas indicate that elk prefer moist sites during the summer months (June through September). Preferred elk summer range exists when these moist sites are interspersed with other necessary habitat components, including a diversity of timber types and densities, especially near drainage heads. Such sites are often found at the heads of drainages, bordering streams or marshy meadows, or occupying moist swales or benches. These sites are usually found within the Abies lasoicarpa 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 which 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 Erom 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 had summer range cattle allotments. Systematic observation revealed a significant tendency for elk to avoid cattle. In any habitat, the probability of elk use concurrent with cattle use was about one-half the probability of elk use in the absence of cattle.

Road construction and other associated timber harvest activities occasionally "open up" new areas for grazing or alter existing cattle grazing allotments on elk summer ranges. Such activities increase the potential for elk-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 which 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 increased energy intake and increased energy output because of increased travel between suitable bedding and feeding sites.

Winter range conditions vary greatly across Montana. To the east, elk forage on grasslands and seek cover in adjacent timber stands. Snow depths are usually low to moderate, and elk wintering in these areas may venture far from timber cover when undisturbed. When snow does get deep, elk will seek cover. Logging adjacent to grassland winter ranges will normally be detrimental to elk. Forage conditions on these ranges may be improved by range rehabilitation, grazing management, or prescribed fire.

West of the Continental Divide, on important and already well used browse ranges, the probability of improvement by logging is minimal. Where winter range quality is declining or is already poor, especially on shrub ranges, several mangement 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.

APPENDIX D

Guidelines for Management of Grizzly Bear Habitat

The 190,700 acres of grizzly bear habitat on the Helena National Forest are mostly north of Montana Highway 200, and 107,700 acres are outside the Scapegoat Wilderness. (See map at the end of this Appendix).

The Grizzly Bear Recovery Plan (January 29,1982) identified six grizzly bear ecosystems in the the continguous 48 states, and the Helena contributes to the Northern Continental Divide Grizzly Bear Ecosystem. The grizzly habitat has been mapped according to the below management situations, which are adapted from the guidelines developed for the Yellowstone Ecosystem. On the Forest 120,600 acres are in Management Situation I and 70,100 acres are in Management Situation 2. The habitat will be managed to maintain the Forest's grizzly recovery goal of 18 bears.

Management Situation 1

Population and Habitat Conditions -- The area contains grizzly population centers (areas key to the survival of grizzlies where seasonal or yearlong 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 conservations and recovery of) the grizzly.

Management Direction -- Grizzly habitat maintenance and improvement (improvement applies to Forest Service only) and grizzly and 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 that can affect such uses will be disallowed or eliminated. All permits will include a clause providing for cancellation or temporary cessation of activities if such are needed to resolve a grizzly-buman conflict situation. Permittees' full cooperation in meeting grizzly management goals and objectives will be a condition to their receiving and holding permits. Grizzly and 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 reasurable measures have been taken to protect the bear and/or its habitat (including area closures and/or activity curtailments).

Management Situation 2

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. By 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 population and habitat needs. The effects of major Federal activities or programs on the conservation and recovery of the species are not generally predictable.

'anagement Direction -- The grizzly bear is an important but not the primary, ser of the area. Habitat maintenance and improvement, and grizzly and 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 accommodated in other land-use activities, if feasible, but not to the extent of exclusion of other use needs. A feasible accommodation is one that 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 represent demonstrated needs that are so great (necessary to the normal needs or 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.

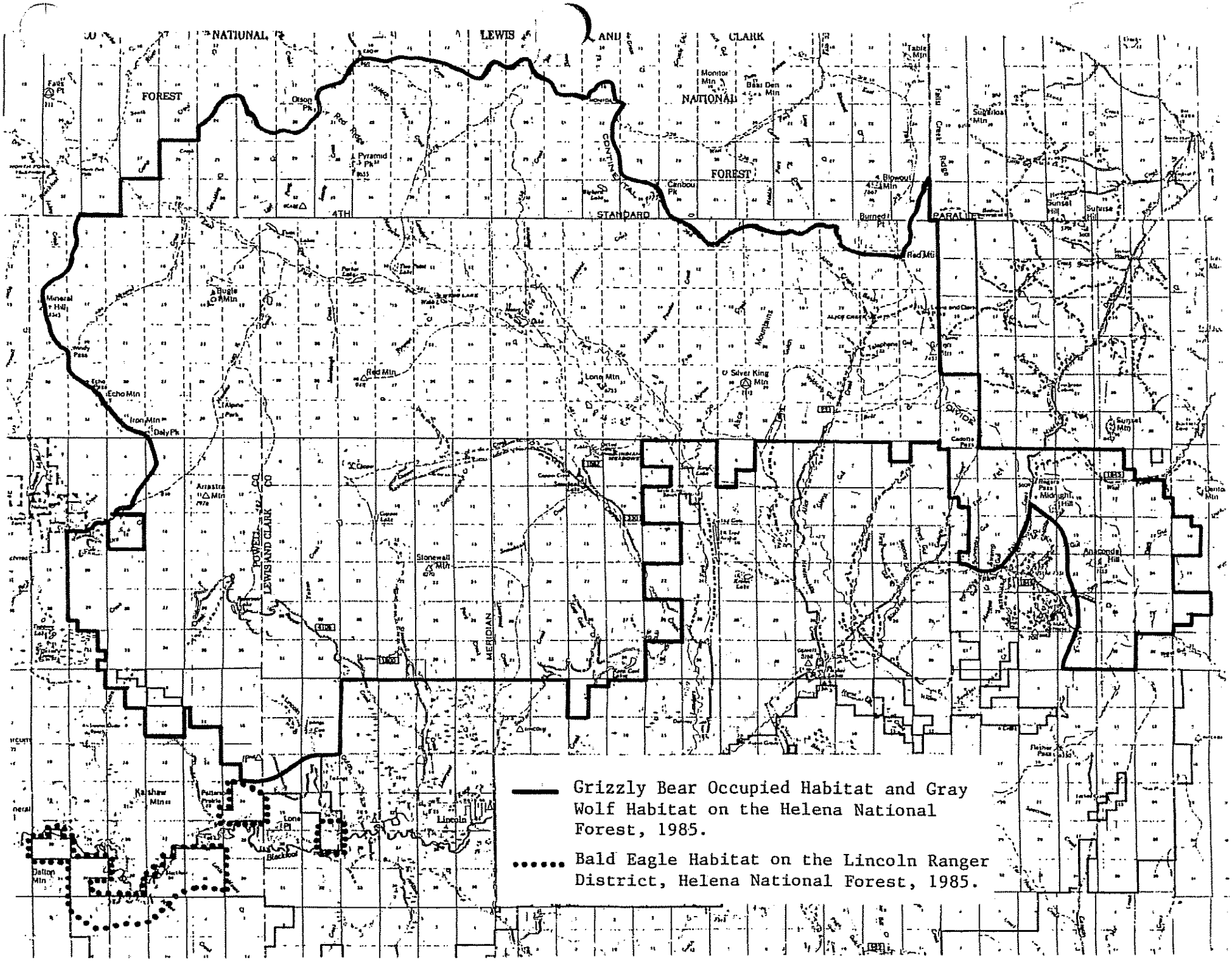
In additional to the above Management Situation descriptions, the Helena National Forest will use the following in managing grizzly habitat.

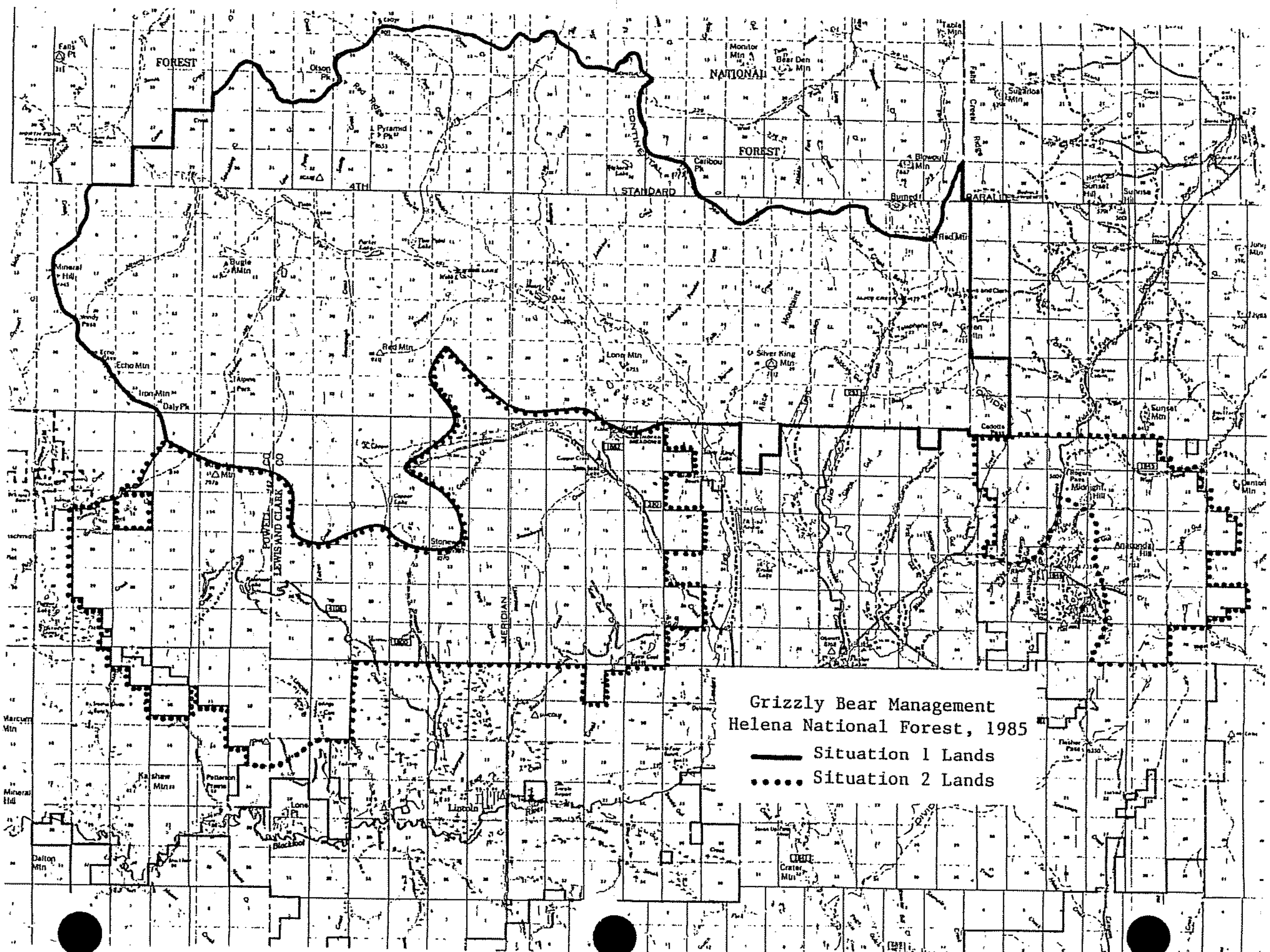
Coordination dates for grizzly habitat use are:

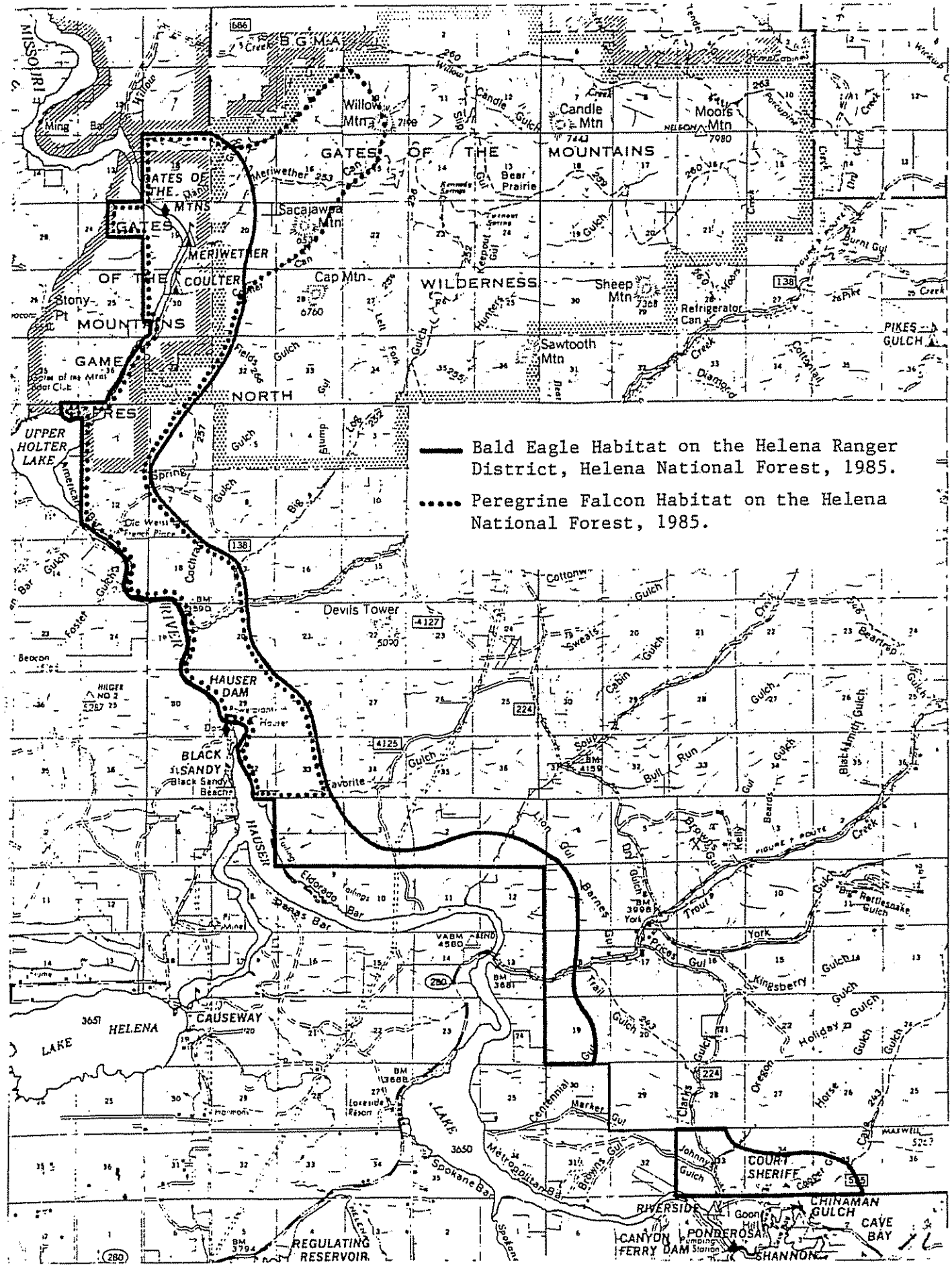
Spring habitat (concentrated use areas) -- April 1 to June 30.
Breeding areas -- May 1 to July 15.
Alpine feeding sites -- July 1 to September 15.
Subalpine fir/Whitebark pine habitats -- August 1 to November 30.
Denning habitat -- October 15 to April 15.

aintain the existing seasonal grizzly habitat use in constituent elements and habitat components.

Coordinate man's activities using the measures listed or discussed in "Rocky Mountain Front Grizzly Bear Monitoring and Investigation" (Aune et. al. 1984) as appropriate to the habitats and grizzly use on the Helena National Forest.


NATIONAL
LEWIS
AND
CLARK
FOREST
NATIONAL
FOREST
Red Mtn.
Long Mtn.
Silver King Mtn.
Echo Mtn.
Iron Mtn.
Daly Pk.
Bugle Mtn.
Stonewall Mtn.
Lincoln
POWELL
LEWIS AND CLARK
MERIDIAN
Grizzly Bear Occupied Habitat and Gray Wolf Habitat on the Helena National Forest, 1985.
Bald Eagle Habitat on the Lincoln Ranger District, Helena National Forest, 1985.


Grizzly Bear Management
Helena National Forest, 1985
Situation 1 Lands
Situation 2 Lands
FOREST
NATIONAL
CONTINENTAL
DIVIDE
4TH
STANDARD
PARALLEL
MERIDIAN
POWELL CO
LEWIS AND CLARK CO
Falls Pt
Olson Pk
Red Ridge
Pyramid Pk
Monitor Mtn
Bear Den Mtn
Caribou Pk
Sugarloaf Mtn
Falls Creek Ridge
Blowout Mtn
Burned Pt
Red Mtn
Mineral Hill
Bugle Mtn
Windy Pass
Echo Mtn
Iron Mtn
Daly Pk
Long Mtn
Silver King Mtn
Mountains
Cadotte Pass
Sunset Hill
Sunrise Hill
Sunset Mtn
Midnight Hill
Anaconda Hill
Rogers Pass
Green Mtn
Dalton Mtn
Kalshaw Mtn
Peterson Prairie
Lone Pt
Blackfoot
Lincoln
Crater Mtn
Flesher Pass
Marcum Mtn
Stonewall


Bald Eagle Habitat on the Helena Ranger District, Helena National Forest, 1985.
Peregrine Falcon Habitat on the Helena National Forest, 1985.
GATES OF THE MOUNTAINS
MERIWETHER
WILDERNESS
NORTH
HAUSER DAM
CAUSEWAY
HELENA
LAKE
REGULATING RESERVOIR
CANYON FERRY DAM
RIVERSIDE
CHINAMAN GULCH
CAVE BAY
SHANNON
Devils Tower
Willow Mtn
Candle Mtn
Moors Mtn
Cap Mtn
Sheep Mtn
Sawtooth Mtn
Sacajawea Mtn
Stony Pt
BLACK SANDY
Eldorado Bar
Barnes Bar
Spokane Bar
Metropolitan Bar
COURT SHERIFF
PONDEROSA

APPENDIX E

Grizzly Bear Uanagement Outside of Recovery Areas

Following are the steps to be taken when identifying grizzly bear habitat that is not currently inventoried.

I Documentation of Habitat Components and Bear Use

A. Maintain records of grizzly bear Observations made by FS and other personnel. Such information should be solicited from sister agencies.

B. When collecting wildlife field data in areas known, or suspected, to be occupied by grizzly bears, collect grizzly bear habitat information.

C. Document identified grizzly bear use areas (dens, digs, etc.) or sign (scats, tracks, scratch trees, etc.).

D. Document Biological Activity Centers (BAC). BACs are verified grizzly bear observations over the last 10 years (6 year out of 10). Observations must include females with cubs or yearlings at least 5 of the 10 years.

II. Protect Currently (within the last three years) Used Habitat Components

A. Maintain the physical nature of the habitat component to allow continued use by the bear.

B. To the extent that other resource outputs identified in the Proposed Forest Plan are not significantly impacted, control increased human access to avoid disturbance levels that would preclude bear use of the habitat components during the season of expected grizzly bear use.

III. Determine If Management Direction for Area Should Emphasize Bears

A. If the area is not a BAC, grizzly bear management will not be emphasized.

1. Implement those management actions and protective measures that will allow continued grizzly bear use without decreasing outputs of other resources identified in the Proposed Forest Plan.

B. If the area is a BAC, informally consult with the U.S. Fish and Wildlife Service to determine potential significance to grizzly bear recovery.

C. If the area is determined to be significant to the recovery of the grizzly bear:

1. Stratify the area using the guidelines in Appendix D.

2. Evaluate potential effects on resource outputs identified in the Plan.

a) If applying the Forest-Wide Standards for grizzly bears will not affect Proposed Forest Plan outputs, implement the Standards.

b) If applying the Standards will affect Proposed Forest Plan outputs, see implementation chapter.

APPENDIX F

Seeding Guidelines

These seeding guidelines are designed to provide seed mixtures of natural and xotic grasses and shrubs for use on disturbed areas, usually resulting from management activities. Seeding mixtures were designed around habitat types, soil types, elevation, and parent material. Initial recommendations are based on ease of establishment, availability, and cost. The grass alternatives may supplement or be substituted for the original recommendations. The other alternatives may supplement the mixture to meet other objectives, such a wildlife or visual quality. The seeding tables are on pages F-4 through F-8. The fertilizer guide is on page F-10.

Guide to Seeding Tables

Hab. #	Habitat Type	Seeding Table(s)
040	Pinus flexilis/Agropyron spicatum	5,8
050	Pinus flexilis/Festuca idahoensis	5,8
051	Festuca idahoensis phase	5,8
052	Festuca scabrella phase	1,8
070	Pinus flexilis/Juniperus communis	5,8
130	Pinus ponderosa/Agropyron spicatum	6,8
140	Pinus ponderosa/Festuca idahoensis	6,8
14L	Festuca idahoensis phase	6,8
142	Festuca scabrella phase	1,8
210	Pseudotsuga menziesii/Agropyron spicatum	6,8
220	Pseudotsuga menziesii/Festuca idahoensis	6,8
230	Pseudotsuga menziesii/Festuca scabrella	1,8
250	Pseudotsuga menziesii/Vaccinium caespitosa	2,8
260	Pseudotsuga menziesii/Physocarpus malvaceus	2,3,8
261	Physocarpus malvaceus phase	2,3,8
262	Calamagrostis rubescena phase	2,3,8
280	Pseudotsuga menziesii/Vaccinium globulare	2,3,8
281	Vaccinium globulare phase	2,3,8
282	Arctostaphylos uva-ursi	2,8
283	Xerophyllum tenax phase	2,3,8
290	Pseudotsuga menziesii/Linneae borealis	2,3,8
291	Symphoricarpos albus phase	2,3,8
292	Calamagrostis rubescens phase	2,3,8
293	Vaccinium globulare phase	2,3,8
310	Pseudotsuga menziesii/Symphoricarpos albus	2,3,8
311	Agropyron spicatum phase	6,8
312	Calamagrostis rubescens phase	2,3,8
313	Symphoricarpos albus phase	2,3,8
320	Pseudotsuga menziesii/Calamagostis rubescens	2,3,8
321	Agropyron spicatum phase	6,8
322	Arctostaphylos uva-ursi phase	2,3,8
323	Calamagrostis rubescens phase	2,3,8
324	Pinus ponderosa phase	6,8
330	Pseudotsuga menziesii/Carex geyeri	6,8
340	Pseudotsuga menziesii/Spirea betulifolia	6,8

Hab. #	Habitat Type	Seeding Table(s)
350	Pseudotsuga menziesii/Arctostaphylos uva-ursi	6,8
360	Pseudotsuga menziesii/Juniperus communis	6,8
70	Pseudotsuga menziesii/Arnica cordifolia	6,8
+10	Picea/Equisetum	7
440	Picea/Galium triflorum	2,3,7,8
450	Picea/Vaccinium caespitosum	2,3,8
470	Picea/Linnaea borealis	2,3,8
480	Picea/Smilacina stellata	2,3,8
620	Abies lasiocarpa/Clintinia uniflora	2,3,8
621	Clintonia uniflora phase	2,8
622	Aralia nudicaulis phase	2,8
623	Vaccinium caespitosa phase	2,8
624	Xerophyllum tenax phase	2,8
625	Menziesia ferruginea phase	2,3,8
630	Abies lasiocarpa/Galium triflorum	2,3,8
640	Abies lasiocarpa/vaccinium caespitosa	2,3,8
650	Abies lasiocarpa/Calamagrostis canadensis	2,3,8
651	Calamagrostis canadensis phase	2,3,8
653	Galium triflorum phase	2,3,8
654	Vaccinium caespitosa phase	2,3,8
660	Abies lasiocarpa/Linnaea borealis	2,3,8
661	Linnaea borealis phase	2,3,8
662	Xerophyllum tenax phase	2,3,8
663	Vaccinium scoparium phase	2,3,8
670	Abies lasiocarpa/Menziesia ferruginea	2,8
690	Abies lasiocarpa/Xerophyllun tenax	2,3,8
691	Vaccinium globulare phase	2,3,8
12	Vaccinium scoparium phase	2,3,8
10	Abies lasiocarpa/Vaccinium globulare	2,3,8
130	Abies lasiocarpa/Vaccinium scoparium	2,3,8
731	Calamagrostis rubescens phase	2,3,8
732	Vaccinium scoparium phase	2,3,8
733	Thalictrum occidentale phase	2,3,8
740	Abies lasiocarpa/Alnus sinuata	2,3,8
750	Abies lasiocarpa/Calamagrostis rubescens	2,3,8
770	Abies lasiocarpa/Clematis pseudoalpina	4
780	Abies lasiocarpa/Arnica cordifolia	4 (occasionally 3)
790	Abies lasiocarpa/Cares geyeri	3,4
791	Carex geyeri phase	3,4
792	Pseudotsuga menziesii phase	3
820	Abies lasiocarpa-Pinus albicaulis/ Vaccinium scoparium	4
830	Abies lasiocarpa/Luzula hitchcockii	4
831	Vaccinium scoparium phase	4
832	Menziesia ferruginea phase	4
850	Pinus albicaulis-Abies lasiocarpa	4
870	Pinus albicaulis hts.	4
920	Pinus contorta/Vaccinium caespitosa	2,8
930	Pinus contorta/Linnaea borealis	2,3,8
940	Pinus contorta/Vaccinium scoparium	2,3,8
950	Pinus contorta/Calamagrostis rubescens	2,3,8

The following grass habitat types do not have assigned habitat numbers.

Habitat Type	Seeding Table(s)
Stipa comata/Bouteloua gracilis	5
Agropyron spicatum/Bouteloua gracilis	5
Agropyron spicatum/Agropyron smithii	6
Agropyron spicatum/Poa sanbergii	6
Festuca scabrella/Agropyron spicatum	1,8
Festuca scabrella/Festuca idahoensis	1,8
Festuca idahoensis/Agropyron smithii	6,8
Festuca idahoensis/Agropyron spicatum	6,8
Festuca idahoensis/Carex filifolia	6,8
Festuca idahoensis/Deschampsia caespitosa	4,8
Festuca idahoensis/Agropyron caninum	1,4,8
Deschampsia caespitosa/Carex sp.	4
Artemesia tridentata/Agropyron spicatum	6,8
Artemesia tridentata/Festuca scabrella	1,8
Artemesia tridentata/Festuca idahoensis	6,8
Potentilla fruticosa/Festuca scabrella	1,8
Potentilla fruitcosa/Festuca idahoensis	5,8
Purshia tridentata/Agropyron spicatum	5,8
Purshia tridentata/Festuca scabrella	1,8
Purshia tridentata/Festuca idahoensis	5,8
Cercocarpus ledifolius/Agropyron spicatum	5,8
Rhus trilobata/Agropyron spicatum	5,8
Rhus trilobata/Festuca idahoensis	5,8
Riparian/ shrub	7
Deciduous/subirrigated	7
Alpine meadows	4

TABLE I

Dry Habitat Types **Where Bough** Fescue **Is** Present

Species Name	**Common** Name	Seeds/Lb.	**Lbs.**/Acre
Agropyron trachycaulum	slender wheatgrass	135,000	6
Poa ampla (Sherman)	big bluegrass	885,000	0.5
Bromus marginatus	mountain hrome	90,000	3
Agropyron spicatum	bluebunch wheatgrass	125,000	3
			12.5

Alternatives

A. Grasses

Festuca scabrella	rough fescue	200,000	2
Elymus cinerus	basin wildrye	130,000	2
Stipa viridula (clay sites)	green needle grass	181,000	2
Agropyron smithii	western wheatgrass	110,000	2
Agropyron dasystachyum	thickspike wheatgrass	154,000	2
Sitanion hystrix	bottlebrush squirreltail	192,000	1
Koeleria cristata	prairie junegrass	2,315,400	0.5
Agropyron inerme	heardless hluebunch wheatgrass	117,000	2

- Other Alternatives

Rhus trilobata	sumac	20,300	trace
Prunus virginiana	chokecherry	4,800	trace
Purshia tridentata	hitterbrush	15,000	alkaline trace
Amelanchier alnifolia	serviceberry	45,000	alkaline trace
Symphoricarpos albus	snowberry	76,000	trace
Balsamorhiza sagitta	arrowleaf balsamroot	55,000	trace
Geranium viscosissimum	wild geranium	52,200	trace
Lupinus sericeus	silky lupine	12,900	trace
Balsamorhiza saggitta	arrowleaf balsamroot	55,000	trace
Achillea millefolium	yarrow	2,770,000	trace
Cercocarpus ledifolius	mountain mahogany	51,900	trace
Linum lewisii	blue flax	293,000	trace

TABLE 2

Mesic Upland Sites **Usually Below** 7,000 feet **or Where Habitat Type** Occurs

Species Name	Common Name	Seeds/Lb.	**Lbs.**/Acre
Agropyron trachycaulum	slender wheatgrass	*159,000*	*2*
Stipa viridula	green needle grass	*181,000*	*3*
Bromus marginatus (Bromar)	mountain hrome	*90,000*	*3*
Agropyron dasystachyum	thickspike wheatgrass	*154,000*	**2**
Poa compressa	Canada bluegrass	*2,500,000*	0.5
			10.5
Alternatives			
A. Grasses			
Poa ampla	big bluegrass	*882,000*	*0.5*
Festuca ovina var. duriuscula	sheep fescue	*565,000*	3
Agrostis alba	redtop	*4,900,000*	*0.5*
Elymus cinereus	basin wildrye	**130,000**	1.0
Stipa viridula	green needlegrass	*181,000*	*3*
B. Other Alternatives			
Achillea millefolium	yarrow	*2,770,000*	trace
upinus sericeus	silky lupine	*12,900*	trace
ledysarum boreale	northern sweetvetch	*33,600*	trace
Acer glabrum	Rocky Mountain maple	*13,400*	trace
Amelanchier alnifolia	serviceberry	*45,000*	trace
Ceanothus velutinus	snowbrush ceanothus	*94,000*	trace
Symphoricarpos albus	snowberry	*76,000*	trace

TABLE 3

Mesic Upland Sites Usually Above 7,000 Feet or Where Habitat Type Occurs

Species Name	Common Name	Seeds/Lb.	Lbs./Acre
Bromus marginatus	mountain brome	90,000	3
Agrorpyron trachycaulum	slender wheatgrass	159,000	3.5
Agrostis alba	redtop	4,900,000	0.5
Poa compressa	Canada bluegrass	2,500,000	0.5
			7.5

Alternatives

A. Grasses

Festuca ovina var. duriuscula	hard fescue	550,000	3

B. Other Alternatives

Acer glabrum	Rocky Mountain maple	23,400	trace
Amelanclier alnifolia	serviceberry	45,000	trace
Ceanothus velutinus	ceanotbus	94,000	trace

TABLE 4

Cold, Alpine, and Subalpine Types. Includes Timbered and Nontimbered Types.

Species Name	Common Name	Seeds/Lb.	Lbs./Acre
Agropyron trachycaulum	slender wbeatgrass	135,000	2
Deschampsia ceaspitosa	tufted hairgrass	2,500,000	1
Phleum alpinum	alpine timothy	1,400,000	2
Poa alpinum	alpine bluegrass	1,400,000	2
Trisetum spicatum	spike trisetum	2,500,000	1
			8

Alternatives

A. Grasses

Agrostis alba	redtop	4,900,000	1
Bromus marginatus	mountain brome	90,000	3
Festuca ovina	bard fescue	680,000	1

TABLE 5

Dry Warm Sites. Usually Grasslands or Limber **Pine** Sites

Species Name	**Common** Name	Seeds/Lb.	Lbs./Acre
Bouteloua gracilis	blue gramma	825,000	2
Agropyron spicatum	bluebunch wheatgrass	140,000	3
Agropyron dasystachyum or	thickspike wheatgrass	175,000	
Agropyron smithii	western wheatgrass	110,000	**3**
Sitanion hystrix	bottlebrush squirreltail	192,000	1
			9

Alternatives

A. Grasses

Stipa comata	needle and thread	115,000	2
Agropyron destertorum	standard crested wheatgrass	175,000	2
Koeleria cristata	prairie junegrass	2,315,400	1
Oryzopsis hymenoides	Indian ricegrass	141,000	2
Sitanion hystrix	bottlebrush squirreltail	192,000	0.5

B. Other Alternatives

Artemesia frigida	fringed sagewort	4,536,000	0.25
Amelanchier alnifolia	serviceberry	45,000	trace
Purshia tridentata (well drained sites)	bitterbrush	15,000	trace
Eriogonum umbellatum	sulfur buckwheat	209,000	trace
Ratibida columnaris	prairie coneflower	1,230,000	trace
Rosa woodsii	woods rose	45,300	trace
Balsamorhiza sagitta	arrowleaf balsamroot	55,000	trace

TABLE 6

Dry Sites Usually Less Than 5,000 Feet or Where Habitat Types Occur. Sites Do lot Contain Fescue.

Species	Common Name	Seeds/Lb.	Lbs./Acre
Agropyron spicatum (Whitmar)	bluebunch wheatgrass	125,000	6
Agropyron smithii (Rosanna)	western wheatgrass	115,000	4
Poa canbyi (Canbar)	Canby bluegrass	2,500,000	0.5
Poa ampla (Sherman)	big bluegrass	885,000	0.5
			11.0

Alternatives

A. Grasses

Sitanion hystrix	bottlebrush squirreltail	192,000	2
Stipa comata	needle and thread	115,000	2
Agropyron dasystachyum	thickspike wheatgrass	154,000	3
Bouteloua gracilis	blue grama	825,000	2
Agropyron inerme	beardless bluebunch wheatgrass	117,000	2
Koeleria cristata	prairie junegrass	2,315,400	trace

B. Other Alternatives

Rosa woodsii	woods rose	43,500	trace
Purshia tridentata	bitterbrrish	15,000	trace
Achillea millefolium	yarrow	2,770,000	trace
Artemesia frigida	fringed sagewort	4,536,000	trace
Eriogonum umbelltum	sulfur buckwheat	209,000	trace
Cercocarpos ledifolius	mountain mahogany	51,900	trace
Artemesia frigida	fringed sagewort	4,536,000	trace
Baileya multiradiata	desert marigold	1,060,000	trace
Ratibida columnaris	prairie coneflower	1,230,000	trace

TABLE 7

Riparian Sites Grass and **Shrub** Aspect

Species Name	Common Name	Seeds/Lb.	Lbs./Acre
Panicum virgatum	Switchgrass	389,000	2
Agropyron riparium	Streambank wheatgrass	156,000	**3**
Elymus cinereus	basin wildrye	130,000	**3**
Sporobolus airoides	alkalai sacton	1,758,000	***0.5***
Poa compressa	Canada bluegrass	2,500,000	0.5
			9.0
Alternatives			
Salix (sp.)	willows		seedlings
Prunus virginiana	chokecherry	*4,800*	trace
Amelancheir alnifolia	serviceberry	***43,000***	trace
Populus tremuloides	aspen		seedlings or trace
Phalaris arundinacea	reed canary grass	533,000	2
Cornus stolonifera	red-osier dogwood	173,000	trace
Populus sp.	red cottonwort		seedlings or trace

TABLE 8

All Sites Have Granite Parent Material. Species Listed are Adapted for Dry, Marsh Sites. Alternative Species with an * are for More Mesic Sites.

Species Name	Common Name	Seeds/Lbs.	Lbs./Acre
Agropyron dasystachyum	thickspike wheatgrass	154,000	3
Onobrychis viciaefolia	sainfoin	30,000	1
Agropyron sibericum	Siberian wheatgrass	170,000	3
Poa compressa	Canada bluegrass	2,500,000	0.5
Sitanion hystrix	bottlebrush squirreltail	192,000	1
			8.5

Alternatives

A. Grasses

Agropyron riparium*	steambank wheatgrass	156,000	2
Agropyron desertorum	standard crested wheatgrass	175,000	3
Stipa comata	needle and thread	115,000	2
Agropyron trachycaulum*	slender wheatgrass	159,000	I
Oryzopsis hymenoides	Indian ricegrass	141,000	2
Secale cereal	cereal rye	18,000	20
Melilotus sp.	sweet clover	260,000	1
Koeleria cristata	prairie junegrass	2,315,400	0.5

Other Alternatives

Amelanchier alnifolia	serviceberry	45,000	trace
Ceanothus velutinus	ceanothus	94,000	trace
Rosa woodsi	woods rose	45,300	trace

FERTILIZER GUIDE

Soil fertilization is an integral art of seeding. Soil chemistry data from across the Forest shows phosphorous and potassium are uniformly low to very low. Therefore, one fertilizer recommendation applies Forest-Wide.

A blend of 220 lbs./ac. of ammonium phosphate-sulfate (16-20-0-14SS) and 65 lbs./ac. of muriate of potash (0-0-60) broadcasted on disturbed sites.

APPENDIX G

Land Classification Summary

Classification		Thousand Acres
1.	Non-Forest land (includes water)	106.6
2.	Forest land	868.5
3.	Forest land withdrawn from timber production	102.6
4.	Forest land not capable of producing crops of industrial wood	211.9
5.	Forest land physically unsuitable: - irreversible damage likely to occur - not restockable within 50 years	 -- --
6.	Forest land - inadequate information 1/	--
7.	Tentatively suitable forest land (item 2 minus items 3, 4, 5, and 6)	554.03
8.	Forest land not appropriate for timber production 2/ (display acres by management emphasis) Other Resources: wildlife - 114.3; dispersed recreation - 38.9; wilderness - 19.7 Not Cost Efficient: minimum level - 128.3	302.4
9.	Unsuitable forest land (item 3, 4, 5, 6, and 8)	616.9
10.	Total suitable forest land (item 2 minus item 9)	251.6
11.	Total national forest land (items 1 and 2)	975.1

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: (a) assignment to other resource uses to meet Forest Plan objectives; (b) management requirements; and (c) not being cost efficient in meeting Forest Plan objectives over the planning horizon.

APPENDIX H

Silvicultural Practices by Habitat Types

Appendix H is compiled from Forest Habitat Types of Montana (USDA-Forest Service, GTR INT-34, 1977) and professional knowledge of timber sites on the Helena National Forest. The silvicultural options, site preparation guide, and stocking levels are designed to ensure regeneration within five years of final harvest.

FORPLAN H.T. Group	Eastside H.T. Group	INHERENT HABITAT TYPE WITHIN EACH HABITAT GROUP	SILVICULTURAL OPTIONS 1/ PP	DF	LPP	S/AF	AVERAGE ROTATION AGE	AVERAGE CMAI	Timber Mgmt Suitab. 3/	SITE PREP 4/	Regen. Methods 5/	MIN STOCKING GUIDELINES TREES/ ACRES	Thinning Age	GENERAL COMMENTS
1	1	PF SERIES, SCREE	-	-	-	-	-	-	VL	-	-	-	-	ALWAYS UNPRODUCTIVE (< 20 CF/ACRE/YEAR).
	2	PF SERIES DF/Agsp; Feid; Fesc DF/Syal-Agsp; Caru Agsp DF/Cage on Lincoln	(S) 2/ (SW)	(S) (SW)	-	-	150 if productive	-	VL-L	-	-	-	-	USUALLY UNPRODUCTIVE. IF PPDDUCIIVE TREAT SIMILARLY I D GROUP 4.
2	2	PP SERIES DF/Agsp; Feid; Fesc DF/Syal-Agsp; Caru Agsp DF/Cage on Lincoln	(S) 2/	(S)	-	-	150 if productive	120	VL-L	HDH	H	150	20	USUALLY UNPRODUCTIVE. IF PRODUCTIVE TREAT SIMILARLY TO GROUP 4.
	4	DF/Caru; Cage; Juco DF/Arco; LPP/Caru	(S) (SW)	S GS SW	C	-	120-150	120	L-M	HDH	H	150	20	SW RECOMMENDED. FILL IN PLANTING MAY BE REQUIRED DUE TO WESTERN SPRUCE BUDWORM.
	6	DF/Spbe; DF/Aruv (minor)	S GS SW	S GS SW	-	-	150	120	L	HDH	H	200	20	LOW TIMBER VALUE MINOR-LUMP GROUP 4.
	7	DF/Phma; Syal-Syal; Syal-Caru	(SW)	GS SW	C	-	120-150	120	L-M	HDH	H	200	20	SW RECOMMENDED. FILL IN PLANTING MAY BE REQUIRED DUE TO WESTERN SPRUCE BUDWORM.
	13	AF/Caru; Cage; Arco (minor)	-	S SW	C	S C	120-150	120	M	HDH	H	200	20	OFTEN HAS GOOD ADVANCED REGENERATION. MINOR-LUMP W/GROUP 4.
	14	AF/Clps; S/Sest (minor)	-	S SW	-	S SW	150	120	L	HDH	H	200	20	LOW TIMBER VALUE. MINOR-LUMP W/GROUP 4.
3	8	DF/Vaca; Libo; S/Vaca; Libo; Smst; AF/Vaca; Libo	-	SW C	C C	(S) C	100-125	110	L-M	DB	A	200	20	CLEARCUTS & NATURAL REGENERATION USUALLY SUCCESSFUL. PLANTING USUALLY SUCCESSFUL BUT NOT NECESSARY.
	9	DF/Vagl; AF/Xete; Vagl	-	SW C	C C	(S) C	100-125	110	L-M	DB	A	200	20	" "
	10	AF/Vasc	-	(SW) C	C C	S C	100-125	110	L-M	DB	A	200	20	" "
	12	AF/Mefe; Alsi	-	C SW	C	S C	100-125	110	M	DB	A	200	20	REQUIRES HEAVY SCARIFICATION TO REDUCE COMPETITION. POSSIBLE TO INTRODUCE W. LARCH AS SERIAL SPECIES.
4	11	AF/Clun; Gatr; Caca; S/Clun; Gatr; Eqar	-	S SW	C	S C	100-125	100	M-H	DBS	A	200	15	HIGH WATER TABLES LIMIT ROADING. CABLE SYSTEMS FROM ADJACENT HIGH GROUND. SELECTION IF POSSIBLE.
	15	AF/Luhi; AF-WBP/Vasc	-	-	-	-	-	-	VL-L	-	-	-	-	HIGH ZONE-NOT REGULATED.
6	15	AF/Luhi; AF-WBP/Vasc	-	-	-	-	-	-	VL-L	-	-	-	-	HIGH ZONE-NOT REGULATED.
	16	WBP; WBP-AF; AL-AF	-	-	-	-	-	-	VL	-	-	-	-	ALWAYS UNPRODUCTIVE. WIND TIMBER.
7	18	Nonforest	-	-	-	-	-	-	VL	-	-	-	-	GENERALLY LESS THAN 15% FOREST CANOPY COVERAGE.

1/ S - Selection
GS - Group Selection
SW - Shelterwood
C - Clearcut

2/ ( ) - Indicates species found in only part the HT group.

(minor) - only minor occurance on the Forest.

3/ VL - Very Low
L - Low
M - Moderate
H - High

4/ HDH - Hand & Dozer scarification. Herbicide for additional prep.
DB - Dozer Scarification Broadcast Burn
DBS - Dozer Scarification Broadcast Burn, Large Scalps

5/ N - Natural, some artificial, some animal control.
A - Artifical on best sites, natural within 5 years.

6/ GB - Grizzly Bear
OG - Old Growth
ES - Elk Summer
EW - Elk Winter
F - Fisheries

APPENDIX I
Forest Plan
Timber Productivity Classification

Potential Growth (cubic feet/acre/year)	Suitable Lands[1] (thousand acres)	Unsuitable Lands[2] (thousand acres)
Less than 20	--	211.8
20-49	188.7	303.8
50-84	62.9	101.3
85-119	--	--
120-164	--	--
165-224	--	--
225+	--	--

1 Based on the potential biological growth of natural stands, with no consideration given to stocking control or other intensive management practices.

2 Productivity for lands, such as wilderness, where data are not available has been estimated.

APPENDIX K

Present and Future Forest Conditions

	Unit of Measure	Suitable Land	Unsuitable Land
Present forest:			
Growing stock	MMCF	488.6	203.8
	MMBF	1,514.7	505.6
Live cull	MMCF	94.76	6.62
	MMBF	251.11	17.57
Salvable dead	MMCF	.64	.09
	MMBF	1.66	.2
Annual net growth	MMCF	-4.2	1.93
	MMBF	-13.0	5.0
Annual mortality	MMCF	2.13	.5
	MMBF	5.2	1.3
Future forest:			
Growing stock	MMCF	436.7	
Annual net growth	MMCF	8.92	
Rotation age	Years	90 [1] to 110	

Age class distribution acres (suitable lands)	Age Class	Present Forest	Future Forest
	0-39	26.900	72,000
	40-89	35,800	115,100
	90-119	61,600	47,300
	120-149	127,300[4]	-------
	150-199	-------	2,200
	200c	-------	14,900

1 Average rotation age for regenerated stands on lands with timber emphasis by major forest types.

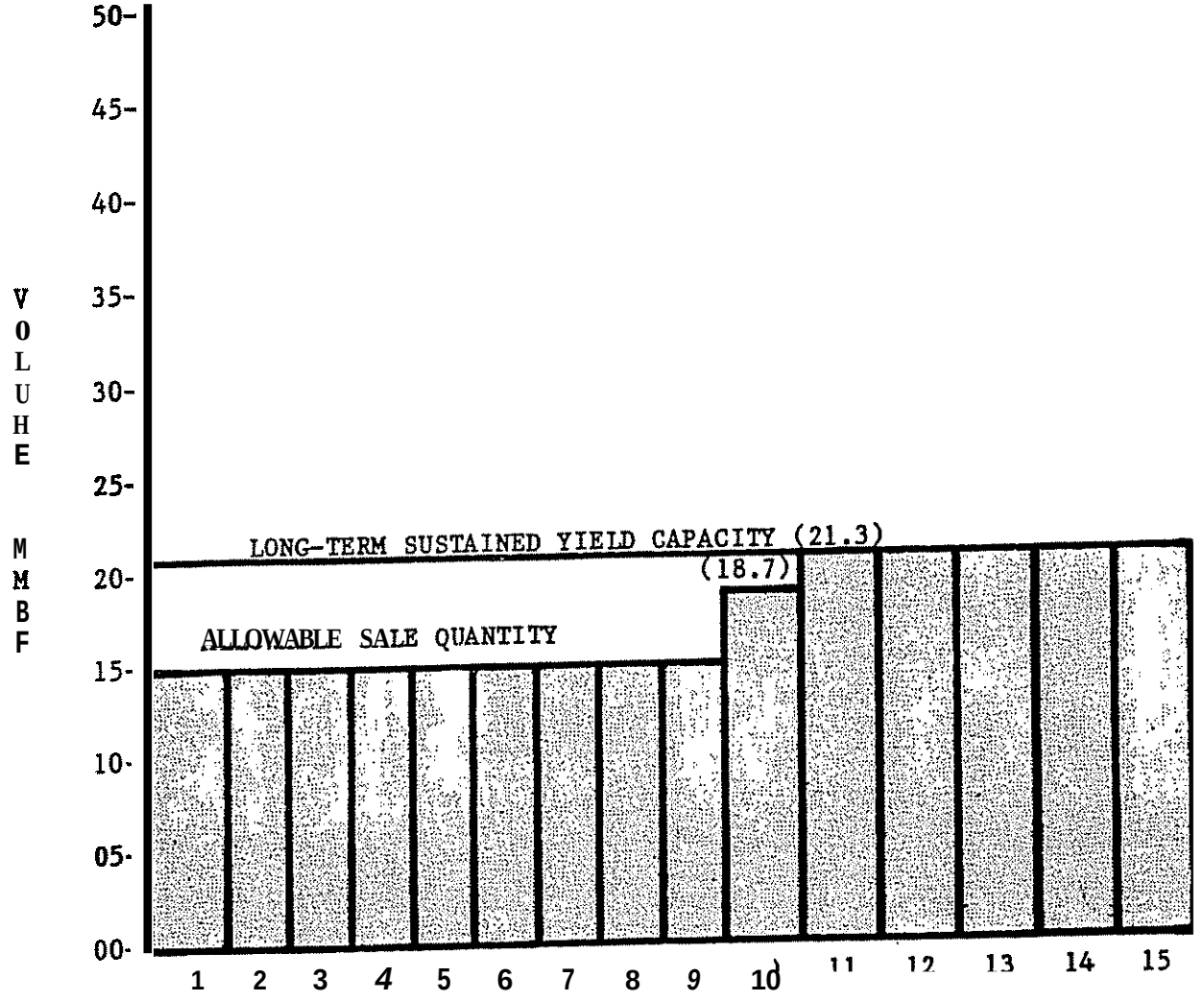
2 Does not take into account acres of harvest for period one.

3 Numbers are based on previous inventory statistics and are only an estimate of what current FORPLAN outputs might be.

4 Due to model size limitations this age class includes ages 120 years and greater.

APPENDIX L

Display of Long-Term Sustained Yield and Allowable Sale Quantity



ALLOWABLE SALE QUANTITY AND SUSTAINED YIELD
(millions of board feet)

Appendix M

VEGETATION MANAGEMANT PRACTICES

A SILVICULTURAL PRACTICES

A silvicultural examination and prescription will be completed for all timber lands where vegetative management practices occur. All silvicultural prescriptions will be prepared and/or reviewed and approved by a certified silviculturist. The decision for vegetative management practices (silvicultural systems) is based upon on-the-ground analysis by certified silviculturists using the guidance in this appendix and through thorough review of pertinent scientific and technical literature and practical experience. Silvicultural prescriptions consider site specific factors such as physical site. soils, climate, habitat type, and current vegetative composition and conditions in order to set detailed guidance for vegetative management projects.

The silvicultural prescription process is a concurrent activity with the interdisciplinary team process in preparing projects. Prescriptions are formulated within the Forest Plan guidance to achieve specific objectives of management areas. The full range of silvicultural systems (individual tree selection to clearcut) are available for use on the Helena National Forest. The selected vegetative management practices for individual sites will comply with management requirements listed in 36 CFR 219.27(b). (Where clearcutting is the vegetative management practice selected, it will have been determined that it is the optimal method.) Generally, tbe optimal method is selected.

B. EABITAT TYPE GUIDELINES

These guidelines are supplemental. to the Northern Region Guides and are applicable to all management areas described in the Forest Plan. They are organized by Habitat Groups which correspond to those used in the Forest Plan. The rationale for implementing various vegetative management practices is also included. These guidelines are to be used as a basis for identifying project-specific vegetative management practices on the Helena National Forest. Specific Management Area direction may influence the silvicultural systems appropriate for use; however, stand-specific prescriptions supported by an environmental analysis may also prescribe other treatments.

HABITAT GROUP 2 - DRY MIX

Psme/Agsp	Psme/Caru
Psme/Phma	Abla/Caru
Psme/Spbe	Abla/Clps

This group is found at nearly all elevations from (4,500'-7,000'). It is generally dominated by Douglas-fir, but can be dominated by lodgepole pine, ponderosa pine, subalpine fir or spruce, depending on elevation and aspect. These sites tend to "sod-in" and experience poor regeneration after overstory removal. Cutting methods are usually restricted to shelterwood or selection, and natural regeneration should be emphasized. Timber productivity varies from 20-45 cu.ft./ac./year. Forage potential for big game and domestic livestock is

moderate to low. Where this group bas winter range in it, the primary value is security. Wildfire often takes to the crowns.

1. Timber

Tree stocking and soil moisture are limiting factors on these sites. Commercial timber production is feasible on theses sites with production of up to 45 cubic feet per acre per year. Since moisture is a limiting factor on these sites, silvicultural systems will include individual tree selection, group selection, and shelterwood regeneration methods in order to maintain shading of regeneration. Clearcutting would only be a viable option where site factors indicate a high probability of achieving regeneration.

2. Site Preparation

Site preparation levels are dependent upon the type of regeneration activity prescribed, but generally some mineral soil is necessary for successful regeneration. These sites are considered highly competitive, primarily due to moisture stress. Maintaining down woody material is desirable for site and seedling protection.

3. Reforestation

Minimum acceptable tree stocking for certification will be identified in the silvicultural prescription, with ponderosa pine being the preferred species at lower elevations and Douglas-fir, lodgepole pine at higher elevations.

4. Protection

These sites currently have dense understories of Douglas-fir which are overstocked and growing very slowly. This condition is conducive to spruce budworm epidemics, root disease spread, bark beetle infestation, and the spread of dwarf mistletoe. Wildfire can be very destructive in some of these stands. Prescribed light burning of the understory to maintain open stands with mixtures of species, age class distributions, and stocking control is an acceptable integrated pest management measure.

5. Wildlife

These sites are used extensively by big game for winter range and by some grass/forb dependent wildlife species all year long.

6. Range

This habitat group provides excellent domestic livestock forage.

7. Soil/Water

Soil and water resources are discussed at length in the Helena National Forest Land Systems Inventory.

HABITAT GROUP 3 - COOL

a.

Psma/Phma	Psma/Caru
Psme/Vagl	Abla/Vasc
Abla/Libo	Abla/Mefe
Abla/Vagl	

Group 3 is found on cool, moist, (but well drained) northerly aspects from mid-elevations to the high elevaltion zone. Lodgepole pine normally dominates, but can be clearcut, shelterwood or selection with successful regeneration. Scarification is often needed for regeneration. Timber productivity varies from 20-50 cu.ft./cu./yr. Values for domestic livestock are low. Has moderate to high value as big game summer range. These cool, moist sites are fire resistant in normal years, but can be very vulnerable to catastrophic fires in drought years.

I. Timber

These habitat types are capable of moderate timber production at an estimated 50 cubic feet per acre per year under intensive management. Seed tree and clearcut with SW harvesting will be the major treatments. On steep ground requiring cable yarding systems, patch clearcutting (up to 40 acres) may be utilized where the site indicates a reasonable success for regeneration. Individual tree selection generally will not be employed due to a need to maintain lodgepole pine as the seral species and the high costs of employing such a system. Individual tree selection may be appropriate in special situations where protection of special features, species diversity, or slash treatment requires such a treatment.

- Site Preparation

Light scarification is usually required maintaining woody material for seedling protection. These sites are considered high to moderate in competitiveness for conifer regeneration.

3. Reforestation

Minimum acceptable stocking recommendation is generally 200 trees per acre on 80 percent of the harvested area; however, this minimum may be adjusted by individual stand prescriptions which reflect site specific conditions. Preferred species composition is lodgepole pine and Douglas-fir, with spruce on the moister sites. Natural regeneration is generally easy to achieve and is the least costly method of reforestation.

4. Protection

The overstocking in the Douglas-fir understories over some of the area presents a high risk situation for spruce budworm epidemics. These conditions are also conducive to root diseases, dwarf mistletoe, bark beetles, and large destructive wildfires. Integrated pest management strategies should stress species diversity, age class distribution, and stocking control.

5. Fire

Vegetative recovery is rapid after a fire disturbance. The potential exists for intense wildfires due to present stand conditions and fuel accumulations.

6. Wildlife

These habitat types are primary big-game summer ranges with moderate browse production potentials.

7. Range

These habitat types offer a moderate level of forage production for domestic livestock.

8. Soil/Water

Soil and water conditions are discussed at length in the Helena National Forest Land Systems Inventory.

HABITAT GROUP 4 - MOIST

Abla/Gatr Abla/Clun

Mesic sites such as streamsides, wet flats, seeps, and swales typify the environment for this group. Stand composition ranges from nearly pure lodgepole pine to all-aged spruce and/or subalpine fir. Productivity is moderately high to high (50+ cu.ft./ac./yr.), representing some of the best timber growing sites on the Helena. Shelterwood or selection are ideal cutting stems, depending on stand conditions. Clearcuts often result in heightened ter tables and inherent problems such as regeneration failure, community type conversions, and soil instability. This group is a favored wildlife habitat because of water, abundant forage, and species diversity. There is moderate forage potential for domestic stock; however, cattle tend to congregate to the detriment of soils, vegetation, and water quality. Despite abundant fuels, these moist sites are usually resistant to wildfires.

1. Timber

Habitat types within this group have the potential to produce approximately 50 cubic feet per acre per year under intensive management. Shelterwood regeneration systems will he the dominant treatment. Group selection may be used on areas where logging systems can operate efficiently and where tree species will allow. Individual tree selection generally will not be used unless needed to protect site features. Clearcutting may be used where there is a high probability of achieving regeneration. Site specific information will he utilized to determine the precise treatments.

2. Site Preparation

These sites are considered moderate to highly competitive to the establishment of coniferous regeneration. Site specific prescriptions may vary from these Guidelines.

3. Reforestation

Minimum acceptable conifer tree stocking recommendation is generally 200 trees per acre over 80 percent of the harvested area unless a site specific prescription varies these levels. Preferred species for these sites are spruce, lodgepole pine, and Douglas-fir. Big-game use may be a problem with stand establishment.

4. Protection

These stands are high risk to spruce budworm, root diseases, and dwarf mistletoe due to the present stand structures of dense understories with existing Douglas-fir and lodgepole pine overstory components. Integrated pest management strategies should include utilizing species mixtures, age class diversity between stands, and stocking control.

5. Fire

Due to current structure many of these stands are not suitable for underburning; however, once the stand structure is converted to a suitable condition, underburning is a viable management prescription. Wildfires will result in moderately intense fires which will generally replace most of the understory, and at times the entire stand.

6. Wildlife

These habitat types are used as winter range with some big game using these sites all year.

- Range

Forage production is moderate to high for domestic livestock.

8. Soil/Water

Soil and water conditions for these habitat types are discussed at length in the Helena National Forest Land System Inventory.

APPENDIX A

Oil and Gas Leasing

Any or all of the stipulations -- Forms 3109-3, 3109-5, 3109-7, and 3109-12 -- on pages N-4 thru N-11 of this appendix may be attached to an oil and gas lease. If on-the-ground knowledge indicates concern for any of the following items, the stipulation sited under the mitigation measures should be attached to the lease. This concern list is not exhaustive; therefore, stipulations may be attached as needed for other situations.

CONCERN	MITIGATION MEASURES
1. Water quality and quantity	Surface Occupancy Restriction Stipulation (Form MT-3109-3) to prohibit occupancy within 100' of streams (live or intermittent), lakes, springs, and ponds.
2. Threatened and Endangered Species	a. Activity Coordination Stipulation (Form MT-3109-7) to coordinate activities within T&E Species essential or occupied habitat.
	b. No-Surface Occupancy Stipulation (Form MT-3109-3) to prohibit surface occupancy leasing within 1 mile of bald eagle nest sites.
	c. Surface Occupancy Stipulation (Form MT-3109-3) to prohibit oil and gas activities within 1 mile of bald eagle nesting sites during the February 1 to July 31 nesting period.
	d. The use of explosives, helicopters, machinary, or other noise productions exceeding 70 DBA during the nest site selection to 30 days post-fledging nesting period (February 1 through July 31) on or over Helena National Forest lands from outlet of Upper Bolter Lake north--within 3 miles either side of the Missouri River--will be evaluated prior to authorization to assure protection from disturbance to nesting eagles. (The "3 mile" distance for this nest site considers the unique topograhic characteristics present which channel noise greater distances than most other sites.)

e. Prevent human–animal conflicts and disturbances in areas where key use by a Threatened or Endangered Species is documented. Limit surface occupancy to periods on non–critical use, or restrict occupancy to specific areas (Form MT-3109-3).

f. Restrict the timing or type of Oil and Gas use on existing roads, if needed to control human–animal conflicts or disturbances with Threatened or Endangered Species (Form MT-3109-12).

g. Roads constructed for oil and gas activities (single purpose use) will be closed to the public within essential or occupied habitat for the grizzly bear or gray wolf. When the use period is over, the road will be put to bed and rehabilitated.

3. Wildlife and Fisheries

a. Non–game habitat

(1) Surface Occupancy Restriction Stipulation (Form MT-3109-3) to prohibit surface occupancy occupancy within 1 mile of osprey nests during the 3/1 to 7/31 nesting period.

(2) No–Surface Occupancy Restriction Stipulation (Form MT-3109-3) to prohibit surface occupancy of identified riparian and wetland habitats.

b. Big game habitat?

(1) Surface Occupancy Restriction Stipulation (Form 3109-3) to prohibit occupancy on identified key areas for big game during the following time period:

- winter range 12/1 - 5/31.

(2) Surface Occupancy Restriction Stipulation (Form 3109-3) to prohibit occupancy on identified key areas for big game during the following time period:

- calving, lambing, etc., range 4/15 - 6/30.

(3) Surface Occupancy Restriction Stipulation (Form 3109-3) to prohibit occupancy on identified key areas for big game during the following time period:

- summer concentration habits 6/1 - 9/31.

		(4) Activity Coordination Stipulation (Form MT-3109-7) to coordinate activities in both space and time within identified key big game travel routes.
	c. Fisheries	Comply with Montana Fish and Game Commission Notice of Construction or Hydraulic Project Affecting Fishing Waters (Form FS 124).
4. Special Uses, Leases and Permits (including municipal water supply)		Attach appropriate stipulations to mitigate effects and on authorized uses. No-Surface Occupancy Stipulation (Form MT-3109-3) to prohibit occupancy within 400' of permitted developments unless otherwise specified.
5. Land stability and erosion	a.	No-Surface Occupancy Stipulation (Form MT-3109-3) to prohibit occupancy on: - landtypes sensitive to mass wasting.
	b.	No-Surface Occupancy Stipulation (Form MT-3109-3) to prohibit occupancy on: - landtypes with slopes greater than 60% sideslope.
6. Social and economic concerns	a.	Encourage participating oil or gas firms to hire as many local employees as possible.
	b.	Keep impact areas residents fully informed of development plans, including specific areas involved, personnel requirements procedures used, duration of activity, and prospects for local contractors.
	c.	Involve the Forest Service, participating oil firms, and local communities in joint advance planning to insure orderly development.

UNITED STATES DEPARTMENT OF THE INTERIOR
Bureau of Land Management Serial No. _____

Oil & Gas Lease Stipulations

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

No Surface Occupancy Stipulation

% of Lease

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

(a)

(b)

Reasons for this restriction are:
(a)
(b)

_____
Surface Occupancy Restriction Stipulation (by location)

% of Le.

( ) No _____ will be allowed within:

_____ feet of _____ located within:

_____ feet of _____ located within:

N/4

(Continued on Reverse)

Surface Occupancy Restriction Stipulation (by location) % of Lease

_____ feet of _____ located within:

_____ feet of _____ located within:

This area contains approximately _____ total acres

Surface Occupancy Restriction Stipulation (timing) % of Lease

( ) (a) In order to (minimize) (protect) _____

_____ will be allowed only during: _____

(b) In order to (minimize) (protect) _____

_____ will be allowed only during: _____

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

(a)

(b)

Road Use Stipulation % of Lease

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

N/5

Date Signature

UNITED STATES DEPARTMENT OF THE INTERIOR
Bureau of Land Management

Serial No. _____

OIL AND GAS LEASE STIPULATIONS
LANDS UNDER JURISDICTION OF DEPARTMENT OF AGRICULTURE
FURTHER PLANNING AREA

Stipulations may be modified when specifically approved in writing by the Bureau of Land Management (BLM), with concurrence of the Forest Service (FS).

% of Lease

( ) The lollowing described lands embraced in this (lease. permit, license) were identified in the Roadless Area Review and Evaluation (HARE II) decision document as requiring lurther planning: ( )

Future planning may identify all or part of these lands as suitable for wilderness. and the lands so identified may ultimately be designated as wilderness. Information made available to the FS regarding discoveries of mineral deposits on these lands will be considered in the planning process and may be key factors in the land allocation.

Any terms of this (lease. permit, license) to the contrary notwithstanding. the following terms shall apply to the above described lands:

1. Only exploration activities for the purposes of discovering and disclosing the extent of mineral deposits is allowed. until development and production operations are specifically concurred in by the FS based on a land management plan and/or a specific environmental analysis of an operating plan.

2. Exploration plans must be specifically approved by the BLM and concurred in by the FS. The FS will agree to reasonable access for conducting necessary exploration operations.

3. Any lands covered by this (lease. permit. license) which Congress designates as wilderness shall become subject to the provisions of the applicable wilderness legislation. and the Secretary of Agriculture's regulations and FS policies pertaining thereto.

4. The (lessee. permittee, licensee) will be responsible. as he deems necessary to protect his interest. for initiating requests to the Department of the Interior for suspension of (lease. permit. license) terms, rental, or minimum royalties. The FS does not intend that the inclusion of this stipulation be construed as a basis to deny a request for suspension.

N/6

(Continued on Reverse)

5 Until these lands are allocated to non-wilderness purposes, by a land management plan or specific environmental analysis and decision, mineral-related operations are subject to the following terms:

a. Construction of access ways and operation sites will not be permitted in areas of extremely high environmental sensitivity where such construction would cause serious and irreparable environmental damage.

b. Access way construction will be permitted only where existing access ways are inadequate or other methods of access are impractical,

c. Access ways will be built to a standard no higher than required for passage of equipment and support personnel. and to protect surface resources.

d. The access ways and other areas of operation will be reclaimed. as soon as they have served their purpose. to a condition as near as practical to the surface condition existing prior to the authorized use of the lands

The above checked stipulations are hereby accepted

Date

Signature

US Department of the Interior
Bureau of Land Management

_____
(Serial No.)

ACTIVITY COORDINATION STIPULATION

This stipulation may be modified when specifically approved in writing by the Bureau of Land Management, with concurrence of the authorized officer of the surface management agency.

( ) This lease includes lands within _____ % of
_____ Lease
_____
which has resource values sensitive to high levels of activity. in order to minimize impacts to these resources, special conditions. such as unitization prior to approval of operations, and/or other limitations to spread surface disturbance activities over time and space may be required prior to approval and commencement of any operations on the lease.

_____ _____
(Date) (Signature)

MT-3109-7 (June 1983)

N/8

UNITED STATES DEPARTMENT OF THE INTERIOR
Bureau of Land Management
222 North 32nd Street
P. O. Box 36800
Billings, Montana 59107

(Serial Number)

STIPULATIONS FOR LANDS OF THE NATIONAL FOREST SYSTEM
UNDER JURISDICTION OF
DEPARTMENT OF AGRICULTURE

The licensee/permittee/lessee must comply with all the rules and regulations of the Secretary of Agriculture set forth at Title 36, Chapter II, of the Code of Federal Regulations governing the use and management of the National Forest System (NFS) when not inconsistent with the rights granted by the Secretary of the Interior in the license/prospecting permit/lease. The Secretary of Agriculture's rules and regulations must be complied with for (1) all use and occupancy of the NFS prior to approval of a permit/operation plan by the Secretary of the Interior, (2) uses of all existing improvements, such as Forest development roads, within and outside the area licensed, permitted or leased by the Secretary of the Interior, and (3) use and occupancy of the NFS not authorized by a permit/operating plan approved by the Secretary of the Interior.

All matters related to this stipulation are to be addressed

to

at

Who is the authorized representative of the Secretary of Agriculture.

Any or all of the following stipulations may apply to this lease and may be made less restrictive depending upon the actual onground conditions. The Forest Service (FS) should be contacted for details regarding the restrictive nature of these stipulations.

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

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

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

The lessee/operator is given notice that the lands within this lease may include special areas and that such areas may contain special values, may be needed for special purposes, or may require special attention to prevent damage to surface and/or other resources. Any surface use or occupancy within such special areas will be strictly controlled or, if absolutely necessary, excluded. Use or occupancy will be restricted only when BLM and/or the FS demonstrates that the restriction is necessary for the protection of such special areas and existing or planned uses; however, reasonable lease occupancy will not be precluded unless specified in additional stipulations attached hereto. Appropriate modifications to imposed restrictions will be made for the maintenance and operations of producing oil and gas wells.

After the FS has been advised of specific proposed surface use or occupancy on the leased lands, and on request of the lessee/operator, the FS will furnish further data on any special areas. Such restrictions may include limitations or exclusion of activities which occur within:

500 feet from perennial and ephemeral water courses and bodies, springs, flood plains, riparian areas, and water supplies;

500 feet from roads and trails, buildings and structures, sites eligible for or designated as National Register Sites or Research Natural Areas, visually sensitive areas and recreation areas including those managed for primitive recreation values;

(Continued on Reverse)

Essential habitat of State and Federal sensitive species including wildlife, raptors, fish and plants, and crucial wildlife ranges including but not limited to: winter range from December 1 to May 15; birthing to reproduction areas (e.g., calving, fawning) from April 15 to June 30; migration routes from November 1 to December 31; spawning sites from May 1 to July 1 or appropriate from September 1 to March 30; grouse strutting grounds and nesting areas within 1/2 mile; and within 1/2 mile of raptor nests from February 1 to July 31;

Seasonal road closures, roads for special uses, specified roads during heavy traffic periods and on areas having restrictive offroad designations;

On steep slopes (over 30 to 60 percent), on slopes or soils which have a high potential for-or are currently experiencing mass movement (slumps, slides, flows) or which are extremely erodable.

Date

Lessee's Signature

NOTICE

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

1. Contact the FS to determine if a site specific cultural resource inventory is required. If a survey is required, then:

2. Engage the services of a cultural resource specialist acceptable to the FS to conduct a cultural resource inventory of the area of proposed surface disturbance. The operator may elect to inventory an area larger than the area of proposed disturbance to cover possible site relocation which may result from environmental or other considerations. An acceptable inventory report is to be submitted to the FS for review and approval no later than that time when an otherwise complete application for approval of drilling or subsequent surface disturbing operation is submitted.

3. Implement mitigation measures required by the FS and BLM to preserve or avoid destruction of cultural resource values. Mitigation may include relocation of proposed facilities, testing, salvage, and recordation or other protective measures. All costs of the inventory and mitigation will be borne by the lessee or operator, and all data and materials salvaged will remain under the jurisdiction of the U.S. Government as appropriate.

The lessee or operator shall immediately bring to the attention of the FS and BLM any cultural or paleontological resources or any other objects of scientific interest discovered as a result of surface operations under this lease, and shall leave such discoveries intact until directed to proceed by FS and BLM.

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

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

In order to minimize impacts on endangered or threatened species or their habitat, special conditions, such as unitization prior to approval of operations, and/or other limitations to spread surface-disturbing activities over time and space may be required prior to approval and commencement of any operations on the lease.

APPENDIX O

Guidelines for Special Uses and Subdivisions

1. Access -- Access by road permits, road-use permits, USDA easements, DOT easements, or existing Memorandum of Understanding are covered in the Regional Land Access Policy, FSM 2703, R-1 Supplement No. 47.

2. Subdivisions -- District Rangers will work closely with city/county planning and zoning organizations when proposed subdivisions affect National Forest resources. Early input into development plans are needed to minimize potential problem areas such as: access, garbage disposal, utilities, water systems, sewage disposal, TV and/or radio antennas, boundary line accuracy, fencing, covenants, fire hazards, and visual problems.

As subdivisions develop requests for uses by individuals will be discouraged in favor of permits issued to local governmental entities. Initial individual (developer) permits will be phased out and incorporated in these permits.

Subdivisions -- Interior subdivision roads will rarely be allowed on National Forest System lands. One access road per subdivision or original homestead is usually sufficient. Roads used for residential purposes, including those on National Forest land, should be dedicated to the county and built to county road standards by the developer.

Powerlines -- Distribution lines and service drops will be buried when possible. Exception for service and distribution may be made in cases of ntermingled land, where Lines cross a small corner of National Forest land, or here burying lines may cause excessive environmental impacts; e.g., in swampy areas. Powerlines constructed above ground will be designed to protect raptors from electrocution.

Telephone Lines -- All new and replacement lines will generally be buried. Minimum specifications. See Powerlines for details.

Water Systems -- National Forest System lands will be considered as a water source when it is not possible to obtain water on private land. Community or group requests will be encouraged whenever a future need is recognized. Rarely will new permits be granted for new domestic water sources from other than drilled wells.

Sewer System -- Generally, private sewer systems will not be permitted in National Forest lands.

Garbage Disposal -- At the present time, this use will not be allowed because the need can be met on private land. In the future, because of energy conservation needs, this position may have to be reconsidered.

TV or Radio Antennas -- Only one antenna site or system per subdivision will be allowed.

Electronic Sites -- Policy is to minimize the number of sites. Group uses will be encouraged to minimize the number and size of structures.

, Occasional bents -- Handle requests such as for cross-country ski or nowmobile races, youth or church organization camps, and recreation trails on a case-by-case basis. Do not allow permanent structural facilities to be built or permit use where unacceptable resource damage could occur. Speed races involving motorcycles or horses may cause damage and will generally not be allowed.

4. Commercial Recreation Developments and Major Facilities -- Bandle these on a case-by-case basis.

5. Topsoil -- Topsoil removal will not be allowed.

6. Occupancy Trespass -- Phase out all nonconforming uses. Innocent trespass of long standing may be authorized by special-use permit. If it is a use normally permitted, e.g., a water transmission ditch, issue a regular permit. The difficulty of moving will have a bearing on the phase-out period. Moveable items such as some cabins or fences will be phased out over a maximum period of 5 years. Appropriate legal action will be taken to eliminate deliberate trespass.

7. Becreation Cabins -- Cabins used for recreation purposes and located tside of areas specifically planned for residential purposes, or cabins not cated in areas identified for possible disposal; will be terminated at the arliest opportunity. Cabins located in areas such as York, Rimini or Unionville will be evaluated for permit renewal pending possible disposal by applicable regulations.

APPENDIX P

Corridor Planning

The Utility-Transportation Corridor Study for Montana (November 1981) recommends a combined exclusion area, avoidance areas, and window concept for identifying and selecting corridors in the state. The first step in this approach is to develop and agree on criteria for identifying these areas. The following paragraphs define each area and then list identification criteria. The criteria are designed to apply to all lands, however, the Bureau of Land Management (BLM), Forest Service (FS), and state agencies will only apply the criteria on lands within their jurisdiction. Local governments and other Federal agencies have the option to consider these standards in their planning.

Exclusion Areas Land areas determined to be unavailable for corridor allocation or facility siting. Lnclude only those areas with a legal Congressional mandate that excludes linear facilities, i.e., national wilderness lands. Jurisdiction: FS and BLM. See Table 1 for which management areas are within an exclusion area.

Avoidance Areas Land areas that pose particular land use or environmental impacts that would be difficult or impossible to mitigate. This may vary by type of facility and is divided into three types of areas. See Table 1 for which management areas are within avoidance areas.

a. Areas where establishment and use of corridors conflict with land use/land management objectives. Examples are: specially managed areas, environmentally sensitive areas, archeological and historical sites, areas with specific VQOs, and coal mining units. Jurisdiction: FS and BLM.

b. Areas with special or unique values that have been accorded specific and sometimes protected management status through "legislative" action. These values conflict with facility placement. Examples are: National Recreation Areas, wild and scenic rivers, nationally classified trails, and state recreation areas. Jurisdiction: FS, BLM, and state.

c. Areas that have been identified by local government bodies (within their areas of jurisdiction) as not suitable for the placemnt of linear facilities. Examples are: urban residential areas and city parks. Jurisdiction: cities and counties.

Table 1
Management Areas by Corridor Category

Exclusion	Avoidance Areas	Non Exclusion/Avoidance Areas
P-1, P-2, P-3	A-1, N-1, H-1, H-2 R-1, R-2, Elkhorn-2	M-1, L-1, L-2, T-1, T-2, T-3, T-4, T-5, W-1, W-2, Elkhorns-1, 3, and 4

Windows Usually short, narrow passageways through constrained areas that are the most feasible potential locations for linear facilties, considering engineering, and/or environmental factors. Examples are:

- Areas recognized as critical corridor segments because of physiographic or ethnical suitability. Jurisdiction: FS, BLM, State, and counties.

- Restricted passages identified as a result of identifying exclusion or avoidance areas. Jurisdiction: FS, BLM, and state.

- Existing critical corridor segments through sensitive areas, such as urban, residential areas, or areas of intensive land use. Jurisdiction: Mainly counties, cities, and state.

On the Helena National Forest the areas defined as windows through the planning process are described below. Windows and existing transmission lines are shown on maps filed in the Helena Forest Planning records.

Window No. 1 (R-14) is in the Blackfoot River Valley about 5 miles west of Lincoln. Currently a powerline and Montana Highway 200 run through area. The landownership is mixed and the National Forest lands are constrained by a partial retention or retention VQO.

Window No. 2 (R-13) is through the Rogers Pass area about 16 miles east of Lincoln. Montana Highway 200 passes through this area. This area is constrained by a partial retention or retention VQO and the north side of the highway is occupied grizzly habitat.

Window No. 3 (R-18) is through the Mullen Pass about 16 miles northwest of elena, Montana. This is an existing corridor containing a railroad, pipeline, id a major Forest road.

Window No. 4 (R-20) is through Duck Creek Pass in the Big Belt Mountains, approximately 15 miles northeast of Townsend. A major Forest road passes through this area at present.

Window No. 5 (R-21) is in the North Fork of Deep Creek drainage, about 15 miles east of Townsend, and about 4 miles north of U.S. Highway 12.

Window No. 6 (R-22) is in the Grayson Creek drainage, about 15 miles east of Townsend and about 6 miles south of U.S. Highway 12. The 500 KV powerline from Colstrip to Hot Springs passes through this area.

Window No. 7 (R-19) crosses the Big Belt Mountains east of Helena and Canyon Ferry Lake. It crosses the Benton Creek drainage on the east and Whites and Confederate Gulches on the west side of the Big Belts.

APPENDIX Q

Withdrawals From Mineral Entry
12/31/80

EXISTING AND PROPOSED WITHDRAWAL INVENTORY

Existing Withdrawals

Serial No.	Name of Site	Township	Range	Acres
M014987	Aspen Grove Campground	14 N.	7 W.	136.22
M014987	Beaver Cr. Camp	15 N.	9 W.	40.00
M014987	Beaver Cr. Rec. Area	13 N.	1 W.	180.00
M014987	Blackfoot Canyon Rec. Area	14 N.	9 W.	10.00
M014987	Colorado Mountain Lookout	9 N.	5 W.	40.00
M014987	Crow Creek Campground	6 N.	1 W.	15.00
M014987	Crystal Cr. Picnic Area	8 N.	2 W.	75.45
M014987	Glendale Campground	6 N.	1 W.	15.00
M014987	Heart Lake Rec. Area	16 N.	8 W.	240.00
M014987	Indian Cr. Rec. Area	12 N.	1 E.	240.00
M014987	Jenkins Gulch Campground	6 N.	1 W.	35.00
M014987	Kading Pasture Adm. Site	8 N.	7 W.	134.00
M014987	Little Blackfoot Rec. Area	9 N.	6 W.	100.00
M014987	McClellan Cr. Rec. Area	8 N.	2 W.	56.12
M014987	Meadow Cr. Rec. Area	16 N.	9 W.	80.00
M014987	Meadow Cr. Rec. Area	16 N.	10 W.	80.00
M014987	Meriwether Camp	13 N.	2 W.	320.00
M014987	Ontario Creek Rec. Area	8 N.	6 W.	40.00
014987	Snowbank Summer Homes	15 N.	8 W.	40.00
014987	Strawberry Lookout	8 N.	3 W.	20.00
014987	Ten Mile Rec. Area	9 N.	5 W.	290.00
M014987	Treasure Mountain Lookout	8 N.	6 W.	134.02
M014987	Trout Creek Rec. Area	11 N.	1 W.	190.00
M014987	Vigilante Campground	12 N.	1 E.	150.00
M020355	Arrasta Creek Campground	14 N.	10 W.	20.00
M020355	Beaver Creek Campground	8 N.	1 W.	30.00
M020355	Cromwell Dixon Campground	9 N.	6 W.	40.00
M020355	Gile Reservoir Camp	9 N.	4 E.	115.34
M020355	Granite Butte Lookout	13 N.	7 W.	10.00
M020355	Lone Point Campground	14 N.	10 W.	80.00
M020355	MacDonald Pass Campground	9 N.	6 W.	32.50
M020355	MacDonald Pass Roadside Zone	9 N.	6 W.	77.44
M020355	MacDonald Pass Roadside Zone	10 N.	5 W.	77.44
M020355	MacDonald Pass Roadside Zone	10 N.	6 W.	58.08
M020355	Porcupine Campground	10 N.	5 W.	25.00
M020355	Silver King Lookout	16 N.	7 W.	40.00
M034538	Telegraph Cr. Campground	9 N.	6 W.	5.00
M040004	Copper Creek Rec. Area	15 N.	8 W.	132.00
M040004	Davis Creek Rec. Area	13 N.	7 W.	42.50
M040004	Deep Creek Camp	7 N.	4 E.	20.00
M040004	Huckleberry Rec. Area	15 N.	8 W.	47.50
M040004	Kinnikinnic Rec. Area	15 N.	8 W.	81.25
M040004	Lower Copper Cr. Rec. Area	15 N.	8 W.	77.50

M040004	Ontario Cr. Rec. Area	8 N.	6 W.	20.00
M072530	Blackfoot Campground	14 N.	10 W.	40.00
M072530	Indian Flats Camp	12 N.	1 W.	40.00
M072530	Lincoln Gulch Camp	14 N.	9 W.	50.00
M072530	Park Lake Camp	8 N.	5 W.	27.97
M072530	Pike Creek Camp	13 N.	1 W.	40.00
M072530	Skidway Gulch Camp	7 N.	5 E.	60.00
M072530	Ten Mile Camp	9 N.	5 W.	30.00
M40594	Deep Creek Ranger Station	7 N.	4 E.	80.00
M40595	Deep Creek Ranger Station	7 N.	4 E.	40.00
M40596	Mule Creek Station	10 N.	4 E.	100.00
M41181	Indian Meadows Adm. Site	15 N.	8 W.	90.00
M41808	Moose Creek Ranger Station	9 N.	5 W.	62.50
M43278	Blossherg Ranger Station	11 N.	6 W.	80.00
M45202	Blackfoot Ranger Station	9 N.	6 W.	100.00

Proposed Withdrawals

Serial No.	Name of Site	Township	Range	Acres
M21943	Lincoln Gulch Hist. Site	14 N.	9 W.	120.00
M26024	Thompson Gulch Guard Station	9 N.	4 E.	13.42

TOTALS

	No. of Serialized Cases	No. of Sites	Acres
Existing Withdrawals	12	55	4,534.13
Proposed Withdrawals	2	2	133.42

CRITERIA TO USE IN WALUATION OF EXISTING AND PROPOSED WITHDRAWALS

1. Evaluation Criteria

a. Existing Withdrawals

1. Is the land still being used for the purpose for which it was withdrawn?

   a. If yes, is the area withdrawn too small or too extensive?

   b. Have conditions changed so that the lands are more valuable for other uses? If no, then:

2. Are there other ways available to protect the resource values (for instance, existing statutes and regulations, rights-of-way, cooperative agreements)? If no then:

3. Are the values at risk of such a nature that a significant financial, social, or cultural loss could occur?

   a. What is the monetary value of the physical improvements at risk?

b. What is the current and projected use demand?

c. If the withdrawal is for a proposed development, have funds been allocated for this project?

d. Is the resource unique and/or irreplaceable? If yes, then:

4. Does the withdrawal area have a high mineral potential or are there nearby mining claims or mining activities? If yes, then:

5. Initiation of withdrawal action recommended.

b. Proposed Withdrawals

Follow steps 2 through 5.

2. Processing Program and Review

a. Determination of need based on criteria section.

b. Process using requirements outlined in statutes and regulations.

1. Section 204 of FLPMA (P.L. 94-579).
2. 43 CFR 2310.

c. Review of existing withdrawals as shown in the above inventory will be completed by 1991. A review of existing and future withdrawals will again occur with the programmed revisions of the Helena Forest Plan.

Helena Rational Forest
Fire Management

A. 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 Proposed Forest Plan. The fire program is documented in the Fire Management Action Plan, which explains: (1) how and when to implement the suppression response for each management area (2) how and when to use prescribed fire with unplanned ignitions and provides a means of locating and scheduling prescribed fire with planned ignitions.

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 annual program planning and budgeting systems. The Level II analysis has established the most cost efficient fire management organization. The Fire Management Action Plan documents it as well as the organization that is actually planned at the budget level provided.

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 a integral part of all ecosystems on the Helena 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 Ensure 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. Clayton and Fisher, 1983.

(2) Level I Fire Management Analysis, Helena National Forest, 1981.

(3) The Role and Use of Fire in Sagebrush-Grass and Pinyon-Juniper Plant Communities. Wright, Neuenschwander, and Britton, 1979.

(4) Fuel Management Planning and Treatment Guides, Northern Region, USDA-Forest Service, July 1982.

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 expanses 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. (See Fire planning records for Memorandum of Understanding.)

6. Gain greater public involvement, understanding, and approval of our fire management practices.

Direction to Ensure 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 action, by implementing the fire management direction documented in the Proposed Forest Plan.

2. Permit reason, logic, resource objectives, 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 a fire that exceeds the first calculation of initial attack resources and reasonable reinforcements necessary for prompt control, or exceeds its fire prescription.)

3. Reduce presuppression expenditures where possible.

Determine the most cost-effective fire management organization based on sound analytical methods. The Level II economic analysis made by the Helena Forest will be used to determine a cost-effective fire management organization that meets the objectives of the Proposed 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 fire prescriptions.

A summary of fire management direction for each management area is contained in Table 1.

B. FIRE MANAGEMENT UNIT 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, the Forest management areas have been grouped into fire management units. Management areas in the same unit 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 units are 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 Fire Management Action Plan.

L. Boundary Generator Criteria

The boundaries for fire management units are drawn on the basis of existing management areas. While management areas serve as boundary generators for the fire management units (see table 1), subdivisions of the major categories may be made on a District basis. Boundaries for these subdivisions will he made, whenever possible, on hydrologic divides or other geographical features that 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 he allowed with appropriate burning plans and state permits.

The areas within the control category are all state and privately owned land protected by the Helena 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

These are 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 he used if allowed in the Forest Plan for the management area when the objective of the approved burning plan can be achieved with the unplanned ignition. Otherwise unplanned ignition 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 vegetative communities may he 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 fire 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 Scapegoat and Gates of the Mountains Wildernesses and those areas recommended for wilderness 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 areas.

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 categories 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.

C PRESCRIPTION CRITERIA FOR PRESCRIBED FIRE

A prescribed fire is a fire burning in a specified area under predetermined conditions to achieve 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 will be displayed in the Fire Management Action Plan.

D. 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 Occurances
Annual Average No. of Fires

Lightning:	30
Person-caused:	18
	48

E PRESUPPRESSION PLANNING CRITERIA

Presuppression involves all activities planned and accomplished in advance of a wildfire ignitions, 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 land management direction.

The presuppression plan consists of a collection of implementation plans and specific direction for the fire manager. This direction is taken from the Forest Plan and brought together in the Annual Fire Management Action Plan.

The Level II Fire Management Analysis indicated expected annual average acres burned by wildfire with the preferred land management alternative 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: 392

F. FIRE MANAGEMENT PROGRAM

The Fire Management Analysis (Level II) process identifies the most cost-efficient fire management program which meets land and resource management objectives. (See Fire Planning Record for Level II Fire Management Analysis.) Several management options at increased and decreased budget Levels were analyzed. The most cost effective option and budget level indicated by the analysis is the "current" (1978) base budget using interagency initial attack with a helicopter. This management option was also the most preferred by the participating agencies (BLM and Montana Department of State Lands).

The 1978 base protection budget (FFP) for the Kelena National Forest was $388,000.00. This figure was reduced due to savings from combining agency resources. Sharing the cost of resources, such as a helicopter contract, with the BLM and the Montana Department of State Lands and by combining dispatch, prevention, and detection efforts, the Kelena National Forest FFP budget could be reduced to $339,000.00. This is a savings of 12.5 percent from the 1978 financing level.

This program relies heavily on the "closest crew" concept, in that the closest fire crew will attack a wildland fire regardless of agency jurisdiction.

G. MONITORING AND EVALUATION

1. 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 II Analysis.

2. Determine the adequacy of the prevention program projections for person-caused fires, based on trends in the fire occurrence statistics.

3. Determine the adequacy of the fire management organization to meet the fire frequency and size distribution (PARS) and expected costs and net value change as projected for the selected option. This should be compared on both an annual basis and for the cumulative planning period.

4. Determine the adequacy of the values change analysis by comparing the reported annual value change for 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.

TABLE 1

Helena Fire Management Direction
Decade 1

Mgt. Area	WILDFIRE 1/ Strategies Allowed: Control	Contain	Confine	Expected 2/ Avg. Ann. Acres Burned	Re 4/ strictions	PRESCRIBED FIRE 3/ Nat Fuels (Acres)	HIH PI2 PLUS	Unplanned Ignitions (Acres)	Priority	Activity Fuels (Acres)	MIH PII PLUS	Unplanned Ignitions (Acres)	Fire Mgt. Unit
A-1	Yes	No	No	<1	1	Unsched.	C03/D03	--------		Unsched.	L25	--	Control
H-1	Yes	Yes	Yes	70	--	Unsched.	C03/D03	Unsched.		Unsched.	E04	--	Observation
H-1	Yes	Yes	Yes	<10	4	Unsched.		Unsched.		--------	--	--	Special
L-1	Yes	Yes	Yes	50	--	8500	303	8500	4	Unsched.	E04	--	Operational
L-2	Yes	Yes	Yes	<5	--	1000	C03/D03	1000	6	Unsched.	E04	--	Operational
M-1	Yes	No	No	<10	4	Unsched.	C03/D03	Unsched.		Unsched.	E04	--	Special
M-2	Yes	Yes	No	<10	1/4	Unsched.	C03/D03	Unsched.		Unsched.	E04	--	Special
R-1	Yes	Yes	Yes	20	2	Unsched.	C03/D03	Unsched.		--------	--	--	Observation
R-2	Yes	No	No	<1	1	Unsched.	C03/D03	--------		Unsched.	E04	--	Control
T-1	Yes	Yes	No	<10	--	Unsched.	C03/D03	--------		21,750	E04/E05	--	Operational
I-2	Yes	Yes	No	<10	--	50	C03/D03	--------	11	1200	E04/E05	--	Operational
T-3	Yes	Yes	No	<10	--	700	C03/D03	--------		4950	E04/E05	--	Operational
T-4	Yes	No	No	<10	2	Unsched.	C03	--------		1600	E04/E05	--	Control
I-1	Yes	Yes	No	<10	--	600	C03/D03	600	10	1550	E04/E05	--	Operational
W-1	Yes	Yes	Yes	20	--	3150	C03/D03	3150	5	Unsched.	E04	--	Operational
U-2	Yes	Yes	Yes	10	--	450	C03/D03	450	7	Unsched.	E04	--	Operational
P-1, P-2, P-3	Yes	Yes	Yes	60	3/4	Unsched.	U00	Unsched.	8	--------	--	--	Wilderness
Elk-1	Yes	Yes	Yes	20	--	3800	C03	3800	1	Unsched.	E04	--	Operational
Elk-2	Yes	Yes	Yes	20	2	100	C03	100	9	--------	--	--	Operational
Elk-3	Yes	Yes	Yes	20	2	Unsched.	C03	Unsched.	2	Unsched.	E0I	--	Operational
Elk-4	Yes	Yes	Yes	10	2	Unsched.	C03	Unsched.	3	Unsched	E0I	--	Operational

FOOTNOTES:

1/ Wildfire. Any wildland fire that requires a suppression response.

The following are suppression strategies. Each wildfire ignition requires an appropriate suppression response.

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.

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APPENDIX S

WILDERNESS RECREATION
OPPORTUNITY CLASS DESCRIPTIONS AND GUIDELINES

Opportunity Classes represent a spectrum of wilderness experience opportunities within the Bob Marshall Wilderness Complex (BMWC). These classes describe existing areas within the complex having different resource and social conditions. They also identify management actions that are acceptable within each class. Inherent in the definitions are different levels of resource and social conditions acceptable for each class in the spectrum.

Three components are used to describe opportunity classes: resource, social, and managerial settings. Each component has several elements that are used to describe differences between opportunity classes. These descriptions provide managers, researchers, and users with common definitions for terms used to describe areas within the complex.

Opportunity class definitions for the BMWC were developed through analyses of Task Force member comments, examples from other areas, inventory data for sample areas within the complex, and input from wilderness researchers. The following are definitons of each class including descriptions of the resource, social, and managerial settings. Also included is a table to allow the reader to compare differences between classes.

OPPORTUNITY CLASS I

A. RESOURCE SETTING

Characterized by an unmodified natural environment. Ecological and natural processes are not measurably affected by the actions of users. Environmental impacts are minimal, restricted to temporary loss of vegetation where camping occurs and along some livestock travel routes, typically recover on an annual basis and are subtle in nature and generally not apparent to most visitors.

B. SOCIAL SETTING

Provides an outstanding opportunity for isolation and solitude free from evidence of human activities and with very infrequent encounters with users. The user has outstanding opportunities to travel across country utilizing a maximum degree of outdoor skills, often in an environment that offers a very high degree of challenge, self-reliance and risk. Interparty contacts will be very few while traveling and rare to nonexistent at the campsite.

C. MANAGERIAL SETTING

Management will strongly emphasize sustaining and enhancing the natural ecosystem. Direct onsite management of visitors will be seldom. Necessary rules and regulations will be communicated to visitors outside the area, such as at trailheads or boundary portals. Contact of visitors within this class by Forest personnel will. be mostly reactive and by invitation, with discussion items limited to what visitors want to know. Formal and informal user education programs will be initiated to inform users about what to expect and how to use the area for optimum benefits to all. Formal regulations, orders and/or permits will be considered only when less restrictive regulations or programs have consistently failed to achieve desired goals and objectives. Infrequent patrols and monitoring of conditions by appropriate State and Federal agency personnel will be conducted only as necessary to achieve management objectives. All scientific and ecological monitoring actions will be scheduled to meet social setting criteria. Trails will not be constructed and maintenance will be conducted only to protect the resource. No trail signs will be present, and no facilities of any kind will be provided or permitted, including lookouts and radio transmitter stations.

OPPORTUNITY CLASS II

A RESOURCE SETTING

Characterized by an essentially unmodified natural environment. Ecological and natural processes and conditions are minimally affected by the action of users. Environmental impacts are low and restricted to minor losses of vegetation where camping occurs and along most travel routes. Most impacts recover on an annual basis and will be apparent to only a low number of visitors.

B. SOCIAL SETTING

High opportunity for exploring and experiencing isolation from the sights and sounds of man with the probability of encountering other users being low. The user has good opportunity for experiencing independence, closeness to nature, tranquility, and self-reliance through the application of primitive recreation skills. These opportunities occur in an environment that offers a high degree of challenge and risk. Interparty contacts will be low on the trail and fairly low at the campsite, with parties often camped in isolation.

C. MANAGERIAL SETTING

Management will emphasize sustaining and enhancing the natural ecosystem. Direct onsite management will involve minimum visitor contact during the normal use season. Necessary rules and regulations will be communicated to visitors outside the area, such as at trailhead and boundary portals. Contact of visitors by Forest personnel will be mostly reactive and by invitation. In addition to what the visitor wants to know, the opportunity will be seized to

present other pertinent site-specific messages. Formal and informal user education programs will be initiated to inform users about what to expect and how to use the area for optimum benefit to all. Formal rules and regulations may be necessary to achieve management objectives and permits may be considered only when light-handed, less restricted measures have failed to achieve desired goals and objectives. Signs will be permitted within the area and will provide only the minimum information necessary to protect the wilderness resource. Trails will normally be constructed, maintained, and managed to accommodate light and infrequent travel. Routes will be maintained only for resource protection and minimal user safety. Modification of the natural environment would be minimal. The route should provide the user with an opportunity for testing skills and experiencing a sensation of physical exertion and a feeling of accomplishment. Facilities will be provided, only in a few extreme cases, and those that are will be permitted only for resource protection and will use only native materials.

OPPORTUNITY CLASS III

A. RESOURCE SETTING

Characterized by an essentially unmodified natural environment where ecological and natural processes are in a few areas moderately affected by the action of users. Environmental impacts are moderate, with most areas along travel routes and near campsites showing moderate losses of vegetation. Impacts in some areas often persist from year to year and are apparent to a moderate number of visitors.

B. SOCIAL SETTING

Moderate opportunities for exploring and experiencing isolation from the sights and sounds of man, with the probability of encountering other users low to moderate. The user has moderate opportunities for experiencing independence, closeness to nature, tranquility and self-reliance through the application of primitive recreation skills. These opportunities occur in a natural environment that normally offers a moderate degree of challenge and risk. Contact with other visitors both on the trail and while camped will be moderately frequent.

C. MANAGERIAL SETTING

Management will emphasize sustaining and enhancing the natural ecosystem. Onsite management will involve routine visitor contact. Necessary rules and regulations will be communicated to visitors outside the area, such as at trailbeads and boundary portals. Contact is initiated by Forest personnel during routine duties. Information concerning protection of site-specific wilderness resources will be presented. Formal and informal user education programs will be initiated to inform users about what to expect and how to use the area for optimum benefit to all. Formal rules and regulations may be necessary to achieve management objectives and permits may be considered only

when light-handed. less restricted measures have failed to achieve desired goals and objectives. Signs will be permitted within the area and will include the minimum number necessary to protect the wilderness resource, and for administration. Trails will normally be constructed, maintained, and managed to accommodate moderate **use** for the majority of the use season. **The** route will only modify natural conditions to the extent necessary to protect the environment and provide for moderately safe use by a user with limited experience and average physical ability. A moderate number of facilities will be provided or permitted, and only those necessary for the protection of the wilderness resource and the user. Natural materials will dominate. Dimensional and nonnative materials may be used but must remain not evident to the average **user.**

OPPORTUNITY CLASS IV

A RESOURCE SETTING

Characterized by a predominantly unmodified natural environment where ecological and natural processes are in many locations substantially affected by the action of users. Environmental impacts are generally high in areas along major travel routes, along popular river corridors and lake shores, and near major entry points. Impacts often persist from year to year and there may be moderate loss of vegetation and soil at some sites. Impacts are readily apparent to most visitors.

B. SOCIAL SETTING

Moderate to low opportunities for exploring and experiencing isolation from the sights and sounds of man with the probability of encountering other area **users** moderate to high. **The** user has the opportunity for a high degree of interaction with the natural environment, often with low **or** moderate challenge and risk. Contacts with other users will be relatively high much of the time, both on the trail and at campsites. Some parties will camp out of sight and sound of other parties, but this will not be common during the main-use season.

C. MANAGERIAL SETTING

Management will be oriented to sustaining and enhancing the natural ecosystem. There will be frequent opportunity for visitor contact with management personnel. Necessary rules and regulations will be communicated to visitors outside the area, such as at trailheads and boundary portals. Special efforts will be taken to contact visitors. Information concerning wilderness management, user conflicts, fire prevention, and other pertinent subjects will be presented. Formal and informal user education programs will be initiated to inform users about what to expect and how to **use** the area for optimum benefit to all. Formal rules and regulations may be necessary to achieve management objectives and permits may be considered only when light-handed, less restricted measures have failed to achieve desired goals and objectives. Signs

within the wilderness will be placed to aid in distributing and dispersing use, and for resource protection purposes. Trails will normally be constructed, maintained, and managed to accommodate heavy traffic for tbe majority of the use season. The routes will blend into the natural features of the area. acilities and improvements may be provided and permitted for resource protection, user safety, and limited user convenience. Facilities when constructed will emphasize the use of natural materials. Dimensional and nonnative materials are acceptable but should harmonize with the natural environment.

TABLE S-1
SUMMARY OF RESOURCE AND SOCIAL SETTING COMPONENTS FOR EACH OPPORTUNITY CLASS

	OPPORTUNITY CLASS I	OPPORTUNITY CLASS II	OPPORTUNITY CLASS III	OPPORTUNITY CLASS IV
RESOURCE SETTING: (General Description)	Unmodified natural environment	Unmodified natural environment	Unmodified natural environment	Predominantly unmodified natural environment
1) Ecological Conditions	Not measurably affected by the action of users	Minimally affected by the action of users	Moderately affected by the action of users	Many locations substantially affected by the action of users
2) Prevalence and Duration of Impact	Temporary loss of vegetation where camping occurs and along some travel routes. Typically recovers on an annual basis.	Minor loss of vegetation where camping occurs and along most travel routes. Most impacts recover on an annual basis.	Moderate loss of vegetation where camping occurs and along most travel routes. Impacts in some areas persist from year to year.	Moderate loss of vegetation and soil on major travel routes, campsites, and popular lake shores. Impacts persist from year to year.
3) Visibility of Impacts	Not apparent to most visitors	Apparent to only a low number of visitors	Apparent to a moderate number of visitors	Impacts are readily apparent to most visitors
SOCIAL SETTING: (General Description)	Outstanding opportunity for isolation and solitude	High opportunity for isolation and solitude	Moderate opportunity for isolation and solitude	Moderate to low opportunities for isolation and solitude
1) General Level of Encounters	Very infrequent	Low	Moderate	Moderate - High
2) Degree of Challenge and Risk	Very High	High	Moderate	Moderate - Low
3) Interparty Contacts while Traveling	Very Few	Low	Moderately Frequent	Relatively High
4) Interparty Contacts at the Campsite	Non-existent	Fairly Low	Moderately Frequent	Common

TABLE S-1 (CONTINUED)
SUMMARY OF MANAGERIAL SETTING COMPONENTS FOR EACH OPPORTUNITY CLASS

	OPPORTUNITY CLASS I	OPPORTUNITY CLASS II	OPPORTUNITY CLASS III	OPPORTUNITY CLASS IV
MANAGERIAL SETTING (General Description)	Strongly emphasize sustaining and enhancing the natural ecosystem	Emphasize sustaining and enhancing the natural ecosystem	Emphasize sustaining and enhancing the natural ecosystem	Emphasize sustaining and enhancing the natural ecosystem
1) Contact with Management Personnel during Normal Use Season	Infrequent	Minimum	Routine	Frequent
2) Rules and Regulations and Visitor Behavior	Will be communicated to visitors primarily outside of the wilderness in areas such as at trailheads and boundary portals		Where necessary, on-site enforcement and communication of rules and regulations will be conducted	
3) Formal and Informal User Education Programs	Will be initiated to inform users about what to expect and how to use the area for optimum benefit to all.			
4) Formal Rules and Regulations	May be necessary to achieve management objectives and permits may be considered only when light-handed, less restricted measures have consistently failed to achieve desired goals and objectives			
5) Presence and Extent of Signing	No trail signs present	Trail signs permitted. Will provide only minimum information necessary to protect the resource.	Signs will be permitted. Will include minimum number necessary to protect the resources and for administration.	Signs will be placed to aid in distributing and dispersing use, and for resource protection.
61 General Level of Trail Construction and Maintenance	Trails will not be constructed. Maintenance conducted only to protect the resource.	Managed to accommodate light and infrequent travel. Maintained only for resource protection and minimal user safety.	Managed to accommodate moderate use. Maintained only for resource protection and moderate user safety.	Managed to accommodate heavy traffic. Maintained for resource protection, user safety and limited user convenience.
7) Presence of Facilities	None provided or permitted	Very few provided or permitted and only for resource protection	Moderate number provided or permitted and only for user and resource	May be provided or permitted for resource protection and user

APPENDIX T

Watershed Improvement Schedule

FY 1987

Watershed	Project Name	Nature of Problem	cost Estimate
Ten Mile	Banner Creek Rd	Road Erosion	$ 2,000
	Minniehaha Rd System	" "	11,800
	Josephine-Beatrice Rd	" "	900

FY 1988

Ten Mile	Ten Mile Rd System	Road Erosion	12,175

FY 1989/1990

Ten Mile	Ten Mi Mine Reclamatn	Abnd Mn Dump	35,000

FY 1991

McClellan Cr.	Crystal Cr Rd System	Road Erosion	8,850
	Maupin Cr Rd System	" "	6,225

FY 1992

McClellan Cr.	Jackson Cr Rd System	Road Erosion	3,175
	McClellan Cr	" "	1,850
Prickly Pear Cr.	Lump/Corral Rd System	Road Erosion	7,250
	Quartz Cr. Rd System	" "	3,475

FY 1993

Prickly Pear Cr.	Brooklyn Bridg Rd Sys	Road Erosion	1,800
	Middle Fk Rd Sp.	" "	12.987"

*A portion of the improvements scheduled for this project is also included in 1994, which is Listed on the following page.

FY 1994

Watershed	Project Name	Nature of Problem	cost Estimate
Prickly Pear Cr.	Shingle Cr. Rd	Road Erosion	$ 1,900
	Middle Fk Rd Sp.	" "	12,988*

FY 1995

Prickly Pear Cr.	Side Rds on Warm Sp.	Road Erosion	4,900
	North Fk Warm Sp. Rd	" "	7,500
	Buffalo Cr. Rd System	" "	4,275

FY 1996

Prickly Pear Cr.	Strawberry Cr. Rd	Road Erosion	6,425
Little Blackfoot	Bryan Creek Rd	Road Erosion	4,330
	Mine abv Newmans Camp	Sediment	675
	Treasure Mtn Rd Sys.	Road Erosion	5,925

FY 1997

Little Blackfoot	Hahn Cr.-Flume Gulch	Road Erosion	500
	Moose Cr. Rd System	" "	2,625
	Dog Cr. Rd Sys. #1	" "	5,225
	Dog Cr. Rd Sys. #2	" "	5,625
	Dog Cr. Rd sys. #3	" "	5,275

FY 1998

Little Blackfoot	Rd #87084	Road Erosion	225
	Ontario Cr. Rd System	" "	7,150
	Trout Cr. Rd System	" "	3,975
	Mike Renig Rd System	" "	2,325
	Golden Anchor Mill&Rd	Sedimt/Debris	2,500

A portion of the improvements scheduled for this project is also included in 1993, which is listed on the previous page.

FY 1999

Watershed	Project Name	Nature of Problem	cost Estimate
Little Blackfoot	Kading #87227	Road Erosion	$ 1,500
	Third Term Mine	Chemical-H20	1,250
West Side-Missouri	Beaver Cr. Rd System	Tree Uprt-Rd	5,875
	Staubach Rd System	Road Erosion	350
	West Fork Indian Cr.	" "	2,400
	Indian Cr. Rd System	Mine Tailing	5,875

FY 2000/2001/2002

Little Blackfoot	Mines Reclm w/in drng	Mine Waste	55,125

FY 2003

West Side-Missouri	Crow Cr. Rd System	R Eros-lk CMP	2,975
	Tizer Rd System	R Eros-Strm X	---
East Side-Missouri	Sulpur Bar Rd System	Road Erosion	7,200
	Hay Cr. Hdwtrs Rd Sys	" "	5,625

FY 2004

East Side-Missouri	Bear Gulch	Road Erosion	850
	Cabin Gulch Rd (E Fk)	" "	5,950
	Side Rds N.F.Deep Cr.	" "	3,450
	North F. Deep Cr.	" "	1,500
	#4178-Ray & Gumet Cr	" "	120
	#139-Duck Cr. Rd	" "	250
Little Prickly Pear	S.F. L. Prickly Pear	Road Failure	145
	Lost Horse Rd System	" "	3,000

FY 2005

Watershed	Project Name	Nature of Problem	cost Estimate
Little Prickly Pear	Virginia Cr. Rd Sys.	Road Erosion	$ 5,075
	N.Fk L.Pr.Pear Rd Sys	" "	6,050
	N.F. L. Prickly Pear	" "	4,950

FY 2006

Little Prickly Pear	S.Fk L.Pr.Pear Rd Sys	Road Erosion	8,575
	Virginia Cr. Rd Sys.	" "	4,300
lackfoot	Beaver Cr. Rd System	Road Erosion	825
	Stonewall Cr. Rd	" "	750

FY 2007

Prickly Pear Cr.	Greenhorn Cr Rd Sys	Road Erosion	3,800
	Austin/Sweeney Rd Sys	" "	6,000
Blackfoot	Poorman Cr. Rd System	Road Erosion	3,205
Smith River	Birch Cr. Side Rds	Road Erosion	2,250

FY 2008

Landers Fork	Copper Cr Debris Remv	Channel Eros	9,000
	Copper Cr. Rd System	Road Erosion	3,825

FY 2009

Landers Fork	7-Up Pete Cr. Rd Sys.	Road Erosion	9,020

APPENDIX U

Prescribed Burning Schedule

Prescribed burning will be used to reduce fuels resulting from timber sale activities as well as natural fuels to improve range for both livestock and wildlife habitat. Criteria for selecting livestock and wildlife areas are listed for natural fuels. Also refer to Chapter II, Forest-Wide standards, for prescribed burning.

Prescribed burning for the Helena National Forest is broken into Activity Fuels (including Timber Harvest related fuel treatment) and Natural Fuel Treatment for Fire Hazard Reduction, Range and Wildlife improvement.

ACTIVITY FUELS - During the first decade the timber program will harvest 150 million board feet on up to 19,400 acres scattered throughout the Forest. See Helena National Forest Plan, Appendix V "Ten-Year Timber Sale Schedule." Annual fuel treatment from these sales will average 1,800 acres per year once harvest activities begin. Treatment methods include a spectrum from little or no treatment such as natural abatement, lopping and supplemental protection to intensive treatment such as dozer piling and burning and broadcast burning.

The following chart shows the timber sales now under contract and remaining fuels work planned for these sales:

Activity Fuel Treatment **1986-1990** Forest Sevice Responsibility

District	F.Y.	Sale Name	*Treatment*	Acres
D-1	86	Granger-N. Fork	Burn Dozer Piles	58
D-1	86	Hellgate-Magpie	Burn Dozer Piles	22
D-1	86	Hellgate-Magpie	Jackpot Burn	27
D-1	86	Cement Post	Burn Dozer Piles	4
D-1	86	Small Sales	?	35
D-2	86	Little Porcupine	Burn Dozer Piles	250
D-2	86	Greenhorn Sal.	Burn Dozer Piles	68
D-2	86	LaSalle	Burn Dozer Piles	105
D-2	86	Hahn C.	Broadcast Burn	10
D-2	86	Small Sales	Burn Dozer Piles	25
D-4	86	Long-Ethyl T.S.	Burn Dozer Piles	77
D-4	86	Madison-Willow T.S.	Underburn	8
D-4	86	Madison-Willow T.S.	LOP	54
D-4	86	Clear-Buffalo T.S.	Burn Dozer Piles	100
D-4	86	Gold Creek T.S.	Burn Dozer Piles	57
D-4	86	Small Sales	Burn Dozer Piles	100
D-1	87	Camas-Gypsy	Broadcast Burn	62
D-1	87	Camas-Gypsy	Burn Dozer Piles	86
D-1	87	Blacktail Cabin	Burn Dozer Piles	23
D-1	87	Blacktail Cabin	Burn Hand Piles	12
D-1	87	Small Sales	?	35

D-2	87	Hahn Cr.	Burn Dozer Piles	143
D-2	87	Deadman	Braodcast Burn	55
D-2	87	Small Sales	Burn Dozer Piles	25
.-4	87	Davis-South Fork T.S.	Burn Dozer Piles	78
D-4	87	Davis-South Fork T.S.	Broadcast Burn	22
D-4	87	Clear Buffalo T.S.	Burn Dozer Piles	100
D-4	87	Gold Creek T.S.	Broadcast Burn	37
D-4	87	Sucker-Keep Cool T.S.	Burn Dozer Piles	100
D-4	87	Sucker-Keep Cool T.S.	Burn Band Piles	14
D-4	87	Copper-Snowbank T.S.	Burn Dozer Piles	122
D-4	87	Sauerkraut T.S.	Burn Dozer Piles	100
D-4	87	Lincoln Gulch T.S.	Burn Dozer Piles	12
D-1	88	Blacktail Slough	Burn Dozer Piles	130
D-1	88	Blacktail Slough	Burn Band Piles	16
D-1	88	Blacktail Slough	Broadcast Burn	25
D-1	88	Small Sales	?	35
D-2	88	Jesusha Gulch	Underburn	20
D-2	88	Bat Cr.	Burn Dozer Piles	88
D-2	88	Deadman	Burn Dozer Piles	220
D-2	88	Small Sales	Burn Dozer Piles	25
D-4	88	Davis-South Fork T.S.	Burn Dozer Piles	42
D-4	88	Davis-South Fork T.S.	Broadcast Burn	62
D-4	88	Clear Buffalo T.S.	Burn Dozer Piles	123
.D-4	88	Clear Buffalo T.S.	Burn Band Piles	23
4	88	Sucker-Keep Cool T.S.	Broadcast Burn	14
4	88	Copper-Snowbank T.S.	Broadcast Burn	72
D-4	88	Lincoln Gulch T.S.	Braodcast Burn	55
D-4	88	Small Sales	Burn Dozer Piles	100
D-1	89	Twin Sisters	Burn Dozer Piles	112
D-1	89	Twin Sisters	Broadcast Burn	24
D-1	89	Small Sales	?	35
D-2	89	Jesusha Gulch	Burn Dozer Piles	77
D-2	89	Bison Mt.	Burn Dozer Piles	235
D-2	89	Small Sales	Burn Dozer Piles	25
D-4	89	Copper-Snowbank T.S.	Burn Dozer Piles	65
D-4	89	Copper-Snowbank T.S.	Broadcast Burn	56
D-4	89	Lincoln Gulch T.S.	Broadcast Burn	56
D-4	89	Small Sales	Burn Dozer Piles	100
D-1	90	Granger-North Fork	Burn Dozer Piles	77
D-1	90	Granger-North Fork	Broadcast Burn	30
D-1	90	Small Sales	?	35
D-2	90	Strawberry	Underburn	107
D-2	90	Strawberry	Jackpot	65
D-2	90	Small Sales	Burn Dozer Piles	25

D-4	90	Copper-Snowbank T.S.	Burn Dozer Piles	48
D-4	90	Copper-Snowbank T.S.	Broadcast Burn	34
D-4	90	Lincoln Gulch T.S.	Broadcast Burn	60
D-4	90	Small Sales	Burn Dozer Piles	100

NATURAL FUELS - Prescribed burning will be used to reduce natural fuel accumulation, and improve habitat for both livestock and wildlife.

Most burning will improve vegetative conditions for both livestock and wildlife. The acres are potential acres--acres of grassland or timber/grassland habitat types that could benefit from burning. From these potential acres, specialists in range, wildlife, and fire will determine the actual acres to burn, based on livestock and wildlife needs, burning feasibility, and on-the-ground reviews. Forest-Wide the annual average prescribed burning program is 1,950 acres.

Criteria for Selecting Areas to Burn

1. Areas are in Fire Groups 1 thru 6. (See the Fire Planning Records for a description of each Fire Group. Fire Group maps are available in the Forest Supervisor's office.)

2. The fire frequency in the area has not exceeded the natural fire frequency for the Fire Group.

3. Vegetative productivity needs to be maintained or improved.

. The composition of vegetation types needs to be maintained or improved.

More specifically. when selecting areas for prescribed burning one should identify problem areas — grazing land with reduced productivity--in Fire Groups 1 tbru 6, and then ask the following questions:

1. Does the allotment have areas of reduced forage production for livestock?

2. Is competition between cattle and elk such that there is inadequate fall, winter, or spring forage for elk?

3. Is there overuse of browse plants by deer and elk?

4. Is the wintering elk herd damaging private lands?

5. Are there opportunities to expand the elk winter range into areas presently not used?

If the answers are yes, then the area should be considered for prescribed burning.

The following chart shows the proposed natural fuels burning schedule for 1986–1991. These acres are estimated. Actual acres will be determined by resource specialists and dollars available at the time the Burning Prescription is being prepared.

PLANNED PRESCRIBED BURNING SCHEDULE FOR NATURAL FUELS AND HABITAT IMPROVEMENT

FY	DISTRICT	LOCATION	POTENTIAL ACRES	FIRE GROUPS	MANAGEMENT AREAS
86	D-1	White horse	300	0	Elkhorns 1
86	D-1	Whites NE	300	0,4	L1,M1
86	D-1	Carl Cr.	890	0,4	L1,MI
86	D-2	Hedges	100	0,4	M1
86	D-2	Beaver/Soup	1000	0,2	L1,W2
86	D-4	Ethyl-Long	150	0,4,6	W2,T2
86	D-4	Baldy	350	0,4,5,6	W2,M1,T2
87	D-1	S.Crow	3500	0	Elkhorns 1
87	D-1	Thomas	120	0,4	W2,L1
87	D-1	Avalanche	1800	0,4	L1,M1
87	D-2	Beaver/Soup	500	0,2	L2
87	D-2	Irish Mine	400	0	L1
87	D-4	Silver King	400	0,4,5,6	W1,M1
87	D-4	W. Alice	200	0,4,5,6	L2,W1
88	D-1	Silver Springs	500	0	Elkhorns 1
88	D-1	Dry Cr.	640	0,4	L1,T5
88	D-1	Spring Cr.	30	0	L1
88	D-2	Irish Mine	600	0	L1
8	D-4	Trout Tarhead	400	0,4,6	W1,W2,T3,L1,M1
89	D-1	Eagle Cr.	1698	0	Elkhorn 1
89	D-1	Johnnies (Pasture)	881	0	Elhorn 1
89	D-1	Bear G.	70	0	W2
89	D-1	Hellgate	570	0,4	L1,M1
89	D-2	Esmeralda	1000	0	L1
89	D-4	Black Diamond	300	0,4,5	T2,T3
89	D-4	Hogum	120	0	W1,W2,L1
90	D-1	L.Pole	60	0	Elkhorns 3
90	D-1	Sulphur Bar	60	0	T1,M1
90	D-1	Whites NW	875	0,4	W2,M1,L2
90	D-2	Esmeralda	1000	0	L1
90	D-4	Moose Cr.	100	0,4,6	T2,T1,M1
90	D-4	Trapper Mtn.	50	0,4	TI,MI
90	D-4	Chimney	100	0	L2
90	D-4	Deer Cr.	150	0,4,5,6	W1,T5

91	D-1	N. Crow	1756	0	Elkhorns 1
91	D-1	Avalanch Spiling N	400	0,4	L1,M1
91	D-2	Strawberry	800	0,6	Elkhorns 2,4
91	D-4	Copper Cr.	230	0,4	W1,T4,M1
'91	D-4	Liverpool	70	0,4,6	M1
91	D-4	Theodore	100	0,5,6	M1, T2

* These are the approximate acres in Fire Groups 1 thru 6 within the area scheduled for burning. From the potential acres, specialists in range, wildlife, and fire will determine the actual acres to burn based on livestock and wildlife needs, burning feasibility, and on-the-ground reviews.

APPENDIX V

Ten-Year Timber Sale Schedule

The sale schedule will be annually updated to reflect new on-the-ground information and management changes, and as the first year is implemented a new tenth year will be added.

Sale Name 1986	Location	Management Area	Area (acres)	Volume (MMBF)	Road Miles C	Road Miles R	Probable Harvest Methods by Forest Type and Special Requirements
Hogum Creek	Sec. 20,21,22,28,29, 32.33 T14N, R7W	T-1 6 1-3	300	4.0	8.2	2.9	LPP Clearcut up to 40 acres.
Middle Davis	SEE. 16, 17, 20, 21 T13N, R7W	T-1 & 1-3	90	0.7	1.2	0	LPP Clearcut up to 60 acres.
Old Lincoln	Sec. 7. 8, 1148. R9W	1-3	70	1.1	0	0	LPP-DP Clearcut up to 40 acres.
Sauerkraut	Sec. 8, 16, 17, 20, 21, T9N, R9W	T-1	100	1.1	0.9	1.3	LPP Clearcut up to 40 acres.
Ontario Creek	Sec. 4. T8N, R6W	T-1	330	1.7	5.9	0.6	LPP-DP Clearcut up to 40 acre.; shelterwood units up to *40* acres on SW/S/W slopes.
Rocky-Bowman	Sec. 9, T12N, R1E	T-1 6 T-3	490	2.5	5.0	.3	DP Shelterwood up to *40* acres.
Upper Duck	Sec. 25. T9N, R3E	I-i	200	1.0	1.8	0.1	DP Shelterwood units up to *40* acre..
Snowshoe Creek	Sec. 23, T11N, K7Y	T-1	110	1.0	1.0	0	DP-LPP Clearcut up to *40* acres; shelterwood up to 40 acres on S/SW slopes
Small Sales			200	2.2	0	0	LPP Clearcut patchs up to *40* acre..

Sale Name 1987	Location	Management Area	Area (acres)	Volume (MMBF)	Road Miles C	Road Miles R	Probable Harvest Methods by Forest Type and Special Requirement
Upper Arrastra	Sec. 21, 23, 24. 26 T15N, R10W	T-1	*400*	40	2.0	*6.0*	Mixed conifer seed tree cuts to 40 acres. LPP Clearcut up to *40* acres.
Yukon	Sec. 29. 32. 33 T15N, R9W	T-i, T-2 T-3	175	25	1.1	3.7	LPP-DP Clearcut up to 40 acres; shelterwood up to *40* acre. on S/SW/W slopes.
Copper Red - copper Bottom	*SIC.* 5. *6. 9.* 16 T15N, R8W	T-3 6 T-4	*50*	0.5	1.0	0	LPP Clearcut up to 40 acres.

Area = Area to be cut; Volume = Volume to be Sold; Road Miles: C = Construction; R = Reconstruction

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Sale Name 1987	Location	Management Area	Area (acres)	Volume (MMBF)	Road Miles C	Road Miles R	Probable Harvest Methods by Forest Type and Special Requirement
Upper Arrastra	Sec. 21, 23, 24. 26 T15N, R10W	T-1	400	4.0	2.0	6.0	Hired conifer seed tree cuts to 40 acres. LPP Clearcut up to 40 acres.
Yukon	Sec. 29. 32. 33 T15N, R9W	T-1, T-2 T-3	175	25	11	3.7	LPP-DP Clearcut up to 40 acres; shelterwood up to 40 acres on S/SW/W slopes.
Copper Red - Copper Bottom	Sec. 5. 6. 9, 16 T15N, R8W	T-3 6 1-4	50	05	10	0	LPP Clearcut up to 40 acres.

Sale Name 1988	Location	Management Area	Area (acres)	Volume (MMBF)	Road Miles C	Road Miles R	Probable Harvest Methods by Forest Type and Special Requirements
Baldy	T13N, R8W	T-1 6 T-2	100	0.7	1.0	0	LPP Clearcuts up to 40 acres;
N. Poorman	Sec. 7. 8. 18, T13N, R7W	T-1	200	1.6	25	0	LPP Clearcut up to 40 acres.
Sauerkraut (small sales)	T13N, R9W	T-1	150	1.3	0	0	LPP Clearcut up to 40 acres.
Speiling	Sec. 20, T14N, R9W	T-4	50	05	0	0	DF Shelterwood.
South Hat	Sec. 10, T8N, R7W	T-1 & T-5	790	4.0	7.0	0	LPP-DP Clearcut up to 40 acres; shelterwood up to 40 acres on S/SW/W slopes.
Cave Gulch	Sec. 9. T11N, E7Y	T-1 6 1-5	200	1.1	1.6	0	DF-LPP Shelterwood up to 40 acres; clearcut up to 40 acres.
Diamond 1/	Sec. 28, T10N, R3E	T-1 & T-3	330	1.1	2.2	3.5	LPP-DP Clearcut up to 40 acres; shelterwood an S/SW/W slope..
Small Sales		T-1		3.1	3.0	0	LPP-DF Clearcut up to 40 acres; shelterwood up to 40 acres on S/SW/W slopes.

Sale Name 1989	Location	Management Area	Area (acres)	Volume (MMBF)	Road Miles C	Road Miles R	Probable Harvest Methods by Forest Type and Special Requirement
Indian Meadows	Sec. 2, 3. 10, 14. T15R, R8W	1-3	400	4.0	5.0	0	LPP-DP Clearcut up to 40 acres; shelterwood and seed tree cuts.
Sauerkraut	T13N, R9W	T-1 & T-3	350	3.0	3.0	1.0	LPP Clearcut units up to 40 acres.
Black Mountain 1/	Sec. 25. T9N, R5W	T-3, T-4	280	4.0	3.0	0.7	LPP-DP Clearcut up to 40 acres; shelterwood up to 40 acres on S/SW/W slopes. Sensitivity to visuals.
West Cabin	Sec. 15, T7N, R4E	T-1, 1-3 & T-5	200	1.0	2.0	0	DP Shelterwood up to 40 acres on S/SW/W exposures.
Small Sales				3.0	0	0	LPP-DP Clearcut up to 40 acres; shelterrood up to 40 acres.

Sale Name 1990	lacation	Management Area	Area (acres)	Volume (MMBF)	Road Miles C	Road Miles R	Probable Harvest Methods by Forest Type and Special Requirement
Crater Mountain	T14N, R7W	T-1, 'I-3. & T-5	775	6.2	8.0	2.0	LPP Clearcut up to 40 acres.
lane Point	Sec. 24, T14N, R10W	T-2	150	0.8	1.8	0	DP Shelterrood cuts.
Coon Spring 1/	Sec. 3. T10N, R2E	T-1, T-3, & T-5	530	2.7	5.5	1.0	DF Shelterwood up to 40 acres.
Treasure Mountain1/	T8N, R6W	T-1	800	4.0	8.0	2.0	DF-LPP Shelterwood up to 40 acres; clearcut up to 40 acres.
Small Sales				1.3			LPP-DP Clearcut up to 40 acres; shelterwood up to 40 acres on S/SW/W slope..

1/ Capital Investment Funds have been requested. Although fund. have been requested there is no assurance they will be recieved.

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APPENDIX V

Ten-Year Timber Sale Schedule

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Sale Name 1991	Location	Management Area	Area (acres)	Volume (MMBF)	Road Miles C	Road Miles R	Probable Harvest Methods by Forest Type and Special Requirement
McCarthy	Sec. 12, T13N, R9W	T-2	175	0.8	0.8	0.5	DF-LPP Shelterwood up to 40 acres; clearcut up to 40 acres.
South Poorman 1/	Sec. 29, 32, 33, T13N, R9W	T-1 & T-3	400	4.0	7.7	3.2	LPP Clearcuts up to 40 acres.
Lower Arrastra	Sec. 4. 10, T14N, R10W	T-1	175	0.7	0.5	1.0	LPP-UP Clearcut up to 40 acres; shelterwood up to *40* acres on S/SW/W slope.,
Elk Ridge 1/	Sec. 22. T13N, R1E	T-1 & 1-5	*490*	2.5	5.0	1.0	DF Shelterwood up to 40 acres.
Left Hand Fork Deadman	T21N, P7Y	T-1 & 1-3	290	15	*3.0*	0.5	LPP-DF Clearcut to 40 acres; shelterwood up to *40* acres.
Brooklyn Bridge	Sec. 21,22,23,26,27, 28,34,35, T9N, R4W	T-1	250	13	25	0.5	LPP-DF Clearcut up to 40 acres; shelterwood up to 40 acres.
Upper Cabin	Sec. 2, T7N, R4E	T-1, 1-3 & T-5	200	i.3	2.0	*0*	DF Shelterwood up to *40* acres on S/SW/W slope..
Small Sales		T-1	200	*3.0*	0.5	0.5	LPP-DF Clearcut up to *40* acres; shelterwood up to *40* acres on S/SW/W slopes.

Sale Name 1992	Location	Management Area	Area (acres)	Volume (MMBF)	Road Miles C	Road Miles R	Probable Harvest Method. by Forest Type and Special Requirement
Stonewall	T15N, R9W	T-1, T-2 T-3	800	6.0	12.0	3.0	LPP-DP Clearcut up to 40 acres; shelterwood up to 40 acres on S/SW/W slopes.
Mullen Pass 1/	T11N, R6W	T-1 & 1-5	800	*4.0*	8.0	2.0	DF Shelterwood up to 40 acres.
Lava Mountain	Sec. 14,15,21,22,23, 24,25,26,27,T8N,R5W	T-1	330	17	25	0	DP-LPP Shelterwood up to 40 acre.: clearcut up to 40 acres.
Carl Creek	Sec. 25, T7N, BAS	T-1	150	13	1.0	1.0	DF Shelterwood up to 40 acres
Small Sales			*400*	2.2	0	0	LPP-DP Clearcut up to 40 acres; shelterwood up to *40* acres on S/SW/W slopes.

Sale Name 1993	Location	Management Area	Area (acres)	Volume (MMBF)	Road Miles C	Road Miles R	Probable Harvest Method. by Forest Type and Special Requirement
Eastside	T13N, R7W	T-3 & T-5	a00	6.0	12.0	3.0	DP-LPP Shelterwood up Lo 40 acres; clearcut up to 40 acres.
Three-Mile	T11N, R7W	T-1 & T-5	300	2.0	4.0	1.0	LPP-DF Clearcut up to 40 acre.; shelterwood up to 40 acre.
Willow Creek 1/	T9N, R5W	T-1, 1-3	230	1.2	25	0.5	DF-LPP Shelterwood up to 40 acre.; clearcut up to 40 acres.
Deadman II	Sec. 29. T12N, P7Y	T-1	150	1.5	2.0	0	LPP-DF Clearcut up to 40 acre.; shelterwood up to 40 acres on S/SW/W slopes.
Small Sales				3.8	0	0	LPP-DF Clearcut up to 40 acre.; shelterwood up to 40 acres on S/SW/W .lope.,

Sale Name 1994	Location	Management Area	Area (acres)	Volume (MMBF)	Road Mile. C	Road Mile. R	Probable Harvest Method. by Forest Type and Special Requirement
Ogden	T13N, R10W	T-1 & T-3	a00	b-0	12.0	3.0	LPP-DF Clearcut up to 40 acres; shelterwood up to 40 acres on S/SW/W slopes.
Priest Pass	T10N, R5W	T-1	a00	4.0	8.0	2.0	DF-LPP Shelterwood up to 40 acres; clearcut up to 40 acres.
Ten Mils	T8N, P6Y	T-1	500	3.0	3.0	1.0	LPP-DF Clearcut up to 40 acre.; shelterwood up to 40 acres on S/SW/W slopes.
Small Sales			300	2.0	0	0	LPP-DF Clearcut up to 40 acres; shelterwood up to 40 acres on S/SW/W slopes.

Sale Name 1995	Location	Management Area	Area (acres)	Volume (MMBF)	Road Miles C	Road Miles R	Probable Harvest Methods by Forest Type and Special Requirements
Sucker-Keep Cool	T15N, R8W	T-1, T-3 & T-4	800	6.0	12.0	3.0	LPP-DF Clearcut up to 40 acres; shelterwood up to 40 acres on S/SW/W slopes.
Large Sales	(D-1 & D-2)	T-1, T-2, T-3, T-4, & 1-5	a00	6.0	8.0	2.0	LPP-DF Clearcut up to 40 acres; shelterwood up to 40 acres on S/SW/W slopes.
Small Sales (D-1 & D-2)	Throughout Districts		290	2.0	1.0	0.5	LPP-DF Clearcut up to 40 acres; sheltenood up to 40 acres on S/SW/W slopes.
Small Sales (D-4)	Throughout District		150	1.0	1.0	0	LPP-DF Clearcut up to 40 acres; shelterwood up to 40 acres on S/SW/W slopes.

1/ Capital Investment Funds have been requested. Although funds have been requested there is no assurance they rill be recieved.

Area = Area to be cut; Volume = Volume to be Sold; Road Miles: C = Construction; R = Reconstruction

APPENDIX W

Criteria and Schedule for Fisheries Improvement

The following criteria are used to select lakes or streams for fisheries improvements. This list is not exhaustive; additional criteria may be considered.

1. Projects should be cost effective.
2. Emphasize projects for arctic grayling, cutthroat, and bull trout.
3. Projects should remove the factor limiting the fish population.
4. Emphasize projects in drainages receiving heavy angling pressure.
5. Emphasize projects to mitigate impacts on fish populations resulting from other land management activities.

Fisheries Improvement Schedule

The improvement schedule will be annually updated to reflect new on-the-ground information and management changes.

Year	Project	Management Area
1986	-Stocking of Park Lake w/ Cutthroat Trout	T-4
	-Pool development S Fk Poorman Cr.	T-3
	-Pool development Monarch Cr.	T-1
	-Pool development Hunters Gulch	L-2
	-Culvert barrier removal on Yukon Cr.	T-1
1987	-Bank protection S HK Crow Cr.	Elkhorn 1
	-Shrub planting Avalanche Creek	L-1
	-Pool development in Beaver Creek	L-2
	-Stock Westslope Cutthroat and pool development in Eureka Cr.	Elkhorn 2

	-Stock Park Lake w/ Cutthroat	T-4
988	-Shrub planting Elliston Creek	T-1
	-Shrub planting & hank protection Avalanche Creek	L-1
	-Pool development in Deep Creek	W-1
	-Stock Park Lake w/ Cutthroat	T-4
1989	-Shrub planting Dry Creek	L-1
	-Pool development in Dry Creek	L-1
	-Cutthroat introduction in Upper Arrastra Creek	M-1
	.-Beaver introduction in Slate Creek	T-5
	-Pool development Davis Gulch	T-3
1990	-Cutthroat introduction & pool development Beartrap Gulch	L-1
	-Pool developments in Copper Creek	T-4
	-Pool developments in unnamed tributary to Telegraph Creek	T-1
	-Pool developments in Ontario Creek.	R-1
	-Cover development on Snowbank Lake	T-4

APPENDIX X

Noxious Weed Control

Emphasis for control of noxious weeds on the Helena National Forest will be under cooperative weed control agreements with the County Weed Boards. As part of the control program, the Forest expects to annually treat approximately 700 acres where infestations are in danger of spreading. The noxious weed inventory indicates where these are located. (Helena Forest noxious weed inventory is available at the Supervisor's Office, file 2240.) Weed species to be treated are identified in the County Weed Boards' noxious weed list. According to Integrated Pest Management principles, all weed treatment will be performed by back pack sprayers, use of granules and ground rigs with hand held sprayers. Cooperative weed control agreements are being developed where logical treatment boundaries can be established. Proposed treatment areas for the next five years are as follows:

Jefferson County Weed District

Prickly Pear drainage
Boulder River drainage

Lewis & Clark County Weed District

Blackfoot River drainage
West Side of Big Belts

APPENDIX Y

Projected Budget **Required to** Implement the **Forest** Plan 1/
(Average Annual Dollars for First Decade)

Funding Item	Budget Activity	FY 78 Dollars 2/	FY 84 Dollars 3/
00	General Administration	612,245	900,000
01	Fire Protection	336.735	495,000
02	Fire Prot. (FUEL)	52,381	77,000
03	Tbr. Prep/Admin.	215,646	317,000
04	Tbr. Resource Plans	65,986	97,000
05	Tbr. Silv. Exams	117,007	172,000
06	Range	147,619	217,000
07	Range(Noxious Weeds)	29,932	44,000
08	Minerals	142,857	210,000
09	Recreation	166,667	245,000
10	Wildlife and Fish	185,714	273,000
11	Soil, Air, Water	137,415	202,000
12	Facility Maintenance	29,932	44,000
13	Special Uses	40,816	60,000
15	Land Exch/Ownership	20,408	30,000
16	Landline Location	68,027	100,000
17	Road Maintenance	204,082	300,000
18	Trail Maintenance	52,381	77,000
19	Co-op Law Enforcement	10,884	16,000
20	Reforestation - Appropriated	48,299	71,000
21	TSI - Appropriated	32,653	48,000
23	Tree Improvement	7,483	11,000
25	SCSEP	6,803	10,000
26	KV-Reforestation	188,435	277,000
27	KV-Tbr. Stand Imp.	15,646	23,000
28	KV-Other	6,803	10,000
29	CWFS-Other (Trust Fund)	10,204	15,000
30	Timber Salv.Sales (Perm, Fund)	10,204	15,000
31	Brush Disposal (Perm. Fund)	22,449	33,000
32	Range Improvement	22,449	33,000
33	Recreation Construction	26,531	39,000
34	Facility Construction - FA&O	30,612	45,000
35	Engineering Construction Support	319,728	470,000
36	Const.-Capital Investment Roads	204,082	300,000
37	Trail Construction/Reconstruction	28,571	42,000
42	Land Status	3,401	5,000
	Total	3,621,088	5,323,000

1/ Projected budget includes the cost of monitoring the Forest Plan.
2/ FY 78 is the base year for costs **used** in Forest planning.
3/ FY 84 dollars equals FY 78 dollars times 1.47.