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Department of
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Forest Service



Flathead
National Forest

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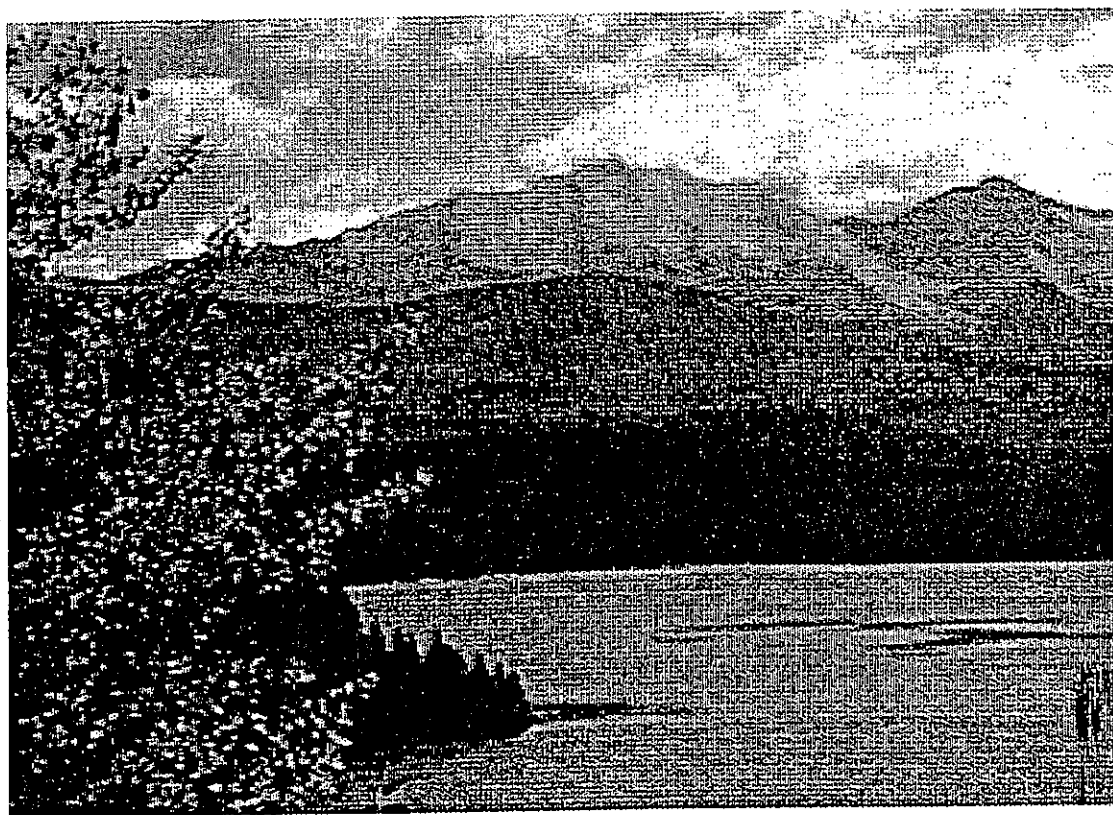
FLATHEAD NATIONAL FOREST



FOREST PLAN AMENDMENT #19

Allowable Sale Quantity and Objectives
and Standards For
Grizzly Bear Habitat Management

AMENDED ENVIRONMENTAL ASSESSMENT



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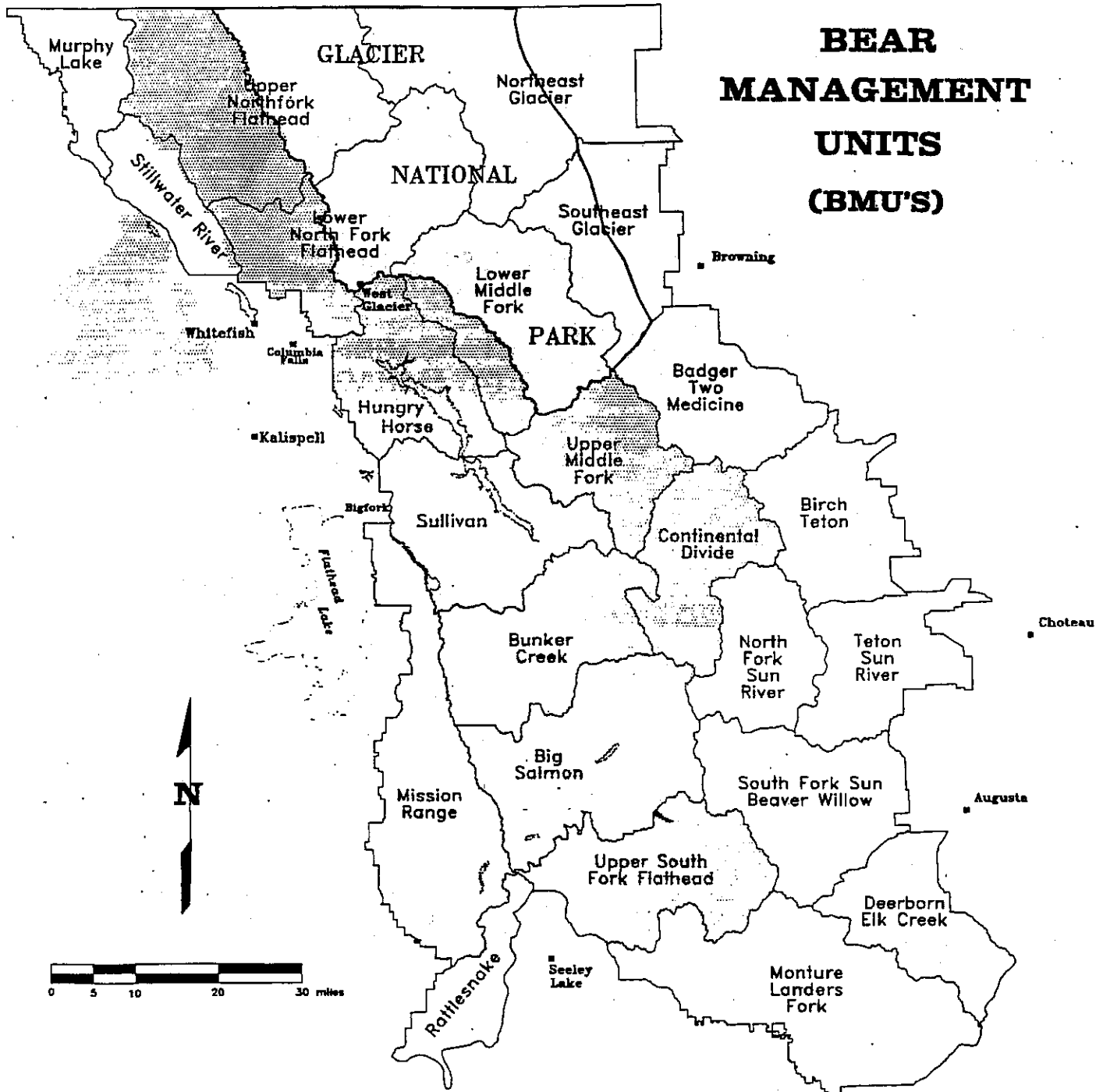
**ALLOWABLE SALE QUANTITY
AND
OBJECTIVES AND STANDARDS FOR
GRIZZLY BEAR HABITAT MANAGEMENT**

AMENDED ENVIRONMENTAL ASSESSMENT

MARCH 1995

**Northern Continental Divide
Recovery Area**

**BEAR
MANAGEMENT
UNITS
(BMU'S)**



FLATHEAD NATIONAL FOREST

TABLE OF CONTENTS

Chapter I - Purpose and Need	1
Chapter II - Alternatives	5
Chapter III - Affected Environment and Effects of Alternatives	27
Chapter IV - List of Preparers	103
Chapter V - Public Comments and Responses	105
Glossary	136
Literature Cited	139

APPENDICES:

Appendix V-1 -	Federal, State, and County Comment Letters (Chapter V)
Appendix V-2 -	List of Respondents (Chapter V)
Appendix A -	Proposed Changes to the Forest Plan (includes Access Management Monitoring, Forest Plan Appendix UU)
Appendix B -	Spatial Analysis Methods for Determining ASQ
Appendix C -	Analysis Methods for Threatened and Endangered Wildlife
Appendix D -	Definitions and Implementation Direction for Restricted Roads, Reclaimed Roads, and Security Core Areas (Forest Plan Appendix TT)

CHAPTER I -- PURPOSE AND NEED

A. PURPOSE AND NEED

Introduction

The Flathead National Forest proposes to change the Forest Plan by amending the objectives, standards, and guidelines that address timber production and grizzly bear management.

Under provisions of the National Forest Management Act of 1976, the U.S. Department of Agriculture's Forest Service prepares an integrated plan for the management of each National Forest. The Forest Service has a responsibility to provide for the recovery and conservation of endangered species and threatened species under the Endangered Species Act. The Flathead Forest Plan contains goals, objectives, standards, and guidelines that are intended to ensure conservation and recovery of listed species and to provide adequate protection of their habitat.

A lawsuit against the Forest Plan resulted in a court order to adjust the Allowable Sale Quantity (ASQ) of timber in a manner that ensures protection of endangered and threatened species and their habitats.

Development of the Forest Plan

The Forest and Rangeland Renewable Resources Planning Act of 1974, the National Forest Management Act (NFMA) of 1976, the National Environmental Policy Act (NEPA) of 1969, and their implementing regulations, provided direction for the planning process. As part of the Forest Planning process an Environmental Impact Statement (EIS) was developed, which considered alternatives for the future management of land and resources managed by the Flathead National Forest. The Preferred Alternative in the EIS was the basis for the final Flathead National Forest Land and Resource Management Plan (Forest Plan).

The goals for managing the Flathead National Forest are to provide: (1) public benefits from National Forest lands, (2) long-term stewardship of the land, (3) leadership in forestry, and (4) commitment to public service. The management objectives of the Flathead National Forest support and contribute to the eventual realization of these goals.

Regional Forester James Overbay approved the Forest Plan on January 22, 1986. Ordinarily, the Forest Plan would be revised on a 10-year cycle or at least within 15 years. However, the Forest Plan can be changed at any time to reflect new information.

History of Forest Plan Consultation and Litigation

The Flathead National Forest consulted with the U.S. Fish and Wildlife Service (USFWS) regarding the development of the Forest Plan. The Biological Opinion for the Flathead Forest Plan, dated May 15, 1985 and amended July 18, 1989, concluded that implementation of the Forest Plan is not likely to jeopardize the continued existence of threatened and endangered species (peregrine falcon, bald eagle, gray wolf, and grizzly bear). No incidental take was authorized.

Eighteen previous amendments have been proposed to the Forest Plan dealing with a variety of resource management issues. Amendment #9, approved July 31, 1989, added the Interagency Grizzly Bear Guidelines (IGBG) to the Forest Plan as an unbound appendix and amended the Management Situation descriptions and direction to read exactly as published in the IGBG. The USFWS was consulted on this and other amendments to the Forest Plan.

On February 22, 1989, a lawsuit challenging the Flathead Forest Plan and accompanying EIS was filed by Resources Limited, Inc., Swan View Coalition, Inc., Friends of the Wild Swan, Five Valleys Audubon Society, and the Sierra Club. The case was decided in favor of the Forest Service by the District Court and then subsequently appealed to the Ninth Circuit Court of Appeals. An opinion was rendered on Nov. 3, 1993, by the Ninth Circuit, with an order amending the opinion and denying rehearing rendered on July 5, 1994. The Court ruling reversed the District Court ruling in part and *"set aside the Forest Service's determination that implementation of the Plan would not jeopardize the continued existence of listed species."*

In the July 5, 1994 order, the Ninth Circuit Court held that *"the Forest Service acted arbitrarily and capriciously in concluding, on the record as a whole, that the Plan would not jeopardize listed species even at timber harvest levels of 100 mmbf/year."*

The Court concluded that:

"the Forest Service may reinitiate formal consultation with the FWS concerning the current amended Plan. Alternatively, the Forest Service may propose an amendment to the current amended Plan which shall include an amended ASQ [Allowable Sale Quantity]. In any event, the Forest Service shall formally consult with the FWS concerning the current or proposed amended Plan and provide it with all the data and information required by 50 C.F.R. 402.14(d), including, but not limited to, the Interdisciplinary Team and the District Rangers reports."

After the FWS issues an amended opinion based on its assessment of all the relevant information, the Forest Service must reevaluate its determination that the current or proposed amended Plan would not be likely to jeopardize listed species. The district court will retain jurisdiction over this case to ensure that this process is completed within six months of our mandate."

Rationale for Preparing an Amendment to the Forest Plan

The NFMA of 1976 (P.L. 94-588), limits the sale of timber from each national forest to a quantity equal to or less than the amount that can be removed annually in perpetuity on a sustained-yield basis (with certain exceptions). The regulations that guide implementation of the NFMA define ASQ as "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", usually expressed on an annual basis (36 CFR 219.3). The ASQ is a ceiling or upper limit, not a target to be attained each year. At the same time, the ASQ should provide a realistic frame of reference upon which to base Forest Plan projections and analysis of effects.

Several factors have led us to believe it is necessary and desirable to change the ASQ at this time. These include recent modeling of spatial effects of Forest Plan standards, reduced sale or harvest of timber since the Forest Plan was approved, new information about grizzly bear response to roads, and access management as an action connected to ASQ.

Grizzly bears historically ranged across much of western North America, from Kansas south to Mexico. Between 1850 and 1975, grizzly populations declined from estimates of more than 50,000 to fewer than 1,000 (U.S. Fish and Wildlife Service 1993). The grizzly bear was

federally listed by the USFWS as a threatened species in 1975. The Flathead National Forest lies within the Northern Continental Divide Ecosystem, one of five areas in the conterminous United States that still contain self-perpetuating or remnant populations of grizzly bears.

Motorized access was recognized in the Forest Plan as an important factor affecting habitat security for grizzly bears. Road management was primarily directed towards restricting certain types of motorized use during specified time periods to limit the density of open roads. However, recent research indicates that in addition to open road density, total motorized density along with the presence of core areas providing security are important elements of grizzly bear habitat management. Total motorized density includes roads and trails that receive motorized use.

When projects are developed to implement the Forest Plan, the USFWS is consulted regarding anticipated effects on listed species and their habitats. In a Biological Opinion for the Lost Silver Timber Sale dated Sept. 3, 1993, and the amended Biological Opinion dated January 11, 1994, the USFWS concluded that while the proposed project is not likely to jeopardize the continued existence of the grizzly bear, the direct and indirect effects of the proposed road reconstruction, logging, and associated activities added to the existing baseline habitat condition will result in an incidental take of grizzly bears. This Biological Opinion was based on new information regarding the impacts of roads on grizzly bears.

In order to reduce this incidental take, the USFWS provided terms and conditions to implement reasonable and prudent measures to minimize the take authorized by the Biological Opinion. The USFWS also recommended that the Forest *"develop programmatic direction to ensure that grizzly bear secure habitat is provided Forest-wide. This programmatic direction should be in the form of revised Forest Plan grizzly bear standards and guidelines that can be incorporated into the existing Forest Plan via an amendment or through revision of the Forest Plan."*

These various pieces of new information point to a need to update the direction contained in the Flathead Forest Plan, rather than to re-initiate consultation on the existing Forest Plan (as amended previously). We have prepared a Biological Assessment on this interim amendment and obtained a Biological Opinion from the USFWS that addresses both jeopardy and incidental take of listed species.

On July 14, 1994, *Howellia aquatilis* was listed as "threatened" under provisions of the Endangered Species Act. The Biological Assessment and Biological Opinion will address this species as well as the four previously-listed species (gray wolf, bald eagle, peregrine falcon, and grizzly bear) that occur on the Flathead National Forest.

B. PROPOSED ACTION

The proposed action is to amend the Forest Plan. The specific changes are to update objectives and standards for management of the grizzly bear, and to amend projected timber sale outputs (ASQ) for the period of 1995-1999. The direction in this amendment will be in effect until the Forest Plan is revised.

The proposed changes in grizzly bear management are to add objectives and standards that establish desired levels of total motorized access density, open motorized access density,

and security core areas. During this interim period until the Forest Plan is revised, there will be no net increase in access densities, and no net reduction in the size or amount of core areas, within Bear Management Unit (BMU) Subunits. Implementation priority will be given to those BMU Subunits that currently exceed maximum levels of access density or are below minimum levels for core areas.

The ASQ will be adjusted to a level that is clearly consistent with Forest Plan standards and protection of listed species, as directed by the Court. Once again, the ASQ will be adjusted for the period 1995-1999.

Forest Plan revision will tier to analysis, guidance and decisions contained in the Upper Columbia River Basin Assessment and associated Montana-Idaho EIS, and the management recommendations of the Interagency Grizzly Bear Committee's Task Force on grizzly bear/motorized access. Completion and adoption of these documents is expected to take approximately three years.

C. SCOPE OF THE PROPOSAL

The Forest Plan provides broad direction for management activities through its goals, objectives, standards, guidelines, and designation of "Management Areas." This amendment will not establish new Management Areas, nor change the land base considered suitable for timber production. Reconsideration of goals, objectives, and land allocations will be part of the analysis of a longer-term strategy considered when the Forest Plan is revised.

The proposal is to amend certain Forest-wide objectives (Forest Plan pages II-7 through II-9) and standards and guidelines (Forest Plan pages II-24 through II-33), to delete Appendix M, Part F (Ten-year Timber Sale Offerings), and to add Unbound Appendix TT (refer to Appendix D) and Unbound Appendix UU (refer to Appendix A) to the Forest Plan. No changes in direction for other federally-listed species are proposed in this amendment.

D. FURTHER NEPA ANALYSIS NEEDED AND CONSULTATION

This amendment will guide implementation of site-specific projects that tier to the Forest Plan. Additional NEPA compliance will focus on site-specific projects and environmental impacts of implementing the new direction incorporated into the Forest Plan.

Formal consultation with the U.S. Fish and Wildlife Service will be completed on the programmatic effects of this amendment. Further consultation will occur on site-specific actions as they are proposed and analyzed.

CHAPTER II – ALTERNATIVES

SUMMARY OF CHANGES IN THE AMENDED ENVIRONMENTAL ASSESSMENT

The Environmental Assessment (EA) was distributed for comment on November 18, 1994. A new Chapter V, which provides a summary of issues raised by the public and the response by the Interdisciplinary Team, has been added to this amended EA. In response to the public comments and consultation with the U.S. Fish and Wildlife Service, this chapter has also been amended.

Corrections have been made to Alternatives 3 and 4. The information initially used in the analysis of total motorized access density, open motorized access density, and security core area for Amendment 19, and reported in the EA, represented 1994 conditions. Conditions within the composite annual home range of adult female grizzly bears in the South Fork Grizzly Bear Project study area were used as a basis to formulate management objectives under Alternatives 3 and 4.

It came to our attention that the 1994 road and trail information does not correctly match with the time period during which bear observations were made. This problem is particularly pronounced because substantial restrictions of open roads were implemented between 1990 and 1994, partially in response to recommendations contained in the 1992 Progress Report on the South Fork Study.

To correct this error, we repeated the calculations using 1990 road and trail map information. The proportion of the composite home range that is in a high density class (> 1 mile/ square mile) for open motorized access using the corrected (1990) map is 19 percent (as compared with 13 percent derived from the 1994 file). The proportion of the composite home range that is in a high density class (> 2 miles/ square mile) for total motorized access using the corrected (1990) map is 19 percent (unchanged from previous calculation, but erroneously reported as 18 percent in the EA). The proportion of the composite home range that provides security core area using the corrected (1990) map is 68 percent (unchanged from previous calculation).

Alternative 3-Corrected has also been modified to conform to the terms and conditions of the U.S. Fish and Wildlife Service's Biological Opinion on Amendment 19 (Jan. 6, 1995). The short-term objective for security core areas is 60 percent of each BMU Subunit, with a long-term objective of 68 percent (as compared with the 55 percent originally proposed under Alternative 3).

We received many comments requesting that we consider an alternative that provides a greater degree of security for grizzly bears. In response, we developed and considered in detail an additional alternative. The description of Alternative 5 has been added to this chapter.

New material also has been added to the section in Chapter II describing issues and alternatives that we considered, but that we did not analyze in detail.

A. INTRODUCTION

This Chapter describes the alternatives that wholly or partially meet the purpose and need identified in Chapter I. It also describes a "no action" alternative which would make no changes to the current Forest Plan. All the alternatives are programmatic in nature. When Forest Service personnel propose site-specific decisions implementing these objectives and standards, they will complete additional National Environmental Policy Act (NEPA) analysis and documentation.

B. PUBLIC INVOLVEMENT - "SCOPING FOR ISSUES"

"Scoping" is an early and open public planning process under NEPA for determining the issues to be addressed. This process identifies the significant environmental issues considered for study. Public scoping for this EA began when a proposed action was prepared to amend the Forest Plan.

A public involvement strategy was formulated which identified stakeholders, established communication objectives, and selected appropriate methods to meet those objectives.

On August 3, 1994, the Forest Supervisor mailed a letter to approximately 800 addressees on the Forest Plan mailing list inviting comments on the proposed amendment. A news release was issued informing local residents that the scoping document was available for comment, emphasizing an "open door policy", and encouraging involvement in the early stages of the EA. The team spent time visiting with people on the phone, attending - at invitation - special interest group meetings, and meeting with people on a "one-on-one" basis. At the end of October, the Flathead Forest's newsletter "FOCUS" provided an update on Amendment 19. The objective was to not only inform and update, but once again encourage public involvement.

During this scoping period, approximately 350 letters were received by the Forest regarding the proposal to amend the Forest Plan. An "Action Alert" was sent out by a coalition of environmental and conservation groups, asking their members to send in comments. Over 200 letters were mailed in by people from all over the country, expressing interest in the Flathead National Forest. The remaining comments were received from local interest groups, coalitions, and individual citizens. The comments received were used to identify environmental issues and potential alternatives for further consideration.

Formal Comment Period

The EA was mailed to all those who requested a copy in their response to scoping (approximately 100 copies). A summary of the EA was sent to an additional 1,100 individuals and groups on the Forest Plan mailing list, including those who submitted comments during scoping. Additional EAs were supplied upon request. The comment period for EAs is normally 30 days, but this was extended to 45 days to ensure recipients ample time to provide comments.

A process called "Content Analysis" was used for compiling, categorizing, and summarizing public comments on the EA. We received a total of 1,908 comments responding to the EA. A new chapter (Chapter V in this amended EA) summarizes the public comments on the EA and how the comments were considered in the decision process. This information is presented

qualitatively by summarizing the substantive issues, quoting representative comments, and providing our responses.

C. ENVIRONMENTAL ISSUES

Comments received during the scoping period were classified into broad categories. It was determined that six of the environmental issues are within the scope of the analysis and feasible. The issues are listed below.

- 1. Is adequate security provided to protect grizzly bears and contribute to their recovery?**
- 2. Will other species of wildlife and other resources be protected?**
- 3. How will changes to the Forest Plan affect the long-term risks of insect or disease damage and wildfire?**
- 4. How will the transportation system be managed and what will be the costs associated with road restrictions and maintenance, and fire suppression, etc.?**
- 5. Will recreation opportunities be affected by the proposed changes to the Forest Plan?**
- 6. What are the socio-economic effects of the proposed changes to the Forest Plan?**

D. ALTERNATIVES CONSIDERED IN DETAIL

Five alternatives fall within the scope of the proposed amendment and were considered in detail. The following is a brief description of the general intent of each alternative. A detailed and exact description of each alternative can be found in Appendix A of this amended EA.

Alternative 1. No Change to the Current Forest Plan (No Action):

The National Environmental Policy Act requires that a no action alternative be considered. "No action" in this case means no change from the current Forest Plan, as previously amended. The current Forest Plan has an annual Allowable Sale Quantity of 100 million board feet (MMBF) of timber. This figure represents the maximum amount of timber that could be sold from the Flathead National Forest on an average annual basis. Current goals and objectives, standards and guidelines would remain the same.

Alternative 2. Amend the Forest Plan Allowable Sale Quantity (ASQ) to an Achievable Level Consistent with Current Forest Plan Standards.

The Ninth Circuit Court of Appeals ordered that we adjust the ASQ to an achievable level consistent with all current Forest Plan standards, including the 1986 Interagency Grizzly Bear Guidelines. This alters the definition of ASQ, from a ceiling for the planning period that does not exceed long-term sustained yield, to an achievable level that can be demonstrated to be consistent with all Forest Plan standards. Under this alternative, Forest Plan direction is unchanged and a spatial analysis of existing Forest Plan standards is used to adjust the ASQ for the 1995-1999 period to 64 MMBF per year. This alternative is responsive to legal

and regulatory issues, especially regarding the Court's expectation that ASQ be "achievable". This alternative serves as a basis of comparison for effects of Forest Plan changes under Alternatives 3-Corrected, 4-Corrected, and 5.

Alternative 3-Corrected. Amend Forest Plan objectives (short term and long term) and standards for grizzly bear habitat and for timber management. Amend Forest Plan monitoring items related to access management. Add Unbound Appendices TT and UU to the Forest Plan.

Complete Forest Plan text changes proposed under this alternative can be found in Appendix A. In all BMU Subunits, there will be no net increase in total motorized access density greater than 2 miles/square mile, no net increase in open motorized access density greater than 1 mile/square mile, and no net decrease in the amount or size of security core area. Forest Service actions will result in a net gain towards the objectives. The average annual ASQ is adjusted accordingly to 54 MMBF/year during the period 1995-1999.

The long-term grizzly bear objectives for motorized access and security core areas are based on the values obtained within a composite home range of adult female grizzly bears that have been radio-tracked in the Swan Range through the South Fork Grizzly Bear Study. Short-term objectives allow a phase-in for total motorized access density and security core area objectives, based on current average values on the Flathead National Forest within the grizzly bear recovery area. Definitions are those contained in the IGBC Task Force Report (1994).

Predominantly (> 75%) National Forest Lands:

- Total Motorized Access Density - the objective is to limit high-density access (> 2 miles/square mile) to no more than 19% of Management Situation 1 and 2 lands within a BMU Subunit in the long term (10 years) and not to exceed the current Forest-wide average of 24% in the short term (5 years).
- Open Motorized Access Density - the objective is to limit high-density (> 1 mile/square mile) access to no more than 19% of Management Situation 1 and 2 lands within a BMU Subunit. Because the current average of 20% is so similar to the 19% objective, only a 5-year objective will be set.
- Security Core Areas - the long-term (10 years) objective is to provide 68 - 100% of the BMU Subunit in security core areas that are free of motorized and high-intensity use during the non-denning period, and to not exceed the current average of 60% as the short-term (5 year) objective. Core areas will be at least 2500 acres in size, and include all seasonal habitats.

BMU Subunits That Are Not Predominantly National Forest Lands, MS-1 and MS-2:

- Motorized Access Density and Security Core Areas - Forest Plan standards emphasizing a *no net loss, net gain* approach on the National Forest will apply to all BMU Subunits. In these BMU Subunits (see Figure 1), it is not possible for the Forest Service to achieve the objectives independently. For example, many of the BMU Subunits that span the Swan Valley contain less than 60% National Forest, much of this in a checkerboard ownership pattern. Unless security core area was provided on other ownerships as well, it would not be possible to attain at least 60% core area across the BMU Subunit as a whole. Because the regulatory authority of the Forest Service is limited to National Forest system lands, the objectives and standards of the Forest Plan apply only to the National Forest. Efforts will be made to cooperate with other landowners to improve habitat effectiveness.

Forest-wide General Standard No. 1 is amended to state that the grizzly bear objectives and standards of this amendment, which are required by the Terms and Conditions of the U.S. Fish and Wildlife Service's Biological Opinion on Amendment 19, are not discretionary. These objectives and standards supersede any conflicting or inconsistent management direction contained in the Forest Plan.

Compliance with standards and progress towards objectives will be monitored annually. The Forest Service will prepare an annual monitoring report, which will be submitted to the U.S. Fish and Wildlife Service and distributed to the public for review.

Alternative 4-Corrected. Amend Forest Plan objectives and standards for grizzly bear habitat that mirror the statistics of a composite female home range from the South Fork Study area, and amend objectives and standards for timber management. Amend Forest Plan monitoring items related to access management. Add Unbound Appendices TT and UU to the Forest Plan.

Complete Forest Plan text changes proposed under this alternative can be found in Appendix A. For all BMU Subunits, there will be no net increase in total motorized access density greater than 2 miles/square mile, no net increase in open motorized access density greater than 1 mile/square mile, and no net decrease in the amount or size of security core area. Forest Service actions will result in a net gain towards the objectives. The ASQ is adjusted accordingly to 52 MMBF/year during the period 1995-1999.

Predominantly (> 75%) National Forest Lands:

- Total Motorized Access Density - the objective is to limit high-density access (> 2 miles/square mile) to no more than 19% of Management Situation 1 and 2 lands within a BMU Subunit, to be achieved in 5 years.
- Open Motorized Access Density - the objective is to limit high-density (> 1 mile/square mile) area to no more than 19% of Management Situation 1 and 2 lands within a BMU Subunit, to be achieved within 5 years.
- Security Core Areas - 68 to 100% of the BMU Subunit will be in areas that are free of motorized access during the non-denning periods, to be achieved within 5 years. Core areas will be at least 2500 acres in size, and include all seasonal habitats.

BMU Subunits That Are Not Predominantly National Forest Lands, MS-1 and MS-2:

- Motorized Access Density and Security Core Areas --Forest Plan standards emphasizing a *no net loss, net gain* approach on the National Forest will apply to all BMU Subunits. In these BMU Subunits (see Figure 1), it is not possible for the Forest Service to achieve the objectives independently. Unless security core area was provided on other ownerships as well, it would not be possible to attain at least 68% core area when National Forest lands represent less than 75% of the BMU Subunit. Because the regulatory authority of the Forest Service is limited to National Forest system lands, the objectives and standards of the Forest Plan apply only to the National Forest. Efforts will be made to cooperate with other landowners to improve habitat effectiveness.

Forest-wide General Standard No. 1 is amended to state that the grizzly bear objectives and standards of this amendment, which are required by the Terms and Conditions of the U.S. Fish and Wildlife Service's Biological Opinion on Amendment 19, are not discretionary. These

objectives and standards supersede any conflicting or inconsistent management direction contained in the Forest Plan.

Compliance with standards and progress towards objectives will be monitored annually. The Forest Service will prepare an annual monitoring report, which will be submitted to the U.S. Fish and Wildlife Service and distributed to the public for review.

Alternative 5. Amend Forest Plan objectives and standards for grizzly bear habitat and for timber management similarly to Alternative 4, except with a greater degree of security provided for grizzly bears. Amend objectives and standards for timber management. Amend Forest Plan monitoring items related to access management. Add Unbound Appendices TT and UU to the Forest Plan.

This alternative was added to the amended EA in response to public comments. This alternative provides a greater degree of security core area and more restrictive open motorized access density objectives than the Lost Silver Biological Opinion thresholds. Complete Forest Plan text changes proposed under this alternative can be found in Appendix A. For all BMU Subunits, there will be no net increase in total motorized access density greater than 2 miles/ square mile, no net increase in open motorized access density greater than 1 mile/ square mile, and no net decrease in the amount or size of security core area. Forest Service actions will result in a net gain towards the objectives. The annual ASQ is adjusted accordingly to 46 MMBF/year during the period 1995-1999.

Predominantly (> 75%) National Forest Lands:

- Total Motorized Access Density - the objective is to limit high-density access (> 2 miles/square mile) to no more than 19% of Management Situation 1 and 2 lands within a BMU Subunit, to be achieved within 5 years.
- Open Motorized Access Density - the objective is to limit high-density (> 1 mile/square mile) area to no more than 15% of Management Situation 1 and 2 lands within a BMU Subunit, to be achieved within 5 years.
- Security Core Areas - 80 to 100% of the BMU Subunit will be in areas that are free of motorized access during the non-denning periods, to be achieved within 5 years. Core areas will be at least 2500 acres in size, and include all seasonal habitats.

BMU Subunits That Are Not Predominantly National Forest Lands, MS-1 and MS-2:

- Motorized Access Density and Security Core Areas - On National Forest land, within BMU Subunits that are not predominantly National Forest, Forest Plan standards emphasizing a *no net loss, net gain* approach on the National Forest will apply. In these BMU Subunits (see Figure 1), it is not possible for the Forest Service to achieve the objectives independently. Unless security core area was provided on other ownerships as well, it would not be possible to attain at least 80% core area when National Forest land represents less than 75% of the BMU Subunit. Because the regulatory authority of the Forest Service is limited to National Forest system lands, the objectives and standards of the Forest Plan apply only to the National Forest. Efforts will be made to cooperate with other landowners to improve habitat effectiveness.

Forest-wide General Standard No. 1 is amended to state that the grizzly bear objectives and standards of this amendment, which are required by the Terms and Conditions of the U.S. Fish and Wildlife Service's Biological Opinion on Amendment 19, are not discretionary. These

objectives and standards supersede any conflicting or inconsistent management direction contained in the Forest Plan.

Compliance with standards and progress towards objectives will be monitored annually. The Forest Service will prepare an annual monitoring report, which will be submitted to the U.S. Fish and Wildlife Service and distributed to the public for review.

Figure 1. Bear Management Unit Subunits

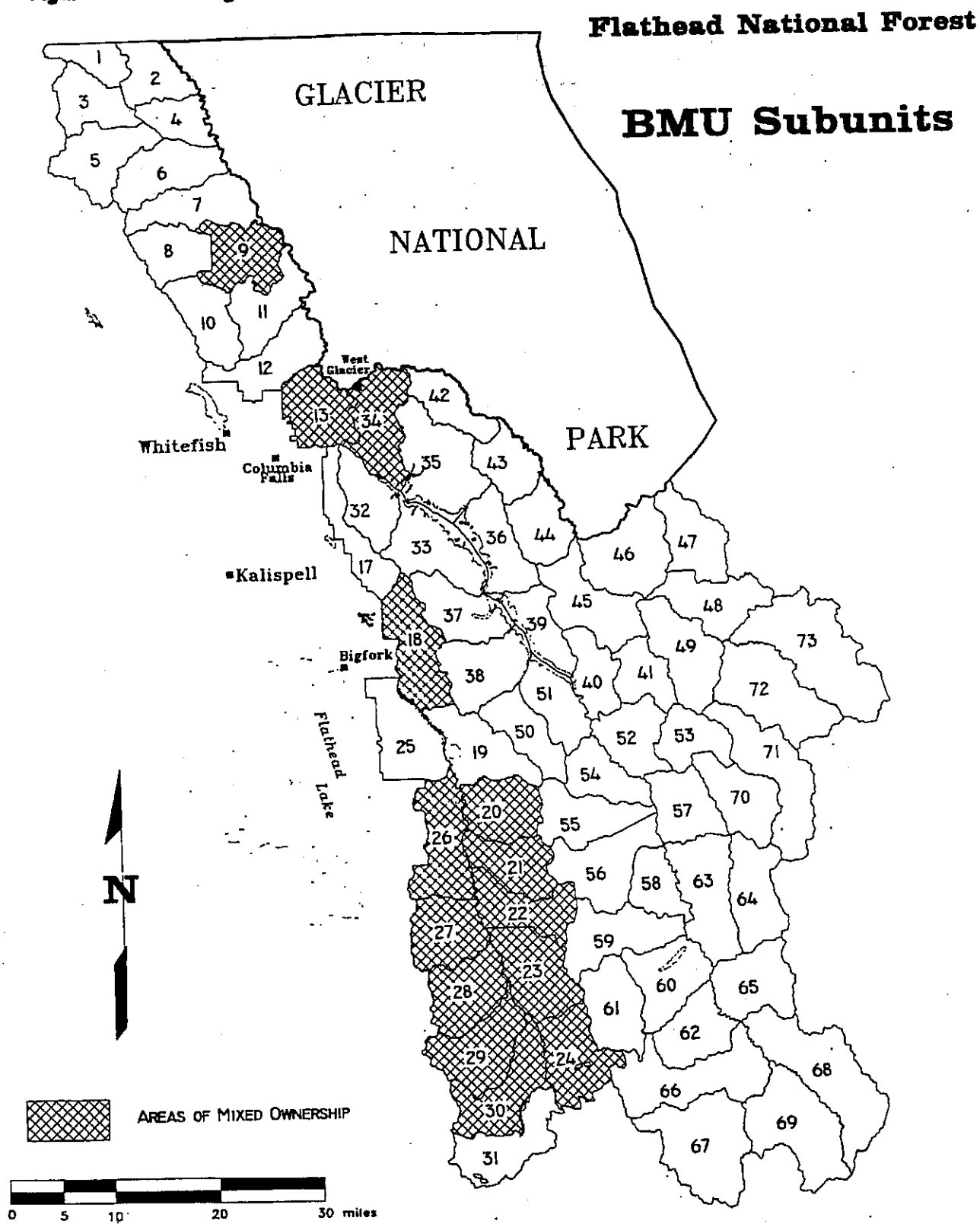


Table 1. List of BMU Subunits on the Flathead National Forest

BMU	Map #	Subunit Name	BMU	Map #	Subunit Name
Upper North Fork	1	Frozen Lake	Bunker	20	So Fork Lost Soup
	2	Ketchikan		21	Goat Creek
	3	Upper Trail Creek		22	Lion Creek
	4	Lower Whale Creek		52	Spotted Bear Mtn
	5	Upper Whale Shorty		53	Big Bill Shelf
	6	Red Meadow Moose		54	Jungle Addition
	7	Hay Creek		55	Bunker Creek
	8	Coal & South Coal		56	Gorge Creek
	9	State Coal Cyclone		57	Harrison Mid
Lower North Fork	10	Werner Creek	Continental Divide	70	Silvertip Wall *
	11	Lower Big Creek		71	Pentagon *
	12	Canyon McGinnis		72	Trilobite Peak *
	13	Cedar Teakettle		73	Strawberry Creek *
Lower Middle Fork	42	Moccasin Crystal	Upper South Fork	66	Gordon Creek *
	43	Stanton Paola		67	Youngs Creek *
	44	Dickey Java		68	Basin Trident *
Upper Middle Fork	45	Long Dirtyface		69	Jumbo Foolhen *
	46	Tranquil Gelfer	Big Salmon	23	Meadow Smith
	47	Skyland Challenge		24	Buck Holland
	48	Plume Mountain Lodgepole		58	Hungry Creek *
	49	Flotilla Capitol		59	Little Salmon Creek *
Hungry Horse	17	Peters Ridge	Big Salmon (con't)	60	Big Salmon Holbrook *
	32	Doris Lost Johnny		61	Albino Pendant *
	33	Wounded Buck Clayton		62	Burnt Bartlett *
	34	Coram Lake Five		63	Black Bear Mud *
	35	Emery Firefighter		64	Brushy Park *
	36	Riverside Paint		65	White River *
Sullivan	18	Noisy Red Owl	Mission Range	25	Crane Mountain
	19	Swan Lake		26	Porcupine Woodward
	37	Jewel Basin Graves		27	Piper Creek
	38	Wheeler Quintonkon		28	Cold Jim
	39	Logan Dry Park		29	Hemlock Elk
	40	Lower Twin		30	Glacier Loon
	41	Twin Creek		31	Beaver Creek
	50	Ball Branch			
	51	Kah Soldier			

* These BMU Subunits were not analyzed for effects of proposed changes regarding motorized access or ASQ.

E. FEATURES OF THE ALTERNATIVES

Alternative 1 is the "no action" alternative. This means that there would be no changes to the current Forest Plan, as previously amended. Alternatives 2, 3-Corrected, 4-Corrected, and 5 would amend certain sections of the Forest Plan. Table 2 compares the major features of the alternatives. A comparison of specific changes in the text of the Forest Plan can be found in Appendix A.

Table 2. Features of the Alternatives

	Alt. 1	Alt. 2	Alt. 3-Corrected	Alt. 4-Corrected	Alternative 5
Changes to Forest Plan	None	No change to direction, adjust ASQ with spatial analysis of existing standards	Amend objectives and standards for grizzly bear management, with phase-in for total motorized access and security core area, and timber management including adjusted ASQ	Amend objectives and standards for grizzly bear management and timber management including adjusted ASQ	Amend objectives and standards for grizzly bear management and timber management including adjusted ASQ
Standards for motorized access in MS-1 and MS-2	1 mi/mi ² averaged across Geographic Area	1 mi/mi ² averaged across Bear Management Analysis Area	No net increase in open or total motorized access density; no net decrease in size or amount of core area on National Forest lands within each BMU Subunit; net gain towards objectives	No net increase in open or total motorized access; no net decrease in size or amount of core area on National Forest lands within each BMU Subunit; net gain towards objectives	No net increase in open or total motorized access; no net decrease in size or amount of core area on National Forest lands within each BMU Subunit; net gain towards objectives
Objectives for total motorized access density in MS-1 and MS-2	None	None	Limit high-density* to < 24% within 5 yrs, < 18% within 10 yrs within each BMU Subunit	Limit high-density* to < 18% in 5 yrs within each BMU Subunit	Limit high-density* to < 18% in 5 years within each BMU Subunit
Objectives for total motorized access density in BMU Subunits with mixed ownership	None	None	No increase on National Forest	No increase on National Forest	No increase on National Forest

* High density total motorized access is the area where the density of open and restricted roads and motorized trails exceeds 2 miles per square mile.

Forest Plan Amendment #19

Alternatives

Table 2. Features of the Alternatives

	Alt. 1	Alt. 2	Alt. 3-Corrected	Alt. 4-Corrected	Alt. 5
Objectives for open motorized access density in MS-1 and MS-2	None	None	Limit high-density** to < 19% in 5 yrs within each BMU Subunit	Limit high-density** to < 19% in 5 yrs within each BMU Subunit	Limit high-density** to < 15% in 5 yrs within each BMU Subunit
Objectives for security core area in MS-1 and MS-2	None; standard to provide security area adjacent to project area as needed	None; standard to provide security area adjacent to project area as needed	Provide 80-100% core area within each BMU Subunit within 5 yrs and 88-100% in 10 yrs.	Provide 88-100% core area within each BMU Subunit in 5 yrs	Provide 80-100% core area within each BMU Subunit in 5 yrs
Objectives for security core area in BMU Subunits with mixed ownership	None; standard to provide security area adjacent to project area as needed	None; standard to provide security area adjacent to project area as needed	No reduction on National Forest	No reduction on National Forest	No reduction on National Forest
Allowable Sale Quantity of timber	100 MMBF (annual)	64 MMBF (annual)	54 MMBF (annual)	52 MMBF (annual)	48 MMBF (annual)
Forest Plan monitoring	No change	No change	Update grizzly bear monitoring to conform with the Recovery Plan; add monitoring items for roads and trails; add Unbound Appendix UU to Forest Plan	Same as Alternative 3-Corrected	Same as Alternative 3-Corrected

** High density open motorized access is the area where the density of open roads and motorized trails exceeds 1.0 mile per square mile.

F. COMPARISON OF EFFECTS OF THE ALTERNATIVES

A full discussion of the anticipated environmental effects of the alternatives can be found in Chapter III. The comparison of effects on vegetation management was modified from the original EA to more clearly focus on Management Situation 1 and 2. A brief comparison of the maximum expected effects is presented in Table 3 below.

Table 3. Comparison of Effects of Alternatives

	Alt. 1	Alt. 2	Alt. 3-Corrected	Alt. 4-Corrected	Alt. 5
VEGETATION MANAGEMENT - Management Situation 1 & 2 Annual allowable harvest acres (all types):	5,817	3,627	2,900	2,818	2,370
Percent suitable lands in mature and seedling classes in 1999: Mature (existing 44%) Seedling/Sapling (existing 27%)	40% 32%	42% 29%	43% 28%	43% 28%	44% 28%
Insect and disease risk: Risk of catastrophic outbreak Maximum annual treatment of high-risk classes classes	Low 3972	Low 1782	Low 1055	Low 973	Low 528
Fire risk: Suitable timber lands in MS-1 and MS-2 > 0.3 miles from open or gated road	29%	29%	39%	50%	62%
Ground-based initial attack response time		No Change	Slower than under Alts. 1 & 2	Slower than Alts. 1, 2, & 3-Corrected	Slower than under other Alts.
Suppression cost	No change	No change	Increased	Increased	Increased

Forest Plan Amendment #19

Alternatives

Table 3. Comparison of Effects of Alternatives

	Alt. 1	Alt. 2	Alt. 3-Corrected	Alt. 4-Corrected	Alt. 5
ECONOMIC EFFECTS					
Employment Potential Change	No change	Slight reduction	Slightly larger reduction than Alt. 2	Slightly larger reduction than Alt. 3-Corrected	Slightly larger reduction than Alt. 4-Corrected
Potential Total Wage Income	No change	Slight reduction	Slightly larger reduction than Alt. 2	Slightly larger reduction than Alt. 3-Corrected	Slightly larger reduction than Alt. 4-Corrected
Potential Total Funds (25% & PILT)	No change	Slight reduction	Slightly larger reduction than Alt. 2	Slightly larger reduction than Alt. 3-Corrected	Slightly larger reduction than Alt. 4-Corrected
WILDLIFE Threatened & Endangered Species: Grizzly Bear Habitat Effectiveness	No change, unpermitted taking has occurred	No change, unpermitted taking has occurred	Habitat effectiveness will improve, priority given to areas with lowest habitat effectiveness	Habitat effectiveness will improve in all MS-1 and MS-2	Habitat effectiveness will improve in all MS-1 and MS-2, highest of all alternatives
Human-caused Mortality	Met overall goal ('92&'93)	Met overall goal ('92&'93)	Risk lower than Alts. 1&2	Risk lower than Alts. 1&2	Risk lowest
Human-Caused Mortality of Adult Females	Did not meet goal ('92&'93)	Did not meet goal ('92&'93)	Risk lower than Alts. 1&2	Risk lower than Alts. 1&2	Risk Lowest
Gray Wolf Mortality Risk	Low within NCDE, moderate outside NCDE	Low within NCDE, moderate outside NCDE	Slightly lower within NCDE	Slightly lower within NCDE	Slightly lower within NCDE

Table 3. Comparison of Effects of Alternatives

	Alt. 1	Alt. 2	Alt. 3-Corrected	Alt. 4-Corrected	Alt. 5
Bald Eagle	No change	Better protect potential habitat	Better protect potential habitat, may enhance prey base	Same as Alternative 3-Corrected	Same as Alternative 3-Corrected
Peregrine Falcon	No change, adequate protection for recovery	No change	No change	No change	No change
Sensitive Species: Loon, black-backed woodpecker, bog-lemming, western big-eared bat	No adverse effects	No adverse effects	No adverse effects	No adverse effects	No adverse effects
Boreal owl, flammulated owl	No specific protections in Forest Plan	Interim old growth direction included in ASQ calculation, adequate to maintain viability	Same as Alternative 2	Same as Alternative 2	Same as Alternative 2
Harlequin duck	No adverse effects	No adverse effects	Improved water quality may enhance prey base	Same as Alternative 3-Corrected	Same as Alternative 3-Corrected
Fisher, lynx, wolverine	May impact individuals but not likely to cause trend towards federal listing	May impact individuals but not likely to cause trend towards federal listing	Higher security	Higher security	Higher security

Table 3. Comparison of Effects of Alternatives

	Alt. 1	Alt. 2	Alt. 3-Corrected	Alt. 4-Corrected	Alt. 5
Commonly Hunted Species: Elk, Mule Deer, and White-tailed Deer	No change; populations expected to increase	No change; populations expected to increase	Higher elk summer range habitat effectiveness, more unroaded hunting opportunity	Same as Alt. 3-Corrected	Same as Alt. 3-Corrected
Old Growth Associated Species:	Interim direction will maintain viability with low risk	ASQ calculation addresses amount and distribution of habitat	ASQ calculation addresses amount and distribution of habitat; restricting open motorized access will reduce removal of snags along roadsides	Same as Alt. 3-Corrected	Same as Alt. 3-Corrected
Cavity Dependent Species:	No adverse effects	No adverse effects	No adverse effects, restricting access expected to reduce removal of snags along roadsides	Same as Alt. 3-Corrected	Same as Alt. 3-Corrected
Migratory Birds	Not expected to have adverse impacts	Not expected to have adverse impacts	Establishing core areas may result in less fragmentation	Same as Alt. 3-Corrected	Same as Alt. 3-Corrected
THREATENED & SENSITIVE PLANTS	No adverse effects	No adverse effects	No adverse effects, road restrictions may reduce spread of noxious weeds	No adverse effects, road restrictions may reduce spread of noxious weeds	No adverse effects, road restrictions may reduce spread of noxious weeds
WATER QUALITY AND FISHERIES	No adverse effects	No adverse effects	May improve water quality	Same as Alt. 3-Corrected	Same as Alt. 3-Corrected

Table 3. Comparison of Effects of Alternatives

	Alt. 1	Alt. 2	Alt. 3-Corrected	Alt. 4-Corrected	Alt. 5
RECREATION OPPORTUNITY - Acreage and percentage of land outside of wilderness for each class of recreation opportunities					
Primitive (non-wilderness portion of the Forest)	6,870 .5%	6,870 .5%	6,870 .5%	6,870 .5%	6,870 .5%
Semiprimitive Non-motorized	341,900 28 %	341,900 28%	653,500 50%	713,500 55%	788,900 60%
Semiprimitive Motorized	67,300 5%	67,300 5%	10,700 1%	6,800 1%	6,300 .5%
Roaded Natural Appearing	31,400 2.5%	31,400 2.5%	15,100 1.5%	14,400 1%	13,400 1%
Roaded Modified	846,500 65%	846,500 65%	607,800 47%	550,400 42%	481,500 37%
Rural	3,400 .5%	3,400 .5%	3,400 .5%	3,400 .5%	3,400 .5%

NOTE: Changes apply during non-denning season. Winter recreation opportunities would not be affected.

G. ISSUES NOT ADDRESSED IN THIS ANALYSIS

The following issues and comments were proposed through public and internal scoping. The Interdisciplinary Team did not carry them forward in the analysis because they were outside the scope of the proposal. Many of these issues will be addressed during site-specific analyses.

Which roads and trails will be affected by the proposed action?

This is a programmatic decision, and establishes broad objectives and standards for management. Decisions about management of individual roads or trails will be made at the site-specific level, consistent with direction contained in the amended Forest Plan.

What type of closure devices will be used for restricting road access, and which are most effective?

Decisions about type of closure device will not be made at the programmatic level. These decisions will tier to direction contained in the Forest Plan, but will also consider factors specific to local conditions. Under Alternatives 3-Corrected, 4-Corrected, and 5, the Forest Plan would be amended to incorporate unbound Appendix TT, which provides implementation direction that addresses this issue.

What will be the costs of law enforcement associated with restrictions on motorized access?

Law enforcement costs are highly variable, and depend on site-specific factors that cannot be effectively addressed in a programmatic analysis.

How will the amendment affect recreational activities on and in the vicinity of the Big Mountain Ski Area?

The amendment establishes programmatic objectives and standards for management. Recreational activities in the Big Mountain Ski Area vicinity were not specifically addressed in this programmatic decision. This decision is not expected to alter the Draft Environmental Impact Statement now being considered regarding expansion of ski area facilities.

H. ALTERNATIVES ELIMINATED FROM DETAILED CONSIDERATION

Several alternatives were suggested and evaluated, but not carried forward for detailed analysis. These alternatives are not responsive to the purpose and need for this decision, are substantially similar to other alternatives considered in detail, or are not feasible to implement.

Do not schedule any road construction or timber harvest in roadless areas.

While recognizing that this is a continuing public issue, it is outside the scope of this Environmental Assessment. Management of roadless areas will be addressed in Forest Plan revision.

Exclude all areas considered in the Northern Rockies Ecosystem Protection Act from road construction and timber sales, and adjust the ASQ accordingly.

This public issue does not address the purpose and need of this analysis. As described in Chapter I, re-consideration of land allocations will be addressed during Forest Plan revision.

Restrict access in grizzly bear habitat to only scientists conducting research.

The Court asked us to adjust the ASQ in a manner that is consistent with Forest Plan standards, including the 1986 Interagency Grizzly Bear Guidelines. Nowhere in those or any more recent guidelines has a recommendation been made that all public access should be denied in order to recover the grizzly bear population. This issue was not carried forward for further analysis.

At least one respondent requested that the Interdisciplinary Team consider "alternative ASQs which reflect changes in management area designations and emphases necessary to make management area direction consistent with Grizzly Bear Guidelines and all other LRMP standards."

This alternative was not considered separately in detail because existing Management Area designations, and associated management direction, currently are consistent with grizzly bear objectives, standards, and guidelines. Alternatives 2, 3-Corrected, 4-Corrected, and 5 propose allowable sale quantities that are consistent with current grizzly bear objectives, standards, and guidelines, and additions proposed with each of these alternatives.

The Forest Plan management direction for each individual Management Area, including Management Areas where timber harvest is allowed, contains a standard stating: "[a]dhere to the Forest-wide Standards for Grizzly Bear management in occupied Grizzly Bear habitat." Forest Plan Amendment 8 (Project Record, Exhibit B-2), which was approved on July 31, 1989, establishes that all Forest Plan standards are not discretionary. This amendment further establishes that standards for threatened and endangered species conservation are mandatory, and thus take precedence when there are conflicting uses. With Amendment 9 (Project Record, Exhibit B-4), which was also approved on July 31, 1989, the Flathead National Forest added the entire Interagency Grizzly Bear Committee Guidelines to the Forest-wide standards for grizzly bear. Thus, under the current Flathead Forest Plan, the IGBC Guidelines and all other grizzly bear standards are nondiscretionary standards that take precedence whenever there is any conflicting interpretation of Forest Plan management direction. This applies to any conflicting interpretation of management direction associated with specific Management Areas.

To ensure that there are no misunderstandings about the interpretation of Management Area direction, Alternatives 3-Corrected, 4-Corrected, and 5 all propose to amend Forest-wide General Standard No. 1 to add the following text:

"2. The grizzly bear objectives and standards of Amendment 19, which are required by the Terms and Conditions of the U.S. Fish and Wildlife Service's Biological Opinion on Amendment 19, are not discretionary. These objectives and standards supersede any conflicting or inconsistent management direction contained in the Forest Plan."

The allowable sale quantities presented with Alternatives 2, 3-Corrected, 4-Corrected and 5, are also consistent with the objectives, standards, and guidelines for grizzly bear.

In developing the Allowable Sale Quantity (ASQ) for each of these alternatives, the Interdisciplinary Team first "screened" all acres in the suitable land base with various spatial standards. This analysis method excludes from the "acres available" all acres and structure classes needed to comply with the spatial standards of the Forest Plan. These analysis methods are described in Chapter III and Appendix B.

The spatial standards related to grizzly bear objectives, standards, and guidelines modeled in this way included:

- Grizzly Bear BMA Activity Schedule
- Opening Size and Duration
- Grizzly Bear 600 feet to Cover
- Grizzly Bear Percent Cover
- Grizzly Bear Security Core Area (Alternatives 3 and 4)

Several other Forest Plan standards not directly related to grizzly bear were also modeled as part of this analysis. This modeling procedure identified acres potentially available for harvest during the planning period. To estimate the ASQ, these available acres were inputted to a simulation model that generates landscape harvest patterns reflecting additional standards through a set of modeling rules. The rules applied in this simulation modeling included:

- Average Harvest Unit Size of 15 Acres in MS 1 and 2
- Minimum Distance Between Harvest Units of 1312 feet in MS 1 and 2

These programmatic analysis methods insured that the ASQ potentially could be harvested consistent with the IGBC Guidelines and conservation recommendations from the Service's previous biological opinions. Experience indicates that budget allocations, site-specific analysis, appeals and litigation, and other somewhat unpredictable factors may result in actual harvest levels being less than maximum allowable harvest level established by the ASQ. These are the best available methods for programmatic modeling of ASQ consistent with grizzly bear habitat standards and objectives.

In conclusion, the Management Area direction of the Forest Plan is fully consistent with the IGBC Guidelines and grizzly bear conservation. The ASQ values for the alternatives for Amendment 19 were developed to assure consistency with the programmatic objectives, standards, and guidelines for grizzly bear. Thus, Alternatives 2, 3-Corrected, 4-Corrected and 5 satisfy this requested alternative.

Amend the Forest Plan objectives and standards for grizzly bear habitat that mirror the statistics of a composite female home range from the South Fork Study area, and amend objectives and standards for timber management; achieve the objectives for grizzly bear habitat within one year.

Alternatives 4-Corrected responds to these suggestions, except that the objectives have a 5-year time frame. Achieving the objectives in only one year is not a feasible time schedule to complete additional site-specific analysis, secure necessary funding, and implement site-specific decisions. Therefore, this alternative was not carried forward for further analysis.

Consider an alternative that incorporates the U.S. Fish and Wildlife Service's 1994 Biological Opinion for the Lost Silver timber sale.

This alternative was not considered in detail because it is very similar to Alternative 3-Corrected in some aspects, and very similar to Alternative 5 in other aspects.

Alternative 3-Corrected is very similar to the terms and conditions of the Lost Silver Biological Opinion. They both are based upon the composite home range values from radio-collared female grizzly bears in the South Fork of the Flathead River. They differ only in the definitions. The terms and conditions of the Lost Silver Biological Opinion addressed only roads; it did not include any motorized or nonmotorized trails. The definitions used in Alternatives 3-Corrected, 4-Corrected, and 5, include roads and motorized trails in the calculation of open motorized access density and total motorized access density. In addition, the Lost Silver terms and conditions defined "secure habitat" as any area more than 1/2 mile from any road, regardless of current restrictions, condition, or estimated use level. The definitions used in Alternative 3-Corrected, 4-Corrected, and 5 include motorized roads, motorized trails, and high-use non-motorized roads and trails. The latter definitions do not include roads restricted with a permanent physical obstruction, which do not receive motorized use or high-intensity non-motorized use, when calculating "security core areas." In addition, the terms and conditions of the Lost Silver Biological Opinion defined "secure habitat" as areas more than 1/2 mile from any road. The definitions used in Amendment 19 define "security core area" as an area more than 1/2 kilometer from any road receiving motorized use, any motorized trail, or any trail receiving high-intensity non-motorized use.

The "thresholds" identified in the Lost Silver Biological Opinion are compared to the quantitative objectives of Alternatives 3-Corrected and 5 in the following table.

	Lost Silver	Alt. 3-Corrected short term - long term	Alt. 5
Open Road Density/Open Motorized Access Density	20	19	15
Total Road Density/Total Motorized Access Density	18	24 - 19	19
Secure Habitat/Security Core Area	46	60 - 68	80

The Interdisciplinary Team tested the implementation effects of the Lost Silver terms and conditions, using the Lost Silver definitions, in three sample BMU Subunits in the South Fork drainage (Project Record, Exhibit L-32). They compared these effects to the implementation effects of the quantitative objectives and definitions of the alternatives considered in detail. The results indicate that the Lost Silver terms and conditions result in an amount of open roads (an average of 20.66 miles of road remain open per BMU Subunit) very similar to the results of Alternative 3-Corrected (an average of 21 miles of road remain open). However, the Lost Silver terms and conditions result in more miles of road reclamation (an average of 55 miles of road reclamation per BMU Subunit) than Alternative 3-Corrected (a Subunit average of 33.66 miles of road reclamation within 5 years and a total of 43.66 miles of reclamation in 10 years). Alternative 5 results in an average of 63 miles of road reclamation per BMU Subunit.

In early consultation regarding the proposed Forest Plan Amendment 19, the U.S. Fish and Wildlife Service advised us to use the IGBC Task Force definitions. With its January 6, 1995, Biological Opinion on Amendment 19, the U.S. Fish and Wildlife Service amended the Lost Silver Biological Opinion's incidental take statement and the associated terms and conditions.

One commentor requested that the Forest Service consider an alternative that eliminates motorized access year long, except on the East and West side Hungry Horse roads and existing Highways, such as the Swan Highway.

This alternative was eliminated from detailed consideration because it is substantially similar to Alternative 5. Alternative 5 contains a 5-year objective that no more than 15 percent of any BMU Subunit contain open road densities greater than 1 mile per square mile. This results in the elimination of motorized access on almost all roads under National Forest System jurisdiction, except major arterials such as the East and West side Hungry Horse roads.

Consider an alternative that replaces standards and objectives for access with standards that directly tackle the prime sources of grizzly bear mortality: poaching, food storage, hunting and train impacts. We advocate standards that integrate law enforcement, food storage regulations, education, and road management into a comprehensive grizzly bear mortality reduction strategy that is socially acceptable and economically responsible.

This alternative was not considered in detail because it would not comply with the terms and conditions of the U.S. Fish and Wildlife Service's Biological Opinion. Thus, it would not comply with the Endangered Species Act.

The recommendations to integrate law enforcement, food storage regulations, education, and management are very reasonable. Actions of the Flathead National Forest follow these recommendations. The Forest recently issued for public comment a draft food storage order. Through the Burlington Northern Environmental Stewardship Area agreement, the Forest is cooperating with several agencies and companies to reduce grizzly bear mortalities associated with trains. Similarly, the Forest Service cooperates on education and law enforcement with Montana Department of Fish, Wildlife and Parks, and other members of the Interagency Grizzly Bear Committee.

One commentor requested that the Forest Service consider an alternative that includes the following five features:

- 1) establish standards, not objectives, for core security areas, open road density, and closed road density for implementation within a couple of years;**
- 2) effectively and legally close core security areas to motorized use, and obliterate at least a quarter mile of all roads within core security areas and aggressively revegetate the remainder;**
- 3) maintain non-motorized trail and trail access to the fullest extent possible;**
- 4) eliminate all new system road construction; and**
- 5) in areas of intermingled land ownership, deny private land access requests unless subunits are in full compliance with adopted standards.**

This alternative was not considered in detail for several reasons. The features of this suggested alternative are either substantially similar to other alternatives considered in detail, not feasible, or unlawful.

The suggestion to establish access density standards rather than objectives does not change the effects. The Alternative 3-Corrected includes an amendment to Forest-wide General Standard No. 1 clarifying that the access density objectives of Amendment 19 are not discretionary. Achieving access density objectives within two years would not allow sufficient time to complete additional site-specific analysis, secure necessary funding, and implement site-specific decisions.

Appendix D explains that all restricted roads and reclaimed roads will be physically closed and subject to a legal closure order. It also describes the minimum physical treatment required for restricted and reclaimed road in security core areas. These requirements are similar to those suggested.

Appendix D also explains that restricted roads will remain open to nonmotorized use, and that reclaimed roads may be converted to nonmotorized trails when necessary to maintain access to the existing trail system.

Alternatives 3-Corrected, 4-Corrected, and 5 include a standard requiring no net increase in access density in BMU Subunits. Any new road construction in BMU Subunits must be offset by road reclamation.

The Forest Service has a statutory obligation to provide access to nonfederally owned lands within the boundaries of the National Forest System (16 U.S.C. 1323). Thus, it would be unlawful for the Forest Service to "deny private land access requests unless subunits are in full compliance with adopted standards."

CHAPTER III – EFFECTS OF ALTERNATIVES

This Environmental Assessment proposes to amend the Forest Plan by updating the estimate of Allowable Sale Quantity of timber, and establishing additional objectives and standards for grizzly bear habitat management. This chapter describes the physical setting and the effects of the alternatives on the natural resources and human environment of the Flathead National Forest pertinent to this amendment.

SUMMARY OF CHANGES TO CHAPTER III

This chapter has been amended in response to public comments and the U.S. Fish and Wildlife Service's Biological Opinion. Corrections and modifications have been made to Alternatives 3 and 4, an additional alternative was added, as described in Chapter II.

The primary changes made to this chapter are: disclosure of the effects of Alternative 5, found in each section throughout the chapter; updated information in section C. TIMBER RESOURCE, which now focuses on MS-1 and MS-2 lands; updated information in section F. FISHERIES AND WATER QUALITY related to effects of the alternatives on water quality; updated information in section I. TRANSPORTATION, related to road maintenance and reclamation costs, and new projections of the miles of open, restricted, and reclaimed roads by alternative.

We also sought to clarify sections that respondents said were confusing or needed further explanation, and made other minor editorial changes.

Several respondents inquired about biological evaluations of the effects of this Environmental Assessment on sensitive species. The effects of the alternatives on sensitive species are disclosed in this chapter. Biological evaluations of the effects of the preferred alternative on sensitive wildlife and on sensitive fish species are included in the Project Record.

A. TIERING TO THE FOREST PLAN, EIS, AND RECORD OF DECISION

This analysis is tiered to the Forest Plan, Environmental Impact Statement (EIS) and Record of Decision, dated January 22, 1986. These documents discuss a broad range of alternatives for long term land uses and the environmental, economic, and social effects of implementing these land uses. The scope of this document is limited to amending the grizzly bear and timber production objectives and standards in the Forest Plan to reflect updated information and respond to the Federal Court Order. The goals and land management allocations established in the Record of Decision will not be altered by this amendment.

Chapter III of the EIS, describes the forest environment. As directed by the CEQ regulations (1500.4(i), 1502.4, 1502.20), this document will not repeat these discussions, except as needed to update information and to aid in understanding.

B. PHYSICAL SETTING

The Flathead National Forest is located in northwestern Montana, in the headwaters of the Columbia River Basin. The total area of the Flathead National Forest is approximately 2,366,000 acres. It is spread over six counties: Flathead, Lake, Lewis and Clark, Lincoln, Missoula, and Powell.

The Flathead National Forest contains five mountain ranges and intervening narrow valleys formed by block faults. The mountain ranges are the Whitefish, Salish, Mission, Flathead, and Swan. The National Forest is drained by the South Fork, Middle Fork, and North Fork of the Flathead River; the Stillwater River; and the Swan River. Valley bottoms are about 3,000 feet above sea level. The highest mountain peaks are just under 10,000 feet above sea level.

Most of the Flathead National Forest has been glaciated. There were several advances of continental glaciers during the Pleistocene. The higher mountains not over-ridden by continental glaciers were subjected to intense glaciation by alpine glaciers. Most landforms present in the area have been influenced by glaciation. Glacial cirques, U-shaped glacial valleys, moraines, and terraces formed in glacial outwash are examples of glacial landforms.

The climate of the area is strongly influenced by Pacific maritime weather systems. Winters are generally cloudy, cool, and wet. Temperature inversions are common in valleys during the winter. November, December, and January are the wettest months, and most of the high elevation snowpack accumulates during these months. Summer days are warm and dry with cool nights. Occasional late afternoon thunderstorms occur on hot summer days.

The average annual precipitation is about 16 inches at Kalispell and about 100 inches on the highest mountain ridges. Climatic conditions in mountainous areas are extremely variable over short distances because of local topographic effects. The mountains receive about 80 percent of their precipitation as snow. The average annual temperature at Kalispell is about 43 degrees F.

C. TIMBER RESOURCE

Background

The following definitions and discussions are included to help explain the nature of the proposed amendment.

Allowable Sale Quantity (ASQ) is the quantity of timber that *may be sold* from the area of suitable land covered by the forest plan for a time period specified in the plan. The quantity is usually expressed on an annual basis as the "average annual allowable sale quantity" (36 CFR 219.3). For the purpose of this amendment, an annual ASQ is described for the 1995 through 1999 time period.

As implied by this definition, the ASQ is the maximum amount that may be sold; it is a ceiling. The actual volume of timber sold in a year normally will be less than the ASQ.

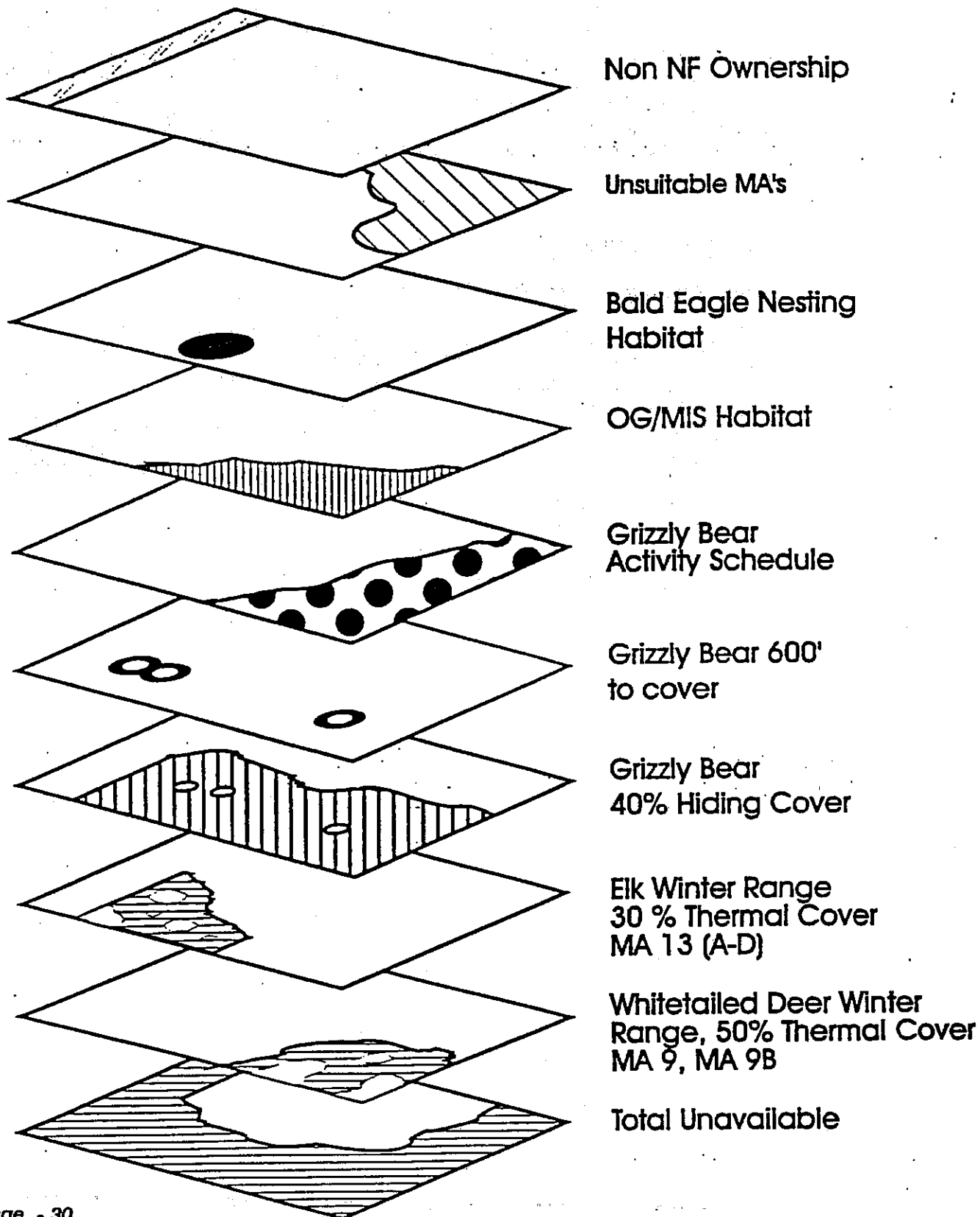
There are a variety of factors that cause the actual volume sold in a given year to be less than the ASQ. These factors include the Forest's timber management budget, choice of silvicultural prescription, additional site-specific analysis, and further public involvement. For example, in fiscal years 1994 and 1995 the Flathead National Forest received a timber management budget for the preparation and sale of 32 and 18 million board feet per year respectively, even though the ASQ was 100 million board feet. In addition, the ASQ is based upon assumptions that clearcutting will be the silvicultural prescription used for most timber sales. However, analysis of specific areas and timber stands frequently results in the actual application of silvicultural prescriptions other than clearcutting, and a reduction in the volume sold.

ANALYSIS METHODS

Spatial Modeling of Forest Plan Standards

To calculate an attainable annual ASQ for the period 1995-1999, Forest Plan standards were reviewed to identify those that can be modeled spatially. For each of these standards, a Geographic Information System (GIS) layer was created to represent at least the minimum acres and location needed to meet the requirements of the standard. Each of the GIS layers ("screens") were combined, in order to approximate the acres available for harvest during the period. A description of the spatial modeling techniques used to determine the ASQ under the existing Forest Plan standards is discussed in Appendix B and a more detailed explanation can be found in the planning records.

Figure 2. Schematic Representation of Spatial Modeling



Determination of Allowable Harvest

Following the screening for these standards, the acres scheduled for harvest in the first decade using the FORPLAN computer model were tested for feasibility, and adjusted accordingly, using the HARVEST model. This model incorporates a number of simulation features representing the standards stated above and considerations of appropriate size and spacing constraints of harvest. The HARVEST model generates forest harvest patterns reflecting these specific standards through a set of modeling "rules". The model is simplistic in that it does not attempt to optimize and is not predictive as to the specific location of future harvest activity. Instead the model produces a random implementation of the standards.

Calculation of Allowable Sale Quantity

The allowable harvest modeling results were disaggregated to the appropriate yield tables used in the determination of ASQ for the 1986 Forest Plan. This was done by simply multiplying the acres of allowable harvest by the appropriate yield per acre in a spreadsheet. The "mix" of even-aged regeneration harvest prescriptions was held to the same proportions as used in 1986.

Results

Basic to the evaluation of the impacts of each alternative is the question of how many acres are available for harvest consistent with Forest Plan standards. The result of the analysis is not a Forest Plan decision. Choices are made at the project-level within the Forest Plan standards and guidelines, to meet the goals and objectives. The following projections are a result of the analysis methods used to predict the effects of the proposed amendment and alternatives on ASQ. Like those displayed in the current Forest Plan, they only represent projections of what is thought to likely occur during project implementation.

Alternative 2 spatially models existing Forest Plan standards. Alternatives 3-Corrected, 4-Corrected and 5 spatially model, to varying levels, open motorized access and security core area objectives. Each progressively reduces the number of acres available for harvest and correspondingly reduces ASQ.

Figure 3. Harvest Acres by Alternative

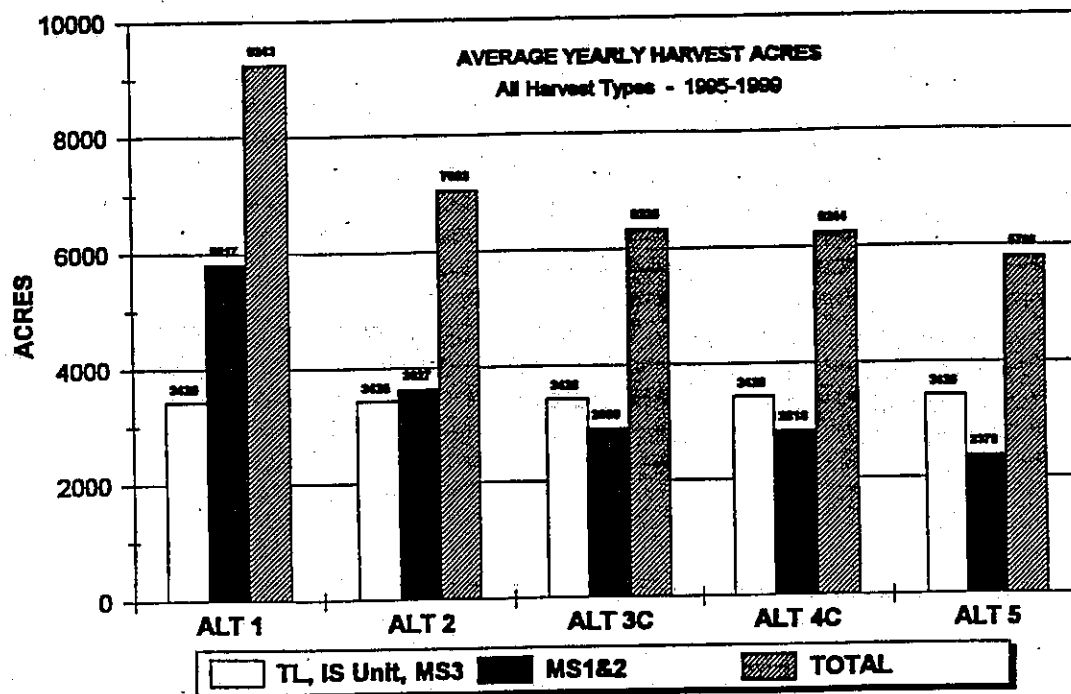
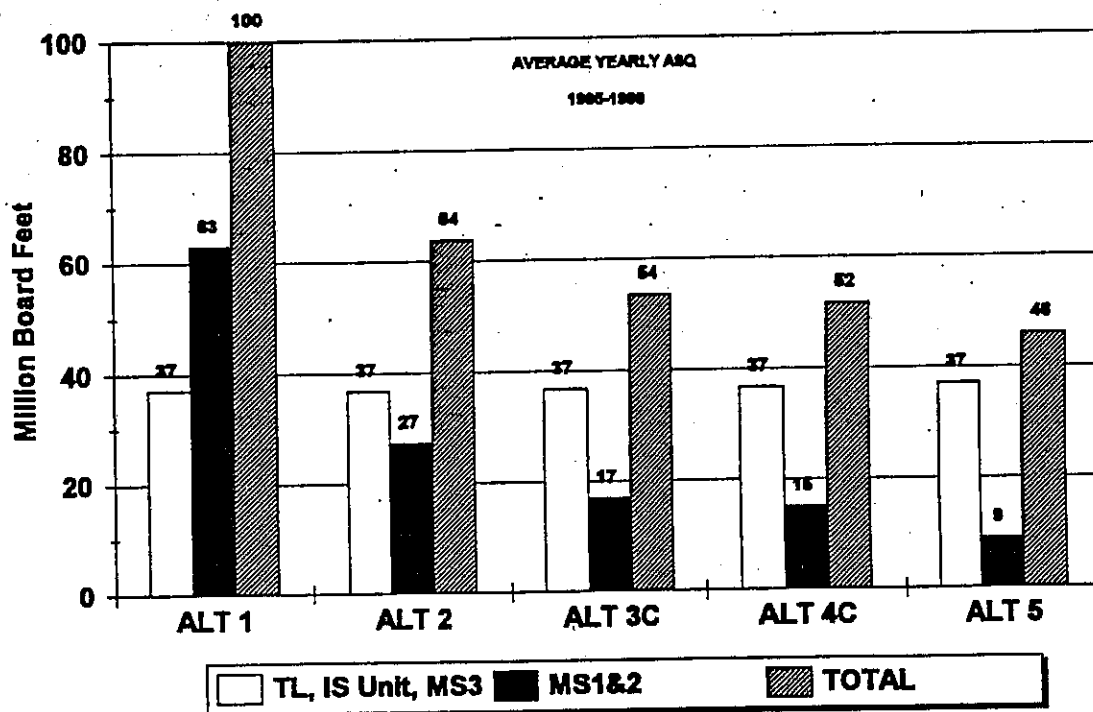


Figure 4. ASQ by Alternative

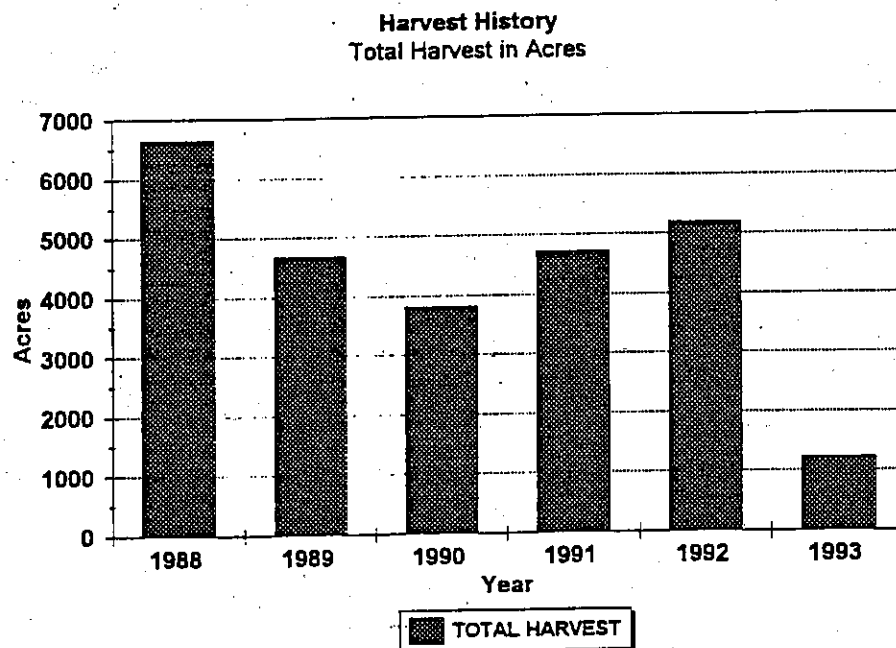


AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES**Introduction**

About 670,670 acres or 28 percent of the Flathead National Forest are designated by the Forest Plan as suitable for commercial timber production. Of this amount, about 447,315 acres are in grizzly bear management situation 1 and 2. Over the past 15 years, the Flathead National Forest has emphasized an aggressive program to harvest lodgepole pine to reduce losses in timber volume and value due to mountain pine beetle-caused mortality. While this harvest has occurred on all districts, it has been concentrated on the Tally Lake Ranger District and the Island Unit portion of the Swan Lake Ranger District. Historically, the majority of timber harvest has occurred on slopes less than 40 percent, which are typically on lower topographic positions. In addition, mature mixed-conifer stands are concentrated in areas which have not had a severe natural fire within the last century. These are the mixed-conifer stands that have had the majority of harvest in the past 20 to 30 years.

Annual harvest since 1986 is displayed in the Figure 5.

Figure 5. Annual Harvest (1988-1993).



Forest Structure

Implementation of management standards and guidelines for grizzly bear would affect forest structure on lands classified as suitable for timber harvest. A five-class structure classification is used to describe the development stages of forest vegetation: seedling (0 - 1" dbh), sapling (1 - 5" dbh), pole (5 - 9" dbh), young-mature sawtimber and mature sawtimber (9+ " dbh).

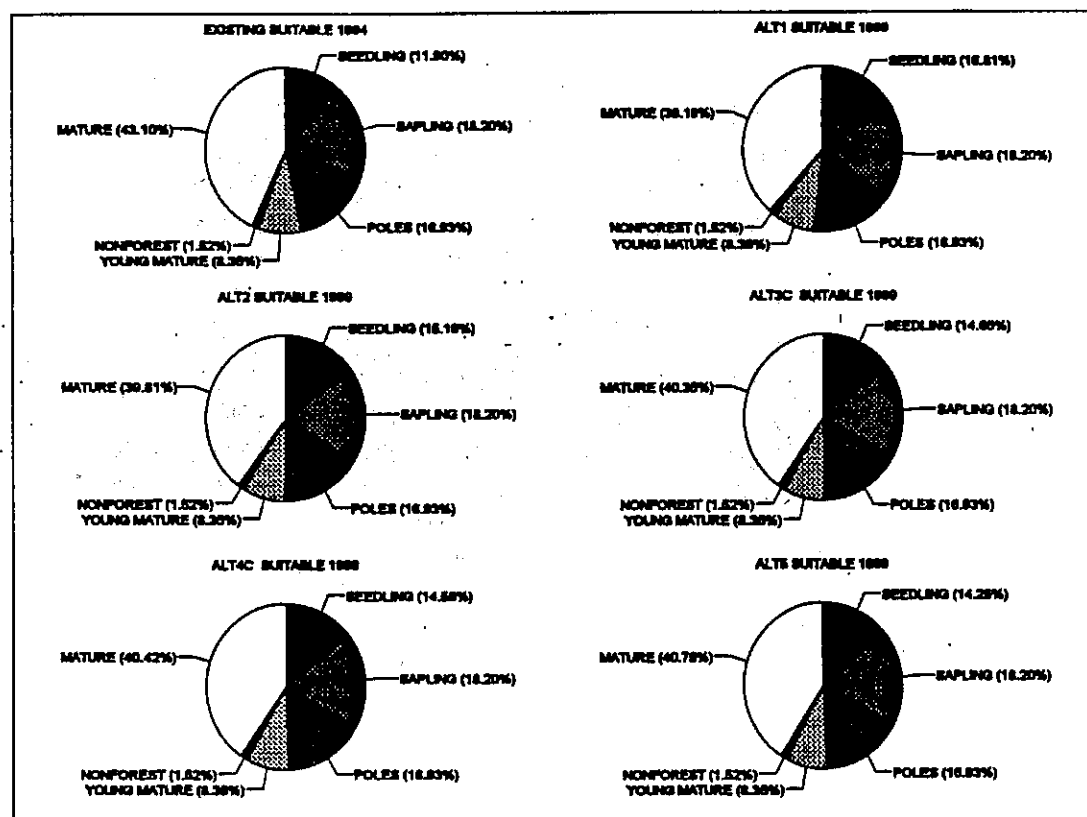
Affected Environment

The age-class distribution of the existing commercial Forest land is 44 percent mature sawtimber, 9 percent young mature, 17 percent poles, 18 percent sapling and 12 percent seedling. These stands are unevenly distributed across the forest. Approximately 13 percent of the mature structure class is lodgepole pine and 87 percent mixed conifer. The current conditions in the suitable timber base are summarized in Figure 6.

Environmental Effects

Figure 6 also illustrates the structure classes for each of the alternatives. The percentage shown represents the maximum that could be anticipated in the next 5 years under each alternative. Actual change in structure class will depend on site-specific implementation decisions.

Figure 6. Changes in Forest Structure on Suitable FNF Lands



INSECT AND DISEASE RISK

Affected Environment

The environmental consequences are discussed in terms of the overall risk to insect and disease damage in the two primary forest types.

Lodgepole Pine Cover Type (13% of the suitable acres)

Mountain pine beetle - This boom and bust bark beetle has been epidemic on the Forest in the past decade, causing mortality on nearly 210 thousand acres of mature lodgepole pine in 1986 alone. Yet in 1993, mortality was at the lowest figure reported since 1966. Crane Mountain on the Swan Lake Ranger District is one of three active areas in Montana, with mortality occurring on approximately 2,500 acres in 1993 or slightly over 1 percent of the mortality acres in 1986. Because of the low populations and diminished host base forest-wide, mortality in the next 3 to 5 years is expected only in the Crane Mountain area. There it may cause additional mortality on the order of 5 to 10 million board feet.

Dwarf-mistletoe - This wide-spread parasitic plant infects the living branches of lodgepole pine at all ages and reduces tree vigor or, in severe cases, can kill the tree. Since it moves laterally from tree to tree at about 10 to 15 feet per decade, little increase in this disease is expected in the next 3 to 5 years. Where it occurs now, growth losses are expected to be approximately 45 board feet/acre/year.

Root disease and defoliators are not considered a major factor in this type and little mortality is expected in the next 3 to 5 years.

Mixed-conifer Cover Types (87% of the suitable acres)

Root disease - Several root diseases are major contributors to decline of forest health in mature trees of this type. Infection centers grow larger over time and infected trees are often attacked by bark beetles. Bark beetle populations can build in these areas and then successfully attack trees that are not infected with root rot. Because root rot infections typically occur at low levels, killing only an individual tree here and there, it is difficult to assess the mortality as with bark beetles. Research results on the Lolo National Forest, where 18.8 percent of the commercial forest contained root disease mortality and 1.2 percent was occupied by root disease patches, are likely to reflect the conditions on the Flathead. These conditions are expected to remain static over the next 3 to 5 years, although continued drought may increase root rot mortality.

Bark Beetles - Mature stands of this type have been impacted by several bark beetles: spruce bark beetle, western balsam bark beetle, Douglas-fir beetle, and again mountain pine beetle in non-lodgepole pine hosts. In 1983, these bark beetles caused mortality on a little over 35,000 acres. In 1993, mortality was detected on slightly over 1,000 acres. Western pine beetle, fir engraver, and pine engraver are secondary killers whose populations are commonly undetectable from aerial reconnaissance. With the exception of Douglas-fir beetle and western balsam bark beetle, the trends for the next 3 to 5 years are likely to be static. Douglas-fir beetle seems to be increasing slightly and will likely continue to do so. Not much is known about the life cycle and population dynamics of western balsam bark beetle and it is difficult to predict a population trend. The trend in the past 5 years shows a slight increase and is likely to continue causing mortality in subalpine fir.

Figure 7. Mountain Pine Beetle Mortality

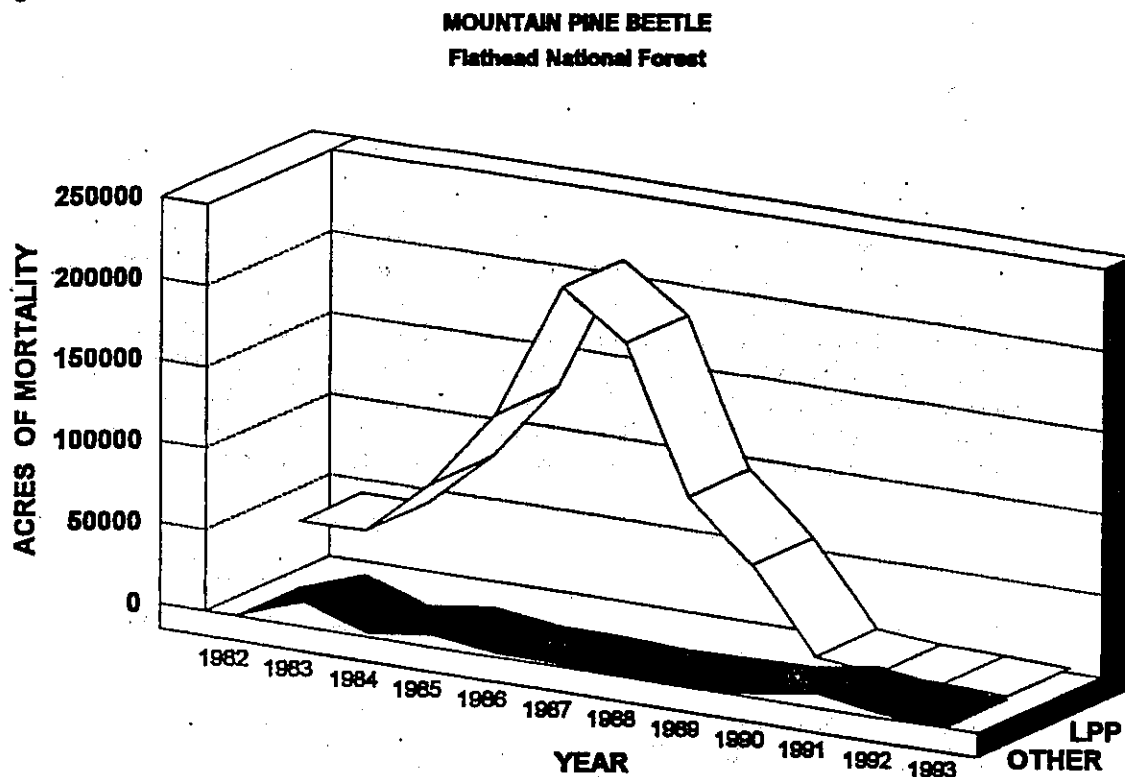
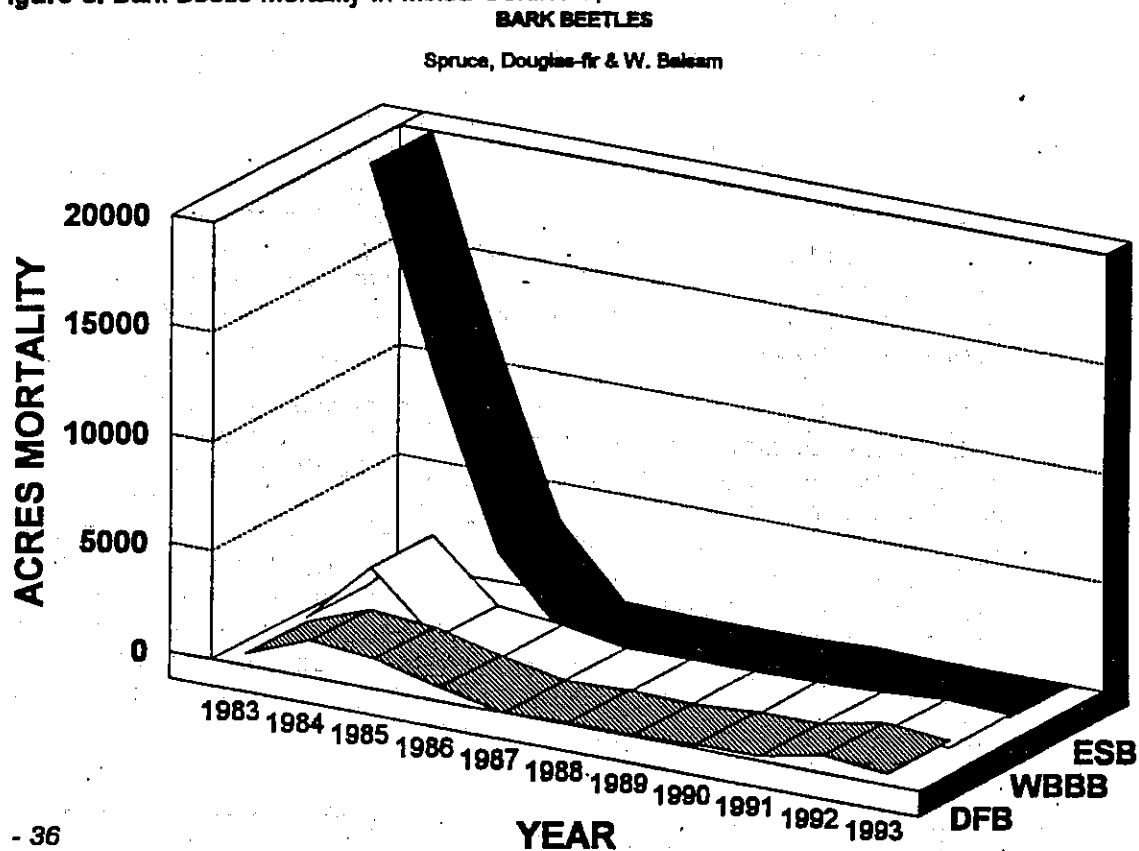


Figure 8. Bark Beetle Mortality in Mixed Conifer Species.



Dwarf-mistletoe - Douglas-fir growing at low elevations is the primary host on the Flathead National Forest. Large brooms, or severely infected branches, are frequently visible in mature trees and can cause noticeable mortality in older multi-storied stands. Infection levels are likely above pre-settlement conditions due to fire suppression and partial cutting. While occasionally found in western larch, it is not considered a wide-spread problem. Other conifers in this cover type are not susceptible to this pathogen. In these hosts, dwarf mistletoe is expected to have trends similar to the lodgepole type.

White pine blister rust - This disease was introduced from Europe in 1910 to Vancouver, BC. Western white pine and whitebark pine are highly susceptible at all ages, with mortality rates in excess of 90 percent in what were once vigorous, well stocked stands. While blister rust mortality was recently accelerated in combination with severe winter kill, mountain pine beetle attacks, and root rots, mortality in the next 3 to 5 years is expected to be lower.

Western spruce budworm - While a major concern on other National Forests in Montana, this defoliator hasn't been a problem on the Flathead since the late 1970's. Even then, the acres of aerially visible defoliation was only a small fraction of that on forests to the south. Generally wetter and cooler weather patterns in this area are thought to adversely affect larval dispersal and development time. Since populations are at record lows in Montana, budworm populations are not expected to recover in the next 3 to 5 years.

At low, endemic levels, insect and disease caused mortality provides rotting logs which harbor grubs and larvae that provide a food base for a variety of wildlife species, and can create small forest openings that promote food sources such as huckleberries. At epidemic levels, extensive mortality may decrease available cover and forested habitats directly or indirectly through increased fire occurrence.

Environmental Consequences

Changes were made to this section as a result of public comment to focus on the effects of the alternatives on lands suited for timber production in Management Situation 1 and 2 (MS-1 & MS-2), rather than presenting information for the Forest as a whole.

There are no differences in the effects of the alternatives outside the grizzly bear recovery area (primarily Tally Lake Ranger District and the Island Unit portion of Swan Lake Ranger District). Within the recovery area, 99% of the land is designated as MS-1 and MS-2, with only 1% designated as MS-3 (Appendix A page 7). Within MS-1 and MS-2 lands, there are differences between alternatives in the acres of allowable harvest of mature and mature high-risk sawtimber.

The estimated amount of allowable intermediate (thinning, sanitation, salvage, etc.) and uneven-aged riparian harvest is identical forest-wide under all alternatives.

Figure 8.1 displays the amount of potential even-aged regeneration harvest on land suited for timber production in MS-1 and MS-2. It should be noted that the proportion of potential treatments between mixed-species and lodgepole pine stands could vary as a result of project implementation decisions. Also, the proportion of lodgepole pine in Alternative 1 may be an overestimate. These values were obtained by simply proportioning the first decade results of the original FORPLAN modeling to arrive at a 5-year (1995-1999) result. It is likely that the mountain pine beetle mortality harvest during the first half of the decade, harvested more than half of the total decadal acres. For the remaining alternatives, modeling was done

of the existing on-the-ground conditions. Allowable harvest is directly proportional to the availability of each species group.

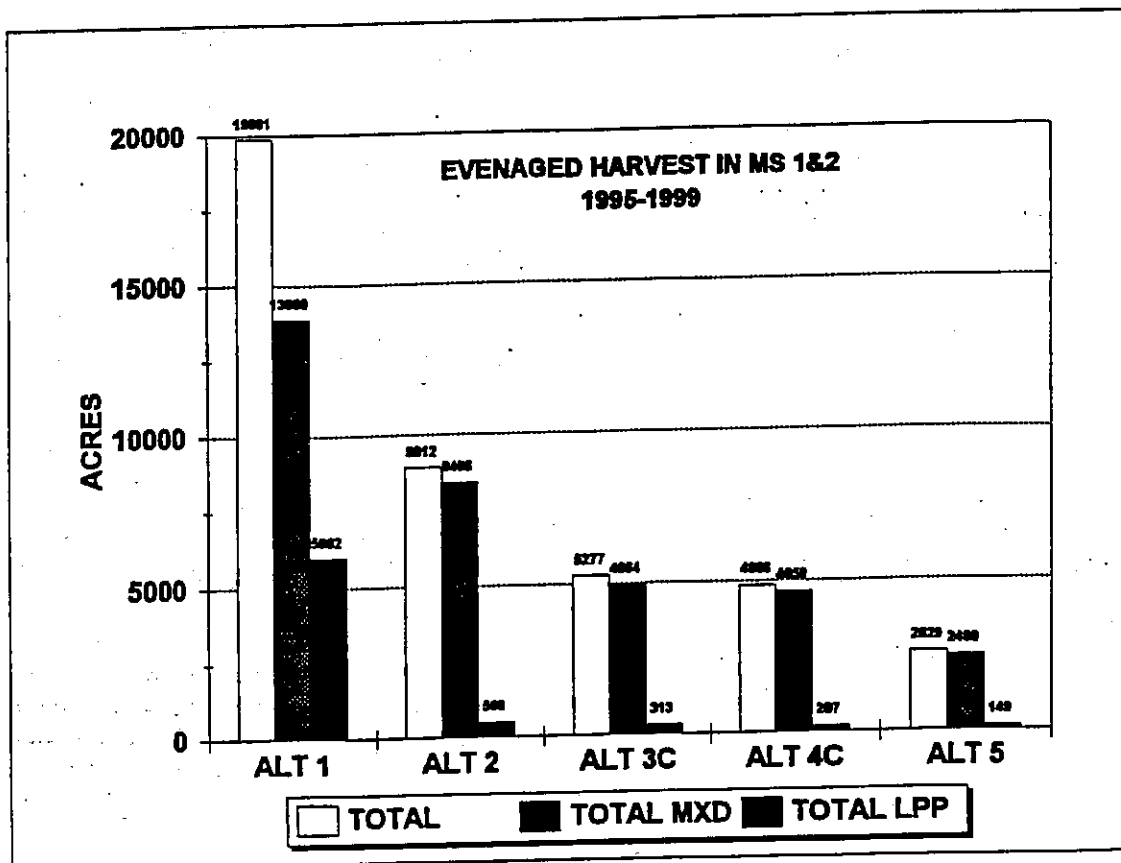
All Alternatives - The probability of a catastrophic insect and disease outbreak is low under all alternatives during the 1995-1999 period. The only difference between the alternatives is minor localized change in risk. The effects discussed by alternative are a relative comparison.

Alternatives 3-Corrected, 4-Corrected and 5: Vegetation management is permitted within core areas, provided that all motorized activities occur during the denning season. All criteria related to access levels must be met during the non-denning period. For further information, see Appendix D.

Alternative 1 - The insect and disease risk is lowest in this alternative. The allowable harvest of mature and high risk sawtimber would provide the opportunity to treat the greatest acreage of forest most susceptible to insect and disease mortality.

Alternative 2 - The risk of insect and disease damage may increase. The opportunity to treat high risk sawtimber stands would be lower in MS-1 and 2 on all BMU Subunits, as compared with Alternative 1. Bark beetle populations may again increase in time as lodgepole pine and other host species mature. Dwarf-mistletoe treatment would be delayed in some stands. Rehabilitation of some blister rust stands would be postponed.

Alternatives 3-Corrected, 4-Corrected and 5: The risk of insect and disease damage may proportionally increase with less opportunity to treat the high-risk stands during the next 5 years. Because of the logistical difficulties, we assumed that grizzly bear security core areas would not have timber harvest scheduled during the 1995 - 1999 period in BMU Subunits that are predominantly National Forest lands. On mixed-ownership BMU Subunits, effects are similar to Alternative 2. Reduced treatment could result in more acres susceptible to increased mortality rates from bark beetles and root rots. Additional acres of dwarf-mistletoe and blister rust treatment would be postponed. Due to reduced total motorized access, more costly skyline or helicopter logging may be required outside security core areas. Prompt removal of windthrow may be delayed. This may, for example, provide a base for population build-up of spruce bark beetle or Douglas-fir beetle. Rapid suppression of insect and disease outbreaks, while they are small isolated areas, may be hampered as a result. As each alternative progressively reduces the acres that could potentially be treated, there is a corresponding increase in insect and disease risk.

Figure 8.1 Evenaged Harvest in MS-1 and MS-2**FIRE RISK****Affected Environment**

Before this century, most vegetation types had evolved with fires of natural or human caused origin. Fire history shows that these types were periodically disturbed by fire. The pattern of disturbance is referred to as fire frequency, and the effects of the disturbance is referred to as fire regime or intensity. The frequency and intensity of fires varied greatly because of variation in fuel, topography and weather. This resulted in a mosaic of vegetation.

Fire suppression in this century has created unexpected effects. Successful fire suppression, insect and disease mortality and windstorms causing blowdown have resulted in a buildup of fuels. This has led to increasing rates of fire spread and intensity, and ultimately has increased the probability of larger high-intensity fires that potentially could occur on a repeated basis due to an increase in large fire frequency.

Management activities that change species composition, age distribution and landscape structure affect fire regimes. The structural factors which determine crown fire potential are canopy closure, fuel ladders, and canopy height. The species that are selected for a site, through active management or through the indirect effects of fire suppression, can affect fire intensity.

Of the lands suited for timber production in grizzly bear Management Situation 1 and 2, approximately 72 percent of the area is within 0.3 miles (0.5 kilometers) of a road. Management actions that change roaded access, may affect human-caused fire ignitions, initial attack fire suppression success and have significant effects on large-fire suppression capability. Delayed response time for initial attack and reinforcement for emerging fires is the critical limiting factor for most fire starts. Extended response times due to reduced surface access increases escaped fire possibility. The cost of suppression increases due to needs for aviation support and fire fighter support in more remote areas. Conversely, reduced access may decrease the number of human-caused fires.

The Flathead National Forest averaged 73 fires per year from 1960 to 1990, with an average of 1,717 acres burned per year. Lightning accounted for 61 percent of the number of fires and 75 percent of the acres. Human-caused activities accounted for 39 percent of the number of fires and 25 percent of the acres. The year of greatest fire occurrence was 1973 with 175 fires and the lowest in 1993 with 17 fires. Recent large fires occurred with Red Bench fire (38,500 acres) in 1988 and Little Wolf Fire (15,450 acres) in 1994.

Environmental Effects

Fires burning relatively small areas, on the order of tens to hundreds of acres with varying intensities, could provide a mosaic of cover and forage for wildlife. Fire-killed trees would provide snags and rotting logs which harbor larvae and grubs that provide a food base for a number of wildlife species. A low-intensity fire would stimulate rapid re-growth of forbs, grasses, and shrubs that provide food for species such as deer, elk, and grizzly bears. Large stand replacement crown fires burning over thousands of acres with high intensity will remove cover for a period of time. Loss of cover in areas that have human access increases the risk of human-caused mortality.

Vegetation management to treat insect and disease mortality, blowdown, and undesirable tree species compositions are restricted to varying degrees in each alternative. Fire history suggests that those alternatives with the least vegetation management would have the most potential for large fires in vegetative types with low fire frequency. When a wildfire begins under the right weather and fuel conditions in these types, wildlife security habitat could be adversely impacted.

Decreased motorized access may also decrease the number of human caused fires. Assuming the total amount of motorized recreation doesn't decrease and is simply relocated in different areas, the results may only be that human-caused ignitions are more concentrated into those areas with access, with fewer ignitions in the areas with motorized access restrictions.

Additional road restrictions may have the potential of impacting fire suppression efforts. In general, decreases in access can result in larger fires due to delays in getting firefighters to the site. Any alternatives' actual impact cannot be accurately assessed until the site-specific implementation decisions occur.

Effects of the Alternatives:

All Alternatives - There are no direct effects of the proposed amendment on fire risk on lands outside grizzly bear recovery area (primarily Tally Lake and the Island Unit portion of Swan Lake Ranger Districts), nor in designated wilderness. Little effect is anticipated in mixed-ownership BMU Subunits in Management Situations 1 and 2. With the exception of

one BMU Subunit (Peters' Ridge) there should be no material effect on roaded access in Montana Department of State Lands fire protection areas.

The following discussion of effects is on those lands within BMU Subunits that are predominantly National Forest (75% or greater national forest jurisdiction in a BMU Subunit). The consequences of the alternatives would be proportional to the decrease in allowable harvest (see Figure 8.1) and roaded access.

Alternative 1 - Fire risk is lowest in this alternative. The allowable harvest would treat the highest number of acres of vegetation that pose a fire risk. Roaded access is highest in this alternative, aiding the potential success of road-based fire suppression efforts. Approximately 71 percent of lands suited for timber production that are in grizzly bear Management Situation 1 and 2 are within 0.3 miles (0.5 kilometers) of a road.

Alternative 2 - The fire risk may increase as fewer acres are treated. Roaded access is maintained at the same level as Alternative 1, making road-based fire suppression efforts highly successful.

Alternative 3-Corrected - The fire risk may increase in BMU Subunits that are predominantly National Forest land. Fewer acres of vegetation are treated and roaded access is lessened. Approximately 62 percent of lands suited for timber production in grizzly bear Management Situation 1 and 2 is within 0.3 miles (0.5 kilometers) of a road. More reliance would be placed on smokejumpers, helicopters and fixed-wing retardant drops for initial attack. This may increase suppression costs and risk of escape during multiple fire days as aviation delivered resources are limited and prioritized to fires affecting high resource values.

Alternative 4-Corrected - The fire risk may increase in BMU Subunits that are predominantly National Forest land. Fewer acres of vegetation are treated with a lesser amount of roaded access. Approximately 50 percent of lands suited for timber production in grizzly bear Management Situation 1 and 2 is within 0.3 miles (0.5 kilometers) of a road. Additional reliance on air supported fire suppression would be needed to compensate for reduced ground-based response time. The cost of fire suppression would likely increase. Outside grizzly bear habitat, there would be no change in roaded access from Alternative 2. It must be noted that reduced initial attack time due to limited surface access potentially equates to increased escaped fires and more and larger high-intensity fires in many vegetative types. When fire starts in this described alternative in grizzly bear habitat, the risk of fire escaping from the security core areas on a large front is increased. This poses an increased risk of large stand replacement fires on downwind resources.

Alternative 5 - The fewest acres of vegetation are treated with the least amount of roaded access. Approximately 38 percent of lands suited for timber production in Management Situation 1 and 2 is within 0.3 miles (0.5 kilometers) of a road. The effects discussed in Alternative 4-Corrected would be more pronounced.

D. THREATENED AND SENSITIVE PLANTS

Water howellia is the only plant that is listed under the Endangered Species Act. It is listed as "threatened".

Water howellia is an aquatic plant that grows in wetlands associated with vernal glacial ponds and former river oxbows. Water howellia is an annual plant, reproducing entirely from seed. Germination occurs only when the seeds are exposed to air. For this reason, ponds must dry at least partially each year to allow seeds to germinate, and then fill again to allow plants to grow.

Historically, water howellia was distributed throughout the Pacific Northwest, although occurrences (that is, individual wetlands where the species occurs) were probably always rare. Nearly all remaining occurrences are clustered in two main population centers: one in Washington and one in the Swan Valley of Montana. There are 58 known occurrences in the Swan Valley. Of these, 22 are found on private land, 32 are on the Flathead National Forest, and 4 span more than one ownership.

A sensitive plant species is a species, subspecies, or variety of plant for which the Regional Forester has determined that there is a concern for population viability, due to current or predicted downward trend in populations or habitat. Amendment 15 of the Forest Plan (11/91) amended the list of sensitive plant species and added direction for completing site-specific effects analyses for sensitive plants. Direction is to avoid adverse impacts to plants or their habitats, and to ensure that project decisions will not result in loss of species viability or create significant trends towards federal listing. The list of sensitive plant species was updated in June of 1994 (Project Record, Exhibit L-2).

Effects of Alternatives on Threatened and Sensitive Plants

None of the alternatives would alter current Forest Plan direction for sensitive plant species. Because populations of sensitive plants are uncommon and generally have a localized distribution, and current Forest Plan standards require site-specific analyses, none of the alternatives will have any effect on threatened and sensitive plant species.

Open roads and trails function as conduits for the spread of non-native plants, including aggressive weeds. Following disturbance, weeds may establish and totally displace native plants. Under Alternatives 3-Corrected, 4-Corrected, and 5, the risk of introduction and spread of noxious weeds would be somewhat less than under Alternatives 1 and 2.

E. WILDLIFE

About 250 species of vertebrate wildlife inhabit the Flathead National Forest. During preparation of the Forest Plan, Management Indicator Species (MIS) were identified for those groups of species most likely to be changed by forest management activities or those of special scientific or economic importance. In 1986, the Regional Forester identified a list of sensitive wildlife species, which was updated in June of 1994. Sensitive species are those for which viability is a concern. Wildlife species or species groups for which the effects of the alternatives were analyzed are:

Threatened and Endangered Species: bald eagle, peregrine falcon, gray wolf, and grizzly bear (listed under the Endangered Species Act);

Sensitive wildlife species: common loon, harlequin duck, boreal owl, flammulated owl, black-backed woodpecker, fisher, lynx, wolverine, northern bog lemming, and western big-eared bat;

Commonly hunted species: elk, mule deer, and white-tailed deer (Forest Plan MIS);

Mature and old-growth associated species: marten, pileated woodpecker, and barred owl (Forest Plan MIS);

Cavity dependent species: 42 species of birds and 10 species of mammals (Forest Plan MIS);

Migratory land birds: 88 species.

Effects of the alternatives were analyzed for each of these species or groups. Brief descriptions of suitable habitat and status on the Flathead National Forest are provided for each species, followed by a discussion of the expected effects of the alternatives.

ENDANGERED AND THREATENED SPECIES OF WILDLIFE

Four wildlife species are listed as endangered or threatened under provisions of the Endangered Species Act. A brief description of suitable habitat on the Flathead National Forest is found in Table 4 below.

Table 4. Suitable habitat for threatened and endangered species on the Flathead National Forest.

Species	General Description of Suitable Habitat	Status and Habitat Conditions on the Flathead NF
Bald Eagle	Stands (>25 acres) of mature or old-growth forest with multi-layered canopy; within 1 mile of large lakes (>35 acres) or 4th order + streams; adequate population of fish (primary prey); large-diameter trees and snags for nest, perch and roost trees	9 known nesting territories; potential habitat 1,320,000 acres; migration and wintering habitat along major rivers and lakes
Peregrine Falcon	Sheer cliffs, usually below 9,500 feet in elevation; prey on birds in wetlands, riparian areas, meadows, and croplands within 10 miles of the nest site; migration routes include waterfowl refuges and concentration areas	One pair observed during 1993 and 1994 nesting seasons
Gray Wolf	Large home range size; prey primarily deer and elk, also moose and mule deer; security at den and rendezvous sites	Currently, 3 packs adjacent to or overlapping the U.S.-Canada border; suitable habitat exists throughout the Forest
Grizzly Bear	Primary food sources in the NCDE include forbs, roots, and carrion in the spring, berries in the summer, and roots and carrion in the fall; security is an important feature	Minimum population size in 1993 for NCDE estimated as 306 bears; on FNF, about 94% of land within the recovery zone is Management Situation 1, with 5% MS-2, and 1% MS-3.

Effects of Alternatives on Bald Eagles

Human activities that can affect bald eagles and their habitat are alteration of habitat by logging, disturbance at the nest site, and direct mortality.

The current Forest Plan prohibits disturbance-causing activities within 1/2-mile of active nests during the nesting period; requires consultation with USFWS prior to vegetation alteration within 1/4-mile of nests; requires a biological investigation prior to use of pesticides within 15 miles of an active nest; prohibits cutting of snags for firewood within 300 feet of any river, lake or reservoir; and adopts the guidance for management of nesting territories, potential nesting habitat, and wintering and migration habitat from the Recovery Plan (U.S. Fish and Wildlife Service 1986) and the Montana Bald Eagle Management Plan (Montana Bald Eagle Working Group 1986).

Because of the protections already offered bald eagles by the Forest Plan, none of the alternatives are expected to have an adverse effect on them. Under Alternatives 2 through 5, existing and potential nesting habitat was identified and these acres removed from ASQ calculations (see Appendix B). This adjustment will help to ensure that potential habitat is not inadvertently reduced below that necessary to recover the species.

Under Alternatives 3-Corrected, 4-Corrected, and 5, fewer miles of road would be constructed, due to the additional standards, and fewer miles would remain open to motorized use. This would be expected to have a beneficial effect on water quality and potentially on fish populations, the bald eagle's primary prey base. This assumes that bermed roads will normally have culverts pulled and other measures taken to reduce or prevent erosion.

None of the alternatives are expected to have any measurable effect on wintering or migration habitat, or to change risk of mortality of bald eagles.

Effects of Alternatives on Peregrine Falcons

The current Forest Plan prohibits disturbance-causing activities within 1/2-mile of active nests during the nesting period; requires consultation with USFWS prior to vegetation alteration within 1/4-mile of nests; requires a biological investigation prior to use of pesticides within 15 miles of an active nest; prohibits cutting of snags for firewood within 300 feet of any river, lake or reservoir; and adopts the guidance for management of occupied and potential nesting habitat, and wintering and migration habitat in the Recovery Plan (U.S. Fish and Wildlife Service 1984). Implementation of these standards should be adequate to ensure recovery of the species.

None of the alternatives is expected to have an adverse effect on habitat of peregrine falcons. Nor are any of the alternatives expected to have any effect on risk of mortality for peregrine falcons.

Effects of Alternatives on Gray Wolf

The Forest Plan currently provides protection within a 1 mile radius of known or suspected wolf whelping dens and rendezvous sites, during the period March 15 - July 1; ungulate calving/fawning areas May 1 - July 15; and ungulate winter ranges December 1 - April 15. The wolf recovery plan (U.S. Fish and Wildlife Service 1987) was added as an unbound appendix to the Forest Plan with Amendment #12.

Human tolerance is the most important factor in recovery of the wolf. Road access is generally assumed to increase the risk of human-caused mortality of wolves (Mech 1989). Gated or seasonally restricted roads away from human settlements provided wolf travel corridors in Alaska, while open roads and areas with permanent human presence were avoided by wolves (Thurber *et al.* 1994).

Fewer roads would be constructed under Alternatives 3-Corrected through 5, because of the addition of the standard for no net increase in motorized access density, than under Alternatives 1 and 2. Under Alternatives 3-Corrected through 5, proposed objectives and standards for motorized access would reduce the risk of human-caused mortality of wolves within the grizzly bear recovery area.

Wolf observations and suitable habitat exist both within and outside of the grizzly bear recovery area. For example, high densities of white-tailed deer are found on the Tally Lake Ranger District outside the Northern Continental Divide Ecosystem (NCDE). Outside of the grizzly bear recovery area, Forest Plan direction would be the same under all alternatives. Risk of mortality for wolves is higher in these portions of the National Forest due to the comparatively high open road densities.

Effects of Alternatives on Grizzly Bear

Forest management practices that provide a diversity of age classes and enhance production of forage such as huckleberries can positively affect the quality of grizzly bear habitat (Peek *et al.* 1987). However, the development of human access that often accompanies logging increases disturbance and risk of human-caused mortality of grizzly bears and other wildlife. A variety of measures to reduce adverse effects and promote positive effects of timber management were included in the Forest Plan, as amended to adopt the Interagency Grizzly Bear Guidelines of 1986.

Road management has always been recognized as an important factor in achieving Forest Plan objectives and recovery goals. Grizzly bears generally avoid roads and habitat adjacent to roads, although they may habituate to regular vehicular traffic or may use these areas at night (McLellan 1986). Preliminary results from the South Fork Flathead River Grizzly Bear Project (Mace and Manley 1993) indicated that when open road density exceeded 1 mile/square mile, adult female bear use of available habitat was less than expected. When total road density exceeded 2 mile/square mile, use of habitat by all age/sex classes of bears was less than expected.

Alternatives 1 and 2: existing direction in the Forest Plan would remain unchanged. Current Forest Plan direction emphasizes management of open road density, averaged over a Geographic Unit or a Bear Management Analysis Area. This direction is inadequate, as evidenced by a series of Biological Opinions from the USFWS indicating that a "taking" of grizzly bears is occurring in some areas of the Forest due to existing road densities and lack of security core area.

Alternatives 3-Corrected through 5: Objectives and standards are proposed to address total and open motorized access and security core area within the grizzly bear recovery area. All of these alternatives comply with the Biological Opinion on Amendment 19, prepared by the U.S. Fish and Wildlife Service on Jan. 6, 1995. In response to public comments, definitions and implementation direction will be added as unbound appendix TT of the Forest Plan (Appendix D of the amended EA).

Under these alternatives, there will be a *no net loss, net gain* approach to managing motorized access density and security core area. Different objectives apply to BMU Subunits that are predominantly National Forest, and those with mixed ownership. Within mixed ownership Subunits, mortality risk will be relatively high under all alternatives.

Seventy BMU Subunits have been delineated on the Flathead National Forest (see Fig. 1). The 16 BMU Subunits that are entirely within designated wilderness currently meet the proposed objectives and standards, since motorized access is prohibited and high-intensity use levels occur on only a very limited number of trails. Thus there is no effect on grizzly bear habitat within wilderness as a result of these alternatives.

Under Alternatives 3-Corrected through 5, reducing the density of access routes on the remaining 54 BMU Subunits should improve opportunities to accommodate expansion of the grizzly bear population and would be expected to reduce risk of habituation, displacement, and human-caused mortality.

Availability of core area is probably most limiting during the early spring, when snow still blankets the higher elevations. The early spring or post-denning season is defined as the period from March 15 through May 7. At the end of April, the snow line typically is at about 5110 feet (R.Mace, pers. comm.). Because main roads and human dwellings tend to occur at lower elevations as well, little core area is available at these lower elevations. In drainages without substantial human development, such as the South Fork, security is compromised in the early spring by the black bear hunt. The proposed standards place emphasis on providing core area in all seasonal habitats and at all elevations, but the amount of core area will always be greater at higher elevations.

Core areas will be delineated site-specifically. After a core area is identified, it must remain in place for at least 10 years. Therefore, when ASQ was modeled for Alternatives 3-Corrected, 4-Corrected, and 5, all existing core areas and an approximation of additional areas needed to meet the core area objectives were considered to be not available for timber harvest during the 1995-1999 period. Although it is possible for winter logging to occur in core areas, removing them from the available acres seemed to be an appropriate modeling approach, given the access restrictions that would apply.

The monitoring plan will be amended, as proposed initially but now also incorporating additional guidance in unbound appendix UU to the Forest Plan (found in Appendix A of the amended EA). This will allow us to track our progress and adjust our management when the need to do so is indicated.

Alternative 3-Corrected: The area of high-density (> 1 mile/square mile) open motorized access will be limited to no more than 19% of the MS-1 and MS-2 within a BMU Subunit. This value (which has been corrected from the original EA) matches that found within a composite home range of adult female grizzly bears in the South Fork Grizzly Bear Project study area. The current Forest average is 20%, so no phase-in is needed as was proposed in the original EA.

The long-term objective for total motorized access density under this alternative would be no more than 19% in a high-density (> 2 miles/square mile) class in MS-1 and MS-2. This objective is based on the conditions found within a composite home range of adult females in the South Fork Grizzly Bear Project study area. Short-term objectives (5 years) are set

equal to the current Forest average of 24%, so that all BMU Subunits that are above the average will be addressed first.

The long-term objective for security core area under this alternative would to provide 68 to 100% of each BMU Subunit as core area, with additional specifications on size and distribution. This objective is based on the conditions found within a composite home range of adult females in the South Fork Grizzly Bear Project. Short-term objectives are set equal to the current Forest average of 60%, so that all BMU Subunits that are below the average will be addressed first. This objective was changed from the original EA to comply with the terms and conditions of the incidental take statement in the Biological Opinion on Amendment 19 by the U.S. Fish and Wildlife Service.

Seventy BMU Subunits have been delineated on the Flathead National Forest (see Fig. 1). Of these, 54 were analyzed in detail because they encompass lands outside of wilderness that will be affected by the proposed change in objectives and standards regarding ASQ and motorized access density.

Currently, 18 of the 40 BMU Subunits that are predominantly National Forest (75% or more National Forest jurisdiction in a BMU Subunit) do not meet the objective for open motorized access (Figure 10), 13 do not meet short or long-term objectives for total motorized access (Figure 9), and 19 do not meet short or long-term objectives for security core area (Fig. 11).

Of the 14 BMU Subunits with mixed ownership, 2 currently meet the objective for total motorized access density, only one meets the objective for open motorized access density, and three meet the short-term objective for security core area.

The composite home range represents 95% of the pooled locations of radio-collared grizzly bears. Its boundary reflects the actual area used on an annual basis by these bears, rather than the study area boundary. Portions of the South Fork study area outside the composite home range had higher open and total road densities and lesser amounts of unroaded habitat, than within the composite home range. These adult females are known to have survived and reproduced in these conditions. By applying composite home range values across entire BMU Subunits, there will be an improvement in habitat conditions for grizzly bears. Under this alternative, the short term objectives will allow a phase-in for total motorized access and core area.

By establishing short term and long term objectives, Alternative 3-Corrected would reduce the immediate impact on some traditional or desired human uses, while still giving priority to improving habitat conditions in those BMU Subunits that currently have the highest impacts from human activity. On the other hand, restricting motorized access could reduce public support for grizzly bear recovery.

Alternative 4-Corrected: This alternative is similar to Alternative 3-Corrected, but does not provide for the phase-in with short term objectives.

Seventy BMU Subunits have been delineated on the Flathead National Forest (see Fig. 1). Of these, 54 were analyzed in detail because they encompass lands outside of wilderness that will be affected by the proposed change in objectives and standards regarding ASQ and motorized access density.

Currently, 18 of the 40 BMU Subunits that are predominantly National Forest do not meet the objective for open motorized access (Figure 10), 19 do not meet the objective for total motorized access (Figure 9), and 21 do not meet the objective for security core area (Fig. 11).

Of the 14 BMU Subunits with mixed ownership, only one meets the objective for open motorized access density, 2 currently meet the objective for total motorized access density, and none meet the objective for security core area.

As with Alternative 3-Corrected, there will be an improvement in habitat conditions for grizzly bears, under Alternative 4-Corrected. The changes will occur over a shorter time frame than under Alternative 3-Corrected.

Alternative 5: This alternative was added to the amended EA in response to public comments that suggested we provide a greater degree of security since the grizzly bear population may be declining.

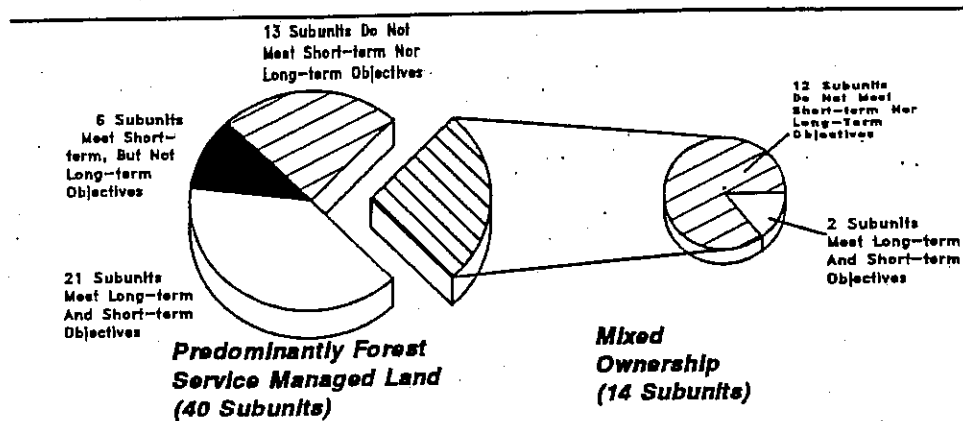
Of the 70 BMU Subunits on the Flathead National Forest, 54 were analyzed in detail because they encompass lands outside of wilderness that will be affected by the proposed change in objectives and standards regarding ASQ and motorized access density.

This alternative reduces the objective for high-density open motorized access from 19% to 15%. Currently, only 18 of 40 BMU Subunits that are predominantly National Forest meet the objective for open motorized access under Alternative 5 (Fig. 10). Of the 14 BMU Subunits with mixed ownership, only one meets the objective for open motorized access density. This alternative would reduce opportunities for people driving on forest roads to observe grizzly bears, and therefore may reduce mortality risk. However, the substantial additional restrictions on open motorized access has the greatest risk of any alternative of eroding public support for grizzly bear recovery efforts.

Under this alternative, the objective for security core area is increased to 80%. Using the largest annual individual home range, rather than the composite home range, 4 of 7 adult female home ranges had 80 to 81% security core area (R.Mace, pers. comm.) Currently, 13 BMU Subunits provide at least 80% in security core areas (Figure 11). All of these Subunits are predominantly National Forest. Providing this level of security core area gives a very high probability that this would be sufficient to achieve recovery goals, provided that public support is unchanged.

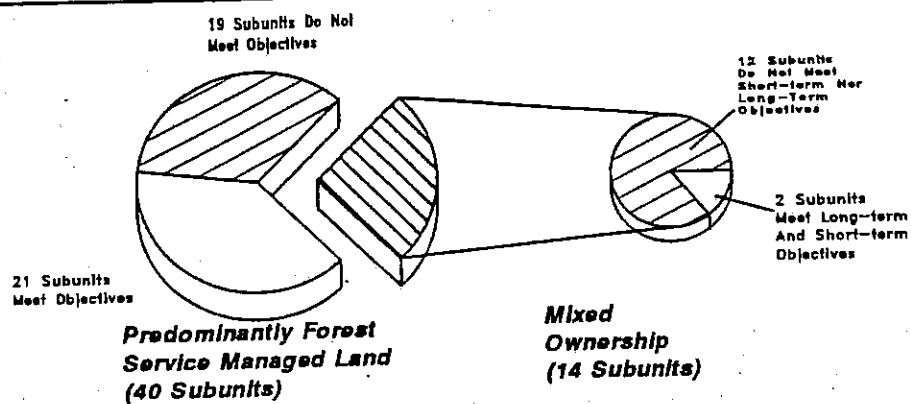
Figure 9. Total Motorized Access Density

Alternative 3-Corrected



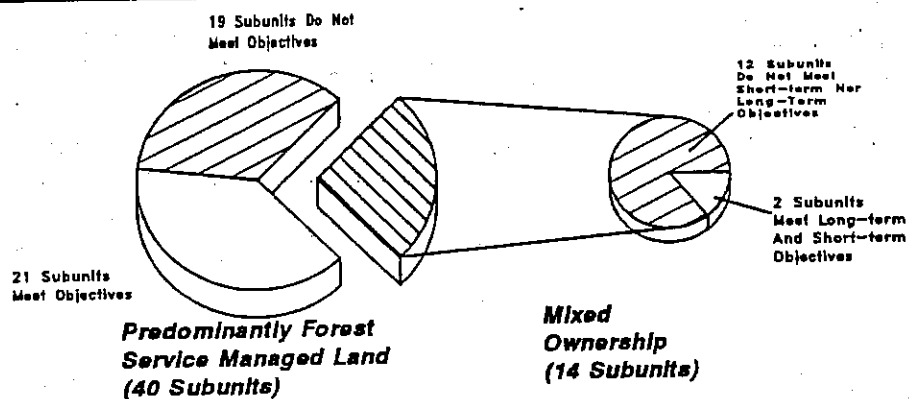
Long-term objective is to have no more than 19% of each BMU Subunit with total road/motorized trail densities greater than 2 miles/sq. mi. Short-term Objective is no more than 24%.

Alternative 4-Corrected



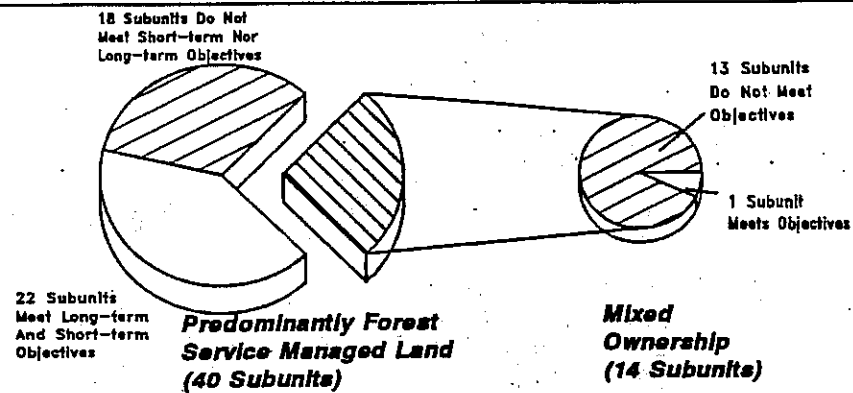
Objective is to have no more than 19% of each BMU Subunit with total road/motorized trail densities greater than 2 miles/sq. mi.

Alternative 5

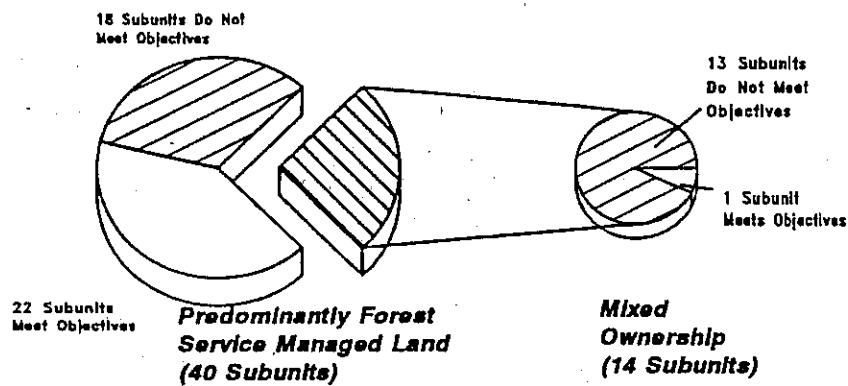


Objective is to have no more than 19% of each BMU Subunit with total road/motorized trail densities greater than 2 miles/sq. mi.

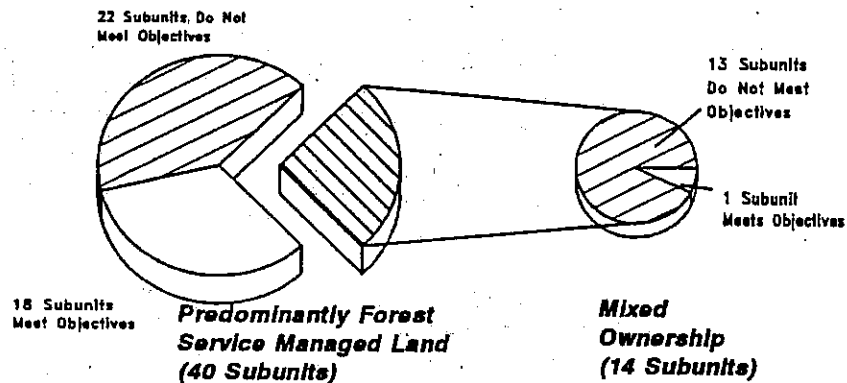
Figure 10. Open Motorized Access Density

Alternative 3-Corrected

Long-term objective is to have no more than 19% of each BMU Subunit with open road/motorized trail densities greater than 1 mile/sq. ml. Short-term objective is the same.

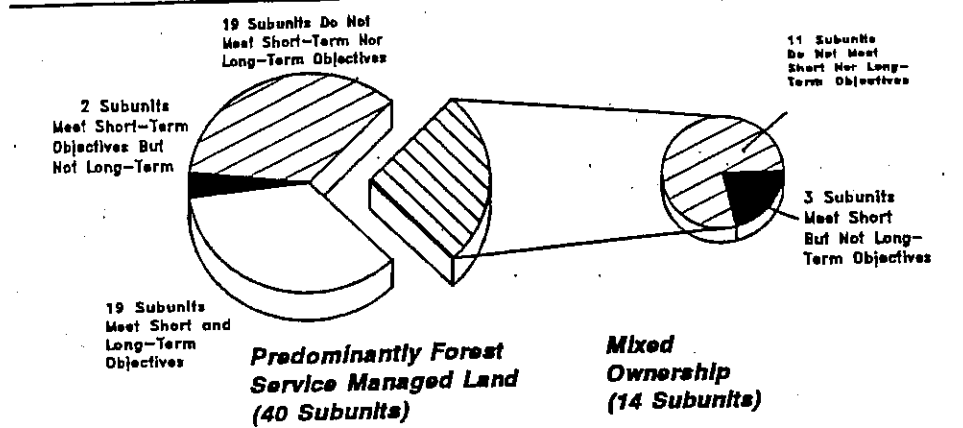
Alternative 4-Corrected

Objective is to have no more than 19% of each BMU Subunit with open road/motorized trail densities greater than 1 mile/sq. ml.

Alternative 5

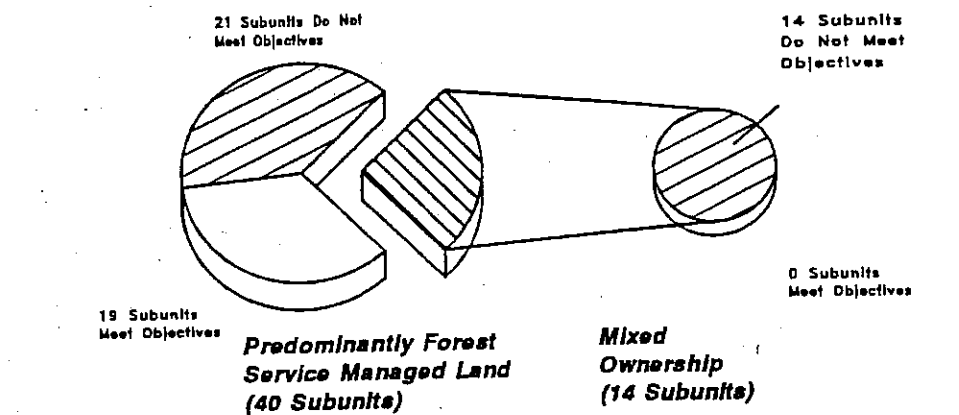
Objective is to have no more than 15% of each BMU Subunit with open road/motorized trail densities greater than 1 mile/sq. ml.

Figure 11. Percent Security Core Area
Alternative 3-Corrected



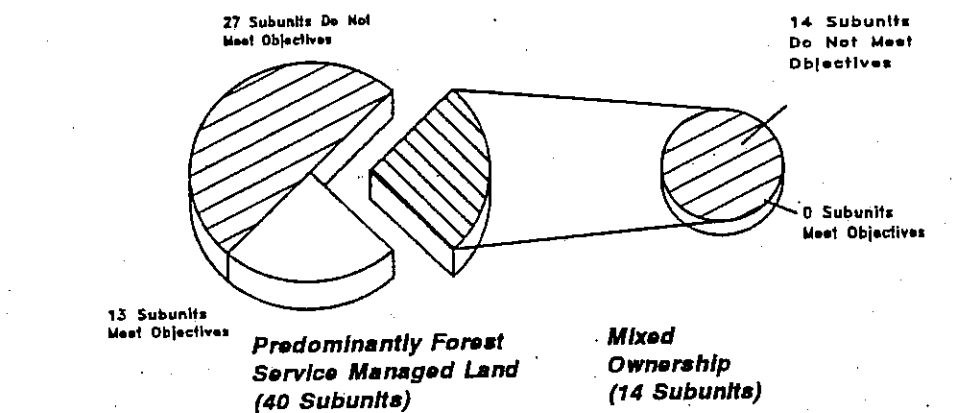
Long-Term Objective is to have at least 68% of each BMU Subunit in Security Core area. Short-Term objective is to have at least 56% of each Subunit in Core.

Alternative 4-Corrected



Long-Term Objective is to have at least 68% of each BMU Subunit in Security Core area.

Alternative 5



Long-Term Objective is to have at least 80% of each BMU Subunit in Security Core area.

Cumulative effects: The Cumulative Effects Model (CEM) was used to calculate habitat effectiveness under existing conditions. The CEM uses the seasonal habitat maps to estimate the inherent ability of an area to support bears, and then provides an estimate of the habitat effectiveness remaining after considering the impacts of human disturbances. Disturbance variables are roads, trails, point activities, and dispersed activities. Bar charts displaying the Seasonal Habitat Value and the Habitat Effectiveness of each BMU Subunit are included in Appendix C.

The current ranges of Habitat Effectiveness values by season are:

Minimum: early spring 33%, spring 29%, summer 27%, autumn 21%, denning 44%

Median: early spring 75%, spring 63%, summer 65%, autumn 56%, denning 91%

Maximum: early spring 92%, spring 93%, summer 94%, autumn 79%, denning 99%

Currently, the autumn season is the most impacted in most BMU Subunits. Habitat Effectiveness is also significantly reduced during early spring in BMU Subunits that interface with human residential areas.

Because roads and trails are variables in the CEM, implementation of Alternatives 3-Corrected, 4-Corrected, or 5 would be expected to result in higher Habitat Effectiveness. The short-term objective under Alternative 3-Corrected is expected to give first priority to improving the BMU Subunits that have the lowest Habitat Effectiveness. The other two alternatives would achieve the improvements more quickly.

Linkages are areas that provide adequate habitat to ensure occupancy and the opportunity for movement through the valley bottoms, where human activities and permanent residences are typically concentrated. Four linkage zones have been identified by the U.S. Fish and Wildlife Service in the Swan Valley. A fifth area at the north end of the valley, encompassing Porcupine Creek, offers the best opportunity for the Forest Service to provide habitat connectivity between the Swan and Mission Ranges. This area will be changed from MS-2 to MS-1 in recognition of its existing habitat quality and its capability to function as a linkage.

Linkages are not yet mapped for the other major valleys encompassed by the Flathead National Forest. Movement zones have been identified in the Middle Fork of the Flathead River. This canyon is generally narrower and more incised than the Swan valley.

Alternatives 3-Corrected through 5 address linkage of habitat primarily in terms of core areas within a BMU Subunit and improving Habitat Effectiveness. It is clear from looking at map output from the cumulative effects model that grizzly bear habitat is being fragmented by human development and activities that are concentrated in the valley bottoms. Many of these impacts are likely to continue, and may worsen under Alternatives 1 and 2.

Human-caused mortality poses the greatest threat to the grizzly bear population in the NCDE. All recovery criteria except human-caused mortality of females were met during the 1987-1992 period, and the female mortality limit was again exceeded in 1993.

The number of human-bear conflicts and human-caused grizzly bear mortalities is positively correlated with increased human and livestock presence (Mace *et al.* 1987). Habituated and food-conditioned bears are much more likely to be killed than wary bears, especially where human activity is relatively unregulated and/or hunting is allowed (Mattson 1993).

Known mortalities that have occurred on the Flathead National Forest from 1988 through 1994 were reviewed (Table 4). Total and open motorized access densities at the BMU Subunit scale are not reliable predictors of mortalities. A major contributing factor is presence of attractants. Bears attracted to the grain spills along train tracks in the Middle Fork and other food-conditioned bears represent a large proportion of the mortalities.

The Forest Plan already contains standards regarding securing human and livestock foods as a condition of issuance of permits. In addition, the Forest has developed and purchased various educational materials that are made available to visitors. The Forest Service has prepared a draft special order requiring proper food storage in grizzly bear habitat for public comment.

Alternatives 3-Corrected through 5 will establish new objectives and standards for human access in grizzly bear habitat. Implementation of these alternatives would result in greater security, and may make human use somewhat more predictable. Motorized access management is only one factor in reducing risk of human-caused mortality, however, as noted above.

Unless human tolerance for grizzly bears is improved, the current rapid growth of the human population in this area will be accompanied by an increasing mortality risk for bears, under all alternatives. Alternative 5, by setting more restrictive objectives for open motorized access and security core area, will have the greatest impacts on human uses and has the highest risk of reducing public support for grizzly bear recovery efforts. Alternative 3-Corrected proposes affirmative action to improve grizzly bear security, but by establishing short-term and long-term objectives, offers greater flexibility to accommodate some traditional human uses.

Table 5. Known human-caused mortalities occurring in the Flathead National Forest area, 1988-1994.

Ref No	Date	Sex	Age	Location	Description of circumstances
M88-1	5/13/88	F	11	Mission Range BMU	Illegal, poaching conviction
M88-5	9/28/88	M	Ad	BM Wilderness	Illegal, mistaken for black bear
M88-6	9/28/88	F	4	BM Wilderness	Illegal, mistaken for black bear
M88-7	10/1/88	F	14	Sullivan BMU	Legal hunter kill
M88-9	10/1/88	F	1	GB Wilderness	Legal hunter kill
89NC-1	5/12/89	F	24+	Lower Middle Fork BMU	Legal, defense of life
89NC-2	5/15/89	M	8	Lower Middle Fork BMU	Illegal, mistaken for black bear
89NC-3	5/25/89	M	Subad	Lower North Fork BMU	Illegal, poaching
89NC-4	6/12/89	F	1	Upper Middle Fork BMU	Train injury, euthanized
89NC-6	7/19/89	M	10+	Upper Middle Fork BMU	Train kill
89NC-8	9/~/89	M	2	Sullivan BMU	Illegal, radio found cut off bear
89NC-10	9/29/89	M	Ad	BM wilderness	Possible self defense
89NC-12	10/2/89	M	8	BM Wilderness	Legal, defense of life
N90-02	5/21/90	F	3-4	Lower Middle Fork BMU	Train kill
N90-04	6/30/90	F	15+	Upper Middle Fork BMU	Train kill
N90-06	6/8/90	F	8+	Sullivan BMU	Cause undetermined, bear marked 6/3
N90-09	6/18/90	M	4	Upper Middle Fork BMU	Management removal, threatening workers at BN grain spill
N90-13	10/19/90	F	1	Upper Middle Fork BMU	Train kill
N90-1	4/30/90	M	13	Private land in vicinity of FNF	Killed by landowner near dog pen
N90-15	11/4/90	M	2	Private land, Upper North Fork BMU	Management removal, live, nuisance bear
N91-8	7/30/91	F	2	BM Wilderness	Management removal, relocated bear, camp encounters
N92-1	5/4/92	F	3-4	Bunker BMU	Illegal, shot while snared
N92-2	5/14/92	M	2	Sullivan BMU	Management removal, food-conditioned bear
N92-4	7/31/92	M	8-10	Lower Middle Fork BMU	Road injury, euthanized
N92-8	8/27/92	M	2	Sullivan BMU	Management removal, previously relocated, history of nuisance incidents
N92-11	9/21/92	F	4-5	Sullivan BMU	Illegal, shot over elk carcass
N92-15	10/15/92	F	2	Bunker BMU	Management removal, food-conditioned, removed to zoo
N93-3	9/13/93	F	7	Bunker BMU	Management removal, previous nuisance history, removed to zoo
N93-4	9/17/93	F	13	Sullivan BMU	Unknown, collar found 10/13
N94-2	5/20/94	F	3	Sullivan BMU	Illegal, carcass & bullet found
N94-3		M	4	Missions	Private land
N94-4		F	Ad	Missions	Probable- 3 cubs observed alone
N94-6	10/94	M	Subad	Upper South Fork	Self defense

SENSITIVE WILDLIFE SPECIES

Sensitive species are those for which viability is a concern, because of limited distribution or vulnerability to management actions. Currently, ten species of wildlife are listed as sensitive on the Flathead National Forest. The habitat requirements of sensitive species are briefly summarized in Table 6.

Table 6. Suitable habitat for sensitive wildlife species on the Flathead National Forest.

Species	General Description of Suitable Habitat	Status and Habitat Conditions on the Flathead NF
Common Loon	Lakes larger than 35 acres and below 5,000 feet in elevation, with shallow waters and emergent vegetation along islands or lakeshore.	25 lakes are known to be occupied or have suitable conditions
Harlequin Duck	Swift mountain streams, shrub cover along banks, loafing sites in creek, aquatic invertebrate prey.	Migratory, present during nesting season; documented on streams across the National Forest
Boreal Owl	Mature to old-growth forests; spruce-fir, Douglas-fir, western larch/subalpine fir, and aspen; 4,500 to 8,000 feet in elevation; nests in cavity (abandoned woodpecker nests); principal prey small mammals.	Presence documented on all Ranger Districts; estimated 770,000 acres of suitable habitat, well-distributed across the Forest
Flammulated Owl	Mature to old-growth lower-elevation ponderosa pine or mixed conifer forests; nests in cavity; principal prey invertebrates, esp. moths, captured in the air.	Migratory, present only during nesting season; estimated 81,000 acres of habitat, patchily distributed
Black-backed Woodpecker	Subalpine fir, spruce, and lodgepole pine forests; somewhat nomadic; population irruptions following fire or insect outbreaks; nests and feeds on recently-burned snags.	Documented across Forest, little known of population status; amount of habitat varies between years
Fisher	Mid-elevation Douglas-fir and mixed conifer forests, moist habitat types near water; large down logs for dens and to feed under the snow layer; principal prey squirrels, grouse, porcupines and hares.	Presence documented across Forest; estimated 545,000 acres of suitable habitat; relatively high vulnerability to trapping
Lynx	Dense mature to old-growth spruce and large-diameter logs for denning habitat, brushy sapling to pole-size forests for feeding; principal food snowshoe hare.	Presence documented across Forest; estimated 618,000 acres of denning and feeding habitat
Wolverine	Primary food carrion; ranges widely from subalpine talus slopes to winter ranges, generally in areas remote from human activity; presence of other predators important to maintain food supply.	Presence documented across the Forest, all elevations; occurs at very low density
Western Big-eared Bat	Uses caves primarily for roosts and nurseries; occasionally uses tree cavities at all elevations; insectivorous; forages nocturnally, principally in openings.	Population status not known; cave habitat available across Forest
Bog Lemming	Wet meadows and sphagnum bogs; feeds on sphagnum moss, grasses, and sedges.	Presence documented but very rare; estimated maximum of 45,000 acres that may be suitable

Effects of Alternatives on Common Loons

Under the current Forest Plan, riparian areas surrounding lakes and ponds are allocated to Management Area (MA) 12. The goal for MA-12 is to enhance vegetation and wildlife diversity and to maintain or enhance water quality and fisheries. Protection of common loon habitat is compatible with this direction. Each year, Forest personnel place signs near known loon nesting sites to alert boaters so that disturbance is minimized during the nesting season.

Human activities of greatest concern for protection of loons are disturbances during nesting season that cause nest abandonment, alteration of lakeshore vegetation, and degradation of water quality in the lake and particularly the nursery area. None of the alternatives are expected to result in adverse effects for any of these parameters.

Effects of Alternatives on Harlequin Ducks

Under the current Forest Plan, riparian areas surrounding perennial streams are allocated to Management Area (MA) 12. The boundaries of MA-12 are mapped site-specifically, with the width varying with topography. The goal for MA-12 is to enhance vegetation and wildlife diversity and to maintain or enhance water quality and fisheries. Protection of harlequin duck habitat is compatible with this direction.

Human activities of greatest concern for protection of harlequin ducks are disturbances during nesting season that cause nest abandonment, removal of streamside vegetation that provides visual screening, and degradation of water quality that would affect the aquatic invertebrate prey base. None of the alternatives are expected to result in adverse effects for any of these parameters.

Under Alternatives 3-Corrected through 5, reductions in total motorized access may result in improved water quality, and potentially enhance the prey base of aquatic invertebrates. This assumes that bermed and reclaimed roads will normally have culverts removed and other measures taken to reduce or prevent erosion, as described in Appendix D.

Effects of Alternatives on Boreal Owls

The primary threat to boreal owls is removal of snags and old-growth habitat. Nesting sites are often found at the lower elevational band of a boreal owl territory, where abandoned pileated woodpecker cavities can be found (Hayward 1993). Boreal owl habitat at the higher elevations is generally not on lands considered suitable for timber production.

The adjustments to ASQ under Alternatives 2 through 5 considered interim direction for old-growth. Boreal owl winter and summer home range size average over 2500 acres and home ranges larger than 8,000 acres have been documented (Hayward 1994). This is larger than the 2,000-acre minimum size specified for marten. Boreal owls are quite mobile, and are known to make nomadic movements periodically, so old-growth spacing requirements are considered adequate. Under the current Forest Plan, interim direction for old-growth and Forest-wide standards for snags are probably sufficient to maintain viable populations of boreal owls.

Effects of Alternatives on Flammulated Owls

The primary threat to flammulated owls is reduction of snags and old-growth ponderosa pine and Douglas-fir habitat. Logging and fire suppression have probably both reduced the amount of suitable habitat, by removing large-diameter, open grown trees, and encouraging the development of a dense understory of young trees.

The adjustments to ASQ under Alternatives 2 through 5 included interim direction for old-growth. Flammulated owls have a relatively small home range size, of about 35 acres (Goggans 1986). Under the current Forest Plan, interim direction for old-growth and Forest-wide standards for snags are probably sufficient to maintain viable populations of flammulated owls.

Effects of Alternatives on Black-backed Woodpeckers

Fire suppression, salvage logging of fire-killed trees, and removal of snags reduce the amount of habitat for black-backed woodpeckers. These woodpeckers are somewhat nomadic, moving into burned areas to seek invertebrate food that is available in the immediate post-fire period. Current Forest Plan direction does not address the spatial and temporal patterns of snags required by black-backed woodpeckers, although the standards offer sufficient flexibility to meet the needs of this species.

Restricting open motorized access as proposed under Alternatives 3-Corrected through 5 may reduce the removal of snags from roadsides. Lowering the Allowable Sale Quantity (ASQ) could result in slightly higher risk of fire on lands suited for timber production. These changes could benefit the black-backed woodpecker, although the changes would probably be slight.

Effects of Alternatives on Fishers

Habitat management for fishers emphasizes maintaining sufficient down logs and old-growth forest habitat, and limiting vulnerability to trapping.

The adjustments to ASQ under Alternatives 2 through 5 considered interim direction for old-growth. Fisher home range size is estimated to be about 3,840 - 10,240 acres (6-16 mi²) for females, and about 4,480 - 20,480 acres (7-32 mi²) for males (Jones 1991, Banci 1989), which is larger than the minimum size specified for pileated woodpeckers and marten. Within the home range area, a mix of successional stages should be provided, but with a predominance of mature and old-growth. Current Forest Plan standards may not provide sufficient contiguous habitat for fisher. In the Swan Valley, the intermingled ownership pattern may result in a fragmented pattern and insufficient amounts of mature and old-growth habitat.

Under Alternatives 3-Corrected through 5, motorized access is restricted during the non-denning season. This would not change access during the winter trapping season. The proposed standard to have no net increase in total motorized access and a net gain towards the objectives may improve security for fisher.

Effects of Alternatives on Lynx

Protection of lynx habitat includes maintaining old-growth habitat and down logs for denning, retaining dense stands of young trees and brush for feeding habitat, and limiting vulnerability to trapping.

The adjustments to ASQ under Alternatives 2 through 5 considered interim direction for old-growth. Lynx home range size is estimated to be about 3,840 - 5,120 acres (6-8 mi²) (Butts 1992). To provide denning habitat, at least 10% of the home range should be mature or old-growth stands of at least 30 acres in size. Habitat for old-growth MIS will probably be adequate to provide lynx denning habitat. Thinning of forest stands reduces the quality of habitat for snowshoe hare and lynx. The amount and location of thinning was not addressed in this amendment, but will be analyzed site-specifically.

Under Alternatives 3-Corrected through 5, motorized access is restricted during the non-denning season. This would not change the current situation in terms of vulnerability during the winter trapping season. Adding objectives for security core area for grizzly bears may improve security for lynx as well. Thinning trees can reduce habitat quality for lynx. However, substantial lynx habitat occurs in portions of the Forest outside the grizzly bear recovery area.

Effects of Alternatives on Wolverines

Wolverines travel over large areas, with home range sizes averaging 163 square miles for 9 male wolverines in Montana (Hornocker and Hash 1981). Wolverine populations have persisted in remote areas of the country with substantial amounts of wilderness or undeveloped land.

Wolverines are primarily scavengers, but also prey on small mammals such as the boreal red-backed vole. Mature and old-growth forests with substantial amounts of down woody material provide high-quality habitat for small mammal prey.

Under Alternatives 3-Corrected through 5, motorized access is restricted during the non-denning season. This would not change the current situation in terms of vulnerability during the winter trapping season. Adding objectives for core area is expected to improve security for wolverine.

Effects of Alternatives on Big-eared Bats

Current distribution of western big-eared bats is probably most closely tied to cave systems. None of the alternatives is expected to affect the western big-eared bat.

Effects of Alternatives on Northern Bog Lemmings

Habitat of northern bog lemmings is very limited in extent and distribution. Logging and road building normally would not occur in wet meadows. None of the alternatives is expected to affect bog lemming habitat.

COMMONLY HUNTED SPECIES**Table 7. Suitable habitat for big game species on the Flathead National Forest.**

Species	General Description of Suitable Habitat	Status and Habitat Conditions on the Flathead NF
Elk	Interspersion of cover and forage (especially graminoids); on winter range, available palatable forage, thermal cover and south aspects; gentle terrain near water with hiding cover for calving; moist sites and habitat effectiveness >50% on summer range; security during hunting season	Population appears to be stable, probably regulated by hunting harvest; about 565,000 acres of FNF used for winter range; summer range throughout most of Forest
Mule Deer	Interspersion of cover and forage (forbs and browse); thermal cover and south aspects on winter range; gentle terrain near water with hiding cover for fawning; hiding cover during hunting season	Population appears to be stable; about 168,000 acres of FNF used for winter range
White-tailed Deer	Riparian areas, coniferous forest, moist habitat types with high diversity; two-storied conifer stands with lichens and browse for winter range; fine-grained mosaic of successional stages	Populations high and increasing; about 516,000 acres of winter range on FNF; summer range throughout lower elevations

Effects of Alternatives on Elk and Mule Deer

Elk and mule deer move seasonally between winter ranges in the lower elevations and summer ranges in the higher elevations. Important winter ranges are allocated in Management Areas 13 through 13D in the Forest Plan, the goal of which is to "provide the size, age, diversity, and distribution of habitat units (both cover and forage) suitable for mule deer and elk winter habitat" (Forest Plan page III-60). Forest-wide standards for elk summer range are to provide appropriate protection and management of "moist sites" and "security areas," in accordance with the Final Report of the Montana Cooperative Elk-Logging Study (Lyon *et al.* 1985).

Under Alternatives 2 through 5, the adjustment of ASQ included consideration of providing at least 30% winter thermal cover on Management Areas 13 and 13C. Most of the winter ranges currently meet or exceed the minimum standard of 30% thermal cover. In areas with heavy snow accumulation, as we have here, a higher percentage of thermal cover may be needed, and this is analyzed site-specifically. Since forage is currently available in natural and created openings, none of the alternatives is expected to reduce the quality of elk and mule deer winter ranges.

Restrictions on motorized access will change the hunting opportunity from a roaded to non-roaded experience in some portions of the Forest. Roaded hunting opportunities will still be available, especially across the portion of the Forest that is outside the grizzly bear recovery area. Motorized access restrictions would be expected to increase the escapement and carry-over of older bulls and bucks. This will be viewed as a positive change by many hunters.

Effects of Alternatives on White-tailed Deer

White-tailed deer are the most plentiful big game animal on the Flathead National Forest. The highest populations of white-tailed deer inhabit the Swan Lake, Tally Lake and Glacier View Ranger Districts.

Under Alternatives 2 through 5, the adjustment of ASQ included consideration of providing at least 50% winter thermal cover on Management Area 9 (MA-9). Many of the winter ranges currently are below the minimum standard of 50% thermal cover. With current high deer populations, a severe winter could result in substantial deer mortality. Only 684 acres of winter range in MA-9 were included in calculation of ASQ for the period 1995-1999 under Alternative 2; 127 acres of MA-9 were included under Alternatives 3-Corrected through 5. None of the alternatives is expected to reduce the quality of white-tailed deer winter ranges.

Restrictions on motorized access will change the hunting opportunity from a roaded to non-roaded experience in some portions of the Forest, but this will be less pronounced for white-tailed deer than for elk. Roaded hunting opportunities will still be available, especially across the portion of the Forest that is outside the grizzly bear recovery area.

OLD-GROWTH MANAGEMENT INDICATOR SPECIES

The tree-dependent and riparian-tree-dependent groups are composed of species associated with all successional stages (grass-forb, brush-seedling, pole-sapling, young, mature, and old-growth stages). The marten was selected as representative of those species in the tree-dependent group (37 species) that use mature and old-growth successional stages, the Barred Owl for the riparian-tree-dependent group (34 species) that use mature and old-growth successional stages, and the Pileated Woodpecker for the old-growth-dependent group (5 species).

Table 8. Suitable habitat for old-growth Management Indicator Species on the Flathead National Forest.

Species	General Description of Suitable Habitat	Status and Habitat Conditions on the Flathead NF
Pileated Woodpecker	Mature and old-growth stands with a high density of snags, including large-diameter larch, ponderosa pine, aspen or cottonwood for nesting sites, stumps and logs for feeding, and moderately closed canopy	Observations throughout the Forest, estimated habitat capability to support about 580 pairs currently
Marten	Mature and old-growth spruce, subalpine fir and lodgepole pine, with closed canopy and down logs; large-diameter logs for denning & resting sites and access for foraging below the snow layer; moist sites that provide small mammal prey	Population well-distributed, low density due to large home range size; estimated habitat capability to support about 285 "reproductive units" (1 male, 2 females) currently
Barred Owl	Mature and old-growth forests with deciduous tree component, large-diameter live tree with broken top or natural cavity for nesting; primary prey meadow and montane voles; range extension may be related to fragmentation of coniferous forest	Eastern species that has expanded its range; distribution very similar to that of pileated woodpecker on Flathead NF

Effects of the Alternatives on Old-growth Associated Species

The Forest-wide standard is to maintain old-growth habitat at elevations below 5,000 feet at the number and distribution that will achieve the desired potential populations of old growth dependent species. As a result of appeals, the Chief of the Forest Service directed that additional analysis and documentation of the habitat requirements of the old-growth MIS be completed, and standards added to ensure their viability. Until this analysis is completed, the Regional Forester was directed *"to implement an old growth retention standard requiring 10 percent of each 3rd order watershed to be left in old growth habitat in blocks large enough to provide habitat for management indicator species and spaced to allow interaction between individuals."*

Forest direction for applying the interim direction was provided in Implementation Note #2 (revised March 7, 1991). A Draft EIS for Amendment 16, Standards for Old-Growth Habitat for Management Indicator Species, was released in June 1992. Since no decision was issued on proposed Amendment 16, the interim direction continues to apply.

Pileated woodpecker, marten, and barred owl were selected as MIS because each has a large home range size requirement and populations can be monitored by methods such as call and track surveys. Requirements for size and spacing of habitat for the three MIS are summarized as follows. Home range size of pileated woodpeckers is about 1,000 acres; spacing distances should average about 2 miles with a maximum of 5 miles based on dispersal distances (McClelland 1977, Bull 1987). Within this area, at least 100-200 acres will provide nesting habitat and at least 250-500 acres will provide feeding habitat. Barred owl size and spacing requirements are very similar to those of the pileated woodpecker. Home range size used for marten is about 2,000 acres (adult male overlapping with adult female home ranges) with spacing distances averaging about 6 miles with a maximum of 12 miles (Buskirk and McDonald 1989). Within this area, at least 250-500 acres will provide denning/resting habitat and at least 250-500 acres will provide feeding habitat. Marten tend to avoid openings,

and down logs are an important component for den sites and to locate prey (Steventon and Major 1982, Soutiere 1979).

Alternatives 2 through 5 considered protection of old-growth in calculating ASQ for the 1995-1999 period. The interim direction provides adequate habitat to maintain population viability with low risk.

Restricting open motorized access density may provide additional protection to old-growth habitat, by reducing the removal of snags and logs by woodcutters.

CAVITY-DEPENDENT WILDLIFE

Dead and defective trees are known to be one of the most important contributors to biological diversity within forest ecosystems. On the Flathead National Forest, 42 species of birds and 10 species of mammals use cavities found in dead or defective trees for nesting, feeding, or shelter (Table 9). Holes are created in trees either by woodpeckers or through natural decay.

A snag is a standing dead tree, while defective trees can include live spike-tops, broken-tops, and those with heart rot or other decays. The minimum diameter of a snag that will be used for nesting is related to body size of the cavity user, and the height at which the cavity can be located. A larger nesting cavity reduces crowding of nestlings. A larger diameter snag provides greater thermal protection, because the thicker walls moderate outside temperature fluctuations. The thicker walls also provide better security against predators. Larger diameter snags remain standing longer, increasing the probability that suitable decay conditions will develop, and increasing the value for secondary cavity users.

Table 9. Wildlife species that use snag habitat, and characteristics of snags used.

Species	DBH (in)	Height (ft)	Decay	Pairs/ 100 ac	No. Snags/ 100 ac
Primary Excavators:					
Pileated Woodpecker	25	60	sound	0.2	6
Northern Flicker	17	10	soft	12.0	48
Lewis' Woodpecker	17	30	soft	12.0	48
Hairy Woodpecker	17	20	soft	16.0	192
Downy Woodpecker	11	10	soft	2.0	16
Black-backed Woodpecker	17	10	sound	1.0	12
No. Three-toed Woodpecker	17	20	sound	0.5	6
Red-naped Sapsucker	17	20	sound	10.0	40
Williamson's Sapsucker	17	20	sound	8.0	32
Red-breasted Nuthatch	17	20	soft	10.0	40
White-breasted Nuthatch	17	20	soft	10.0	40
Pygmy Nuthatch	17	30	soft	10.0	40
Black-capped Chickadee	9	10	soft	20.0	80
Mountain Chickadee	9	10	soft	20.0	80
Chestnut-backed Chickadee	9	10	soft	20.0	80
Boreal Chickadee	9	10	soft	20.0	80

Table 9a. Secondary Cavity Users

Species	DBH	Height	Species	DBH	Height
Wood Duck	25	10	Common Goldeneye	25	10
Barrow's Goldeneye	25	10	Bufflehead	17	10
Hooded Merganser	17	10	Common Merganser	17	10
Osprey	17	40	Bald Eagle	25	40
American Kestrel	17	20	Saw-whet Owl	17	20
Hawk Owl	25	10	Boreal Owl	17	10
Western Screech Owl	17	20	Flammulated Owl	17	10
Pygmy Owl	17	30	Barned Owl	25	30
Great Horned Owl	25	30	Vaux's Swift	25	40
Tree Swallow	15	20	Violet-Green Swallow	15	20
Brown Creeper	15	20	House Wren	15	10
Western Bluebird	15	10	Mountain Bluebird	15	10
House Finch	15	10	House Sparrow	15	20
Long-eared Myotis	17	10	Little Brown Myotis	17	10
Yuma Myotis	17	10	Long-legged Myotis	17	10
Silver-haired Bat	17	20	Big Brown Bat	17	20
Northern Flying Squirrel	17	20	Raccoon	25	10
Marten	17	20	Fisher	25	30

Effects of Alternatives on Cavity Dependent Wildlife

The Forest Plan sets minimum snag densities to be maintained on a 100-acre basis across each Management Area. The Forest Plan standards were designed to provide adequate snag habitat for specified potential population levels of cavity excavators. This in turn is assumed to be sufficient to maintain corresponding populations of secondary cavity users. Forest Plan Implementation Note #1 addressed substituting defective or "green" wildlife trees for snags when necessary. A green wildlife tree is a tree that is identified to provide future dead and defective tree habitat, if the area is or would be expected to become deficient in snag numbers.

Increases in numbers of dead trees can result from fire, insects, disease, or being overtopped. Losses in numbers can result from natural falling rates, windthrow, logging and site-preparation, salvage cutting, and firewood cutting. For all tree species studied in the western United States (Harmon *et al.* 1986), snags began breaking and falling in fewer than 20 years. It is a difficult challenge to maintain large-diameter snags in a stand through various stages of succession. The probable length of time that a snag will remain standing depends on a variety of factors, including tree species, soil moisture, wind patterns, cause of mortality, and decay agents. Retention of live green trees, such as seed trees, can offset snag attrition.

The ASQ analysis assumed that clearcutting would be the primary harvest prescription, and did not adjust timber yield tables to consider retention of snags or replacement trees. Snags are not considered "chargeable volume" towards the ASQ. The reduction in yield for replacement snags would be minor in most areas; unless the area is already deficient in snags.

The Forest Plan estimated that the maximum potential population levels would be achieved with a density of 225 snags/100 acres. However, the updated information in Table 9 indicates that a slightly higher density may be needed. Snag distribution across a landscape is an important consideration since woodpeckers are territorial; this must be evaluated at the site-specific level.

MIGRATORY LAND BIRDS

Population trends of songbirds and other land birds are monitored through the "Breeding Bird Survey," an annual roadside survey conducted by volunteers. The results suggest that many species of songbirds are declining in numbers (Robbins et al. 1989). Population declines are most apparent for birds that breed in eastern North America, with less clear patterns for western birds. Particular concern has been expressed for neotropical migratory birds, that is, birds that nest in the United States and Canada, and winter in the New World tropics (Mexico, the Caribbean, Central America, and South America).

Researchers have identified habitat loss (on the breeding grounds, in wintering areas, and/or in migration stopovers) as the principal cause of the declines in bird populations. Some researchers have suggested that an important factor causing habitat loss in the eastern United States has been the fragmentation of old-growth forest. This fragmentation reduces the amount of forest interior habitat available to the birds, and subjects them to edge effects. Western forests are naturally more fragmented due to the frequency of wildfires.

Fragmentation and edge creation seems to increase the incidence of brood parasitism by brown-headed cowbirds. Prior to the 1800's, brown-headed cowbirds were found primarily on the plains and prairies west of the Mississippi River. This species is very mobile, and probably followed bison herds. Rather than building its own nest, cowbirds lay their eggs in the nests of other birds. As agricultural development and forest fragmentation has occurred across North America, the cowbird has expanded its range (Brittingham and Temple 1983). Species of birds that have not evolved defenses against cowbirds have poor survival of nestlings in parasitized broods. Hejl and Woods (1991) documented high numbers of cowbirds in mature and old-growth ponderosa pine and Douglas-fir forests located just south of the Flathead National Forest.

Effects of Alternatives on Migratory Song Birds

About 88 species of migratory land birds live seasonally on the Flathead National Forest. Fifty-four of these species appear to have declining population trends either in the western United States or in Montana. Of the species that may be declining, 21 are associated with forests with moderate to dense canopies.

Under Alternatives 3-Corrected through 5, objectives would be added to the Forest Plan to provide security core areas within the grizzly bear recovery area. These are large, contiguous areas free of motorized use during the non-denning season. Establishing core areas may help minimize fragmentation of existing mature and old-growth forests.

F. FISHERIES AND WATER QUALITY

Affected Environment

Approximately 22 species of fish are found in the lakes, streams, and ponds located on the Flathead National Forest (FEIS, page III-21). Uncounted numbers of aquatic insects and other macro-invertebrates spend all, or a significant portion, of their life cycles in these systems. The Forest Plan goal for Water Quality and Fisheries is: "Maintain high quality water which meets or exceeds State and Federal water quality standards to protect migratory and resident

fisheries, water-based recreation opportunities, and public water supplies." (Flathead Forest Plan, page II-5). Further emphasis on bull trout and cutthroat trout habitat and protection from increases in sediment-causing activities was addressed in Forest Plan Amendment #3 (Trout Standards), which was adopted in February, 1990.

Environmental Consequences

Since the changes proposed under this amendment do not eliminate any of the existing standards and guidelines that were designed to protect water quality and fisheries, the overall effect on these resources should be within those previously described for Forest Plan standards.

Many studies have documented the effects of fine sediment on both fish and aquatic insects in stream systems (Bjornn et al., 1977). Sediment can effect all life stages of fish depending on location and amount of deposition. In general, fine sediments in riffles reduce spawning success (survival) and reduce insect production. Sediment in deeper runs and pools covers and fills gravel and rubble substrates which reduces juvenile survival in both summer and winter. It appears that effects of sediment may vary between channel types (Bjornn et al., 1980).

Reducing the amount of roads in a watershed can improve stream conditions. Roads can directly introduce fine sediments into streams through surface erosion, mass failure, and culvert failures. As well, roads can increase peak flows, which can change aquatic habitat and increase sediment transport (Troendle and Olsen, 1994).

Introduced Sediment

Roads are the major cause of introduced sediment in forested areas. Megahan (1981) summarized results from 24 different studies documenting increased erosion and, in some cases, sedimentation from forest roads in the Interior West. In addition, mass failures are often associated with roads due to over-steepening of slopes and localized increases in the soil moisture content. These increases are due to ditch systems that concentrate road surface runoff water or intercepted groundwater from the road cutslopes.

On the Flathead National Forest, mass failures are infrequent in most landscapes. However, there are some landtypes that have a moderately high to high potential for natural or road associated mass failures. These include Landtypes 26L-8, 26L-9, 31, 32, and 73. A small percentage of these Landtypes contain sites where mass failures are likely to occur (USDA, Flathead County, 1983). These Landtypes represent 14 percent of the non-wilderness lands on the Flathead National Forest.

Road reclamation can decrease rates of surface soil erosion up to 95 percent (USDA, 1981). Road reclamation can also reduce the incidence of road associated mass failures on most of the sensitive landtypes. However, on the steeper landtypes road reclamation must be prescribed site specifically in order not to increase the potential for mass failures.

With road reclamation, culverts will be removed at stream crossings. The incidence of culvert failure will be lower as a result. Culverts are designed to accommodate a particular size storm, commonly the 25 year flood. The probability of a 25 year or larger flood in 10 years is about 33 percent (Chow et al. 1988, p.383). When culverts fail, a large amount of sediment is delivered directly into the stream channel. As well, culvert failure can cause the stream to

erode upstream as the stream attempts to re-establish a uniform gradient along the stream channel.

Stream Channel Erosion

Increases in peak streamflows alter the sediment transport ability of the stream and increase the ability of the stream to erode its channel. Frequent floods, those which occur every year or two, have the most effect on stream channel erosion and sediment transport (Troendle and Olsen, 1994).

Through intercepting shallow subsurface flow, roads can bring flow to the surface, which normally would flow through the soil downhill until reaching a stream channel (Burroughs et al. 1972, Megahan 1972). In effect, road ditches which intercept large amounts of subsurface flow act like streams, increasing the stream density of the watershed. A master's thesis on this subject in Oregon found that roads increased the stream network by 40 percent during storms, which could close to double the peak flows (Johnson 1995, Wemple 1994). The amount of soil compaction in a watershed can affect peak flows. Although usually roads may make up only a small percentage of the watershed area, the increase in compacted area can increase peak flows. Harr (1986) found that peak flows increase even when less than 5 percent of a basin is compacted.

Through dispersing snowmelt and rainstorm runoff concentrated by the road, reclamation will reduce peak flows and stream channel erosion in streams affected by the reclamation. Fine sediments in riffles and pools would decrease, pool frequency may increase, and fisheries habitat would improve as a result.

Effects of the Alternatives

Any activities carried out under the proposed amendment will be further evaluated and designed as part of site-specific project implementation to address and mitigate potential effects on erosion, sediment transport, and long-term sediment production potential. "The majority of potential sediment produced by management activities can be controlled through timing activities and with specialized techniques in project design, layout, construction, and maintenance, along with immediate installation of erosion preventive measures such as water bars, grass seeding, fertilization, and mulching." (Flathead Forest Plan FEIS, Vol. 1, page III-35).

The alternatives in this amendment do not prescribe site-specific methods of road restriction or reclamation. Definitions have been added in response to public comment to clearly show the intent that roads will be treated and/or monitored to minimize the effects on water quality. Individual projects will be evaluated on a site-specific basis and appropriate measures taken to ensure that water quality is maintained.

Road reclamation activities, e.g., berms, culvert removal, etc., have the potential to increase sediment production in the short-run. Like other activities that disturb the soil surface, certain methods of closing roads can have short-term increases (2 to 5 years) in sediment delivery to streams and aquatic systems. The potential increase in sediment due to culvert removals and other ground disturbance will be balanced by an immediate decrease in peak flows and subsequent stream channel erosion due to dispersing runoff concentrated by the roads. Surface erosion and other sediment sources from roads will be repaired concurrently with the road reclamation. Sediment from culvert failures will decrease as culverts are removed.

Soil compaction on the reclaimed roads will gradually decrease as the roads revegetate with woody shrubs and conifer. After 50 to 100 years, these areas will have increased infiltration and productivity rates similar to undisturbed sites. Water quality and fisheries conditions will improve from the road reclamation activities.

Under Alternative 1, the ASQ is 100 million board feet of timber. If this level of harvest were attained, it would require the construction of about 45 miles of road per year. The impact of this road building and timber harvest was analyzed during the development of the Forest Plan and it was determined that water quality could be maintained at that level of activity.

Under Alternative 2, the ASQ is 64 million board feet and about 30 miles of new roads per year would be needed. At this level of activity, water quality could be maintained.

Under Alternative 3-Corrected and 4-Corrected, road reclamation, including culvert removal, will reduce the risk of culvert failures. In Alternative 5, the risk is reduced to a greater degree than any other alternative.

There would be less area of compacted soil under Alternatives 3-Corrected through 5, about 1000 acres less for Alternatives 3-Corrected and 4-Corrected and close to 2,000 acres less for Alternative 5 in the affected BMU Subunits.

Fine sediments and stream channel erosion would be reduced for most streams within these subunits under Alternatives 3-Corrected, 4-Corrected, and 5. The improvement in water quality and fisheries habitat would be slightly quicker in Alternative 4-Corrected as compared to 3-Corrected, and Alternative 5 would improve watershed conditions more than all other alternatives.

Over the long run, these levels of activity may enhance fish populations, as compared to Alternatives 1 or 2 (see Biological Assessment in Project Record, Exhibit K-3, for determination of the effects of the preferred alternative on bull trout, westslope cutthroat trout, and shorthead sculpin).

G. HUMAN ENVIRONMENT

Economic Community

This section describes the economic environment in and around the Flathead National Forest (the Forest), and the effects of the proposed action and its alternatives on that environment. The focus is on the economic relationship of the Forest to areas around it, and the extent of economic influence relative to goods and services provided by the Forest. Public involvement has indicated that the market for timber and the dependency of local communities on timber-related jobs and income are of particular interest and will be emphasized in this analysis. The rapidly growing recreation/tourism industry is also of special interest to many people and will be discussed.

The Flathead National Forest includes parts of six Montana Counties: Flathead, Lincoln, Lake, Missoula, Powell, and Lewis and Clark. However, about three fourths of the acreage of the Forest is in Flathead County and most of the economic effects of Forest programs and

projects occur in Flathead County. The Forest has secondary effects in Lake County and relatively small effects in the other four counties.

The economic setting in the area of influence is described in terms of industry composition, economic diversity, economic dependence, employment and income, and other trends affecting the economy. An emphasis is placed on describing the existing timber industry and the past and present role of the Flathead National Forest in that industry.

The Flathead National Forest is part of the Northern Continental Divide Ecosystem, which covers most of Northwest Montana. This area has a significant economic value on a regional, national and international scale when recreation and tourism, wildlife, and aesthetic values are considered along with a significant timber management program. However, it is beyond our scope to evaluate markets for all these resources, because they have not been identified as significant socio-economic issues in respect to the proposed amendment. The emphasis is on the economic effects that the proposed action and the alternatives would have on the timber industry and the social and economic communities that would be primarily affected. Effects on the recreation/tourism industry will also be discussed.

Affected Area

The analysis of economic impacts associated with the proposed action and its Alternatives will normally be restricted to Flathead County. However, when it is determined there are notable effects to adjacent areas, they will be discussed. Designation of Flathead County as the affected area was based on multiple criteria, which follows the guidelines in the Forest Service *Economic and Social Analysis Handbook* (FSH 1909.17) (USDA Forest Service 1988). These criteria and explanations of how they were applied are described below:

Economic Center - Flathead County is the economic center for the timber and tourism industry in Northwestern Montana. It is also the county that will most likely be affected by the proposed action. Flathead County has the area's largest and most developed economy.

Trade Patterns - The primary products analyzed in this document are forest wood products. Most of the timber harvested from Flathead National Forest is processed in Flathead County. Although timber is harvested from parts of the Forest in other counties, the logs are usually processed in Flathead County mills.

Counties with Program Lands - Flathead County receives most of the "twenty-five percent fund" payments generated by the Flathead National Forest timber sale program.

Residences of Labor Force - Most of the employees of Flathead County wood processing facilities live in Flathead County. Most loggers, although they might work frequently in other counties, live in Flathead County.

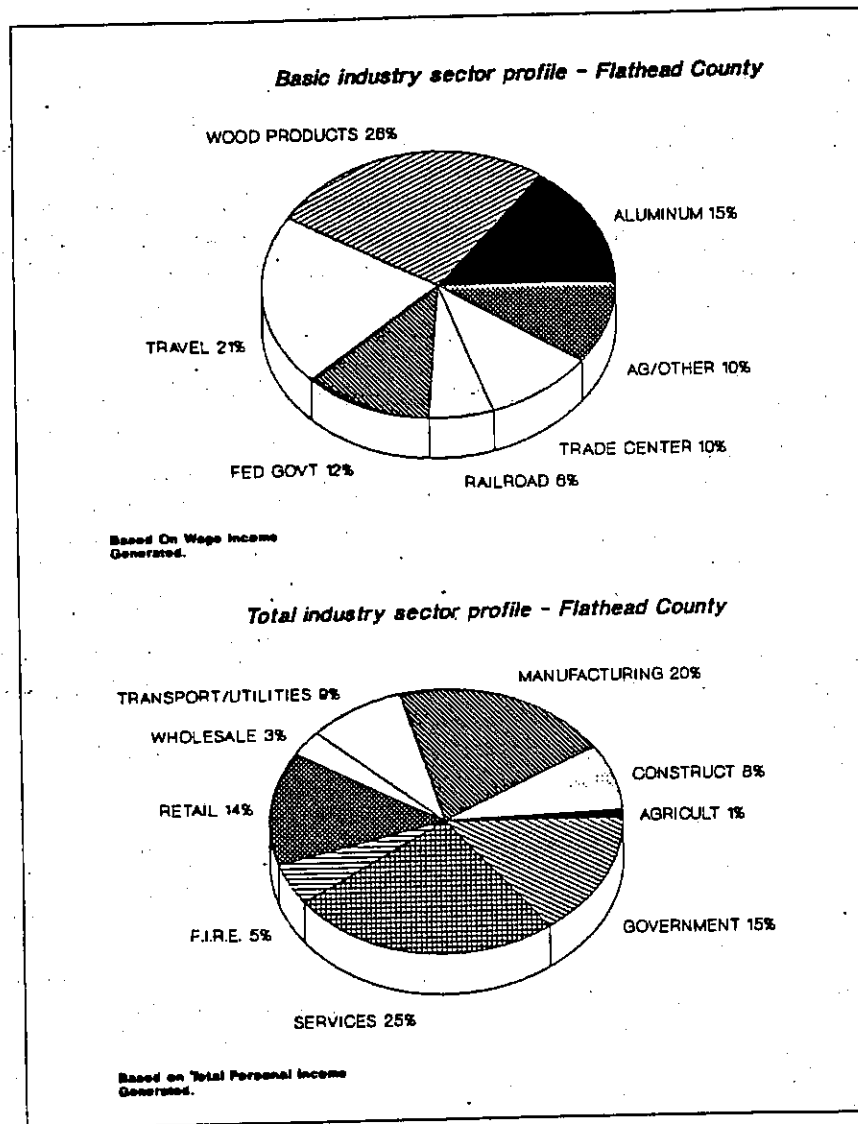
ISSUES

The discussion and analysis of economic and social effects will be driven by Issue 4 in Chapter II which states "What are the socio-economic effects of the proposed changes to the Forest Plan". Effects analysis will concentrate on socio-economic variables of concern, i.e., employment, income, government-revenue sharing, lifestyles.

The Economy

Industry Profile - The economic base - the portion of the economy which involves the importation of dollars into the area - is relatively diversified, without reliance upon a single industrial sector for income. As shown in Figure 12, wood products, aluminum refining, and non-resident tourism are the three largest basic industries in the county, which when combined are responsible for approximately 62 percent of the area's basic income. These industries are followed by the agriculture group, federal government, and the railroad. However, when looking at the entire economy as sectorized by the U.S. Department of Commerce a different picture arises (Figure 13). The services industry becomes the largest sector followed by manufacturing, government, and retail trade.

Figures 12 and 13. Industry Sector Profiles



In this type of sectoring, tourism is not considered to be an industry by itself and tourism spending is primarily in the services and retail trade industries. Future expectations of these industries are discussed in the "Economic Trends" section of this chapter.

Employment - From 1987 through 1992 the job growth rate for Flathead County far exceeded that for the State of Montana; Flathead County was over 3.7 percent per year, while the State of Montana was 2.2 percent. As explained in the "Economic Trends" section of this chapter, growth is expected to continue, but probably at a slower rate. Related to job growth is the unemployment rate. Flathead County has been historically considered a "labor surplus area" by the Montana Department of Labor and Industry because of high unemployment rates. To qualify, an area must have had an average unemployment rate of 8.5% or greater for the previous two calendar years. Although the rate has reached a high of 12.5% in the past 2 years it has recently been as low as 4.3% and rates are presently running substantially lower than they have in recent years.

Income - Total personal income for Flathead County has grown substantially faster than it has for the State of Montana. From 1987 to 1992, total personal income grew at a rate of 7.6 percent in Flathead County compared to 5.9 percent for the State. For an estimate of future income growth see the "Economic Trends" section of this chapter.

Although total personal income grew at a rate of 7.6% from 1987 to 1992 per capita personal income in Flathead County, grew at an annual rate of only 5.64%, which means economic growth did not keep up with population growth. This rate was very similar to the state average (5.42%) and the U.S. (5.16%) (U.S. Department of Commerce, 1994). However, the 1992 per capita personal income in Flathead County was 82% of the U.S. average and there were 15 other counties in Montana with higher averages. As explained in the "Economic Trends" section below, this brisk rate of growth is not expected to continue in Montana.

Per capita income alone is not an adequate measure of economic well being. The cost of living in an area must also be considered (Power 1990). The relative cost of living in Flathead Valley is not well understood. Public opinion questionnaires indicate that many people identify the cost of living as one the reasons they relocated to the Flathead Valley. This has led many people to perceive the cost of living here as low. However, extrapolation from the ACCRA cost of living indices indicates the cost of living in the Flathead County area to be approximately 105% of the national average (U.S. Chamber of Commerce 1994).

Diversity/Dependency - The Flathead County Overall Economic Development Plan (OEDP 1989) states that one of the purposes of the development plan is to "foster more stable and diversified local economies...". Forest Service proposals should be evaluated with respect to this objective. Flathead County is generally thought to be relatively diverse. A recent analysis of Montana counties using an entropy index found Flathead County to have the most diverse economy in Montana (Alward 1994). Economic multipliers and the number of economic sectors also indicate a fairly diverse economy (Beckley 1994).

In the past it was thought that Flathead County was highly dependent upon the wood products industry which at one time comprised over 40% of the basic economy. However, it was recently determined that just over 20% of the economy is attributable to the wood products industry (Beckley 1994a). This is primarily due to the rapid growth of other sectors of the economy, while the wood products industry remained fairly constant. A recent assessment indicated Flathead County to be economically dependent on the wood products industry (Claiborne Foundation 1993). However, the concept of dependency is itself diverse. There are no generally

accepted standards for diversity and the relationship between diversity, stability and economic prosperity is being questioned by professionals (Debalen and Goldman 1994).

The relative stability of the local economy is difficult to determine because no generally accepted standards have been developed to measure economic stability.

Economic Trends - Wood products and aluminum refining have traditionally been the largest components of Flathead County's economic base. Together, they were primarily responsible for the growth in the 1970's and the sharp decline between 1979 and 1982. From its trough in the early 1980's, the wood processing industry in Flathead County expanded significantly, becoming the state's largest timber processing center.

Non-resident travel was the Flathead's most rapidly growing basic industry in the 1980's. High technology manufacturing also grew. Non-farm labor income increased significantly in 1991-1992, although basic industries as a whole showed little growth during this period.

As elsewhere, construction, health care, and business services accounted for much of the income growth for the period. Predictions by the University of Montana's Bureau of Business and Economic Research for the Flathead County area are as follows:

"We expect fairly brisk growth to continue between 1994 and 1996—about 2.3 percent per year, the second fastest among Montana's major urban areas. In making this forecast we assume: no major changes at the Columbia Falls Aluminum Plant except for small cost-saving layoffs; only a small decrease in local wood products activity, while other areas in western Montana bear larger losses; and continued strong growth in non-resident travel, despite the specter of overcrowding." (Polzin 1994). However, it is expected Montana as a whole will experience a slowing of economic growth and once again fall below national levels to a 1 to 2 percent rate while the U.S. economy will likely accelerate to 3.0 to 4.5% rate for the same period (Polzin 1994).

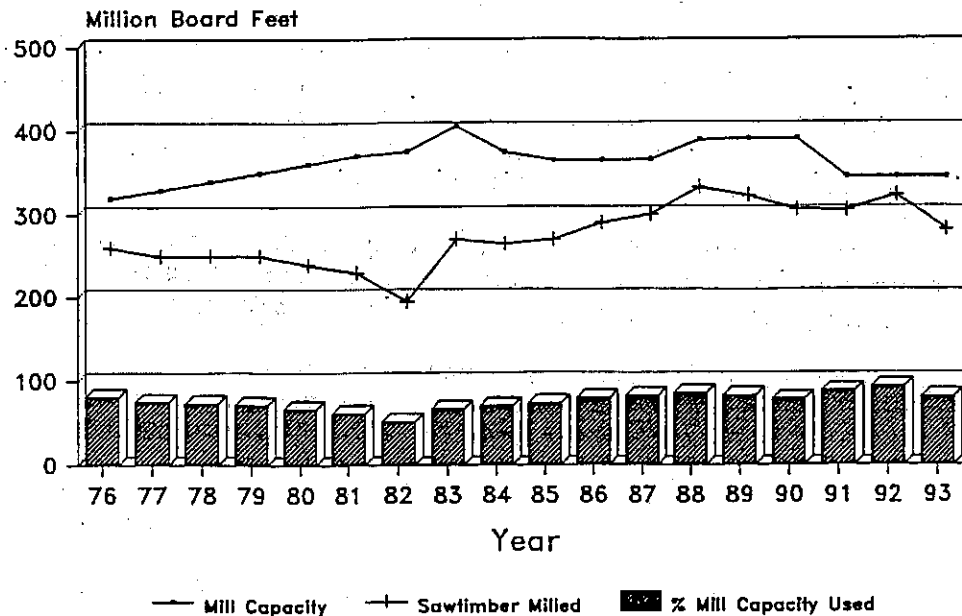
However, recent bed-tax reports indicate that tourism growth has at least temporarily leveled off during 1994. Future local promotion efforts likely will focus on maintaining visitation levels, rather than on increasing them substantially (Daly 1995).

The Timber Industry

Historical Production and Capacity - Since 1980, Flathead County has had the largest wood products manufacturing industry of any county in Montana. Since 1976, the county's capacity to process sawtimber has varied from a low of 320 million board feet (Scribner rule) in 1977 to a high of 395 million board feet in 1983. The present capacity is estimated to be 335 million board feet.

Actual sawtimber processed since 1976 has varied from a low of 185 million board feet in 1982 to a high of 332 million board feet in 1988. It was estimated that 272 million board feet was milled in 1993 (Wichman 1994). Flathead County has led all Montana counties in mill production since 1986 when it surpassed Missoula County.

**Figure 14 - Mill Capacity and Utilization
Flathead County**



The percentage of the milling capacity that is actually used affects the demand for logs and is a variable affecting log prices, which in turn, affects the quantity of logs supplied. Ironically, Flathead County reached its highest utilization capacity of 93% in 1992 - in the face of an impending timber supply shortage. This rate fell to 81% in 1993. The low rate was 51% in 1982 with an average of 75%, since 1976.

A forecast made in 1991 stated "Moreover, the industry faces additional downsizing--another 15%--if the last three years are a predictor of the next ten in the national forest timber sale program. Thus it would by no means be a worst case scenario to project a 25 to 30% decline from 1989 levels in the size of Montana's timber processing industry over the next five to ten years" (Keegan 1991). In another report from the same year, Keegan (1991a) stated that: "Montana's timber industry will shrink an additional 25% to 30% in the next few years....a University of Montana economist says...Flathead and Lincoln are two of the counties most at risk."

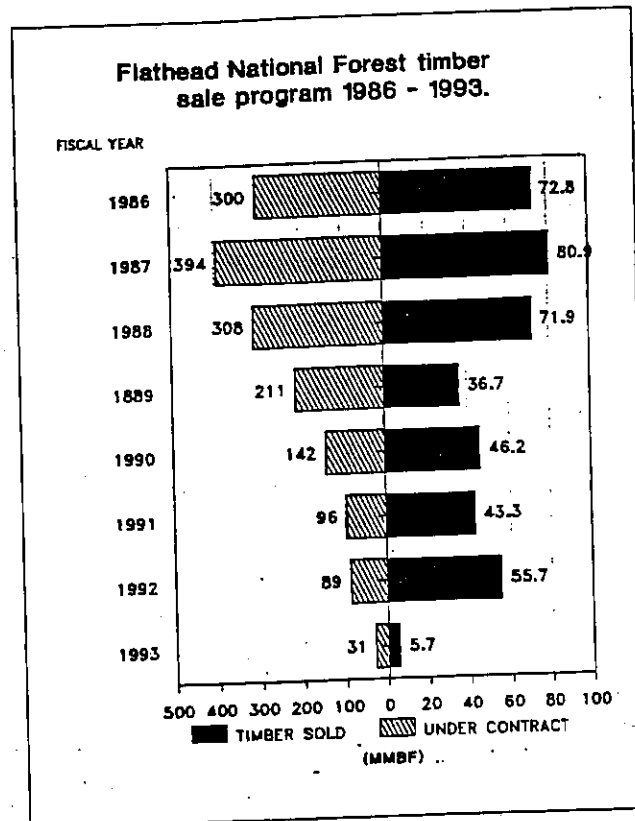
Through 1993 the decline has been about 13% for Flathead County, with most of that occurring in 1993. The latest published forecast for Flathead County states "...between 1994 and 1996....except for small cost-saving layoffs; only a small decrease in local wood products activity" and "Further down-sizing of the industry is expected in the coming year." (Keegan 1994).

Since those projections were made, the Flathead National Forest timber sale program has declined more than predicted.

Flathead N.F. Timber Sale Program

The Flathead National Forest has historically provided approximately 40% of the timber processed by the Flathead County wood products industry (USDA Forest Service 1986). However, this quantity has declined in recent years. It was estimated that only 23% of the timber processed in Flathead county mills was supplied by harvests from Flathead National Forest in 1993 with over 74% coming from private lands (Wichman 1994). Figure 15 displays the amount of timber sold, harvested, and the amount under contract for the Flathead National Forest.

Figure 15. Flathead N.F. Timber Sale Program Summary 1986 - 1993



Effects of Alternatives on the Flathead NF Timber Sale Program - As displayed in Figure 15, the amount of timber sold has not reached the allowable sale quantity of 100 million board feet in any of the years that the Forest Plan has been in effect. The allowable sale quantity is the maximum amount of timber which can be sold from the Forest, expressed as a yearly average. It is not the actual amount programmed to be harvested.

Under Alternative 1, the ASQ is unchanged at 100 million board feet annually, which was projected for the first decade of the Forest Plan. The actual volume sold during the previous 5 years averages 29 MMBF.

Alternative 2 reduces the annual allowable sale quantity to 64 million board feet for the 1995-1999 period. Under this alternative, none of the Forest Plan direction is changed, but a

spatial analysis of existing standards accounts for the reduction of ASQ. This adjusted ASQ is still substantially above the previous 5 year average of 29 million board feet sold. For this reason the ASQ should be viewed as a potential to constrain the actual harvest and each alternative providing a different potential (ASQ) to serve as an upper limit on the actual harvest.

Alternative 3-Corrected, 4-Corrected and 5 all include new habitat objectives for grizzly bear with Alternative 3-Corrected being the least intense to 5 being the most intensive. The resulting ASQ for each alternative can be seen in Figure 4. Therefore Alternative 3-Corrected has the least potential to affect the amount of timber actually harvested and Alternative 5 has the greatest potential. The effect of Alternative 4-Corrected would fall between Alternatives 3-Corrected and 5.

The average volume sold during the previous 5 years did not exceed the ASQ proposed under any of these alternatives. Therefore, the probability of any of the alternatives ASQ's constraining the actual amount of timber harvested is remote.

The economic and social effects of the proposed action and alternatives will be partially based on the potential of the ASQ to limit the amount of timber harvested throughout the remainder of the planning period, and will be discussed in the appropriate sections throughout Chapter 3. Again, keep in mind that the actual amount of timber harvested will change little as a result of Amendment 19.

Employment and Income

A recent analysis of the wood products industry in Flathead County indicated a direct workforce of approximately 2343 people (Beckley 1994). This estimated workforce included jobs in logging, lumber and plywood milling, transportation, and forestry services. These industries paid a total of \$62.4 million in wages. This accounted for 7.6% of the jobs in Flathead County and 12.4% of the wage income paid. The analysis also estimated the total economic contribution of the wood products industry on the local economy. The TSPIRS reports were also considered as a source of data for employment and income effects, but were not found to be as appropriate as those used and cited above. The TSPIRS reports predict greater effects but can be misleading if used in the wrong context. A detailed explanation of the differences between the two sources of impact data can be found in the Project Record, Exhibit N-7.

The analysis described above was done with the use of input-output technology, using the MicroIMPLAN economic impact model (Alward *et al.* 1993). The results of this analysis indicate that just over 20% of the jobs in Flathead County are attributable to the wood products industry. These jobs not only include the ones mentioned above, but also jobs in government timber management programs, jobs created by government timber revenue sharing programs, as well as indirect jobs created by direct business and government spending and induced jobs created by the spending of wages earned in the above activities.

Effects of Alternatives on Local Employment and Income - The potential effects of each alternative on local employment and income will be considered a function of the degree of change in the Flathead NF timber sale program.

Alternative 1, which does not change the Allowable Sale Quantity nor change any management standards, would not have any potential effects on the quantity or price of timber produced. Therefore, there will be no potential effects on local employment and income.

Alternative 2, as explained above, will cause a reduction in ASQ (harvest ceiling) from 100 million board feet per year to 64 million board feet per year. If the *actual* timber harvest changed by this amount it would decrease employment in Flathead County by approximately 745 total jobs and \$14 million in wage income. However, as previously discussed, lowering the ASQ to 64 million board feet will likely have no effect on lowering the *actual* amount of timber harvested and consequently have no effect on employment and income.

Alternatives 3-Corrected, 4-Corrected, and 5 are proposing more intensive grizzly bear management objectives and consequently will have a greater potential effect in limiting the amount of timber that may be sold. The maximum potential effects for Alternative 3-Corrected amount to approximately 249 fewer jobs and \$4.6 million less in wage income than Alternative 2. The estimated maximum potential reduction caused by Alternative 4-Corrected are estimated to be 207 jobs and \$3.9 million in wage income from Alternative 2. Alternative 5, which creates the largest potential change from new grizzly bear standards, would create a maximum potential reduction of 373 jobs and \$7.0 million in wage income. However, the ASQ for these alternatives would still be above the latest 5-year average of 29 MMBF sold. Therefore, it is highly unlikely that any of the alternatives will influence the amount of timber sold for the remainder of the planning period and create changes in employment and income. Even if the maximum potential changes occur they would not be detectable in the unemployment statistics because they would be obscured by the rapid job growth occurring in the Flathead County area. However, even though the unemployment rate might not reflect any potential loss in timber related jobs, a change in the composition of jobs could have an effect on per capita income. Recent job growth has been centered in the retail and services sectors which generally pay lower wages. However, per capita income growth rate has been unusually high in Flathead County for the past 2 years.

The estimated potential maximum effects in relation to Alternative 1 (based on the ASQ from the original Forest Plan) are displayed in the following table. Remember, these figures should be viewed as relative potentials which are highly unlikely to happen as a result of Amendment 19.

Table 10 Effects on employment and wage income.

	ALTERNATIVES				
	1	2	3C	4C	5
Employment: *					
Direct	0	-310	-413	-396	-464
Total	0	-745	-994	-952	-1118
Wage Income(MM\$):					
Direct	0	-8.3	-11.0	-10.6	-12.4
Total	0	-13.9	-18.6	-17.8	-20.9

*Includes both part and full-time jobs.

During 1993, approximately 85% of the timber harvested from the Flathead NF was milled in Flathead County (Wichman 1994). For this reason, it can be assumed that only 85% of the effect of a reduction in timber harvest would occur in Flathead County. The remaining 15% would be felt by surrounding wood processing counties.

It can also be assumed that any changes in the quantity of timber offered by Flathead National Forest will have an effect on timber prices. The less timber volume offered the greater the upward potential on prices. Even with no potential change in timber outputs, such as those predicted in Alternatives 1 and 2, increased timber prices are expected to occur on a regional basis.

In a study done by Flowers *et al.* 1993, the "most likely" scenario predicts a 5.6% per year increase in real prices from 1991 to 2010. It is not feasible to quantitatively determine the effects of this rate, but it can be assumed that Alternatives 1 and 2 would have no effect and Alternative 5 potentially would have more effect than Alternative 3-Corrected and/or 4-Corrected.

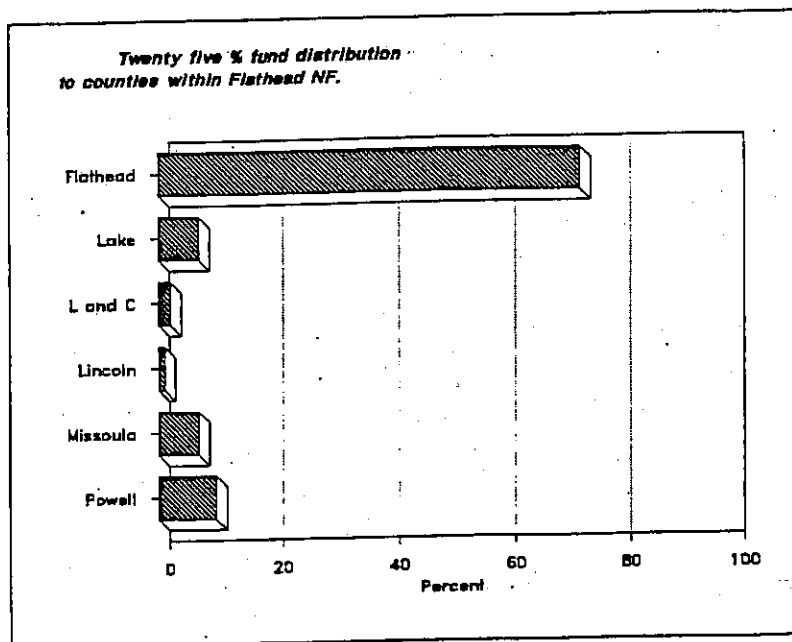
Because the supply of timber is partially a function of timber price, the increase in the price caused by Forest Service timber sale reductions can cause the supply from other sources to increase. This shift has occurred recently with an increase in logs flowing from industrial and non-industrial private lands. This will tend to reduce the adverse potential economic effects of Alternatives 3-Corrected through 5, at least in the short-term.

Many public comments expressed an interest in having an estimate of employment and income generated by the physical process of reclaiming and restricting roads. Using the MicroIMPLAN system explained above, it was estimated that 25 total jobs (direct, indirect and induced), and \$350,000 in total wage compensation would be generated for each \$1,000,000 expended in road reclamation. The total amount to be expended for road reclamation is unknown at the present time because different methods of closure will be made in different situations. The appropriate site specific method will not be selected until additional analysis is done, prior to implementation.

Revenue Sharing From Flathead National Forest Programs

Revenues and other payments from National Forest lands are distributed annually in accordance with the Twenty-five Percent Fund Act and the Payments in Lieu of Taxes Act (PILT). Under the former, 25% of all funds received from each National Forest are paid to the state in which national forest lands are located. The funds are distributed proportionately to all counties in which the forests are located. The allocation is based on the number of national forest acres in each county, regardless of the location of where the activity is conducted.

The amount distributed is based on all receipts, including special use fees, recreation fees, minerals returns, grazing fees and timber sales. In Montana, two-thirds of the dollars received go to the counties general fund for road maintenance while the remaining one-third goes to schools. Historically, from the Flathead National Forest, timber receipts have made up about 85% of the Twenty-five Percent Fund payments returned to counties. Figure 16 shows that 73% of all Twenty-five Percent Fund payments arising from Flathead National Forest programs go to Flathead County, with the balance going to Lake, Lewis and Clark, Lincoln, Missoula, and Powell Counties.

Figure 16. Twenty Five % Fund Distribution

Under the Payments in Lieu of Taxes Act (PILT), payments are made to local governments to supplement other receipt sharing programs, such as the Twenty-five Percent Fund. PILT payments may be used for any government purpose; they are not limited for use in roads and schools. As a result, changes in the amount of Twenty-five Percent Funds received will affect the amount of PILT funds received. However, this offset is not dollar for dollar and at certain levels there is no offset at all.

Effects of the Alternatives on Revenue Sharing From Flathead National Forest Programs - The following table shows PILT and Twenty-five Percent Funds received in Fiscal Year (FY) 93 plus an estimate of PILT and Twenty-five Percent Funds to be received in FY 1994 through FY 1997, for all those counties receiving funds as a result of revenues generated by the Flathead National Forest (Shuster 1994). However, at the time of writing this document legislation was passed to substantially revise the PILT Act which will cause upward revision of the amounts included in Table 11. Because of the timing, the uncertainty of the provisions of the new act, and the time needed to recalculate the revised estimates, there will not be an attempt to quantify the effects. To further complicate the matter not all county shares are calculated under the same formula. For these reasons only comparative comments will be made.

Alternatives 1 and 2 will create no change in the amount of revenue received by the sharing counties. This is because there will be no change in revenue producing outputs for those alternatives. Alternatives 3-Corrected through 5 will create a potential reduction in funds received from those that could be received under the new or old formula. Alternative 5 will create the greatest potential for revenue reduction because of the potential for greater timber output reduction. This is primarily a result of additional bear management standards that could conflict with timber management goals. However, because of the new PILT legislation

all the sharing counties will eventually receive more total funds than they did under the old law, even with the new bear management standards added. For example Flathead County will by 1999 receive a minimum of \$2,200,000 of revenue sharing funds under the new formula. This is even if no 25% funds at all are received. This is well above the past 5 year average of \$1,517,000. Although PILT funds can be used for any type of county government expenditure the county government still has the option of allocating PILT funds to schools and roads. Again, the amount of timber harvested through the remainder of the planning period will be substantially below the proposed ASQ but this is the result of prior events, not Amendment 19.

The relationship of PILT funds to 25% funds is not simple and there is no single source that gives a comprehensive explanation. The best source available is part of the report by Schuster referenced above. We do not feel it is appropriate to explain this somewhat complex formula in the EA.

Table 11

*Estimated Payments to counties through the 25% and PILT fund (thousand \$).
From all National Forests in Counties Listed - 1993 through 1997.*

COUNTIES						
FLATHEAD	LAKE	L AND C	LINCOLN	MISSOULA	POWELL	TOTAL
1,980	195	925	6,900	1,127	582	11,709
990	79	1,059	6,877	945	479	10,429
1,811	182	1,102	7,549	1,111	613	12,368
926	93	990	7,045	1,075	534	10,663
1,334	139	1,053	7,873	1,016	542	11,957
1,408	138	1,026	7,249	1,055	550	11,425

Non Timber Effects

Many public comments were concerned about the brevity in disclosing the effects of Amendment 19 on the recreation/tourism industry. The assumption in some of the comments is that closing roads will enhance wildlife habitat and the quality of recreation experiences and in turn enhance the recreation/tourism industry. Others feel that the closing of roads will reduce the quality and quantity of roaded recreation experiences and have a detrimental effect on tourism and the local economy. Both of these concerns have merit. Reducing the amount of open roads will reduce the quantity and/or quality of roaded recreation opportunities. This will theoretically affect the mixture of use received on the lands involved and affect the mixture of tourists visiting the area. However, because of the large supply of both roaded and unroaded forest land, and the small role that open road density plays in tourism destination choices, the net marginal economic effect is assumed to be insignificant.

Economic Efficiency

Public opinion polls in the Flathead Valley area strongly support the notion that a high percentage of the residents of the area either came to the area or remain in the area because of the clean environment and recreational opportunities (Althen Associates 1989). Implied in this is a demand for wildland resources that serve as a setting for outdoor recreation opportunities. Part of this setting is a wildlife resource of indeterminable value. The grizzly bear is the emotional cornerstone and viewed by many as the most important component of this resource. In addition to the value of these resources to local residents, several million visitors pass through the area each year, deriving some degree of benefit from the wildland resources. Wildland values also include "non-use" values such as existence, bequest, and option values. To evaluate resource management decisions affecting this resource only in terms of income, employment, and public funds generated, would be grossly incorrect (Power 1992).

Effects of Alternatives on Economic Efficiency - To properly evaluate the decisions to be made in respect to the proposed action, analysis must be done to reflect economic efficiency from the perspective of society as a whole, not from the view of individual entities. Benefit-cost analysis has been the traditional tool to evaluate these types of decisions and measure the efficiency of public investment.

In Alternatives 2, 3-Corrected, 4-Corrected and 5, additional "investment" will be made to enhance grizzly bear habitat. The benefits realized will include an improved wildland resource for protecting or enhancing the uses previously mentioned. The costs will include public funds invested in the additional management activities proposed (i.e., road reclamation/restriction), and opportunity costs in the form of timber products foregone.

The primary beneficiaries will be that part of the public that places high value on wildland resources. The sectors of the public most adversely affected will be those who depend upon the forest products industry and those who now utilize the roads that may eventually have restrictions on motorized use and those who place a low value on wildland resources.

A quantitative analysis to determine the economic efficiency of the proposed action and its alternatives will not be attempted for several reasons. First, there is not enough value data available to conduct a meaningful quantitative analysis - especially benefit data. The second reason is more conceptual in that a benefit/cost analysis is not a valid method of comparing alternatives for public investment of this type, because each alternative has a different objective (Iverson et al. 1991). However, each alternative will be developed to be cost-effective.

Economic efficiency and cost effectiveness are normally influenced by the scale of the proposal being evaluated. Any reduction in the size of the timber sale program will probably increase the cost per unit of doing business (assuming we are approaching economies of scale). The greater the reduction, the lower the economic efficiency (Maurice and Smithson 1985). Therefore, Alternatives 1 and 2 should have no effect and Alternative 5 would have the greatest potential adverse effect, in terms of economic efficiency.

It can be assumed that additional management practices to protect the grizzly bear will occasionally reduce the size of individual timber sales. This will reduce economic efficiency as determined by Benefit/Cost analysis. When other values are constant, timber selling values vary directly with sale size (USDA Forest Service 1992). Alternatives 1 and 2 will have no effect while Alternatives 3-Corrected through 5, will be less efficient.

There is a strong presumption that public investments to comply with existing laws and regulations are in the best public interest and as long as they have been efficiently designed, they will result in a positive net public benefit.

SOCIAL DIMENSION

Introduction/Affected Area

A social analysis of the impacts on lifestyles of a population examines the "patterns of work and leisure, customs and traditions, and relationships with family, friends and others" (Forest Service Handbook). Any significant alteration in the size and makeup of a population has the potential of impacting such aspects as community cohesion and identity, aesthetic values, recreational/leisure opportunities, and even basic value systems embraced by residents of the community, such as religious beliefs, cultural/ethnic patterns, and various rituals or celebrations.

In the delineation of the affected area, those persons most subject to the direct and indirect social effects of the various alternatives were considered as guided by the USDA Forest Service's Economic and Social Analysis Handbook (FSH 1909.17, Chapter 30). For the purpose of evaluating the potential social impacts of the proposed project, the affected area is considered to be Flathead County.

Population Characteristics

Since 1969 the population of Flathead County has grown at an average annual rate of 2.1% as opposed to the State of Montana which has grown at an average rate of 1.0%. However, this rate has greatly accelerated in the past few years in Flathead County with a growth rate of 3.5% in 1992 and a rate possibly exceeding 4% in 1993 (Census figures not yet available for 1993).

The population of Flathead County was estimated to be 62,900 in 1992 (U.S. Department of Commerce 1994). Because of this population growth trend, Flathead County's share of the state's population has increased from 5.6% in 1969 to 7.6% in 1992. Population estimates for the future made by Woods and Poole Economics indicate a population of 90,810 for Flathead County by the year 2010. Other services show somewhat lower projections including some that have already been exceeded (Daly, 1994). This means that approximately 10.1% of all Montanans could live in Flathead County by the year 2010. An intensive description of the characteristics of the population of Flathead County can be found in the 1990 Census of Population and Housing publications (U.S. Department of Commerce 1992).

Effects of Alternatives on Population Level - Any alternative that affects the potential timber harvest will create potential changes in population. Therefore, Alternative 1 and 2 should have no potential effect, while Alternative 5 would have the greatest potential effect with Alternative 3-Corrected, and 4-Corrected having a lesser effect than Alternative 5. MicroIMPLAN analysis shows a population/job ratio of 2.03 people for every job in Flathead County (Beckley, 1993). Assuming we are at "full employment", a reduction in jobs as projected in Alternatives 3-Corrected through 5 would create a potential maximum loss in population of 1513 for Alternative 3-Corrected and approximately 2269 for Alternative 5. However, in normal situations only a portion of the job losers would leave the area and the remainder would stay here less than fully employed. This would create upward pressure on the unemployment rate.

These changes would not be easily detectable in standard population statistics if they occur because of their relative insignificance, the time span the change would occur over, and the effects of many other more significant economic events causing changes to employment and population; the real effect would not be a net population loss but a potential slight decrease in the rate of growth.

Lifestyles, Attitudes, Values and Beliefs

Comments from local residents, various publications about the Flathead Valley, newspapers and casual observations provide insight into the area's lifestyles and values. Surveys of local residents were used to quantitatively describe current attitudes regarding values and growth and to identify changes in opinions over time.

The *Future of the Whitefish Area Survey* conducted by the Whitefish Community Development Corporation and the *Flathead County Attitudes Survey* conducted by Design Workshop, Inc. for the Cooperative Planning Coalition (CPC), both completed in 1993 addressed several "quality of life" issues. When questions were sufficiently similar, results from the 1993 surveys were compared to the 1989 Flathead County Public Attitude Survey by Althen Associates for the Flathead Economic Development Corporation and a similar survey conducted in 1980 to identify trends which could be expected to continue in the foreseeable future. Similar surveys were taken for specific areas such as Columbia Falls, the Canyon, and the Swan Valley (Jackson 1993, Lambrecht 1993).

Economic Growth

In 1989, roughly 60 percent of those surveyed indicated they would like to see economic growth in Flathead County occur at an accelerated rate. Others were happy with the present rate of growth while around 15 percent preferred that it occur at a slower rate. As shown on Figure 17, this contrasted with the attitudes in 1980 when residents were almost evenly divided concerning the rate of growth.

As shown in Figure 17, the attitudes of Whitefish residents in 1993 contrast sharply with the 1989 opinions of persons living throughout Flathead County. In 1993, approximately 43 percent of Whitefish residents responded that they would like to see economic growth occur "at a slower rate." Only 15 percent would prefer an accelerated rate of economic growth as compared to 60 percent of county-wide residents in 1989.

The difference in opinions, however, can be partly attributed to the difference in sampling procedures rather than a change in attitudes. Results from surveys covering various areas of the county reflect variations in opinions, depending upon the community. A 1992 survey of persons living in the Canyon area revealed that opinions concerning the desired rate of economic growth are somewhat more "pro-growth" than those expressed by Whitefish residents. Approximately 22 percent of the survey participants from the Canyon area indicated that economic growth should occur at a slower rate and 20 percent felt it should be at a faster rate.

While an identical question was not posed in the 1993 Flathead County survey, answers to related questions on economic activity suggest that people living in areas other than the county's northern part are more interested in economic growth than people in Whitefish and the Canyon area. Over 60 percent of people surveyed throughout the county felt that additional economic activity should be encouraged in Flathead County.

Effects of Alternatives on Attitudes about Economic Growth - The way in which the economy grows and the rate of this growth will probably affect attitudes. The increasing reliance on tourism will be a growing concern to many. The shift from timber to tourism will not be an easy adjustment for those who have been employed by higher-paying timber jobs that will need to accept lower-paying jobs or relocate or remain unemployed. These attitudes will persist even with the no-change alternative. Alternatives 3-Corrected, 4-Corrected, and 5, which increase emphasis on grizzly bear management and further lower timber production, will serve to marginally reinforce the attitudes discussed above.

Figure 17
Attitudes About Growth

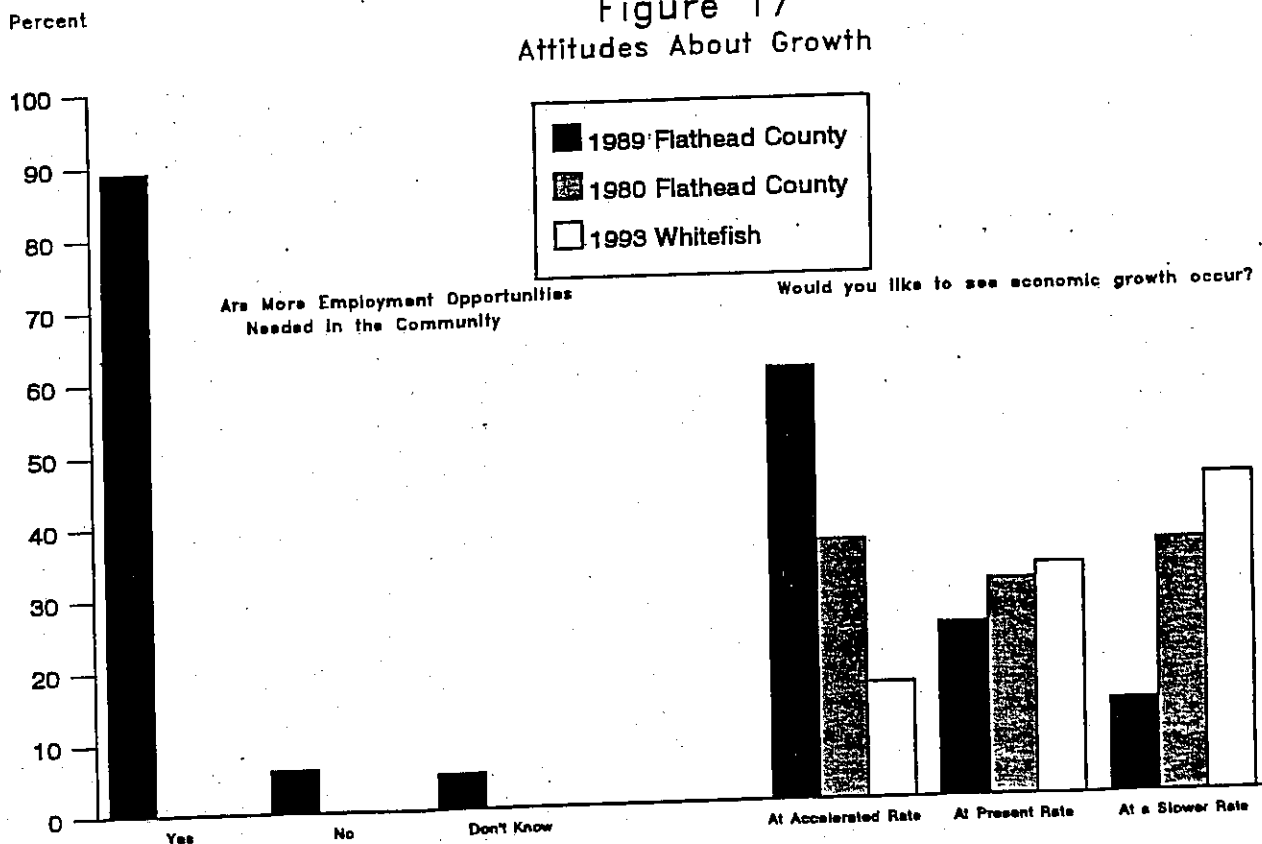
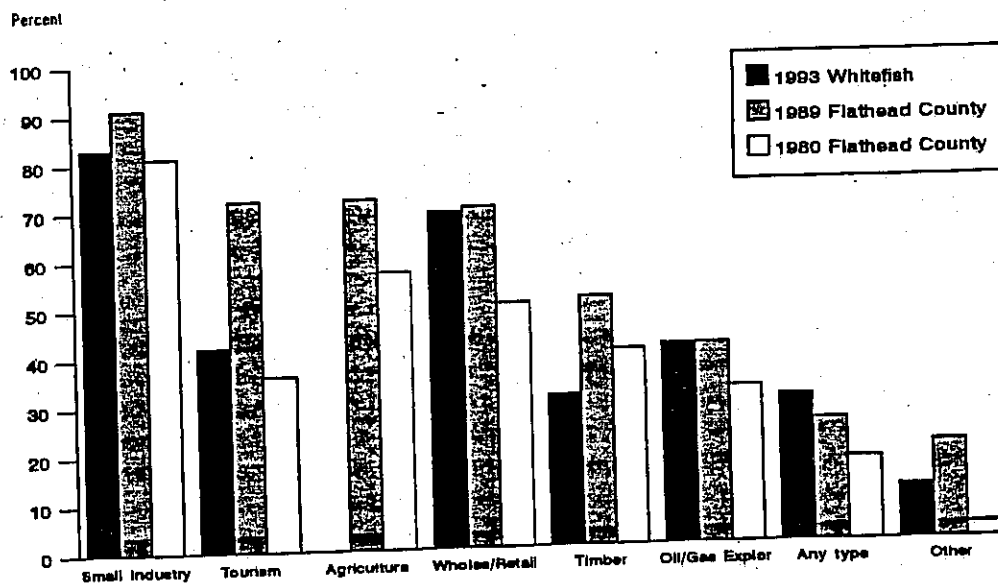


Figure 18
Attitudes About Types of Growth
What Kind of Economic Growth?



Employment Opportunities

In 1989, the overwhelming majority of Flathead County residents agreed that more employment opportunities were needed. Attitudes about the need for additional employment opportunities will not likely improve as a result of the proposed action and its alternatives. Although the current unemployment rate is at the "full employment" level, the per capita income rate is substantially below the national average. Jobs are becoming available but they are not acceptable replacements for the jobs that are being lost.

Effects of the Alternatives on Attitudes about Employment Opportunities - Alternatives 2, 3-Corrected, 4-Corrected, and 5 will impose constraints on potential future timber production. As discussed in previous sections of this EA, Alternatives 1 and 2 have no potential effects on timber production and Alternative 5 has a greater potential effect than Alternatives 3-Corrected or 4-Corrected. The resulting effects on employment opportunities have also been discussed. This will reinforce the attitudes that the local wood products workers have about their uncertain future.

Population Growth

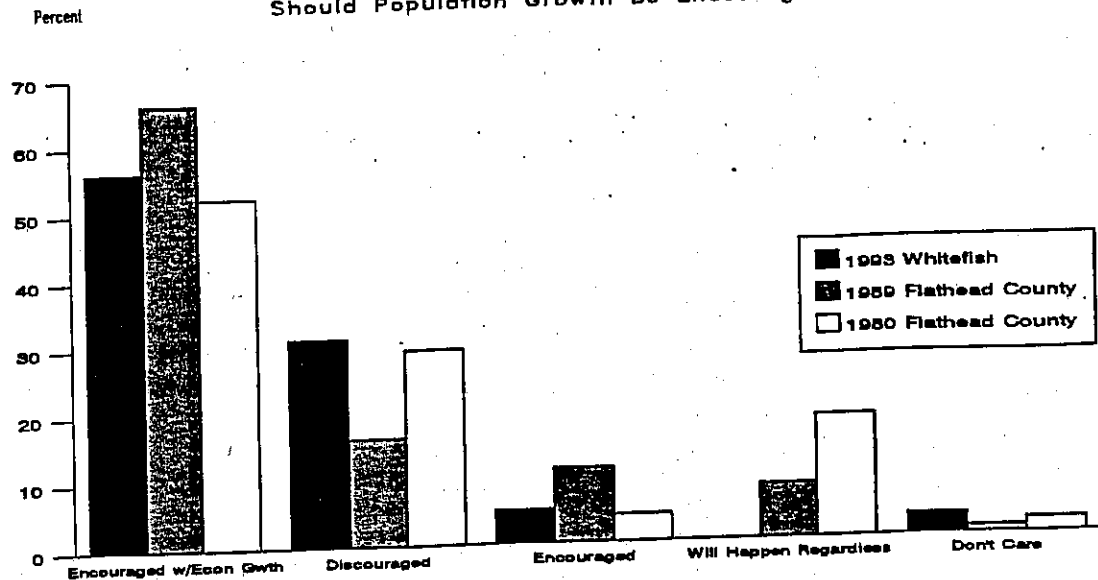
In 1989, approximately 65 percent of those surveyed felt that population growth should be encouraged only if it is coordinated with economic growth along with economic growth, up from about 50 percent in 1980.

The percentage of county residents who felt that economic growth should be discouraged declined sharply between 1980 and 1989 from around 30 percent to approximately 15 percent. By 1993, shifts in public opinion concerning population growth had apparently shifted again to more closely resemble attitudes in 1980. The surveys in Whitefish and the Canyon area asked participants the same question on population growth as posed in 1989 while the majority of Whitefish residents felt that population growth should be encouraged if it can be coordinated with economic growth, 32 percent felt it should be discouraged. In the Canyon area, opinions were similar; 28 percent felt population growth should be discouraged.

The 1993 Flathead County attitudes survey asked participants how many people they felt could be supported in Flathead County without significant negative impacts on the quality of life. The report concluded that there was a clear preference for limited or no growth. Just over one-third of the responses felt that 64,000 or less was the supportable county population level, slightly higher than the current estimated population. Approximately 45 percent felt it could be increased between 25 percent and 65 percent while the remaining minority (15 percent) felt population could increase at greater levels without harming the quality of life. Approximately 55 percent felt that controlling the rate of growth should be a "very important" goal of the county Master Plan.

Effects of Alternatives on Attitudes about Population Growth - The effects on population growth from the alternatives has been discussed in a previous section of this EA. As well as potential changes in the growth rate, there could be minor changes in the composition of the population. It is reasonable to assume that many people will perceive that additional emphasis on grizzly bear management, and additional constraints on timber management will favor growth in that part of the population that prefers the "wildlands" lifestyle and disfavor population growth or maintenance of the population in the manufacturing working class.

Figure 19
Should Population Growth Be Encouraged?



Reasons for Living in the Flathead Valley

The Flathead Valley embodies many of the attributes that characterize Montana, projecting an ambiance of vast, untamed wilderness populated by self-reliant, independent, and outdoor-oriented individuals. As development has encroached on other western towns in the Rocky Mountain Region, individuals with a "frontier mentality" have come to places like Flathead County to recapture what they view to be the last vestiges of the Old West atmosphere.

Many people have escaped to the Flathead in pursuit of a slower pace of life, the exceptional beauty of the area, a [perceived] lower cost of living, and an array of recreational opportunities, literally at one's doorstep (Flathead Basin Commission 1991).

As the population expands, the "lifestyles" of the community diversify and the potential for conflict increases. As Figure 20 indicates, there are fundamental similarities regarding the reasons people choose to live in Flathead County, with its clean environment, recreational opportunities, and the size of the communities being the primary attractions. "Job opportunities" are relatively unimportant on this scale, reflecting the priority which Flathead County residents place on family, "after hours" activities, etc.

Effects of Alternatives on the Reasons for Living in the Flathead Valley - With a large part of the population residing in the Flathead Valley because of its natural amenities, it is reasonable to say that any proposed changes to the plan that would enhance those amenities would be looked upon favorably by the majority of the local population. However, that part of the population that favors recreation activities that require extensive road access might disfavor any proposals that limit that access. An example of users that would be disadvantaged by this kind of management are hunters that have a "special place" to hunt and suddenly find it inaccessible.

Religious Beliefs

Consistent with its racial homogeneity, there is little denominational diversity in Flathead County. The overwhelming majority of churches in the County are Protestant affiliated (there are approximately 90 churches in Flathead County, with about 80 percent being Protestant). Other denominations that are represented are Judaic, Catholic, Latter Day Saints, and Seventh Day Adventists, among others.

It is estimated that about 60 to 70 percent of the population is "unchurched," or does not attend church on a regular basis, which is consistent with attendance in other communities (Rees 1994). The recreation orientation of the community may be a factor in church attendance as many residents use the weekends for various leisure activities. The tourist activity also impacts churches as there are a significant number of "drop in" service attendees in the summer as compared to other times of the year.

Effects of the Alternatives on Religious Beliefs - The proposed action and its alternatives will not have an effect on religious beliefs of the existing population. However, if there is population turnover as a result of new Forest Service management policy, immigrants could change the religious composition of the area. The marginal effect of the proposed action and its alternatives is expected to be insignificant.

Political Issues/Trends

From articles and editorials in local newspapers and comments from City/County staff, it seems that the most controversial issues facing local elected officials seem to emanate from concern and disagreement over planned growth versus personal rights. Concern over the growing population and evolving dependence on tourism is shared by many. Some feel that the growth should only be encouraged and allowed if planned appropriately. Others feel that personal property rights should dominate future land use (Rees 1994).

At the present time the Cooperative Planning Coalition, an ad hoc citizen group, is leading a substantial effort to update the Flathead County Master Plan, which is the primary policy source for land use in Flathead County (FRDO 1987). This effort has been greatly subsidized by private funds and much of the analysis has been directed by Design Workshop, of Denver, Colorado, a management consulting firm. Although the proposed plan has received general support from the citizens of Flathead County, there are many groups and individuals that have strong opinions opposing the plan.

Effects of Alternatives on Political Issues/Trends - The proposed action and its alternatives should not have any incremental effect on the land use plans of Flathead County. Nearly all working groups for the master plan update, had at least one representative from Flathead National Forest as a member.

H. RECREATION AND CULTURAL ACTIVITIES

Cultural Activities

Flathead County is subject to long, harsh winters and unpredictable fall and spring seasons. As such, the summer is long awaited and savored, with various celebrations and festivals, such as farmer's markets, arts and crafts shows, and outdoor concerts.

Effects of Alternatives on Cultural Activities - Effects of the alternatives on cultural activities are expected to be insignificant. As the population increases, new residents will bring cultural activities with them to further diversify the variety of activities. These types of effects have been extensively discussed in previous sections of this EA.

Recreational Activities

Affected Environment

The Flathead National Forest is an integral part of the area's recreation environment, which also includes Glacier National Park, Montana State Parks and Forests, the Flathead River System, Flathead Lake, and the Flathead Indian Reservation. The recreation opportunities on the Flathead National Forest are an important part of the lifestyle of local residents. In addition, the Flathead Valley has become a noted destination recreation site for Americans, Canadians, and other foreign visitors.

The Flathead National Forest uses the Recreational Opportunity Spectrum (ROS) system to evaluate various types of recreational experiences available on the Forest. This ROS system defines the following six types of recreational settings:

Primitive: large areas of land essentially unmodified by human activities. Interaction between recreation users is low. There is a very high probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, and self-reliance through the application of outdoor skills in an environment that offers a high degree of challenge and risk. Motorized use is not permitted. These areas are typically designated wilderness.

Semiprimitive nonmotorized: moderate to large natural appearing areas where there is often evidence of other users. These areas provide a high, but not extremely high, probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, and self-reliance through the application of outdoor skills in an environment that offers challenge and risk. Motorized use is not permitted.

Semiprimitive motorized: areas similar to semiprimitive nonmotorized areas but providing the opportunity to use motorized equipment while in the area.

Roaded Natural: areas characterized by predominantly natural appearing environments with moderate evidence of the sights and sounds of humans. These areas have a moderate probability to encounter other user groups and for isolation from sights and sounds of humans. Challenge and risk opportunities associated with more primitive types of recreation are not very important. Opportunities for both motorized and nonmotorized forms of recreation are possible.

Roaded Modified: areas characterized by a substantially modified environment. Users have an opportunity to get away from others but with easy access. Conventional motorized access (passenger cars/pickup trucks) is reasonable, i.e., access is not limited to ATV or other off-road vehicles.

Rural: in these areas, the natural environment is substantially modified. The probability of encountering other user groups is often moderate to high. Opportunities for wildland challenge and risk are generally unimportant except for specific activities such as downhill skiing, for which challenge and risk-taking are important.

The actual use levels on dispersed recreation settings has not increased to the levels projected in the 1986 Forest Plan EIS. In 1980, the Flathead National Forest estimated that dispersed recreation use of the non-wilderness portions of the Forest was 500,500 recreation visitor days (RVD) per year. The Forest estimated that 77 percent of these visitor days occurred in dispersed roaded settings (Roaded Natural, which is now broken into Roaded Natural and Roaded Modified) for activities such as berrypicking, snowmobiling, driving for pleasure, roadside camping, fishing, and hunting. The other 23 percent represented backpacking, hunting, fishing and other activities in unroaded areas.

The 1986 Forest Plan estimated dispersed recreation use levels at 568,000 visitor days in 1985, and projected a dispersed recreation use level of 757,000 visitor days in 1995 (LRMP EIS, pg. II-9).

Forest Plan monitoring since 1986 reveals that reported dispersed recreation use levels have been less than projected (1991 LRMP Annual Monitoring Report). The average annual number of reported dispersed recreation visitor days from 1986 to 1991 was 347,600. The "actual use trend" displayed in Figure 21, provides a more realistic projection of slightly fewer than 600,000 visitor days by 1995.

Figure 21. Trends of Projected and Actual Dispersed RVD Use

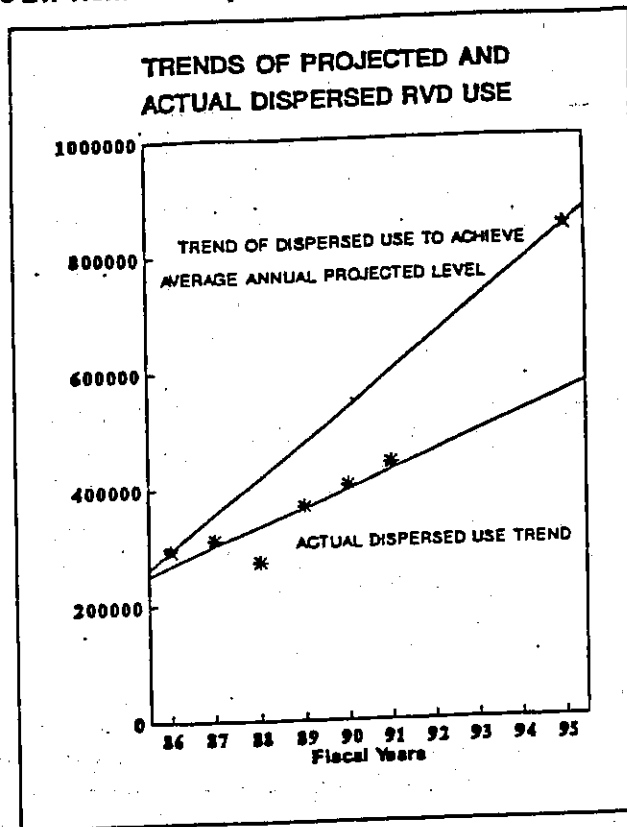


Table 12. ACTUAL RVD USE PER YEAR BY ROS CLASSES, FY 86-91; FLATHEAD NATIONAL FOREST ANNUAL MONITORING AND EVALUATION REPORT FY 1991.

RECREATION OPPORTUNITY SPECTRUM (ROS)

Period Of Use	Primitive	Semi-primitive Non-motorized	Semi-primitive Motorized	Rural	Urban	Roaded Natural Appearing (Dispersed)	TOTAL
FY 86	140,900	27,800	28,700	0	2,200	284,900	683,200
FY 87	134,400	26,900	31,600	0	2,500	292,900	696,400
FY 88	125,100	27,400	27,700	0	2,600	257,600	647,500
FY 89	137,800	30,800	34,600	0	2,400	286,100	729,300
FY 90	141,300	32,400	40,000	0	3,700	313,100	795,000
FY 91	199,200	39,500	41,500	0	5,700	336,100	884,900
Avg 86-91	138,120	31,130	34,020	0	3,180	295,120	736,050

There is little monitoring data on use levels for specific types of dispersed recreation activities. However, in 1991, the Flathead National Forest contracted A & A Research to conduct a telephone survey of 205 adults living in the area around the Flathead National Forest. The survey asked respondents whether and how they had used the Forest in the past twelve months. More than 90 percent of the respondents said they had driven the Forest to enjoy the scenery and to look at wildlife and birds. Roughly 60 percent of the respondents had used the Forest to fish, hike, camp, and pick berries. Slightly less than half said they had used the Forest to hunt, gather firewood, recreate on the rivers, or visit the Wilderness areas. Approximately 15 percent of the respondents said they used the Forest for motorcycling and off-road vehicle riding, snowmobiling, and cross-country skiing (A & A Research, 1991).

Dispersed recreation is generally dependent on road access, i.e., roads are used to access destination points serving non-roaded areas and activities. The type of recreational users identified as being most dependent on roaded recreation areas are woodcutters, berrypickers, anglers, snowmobilers, motorcycle, and off-road vehicle users. Those identified as being dependent on road access to reach non-roaded dispersed recreation areas are backpackers, hikers, hunters, anglers, etc.

Environmental Effects

Dispersed Recreation Opportunities (outside of wilderness)

The alternatives present a range of effects on the availability of different types of dispersed recreation opportunities. Achieving the road density and security core area objectives will affect motorized access, high use trails, and the related amounts of recreation opportunity settings and experiences. Roads that are restricted or reclaimed may be considered for conversion to low use non-motorized trails during project-level analysis and decision-making.

The ROS class Primitive, as is the case with wilderness use, will not be affected in any of the alternatives. Additionally, lands in the ROS class rural (RU) would not be affected by the alternatives. Recreation opportunities on the following ROS classes would be affected as follows:

SEMI-PRIMITIVE MOTORIZED (SPM)

Currently about 5% of the forest, or 67,000 acres, is classified as semi-primitive motorized (SPM). Alternatives 1 and 2 would have no effect. Alternative 3-Corrected would affect a large portion of those acres of roaded opportunities. The setting would likely remain the same (roads would likely be inaccessible but the presence of roads would be evident), but the opportunities for motorized access would be reduced during the non-denning season. The opportunity and experience on about 56,000 of those acres would change to the semiprimitive non-motorized ROS class during the non-denning period.

Alternative 4-Corrected would affect a larger portion of those acres of roaded opportunities in the SPM class. This alternative would change the opportunity and experience on about 58,500 acres. As noted in Alternative 3-Corrected, the setting would remain the same, but the opportunity for motorized access would be reduced during the non-denning period. The ROS experience and opportunity would change on those acres to semi-primitive non-motorized during the non-denning season, thus there would be fewer opportunities for motorized recreation, and more opportunities for non-motorized recreation.

Alternative 5 would affect a larger portion of those acres of roaded opportunities in the SPM class. This alternative would change the opportunity and experience on about 61,000 acres during the non-denning season. As noted in Alternative 3-Corrected, the setting would remain the same but the opportunity for motorized access would be reduced during the non-denning period. The ROS experience and opportunity would change on those acres to semi-primitive non-motorized during the non-denning season, which would provide fewer opportunities for motorized recreation and more opportunities for non-motorized recreation.

ROADED NATURAL (RN)

About 2.5% of the forest, or 31,400 acres, are presently in the Roaded Natural class. Alternative 3-Corrected would affect a large portion of those acres of roaded opportunities. The setting would likely remain the same (roads would likely be inaccessible but the presence of roads would be evident), but the opportunity and experience on approximately 16,200 of those acres would change to the semi-primitive nonmotorized ROS class during the non-denning season. This would provide fewer opportunities for non-motorized recreation and more opportunities for non-motorized recreation.

Alternative 4-Corrected would affect a larger portion of those acres of roaded opportunities in the SPM class. This alternative would change the opportunity and experience on about 17,000 acres during the non-denning season. As noted in Alternative 3-Corrected, the setting would remain the same, the opportunity for motorized access will be reduced. The recreation opportunities and experience would change on those acres to the Semiprimitive Nonmotorized class during the non-denning season. This would provide fewer opportunities for motorized recreation and more opportunities for non-motorized recreation during the non-denning season.

Alternative 5 would affect a larger portion of those acres of roaded opportunities in the SPM class. This alternative would change the opportunity and experience on about 18,000 acres during the non-denning season. As noted in Alternative 3-Corrected, the setting would remain the same but the opportunity for motorized access will be reduced. The recreation opportunities and experience would change on those acres to the Semiprimitive Non-motorized class during the non-denning season. This would provide more opportunities for non-motorized recreation during the non-denning season.

ROADED MODIFIED (RM)

About 65% of the non-wilderness portion of the forest, or 846,500 acres, are presently in the Roaded Modified ROS class. Alternative 3-Corrected would affect a large portion of those acres of roaded opportunities during the non-denning season. The setting would likely remain the same (roads would likely be inaccessible but the presence of roads would be evident). The opportunity and experience for about 239,000 of those acres would change to the semiprimitive non-motorized ROS class in the short term (5 years). This would provide more opportunities for non-motorized recreation and fewer opportunities for motorized recreation during the non-denning season.

Alternative 4-Corrected would affect a larger portion of those acres of roaded opportunities in the RM class. This alternative would change the opportunity and experience on about 296,000 acres during the non-denning season. As addressed in Alternative 3-Corrected, the setting would remain the same but the opportunity for motorized access will be reduced. The opportunity and experience for those acres would change to the Semiprimitive

Nonmotorized ROS class. This would provide more opportunities for non-motorized recreation during the non-denning season.

Alternative 5 would affect a larger portion of those acres of roaded opportunities in the RM class. This alternative would change the opportunity and experience on about 365,000 acres during the non-denning season. As addressed in Alternative 3-Corrected, the setting would remain the same but the opportunity for motorized access will be reduced. The opportunity and experience for those acres would change to the Semiprimitive Nonmotorized ROS class. This would provide more opportunities for non-motorized recreation during the non-denning season.

SEMI-PRIMITIVE NON-MOTORIZED (SPNM)

The addition of security core areas for Alternatives 3-Corrected, 4-Corrected, and 5 move a significant number of acres into the SPNM class for the non-denning season. This would provide recreationists with significantly more recreation opportunities in non-motorized settings.

The primitive setting typically applies to designated wilderness, which makes up roughly half of the Flathead National Forest. The 1986 Forest Plan EIS (LRMP EIS, pg. III-12) included a table that showed the breakdown of dispersed recreation settings for the non-wilderness portion of the forest, as follows:

Primitive	5%
Semiprimitive nonmotorized	15%
Semiprimitive motorized	9%
Roaded natural	71%
Rural	0%

Since the 1986 Forest Plan was completed, the "roaded modified" class was added and the maps delineating ROS classes were updated. For comparison purposes, the breakdown by recreation setting (non-wilderness) for each alternative is as follows:

Alternatives	1 & 2	3-Corrected	4-Corrected	5
Primitive	1%	.5	.5	.5
Semiprimitive nonmotorized	26%	50	55	60
Semiprimitive motorized	5%	1	1	.5
Roaded natural	2%	1	1	1
Roaded modified	65%	47	42	37
Rural	1%	.5	.5	.5

Motorized Recreation Opportunities

For alternatives 1 and 2, about 945,000 acres, or 73% of the non-wilderness portion of the forest would be in ROS classes where there are opportunities for motorized access (semi-primitive motorized, roaded natural, roaded modified, and rural). For Alternative 3-Corrected, approximately 633,000 acres, or 49% of the non-wilderness portion of the forest would provide opportunities for motorized recreation. This would result in less dispersion of some activities closely associated with road access, such as berry picking and hunting near

roads. Conversely, more opportunities would be available to those that prefer more solitude in their recreation pursuits. For Alternative 4-Corrected, approximately 573,000 acres, or 44%, of the non-wilderness portion of the forest would provide opportunities for motorized recreation. For Alternative 5, roughly 508,000 acres, or 39%, of the non-wilderness portion of the forest would provide opportunities for motorized recreation. Since Alternatives 3-Corrected, 4-Corrected, and 5 decrease the supply of areas easily accessible by road, the areas remaining accessible may be more heavily used.

Developed Recreation Opportunities

There would be no direct effects on developed recreation opportunities (campgrounds, special use areas) related to this proposed amendment.

I. TRANSPORTATION

Affected Environment

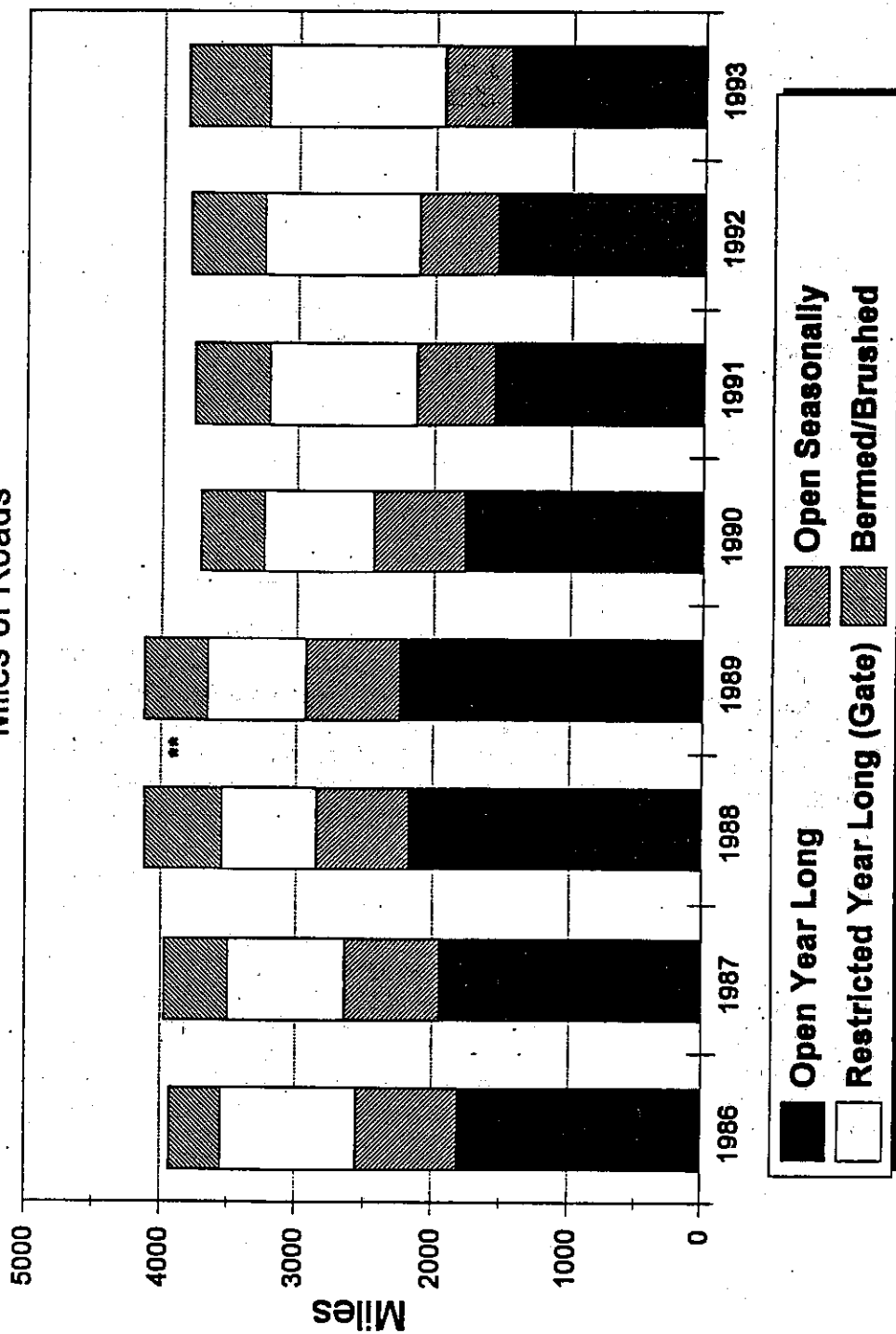
The transportation system (roads) was described in the Environmental Impact Statement (EIS) for the Flathead National Forest Land and Resource Management Plan (LRMP III-39).

The Environmental Impact Statement accompanying the Forest Plan describes the transportation system existing in 1986. At that time, there were roughly 3900 total miles of roads on the Forest inventory. Several changes have occurred in the road inventory since then. About 400 miles of road have been physically blocked, revegetated, and removed from the system inventory. In addition, 260 miles of roads have been constructed since 1986. Today there are about 3800 miles of system roads in the inventory of the Flathead National Forest.

The management status of Forest roads has also changed over the last several years. In 1986, approximately 2500 miles of road were open to general use either seasonally or year-long. This number gradually increased until 1989. Over the last 5 years, several hundred miles of road have been restricted from general use, either seasonally or year-long. Today, about 1500 miles of road are open year-long for general use. Another 450 miles are open seasonally. Roaded access, including year-long and seasonal access, currently is roughly the same as in the early 1970's (Figure 22). During the period 1990 to 1993, the Flathead National Forest closed seven miles of road for every mile of new construction (512 miles closed, 68 miles constructed).

Flathead National Forest Miles of Roads*

Figure 22. FNF Miles of Roads



* Source: RMS Data Base - Inventory of roads includes roads that were developed and those that evolved and were later added to the inventory.

** 420 Miles of roads were obliterated and removed from the forest inventory in 1990.

Environmental Effects

The following describes and compares the estimated miles of roads open, restricted, and reclaimed (See Appendix D for definitions) for each of the alternatives, followed by a general discussion of relative costs. The costs associated with various methods are displayed in order to provide a general understanding only. Decisions regarding changes in road status, method of closure, and projections of actual costs will be made during site-specific analyses.

Several changes were made in this section in response to changes to the alternatives and in response to comments received since the draft was issued; most notably in the estimates of miles of roads that need to be restricted or reclaimed and in the discussion of costs of reclamation and maintenance.

Transportation System

The estimated potential number of miles of road that would need to be constructed for each of the alternatives corresponds to the maximum potential timber harvests projected in this amendment (ASQ). The actual miles needed will depend on the choice of yarding system, site-specific analysis, and budgets. The miles of roads that would need to be restricted or reclaimed are rough estimates only. Detailed information regarding estimates of road miles is in Project Record, Exhibit L-34.

Alternative 1 - The ASQ for Alternative 1 is 100 million board feet of timber per year. The 1986 Forest Plan projected 68 miles of road per year would need to be constructed to achieve projected timber harvest. Over five years (1995-1999) that would amount to roughly 340 miles of new road construction. Approximately 185 miles of local roads would be restricted to meet the open road density standards of the existing Forest Plan.

Alternative 2 - The ASQ for Alternative 2 is 64 million board feet per year. This level of timber harvest reflects the modeling of current Forest Plan standards. To achieve this maximum potential of timber harvest, approximately 44 miles of new roads would need to be constructed per year; 220 miles over 5 years. Approximately 185 miles of local roads would be restricted to meet the open road density standards of the existing Forest Plan.

Alternative 3-Corrected - The ASQ for Alternative 3-Corrected is 54 million board feet per year. This level of timber harvesting reflects the modeling of current forest plan standards and the addition of new objectives for grizzly bear habitat. This level of timber harvest would require approximately 13 miles of new roads per year; roughly 65 miles over 5 years. These roads would need to be constructed primarily in areas outside of MS-1 and MS-2 grizzly bear habitat.

To meet the standards and short-term objectives in MS-1 and MS-2 areas, approximately 350 miles of open road and 125 miles of currently restricted roads would need to be reclaimed in the short term (5 years). To meet long term (10 years) standards and objectives, another 175 miles of already-restricted roads would need to be reclaimed.

The long-term objectives of this alternative would require restricting or reclaiming many of the existing local roads in the recovery area, but would not require restricting major collector or arterial roads, such as the Hungry Horse Reservoir roads (FR #895 or #38). Approximately 1600 miles of road would remain open for motorized use on the Forest.

Alternative 4-Corrected - The ASQ for Alternative 4-Corrected, is 52 million board feet per year. This level of timber harvest reflects modeling of current forest plan standards and the addition of new objectives for grizzly bear habitat. This level of timber harvest would require approximately 13 miles of new roads per year; roughly 65 miles over 5 years. These roads would be constructed primarily in areas outside of MS-1 and MS-2 grizzly bear habitat.

To meet standards and objectives, roughly 350 miles of open road and 300 miles of currently restricted roads would be reclaimed within 5 years. This alternative would require restricting or reclaiming many of the existing local roads in the recovery area, but would not require restricting major collector or arterial roads, such as the Hungry Horse Reservoir roads (FR #895 or #38). This alternative would leave approximately 1600 miles of roads open forest-wide.

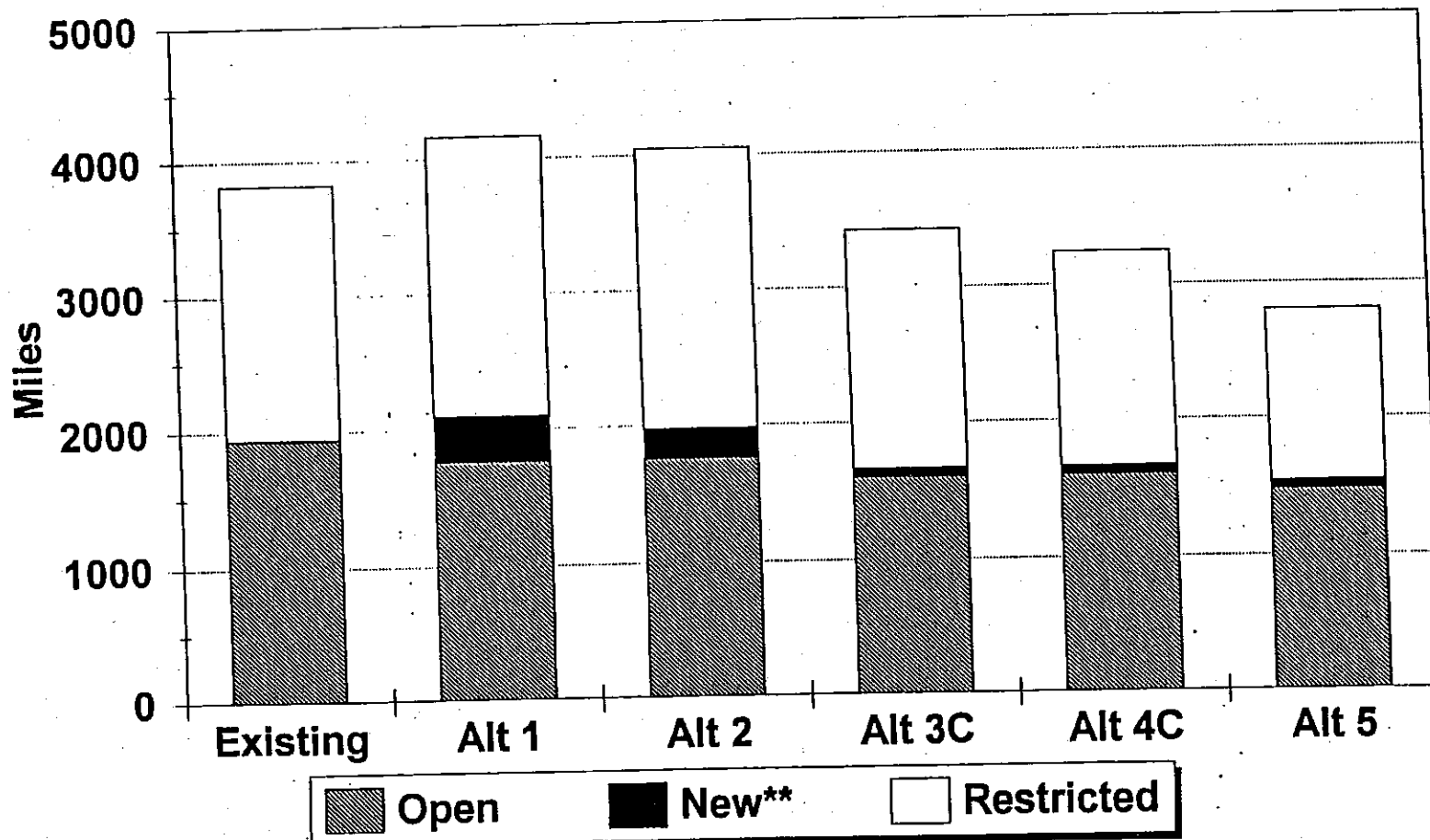
Alternative 5 - The ASQ for Alternative 5 is 46 million board feet per year. This level of timber harvest reflects modeling of current forest plan standards and the addition of new objectives for grizzly bear habitat, with added emphasis on increased security core area. This level of timber harvest would require approximately 13 miles of new roads per year; roughly 65 miles over 5 years. These roads would be constructed primarily in areas outside of MS-1 and MS-2 grizzly bear habitat.

The standards and objectives for Alternative 5 provide more security core area and permit less open motorized access than the thresholds in the Lost Silver Biological Opinion, thus the effects in terms of miles of roads restricted and reclaimed are greater. Supporting information is in Project Record, Exhibit L-32. To meet the standards and objectives, roughly 475 miles of open road and approximately 625 miles of currently restricted roads would be reclaimed within 5 years; this would require restricting or reclaiming nearly all existing local roads, and restricting many collector roads. Approximately 1500 miles of roads would remain open for motorized use across the forest.

For comparison, see Figure 23 "Projected Miles of Roads."

Figure 23. Projected Miles of Roads

Projected Miles of Roads* 1995-1999



* Source: RMS DataBase plus projections by Alternative

** New Roads May Be Temporary

Road Reclamation, and Restriction Costs

Various methods of restricting and reclaiming roads will require additional Forest expenditures. The following list, provides a range of methods available for implementation.

Install gates to restrict access.

Create berms without additional road reclamation.

Create berms, remove culverts, install water bars, seed, etc.

Recontour the first 1000 feet of the road, remove culverts, install water bars, seed, etc.

Recontour entire road, remove culverts, install water bars, seed, etc.

The following list provides cost estimates for various components of available road restriction methods. Actual costs will vary depending on individual site conditions.

Construct berm — \$50 each

Remove existing gate, if necessary — \$500 each

Install gate — \$800 each

Remove culvert — \$200 each

Construct waterbar — \$50 each

Seed roadway — \$275 per acre

Seed and mulch bare cutslopes — \$1200 to \$2000 per acre (as needed)

Reclaim/Recontour — \$1000 to \$5000 per mile

Mobilization — 7% of the contract cost for projects between \$100,000 and \$500,000.

These estimated costs are based on the Northern Region Cost Estimating Guide, Jan. 1994, pages 32, 37, 44, 74, 83, 93, and 104.

Some component costs are also based on known bid prices for similar projects on the Flathead National Forest.

A comparison of the costs of restricting and reclaiming roads is discussed below in relative terms. The actual costs will be determined by the amount and mix of these types of actions required by a site-specific analysis, and the funding available.

Alternative 1 and 2 - Approximately 185 mile of road would be restricted to meet existing road density standards. New roads required to support timber harvest would be primarily low-standard, single-resource facilities, designed and constructed to be restricted or reclaimed after use.

Alternative 3-Corrected - This alternatives would result in increased costs compared with Alternatives 1 or 2. Gates and berms, along with some road reclamation could be employed to move toward meeting short-term standards and objectives. Additional costs will be incurred to meet long-term objectives as additional roads would be reclaimed.

Alternative 4-Corrected - This alternative would require greater costs to meet the more restrictive short-term objectives. Long-term costs are the same as those for Alternative

3-Corrected. However, there would be a shorter time frame to implement, more miles of road to be restricted or reclaimed. Additional road reclamation would be required within the security core areas than that of Alternative 3-Corrected.

Alternative 5 - Of the five alternatives, this alternative would require the greatest expenditures in both the short-term and long-term. This alternative requires the greatest amount of road restriction and reclamation.

Road Maintenance Costs

The existing transportation system on the Flathead National Forest provides access for the management of forest resources as well as public access for recreation activities. Maintenance of this transportation system is necessary to retain its serviceability and to protect forest resources.

In the past three years, on-the-ground road maintenance costs for the entire transportation system have averaged around \$150,000 dollars per year. These costs do not include overhead costs such as planning, programming, and personnel salaries. Overhead costs are not considered in this analysis as they are considered necessary to maintain an effective engineering organization capable of managing the forest transportation system, including road construction, maintenance, and any reclamation projects resulting from implementation of one of the alternatives.

The scheduling and cost of road maintenance depends on a number of factors, including the construction standard, amount of use, and/or the method used to restrict the road. Miles of road displayed below represent current figures.

Maintenance Levels 3, 4, & 5 - (1245 miles) These forest roads provide major recreation access and/or serve as major timber collector routes and are generally constructed to a high design-standard due to the high amount and types of use. These roads require relatively constant and costly maintenance to maintain safe driving conditions. Maintenance activities on these roads include brushing, grading, gravel replacement, minor bridge repair, and in some cases dust abatement. In the past three years, 80% to 95% of road maintenance expenditures on the Forest were used on these roads. Averaged across the Forest, annual on-the-ground expenditures have been around \$100 per mile. (Project Record, Exhibit K-3.7).

Maintenance Level 2 - (827 miles) are generally low design-standard roads constructed to provide limited access to local areas. Traffic levels on these roads is generally less than 15 vehicles per day, usually consisting of administrative use, permitted use or dispersed recreation. Approximately one half of these roads on the Forest are closed to public access. Maintenance activities includes occasional brushing to retain drive-ability and cleaning of culverts and ditches. In the past three years, less than 10% of road maintenance expenditures were used on these roads. Averaged across the forest, annual on-the-ground expenditures are around \$6.00 per mile.

Maintenance Level 1 - (1752 miles) are generally constructed to provide access to an area for the purpose of managing timber resources. These roads are constructed to minimum standards necessary and are designed to be re-used for future timber management in the area. Re-entry is generally considered to occur on a 10 to 30 year basis. Between re-entries, these roads are closed to public use, although some limited administrative use may occur to conduct resource surveys or for activities such as planting or thinning of regenerated

areas. Maintenance of these roads between timber entries is minimal, consisting of occasional cleaning or repairing of ditches and culverts. These roads are reconstructed for use when used for timber removal. In the past three years, less than 10% of road maintenance expenditures were used on these roads. Averaged across the forest, annual on-the-ground expenditures are around \$6.00 per mile.

Reclaimed Roads - A number of roads on the Forest have been reclaimed after a determination has been made that they are not necessary to access future timber management activities or that such activities will only occur in the distant future. Following reclamation no maintenance activities are necessary and costs are not expected.

Each of the action alternatives proposes varying levels of road restrictions and/or road reclamation. These changes in road status will result in only a minor reduction in the amount and costs of annual road maintenance on the Forest.

The majority of road maintenance expenditures on the Forest are incurred on Maintenance Level 3, 4 and 5 roads. None of the first four alternatives would result in significant restriction or reclamation of these roads. Therefore, a reduction in maintenance costs for these roads is not expected. Alternative 5 will result in restricting access on a small number of higher standard roads, resulting in a small reduction in maintenance costs.

Roads proposed for reclamation are currently Maintenance Level 1 and 2 roads. Following reclamation, no road maintenance costs are expected. However, due to the low maintenance costs associated with maintenance level 1 and 2 roads, Forest-wide savings are not expected to exceed \$6,000 annually, through implementation of any alternative.

The majority of roads proposed for restriction are currently Maintenance Level 2 roads. Restriction of these roads may result in the reduction of some minor sources of maintenance needs, such as occasional brushing, however the more costly activities of culvert and ditch maintenance will continue to be required. No significant reduction in maintenance costs is expected as a result of implementing road restrictions.

Other Effects

Each method of reducing road access to the forest results in different environmental, social, and economic trade-offs. For example, complete recontouring of a road may provide excellent security for wildlife, but can be very expensive and reduce recreational access to a popular hiking trail or berry picking area. Installation of a gate is inexpensive (relative to recontouring), and allows people easy access to the forest by foot, but it may not provide adequate security for wildlife because gated roads are sometimes used by off-road motorized vehicles. Determinations of which method of reducing road access is the most appropriate will be made through site-specific analysis and decision-making.

J. SPECIFICALLY REQUIRED DISCLOSURES

Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations. (Executive Order 12898).

There are no adverse effects on human health and environmental conditions on minority or low-income communities. Details on environmental effects including social and economic effects can be seen in previous sections of Chapter III. This finding will be repeated for site specific implementation.

Effects of Alternatives on Prime Farm Land, Rangeland, and Forest Land. (Secretary of Agriculture Memorandum 1827 for prime land).

The area affected by the proposed action does not contain any prime farm lands or rangelands. "Prime" forest land does not apply to lands within the National Forest system. This finding will be re-determined in the NEPA document disclosing eventual implementation.

Effects on Flood Plains and Wetlands. (Executive Orders 11988 and 11990).

There will be no adverse effects to wetlands and flood plains from the proposed action and its alternatives. Effects of the proposed action and its alternatives can be seen in previous sections of Chapter III. This determination will be re-assessed when site specific implementation proposals are made.

Energy Requirements of Alternatives.

There are no unusual energy requirements for amending the Forest Plan. This finding will be redetermined during NEPA analysis for site specific implementation.

Compliance with Section 504 of the Vocation Rehabilitation Act and the Americans with Disabilities Act (ADA).

This amendment of the Forest Plan will comply with all provisions of the above mentioned statutes. Eventual implementation of the Forest Plan amendment will require that all permittees, contractors etc. comply with all applicable provisions of Section 504 and the ADA.

Effects of Alternatives on Minorities and Women.

There will be no adverse effects on minorities and women as a result of the proposed action and alternatives to amend the Forest Plan. This finding will be redetermined during NEPA analysis for site specific implementation.

Effects of Alternatives on Threatened and Endangered Species and Critical Habitat.

The amendment of the Forest Plan as proposed in this document will not have an adverse impact to any federally listed threatened and/or endangered species or critical habitat, as defined in the Endangered Species Act. A detailed description of the effects of the proposed action and its alternatives can be found in previous sections of this chapter. This finding will be redetermined during NEPA analysis for site specific implementation.

Equal Employment Opportunity.

The United States Department of Agriculture (USDA) Forest Service is a diverse organization committed to equal opportunity in employment and program delivery. USDA prohibits discrimination on the basis of race, color, national origin, sex, religion, age, disability, political affiliation and familial status. Persons believing they have been discriminated against should contact the Secretary, U.S. Department of Agriculture, Washington, D.C. 20250, or call 202-720-7327 (voice), or 202-720-1127 (TDD).

CHAPTER IV – LIST OF PREPARERS

The following is a list of individuals who were primarily responsible for preparing this Amended Environmental Assessment. The names and qualifications (expertise, experience, and professional disciplines) of each person are listed (40 CFR 1502.17).

INTERDISCIPLINARY TEAM:

Jim Morrison - Planning Staff Officer and Interdisciplinary Team Leader

B.S. Wildlife Biology, J.D. Environmental Law. Eight years experience with the Forest Service as a planner and environmental policy analyst at Northern Regional Office, the Pacific Northwest Regional Office, and the Washington Office prior to coming to the Flathead National Forest.

Dennis McCarthy - Operations Research Analyst and Assistant Team Leader

B.S. Forestry, M.S. Forestry, M.B.A. - Concentration: Management Information Systems. Ten years experience with the Forest Service as a programmer analyst, systems analyst, group leader, and operations research analyst on two National Forests and the Washington Office.

Nancy Warren - Forest Wildlife Biologist

B.S. Wildlife Biology, M.S. Wildlife Resources. Employed by the Forest Service as a Wildlife Biologist since 1979, with assignments on the Shasta-Trinity and Okanogan National Forests, the Pacific Northwest Regional Office, and the Northern Regional Office prior to coming to the Flathead National Forest.

Doug Berglund - Planning Forester

B.S. Forestry, graduate study - Forest Ecology and Silviculture. Twenty-one years experience with the Forest Service as forester, silviculturist, interdisciplinary team leader and planning forester.

Jim Dry - Transportation Engineer

B.S. Civil Engineering, Registered Civil Engineer, North Carolina. Employed for six years by two state departments of transportation working in preliminary highway design and planning. Employed for seventeen years by the USFS working on two forests in separate regions with most time spent on planning, and road and recreation site location and design.

Carolyn Snyder - Computer Assistant

Nineteen years experience with the Forest Service. Ten years as a member of the Forest Planning Interdisciplinary Team with the main responsibility as the Planning Geographic Information Manager.

Pam Martin - Planning Assistant

Nineteen years experience with the Forest Service on the Kootenai and Flathead National Forests. Twelve years experience in the Business Administration area including purchasing, contracting, finances, resources, personnel, and a one year detail working for the district silviculturist. Six years experience working as a member of the Flathead National Forest Planning Interdisciplinary Team.

Paul Beckley - Forest Economist

B.S. Economics, M.F. Forestry, Phd (Abd) Natural Resource Economics. Certified Public Accountant. Twenty three years with the Forest Service in Timber Management, Silviculture, Planning, and Economics.

The following list of individuals assisted in making a substantial contribution to the preparation of this Amended Environmental Assessment.

Carol Purchase - Hydrologist

Kathy Ake - Biological Technician

Don Halr - Forest Fish Biologist

Greg Warren - Recreation and Wilderness Staff Officer

Ruth Roberson - Resource Information Manager

Dave Ondov - Resource Information Manager

Don Krogstad - Cartographic Technician

Velia Dlemert - Cartographic Technician

Dick Davies - Resource Information Manager

Pat Thomas - Forest Landscape Architect

Earl Sutton - Forest NEPA/Appeals Coordinator

Jody Sutton - Information Receptionist

Vicki Bodfish - Cartographic Technician

Lowell Nelson - Duplicating Equipment Operator

John Reid - Mail Clerk

Michelle Draggoo - Writer/Editor

Jerry Scott - Assistant Transportation Planner

Jean Helps - Cartographic Technician

Tom Wittinger - Wildlife Staff Officer

Kris Smith - Computer Specialist

Content Analysis Cadre - Myra Black, Lois Sturgis, Gail Sullivan, Geoff Vevera, Bill Crane, Don Hauth, Jane Packer, and Dennis Jones

CHAPTER V - PUBLIC COMMENTS AND RESPONSES

The public comment period on the Environmental Assessment (EA) for proposed Amendment 19 began on November 21, 1994, and closed on January 4, 1995. A 45-day comment period was provided, instead of the usual 30-day period for an EA. This provided the extra mailing and response time necessary during the busy holiday season. Agencies, officials, and members of the public were invited to comment on the EA. Representatives of the Flathead National Forest participated in meetings with various local organizations (Project Record, Exhibit #C-31). An EA or a Summary was mailed to all individuals or organizations on the Flathead National Forest's mailing list and to those who responded during the scoping period. News releases citing the availability of the EA and inviting public comments were sent to the media in the Kalispell and Missoula areas.

During this comment period, a total of 1,908 comment letters were received. The types of responses are displayed in the following:

Type of Response	# of Letters
Individual Letters	469
Personal Visits	4
Phone Calls	9
Form letters	1409
E Mail	17

A breakdown of those submitting comments follows:

Business	23
County Government	2
Elected Official	1
Federal Agency	2
Group/Organization	61
Tribal Government	1
State Agencies	1
Town/City Government	1
University	1
Individuals	1815

During the formal comment period, various non-governmental organizations sent out their own informational mailings regarding the proposed amendment. Recipients of these mailings were asked to submit comments, either by a pre-established postcard, form letter, or by individual letters. The Flathead National Forest received 1409 postcards and form letters that reflected the information and issues contained in the informational mailings. Over 80 percent of these form letters urged the Forest Service to consider more access restrictions than the preferred alternative in the EA. The remaining form letters asked the Forest Service to provide for greater motorized access and a higher allowable sale quantity than the preferred alternative in the EA.

The Council on Environmental Quality regulations for implementing the procedural provisions of the National Environmental Policy Act (40 CFR Parts 1500-1508) require that comments

"shall be as specific as possible and may address either the adequacy of the statement or the merits of the alternatives discussed or both," (40 CFR 1503.3a). Comments and responses in the following sections of Chapter V are based on specific comments which proposed to: (1) modify alternatives including the proposed action, (2) develop and evaluate alternatives not previously given serious consideration, (3) supplement, improve, or modify the analysis, and (4) make factual corrections (40 CFR 1503.4).

Many respondents offered their opinions and values regarding the merits of the decision, but did not comment directly on the adequacy of the analysis or the range of alternatives. These comments were considered in the decisionmaking process, and are included in the content analysis summary (Project Record, Exhibit I-12).

Comments addressing the adequacy of the effects analysis, range of alternatives, or legal or procedural issues were forwarded to the interdisciplinary team for review. The interdisciplinary team grouped similar comments and prepared statements that reflect the concerns expressed. The following section contains those statements and responses to them.

GRIZZLY BEAR

Definitions Used for Access Management

Comment(s): Many respondents expressed the opinion that the Interagency Grizzly Bear Committee (IGBC) Task Force Report was not based on sound biological information, was not written by biologists, and that we should instead use definitions from the South Fork Study or from the Lost Silver Biological Opinion. It was unclear to some whether roads with seasonal restrictions would be included in open motorized access density calculations and whether brief (as little as 1 day) closures could be used to avoid having to meet the road density objectives. Some respondents felt it was incorrect to assume that bermed roads would not receive motorized use. There was also a concern that "the findings of the South Fork Study clearly supported the need to remove roads, not merely close them, in order to sustain viable grizzly habitat", and that the proposed amendment did not appear to require removing any roads.

Response: The IGBC Task Force Report (July 1994) is based on a recent and extensive review of biological information by experts in this field. The references cited in the report include the 1993 South Fork Study Progress Report. The U.S. Fish and Wildlife Service administratively amended the Lost Silver Biological Opinion (Sept. 3, 1993, as amended Jan. 11, 1994) when they issued the Biological Opinion on Amendment 19 (Jan. 6, 1995). The Biological Opinion on Amendment 19 endorses the IGBC Task Force Report and requires that we use the three parameters (total motorized access, open motorized access, and security core area) recommended by the IGBC Task Force Report.

The IGBC Task Force was co-chaired by Chris Servheen, National Grizzly Bear Recovery Coordinator for the U.S. Fish and Wildlife Service, and Tom Puchlerz, National Grizzly Bear Habitat Coordinator for the USDA Forest Service. Task Force members were appointed with consideration given to their credentials as biologists and their representation of affected agencies. A roster of the IGBC Task Force is available in the Project Record.

Open motorized access density objectives must be met after including roads and motorized trails that are open yearlong or seasonally; a 1-day closure clearly would not exempt a road from consideration. We recognized that some low level of motorized use may occur on some bermed roads; a judgement call was made on each road in the database to place it into the most appropriate category before calculating densities. Total motorized access density objectives must be met after including open and restricted motorized roads and trails, except for those that have been reclaimed.

In response to comments that the definitions of restricted and reclaimed roads and core area did not adequately express our intent, additional text to clarify definitions, calculation methods, and management intent relative to motorized access densities has been included as Appendix D to the Amended EA, and under Alternatives 3-Corrected, 4-Corrected, and 5 would be incorporated into the Forest Plan as Unbound Appendix TT.

Objectives for Access Management

Comment(s): The analysis of effects of motorized access considered two scenarios: 1) all lands and all access routes within the recovery area, and 2) lands and access routes on National Forest land (Management Situation 1 and Management Situation 2 only) and on State and corporate lands, except for state and federal highways and county roads. Proposed objectives and standards under the action alternatives would use the first scenario to calculate security core area, while the second scenario would be used to calculate total and open motorized access density. Some respondents felt this was unclear in the EA, and recommended that Forest Plan objectives and standards for total and open motorized access density apply to all lands and access routes. Another comment was expressed that "short-term objectives in the preferred alternative are arbitrary and not biologically-based". A common recommendation was to "adopt legally enforceable standards - not unenforceable objectives."

Response: Both scenarios were analyzed in order to fully describe effects of roads and trails within the recovery zone. The Lost Silver Biological Opinion first established the criteria for excluding certain lands and roads from calculation of road density using the moving window method. Under Alternatives 3-Corrected, 4-Corrected, and 5, objectives are intended to apply to all lands and roads to calculate security core area, and to apply to the second set of lands and roads when calculating total and open motorized access density, which is consistent with the established methods. The reason for the second scenario is to identify those access routes and lands over which the Forest Service has decision and management authority.

As explained in Chapter II of the EA, the short-term objectives under Alternative 3-Corrected are based on current averages, as a means of addressing first the BMU Subunits that currently have the highest densities, and greatest biological impact, from road and trail access.

The perception that standards are legally enforceable while objectives are entirely discretionary is incorrect. The Forest Plan is implemented by conducting actions that meet established goals, objectives, and standards. In response to this comment, we have amended Forest-wide General Standard No. 1 to make it clear that the objectives and standards of Amendment 19 are not discretionary (see Appendix A,

page 4 of the Amended EA). Under Alternatives 3-Corrected, 4-Corrected, and 5, the Forest Plan monitoring plan would be amended to monitor progress towards the objectives for open motorized access, total motorized access, and percent core area. As required by the Biological Opinion, progress towards achieving these objectives must be reported annually to the U.S. Fish and Wildlife Service as well.

Grizzly Bear Habitat Management In Relationship to Logging

Comment(s): Respondents asserted that timber harvest does not have a negative impact on grizzly bears, and several referenced a statement by Chris Servheen indicating that timber harvest could effectively be used to enhance grizzly bear habitat. One cited personal experience in observing bears near logging activity. One respondent thought that Amendment 19 "implies that grizzly bears only exist on suitable timber acres and management of their habitat will only occur on these acres."

Response: The Environmental Assessment (page 34) acknowledged that forest management practices that provide a diversity of age classes and enhance production of forage such as huckleberries, can positively affect the quality of grizzly bear habitat. However, the development of human access that often accompanies logging increases disturbance and risk of human-caused mortality of grizzly bears and other wildlife.

A number of standards and guidelines that promote positive effects and reduce adverse effects of timber management are already included in the Forest Plan. Alternatives 3-Corrected, 4-Corrected, and 5 would add objectives and standards to provide a greater degree of habitat security, particularly for adult females. Grizzly bears do not occur only on lands suited for timber production, as the map depicting Management Situations (Appendix A, page 2) clearly shows. Lands within the recovery area designated as Management Situations 1 and 2 must be managed in a way that contributes to the survival and recovery of the grizzly bear population.

Grizzly Bear Habitat Management In Relationship to Roads

Comment(s): Some respondents were concerned that "scientific data showing that bears avoid even closed roads and adjacent habitat" was not being considered, and urged reduction of the number of miles of roads. Others "doubt that a bear would really appreciate the difference and may actually profit by using the roads as traveling and browsing corridors". Another concern was that "While research has suggested some impact of roads on habitat effectiveness, there has been absolutely no research on trails where motorized use occurs."

Response: Scientific information about grizzly bear response to roads was considered throughout the analysis process. Objectives and standards that propose to limit total motorized access (which includes all roads except those that have been reclaimed) are considered under Alternatives 3-Corrected, 4-Corrected, and 5 in the Environmental Assessment. Effects of access on grizzly bears is thoroughly discussed in Chapter III of the Environmental Assessment, in the Biological Assessment for threatened and endangered species, and in the U.S. Fish and Wildlife Service's Biological Opinion of January 6, 1995.

It is true that research into the specific effects of motorized trails on grizzly bears is inadequate. Relying on the advice of scientists who have conducted research on grizzly bears, the IGBC Task Force concluded that motorized trails would have effects similar to those of roads, and recommended that all motorized access be analyzed and managed together.

Factors Contributing to Human-caused Mortality of Grizzly Bears

Comment(s): Some respondents disagreed that human-caused mortalities were related to open roads or lack of security, and recommended that we "tackle the real source of bear mortality which is poaching, food storage, hunting, train accidents, and poor attitudes by the public." It was pointed out that a significant number of human-caused mortalities were in the backcountry and in designated Wilderness. Public education was recommended as a reasonable means of reducing mortality.

Response: These comments are based on information presented in the Environmental Assessment (page 41). The EA (page 40) points out that motorized access is only one factor in reducing risk of mortality. Existing Forest Plan standards and guidelines (Forest Plan pages 11-28 through 33) provide direction regarding public information and education, proper handling and storage of human food and other attractants, and other measures to avoid or resolve human/bear conflicts. A variety of programs are ongoing to implement this direction, including the establishment of the agreement for management of the Burlington Northern Environmental Stewardship Area, employment of a grizzly bear management specialist for the Northern Continental Divide Ecosystem (NCDE), and development and distribution of various educational materials. These efforts will continue irrespective of the decision on Forest Plan Amendment 19. These ongoing programs were considered and factored into the determinations presented in the Biological Assessment. In the Biological Opinion on proposed Amendment 19, the U.S. Fish and Wildlife Service acknowledged the importance of public support for recovery efforts, and included in a requirement that a comprehensive public information program be developed and implemented.

Scientific Uncertainty

Comment(s): A concern was voiced that "we should not make sweeping forest plan decisions based upon such incomplete studies as the South Fork studies." Others considered the South Fork study to be "questionable because the study does not have a control area to compare against." Some commented that the grizzly bear population is now at recovery levels, which was achieved during the same period that many roads were being built. Another concern is that "no one knows how many grizzlies are out there, no one seems to be able to establish how many there should be..." It was recommended that we "implement the 5-year program of Alternative 3 and... [develop long-term objectives] through the process of Forest Plan revision.... based on the best scientific information available at that time."

Response: The South Fork Grizzly Bear Project, initiated in 1988, was designed as a 10-year study. The primary objective is to develop population status and trend monitoring techniques, and secondarily to evaluate habitat selection and the effects of roads on habitat use by grizzly bears. Population data are to be collected throughout the 10-year duration of the study, while the habitat research was

conducted through the first five years of the project. The habitat research is complete and final publications are in preparation. Results of the South Fork Grizzly Bear Project indicate relationships between roads and habitat use that have also been found in other grizzly bear research projects. The pertinent literature is reviewed in the Biological Assessment and in the U.S. Fish and Wildlife Service's Biological Opinion.

The population status and trend research is not complete, but a recent initial estimate suggests that the population segment within the South Fork study area is declining. The Environmental Assessment (page 4) makes it clear that the changes proposed under Alternatives 3-Corrected, 4-Corrected, and 5 would be in effect during the interim period until the Forest Plan is revised. We anticipate revising the Forest Plan within 3-5 years. The Biological Opinion by the U.S. Fish and Wildlife Service requires that both long-term and short-term objectives be set as a means of limiting incidental taking. The Biological Opinion on Amendment 19 also provides for reinitiating consultation if and when new information emerges.

Roads, Trails and Non-motorized Use In Security Core Areas

Comment(s): Some respondents believed it "appropriate to restrict road development and motorized access in some areas of the Flathead National Forest to benefit bears and other species adversely affected by human activities". Others felt that "this amendment goes way overboard in creating grizzly bear security areas by closing roads and restricting road access", and one respondent opined that establishing "security core in which no human activity would be allowed" would "promise a colossal failure of forest management." A concern was expressed that the objectives and standards would allow road construction within core areas and in roadless areas. Many respondents recommended that no roads or trails be permitted within a core area, and were concerned that berming roads would not be adequate to prevent motorized use from occurring. A concern was also voiced that areas with total (restricted) road density greater than 2 miles per square mile could fall within a core area, and would be used significantly less than expected by grizzly bears. Some respondents asked that we "respect the South Fork Study data showing that even non-motorized use of closed roads by humans harm bears." The criterion of more than one party per week to define motorized use of trails was considered arbitrary by some respondents.

Response: Road construction, unless it could be confined to the non-denning period, would not occur in identified security core areas during the 10-year effective period. Restricted roads can occur within a core area, but these roads may not receive motorized use during the non-denning period. In response to the high level of concern about motorized access in security core areas, we will modified Alternatives 3-Corrected, 4-Corrected, and 5 to require legal closure to motorized use in core areas. We have also clarified in Appendix D of the Amended EA that the number of restricted roads within core areas should be minimized, with reclamation being the preferred treatment. The definition of security core area excludes routes with high-intensity non-motorized use.

Information on kinds and amount of use on trails is very limited; the criterion of at least one trip per week met the intent of the IGBC Task Force (refer to correspondence in Project Record) and gave us a means of classifying trails that was feasible within the time frame available. A monitoring item will be added to the Forest Plan under

Alternatives 3-Corrected, 4-Corrected, and 5 to undertake collection of information about types and amounts of trail use.

Percent of Core Area and Buffer Width

Comment(s): Many respondents recommended that the minimum amount of core area be increased from 55% to 68% by BMU Subunit to avoid habituation and human-caused mortality. Some respondents recommended a minimum higher than 68%. Some suggested that we provide 46% core area, using the definitions found in the Lost Silver Biological Opinion. It was suggested that we use a 0.5-mile buffer width in the definition of security core area, rather than the 0.3-mile buffer width.

Response: Alternative 3-Corrected establishes a short-term objective of 60%, and a long-term objective of 68%, which is consistent with the Biological Opinion and satisfies the public comments in favor of providing more than 55% security core area. Alternative 4-Corrected does not provide for a phase-in period, but sets the objective at 68% within 5 years. To respond to comments requesting a percentage of security core area that exceeds the conditions found in the composite female home range, we developed Alternative 5, which establishes an objective of 80% security core area.

The Amended EA continues to use the definitions approved by the Interagency Grizzly Bear Committee, which allow the presence of some restricted roads within the security core area. However, it was always our intent that access routes would be restricted using appropriate methods to ensure that a security core area is effective. Appendix D was added to the EA to better express the principles and intent related to road reclamation, which was misunderstood by many respondents.

The 0.3-mile buffer width is the definition recommended in the IGBC Task Force Report. In response to these comments, we analyzed conditions within the composite home range using various combinations of definitions. If the IGBC Task Force definitions are used except that the buffer distance is changed to 0.5-mile width, the composite home range value would be 56%, rather than 68%. As explained in the Biological Assessment (page 15), the Task Force definition was based on distance of observed avoidance behavior by grizzly bears reported in several studies. The South Fork Study used the 0.5-mile distance only as a convenience, and not based on analysis of bear response distance. Therefore we did not create a new alternative with an objective based on the 0.5-mile width.

Core Area Size and Seasonal Distribution

Comment(s): Some respondents questioned whether a minimum size of 2,500 acres would be sufficient. Some cited an estimate for the Yellowstone ecosystem of 5,400 acres, while others proposed a minimum size of 7,000 acres. It was suggested that "Amendment 19 should require distribution of sufficient quantiles of all seasonal habitat in core areas within each BMU Subunit, and should define clearly what constitutes sufficient quantiles." One commenter proposed that each BMU Subunit should include "high-quality seasonal habitat for each season in core areas in the same proportion as the BMU containing that Subunit."

Response: The minimum size of 2,500 acres is based on actual radio-telemetry locations of adult females in the South Fork Study area, in which more than 80% of all relocations occurred in polygons of at least 2260 acres in size (T.Manley, pers. comm.). The distribution of security core areas in relationship to seasonal habitats is best analyzed at the site-specific level. It does not appear to be appropriate to require a distribution across BMU Subunits based on conditions within the BMU, because substantial variation can exist within a BMU (see figures in Appendix C of the EA).

General Protection of T&E Species

Comment(s): Many respondents offered general support for protection of grizzly bears and other wildlife, and restoring habitat for wildlife and fish by closing and reclaiming roads. A recommendation was offered to "prioritize road closures to help protect prime grizzly habitat first.... Scale down (even more) the construction of new roads, especially in roadless, riparian, and prime grizzly bear habitat areas." Some objected to the "no net gain" in road miles used in the alternatives, and recommended that no new roads be constructed in grizzly bear habitat. A few advocated "drastically" reducing the miles of road or "complete closure and reclamation of some 4000 miles of forest roads."

Response: Alternative 5 has been added to the Amended EA which would provide a greater degree of protection for grizzly bears and other wildlife by providing at least 80% security core area by BMU Subunit. The alternatives originally presented in the EA provided a reasonable range of alternatives with regard to the estimated miles of road construction: 46 miles per year under Alt. 1 to 13 miles per year under Alts. 3 and 4, primarily constructed outside of grizzly bear habitat.

We are not certain whether the people recommending that we close or reclaim 4,000 miles of roads understood that this represents the entire road system. This is not a reasonable or feasible alternative, nor is it within the scope of the decision on Amendment 19.

Linkage Zones

Comment(s): Some respondents supported the concept of linkage zones while others disputed that bears would cross the Swan valley. Both support and opposition for the proposed change from MS-2 to MS-1 of an area southwest of Swan Lake was expressed. It was argued that a change in Management Situation was outside the scope of the decision because it would be "a permanent decision that is inconsistent with the interim direction that Amendment 19 is designed to provide." One respondent recommended that all "wildlife linkages/corridors on the Flathead NF must be given special protection ('wilderness' preservation, if you will)."

Response: Radio-collared grizzly bears are known to have moved across the Swan Valley during the course of the South Fork Study. The recommendation to change the Management Situation in a potential linkage zone is not outside the scope of this Environmental Assessment. A current Forest Plan standard requires that "all biological evaluations will assess the current status of management situation stratification for accuracy and provide analysis data and recommendations for updating as necessary" (Forest Plan page II-29).

Linkages are not proposed to be managed as wilderness. Rather, these are areas of mixed ownership where there is a need to manage land development so that animal movement can continue to occur. These areas are not capable of offering wilderness qualities and experiences.

Grizzly Bear Population Is At Risk

Comment(s): Most of the respondents offered general statements about the importance of protecting grizzly bears and their habitat. Some of the respondents argued that the "pending forest plan for grizzly bear protection does not go far enough in protecting and properly managing these threatened animals." A concern was raised that "the South Fork grizzly population is declining at a rate of at least 4% per year and yet this population was used as the basis for some of the Flathead's proposal.... Please change this proposal now."

Response: We have added Alternative 5, which would set stricter objectives for open motorized access (less than 15% of a BMU Subunit with greater than 1 mile/square mile density) and security core area (at least 80% of a BMU Subunit). The analysis of effects of Alternative 5 are presented in the Amended EA. The U.S. Fish and Wildlife Service's Biological Opinion addressed the downward population trajectory (pages 23 and 24) and still believed that using motorized access conditions within the composite home range is a valid approach for grizzly bear habitat protection.

Grizzly Bear Population Is Not At Risk - Plenty of Habitat Is Available

Comment(s): Several people commented that adequate habitat is available for grizzly bears in wilderness and Glacier National Park. Some respondents commented that the grizzly bear population is increasing or already at recovery, and that current standards are adequate and additional restrictions on access and forest management are not needed. Several urged that the de-listing process be pursued.

Response: The boundaries of the recovery areas were established in the Grizzly Bear Recovery Plan. Although there is inadequate information to estimate population trend for the Northern Continental Divide population as a whole, recent information indicates that the South Fork segment may be on a decreasing trend, while the North Fork (primarily in Canada) may be on an increasing trend. In the Biological Opinion on Amendment 19, the U.S. Fish and Wildlife Service concluded that restrictions on human access are necessary to avoid a "taking" of grizzly bears. Initial work necessary to prepare for eventual de-listing, such as development of a conservation strategy, is in progress for the Northern Continental Divide Ecosystem. The U.S. Fish and Wildlife Service is responsible for preparation of proposals to remove or reclassify species from the endangered or threatened lists.

Apply Original Lost Silver Standards

Comment(s): In response to Action Alerts mailed by various environmental groups, hundreds of respondents sent clip-out post cards or letters commenting that "the original 'Lost Silver' standards limiting roads should be applied forest-wide." As previously mentioned in the section titled "Definitions Used for Access Management", many of these comments indicated that "Lost Silver" was better because it was written by biologists

while the IGBC Task Force Report was authored by "bureaucrats" or "agency employees other than biologists". Some of the respondents also asked that the amendment be implemented within 1-2 years.

Response: Both the Lost Silver Biological Opinion and the IGBC Task Force Report involve evaluation of the density of open and total motorized access routes. Since the Lost Silver Biological Opinion considered only roads while the IGBC Task Force Report also includes evaluation of motorized trails, the Task Force Report may provide a greater degree of protection for grizzly bears. Another difference is that the Lost Silver Biological Opinion considers lands farther than 0.5 mile from roads to provide security core area, while the IGBC Task Force defines core area as being farther than 0.3 mile from roads, motorized trails, and access routes receiving high-intensity non-motorized use. The 0.3 mile distance was based on demonstrated avoidance behavior by grizzly bears, as explained in the Biological Assessment on page 15.

The Lost Silver Biological Opinion was written by biologists employed by the U.S. Fish and Wildlife Service, while the Task Force Report was written by biologists employed by various agencies. In the Biological Opinion on Forest Plan Amendment 19, the U.S. Fish and Wildlife Service endorsed the three parameters recommended by the Task Force Report as "necessary and appropriate to minimize the incidental take of grizzly bears".

Alternatives 3-Corrected, 4-Corrected, and 5 all establish objectives and standards for open motorized access, total motorized access, and percent core area on a BMU Subunit (*aka* female home range analysis area) basis. We did not consider applying these objectives and standards across the portion of the Flathead National Forest that is outside the grizzly bear recovery area, as this would be outside the scope of, and inconsistent with the purpose and need for, the proposed amendment. Nor do the numerical objectives proposed under the action alternatives apply to BMU Subunits that have an intermingled ownership pattern. This is because it is not feasible to achieve the objectives through management on the National Forests alone. This was explained in the EA (page 7) and further documentation is available in the Project Record.

During the initial scoping period, a one-year implementation period was suggested by some respondents. As we explained in the EA (page 16), achieving the objectives in such a brief period is not realistic, given the need to conduct site-specific analyses, secure necessary funding, and implement the decisions.

Apply Updated Lost Silver Standards

Comment(s): Respondents recommended that we "apply 'updated Lost Silver' standards across the entire Flathead National Forest."

Response: The respondents did not explain exactly what was meant by "updated Lost Silver standards". We assume it means calculating similar measures as those used in the Lost Silver Biological Opinion, updated to address motorized access rather than roads only, as recommended by the IGBC Task Force. Alternatives 3-Corrected, 4-Corrected, and 5 all establish objectives and standards for open

motorized access, total motorized access, and percent core area on a BMU Subunit (aka female home range analysis area) basis.

We did not consider applying these objectives and standards across the portion of the Flathead National Forest that is outside the grizzly bear recovery area, as this would be outside the scope and inconsistent with the purpose and need for the proposed amendment. Nor did we consider applying the objectives to BMU Subunits that have intermingled ownership (that is, less than 75% National Forest) for the reasons explained above (section titled "Apply Original Lost Silver Standards").

Risk of Reducing Public Support

Comment(s): One respondent was "disturbed by your contention that alternative 4 would have the highest risk of reducing public support for recovery efforts". Another felt that we should point out that only 10 mmbf of the 46 mmbf reduction of the ASQ under the preferred alternative was tied solely to grizzly bear standards. One respondent felt that public support "remains a crucial issue that has had very little discussion in this document", while another felt that "Amendment #19 pits people against grizzly bears". Several respondents found it ironic that while "the EA and Biological Assessment equate managing access with managing grizzly bear security....the EA admits that Alternatives 3 and 4 may create a backlash against the grizzly bear that may result in more mortalities."

Response: Most of these comments appeared to support the general concepts and information put forward in the EA and Biological Assessment. Those that disputed the EA did not offer new information or suggestions for other alternatives to consider.

WILDLIFE

General Comments about Wildlife Habitat Protection

Comment(s): Some respondents encouraged protection of wildlife and expressed concern about loss of habitat and fragmentation. Another respondent commented that "wildlife populations in northwest Montana exemplify the fact that the beneficiary of good land stewardship is wildlife." One respondent was concerned that a Biological Assessment had not been prepared for sensitive species.

Response: Most of these comments were made in support of protecting wildlife and did not offer new information or suggestions for other alternatives that should be considered in the Environmental Assessment. Effects of the alternatives on various wildlife species were disclosed in Chapter III of the EA. The biological evaluation for sensitive wildlife species is in the Project Record, Exhibit K-4.

Benefits of Access Management

Comment(s): Many respondents commented on the benefits of road closures and road reclamation for wildlife, such as trout, fisher, lynx, gray wolf, wolverine, elk, deer, moose, northern goshawk, and cavity-nesting birds.

Response: These comments were general statements of support for protection of wildlife, and did not make specific recommendations for analysis or alternatives considered in the EA.

ROADS, MOTORIZED ACCESS AND TRAVEL MANAGEMENT

Analysis and Methods/Effects- Motorized Trails

Comment(s): One respondent stated that motorized trails must have proven use or they should be considered nonmotorized.

Response: Motorized trails are those that are known to receive regular use. Those that receive infrequent, irregular use were considered non-motorized. The interdisciplinary team used the best information available and their personal knowledge of the area, where information was lacking, in making this determination before conducting access density analyses.

Analysis and Methods/Effects- Road reclamation

Comment(s): One respondent believed that some reclamation will be needed because many areas do not meet the total motorized access density objective. However, the EA did not disclose how much reclamation was needed.

Response: The Amended EA contains an updated Transportation section in Chapter III which displays the projected amount of reclamation by alternative. These projections are based on an analysis of total motorized access density objectives and security core area objectives.

Favors obliteration - effectiveness of berms and gates is in question

Comment(s): Many respondents stated that gates and berms would not be sufficient to control motorized access. They thought the Forest Service should rely more on obliteration to control motorized access.

Response: Forest Plan Appendix TT has been added as part of this Amended EA and provides definitions and other relevant information about motorized access on roads and trails. Within security core areas, gates are not an acceptable device to restrict roads. While restricted roads may occur in security core areas, they are not the preferred treatment and should be minimized. In these few instances, berms are acceptable where there is reasonable assurance that they will be effective. Outside security core areas, roads can be restricted with gates, berms or other physical obstructions. While total compliance cannot be guaranteed, law enforcement activities would be used to enhance success.

Also refer to Forest Plan Appendix UU, added at the end of Appendix A, for discussion on implementation and effectiveness monitoring. The Transportation section in Chapter III of the Amended EA displays the projected amount of reclamation and restriction needed to meet security and density objectives.

Enforcement of closures is inadequate

Comment(s): Several respondents indicated that gates and berms were ineffective and focused their comments toward inadequate enforcement of closures. They indicated that illegal motorized use would continue after roads were gated or bermed, and that these roads would become access avenues that increased human/grizzly encounters.

Response: Forest Plan Appendices TT and UU are added to this Amended EA and contain information about closure devices and their effectiveness, and monitoring and enforcement of areas to ensure security of non-motorized areas. The Forest Service employs law enforcement staff and while it is not possible to be in all locations simultaneously, their presence will help ensure that motorized access objectives are met. In addition, public awareness/education programs will be established to explain the goals and objectives of grizzly bear management and steps required to recover the population (referenced in Appendix A, Forest Plan Objective A.4, and required by the Biological Opinion from the U.S. Fish and Wildlife Service).

Cost comparison of maintenance versus obliteration

Comment(s): Several respondents felt that road reclamation or obliteration can be cost effective in comparison to the costs of maintaining closed roads.

Response: Several of the respondents forwarding this opinion based their determinations on maintenance costs for closed roads as high as \$65 per mile per year. One respondent stated that repair of blocked culverts and closed roads damaged by floods cost as much as \$100,000 per year on an average ranger district, and used this statement to support their determinations. A review of past road maintenance costs for the Flathead National Forest, as well as costs associated with road reclamation, does not support these statements.

The majority (up to 95%) of road maintenance costs on the Flathead National Forest are expended on major access roads, providing year-round recreation and administrative access to the forest. Implementation of any of the action alternatives would not affect a significant number of these roads and would not appreciably reduce associated maintenance costs.

Roads most likely to be restricted, reclaimed or recontoured through implementation of the Amendment are generally low standard roads, constructed to accommodate periodic timber harvest activities at 10 to 30 year intervals with low levels of use between entries for such activities as planting, thinning and administrative inventories. These roads are generally reconstructed when harvest activities occur.

Maintenance activities associated with these roads, between harvest entries, consist of occasional cleaning and repairing of ditches and culverts. Over the past three years, on-the-ground maintenance costs associated with these roads averaged approximately \$6 per mile, per year. In 1994 less than \$3,000 dollars was expended on maintenance of these roads across the Forest. Flood damage does occasionally occur. However, over the past three years, repair of closed roads damaged by floods has not exceeded \$6,000 forest-wide.

Costs displayed here do not include overhead costs. Maintenance costs used by respondents may have included these costs and would make reclamation appear more cost effective. In comparing costs of maintenance to costs associated with reclamation and recontouring, it is appropriate to compare only on-the-ground costs. Overhead costs include all management costs, including such cost items as building rent and salaries necessary to maintain the engineering organization on the Forest. Maintenance of the Forest engineering organization is necessary to manage all engineering activities, including any road reclamation projects generated from the amendment. The small reduction in maintenance activities associated with reclaiming roads would not result in a commensurate reduction in overhead costs.

Utilizing appropriate figures, comparisons of on-the-ground costs associated with maintenance of closed roads versus reclamation do not indicate that reclamation is likely to be less costly than continued maintenance. When considered over a 20 year period, non-discounted maintenance costs would not exceed \$120 per mile. Reclamation activities will significantly exceed this figure in most cases, costing \$1,000 to \$5,000 per mile or more. In addition, reconstruction of some reclaimed roads may be necessary to support future access needs. Reconstruction of reclaimed roads will be more costly than for those roads which are simply closed or restricted.

WATER QUALITY/FISHERIES

Watershed Analysis

Comment(s): One commenter stated that the "failure to prepare a detailed watershed analysis for this EA renders the whole alternative comparison process ineffective."

Response: Detailed watershed analysis will take place during project implementation. The detailed effects of specific locations, management practices and timing of activities to be used in restricting or reclaiming roads will be known and assessed at this time. The programmatic effects in the EA are reasonable. In response to public comments, minimum treatment requirements designed to minimize adverse water quality effects, have been added to the definitions of restricted and reclaimed roads (Appendix D, Amended EA).

Comment(s): Water quality issues should have been included in the spatial modeling of Forest Plan standards, and in the evaluation of acres potentially available for timber harvest and ASQ.

Response: As stated in Chapter II, Timber Resources, Analysis Methods - Discussion, the Forest Plan does not include numerical standards that can be easily translated into spatial modeling constraints for calculation of allowable timber harvest and ASQ. Water quality issues will be considered in the determination of the feasibility of site-specific project implementation and will likely influence the amount of timber actually sold.

Biological Assessment for Sensitive Fish Species

Comment(s): Several commenters requested that the Forest Service prepare a Biological Assessment of the effects of the proposed amendment on sensitive fish species, particularly bull trout and westslope cutthroat trout.

Response: A biological evaluation of potential effects on sensitive fish species has been completed and is available for review in the project record (Exhibit K-3). The determination reached is that the proposed amendment may impact individual bull trout, westslope cutthroat trout and sculpin, but not the viability of populations or trend toward Federal listing. In the long-term, implementation of the proposed amendment should be beneficial to these species.

Road Closures/Reclamation and Effects on Sedimentation

Comment(s): Permanent road closures have the potential to cause long-term sediment problems. The Forest Service should conduct sediment source surveys in areas planned for road closures.

Response: Concerns of sediment problems from permanent road closures are addressed in the added direction for minimum treatment requirements for restricted and reclaimed roads. Included in this is direction to repair any sediment sources and remove culverts on perennial stream channels as part of the reclamation process. Surveys would be conducted to identify sediment sources and design effective control measures. Removing culverts on reclaimed roads would greatly reduce the risk of future sediment problems caused by blockage and failure of culverts. It also reduces potential for fish passage problems caused by culverts. Additional direction is provided for restricted roads, where road drainage is not reworked, for the development and implementation of a monitoring plan to assure continued, functional road drainage and sediment control.

Comment(s): Many respondents stated that road reclamation/obliteration would cause sediment problems and degrade fisheries habitat, many more stated that road obliteration will improve water quality and fish habitat.

Response: As discussed in Chapter III, road reclamation and obliteration activities can cause short-term increases in sediment production and delivery to streams. However, this effect would be minimized through properly planned, scheduled and executed project implementation.

In the long-run, properly designed and executed projects would improve water quality and fish habitat since these sites will be more stable, have less erosion and less risk of developing future problems.

HUMAN DIMENSION**Effects on Population - Overcrowding**

Comment(s): Population overcrowding and its effects on lifestyles, wildlife habitat and the ability to enjoy outdoor recreation was a concern of many. Most of the people

concerned were supporting the closure of roads and seemed to imply that more open roads meant more people. It was implied that recreation/tourism created increases in population/overcrowding and that it was not addressed in the EA.

Response: The effects on the size of the local population and its effect on lifestyles, wildlife populations, and ability to enjoy outdoor leisure activities was not covered in great detail in the EA and will not be expanded in the Amended EA. This is because the effects of Amendment 19 on the size of the population are minimal. The change in the ASQ will not influence the actual amount of timber harvested and additional grizzly bear management standards will not create any net increase in human population. However, this is not to say that the population will not increase anyway - that seems to be inevitable, but Amendment 19 will not be the cause of the increase. Population growth is discussed on page 68 of the EA.

Quality of Life/Lifestyle Concerns

Comment(s): Many people feared that the closure of roads would have a significant influence on not only their leisure time activities but their ability to earn a living. Closing roads would preclude them from roaded recreation type activities such as berry picking, hunting and fishing, and firewood harvesting. The loss of timber related jobs would force them to change occupations and probably lower their standard of living. Other people felt that road closing would improve their lifestyles because it would increase the "wilderness" character which served as an ideal setting for their leisure time activities.

Response: The lifestyles of specific individuals and groups will undoubtedly be affected as roads are closed and specific areas previously used by individuals are no longer accessible by motorized vehicles. People who value unroaded recreation experiences will have more to choose from in the future. This was explained on page 63 of the EA. The importance of lifestyles, which was the subject of many public surveys taken in previous years, is discussed on page 70 of the EA. The effects of Amendment 19 on employment and income is discussed on pages 59 and 68 of the EA.

Environmental Quality/Grizzly Bear Is Higher Priority than People

Comment(s): Many people fear that "the proposal puts grizzly bear concerns ahead of human needs...". "Forests are for people, not animals" and "people's needs should come before creating the utmost optimum for the grizzly bear" are typical statements made in this category.

Response: Most of these types of comments were not in favor of closing more roads and felt that animals and the environment were being favored over humans. The comments did not, for the most part, suggest ways of improving the effects analysis or suggest modifying existing or adding new alternatives. The Purpose and Need section of the EA thoroughly discusses the reason for the amendment on pages 1-3. These reasons are intended to serve the needs of society, not at the request of animals or animal rights groups. As explained in the EA, the amendment is the result of an order by the Ninth Circuit Court of Appeals to change the Plan to comply with the Endangered Species Act. This act is a product of society to meet the needs of society, not the product of wildlife or the environment.

Obligation of Humanity to Protect Threatened and Endangered Species

Comment(s): Many of these comments were concerned over society's uncontested control over the fate of wildlife, especially the grizzly bear. There was fear that unless something was done soon there would be no grizzly bear left. All comments were in favor of doing whatever is possible to save the bear. However, no specific and plausible recommendations were made for modifying existing alternatives or to propose any new alternatives.

Response: There were no recommendations on improving the analysis of effects. For this reason there will be no response or suggested changes to the EA.

Human Safety

Comment(s): Some people are concerned about dangerous bears... "We are already semi-afraid of using the forest because of these creatures. We already have them wandering through our yard at times...If the people are in a car or have access to one, this (death), no doubt could be avoided." Some people seem to be suggesting that the grizzly bears presence may be a deterrent to backcountry use. This is in contrast to those who feel that the grizzly bear adds to the back country experience and adds quality to the recreational environment.

Response: The Forest Plan contains guidelines dealing with human safety in relation to the Grizzly Bear. There are several brochures available and distributed by the Forest Service that suggest methods of reducing the dangers when encountering bears. Amendment 19 is designed to reduce human/bear encounters.

TIMBER/VEGETATION**Insect and Disease Risk**

Comment(s): Several respondents had general disagreements with the effects of the proposal on insect and disease risk. One specifically contends that since the incidence of insects and disease is at a 10-year low on the Flathead that the future effect discussed for Alternative 4 is a "blatant untruth." Others contend that reducing road access negates needed management of forest health problems.

Response: While insect and disease mortality is presently low, compared to past years, reduced levels of harvest may, in part, contribute to increasing mortality in the future. As presently mature stands continue to grow over time (measured in decades), there will be gradual shifts toward shade-tolerant species. These species are generally more susceptible to insects and diseases. In addition, these shade-tolerant species, which already occur in dense stands, are susceptible during drought to increased insect and disease mortality. Insects and disease are integral to the ongoing evolution of forest structure and composition. These changes can create beneficial diversity if mortality is at endemic levels. However, if large areas all become increasingly susceptible over time, the risk of an epidemic outbreak increases which can in turn increase the risk of a large catastrophic fire. The timing and magnitude of these events is impossible to predict. Chapter III includes a

discussion by alternative on how various access densities may affect management of insect and disease risk.

Fire Risk

Comment(s): Several respondents think that the analysis of the effects on fire risk was unacceptable. One contends that the "logic that more trees creates higher fire risk is unacceptable far-fetched." Others contend that the EA downplays the effect of reducing human access on reducing fire risk and instead dramatizes the fire potential.

Some people find that the beneficial effects of fire have not been adequately addressed, particularly for grizzly bear. Another disagrees with the beneficial effects of fire for grizzly bear, suggesting that "bears perish in wildfires just as surely as if shot with a gun."

Response: Forests exist in a balance between carbon fixation through photosynthesis and carbon release (biologic decomposition and fire oxidation). Because moisture and temperatures are not available to promote rotting to a large degree, carbon fixation exceeds decomposition on the Flathead. As most forests in the Inland West, forests here release carbon through fires. These fires can be low-intensity if little biomass has accumulated or can be large, high-intensity stand-replacement fires if much biomass has built up (see discussion of insect and disease above).

The text in Chapter III has been modified in the Amended EA to better address the beneficial and adverse effects of increased fire risk.

Fire Risk (State protection areas)

Comment(s): How will the proposal affect roaded access in State fire protection areas?

Response: State fire protection is generally in areas of less than 75% national forest ownership. These areas have an objective of "no net gain" in total and open road density due to mixed ownership. However, there is one exception on the Flathead where state fire protection does occur with more than 75% NF ownership; this being the Peter's Ridge BMU Subunit on the Swan Front from Columbia Mountain, south to Noisy Creek. This particular BMU Subunit will not adhere to the "no net gain" objective because most of the landbase is national forest and not intermingled private land. Access would be reduced some in this BMU Subunit under all action alternatives in order to meet road density objectives. Fire protection needs will be one of the factors considered, in cooperation with Montana Department of State Lands during project implementation.

ASQ Analysis Methods (Harvest prescriptions)

Comment(s): The amendment should make a better effort to assess what likely cutting methods will be used.

Response: As discussed in the EA, Chapter III, Timber Resource, the choice of cutting method or silvicultural prescription is made at the project implementation step. Revision of the choice would be inappropriate with this amendment, as there is no basis for a need to change and what the change should be. The purpose and need of this amendment is to establish maximum and desired levels of total

and open motorized access density and security core areas, which does not require revision of cutting methods. It is acknowledged in Chapter III that the choice of silvicultural prescription will likely vary from that which was modeled to calculate ASQ. As discussed in Chapter 1, Scope of the Proposal, reconsideration of goals and objectives will be part of the analysis of a longer-term, multi-resource strategy considered when the Forest Plan is revised. The analysis of likely cutting methods can more appropriately be made in this larger context.

Ongoing efforts related to the Upper Columbia River Basin Assessment and the associated EIS effort, coupled with the local landscape assessments and revision of the Flathead LRMP, will provide the necessary framework for this decision.

ASQ Analysis Methods (Yield Tables)

Comment(s): There is no indication that the accuracy of the yield tables has been monitored or verified since the Forest Plan was issued. The contention is made that the calculation of ASQ is based on outdated and possibly inaccurate data. Additionally, the average yield is based on the 1986 assumption that much of the harvest would be in high volume, old growth stands. This assumption conflicts with the Chief's Interim direction on old growth/management indicator species (MIS) habitat. The revised ASQ is not achievable until old growth/MIS habitat is site-specifically located and designated.

Response: The accuracy of existing yield tables has not been monitored or verified. Until this is accomplished, the existing yield tables provide the best information available. The site-specific location of old growth/MIS areas will be made at the project implementation step. As discussed in the EA (Timber Resources, Background) this is one of the factors that may influence the amount of timber actually sold.

ASQ Analysis Methods (Snags)

Comment(s): The amendment did not adjust timber yield tables to consider retention of snags or replacement snags.

Response: Yield tables reflect the retention of snags, in that they do not include those trees which are dead for several years. Yield tables may not adequately reflect the designation of replacement snags. Replacement snags, a factor in the choice of site-specific silvicultural prescriptions, may influence the amount of timber actually sold.

ASQ Analysis Methods (ASQ achievable)

Comment(s): Several respondents contend that the ASQ of the preferred alternative is not realistically attainable, not scientifically based, and is unreasonably high. Others partially share this view, in stating that the ASQ needs to be realistically attainable, and go on to add that there needs to be a strategy on how the target will be attained. Other respondents, while acknowledging the difficulty in modeling forest sustainability, ecosystem health and plant indicator species, saw no clear tie-in to the methodology used to calculate an attainable ASQ.

Response: The respondents did not suggest ways in improving the analysis to make it more realistic or scientific, nor did they point out specific deficiencies in the

modeling of the spatial standards. In terms of forest sustainability and ecosystem health, these are embodied in the modeling of the nine GIS screens as much as possible. As discussed in Chapter III - Timber Resources, site-specific analysis and implementation of ecosystem management is one of the factors that is likely to influence the amount of timber that would be actually sold.

Also discussed in Chapter III - Timber Resources, ASQ is defined as the maximum amount of timber that may be sold on an average annual basis. As implied by this definition, it is a ceiling, not a target. The actual amount of timber sold will normally be less than ASQ. The actual amount of timber sold is dependent on a variety of factors that cannot be modeled in a programmatic analysis covering nearly 700,000 acres. While the degree of uncertainty is troublesome to many, the analysis used to calculate ASQ has attempted to minimize that uncertainty to the extent possible.

ASQ Analysis Methods (effect on standards and guidelines)

Comment(s): There is no analysis of how the change in ASQ has affected standards and guides that were used in the Forest Plan.

Response: ASQ is a result of a complete set of objectives and standards. Several forest-wide objectives and standards related to grizzly bear management are proposed to be changed with this amendment. These changes would result in an amended ASQ. No other standards and guidelines would be changed in this proposed amendment.

ASQ Analysis Methods (Long Term Sustained Yield Capability - LTSYC)

Comment(s): What is the LTSYC associated with a reduction in ASQ? ASQ needs to be compared to the growth potential of the forest.

Response: LTSYC is the potential average growth (mean increment) of the forest on acres allocated to timber production after the age structure has been stabilized. It can be thought of as a steady state timber output after the existing stands have been cut and each acre allocated to timber production has settled into a particular management intensity and rotation age.

This amendment does not require changes in management intensities or rotation ages of regenerated stands, therefore the LTSYC remains unchanged at approximately 146 MMBF.

The ASQ in all alternatives, including Alternative 1 - no change to the current Forest Plan, is less than any of the estimates of LTSYC.

Old Growth/Management Indicator Species (MIS)

Comment(s): Did the Flathead National Forest use the old growth maps compiled by the National Audubon Society? If not, why not?

Response: Maps compiled by the National Audubon Society were not used because the criteria they used to not match our interim direction. Instead, we used maps we created to depict habitat for old-growth Management Indicator Species. The National

Audubon Society maps could provide useful information during project implementation.

Logging system alternatives

Comment(s): A few respondents think that hell-logging, cable, horse teams, snow sledding, and many more options available today should be utilized to replace road building. The use of lighter than air craft should be considered.

Response: The use of these alternate logging systems will be considered during the implementation step. Helicopter, cable and horse yarding are all feasible systems. Lighter-than-air or balloon logging has not proven to be generally feasible.

ECONOMICS

Benefit/Cost Analysis

Comment(s): Benefit/cost analysis should have been done and "benefit/cost ratios" were suggested, especially to account for the "destruction of resources that are not replaceable". Specific reference was made to Alternatives 1 and 2 and the economic consequences of the Grizzly Bear's status being upgraded to "endangered".

Response: It is conceptually correct to state that benefit/cost analysis can be used to support public policy decisions. It is a well established procedure that can give valuable insight to decision makers. However, Amendment 19 has so many non-quantifiable costs and benefits that a benefit/cost analysis limited to the use of quantifiable values would not render a useful result. Values that do not directly translate into benefit/cost format include improved grizzly bear habitat, effects on employment and income, and the changes in roaded and unroaded recreation opportunities. This is explained in the Economic Efficiency section, of Chapter III in the EA (pg 63-64).

However, benefit/cost analysis will be used where possible during implementation of the amended Plan.

Road Restoration will Create Jobs

Comment(s): The closure and restoration of roads, regardless of the method used, will create employment and income for the local area. Although estimates of jobs and income lost from the potential reduction in timber harvest were made, there was no estimate of the potential jobs that could be created by the physical closing of forest roads.

Response: Employment and income will be generated from the closing and reclamation of Forest roads. An estimate of the effects and brief discussion is included in Chapter III, G. Human Environment, Employment and Income of the Amended EA.

Economic Changes from Changing the ASQ

Comment(s): Changing the ASQ will cause significant changes in the amount of timber harvested and in turn cause significant changes in local employment and income, have enormous effects on the economy in general, and affect the well being of many families and be detrimental to our social programs. The claim in the EA and Summary that there will be very little actual downward change in employment and income due to changes in the ASQ is claimed to be inaccurate. This is explained several times throughout the Economics section of the EA.

Response: The basic assumption made for Amendment 19 is that the proposed downward adjustment of the ASQ will have no significant or measurable effects on the actual harvest of timber for the remainder of the planning period (3-4 yrs.). The ASQ is a legal ceiling which can not be exceeded. It is not an estimate of actual output. The difference between the ASQ and actual timber harvest is attributable to things that can not be modeled in determining ASQ such as budgets, staffing, appeals and litigation, and site specific analysis, and public involvement that can not be determined until the Plan is actually implemented. When considering the actual amount of timber sold over the past 5 years (29mmbf/year) it is highly unlikely that the proposed ASQ will have any constraining effect on timber production for the remainder of the planning period. The ASQ will be re-determined at the eventual revision of the Forest Plan in 3 to 5 years.

Reliance on Private Lands for Timber

Comment(s): The disproportionate reliance upon private lands harvested in the preceding years places the employment and income figures estimated in this document in serious question as to their reliability. It is estimated by local foresters that the immediate supply from the private non-commercial woodlot will be virtually exhausted within a year. It is stated that we "attempt to minimize that extreme impact by pointing out that the mills have been operating at 81% capacity in 1993 when only 5.7MMBF were sold. At that time 74% of the supply was coming from private lands..."

Response: The "physical" supply of timber on private lands has been reduced over the past few years. However, this reduction has been primarily a function of favorable timber prices which has increased the "available" supply. This was a result of a booming construction industry responding to favorable interest rates. The higher the price of timber the more likely previously unavailable timber will find its way to the mill. However, "An Assessment of Montana's Timber Situation" by Flowers et al, in 1993, recognized an increased timber harvest on non-industrial private lands but projected this increase to be sustained through the year 2010. This scenario was somewhat reinforced by Charles Keegan, of the Bureau of Business and Economic Research of the U. of Montana, at the Economic Outlook Seminar at Helena, Montana, on 1/24/95. As one of the key authors of the above study Keegan stated that...

"The current private harvest is sustainable statewide... I think an opportunity for a stable industry is there. High prices, changes in harvest operations make it more feasible... If they (the National Forests) offer what historically would be a very modest amount, then I think we've seen the end of the shakeout... Any

substantial increase from private land owners would not be sustainable.* (Missoulia 1/25/95).

Importing timber into Flathead County over the past few years has also been an important source of raw material for the local wood products industry. The quantity of imported timber is also strongly influenced by price. The above study assumed that under the most likely scenario that timber prices would increase at 5.6% per year through the year 2010, the end of the projection period.

The reduced timber harvest from the Flathead National Forest over the past 5 years has undoubtedly had a part in rising timber prices. However, any changes in the level of private harvest will not be a result of Amendment 19, and Amendment 19 will not significantly reduce the timber harvest on National Forest lands below present levels. This subject was discussed on page 60 of the EA.

Social and Economic Impacts of Closing Roads

Comment(s): The social and economic impacts of closing roads to motorized recreation has not been adequately addressed in the past and again in Amendment 19. The EA looks at the potential economic effects on the timber industry, but not on the growing recreation/tourism industry and the types of jobs created by the recreation/tourism industry as opposed to the timber industry. The assumption in some of these comments is that closing roads will enhance wildlife habitat and the quality of recreation experiences and in turn enhance the recreation and tourism industry. Others feel that the closing of roads will reduce the quality and quantity of roaded recreation experiences and have a detrimental effect on tourism and the local economy.

Response: Both of these concerns are true. Reducing the amount of open roads will reduce the quantity and/or quality of roaded recreation opportunities and increase the quantity and/or quality of unroaded recreation opportunities. This will theoretically affect the mixture of use received on the lands involved and affect the mixture of tourists visiting the area. However, because of the large supply of both roaded and unroaded forest land, the net marginal economic effect is assumed to be insignificant. The physical effects are described in the Recreation section of Chapter III of the EA.

Understatement of Effects on Employment and Income

Comment(s): According to the 1993 TSPIRS report every million board feet of timber harvested provides 35 direct, indirect and induced jobs in the Flathead area. If the ASQ drops from 100 mmbf to 54 mmbf there will be 1610 jobs lost.

Response: The employment and income effects data displayed in Chapter III of the EA is substantially more conservative than the 1993 TSPIRS report. The primary reasons include: (1) The TSPIRS report gives the total effects for a five county area consisting of Flathead, Lake, Lincoln, Missoula, and Sanders County (but not the effects on each individual county). The EA only disclosed the effects on Flathead County because that is where most of the effects occur; (2) The TSPIRS report calculations were based on 1990 data and the EA was based on 1991 data. The 1991 data produces slightly lower multipliers than does the 1990 data; and (3) The effects on grants-in-aid funds to the counties is computed differently. The study

used by the EA only includes the net effects after the PILT funds have compensated for reductions in 25% funds therefore producing a lower number for jobs and income. Only reporting the 25% fund losses, without reporting the PILT offset would not be appropriate NEPA disclosure.

In summary, we have used the latest technology and data to determine any potential effects on employment and income, and in a form appropriate for planning and decision-making.

Effects on Cultural and Social Structures

Comment(s): This amendment makes no sense at all...You are required to take into consideration the effects of your actions on county economic, cultural and social structures within the areas affected by your decision.

Response: Economic, cultural, and social structures are discussed throughout the EA. Economic effects and efficiency are discussed on pages 59 through 64 of the original EA. Cultural and social effects are discussed on pages 80 through 87 of the update to the final EA. Recreation effects are discussed on pages 87 through 93. The extent of the discussion of the effects was commensurate with the magnitude of the predicted effects.

Effects on 25% and PILT funds

Comment(s): Our schools and roads will suffer from the lower timber receipts because they are the sole beneficiaries of the 25% fund. PILT funds will make up some of the decrease in the 25% funds, but PILT funds can be used for any government purpose and may not make it to the schools and roads. Also PILT funds are affected by changes in the 25% fund, but the offset is not dollar for dollar and at certain levels there is no offset at all. What does this mean? Any budget shortages for schools and roads created by the lack of PILT and 25% funds would be born directly by local taxpayers. Conservative estimates indicate that about two million dollars per year that would go to the State would be lost, thus forcing the general tax paying population of the State to offset this. Flathead County, having a history of a self-supportive community, objects to the shift proposed in this action to becoming a welfare community reliant upon PILT monies for timber not sold.

Response: On page 76 of the EA it is explained that the total amount of 25% funds and PILT funds received will actually increase over the next several years and into the indefinite future due to a recent change in the PILT formula. The concern about PILT funds not going directly to roads and schools can be viewed as a problem if the funds are feared to be allocated to lower priority uses. PILT funds can be spent where local officials determine they are most needed.

However, as it also is with the amount of timber harvested and the effects on employment and income, there will be no significant change in the amount of PILT and 25% funds received by the counties as a result of Amendment 19. There could be reductions in 25% funds in the remainder of the planning period but this will be the result of a reduced timber sale program in previous years and these reductions should be more than offset by PILT funds allocated under the new formula.

The relationship of 25% funds to PILT funds is not simple and there is no single document that gives a comprehensive explanation. The best available is part of a report developed by Ervin Schuster which is referenced in the EA.

Economic Effects Outside of Flathead County

Comment(s): A reduction in timber receipts is detrimental and also reduces jobs and some of the economic base of Lake County.

Response: As explained in the previous responses and in the EA, there will be very little effect on timber harvest and the recreation/tourism industry as a result of Amendment 19. Amendment 19 changes the ASQ which will unlikely change the amount of timber harvested for the remainder of the planning period. The net economic effects on the recreation/tourism industry are assumed to be insignificant. This applies to Flathead County as well as adjacent counties including Lake County.

RECREATION

Impact on motorized/trail related activities

Comment(s): Numerous respondents recommended not reducing the roaded motorized opportunities.

Response: This recommendation is included in Alternatives 1 and 2 and compared to other alternatives in Chapter III, Recreation section.

Comment(s): Some respondents raised the issue that areas allocated to a Semi-Primitive Non-Motorized designation could be Semi-Primitive Motorized during the winter seasons with snowmobile activities.

Response: The objectives for motorized access density and security core areas apply during the non-denning season. Appendix D has been added to the EA and clarifies the use of restricted roads in the denning season. The use of snowmobiles is generally allowable. The Recreation section of Chapter III has been updated and reflects changes from the original EA.

Closed roads/reclamation beneficial to non-motorized recreational activities

Comment(s): Many respondents wrote in favor of reducing the number of miles of open roads on the Forest. They supported increasing the opportunities for a Semi-primitive Non-roaded recreation experience.

Response: The recommendation to reduce the number of miles of open road is included in varying degrees in Alternatives 3- Corrected, 4- Corrected, and 5. The alternatives outlined in the original EA were modified in response to public comments. The effects on recreation experience are disclosed in Chapter III.

Comment(s): Closing or reducing motorized access to some parts of the forest could increase activities and use on other parts of the forest that remain open to motorized activities and thereby create additional problems relating to carrying capacity. Those

actions could also create pressure on state or private lands that are open to motorized access.

Response: These potential effects are discussed in Chapter III, Recreation.

Disabled Access- Senior Citizens

Comment(s): Several commentors expressed a concern about providing opportunities for disabled and older recreationists. For them, non-motorized travel may not be feasible.

Response: The alternatives provide a range of recreation opportunities. The effects on motorized travel are disclosed in Chapter III, Recreation section.

PLANNING

National Environmental Policy Act (NEPA) - general comments.

Comment(s): Several respondents requested that the Forest Service prepare an environmental impact statement.

Response: The Finding of No Significant Impact, contained in the Decision Notice, explains the reasons for concluding that an Environmental Impact Statement (EIS) is not required. The principal reason for concluding an EIS is not necessary is that the amendment proposal is programmatic, meaning that it does not authorize any site-specific ground disturbing activities. In any event, the draft and final Environmental Assessment were produced with procedures that are quite similar to those required for an EIS, including a 45 day public comment period.

Range of Alternatives

Comment(s): Numerous respondents recommended that the Forest Service adopt Alternative 4, but "with stronger protections for grizzly bear habitat" or "restrict motorized access even more than Alternative 4." Another commentor suggested an alternative "that allows fewer roads and restricted roads and more core areas and is more likely to ensure a long-term grizzly bear population on the Flathead."

Response: Alternative 5 was added to the final Environmental Assessment (EA) in response to these comments.

Comment(s): Other respondents suggested a variety of additional alternatives.

Response: These suggested alternatives were eliminated from detailed consideration because they were either substantially similar to other alternatives considered in detail, well beyond the scope of the proposed amendment, or infeasible. These suggested alternatives are described in Chapter II of the EA.

Scope of the Proposed Action

Comment(s): Several respondents viewed the linking of grizzly bear habitat protection with the ASQ amendment as unacceptable. They felt that the Ninth Circuit Court of Appeals,

In an opinion rendered July 5, 1994, ordered the Forest Service to amend the ASQ (allowable sale quantity) on the Flathead National Forest and in no way required the reduction of access by the public to Federal lands.

Response: The Ninth Circuit Court of Appeals ordered that the Forest Service formally consult with the U.S. Fish and Wildlife Service (USFWS) on either the existing Forest Plan or a proposed amendment to the Forest Plan. The Forest Service knew from previous consultations that the existing motorized access density was a cause of serious concern for the USFWS. Several recent Biological Opinions of the USFWS had concluded that the existing motorized access density in some areas of the Flathead National Forest was resulting in a "taking" of the grizzly bear and possibly violating section 9 of the Endangered Species Act. Knowing that motorized access density would be a central issue in the consultation with the USFWS, the Forest Service chose to address this issue in the proposed amendment. The Forest Service believes that this choice expedited the decisionmaking process and resulted in greater opportunities for public participation compared to relying exclusively on the USFWS Biological Opinion as the process for establishing these management objectives.

Comment(s): Some respondents stated that the proposed change of some areas in the Swan Valley from Management Situation 1 to Management Situation 2 is outside the scope of Amendment 19 and should be addressed separately.

Response: As stated in response to the previous issue, the Forest Service knew that habitat linkages would be a central issue in Endangered Species Act consultation with the USFWS, as it had been in previous consultations. This experience indicated that this issue was necessarily within the scope of the Court-ordered consultation.

Comment(s): Several respondents felt that the proposed action failed to adequately address grizzly bear habitat management in areas of intermingled land ownership. The concerns expressed focused on whether the distinction of areas with greater than and less than 75 percent National Forest System land is arbitrary, the need to aggressively pursue conservation agreements with other land owners; and recommendations that the Forest Service deny private land access requests where subunits fail to meet the objectives proposed for subunits that are predominately National Forest System lands.

Response: The Interdisciplinary Team carefully evaluated the distribution of ownership in the BMU Subunits in order to define "predominantly National Forest System land." A data table showing the distribution of ownership percentages is found in the Project Record, Exhibit L-8. This evaluation revealed that in these BMU Subunits the security core area and total motorized access density objectives could not be achieved even if every road under National Forest System jurisdiction were reclaimed (Project Record, Exhibit L-28).

The Forest Service agrees with the need to pursue conservation agreements with other landowners. Alternatives 3-Corrected, 4-Corrected, and 5 would amend the Forest Plan to include this objective.

The Forest Service has a nondiscretionary legal obligation to provide access to nonfederally owned lands within the boundaries of the National Forest System (16 U.S.C. 1323). Thus, it would be unlawful for the Forest Service to deny access to

nonfederally owned lands in BMU Subunits that do not meet the objectives proposed for BMU Subunits that are predominantly National Forest System lands.

Comment(s): A large number of commentors were concerned over the fact that Amendment 19 proposes short-term (5-year) and long-term (10-year) objectives. These respondents felt that since the Flathead National Forest will be doing a complete revision of the Forest Plan in the next 2 to 4 years, it's probable the long-term objectives will be revised. With this in mind, any implementation schedule of greater than 3 years is of questionable utility.

Response: The Forest Service does not believe that the anticipated revision of the Forest Plan, within the next 5 years, undermines the utility of long-term objectives. The Forest Plan contains many objectives that will take longer than the next 5 years to achieve. This does not make them invalid. The long-term objectives are valuable because they encourage efforts to accelerate accomplishments where feasible and appropriate.

The National Forest Management Act and the Endangered Species Act require that the Forest Service continuously monitor and evaluate new information regarding trends in grizzly bear populations and habitat conditions. These laws also require that the agencies remain able to adjust their decisions in response to new information indicating a need to change. This responsibility applies regardless of the anticipated timing of Forest Plan revision. If and when new information dictates, the Forest Service will reinstate formal consultation with the U.S. Fish and Wildlife Service on these objectives. On the other hand, if new information confirms the effectiveness and necessity of these objectives, they will not be changed with revision of the Forest Plan.

Monitoring

Comment(s): Several respondents requested more detailed information on proposed requirements for monitoring of road and trail use levels and the effectiveness of road restriction and reclamation.

Response: In response to these comments, additional information is provided in Appendix A of the EA.

Suggestions regarding Effects Analysis and Requests for Additional Information

Comment(s): One person wished to know how many miles of road would need to be restricted with physical barriers, obliterated or reclaimed under the various alternatives?

Response: This information is provided in Chapter III of the EA.

Comment(s): Several respondents reacted strongly to the statement in the EA (pg. 15) that stricter alternatives would not be analyzed because "[n]o scientific basis for the more restrictive values has been provided," and that the South Fork numbers were sufficient simply because females there have reproduced, clearly should be retracted.

Response: This statement has been eliminated in the final EA.

Comment(s): The preferred alternative should make clear that meeting the Total Motorized Access Density (TMAD) objective will require reclaiming open and restricted roads.

Response: Chapter III of the EA describes the miles of road reclamation and road restrictions estimated to result from implementation of each alternative. In addition, Appendix D has been added to the EA. This Appendix defines in detail "reclaimed road" and "restricted road."

Definitions

Comment(s): Some respondents felt that the proposed objectives should be presented as standards.

Response: This direction is termed "objectives" because it represents a statement of intended future results and conditions. These objectives are not any less important or "enforceable" than standards. To make this clear, Alternative 3-Corrected also amends Forest Plan General Standard No. 1 to state: "The grizzly bear objectives and standards of Amendment 19, which are required by the Terms and Conditions of the U.S. Fish and Wildlife Service's Biological Opinion on Amendment 19, are not discretionary. These objectives and standards supersede any conflicting or inconsistent management direction contained in the Forest Plan. These objectives are also enforceable as nondiscretionary terms and conditions of the U.S. Fish and Wildlife Service's incidental take statement in their Biological Opinion on Amendment 19."

Comment(s): Several respondents were concerned that the EA states that ASQ is simply a ceiling that will not likely be achieved. They felt that this position on ASQ is directly counter to the Ninth Circuit Court's ruling that the ASQ must be reliable and provide users a solid foundation for short and long term planning.

Response: The regulations implementing the National Forest Management Act define "allowable sale quantity" as "[t]he 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" (36 CFR 219.3) (emphasis added). In determining the ASQ for each alternative, the Interdisciplinary Team estimated, to the greatest extent possible at the programmatic level, the amount of timber volume that could be sold consistent with the standards and guidelines of the existing Forest Plan, and any proposed additions.

In conducting programmatic analysis of nearly 700,000 acres of land suitable for timber production, it is impossible to account for all the site-specific factors that may affect decisions on specific timber harvest proposals. This is the main reasons why additional site-specific environmental analysis is necessary prior to committing to specific actions. The Opinion of the Ninth Circuit Court of Appeals directly addressed and approved the need for additional site specific analysis in its consideration of the water quality and silvicultural methods issues presented in the case. This subsequent and more specific analysis may result in timber harvest levels that are less than the maximum allowable. In addition, the Flathead National

Forest cannot guarantee that future budgets will be able to finance the annual production of the maximum amount of timber that may be sold.

The ASQ values identified for all alternatives, except Alternative 1, are consistent with the programmatic direction of the Forest Plan. However, it would be inaccurate for the Forest Service to imply that subsequent site-specific analysis and other factors will never cause annual timber harvest levels to be less than the maximum allowable.

Comment(s): Commentors felt that the Forest Service is, for unwarranted reasons, essentially eliminating core security areas from the timber base, even when it is acknowledged in the Biological Assessment that timber harvest is acceptable in core security areas with certain restrictions.

Response: In conducting this analysis for Alternatives 3-Corrected, 4-Corrected, and 5, the Interdisciplinary Team accounted for consequences of the security core area objectives on the amount of land available for timber management. Motorized access is prohibited in security core areas during the non-denning period. However, motorized activities, including timber management activities, may occur during the denning period. The mechanical and economical feasibility of timber management activities during winter conditions depends on site-specific conditions such as slope steepness and distance to road access. These conditions are highly variable across the affected BMU Subunits. As a result, we are unable to evaluate in this programmatic analysis the degree to which timber management activities are feasible in security core areas. Therefore, we excluded security core areas from the estimation of ASQ, even though timber harvest activities are permissible during the denning period.

Decisions to proceed with timber management activities in security core areas during the denning period must be based on site-specific analysis when all the relevant factors can be adequately addressed. The determination to exclude security core areas from the calculation of ASQ is also consistent with the need to assure, to the greatest extent possible at the programmatic level, that the ASQ is achievable consistent with other Forest Plan management direction.

Management Area Allocations

Comment(s): Respondents were concerned that the Flathead National Forest has not demonstrated how Management Area allocations such as MA-15 are compatible with Management Situation 1 grizzly bear recovery areas. They felt that contrary to what is stated in the EA, this must be addressed if the bear is to be given a fair shot at recovery. Commentors concurred that if the Forest does not address Management Area allocations and their compatibility with ecosystem management and MS-1 areas we were essentially side-stepping the whole issue and letting timber uses dominate over the bear.

Response: This proposal does not include any adjustment to the Management Area designations of the Forest Plan. The current Management Area designations are compatible with grizzly bear recovery goals. Management area direction must be read in its entirety and in conjunction with Forest-wide goals, objectives, and standards.

The Forest Plan management direction for each individual Management Area, including those where timber harvesting is allowed, contains a Standard stating: "[a]here to the Forest-wide Standards for Grizzly Bear management in occupied Grizzly Bear habitat." Amendment 8, which was approved on July 31, 1989, establishes that all Forest Plan standards are not discretionary. This amendment further clarifies that standards for threatened and endangered species conservation are mandatory, and thus take precedence when there are conflicting uses. In Amendment 9, which was also approved on July 31, 1989, the Flathead National Forest added the entire Interagency Grizzly Bear Guidelines to the Forest-wide standard for grizzly bear.

In addition, the Amendment 19 alternatives that would establish additional objectives for grizzly bear habitat management also propose amending the Forest Plan's Forest-wide General Standard No. 1 to affirm that the proposed habitat objectives are nondiscretionary requirements of the Terms and Conditions of the U.S. Fish and Wildlife Service's January 9, 1995 biological opinion that supersede any conflicting or inconsistent management direction contained in the Forest Plan.

The Forest Service concludes that Management Area allocations, including those such as MA-15 that allow timber harvest when all other standards are met, are compatible with Management Situation 1 grizzly bear recovery areas. In these areas, timber uses clearly do not dominate over the bear.

GLOSSARY

ALLOWABLE SALE QUANTITY (ASQ) - 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."

ARTERIAL ROADS - Roads that provide service to large land areas across the forest. Arterial roads connect with other arterials and/or public highways and provide access to collector roads. Examples of arterial roads on the forest include the East and West Side Hungry Horse Reservoir roads.

BEAR MANAGEMENT UNIT (BMU) - An area which meets yearlong habitat needs of both male and female grizzly bears. BMUs in the NCDE are about 400 mi² in size.

BIOLOGICAL ASSESSMENT - Documentation prepared by a federal agency of analysis of the effects of a proposed action on species listed under the Endangered Species Act. The purpose of the Biological Assessment is to determine whether endangered, threatened, or proposed species or their habitat are likely to be adversely affected by the action, and to determine whether formal consultation or conference with the U.S. Fish and Wildlife Service is necessary.

BIOLOGICAL EVALUATION - A review and determination by the Forest Service of how its programs or activities may affect endangered, threatened, proposed, or sensitive species.

BIOLOGICAL OPINION - Document that states the opinion of the U.S. Fish and Wildlife Service as to whether or not the federal action is likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat.

BMU SUBUNIT - A subset of a BMU, representing the approximate size of an average annual female home range (about 50 mi² in most of this area), generally delineated from ridgetop to valley bottom, and encompassing all seasonal habitats.

COLLECTOR ROADS - Roads that connect arterial roads with local roads.

DISPERSED RECREATION - That portion of outdoor recreation use which occurs outside developed sites in the unroaded and roaded Forest environment; i.e., hunting, backpacking, and berry picking.

HABITAT EFFECTIVENESS - A measure that reflects the area's ability to support wildlife given the quality of habitat and the types of human disturbance imposed upon the area.

INCIDENTAL TAKE - As defined by the Endangered Species Act, to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Taking is prohibited, unless permitted under provisions of section 10.

LOCAL ROADS - Roads that connect collector roads to trailheads, parking lots, timber cutting units, or other facilities located at the end of roads.

LISTED SPECIES - A species or subspecies of fish or wildlife or plants, and any distinct population segment of any species or vertebrate fish or wildlife which interbreeds, that is determined by the U.S. Fish and Wildlife Service to be endangered or threatened, and is protected under the Endangered Species Act.

MANAGEMENT SITUATION 1 - Areas key to the survival and recovery of the grizzly bear population or a segment of the grizzly bear population, containing seasonal and year-long habitat.

MANAGEMENT SITUATION 2 - Areas which lack distinct grizzly bear population centers, and where suitable habitat generally does not occur. Habitat resources are either unnecessary for survival and recovery of the species, or the need has not yet been determined.

MANAGEMENT SITUATION 3 - Grizzly bear presence is possible but infrequent. Developments, such as campgrounds, resorts or other high human use associated facilities, and human presence result in conditions which make grizzly bear presence untenable.

NON-MOTORIZED TRAIL - Any trail that does not have motorized use yearlong, either by legal restriction or physical obstruction of ALL motorized traffic.

OPEN MOTORIZED TRAIL - A trail without legal restriction, or physical obstruction, on motorized use and *is used* by motorized vehicles. Trails use by 4-wheeler, 4-wheel drive vehicles and motorized trail bikes are examples of this type of access route.

OPEN ROAD - A road without restriction on motorized vehicle use.

RECLAIMED ROAD - A reclaimed road has been treated in such a manner so as to no longer function as a road or trail and has a legal closure order until reclamation treatment is effective. This can be accomplished through one or a combination of treatments including: recontouring to original slope, placement of natural debris, or revegetation with shrubs or trees.

RESTRICTED MOTORIZED TRAIL - A trail on which motorized use is legally restricted, or physically impossible, seasonally or yearlong.

RESTRICTED ROAD - A road on which motorized vehicle use is restricted during the entire non-denning period. The road requires physical obstruction and motorized vehicle use in the non-denning period is legally restricted by order.

ROAD - All created or evolved routes that are >500 feet long (minimum inventory standard for the Forest Service Route Management System), which are reasonably and prudently driveable with a conventional passenger car or pickup.

SEASON OF GRIZZLY BEAR USE - Seasons have been defined through grizzly bear research. Although there may be considerable variation between individuals, seasons are defined for cumulative effects analysis as:

Denning (maximum): 10/7 - 5/7
Early spring (den emergence): 3/16 - 5/7
Spring (herbaceous foods): 5/8 - 7/15
Summer (berries): 7/16 - 9/30
Autumn (roots, hunting season): 10/1 - 11/15

The non-denning season for purposes of identifying security core area is March 16 - November 15.

SECURITY CORE AREA - An area that is at least 0.3 miles from open roads and high-intensity non-motorized trails. Restricted roads may occur within the security core area, provided they have substantial immobile closure devices and legal closure to motorized use during the non-denning period. Legal closure orders for individual roads or trails, or an area closure, may be utilized. Areas must be at least 2500 acres in size, once established and effective, remain in place for at least 10 years.

TRAIL - All created or evolved access routes that do not qualify as a "road". They are not reasonably and prudently driveable with a conventional passenger car or pickup. Generally, these routes are maintained and inventoried as part of the trail system. Within the three classes below, each trail will need to be attributed as having high use (20 or more parties per week) or low use (less than 20 parties per week).

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APPENDIX V-1

FEDERAL, STATE, AND COUNTY AGENCY LETTERS

Montana Department
of
Fish, Wildlife & Parks



RECEIVED

JAN 4 1995
FLATHEAD N.F.

Region One
490 North Meridian Rd.
Kalispell, MT 59901
(406) 752-5501
FAX: 406-257-0349
Ref: DV193.95
January 3, 1995

Flathead National Forest
Mr. Joel Holtrop, Supervisor
1935 Third Avenue East
Kalispell, MT 59901

Dear Joel,

Thank you for the chance to comment on proposed Forest Plan Amendment 19. I commend you and your staff for the job you have done on this amendment. With this, the first application of the IGBC Access management guidelines, you have helped to clarify procedures for implementing these guidelines and also illustrated their utility.

There are considerable scientific data which demonstrate the need for access management. Increasing human use of grizzly bear habitat creates potential conflicts with bears, and roads on the landscape increase the risk of conflict. Road management is an essential tool in our combined efforts to recover grizzly bear populations in the Northern Continental Divide. Fish, Wildlife & Parks (FWP) believes it is appropriate to restrict road development and motorized access in some areas of the Flathead National Forest to benefit bears and other species adversely affected by human activities, as accomplished by both Alternatives 3 and 4.

The five year approach outlined in Alternative 3 seems a reasonable way to incrementally improve habitat security for grizzly bears in the short-term. In grizzly bear subunits consisting predominantly of Forest Service lands, Alternative 3 clearly restricts road access in heavily roaded areas of the Forest and will help to reduce the potential for bear/human conflicts. The approach used in mixed ownership subunits described in Alternative 3 seems necessary and appropriate, although both the Forest Service and FWP must continue our commitment to work with state and private landowners to help resolve access and other grizzly bear management conflicts.

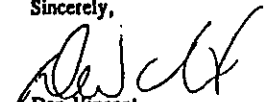
Long-term objectives for Alternatives 3 and 4, although well reasoned, may not be appropriate at this time because they are based on preliminary scientific data. Additional information and more rigorous analyses which are forthcoming from the South Fork and

Mr. Joel Holtrop
January 3, 1995
Page 2 of 2

other ongoing grizzly bear studies will be useful in the development of long-term management strategies. It seems more appropriate to implement the 5-year program of Alternative 3 and to develop final objectives during that time through the process of Forest Plan revision. The forthcoming revision of the Forest Plan should be the vehicle for establishing long-term management objectives based on the best scientific information available at that time. Deferring final objectives for a few years would: 1) result in better decisions for bears and people, 2) help to maintain credibility by reducing volatility in resource management policies, and 3) reduce the risk of eroding public support for grizzly bear recovery by incrementally reducing motorized recreational opportunities. Such an approach would make positive progress in the short-term and enable managers and the public to make informed decisions on the long-term tradeoffs associated with meeting multiple use objectives in the future.

Forest roads are a continuing sediment source and permanent road closures offer a unique opportunity to remedy these problems. Permanent road closures also have potential to sustain significant long-term sediment yield problems if not properly evaluated and addressed. The EA deals with this issue by deferring to Trout Standards adopted with Amendment 3. We are not aware of any provisions requiring the Forest to conduct sediment source surveys in affected road closure areas. Attempts have been made to deal with issues concerning long-term sedimentation through BMPs and Flathead Basin Commission recommendations. However, Amendment 19 provided an opportunity to consolidate recommendations that will assure implementation. This would help to solidify management direction and avoid adverse impacts potentially associated with long-term road closures. It would be beneficial if Amendment 19 included language requiring sediment-source surveys by a multi-agency ID team in any watershed scheduled for long-term road closure or obliteration. This should be followed by full implementation of all remedial actions recommended by the ID team.

Sincerely,


Dan Vincent
Regional Supervisor



IN REPLY REFER TO:

L76

United States Department of the Interior

NATIONAL PARK SERVICE
Glacier National Park
West Glacier, Montana 59936
(406) 888-3441
FAX: (406) 888-5381

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JAN 5 1995

FLATHEAD N.F.

Mr. Joel Holtrop, Forest Supervisor
Forest Plan Amendment 19
Flathead National Forest
1935 Third Avenue East
Kalispell, Montana 59901

Dear Mr. Holtrop:

Glacier National Park's management has reviewed the Environmental Assessment entitled: Forest Plan Amendment #19 - Objectives and Standards for Grizzly Bear Management and Timber Production. We support the addition of new objectives and standards to the Flathead Forest Plan that would further limit high-density motorized access in prime grizzly bear habitat.

Both Alternatives 3 and 4 would provide greater security for the grizzly bear in the Northern Continental Divide Ecosystem and, thus, should help meet the recovery goals for this species. Barring legal challenges that prevent implementation, these alternatives should also help make the supply of timber coming from Flathead National Forest Lands more stable over the coming 5 to 10 years. In preparing this proposed amendment, Flathead National Forest is to be applauded for using new information regarding bear habitat use, bear security and roads that has been produced since the Flathead Forest Plan was originally completed in 1985.

Alternatives 3 and 4 provide standards and objectives regarding total motorized access density, open motorized access density and security core areas that are very similar to the Interim Motorized Access Management Recommendations provided to the Interagency Grizzly Bear Committee by its Access Task Force. In evaluating the effectiveness of these standards and objectives, we urge the Flathead National Forest to utilize the additional analysis recommended by the Access Task Force in its interim report. As additional research information regarding roads and bear security becomes available, modifications to the standards and objectives that are outlined in Alternatives 3 and 4 may be appropriate.

For grizzly bear recovery to be achieved it is also important for other landowners that manage MS-1 and MS-2 lands to cooperate in achieving maximum road density objectives. For those Bear Management Unit subunits that are in either MS-1 or MS-2 classification, and not predominantly National Forest Land, we urge the Forest Service to continue its past efforts to enter into conservation easements, land exchanges or other forms of land protection so as to meet the objectives and standards called for in Alternatives 3 and 4.

Thank you for the opportunity to comment on this proposed Forest Plan Amendment.

Sincerely,

David A. Mihalic
Superintendent

CONRAD BURNS
MONTANA

E-1-1
United States Senate

WASHINGTON, DC 20510-2603

January 3, 1995

Mr. Joel Holtrop, Forest Supervisor
Forest Plan Amendment 19
Flathead National Forest
1935 Third Avenue East
Kalispell, Montana 59901

Dear Joel:

I am writing to add my comments to Forest Plan Amendment 19, Objectives and Standards for Grizzly bear Management and Timber Production.

Reviewing the material presented in Forest Plan Amendment #19, I have come to the conclusion that the most effective amendment to the forest plan, considering the restraints established by the federal courts, is not being considered. By following the preferred alternative, the Forest Service has effectively reduced the allowable sale quantity of timber to roughly half of what it is at the present time. In addition this preferred alternative will close the forest to the people that seek to use the National Forests as a source of recreation.

I am fully aware that the amendment to the Forest Plan has come at the direction of the United States 9th Circuit Court, but the interpretation is one that is unacceptable to the people. I am urging you and your staff to reconsider the impact that the preferred alternative will have on the people of Northwestern Montana, and readdress your findings to take into consideration the requests and needs of the economic base for this area. The selection of Alternative 3 as preferred, does not take into consideration the upcoming findings that the Grizzly bear in northwest Montana should be removed from the listing as endangered, and that the population has recovered enough to sustain itself.

I look forward to hearing that you have decided that the Alternative 2 would meet the requirements established by the court, and will allow reasonable access and use of the forests by the human population. The common comment during the last election cycle was one that the Forest Service and the federal government need to hear, that being that the human element must again be added to the equation when discussing the future plans of endangered species, and government regulation in general.

COMMITTEES
APPROPRIATIONS
COMMERCE, SCIENCE
TRANSPORTATION
SMALL BUSINESS
SPECIAL COMMITTEES

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JAN 9 1995

FLATHEAD N.F.

Joel Holtrop, Forest Supervisor
January 3, 1995
Page 2

Please add these comments to the record and take them into account when you decide upon the future use of the Flathead National Forest.

With best wishes,

Sincerely,


Conrad Burns
United States Senator

CRB/ram

JAN 04 '95 12:52 FLATHEAD COUNTY

P.1/2

Flathead County
Board of Commissioners

800 SOUTH MAIN STREET • KALISPELL, MONTANA 59901 • 758-3503
(406) 758-3503

January 4, 1995

Joel Holtrop, Supervisor
Flathead National Forest Service
1935 Third Avenue East
Kalispell, Montana 59901

RE: Forest Plan Amendment 19

Dear Mr. Holtrop:

The Flathead County Board of Commissioners hereby formally requests the postponement of implementation of Amendment 19 to the Flathead National Forest Plan, amended July 19, 1989, for the following reasons:

Whereas, the notification to this office was ill-timed and short-term, not allowing for adequate review.

Whereas, we request the Flathead National Forest Service initiate a full environmental impact statement on this proposed action as required in NEPA 1502.4(b) to include an economic impact statement defining the impact of proposed actions on all facets of our local economy including, but not limited to, timber industry, finished wood products, tourism, recreation (summer and winter), et al.

Whereas, the Ninth Circuit Court of Appeals, in an opinion rendered July 5, 1994, ordered the Forest Service to amend the ASQ (allowable sale quantity) on the Flathead National Forest. This in no way required the reduction of access by the public to Federal lands.

Whereas, the environmental assessment did not sufficiently address the specific impacts on public access to public domains.

Whereas, Flathead County is reliant upon timber receipts for County schools and roads, this proposed action would greatly reduce accessible saleable timber within our County. We object to the set-aside of any mature saw timber considered high risk to fire and/or disease.

Whereas, Flathead County, having a history of a self-supportive community, objects to the shift proposed in this action to becoming a welfare community reliant upon PILT monies for timber not sold.

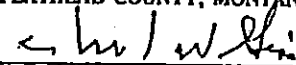
JAN 04 '95 12:52 FLATHEAD COUNTY

P.2/2

Mr. Joel Holtrop
January 4, 1995
Page 2

We appreciate the opportunity to comment.

Sincerely,
BOARD OF COMMISSIONERS
FLATHEAD COUNTY, MONTANA


Howard W. Gipe, Chairman


Sharon L. Stratton, Member


Robert W. Watne, Member

FCBC:eca



Waterton Lakes National Park
Waterton Park, Alberta
T0K 2M0 CANADA

December 6, 1994

CR file 9810-133

Joel D. Holtrop
Forest Supervisor
USDA Forest Service
Flathead National Forest
1935 Third Avenue East
Kalispell, MT 59901
U.S.A.

Dear Mr. Holtrop:

Thanks for the opportunity to comment on Amendment #19 to your Forest Plan.

On balance, our assessment is that Alternative 4 is preferred. It appears to have no significant economic impacts, yet provides for the greatest habitat restoration and provision of secure areas. It is appropriate, when dealing with questions of endangered wildlife and maintenance of biodiversity, to choose the most conservative course of action. The conservation biology rationale for choosing Alternative 4 is solid, and the long-term survival of grizzlies and other wildlife in the Northern Continental Divide Ecosystem which we share will be enhanced by its adoption.

Congratulations on your efforts to integrate biodiversity conservation and landscape ecology considerations into your Forest Plan.

Sincerely,

Bill Dolan
Chief Park Warden
Waterton Lakes National Park
(403) 859-2224 (voice)
859-2650 (fax)

JS 89:51 4068924413

COLUMBIA FALLS CITY

PAGE 02

City of Columbia Falls

PHONE: (406) 892-4391

P.O. BOX 1970
130 8TH STREET WEST
COLUMBIA FALLS, MT 59912

FAX: (406) 892-4413

January 3, 1995

Joel Holtrop
Flathead National Forest Supervisor
1935 Third Avenue East
Kalispell, Montana 59901

Dear Mr. Holtrop:

Thank you for the opportunity to express our concerns about the potential economic impacts of the proposed Amendment 19 to the Flathead Forest Plan. While we understand the mandates you are obliged to meet, it is our hope that a better balance between environmental and economic/social concerns can be met.

We understand that the amendment and revised RSO's could result in a reduction of 937 jobs and \$17.9 million in wage income. Such an adverse impact will create economic instability in Flathead County and may adversely affect forest health. Current timber sales performance being far below the aid or proposed RSO's is already having a negative impact on the community in funding of schools and county roads. And taxpayers are in no need to pay more for services they rely on.

Also, forest access is itself an economic factor in our area. Both winter and summer forest recreation draw tourists to the region. Further restriction of access to the forests can only lead to a decline in that activity and overuse of those areas that do remain accessible.

Thank you for your consideration.

Sincerely,

Mike Christean, Mayor

Colleen Allison

Mike Chaff

Doug Harper

Robbin Kalechuk

Jennifer Krueger

Roger Newman

APPENDIX V-2

LIST OF RESPONDENTS

Elected Officials and Federal Agencies

FISH & WILDLIFE SERVICE
DUFFY PETE

USDI, NATIONAL PARK SERVICE
DAVID A. MIHALIC

UNITED STATES SENATE
CONRAD BURNS

WATERTON LAKES NATIONAL PARK
BILL DOLAN

State Officials and Universities

MDFWP
DAN VINCENT

UNIVERSITY OF COLORADO AT BOULDER
MARK WOODS

DEPARTMENT OF STATE LANDS
MIKE LAKE

UNIVERSITY OF MARYLAND AT COL. PARK
LISA BOARD

UNIVERSITY OF MINNESOTA
PETER A. ABRAMS

UNIVERSITY OF MINNESOTA
JOSE BARBOSA

UNIVERSITY OF CA AT SANTA CRUZ
MICHAEL SOULE

UTAH STATE UNIVERSITY
B.K. GILBERT, PHD

County and City Elected Officials

CITY OF COLUMBIA FALLS
LYLE A. CHRISTMAN

LAKE COUNTY COMMISSIONERS
GERALD L. NEWGARD

COLUMBIA FALLS AREA CHAMBER OF COMM
TIM FURLONG

RURAL PLANNING OFFICE
PATRICK O'HERREN

BOARD OF COMMISSIONERS FLATHEAD COUNTY

YELLOWSTONE COUNTY PUBLIC DEFENDER
L. S. SELVEY

Businesses and Interest Groups

A-1 LANDSCAPING
ANDY KLEIN

ALLIANCE FOR THE WILD ROCKIES
TOM PLATT

AMERICAN MOTORCYCLIST ASSOCIATION
ERIC LUNDQUIST

AMERICAN RED CROSS IN GTR N.Y
JOEL HAMMER

AMERICAN WILDLANDS
ROBERT AMENT

ANCIENT FOREST INTERNATIONAL
ANNE SEAQUIST

BACKCOUNTRY HORSEMAN
EDWIN E. BLACKLER

BACKCOUNTRY HORSEMAN
LARRY SCHULTZ

BALLARD & ASSOCIATES, INC.
W. W. BALLARD

BIOSTATISTICAL ANALYSES
BENJAMIN B. STOUT

BLACK HILLS FOREST RESOURCE ASSOC.
TOM TROXEL

BLUE RIBBON COALITION INC.
ADENA COOK

CHESTWOOD WILDERNESS ALLIANCE
MARK DES MARETS

CITY SERVICE, INC
EDWARD CROYMOUS

COALITION FOR CANYON PRESERVATION
DONALD H. KERN

COALITION FOR CANYON PRESERVATION
SHARLON I. WILLOWS

COLUMBIA VISTA CORPORATION
FRED F. SCHULTZ

COON HOLLOW CANVAS
HELEN PILLING

DAVID BROWNSTEAD DESIGNS
CHUCK ADAMS

DEFENDERS OF WILDLIFE
HANK FISCHER

DUVAL'S RV & BIKE PARK
BRENT L. DUVAL

DUVAL'S RV & BIKE PARK
JAMES J. DUVAL

DUVAL'S RV & BIKE PARK
C. DUVAL

DUVALS RV & BIKE PARK
JUSTIN & AARON DUVAL

ENERGY CONTROL PRODUCTS, INC.
R MORLER

FH STOLTZE LAND & LUMBER CO
RONALD BUENTEMEIER

FILM & VIDEO INC.
TED FAYE

FLATHEAD AUDUBON SOCIETY
BRENT MITCHELL

FLATHEAD AUDUBON SOCIETY
LEO KEANE

FLATHEAD AUDUBON SOCIETY
RONALD & MARIE SPERANDEO

FLATHEAD ECONOMIC DEVELOPMENT CORP
CAROL DALY

FLATHEAD LAKE BIOLOGICAL STATION
COLDEN BAXTER

FRIENDSION FOR GLOBAL SUSTAINBLTY
BROWNIE NEWMAN

FRIENDS OF THE BITTER ROOT, INC.
DONNIE LAUGHLIN

FRIENDS OF THE CLEARWATER
STEVE PAULSON

FRIENDS OF THE CLEARWATER
LAURIE SOLOMON

FRIENDS OF THE WILD SWAN
ARLENE MONTGOMERY

FRONTIER TRANSPORTATION, INC
KEN DOTY

GLACER INSURANCE, INC.
MARK A. AGATHER

GREATER ECOSYSTEM ALLIANCE
MITCH FRIEDMAN

GREATER SALMON-SELWAY PROJECT
MARILYN OLSEN

GREATER YELLOWSTOE COALITION
LOUISA WILLCOX

GREEN FIRE PRODUCTIONS
KAREN & RALF MEYER

HEART OF THE WEST RANCH
RIC VALOIS

INLAND EMPIRE PUBLIC LANDS COUNCIL
SARA FOLGER

INTERMOUNTAIN FOREST IDUSTRY ASC
SETH DIAMOND

INTERNATIONAL WILDLIFE FILM FESTVL
AMY HETZLER

INWARD
LINA M. GOOLEY

J BAR D ENVIROMENTAL SERVICES
LARRY L. BROWN

KETTLE RANGE CONSERVATION GROUP
TIMOTHY J. COLEMAN

LIONS CLUB DISTRICT 37D
HOWARD N. HORTON

LONE WOLF ADVOCACY
MERRIEL JOHNSEN

MADISON GALLATIN ALLIANCE
JOE GUTKOSKI

MENDOCINO FOREST WATCH
DON MORRIS

MID SOUTH CHAPTER
MIRIAM HOOVER

MKTG. CONS. CORP. OF MINNEAPOLIS
PETER A. PASSOLT

MONTANA CHAPTER SIERRA CLUB
SHERMAN H. JANKE

MONTANA FARM BUREAU FEDERATION
J. T. CUMMINS

MONTANA LOGGING ASSOCIATION
KEITH OLSON

MONTANA SNOWMOBILE ASSOCIATION
BOB BUSHNELL

MONTANANS FOR MULTIPLE USE
SHEILA KELLER

MONTANANS FOR MULTIPLE USE
MICHAEL S. WARE

MT TRAIL VEHICLE RIDERS ASSOC
LINDA Y. ELLISON

N. FORK PRESERVATION ASC.
JOHN FREDERICK

NATIONAL AUDUBON SOCIETY
BRIAN PECK

NATIONAL WILDLIFE FEDERATION

NEIGHBORHOOD PLANING SITE DESIGN
BRUCE HOSSFELD

NORTH FORK PRESERVATION ASSOCIATION
JOHN FREDERICK

NORTH VALLEY REFUSE
BEN COHEN

NORTHERN ROCKIES BIODIVERSITY PROJ
MICHAEL CARTER

NORTHWOODS CONSERVATION ASSOC
CHARLES RAY

OREGON LANDS COALITION
TOM HIRONS

OREGON NATURAL DESERT ASSOCIATION
BARBARA BUTLER

PARADISE PACIFIC WILDLIFE FILMS
CHARLES E. EAGAN

PEDIATRICS AND NEONATOLOGY
DANIEL HARPER

PEER
PHILLIP M. PITTMAN

PEOPLE FOR ELK
JAMEY F. WILLOWS

PRESERVE APPALACIAN WILDERNESS
STEVEN KRICHBAUM

PURSUIT OF EXCELLENCE IN FMLY DNTRY
WAYNE K. WRIGHT

ROCKY MOUNTAIN LAB, NIH
L. J. DINCRAK

ROCKY MT FRONT DEFENSE COUNSEL
RICHARD AURAND

SAN JOAQUIN GREENS
ROSE ROWE

SANDPOINT FOREST WATCH
LIZ SEDLER

SCENIC 83
AL CLUCK

SELKIRK-PRIEST BASIN ASSOCIATION
BARRY ROSENBERG

SIERRA CLUB - POLK GROUP

SIERRA CLUB, LOMA PRIETA CHAPTER
CHRIS LARSON

SIERRA CLUB, SF BAY CHAPTER
VICKY HOOVER

SPAR TREE FORESTRY, INC.
JIM MILLER

SWAN VIEW COALITION
KEITH J. HAMMER

SWAN VIEW COALITION
KEITH J. HAMMER

THE WILDERNESS SOCIETY
MICHAEL D. SCOTT

THEORETICAL ECOLOGY
PETER J. BRALLUER

STEVE THOMPSON

TRY CITY LUMBER
BRENT L. HALL

V.O.T.E.
LARRY CAMPBELL

WA PROSPECTORS MINING ASSOC
CHARLES E. COX

WASHINGTON WILDERNESS COALITION
ROSS ANDERSON

WEB PRODUCTIONS
G. M. GRIFFITH

WESTERN ENVIRONMENTAL TRADE ASSOC
PEGGY OLSON TRENK

WILD FOREVER/SI CL/WILD SOC/AUD SOC
ADAM RUBEN

WILDSTOCK
ERWIN & PEGGY BAUER

WIND RIVER MULTIPLE USE ADVOCATES
WILLIAM G. KING

WINTER SPORTS, INC.
MICHAEL COLLINS

YUCCA VALLEY HIGH SCHOOL
SHIA CRAWFORD

YUCCA VALLEY HIGH SCHOOL
DESIREE SIMPSON

YUCCA VALLEY HIGH SCHOOL
MICHELLE STEVENS

Individuals

CHARLES M. ABBOTT

E.M. ABBOTT

MARK ABERNATHY

HUGO F. ABLESON

JUDY ADAM

CHARLES A. ADAMS

CLARENCE & NOREETA R. ANDER-
BERG

LEE G. AIDE

MARTIN ALBERT

JAY ALBRECHO

JOHN ALBRECHT

ALAN J. ALDRICH

JOHN ALE

JODY LEE ALHAVER

KEVIN K. ALLEMANN

MONTE ALLEN

PAULA ALLEY

VICKIE ALLIN

DANIEL E. ALTMAN

ROBERT AMANZELLA

JERRY AMBROSE

GEORGE AMREIHN

ADOLPH B. AMSTER

DALE ANANIA

CLAY & DOROTHY ANDERS

JOHN E. ANDERSEN

B. R. ANDERSON

DAVID G. ANDERSON

FRANK ANDERSON

JORGE L. ANDREMIDAS

SCOTT ANDREWS

STEVE ANDREWS

JEFF ANNSTING

HARRY E. ANTOU

DAVID APPRECO

ANNE H. ARCHIE

GEOFFREY ARNOLD

NATHAN ARTHUR

STEVE & LAUREN ASHLER-GOTTLIEB

JEAN F. ATTHOWE

ELSIE AUERBACH

JOHN G. AUGUSTINE

KEN AUSK

BRIGGS AND ALICE AUSTIN

JO AUSTIN

MONA AVELLINO

BARBARA BABBIT

DANIELLE BACHANT

GREGG BAFUNDO

CHARLES BAGLEY

HARRY A. BAGLEY

KEITH BAILEY

ERNEST L. BAINTON

DENNIS BAIRD

DAVID W. BAKAR

BILL AND LAURA BALDWIN

RICHARD BALDWIN	S. S. BELL	F. M. BLODGET
TOM BALLARD	WILLIE BELL	TERRY BLOSSER
MONICA BARBACK	VERN BENHART	CAROL P. BLUMENTHAL
GWEN BARBER	JENNIFER & CRAIG BENKMAN	JULIE C. BLUNT
D. BARBERIS	BRUCE B. BENTLEY	LORNE BOATTY
BILL & VIKI BARBOUS	RONALD BERG	L. T. BOCHON
WALTER BARBUCK	TRACI BERGAN	JIM REGINA & REBECCA BOCK
ROBERT & DORIS M W. BARKLEY	LINDA BERGEN	ART BOESCHEN
MICHAEL S. BARKSEN	STEPHEN BERGERTON	ROSE BOGHASEN
MATTHEW BARLEY	CAROLINE BERNER	AMY BOHNENSTIEHL
BILL BARNABY	DAVID T. BERNER	REX BOLLER
BRUCE BARNBAUM	JERRY BERNER	DAN BOONE
JIM BARRETT	BRUCE BESHARD	ANNE M. BOOTHE
LISA BARRON	BILL BETTS	DEBORAH E. BOOTS
RONETTE R. BARTELS	PETER BETTS	MARYON BORDER
JIM BARTER	EDWARD BETZIG	LYNN BORDERS
TIMOTHY BASGALL	JESSICA N. BEUSON	MARK BOURGEOIS
RICK BASS	HERBERT L. BICK	MARCHETA BOWDLE
PLENNY BATES	ROBERT D. BIEDA	BARBARA BOWLEN
PLENNY J. BATES, M.D.	JOE BINANDO	ERNEST & JEAN BOYCE
ALLEN BATT	ELISABETH BINGHAM	SHIRLEY K. BOYCE
ELISA BATTLE	NETTEMAE H. BINNIE	TONY BOYD
DOUGLAS BATY	JOAN BISHOP	ALAN L. BOYER
MOLLY BAXTER	R. W. BLAIR	MARK BRADEN
MARIENE BAY	DAVID BLAKE	JACK L. BRADFORD
DIANE L. BAYDA	JOANNE BLAKE	DOROTHY E. BRADLEY
JOHN BAYER	DR. THOMAS BLAKELY	HOMER BRADLEY
MELODY BEAN	RUSSELL BLALACK	GLENDA BRADSHAW
KELLY BEARD-TITTON	DION AND EMILIA BLAND	MARY BRADSHAW
JAMES S. BEARDMORE	D. L. BLANK	STAN BRADSHAW
SHANE & SUSAN BECKER	ALOMA BLAYBOCK	JOE BRADY
DUK & PHYLLIS BEDBURY	WILLIAM P. & PATRICIA C. BLEHA	TOM & PAM BRANCH
KATHLEEN BEINHOFF	WENDY F. BLISS	CELINDA BRANDT
MR. & MRS. JON BELISLE	CARLA BLIZZARD	ROBERTA BRATENAHN
D BELL	PHILIP BLOCK	SUE ANNE BRENGNER, MD

SUE A. BRENNER
SHAWN BRENTHAM
VIVAN BREWER
W. D. BREWER
FRANK BRIDEN
HAL BRILL
MRS. THOMAS BRIST
BOB BRISTER
LEN BROBERG
LISA BROHL
GERALD R. BROOKMAN
BRIAN BROOKMEYER
PHILIP BROUSSARD
ANDREW BROWN
ANN BROWN
CHRIS BROWN
DIANNA M. BROWN
MILISSA BROWN
PATTIE BROWN
RAYMOND H. BROWN
TINA M. BROWN
WALTER BROWN
ALAN BRUBAKER
DAVID H. BRUBECK
BAVID A. BRUNETTI
STAN BUCK
WILLIAM BUDGE
MICHAEL BUDIG
JOE BUNINSKAS
DONALD BURG AU
GLADYS BURNS
JAMES BURNS
JEFFERY D. BURNS
ALAN BURTON
RICHARD BUSH

ROGER BUSLER
EDWARD BUTRICK
DAWN B. BYRD
MR. & MRS. ROYCE BYRD
KERRIE BYRNE
DAVE CADITZ
GEORGE A. CAFFREY
LINDA CAIN
LUTHER B. CALDWELL
MILLIE CALSON
DR. FRANZ CAMENZIND
ROBIN F. CAMERON
ALICE E. CAMPBELL
DOUG CAMPBELL
KAREN CAMPBELL
REX W. CAMPBELL
ROBERT, MRS. CAMPBELL
CAROL CAMUS-NIWA
ARLENE CANONICO
MR. & MRS. TED CANTY
GERALD CARLSON
NORMA CARLSON
JOHN J. CARSON
JOHN R. CARSTELLO
JILL CARTER
STEVEN M. CARTER
SUSANNE CARTER
NICOLE CASHIGLIONI
STEVE CAUDELL
SHARON CAVALLLO
CASSIE CERISE
DOUG CHABOT
MARY CHABOT
TONI L. CHAFFIN
MARY V. CHAMBERLIN

MICHAEL CHAMBERLIN
CAROLYN CHAN
PATTI W. CHAN
S. P. CHAPIN
JOHN M. CHAPLICK
JIM & CYNDY CHAPMAN
TONIA CHAPMAN
JOHN CHIANESE
STEVEN G. CHILINISKI
DOROTHY CHRISTIAN
BRIAN CHRISTOFFERSEN
MARQUERITE CHRISTOPH
MR. & MRS. H. J. CIARDELLA
RICH CIMINO
DANIEL L. CISKE
DONALD, LINDA & DOROTHY CLAP-
PER
PAM CLARIDGE
JAMES D. CLARK
JEAN CLARK
MELINDA CLARK
N J. CLARK
PAUL CLARK
RICHARD CLARK
JAMES AND MRS. CLARKE
NOVA CLARKE
ELIZABETH CLASMAN
KIM CLAUSING
CHIP CLAWSON
JESSICA A. CLAYDON
JOHN CLEMENGER
FERNE L. COHEN
MURAY COHEN
NORMAN COHEN
STEVE COHEN

ANDREW M. COLE	MICHELE CRAWFORD	DORIS DEHNE
MARIANNE R. COLE	ROBERT F. CREECH	RAY AND JANE DEHNER DEHNER
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CHAS SAMUELSON
JULIE S. SANDHAUS
ROLLIN E. SANDS
SU SANG
GENE SARAZEN
SANDY SARGENT
ROYCE SATTELEE
GREG SAUER
DOLORES SAWSON
JAMES SCARBOROUGH
ROBIN L. SCHAEFFER
LAURA D. SCHAIKE
LAURA SCHAPPERT
DEB AND GREG SCHATZ
JERRY SCHAUB
ROBIN SCHAUFLEER
DAVID M. SCHEIBELHUT
NANCY SCHIFRIN
MARK J. SCHIMMEL
GEORGE SCHINDLER

DALE SCHLEICHER	FREDERICK T. SHARP	THOMAS G. SKENDERIAN
SHELLY & MARK SCHLOSS	NORM SHARP	DAVID L. SLAUGHTER
SHELLY & MARK SCHLOSS	KEITH SHAW	BECKY SLECHENSON
JOHN I. & MARY JO SCHNEIDER	MARILYN SHEA	MARY & GARY SLOAN
DENNIS W. SCHNIDA	JUDITH K. SHEDD	LUCY SLOATE
CHAD SCHOEN	RICH P. SHEFFERSON	WAYNE SLUDER
JERRY SCHOEN	TERRY SHERBOURNE	SHIELA SMALLSY
KAREN SCHOEN	S. K. SHESNE	ELYSE SMERLING
STEVE SCHOMBEL	JUDY SHIELDS	ALDEN E. SMITH
A.E. SCHROEDER	SALLY SHIRMER	ANTHONY SMITH
HOLLY SCHROEDER	J. H. SHORE	CHERYL SMITH
FRANKLIN E. SCHROETER	STEVEN SHORE	DAN SMITH
MR. AND MRS DIETER SCHUGT	TERENCE & PHILOMENA SHORE	DIANE SMITH
HENRY J. SCHULTZ	RICHARD, KAREN, ERIC & ANN SHORES	GEORGE SMITH
DR. MARIBETH JANE SCHULTZE,	ROBERT SHROY	GREG SMITH
EARL SCHUMAKER	HOWARD L. SHUKEY	JEAN E. SMITH
KARL E. SCHUMAN	JOSEPH E. SHUPERT	JEFFREY SMITH
TIMM SCHWARZ	RAYMOND J. SHUPERT	JUDY SMITH
OLIVER SCHWEDEE	ERIC SIDOTI	LARRY N. SMITH
DONNA SCHWIEN	STEVE SIEGEL	LARRY S. SMITH
JONE SCOTT	KURT SIGLIER	MICHAEL SMITH
JOSEPH SCOTT	DAN SILVER	RICHARD SMITH
JAMES J. SCOWN	BOB SILVERMAN	ROBERTA SMITH
J.N. REGINALD SCURR	ARVID SIMMONS	SALLY & PETER SMITH
JARL SECHER-JENSEN	PAT SIMMONS	SARA D. SMITH
SHELLEY SECHRIOT	CHARLES SIMONS	STEPHANIE SMITH
SELIGER	S. L. SIMONS	MRS. CHARLES P. SMYTH
GENE & LINDA SENTZ	ELIZABETH L. SIMPSON	ELAINE SNYDER
JOHN SENUTA	HERVA F. SIMPSON	SHIRLEY SNYDER
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JERROL SHANNON	ARLO SKARI	CHUCK SPANGLE
JON SHAPIRO	BARBARA SKARSTEDT	GREG SPEER
NATALIE SHAPIRO		EDWARD SPENLER

TIM SPEYER	MARIANNE STILLNER	JANET TATZ
JOHN SPEZIA	DONALD K. STIMSON	BARBARA TAYLOR
PEGGY SPILKER	A. K. STIRLING	CONNIE TAYLOR
ROBERT SPILLMAN	RONALD K. L. STIRLING	TAMI TAYLOR
LANCE & KELLY SPOONER	BRUCE STOLBACH	WILLIAM M. TAYLOR
MICHAEL T. SPRAGUE	JIM STOLTZ	MIKE TEGLAS
FRANK & ALICE SPREYER	JIM STOLTZ	GEORGE CRANE
JANET SPROULL	BOB & CHERYL STONE	STEVEN TEMPELMAN
MRS. NEWELL D. SQUIRES	D. D. STONE	M. AND C. TEMPLE
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STEVEN C. STAHLBERG	JIM STOTT	RON TERRY
JO STALLARD	JULIE STOUGHTON	DAVID T. THER
HOLLY S. STARK	JOHN C. STOUT JR	SUNE THIEN
JANET STARK	MARIANNE STOWE	ANDREW THIENEMAN
RUDY STARK	DON STRACHAN	LEE THOMAS
THOMAS S. STARODOJ	DOUGLAS K. STREAM	DAVID THOMPSON
STARSHMP	LAURA STREICHERT	DAVID L. THOMPSON
TIM STEBLER	MARK AND JOAN STROBEL	EUGENE F. THOMPSON
BRIAN STEELE	GENE D. STROOPS	JAMES W. THOMPSON
JOANNE STEELE	WENDY STROUD	JOANNE THOMPSON
ROBERT STEELE	KEN STROWBIRIGE SR.	JUDY THOMPSON
WILLIAM K. STEELE	J. S. STUHLE	MARIA THOMPSON
STEVE STEFANO	DEAN STURZ	THOMAS J. THOMPSON
JOE STEIL	CHESA SULLIVAN	JASON THRON
ELLEN R. STEIN	MICHAEL SULLIVAN	BRETT THUMA
KARL STEINBRENNER	MATT SUTLIFF	DENNIS TIGHE
PATRICK STELL	HEATHER SUTTON	ED & LOURELL TILTON
DAVID STELLING	P. SWAN	TOM TINTINGER
JAMES C. STEMPLER	JOHN R. SWANSON	ALICE TISCHER
DEBORAH STENKAMP	DEBBIE SWARTZ	JON TITUS
TIM STEORTS	BILL SWEET	ROSS TITUS
JOHN STEPHENS	BRIAN SWINGLEY	MR. & MRS. JOE TOIGO
ELLY STEPHENSON	INGRID SWORDS	MARK TOKARSKI
DONNA STERN	TERRY TALBOT	JOEL TOTH
WILLIAM STEWART	ARNOLD TALENTINO	GEORGE E. TOURTELATTI

RICK TOWNER	DOUG WAHISTROM	STEVE WEBER
CHARLIE TRANSUE	PAUL WAKE	O. WEDER
KEVIN TRAZPANI	PETE WAKEMAN	KENNETH A. WEEKS
JEFFREY & LYNN TRENNING	SUSAN WALDRON	JULIE WEIER
JIM TREPKA	E. P. WALKER	CARMELLA WEINTRAUB
TERRY & COURTNEY TRITTEN	HARRY WALKER	JENNIFER WEINTRAUB
DENISE TROSCLAIR	P. L. WALKER	STEPHEN WEISSMAN
ALICE S. TSENG	STEPHEN P. WALKER	ARNIE WELBER
DAN TUCKER	LEE WALKLING	SUSAN M. WELCH
LAWRENCE TURK	JANET WALKUP	JERRY A. WELLS
JEFF TURMAN	KEN WALLACE	DON WENDEL
RICHARD SR. E. TURNER	SCOTT WALLER	JOHN D. WENUM
CHARLES W. TUSTIN	E. T. WALLIN	KIRWIN & CAROL WERNER
BRANT ULSH	REBECCA V. WALSH	SUSAN WERNER
ARTHUR D. UNGER	MARILYN WALTER	KARLA WERNINGHAUS
JUDITH B. UNGERMANN	SIDNEY WALTER	WINFIELD WEST
ANN USAKOWSKI	CRAIG WALTON	BILL WESTERMAN
BARBARA C. VALAIKA	IAN G. WALTON	RUTH WETSABLER
KEVIN VALAIKA	GLENN WARD	CARL E. WETZLER
TAMMY VAN DIERENDONCK	GREGG M. WARDRIP	BRENT WHAN
E.W. AND K.S. VAN WOERT	CHARLENE R. WARE	BILL WHELAN
MATT VANDE PUTTE	MARK WARHOL	ALAN L. WHITE
VALERIE & CARL VANVALKENBURG	DEAN WARNER	ERIC WHITE
SALVATORE VASAPOLLI	GWEN WARNER	J.K. WHITE
VASQUEZ	MR. & MRS. DAVID WARSHAW	RICHARD WHITE
MICHAEL J. VICKERS	LAUGHING WATER	DAVID D. WHITESITT
JOEL G. VIGNERE	VICKI WATSON	REE WHITFORD
LAURIE VIGUE	MARK WATT	BOB WHITNEY
JOHN VOELKER	ROBERT WATTEZ	DAVE AND RUTH WHITNEY
ROBERT E. VOGEL	EDGAR WAYBURN	SHARON WHITTEN
W.E. VON PERTZ	ROBIN W. WEANE	J B. WIBBERLEY
ADI VONGONTARD	CHRIS WEATHERLY	THOMAS WICKES
MR. & MRS. W.R. VOORHIES	LENNY WEAVER	SUSAN WIEDMAN
KAREN S. WAGNER	TAMELA WEAVER	CAROL A. WILEY
PEGGY A. WAGNER	GEORGE D. WEBB	DOUG WILEY

G. WILGUS
EARL WILLEY
AL WILLIAMS
CHARLES "DUSTY" D. WILLIAMS
D. W. WILLIAMS
JERRY WILLIAMS
MARK WILLIMAS
FRED WILLS
BILL WILMOT
CHASE WILSON
JAMES, JR. R. WILSON
PAUL WILSON
PAUL WILSON
ROBERT WILSON
SUSANNA WILSON
W. WILSON
WENDY C. WILSON
RACHAEL WINFREE
GREGORY WIRTZ
LISA WISHER
RAY WITTEKIND
THERESE WITTMAN
CALVIN WOJAHN
WALTER WOJTOWICZ
JEFF WOLFE
LOUIS WOLFF
BARRY WOLLEAZIEN
MICHAEL WOOD
SUSAN WOOD-MCKEAN
LAUREN WOODWESS
ELAINE I. WOODRIFF
CHERI WOODS
JAMES L. WOODS
CARL L. WOODWORTH
MRS. DAVID WORDSWORTH

HUGH WORTHEN
WAYNE B. WORTHINGTON
E. M. WRIGHT
JAMES F. WRIGHT
GEORGE WUERTHNER
J. L. WYATT
ARTHUR D. WYNNE
ANN K. YATES
BARBARA E. YATES
DAVID W. YATES
N. W. YATES
RICK YATES
HENRY L. YEE
BOB YOHNE
CYNTHIA YOUNG
KIM YOUNG
TOMMY YOUNGBLOOD-PETERSEN
CHARLES L. YUHES
PETER ZACHS
PETER ZADIS
ELISABETH ZALL
MATTIAS ZEHNER
PROFESSOR C. ZEIFMAN, M.D.
MR. & MRS. ROBERT O. ZELLER
ANDREW ZIMET
ANDY ZIMET
MAX JR. ZISCHKALE
KAREN ZISCHKE
NANCY S. ZOSKEK
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JUELY ZUNWALT
SUSAN ZWINGER

APPENDIX A - PROPOSED CHANGES TO THE FOREST PLAN

This appendix has been modified in response to public comments. One additional alternative is being considered and differences in Forest Plan text under that alternative is shown. In addition, under alternatives 3-Corrected, 4-Corrected, and 5, Forest Plan General Standard No. 1 is modified to clarify the relationships and requirements of objectives and standards.

Forest Plans contain the following information, as required by the NFMA implementing regulations (36 CFR 219.11):

- *(a) A brief summary of the analysis of the management situation, including demand and supply conditions for resource commodities and services, production potentials, and use and development opportunities;
- (b) Forest multiple-use goals and objectives that include a description of the desired future condition of the forest or grassland and an identification of the quantities of goods and services that are expected to be produced or provided during the RPA planning periods;
- (c) Multiple-use prescriptions and associated standards and guidelines for each management area including proposed and probable management practices such as the planned timber sale program; and
- (d) Monitoring and evaluation requirements that will provide a basis for a periodic determination and evaluation of the effects of management practices.*

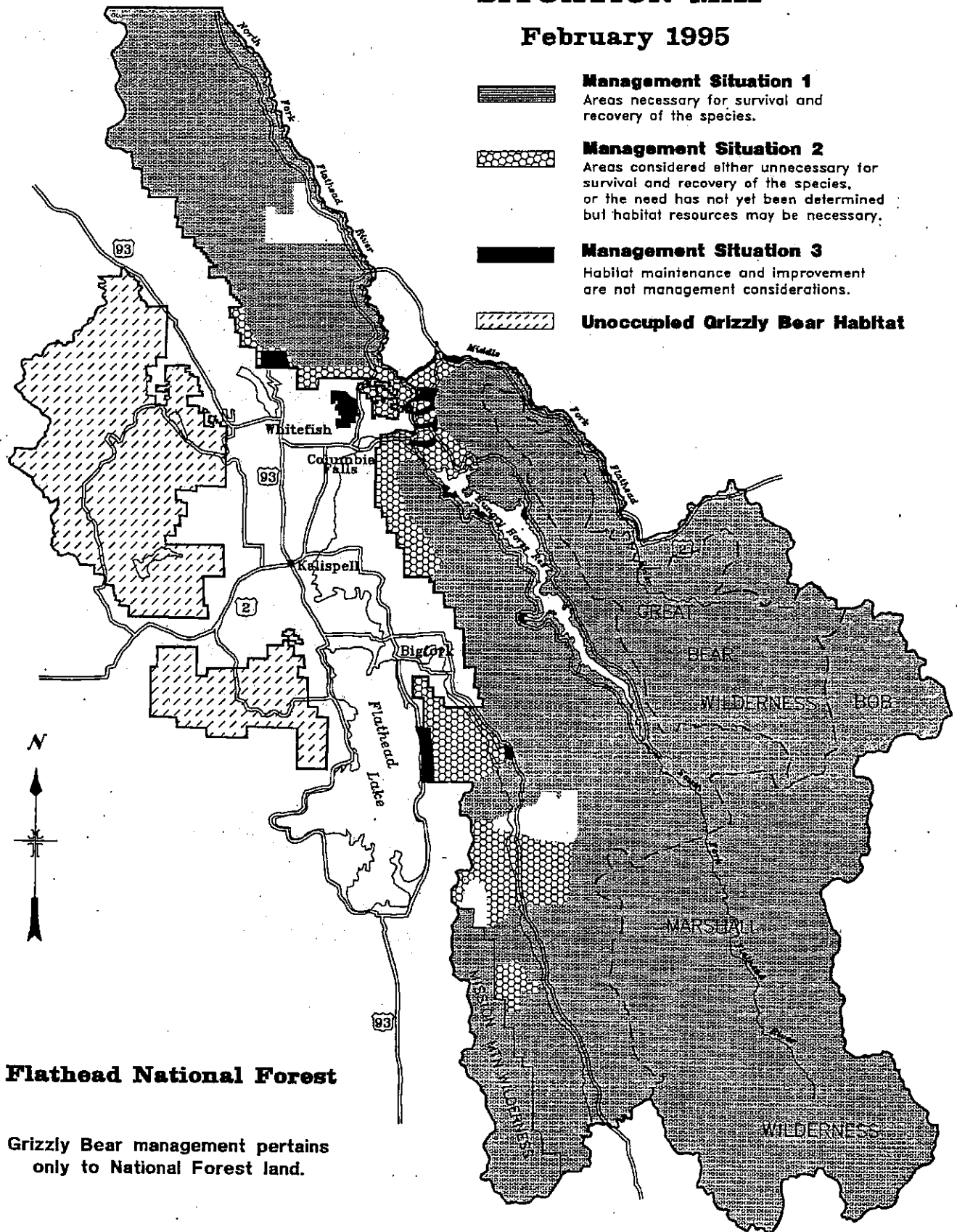
This appendix contains comparisons of the wording contained in the Forest Plan in its current form, and as it would be written under the each alternative. The alternatives propose amendments to certain Forest Plan objectives, standards, monitoring items. The page numbers where the changes would be made are referenced for your convenience. Appendix UU, Access Management Monitoring, is added to the Forest Plan and included at the end of this appendix.

The definition of an objective is "a concise, time-specific statement of measurable planned results that respond to pre-established goals." An objective forms the basis for further planning to define the precise steps to be taken and the resources to be used in achieving identified goals" (36 CFR 219.2). Some current Forest Plan standards are actually statements of objectives, and have been moved accordingly under Alternatives 3-Corrected and 4-Corrected.

The map shown on the next page would be substituted for the current Forest Plan map of Management Situations (Forest Plan page II-24) under Alternatives 3-Corrected through 5.

GRIZZLY BEAR MANAGEMENT SITUATION MAP

February 1995



Under Alternative 2, there would be no changes to the Forest Plan except that the ASQ would be adjusted to a level that clearly demonstrates compliance with Forest Plan standards, including the IGBG.

Alternative 1	Alternative 2
<p>Forest Plan Objective A6 (Forest Plan page II-7):</p> <p>a. Treatments - Program the following treatments during the first decade:</p> <ul style="list-style-type: none"> (1) Regeneration harvest on 66,080 acres (2) Reforestation on 66,080 acres (3) Intermediate harvest on 25,300 acres (sanitation, salvage, and commercial thinning) (4) Selection harvest on 680 acres (5) Slash disposal on 92,060 acres (6) Timber stand improvement on 34,000 acres <p>b. Program management - During the first decade, program up to the allowable sale quantity of 1 billion board feet of timber harvest from suitable lands. So that the uncut volume under contract will remain near 300 MMBF (million board feet), the annual program of sale offerings may range from 70 MMBF to 130 MMBF during this period.</p> <p>In order to support the goal of providing timber offerings keyed to economic demand, the following specific objectives are established for management of programmed sale offerings for the first decade:</p> <ul style="list-style-type: none"> (1) Maintain an annual sell program that will provide at least 20 MMBF in class 5 (2.0 MMBF) and smaller sales. (2) Maintain an average annual program of nonchargeable timber offerings from unsuitable land and/or nonstandard logs of 5 MMBF per year in addition to chargeable volume from suitable lands. (3) Maintain a mix of sale offerings for various logging systems needed to implement the Forest Plan and support local and regional logging systems capabilities. (4) Maintain offerings of firewood and other miscellaneous forest products at least at current levels. (5) Minimize losses from the mountain pine beetle through harvest of 28,850 acres of high and medium risk lodgepole pine stands. <p>Refer to Appendices E, F, H, I, and L in support of these objectives.</p>	<p>a. Treatments - Program the following treatments during the time period 1995-1999.</p> <ul style="list-style-type: none"> (1) Regeneration harvest on 22,090 acres (2) Reforestation on 22,090 acres (3) Intermediate harvest on 12,645 acres (sanitation, salvage, and commercial thinning) (4) Selection harvest on 530 acres (5) Slash disposal on 35,265 acres (6) Timber stand improvement on 17,000 acres <p>b. Program management - During the time period, 1995-1999, program up to the allowable sale quantity of 320 million board feet of timber harvest from suitable lands.</p> <ul style="list-style-type: none"> (1) Offer a mix of large and small (< 2.0 MMBF) sales. (2) Maintain an annual program of nonchargeable offerings from lands not suited for timber production and/or nonstandard logs in addition to chargeable volume from suitable lands. [No change] (4) Maintain offerings of firewood and other miscellaneous forest products consistent with demand and other resource management goals. [delete] <p>[No change]</p>
<p>Forest Plan objective B (Forest Plan page II-8 and 9):</p> <p>See text and table on page II-8 and 9. Not reproduced here due to length.</p>	<p>Decade 1 projected outputs and activities that will be used for programming, budgeting, and attainment reporting are displayed in Table II-1. Other decades are projected for information only.</p> <p>For the planning period 1995 - 1999, Total Volume Offered (ASQ) will be 64 MMBF (average annual volume).</p>

Under Alternative 3-Corrected, proposed changes are:

Alternative 1	Alternative 3-Corrected
<p><u>Forest Plan Objective A.4</u> (Forest Plan page II-30 through II-33):</p> <p>Complete Grizzly Bear Habitat Component Analysis for the Trail Creek Grizzly Bear Management Area (MA 11) and the Bunker Creek area of the Spotted Bear Ranger District (MA 11A) prior to implementation of management activities.</p>	<p><i>[Replace with following]</i></p> <p>a. Grizzly Bear</p> <p>(1) The Flathead National Forest lies within the Northern Continental Divide recovery area. Within each Bear Management Unit, ensure occupancy by reproducing females and limit mortality to achieve recovery goals in the Recovery Plan.</p> <p>(2) Lands within the recovery zone are to be designated as Management Situation 1, 2, or 3 as defined in the Interagency Grizzly Bear Guidelines (Forest Plan Unbound Appendix OO). Management Situations are shown on page II-24. Objectives for Management Situation 1 are to provide high-quality habitat for seasonal foraging needs, free-ranging movement and dispersal of resident grizzly bears, and low risk of mortality due to human/bear conflicts. Objectives for MS-2 are to provide adequate habitat conditions for short-term occupancy, movement and dispersal, and low risk of mortality due to human/bear conflicts. Objectives for MS-3 are to discourage occupancy by grizzly bears and to minimize risk of human/bear conflicts.</p> <p>(3) Habitat conditions adequate to provide for a successfully reproducing adult female will be provided in all BMU Subunits.</p> <p>(4) In BMU Subunits that are predominantly National Forest (jurisdiction greater than 75%), the following desired levels will be attained within 10 years:</p> <ul style="list-style-type: none"> (a) security core areas are 68 to 100 percent; (b) total motorized access is less than 19% of the MS-1 and MS-2 with density greater than 2 miles/square mile; Within 5 years the following will be attained: <ul style="list-style-type: none"> (a) BMU Subunits having less than the current Forest average of 60% security core area will provide at least 60%; (b) BMU Subunits having total motorized access exceeding the current Forest average of 24% with density >2 miles/square mile will be brought to no more than 24% in MS-1 and MS-2; and (c) open motorized access is less than 19% of the MS-1 and MS-2 with density greater than >1 mile/square mile. <p>(5) Within BMU Subunits with an intermingled ownership pattern and/or are not predominantly National Forest, Forest Service activities will not result in an increase in motorized access density or a reduction in core areas on National Forest System lands. Efforts will be made to improve habitat effectiveness of BMU Subunit through cooperative management, land adjustments, or other means.</p> <p>(6) Establish an active public information and education program that explains goals and objectives of grizzly bear management and steps required to recover the population.</p>

Alternative 1	Alternative 3-Corrected
<p><u>Forest-wide General Standard No. 1, page II-15 [Forest Plan Amendment No. 8]</u></p> <p>1. Standards are not discretionary. They apply to all National Forest System Lands and will be followed unless the standards are amended. Any and all amendments of the LRMP standards will be undertaken in compliance with NEPA and the amendment process of the NFMA regulations (36 CFR 219.10(e)), and with public involvement. Amendments may be undertaken in two ways: 1) Standard(s) may be amended for all future activities, or 2) Standard(s) may be amended for a single project only. A project-specific amendment of a Forest Plan standard may be undertaken if it is demonstrated during project analysis that it will fulfill the objective of the standard and related goals. The rationale for project-specific amendments to Forest Plan standards must be described in the project's Decision Memo, Decision Notice, or Record of Decision. A project-specific amendment authorizing an exception to a Forest Plan standard must be issued, by the Forest Supervisor, concurrent with the project decision. Project-specific amendments of Forest Plan standards will in every instance be made in compliance with the Forest Service's legal requirements under the Endangered Species Act, Clean Water Act, NFMA, NEPA, and all other applicable laws.</p> <p>Standards established for threatened and endangered species conservation and protection are mandatory, and thus take precedence when there are conflicting uses. Project-specific amendments of such standards may be considered if they will fulfill the Forest Plan goals related to the conservation of threatened and endangered species. Any amendment to standards established for threatened and endangered species conservation and protection must be preceded by consultation with the U.S. Fish and Wildlife Service.</p>	<p>[No change]</p> <p>[No change]</p>
	<p>2. The grizzly bear objectives and standards of Amendment 19, which are required by the Terms and Conditions of the U.S. Fish and Wildlife Service's Biological Opinion on Amendment 19, are not discretionary. These objectives and standards supersede any conflicting or inconsistent management direction contained in the Forest Plan.</p>
<p><u>Forest-wide General Standard No. 4 (page II-15) [Forest Plan Amendment No. 11]</u></p> <p>4. Initiate informal consultation procedures with the U.S. Fish and Wildlife Service in the early planning phases of site-specific projects if a "no effect/may affect" determination is unclear. If a "may affect" determination is made, formal consultation with the U.S. Fish and Wildlife Service is required.</p>	<p>[No change]</p>

Alternative 1	Alternative 3-Corrected
<p><u>Forest-wide Standards for Grizzly Bear</u> (pages II-25 through II-33)</p> <p>a. Introduction <i>[page II-25, not reproduced here]</i></p> <p>b. Management Situations and Direction Ensure that all management activities and projects are planned, designed, and implemented in accordance with the Interagency Grizzly Bear Guidelines (Interagency Grizzly Bear Committee 1986, see Unbound Appendix OO to the Forest Plan). <i>[Forest Plan Amendment No. 9]</i></p>	<p><i>[Delete]</i></p> <p><i>[No change]</i></p>

c. Flathead National Forest Grizzly Bear Situation

Administrative Unit	Current Occupied Habitat							Total
	Mgmt. Sit. 1	Mgmt. Sit. 2	Mgmt. Sit. 3	Total	Mgmt. Sit. 1	Mgmt. Sit. 2	Mgmt. Sit. 3	
NF Acres	1,923,168	111,360	21,120	2,055,648	1,992,765	100,635	12,997	2,106,397
Percent of Occupied Habitat	94%	5%	1%	100%	94%	5%	1%	100%

Alternatives 1 and 2	Alternative 3-Corrected
<p>The grizzly bear is a highly mobile animal. It is imperative to understand that although the grizzly's habitat has been stratified by management units, the ecosystem must continue to function as a whole; i.e. although areas are mapped as Situation 2, many bears will need to be on these areas during the spring as part of their total home range.</p> <p>The precise carrying capacity of the Flathead National Forest's part of the Northern Continental Divide Ecosystem to support grizzly bears is not known at this time. The highest known densities in the continental United States occur in the Northern Continental Divide population. The Flathead National Forest must provide habitat capable of sustaining one bear per 15.5 square miles of occupied habitat to provide its contribution of 207 bears toward a recovered population.</p>	<p>[Delete-- refer to Forest Plan objectives]</p> <p>[Delete-- refer to Forest Plan objectives]</p>
<p>d. Grizzly Bear Recovery Objectives</p> <p>The Flathead National Forest's objectives for meeting the Northern Continental Divide Ecosystem's recovery goals are as follows:</p> <p>(1) Achieve the recovery goal for the Northern Continental Divide Ecosystem.</p> <p>(2) Manage all "Situation 1" areas with the grizzly bear as a primary resource which must be maintained or enhanced.</p> <p>(3) Manage "Situations 2 and 3" areas in a manner that multiple-use activities will be compatible with the conservation and recovery of the species.</p>	<p>[Delete-- refer to Forest Plan objectives]</p>

Alternatives 1 and 2	Alternative 3-Corrected
<p>e. Management Direction</p> <p><u>All Management Functions, All Management Situations</u></p> <p>(1) Maintain close contact with research organizations to ensure that current research data are being used in resource planning and administration affecting grizzlies.</p> <p>At least once a year, District Rangers and biologists will meet to review current research findings and discuss their application in resource management. Review and revise guidelines as necessary to keep them current. Address research needs in terms of Forest management activities.</p> <p>(2) Biological evaluations of all significant projects are required. Refer to General Standard 4, p. 11-15, for direction regarding consultation with U.S. Fish and Wildlife Service. [Forest Plan Amendment No. 11]</p> <p>(3) Identify and evaluate for each project proposal the cumulative effects of all activities, both existing uses and other planned projects, relative to both public and private lands.</p> <p>(4) Measures to be taken to protect, maintain, and/or improve grizzly bear habitat and populations as a result of the biological evaluation will be specified in project design.</p> <p>(5) Refine Management Situation stratification based on current grizzly bear habitat suitability, population, and distribution trends. All biological evaluations will assess the current status of management situation stratifications for accuracy and provide analysis data and recommendations for updating as necessary.</p> <p>(6) Establish an active public information and education program discussing grizzly bear management, stressing goals, objectives, and steps required to recover the population.</p> <p>(7) Carcasses of wildlife, livestock, or other attractants along highways, roads, and trails will be removed a distance of one-fourth mile from the roadway or otherwise made unavailable to bears. Removal should occur within 24 hours.</p> <p>(8) The riparian zone is a basic component of suitable grizzly habitat. Its management will maintain grizzly bear habitat and will generally follow established guidelines within the Forest Plan.</p> <p>(9) Active grizzly bear trapping sites that are not tended will be closed to other human use. Warning signs will be posted prior to installation of the trap.</p>	<p>[No change]</p> <p>[No change]</p> <p>[No change]</p> <p>(3) Identify and evaluate for each project proposal the cumulative effects of all activities, both existing uses and other planned projects, relative to both public and private lands.</p> <p>(4) Measures to be taken to protect, maintain, and/or improve grizzly bear habitat and populations {} will be specified in project design.</p> <p>(5) Refine Management Situation stratification based on current grizzly bear habitat suitability, population, and distribution trends. All biological evaluations will assess the current Management Situations for accuracy and provide recommendations and rationale for updating as necessary. Changes to Management Situation stratifications will be made by amending the Forest Plan.</p> <p>[Moved to Objectives section]</p> <p>[No change]</p> <p>[No change]</p> <p>[No change]</p>

Alternatives 1 and 2	Alternative 3-Corrected
<p>(10) Contracts and permits will include a clause providing for the cancellation, suspension, or temporary cessation of activities if such is needed to resolve a grizzly/ human conflict situation. Permits for temporary onsite facilities will require that camps be located to avoid seasonally important bear habitats and contain the grizzly bear clauses developed to prevent people/bear conflict. Contractor and permittees' cooperation in meeting grizzly management goals will be attained with applicable clauses and stipulations.</p> <p>(11) Operating plans and special-use permits involving concerns over human or domestic stock food storage, handling, and garbage disposal will have appropriate clauses applied.</p> <p>(12) Road management will be conducted to assist in meeting grizzly bear habitat management goals. When warranted, roads will be closed seasonally or yearlong, and where appropriate, area closures will be applied. Transportation plans and Forest visitor plans as well as individual project road systems will be evaluated regarding their impacts on habitat effectiveness.</p> <p>(13) Feeding of bears will be prohibited.</p> <p>(14) Areas with a history of grizzly bear/human encounters or areas with documented increased use by bears may be closed to human use temporarily, seasonally, or yearlong, in Situations 1 and 2.</p> <p>(15) No open garbage dumps will be permitted. The Forest will work toward bear proofing all garbage handling facilities.</p> <p>(16) Within Management Situations 1 and 2, provide security areas immediately adjacent to the influence zone of the project area. Decide on a site-by-site basis. Security areas should be 5,000 acres or larger in areas that are roadless or where the open road density averages 1 mile/square mile or less over the area during the bear use period.</p> <p>(17) All land adjustment cases will be evaluated using the biological evaluation process for determining effects on the grizzly bear.</p>	<p>[No change]</p> <p>(11) Operating plans and special-use permits will specify measures to be taken regarding human and domestic stock food storage and garbage disposal in grizzly bear habitat.</p> <p>(12) Human access will be managed to meet grizzly bear recovery goals. When warranted, roads will be closed seasonally or yearlong, and where appropriate, area closures will be applied. On National Forest lands within each BMU Subunit, there will be no net increase in density of open motorized access routes or total motorized access routes. Forest Service activities will result in a net gain towards meeting objectives for total and open motorized access and security core areas on National Forest lands. Refer to Forest Plan Unbound Appendix TT for definitions and implementation direction.</p> <p>[No change]</p> <p>(14) Areas with a history of grizzly bear/human encounters or areas with important seasonal use by bears may be closed to human use temporarily, seasonally, or yearlong in Management Situations 1 and 2.</p> <p>(15) On National Forest lands within the recovery zone, garbage handling facilities will be bear-resistant.</p> <p>(16) On National Forest lands within each BMU Subunit, there will be no net decrease in the size or amount of core areas that provide security. Core areas will be at least 2500 acres in size, and will be distributed to provide all seasonal habitats and elevations. Once established and effective, core areas will remain in place for at least 10 years.</p> <p>[No change]</p>
<p>1. Guidelines [refer to pages II-30 through II-33, not reproduced here]</p>	<p>[No change]</p>

The proposed changes to the Forest Plan related to timber management are:

Alternative 1	Alternative 3-Corrected
<p>Forest Plan Objective A6 (Forest Plan page II-7):</p> <p>a. Treatments - Program the following treatments during the first decade:</p> <ul style="list-style-type: none"> (1) Regeneration harvest on 66,080 acres (2) Reforestation on 66,080 acres (3) Intermediate harvest on 25,300 acres (sanitation, salvage, and commercial thinning) (4) Selection harvest on 680 acres (5) Slash disposal on 92,060 acres (6) Timber stand improvement on 34,000 acres <p>b. Program management - During the first decade, program up to the allowable sale quantity of 1 billion board feet of timber harvest from suitable lands. So that the uncut volume under contract will remain near 300 MMBF (million board feet), the annual program of sale offerings may range from 70 MMBF to 130 MMBF during this period.</p> <p>In order to support the goal of providing timber offerings keyed to economic demand, the following specific objectives are established for management of programmed sale offerings for the first decade:</p> <ul style="list-style-type: none"> (1) Maintain an annual sell program that will provide at least 20 MMBF in class 5 (2.0 MMBF) and smaller sales. (2) Maintain an average annual program of nonchargeable timber offerings from unsuitable land and/or nonstandard logs of 5 MMBF per year in addition to chargeable volume from suitable lands. (3) Maintain a mix of sale offerings for various logging systems needed to implement the Forest Plan and support local and regional logging systems capabilities. (4) Maintain offerings of firewood and other miscellaneous forest products at least at current levels. (5) Minimize losses from the mountain pine beetle through harvest of 28,850 acres of high and medium risk lodgepole pine stands. <p>Refer to Appendices E, F, H, I, and L in support of these objectives.</p>	<p>a. Treatments - Program the following treatments during the time period 1995-1999. Treatment methods will be compatible with natural disturbance regimes.</p> <ul style="list-style-type: none"> (1) Regeneration harvest on 18,455 acres (2) Reforestation on 18,455 acres (3) Intermediate harvest on 12,645 acres (sanitation, salvage, and commercial thinning) (4) Selection harvest on 530 acres (5) Slash disposal on 31,630 acres (6) Timber stand improvement on 17,000 acres <p>b. Program management - During the planning period, 1995-1999, program up to the allowable sale quantity of 270 million board feet of timber harvest from suitable lands.</p> <ul style="list-style-type: none"> (1) Offer a mix of large and small (< 2.0 MMBF) sales. (2) Maintain an annual program of nonchargeable offerings from lands not suited for timber production and/or nonstandard logs in addition to chargeable volume from suitable lands. [No change] (4) Maintain offerings of firewood and other miscellaneous forest products consistent with demand and other resource management goals. Emphasize treatment in stands with high risk of developing epidemic levels of insect and disease. [No change]
<p>Forest Plan objective B (Forest Plan page II-8 and 9):</p> <p>See text and table on page II-8 and 9. Not reproduced here due to length.</p>	<p>Decade 1 projected outputs and activities that will be used for programming, budgeting, and attainment reporting are displayed in Table II-1. Other decades are projected for information only.</p> <p>For the planning period 1995 - 1999, Total Volume Offered (ASQ) will be 54 MMBF (average annual volume).</p>

The proposed changes to the monitoring plan are as follows:

Alternative 1	Alternative 3-Corrected
<p><u>Forest Plan monitoring</u> [refer to pages V-8 through V-15, not reproduced here]</p>	<p>Item 1a, Actions/Effects or Resources to be Measured: Sample trails to determine amount of use and whether motorized use occurs.</p> <p>Item 16, Actions/Effects or Resources to be Measured: Grizzly Bear Recovery Plan monitoring items for number of females with cubs, occupancy of BMUs by family groups, and known, human-caused mortality.</p> <p>Item 17, Delete habitat transects as a data source for evaluating habitat suitability for grizzly bears. Monitor seasonal habitat values and habitat effectiveness Index values by BMU Subunit, on a 5-year interval.</p> <p>Item 17b, To report compliance with the Endangered Species Act, add a monitoring item to track the number of projects for which biological evaluations are conducted, the determinations of effects by species, and concurrences or Biological Opinions received from the U.S. Fish and Wildlife Service.</p> <p>Item 54, #2. Monitor progress towards the 5 and 10 year objectives for core area, total motorized access, and open motorized access consistent with Forest Plan Unbound Appendix UU. Provide an annual report documenting progress by BMU Subunit to the Forest Supervisor and to the U.S. Fish and Wildlife Service.</p> <p>Item 54, add #3. Monitor the effectiveness of restrictions on motorized use of roads consistent with Forest Plan Unbound Appendix UU.</p>

Under Alternative 4-Corrected, proposed changes to grizzly bear management direction are:

Alternative 1	Alternative 4-Corrected
	<i>All changes to grizzly bear management direction proposed under Alternative 3-Corrected (Appendix A pages 4 through 8) are also proposed under Alternative 4-Corrected, except for the following item.</i>
<u>Forest Plan Objective A.4</u> (Forest Plan page II-30 through II-33): Complete Grizzly Bear Habitat Component Analysis for the Trail Creek Grizzly Bear Management Area (MA 11) and the Bunker Creek area of the Spotted Bear Ranger District (MA 11A) prior to implementation of management activities.	<i>[Replace with following]</i> a. Grizzly Bear (4) In BMU Subunits that are predominantly National Forest (jurisdiction exceeds 75%), desired levels for security core areas are 68 to 100 percent. In these Subunits, desired level of total motorized access is less than 19% of the area with density greater than 2 miles/square mile, and open motorized access of less than 19% of the area with greater than 1 mile/square mile. These objectives are to be achieved within 5 years.

The proposed changes to the Forest Plan related to ASQ are:

Alternative 1	Alternative 4-Corrected
<p>Forest Plan Objective A6 (Forest Plan page II-7):</p> <p>a. Treatments - Program the following treatments during the first decade:</p> <ul style="list-style-type: none"> (1) Regeneration harvest on 66,080 acres (2) Reforestation on 66,080 acres (3) Intermediate harvest on 25,300 acres (sanitation, salvage, and commercial thinning) (4) Selection harvest on 680 acres (5) Slash disposal on 92,060 acres (6) Timber stand improvement on 34,000 acres <p>b. Program management - During the first decade, program up to the allowable sale quantity of 1 billion board feet of timber harvest from suitable lands. So that the uncut volume under contract will remain near 300 MMBF (million board feet), the annual program of sale offerings may range from 70 MMBF to 130 MMBF during this period.</p> <p>In order to support the goal of providing timber offerings keyed to economic demand, the following specific objectives are established for management of programmed sale offerings for the first decade:</p> <ul style="list-style-type: none"> (1) Maintain an annual sell program that will provide at least 20 MMBF in class 5 (2.0 MMBF) and smaller sales. (2) Maintain an average annual program of nonchargeable timber offerings from unsuitable land and/or nonstandard logs of 5 MMBF per year in addition to chargeable volume from suitable lands. (3) Maintain a mix of sale offerings for various logging systems needed to implement the Forest Plan and support local and regional logging systems capabilities. (4) Maintain offerings of firewood and other miscellaneous forest products at least at current levels. (5) Minimize losses from the mountain pine beetle through harvest of 28,850 acres of high and medium risk lodgepole pine stands. <p>Refer to Appendices E, F, H, I, and L in support of these objectives.</p>	<p>a. Treatments - Program the following treatments during the time period 1995-1999. Treatment methods will be compatible with natural disturbance regimes.</p> <ul style="list-style-type: none"> (1) Regeneration harvest on 18,045 acres (2) Reforestation on 18,045 acres (3) Intermediate harvest on 12,645 acres (sanitation, salvage, and commercial thinning) (4) Selection harvest on 530 acres (5) Slash disposal on 31,220 acres (6) Timber stand improvement on 17,000 acres <p>b. Program management - During the time period, 1995-1999, program up to the allowable sale quantity of 260 million board feet of timber harvest from suitable lands.</p> <ul style="list-style-type: none"> (1) Offer a mix of large and small (< 2.0 MMBF) sales. (2) Maintain an annual program of nonchargeable offerings from lands not suited for timber production and/or nonstandard logs in addition to chargeable volume from suitable lands. [No change] (4) Maintain offerings of firewood and other miscellaneous forest products consistent with demand and other resource management goals. Emphasize treatment in stands with high risk of developing epidemic levels of insect and disease. [No change]
<p>Forest Plan objective B (Forest Plan page II-8 and 9):</p> <p>See text and table on page II-8 and 9. Not reproduced here due to length.</p>	<p>Decade 1 projected outputs and activities that will be used for programming, budgeting, and attainment reporting are displayed in Table II-1. Other decades are projected for information only.</p> <p>For the planning period 1995 - 1999, Total Volume Offered (ASQ) will be 52 MMBF (average annual volume).</p>

The proposed changes to the monitoring plan are as follows:

Alternative 1	Alternative 4-Corrected
<p><u>Forest Plan monitoring [refer to pages V-8 through V-15, not reproduced here]</u></p>	<p>Item 1a, Actions/Effects or Resources to be Measured: Sample trails to determine amount of use and whether motorized use occurs.</p> <p>Item 16, Actions/Effects or Resources to be Measured: Grizzly Bear Recovery Plan monitoring items for number of females with cubs, occupancy of BMUs by family groups, and known, human-caused mortality.</p> <p>Item 17, Delete habitat transects as a data source for evaluating habitat suitability for grizzly bears. Monitor seasonal habitat values and habitat effectiveness index values by BMU Subunit, on a 5-year interval.</p> <p>Item 17b, To report compliance with the Endangered Species Act, add a monitoring item to track the number of projects for which biological evaluations are conducted, the determinations of effects by species, and concurrences or Biological Opinions received from the U.S. Fish and Wildlife Service.</p> <p>Item 54, #2. Monitor progress towards the 5 and 10 year objectives for core area, total motorized access, and open motorized access consistent with Forest Plan Unbound Appendix UU. Provide an annual report documenting progress by BMU Subunit to the Forest Supervisor and to the U.S. Fish and Wildlife Service.</p> <p>Item 54, add #3. Monitor the effectiveness of restrictions on motorized use of roads consistent with Forest Plan Unbound Appendix UU.</p>

Under Alternative 5, proposed changes to grizzly bear management direction are:

Alternative 1	Alternative 5
	<i>All changes to grizzly bear management direction proposed under Alternative 3-Corrected (Appendix A pages 4 through 8) are also proposed under Alternative 4-Corrected, except for the following item.</i>
<p><u>Forest Plan Objective A.4</u> (Forest Plan page II-30 through II-33):</p> <p>Complete Grizzly Bear Habitat Component Analysis for the Trail Creek Grizzly Bear Management Area (MA 11) and the Bunker Creek area of the Spotted Bear Ranger District (MA 11A) prior to implementation of management activities.</p>	<p><i>[Replace with following]</i></p> <p>a. Grizzly Bear</p> <p>(4) In Subunits that are predominantly National Forest (jurisdiction exceeds 75%), desired levels for security core areas are 80 to 100 percent. In these Subunits, desired level of total motorized access is less than 15% of the area with density greater than 2 miles/square mile, and open motorized access of less than 19% of the area with greater than 1 mile/square mile. These objectives are to be achieved within 5 years.</p>

The proposed changes to the Forest Plan related to ASQ are:

Alternative 1	Alternative 5
<p>Forest Plan Objective A6 (Forest Plan page II-7):</p> <p>a. Treatments - Program the following treatments during the first decade:</p> <ul style="list-style-type: none"> (1) Regeneration harvest on 66,080 acres (2) Reforestation on 66,080 acres (3) Intermediate harvest on 25,300 acres (sanitation, salvage, and commercial thinning) (4) Selection harvest on 680 acres (5) Slash disposal on 92,060 acres (6) Timber stand improvement on 34,000 acres <p>b. Program management - During the first decade, program up to the allowable sale quantity of 1 billion board feet of timber harvest from suitable lands. So that the uncut volume under contract will remain near 300 MMBF (million board feet), the annual program of sale offerings may range from 70 MMBF to 130 MMBF during this period.</p> <p>In order to support the goal of providing timber offerings keyed to economic demand, the following specific objectives are established for management of programmed sale offerings for the first decade:</p> <ul style="list-style-type: none"> (1) Maintain an annual sell program that will provide at least 20 MMBF in class 5 (2.0 MMBF) and smaller sales. (2) Maintain an average annual program of nonchargeable timber offerings from unsuitable land and/or nonstandard logs of 5 MMBF per year in addition to chargeable volume from suitable lands. (3) Maintain a mix of sale offerings for various logging systems needed to implement the Forest Plan and support local and regional logging systems capabilities. (4) Maintain offerings of firewood and other miscellaneous forest products at least at current levels. (5) Minimize losses from the mountain pine beetle through harvest of 28,850 acres of high and medium risk lodgepole pine stands. <p>Refer to Appendices E, F, H, I, and L in support of these objectives.</p>	<p>a. Treatments - Program the following treatments during the time period 1995-1999. Treatment methods will be compatible with natural disturbance regimes.</p> <ul style="list-style-type: none"> (1) Regeneration harvest on 15,807 acres (2) Reforestation on 15,807 acres (3) Intermediate harvest on 12,645 acres (sanitation, salvage, and commercial thinning) (4) Selection harvest on 530 acres (5) Slash disposal on 28,892 acres (6) Timber stand improvement on 17,000 acres <p>b. Program management - During the time period, 1995-1999, program up to the allowable sale quantity of 230 million board feet of timber harvest from suitable lands.</p> <ul style="list-style-type: none"> (1) Offer a mix of large and small (< 2.0 MMBF) sales. (2) Maintain an annual program of nonchargeable offerings from lands not suited for timber production and/or nonstandard logs in addition to chargeable volume from suitable lands. [No change] (4) Maintain offerings of firewood and other miscellaneous forest products consistent with demand and other resource management goals. Emphasize treatment in stands with high risk of developing epidemic levels of insect and disease. [No change]
<p>Forest Plan objective B (Forest Plan page II-8 and 9):</p> <p>See text and table on page II-8 and 9. Not reproduced here due to length.</p>	<p>Decade 1 projected outputs and activities that will be used for programming, budgeting, and attainment reporting are displayed in Table II-1. Other decades are projected for information only.</p> <p>For the planning period 1995 - 1999, Total Volume Offered (ASQ) will be 46 MMBF (average annual volume).</p>

The proposed changes to the monitoring plan are as follows:

Alternative 1	Alternative 5
<u>Forest Plan monitoring</u> [refer to pages V-8 through V-15, not reproduced here]	<p>Item 1a, Actions/Effects or Resources to be Measured: Sample trails to determine amount of use and whether motorized use occurs.</p> <p>Item 16, Actions/Effects or Resources to be Measured: Grizzly Bear Recovery Plan monitoring items for number of females with cubs, occupancy of BMUs by family groups, and known, human-caused mortality.</p> <p>Item 17, Delete habitat transects as a data source for evaluating habitat suitability for grizzly bears. Monitor seasonal habitat values and habitat effectiveness index values by BMU Subunit, on a 5-year interval.</p> <p>Item 17b, To report compliance with the Endangered Species Act, add a monitoring item to track the number of projects for which biological evaluations are conducted, the determinations of effects by species, and concurrences or Biological Opinions received from the U.S. Fish and Wildlife Service.</p> <p>Item 54, #2. Monitor progress towards the 5 and 10 year objectives for core area, total motorized access, and open motorized access consistent with Forest Plan Unbound Appendix UU. Provide an annual report documenting progress by BMU Subunit to the Forest Supervisor and to the U.S. Fish and Wildlife Service.</p> <p>Item 54, add #3. Monitor the effectiveness of restrictions on motorized use of roads consistent with Forest Plan Unbound Appendix UU.</p>

This amendment incorporates the following Appendix UU into the Flathead National Forest Plan.

FOREST PLAN APPENDIX UU - ACCESS MANAGEMENT MONITORING

Monitoring of access management in grizzly bear management situation 1 and 2 will address implementation and effectiveness, and supply data for annual reports.

Implementation Monitoring

Implementation monitoring will record locations of motorized access routes, including reclaimed routes; integrity of structural features, including reclaimed routes; administrative use of restricted facilities; and changes in route status as they occur (dates). This will provide information for updating calculations of total and open motorized access route density, and core area.

Implementation monitoring will be carried out using the following methods:

- 1). The location of motorized access routes will be maintained in a GIS data base, including linked attributes such as road restriction-device location and type, and seasonal use status.
- 2). Records of administrative use of restricted access routes will be maintained on a calendar-day basis and summarized annually.
- 3). All restriction devices will be monitored at least bi-annually for integrity and function, with annual or more frequent monitoring scheduled for less secure or durable structures.
- 4). An appropriate sample of reclaimed motorized access routes will be monitored annually for integrity and function.

The implementation monitoring system is largely in place. A review of the system should be conducted by spring 1995 to assure that the current program fully meets outlined expectations.

Effectiveness Monitoring

Effectiveness monitoring will be designed to sample use-levels of different types and settings of motorized and non-motorized access routes and determine if management actions are affecting human use in the way predicted.

Effectiveness monitoring will be designed to document seasonal use levels on open, restricted and reclaimed access features, within the different settings on the Forest. The Forest access system will be stratified by feature type. Possible sample categories include: low use non-motorized restricted road, high use non-motorized trail, low intensity motorized restricted road, etc. A second stratification will be established for settings, this will categorize site or area variables that may influence use. Possible sample categories include: distance to main road, distance to human population concentration area, attraction present, etc. This information will be stored the same way as "implementation data". A scheme will be devised that outlines sample method and intensity, including expected error rates, for the indicated information.

The effectiveness monitoring system currently has only parts of the system in place to accomplish outlined expectations. The sample design needed to acquire the indicated data should be developed by spring of 1995, including a work plan for implementation.

Implementation of monitoring activities should be prioritized, with the objective the acquisition and documentation of an adequate data set to make reasoned decisions and judge the success and effects of the access management program.

APPENDIX B - SPATIAL ANALYSIS METHODS FOR DETERMINING ASQ

To calculate an attainable ASQ for the period 1995-1999, Forest Plan standards were reviewed to identify those that can be modeled spatially. For each of these standards, a GIS layer was created to represent at least the minimum acres and location needed to meet the requirements of the standard.

Each of the GIS layers ("screens") were summarized against forest structure. They were then combined, in order to approximate the acres available for scheduling during the analysis period. The first seven screens were applied first as a group, since none of these are discretionary in their spatial locations; next, big game and grizzly bear cover standards, which may offer greater flexibility in their spatial location, were modeled. Following the screening for these standards, the ASQ was estimated and then tested for feasibility using the HARVEST model.

Spatial Models of Forest Plan Standards

Alternative 2:

1. Management Areas Suitable for Timber Production:

The Forest Plan allocated land within the Flathead National Forest into one of twenty-two Management Areas. Each Management Area has unique management goals, resource potential and management standards. For the purpose of ASQ calculation, land was differentiated into those that are classified as suitable for timber production and those that are not. Suitable Management Areas are: 5,7,7A,8,9,11C,13,13C,15,15A-E,16,16A-C, and 17 which total approximately 650 thousand acres.

2. Bald Eagle Nesting Habitat (existing and potential):

This screen represents the habitat necessary to comply with Forest Plan standards for bald eagle nesting habitat. The Bald Eagle is federally listed as an endangered species, and therefore was identified as a Management Indicator Species in the Forest Plan. Forest-wide standards are found on page II-23 of the LRMP, and Amendment 13 incorporated the Montana Bald Eagle Management Plan and the Pacific Bald Eagle Management Plan. Existing and potential nest site areas (1/4 mile from nest site) and primary use areas (1/4 to 1/2 mile from the nest) were made unavailable for timber harvest in accordance with these standards.

3. Old-growth Management Indicator Species (10 percent, nesting/denning and feeding habitat):

The Forest-wide standard is to maintain old-growth habitat at elevations below 5,000 feet at the number and distribution that will achieve the desired potential populations of old-growth and cavity-dependent species (page II-23). The pileated woodpecker, marten and barred owl were selected as Management Indicator Species for old-growth and mature forest habitats. In response to Forest Plan appeals, the Chief directed that we apply an interim standard of 10 percent old growth on a subwatershed basis, with

a size and spacing appropriate for the MIS. The core nesting and denning areas needed to meet this network and to meet the interim 10 percent standard were made unavailable for timber harvest.

4. Grizzly Bear BMA Activity Schedule (within recovery zone):

The Forest Plan contains several standards related to the timing of management activities in Management Situations 1 and 2 (LRMP, page II-30). The criteria for duration of activity and re-entry frequency are established for Management Situations 1 and 2 in the Biological Opinion for the Proposed Forest Plan, dated May 23, 1985, and clarified in the amended Biological Opinion of July 18, 1989. Areas used for analysis will be subdivisions of Bear Management Units known as Bear Management Areas (BMAs). A list of all timber sales and road construction and reconstruction activities occurring within occupied grizzly bear habitat was developed by BMA for each Ranger District, and for State lands and private commercial timberlands that fall within BMAs. Each BMA was then coded as available or not available for scheduling timber sales during the years 1995 - 1999.

5. Opening Size and Duration (Regional Guide):

The Northern Regional Guide, reflecting the June 10, 1983 Record of Decision, contains standards and guidelines regarding tree opening size and duration of openings (page 2-5A to 2-6). Opening size and duration is modeled with *Grizzly Bear 600-foot to Cover* and *Grizzly Bear Percent Cover* screens in MS 1 and 2. *Elk and White-tailed Deer Winter Range Cover* screens model constraints on opening size and duration in MA 9 and 13. These screens are discussed in the following paragraphs. Outside MS 1/2 and MA 9/13, openings larger than 30 acres that were created in 1994 or planned to be accomplished (timber sales under contract, but unlogged) were considered to not meet the minimum definition of cover at any time in the planning period.

6. Elk Winter Range Cover (MA-13s):

Elk and mule deer winter ranges were allocated to Management Areas 13, 13A, 13B, 13C, and 13D (LRMP pages III-60 through III-63). The Forest Plan standard is to maintain at least 30 percent thermal cover on each winter range. The existing condition is analyzed for each winter range. For any winter ranges that are below 30 percent, the winter range is coded as "not available" for timber harvest. If the winter range has more than 30 percent thermal cover, then the results from creating and combining other screens are reviewed. If application of the other screens does not supply at least 30 percent thermal cover, then additional stands will be coded as "not available" to achieve the standard for thermal cover.

7. White-tailed Deer Winter Range Cover (MA-9s):

White-tailed deer winter ranges were allocated to Management Areas 9 and 9B (LRMP pages III-34 through III-38). The Forest Plan standard is to maintain at least 50 percent thermal cover on each winter range. The existing condition is analyzed for each winter range. For any winter ranges that are below 50 percent, the winter range is coded as "not available" for timber harvest. If the winter range has more than 30 percent thermal cover, then the results from creating and combining other screens are reviewed. If application of the other screens does not supply at least 30 percent thermal cover,

then additional stands will be coded as "not available" to achieve the standard for thermal cover.

8. Grizzly Bear 600 feet to Cover (MS-1 and MS-2):

Forest-wide standards that apply to timber management in Management Situations 1 and 2 (LRMP, page II-31) require providing cover for grizzly bears. This standard requires a minimum width of hiding cover adjacent to harvest units of 3 sight distances. For existing harvest units (not hiding cover) that are larger than 20 acres in size, a 600-foot buffer was made unavailable for timber harvest within the planning period.

9. Grizzly Bear Percent Cover (MS-1 and MS-2):

A Forest-wide standard that applies to timber management in Management Situations 1 and 2 (LRMP, page II-31) requires maintenance of a minimum of 40 percent cover of each project analysis area with 20 percent in summer hiding cover and 20 percent in thermal cover distributed throughout the area. Management Area 11C is in the Swan/Clearwater divide area and is managed to provide a secure travel route between the Mission and Swan Mountain Ranges. Here the standard is to provide and maintain the hiding cover over at least 70 percent of the area. Compliance with standards for the percent cover is determined by summarizing data in the GIS for each BMA of interest. First, the existing percent cover is determined for each of the non-denning seasons. If the BMA does not provide at least 20 percent hiding cover or at least 20 percent thermal cover, the pertinent classes are not considered available for timber harvest. If the BMA does not provide a total of at least 40 percent hiding and thermal cover, then none of the existing grizzly bear cover is considered available for timber harvest. If the percent cover within the BMA exceeds 40 percent, then the results of other screens are reviewed to determine to what extent grizzly bear cover overlaps with acres needed to meet other standards. If application of these screens did not achieve at least 40 percent hiding and thermal cover for each season of use in the BMA, then stands were selected to provide the necessary cover. In Management Area 11C, a similar process is used to insure compliance with the 70 percent cover standard.

Alternative 3-Corrected, 4-Corrected, and 5:

The following screen is added to the 9 screens above for these alternatives. The screen varied between alternatives to model the security core area standard, ranging from 60 to 80 percent.

1. Grizzly Bear Security Core (MS-1 and MS-2):

Alternative 3-Corrected, 4-Corrected, and 5 propose standards that would place limits on motorized access into grizzly bear habitat and provide security core areas, representing more than 60, 68, and 80 percent respectively, of the BMU Subunits that are predominantly National Forest. In BMU Subunits that are not predominantly National Forest, the *no net loss* concept maintains the existing security core areas.

A. BMU Subunits that are predominantly National Forest:

If a BMU Subunit currently has less security core area than specified above by alternative, then all of the existing core area is made "unavailable". Additional adjacent

areas, particularly representing lower elevations, are added to approximate compliance. In Alternatives 3 and 4-Corrected, BMAA's (subdivisions of BMU Subunits) are used for this modeling purpose. Where possible, the additional core area was colocated in BMA's already made unavailable by previous screens (usually grizzly bear activity timing) and where it is estimated to be least impactful on existing motorized access. In Alternative 5, Subunits were analyzed by estimating roads remaining open to approximate compliance. The estimate of 80 percent security core area was made "unavailable" for timber harvest. Since no motorized activity may occur within a core area and it must remain in place for at least 10 years, these acres are made "unavailable" for calculation of ASQ.

- B. BMU Subunits that are not predominantly National Forest: The existing security core areas are made "unavailable", in order to maintain the no net loss concept.

Modeling of Allowable Harvest Acres

The spatial modeling of Forest Plan standards provides an estimate of the total area available for harvest during the planning period. Maximum harvest unit size and adjacency constraints within the available acres are modeled in this step to estimate the available harvest acres. The minimum constraint is from the Northern Regional Guide which provides direction that openings created by even-aged silviculture will be normally less than 40 acres. Forest Plan standards in grizzly bear management situation 1 and 2 require that no point within a harvest unit be more than 600 feet from cover, this is modeled by using a average harvest unit size of 15 acres and a maximum of 23 acres. Forest Plan standards for Management Areas 5,7,7A,8, and 9, limit harvest unit size ranging from 5 to 10 acres average and 10 to 25 acres maximum.

This HARVEST model incorporates a number of simulation features representing the standards above. The model generates landscape harvest patterns reflecting these standards though a set of modeling "rules". The model is simplistic in that it does not attempt to optimize and is not predictive as to the specific location of future harvest activity. Instead the model produces a random implementation of the standards. For each alternative the model is used three times with the same "rules" and the results averaged.

Calculation of ASQ

The results of the HARVEST model are disaggregated to the yield tables used in the 1985 FORPLAN model used to estimate the original ASQ. This volume is added to the original FORPLAN results for intermediate harvest (commercial thinning, sanitation, salvage) and selection harvest in riparian areas to arrive at the total ASQ for each alternative.

Results

The following table displays the results of the entire modeling process.

Appendix B - Table 1

HARVEST BY ALTERNATIVE 1995-1999

		Mgmt Sit 1&2		Mgmt Sit Other		FNF TOTAL	
		Acres	MMBF	Acres	MMBF	Acres	MMBF
ALTERNATIVE 1	Evenaged Regeneration	19861	305	13179	185	33040	490
	Commercial Thin	8852	5	3793	2	12645	7
	Unevenaged Regeneration	370	4	160	2	530	6
	Total Harvest 1995-1999	29083	314	17132	189	46215	503
	Total Harvest per Year	5817	63	3426	38	9243	100
ALTERNATIVE 2	Evenaged Regeneration	8912	126	13179	180	22091	306
	Commercial Thin	8852	5	3793	2	12645	7
	Unevenaged Regeneration	370	4	160	2	530	6
	Total Harvest 1995-1999	18134	135	17132	184	35266	319
	Total Harvest per Year	3627	27	3426	37	7053	64
ALTERNATIVE 3 Corrected	Evenaged Regeneration	5277	75	13179	180	18456	255
	Commercial Thin	8852	5	3793	2	12645	7
	Unevenaged Regeneration	370	4	160	2	530	6
	Total Harvest 1995-1999	14499	84	17132	184	31631	268
	Total Harvest per Year	2900	17	3426	37	6326	54
ALTERNATIVE 4 Corrected	Evenaged Regeneration	4866	69	13179	180	18045	249
	Commercial Thin	8852	5	3793	2	12645	7
	Unevenaged Regeneration	370	4	160	2	530	6
	Total Harvest 1995-1999	14088	78	17132	184	31220	262
	Total Harvest per Year	2818	16	3426	37	6244	52
ALTERNATIVE 5	Evenaged Regeneration	2629	37	13179	180	15808	217
	Commercial Thin	8852	5	3793	2	12645	7
	Unevenaged Regeneration	370	4	160	2	530	6
	Total Harvest 1995-1999	11851	46	17132	184	28983	230
	Total Harvest per Year	2370	9	3426	37	5797	46

Note: some rows/columns do not add due to rounding

Note: Volume difference between Alternative 1 and other alternatives in MS Other due to minor difference in structure classes modelled for harvest

Area with heavy outline remains essentially unchanged between alternatives

Area with double lines contains the change between alternatives

APPENDIX C - ANALYSIS METHODS FOR THREATENED AND ENDANGERED WILDLIFE

INTRODUCTION

This appendix describes the methods used to analyze the effects of alternatives on threatened and endangered wildlife species that inhabit the Flathead National Forest. Results of analysis of the environmental baseline for grizzly bear habitat is also included.

A. GRIZZLY BEAR

The analysis area encompasses all or portions of nine BMUs (Upper North Fork Flathead, Lower North Fork Flathead, Upper Middle Fork Flathead, Lower Middle Fork Flathead, Hungry Horse, Sullivan, Bunker, Big Salmon, and Mission Mountains. The Continental Divide, Upper South Fork Flathead, and Stillwater BMUs were not analyzed.

Habitat Quality and Habitat Effectiveness: For each BMU subunit, an index value of seasonal habitat value and habitat effectiveness can be calculated using the grizzly bear Cumulative Effects Model. The updated model for the NCDE-West was used. Documentation of the Cumulative Effects Model can be found in the project file.

Bear Use Seasons:

Early spring:	March 16 - May 7
Spring:	May 8 - July 15
Summer- berry:	July 16 - Sept. 30
Autumn:	Oct. 1 - Nov. 15
Denning (maximum)	Oct. 7 - May 7

Charts showing model results for the existing situation are found at the end of this appendix. Because of time limitations on completion of this amendment, and because information required by the model (such as locations, status, and use levels of human activities) would be speculative for this programmatic decision, the model was not used to calculate index values under each alternative. Instead, probable changes under each alternative were described narratively.

Motorized Access and Core Areas: Methods and definitions recommended by the Interagency Grizzly Bear Committee's Task Force Report on Grizzly Bear/Motorized Access (1994) were used. A protocol paper documenting the methods used is in the project file.

Tables containing the information regarding existing motorized access and core areas by BMU Subunit are attached. Two scenarios were analyzed: one addressing all roads and lands, in order to fully describe the impacts of motorized access; and a second that described conditions when considering Forest Service-jurisdiction roads and MS-1 and MS-2 lands and adjacent state and industrial forest lands and roads.

Initially, an incorrect interpretation of "total motorized access" was used, wherein bermed roads were not included in the moving window scan. The analysis was corrected after

this error was discovered, and the tables included in this appendix contain the corrected data.

Probable effects of alternatives were described qualitatively.

Linkages: Five areas in the lower 48 states presently support self-perpetuating or remnant populations of grizzly bears (U.S. Fish and Wildlife Service 1993). The NCDE is connected with grizzly bear populations in Canada. No interchange is known to occur with other recovery areas in the United States.

Fragmentation of habitat within a recovery area can result in a reduction of effective habitat and a decline in the population. There is concern that the Mission Mountains could become isolated from the remainder of the NCDE. Movement between the Mission and Swan Ranges is known to occur presently, particularly by adult male bears. However, the number of grizzly bears residing in the Mission Mountains is estimated to have declined from 20-25 in the early 1970's, to 16 by 1979, to 10 at present (Servheen, 1993 pers. comm.). Maps of land ownership, seasonal habitat value, seasonal habitat effectiveness, and the four possible linkage zones across the Swan valley that were identified by the U.S. Fish and Wildlife Service were reviewed. A fifth possible linkage zone in the Porcupine Creek drainage was identified in this analysis.

B. GRAY WOLF

Between 1982 and 1985, increasing wolf activity (including reproduction) was documented in the North Fork Flathead River Valley, primarily in British Columbia, north of Glacier National Park, but also south of the Canada-U.S. border. In 1986, pups were born in Glacier National Park, documenting the first breeding in the U.S. Rockies in 50 years. Since 1986, an increasing number of wolves have been documented south of the Canada-U.S. border in an expanding distribution. The recovery goal is 10 breeding pairs within the recovery zone. The U.S. Fish and Wildlife Service now believes it is more appropriate to apply the recovery goal to the state, and no longer supports the management zone concept for wolves. Therefore, the analysis addressed the entire National Forest.

Wolves are highly social animals that form packs of 2 to 20 individuals. Pack size varies, and may be related to hunting efficiency. That is, larger packs are needed to successfully hunt large, dispersed prey such as moose, while smaller packs can successfully prey on white-tailed deer) and social factors (competition for food, mates, and dominance).

The availability of ungulate prey and human tolerance are the most important factors that determine suitable wolf habitat, as evidenced by their past and present distribution and documented human-caused mortality.

Habitat/Food Habits: At the Forest Plan scale, habitat analysis focused on areas of high prey density and important seasonal habitats such as big game winter ranges.

Mortality Risk: Open road access was the primary indicator of mortality risk. In addition to the factor of open road density, risk of mortality is influenced by topography, presence of livestock, other human access such as closed roads and trails, and human attitudes. These were considered qualitatively.

C. BALD EAGLE

Bald Eagles occur year-round in Montana. The analysis area was the entire National Forest.

Habitat: Currently occupied and potential nesting habitat were mapped using the GIS. Potential nesting habitat was defined as mature forest within 1 mile of large lakes (>40 acres) and 4th order and higher streams. It was assumed that these water bodies would provide an adequate prey base of fish.

Nests are typically placed away from human activities. Avoidance of human activities is most pronounced when the source of disturbance is between the nest and associated water body. This factor is appropriately addressed during project analyses that have a finer scale of resolution than this analysis.

Food availability determines where eagles winter. Usually winter habitat is associated with open water where fish and waterfowl can be taken easily, although eagles may use other food resources such as rabbits and carrion. It was assumed that areas identified as potential nesting habitat could probably also provide wintering habitat.

The calculation of ASQ under Alternatives 2 through 5 provided protection to occupied and potential nesting habitat for bald eagles. Sufficient potential habitat was deferred from consideration for timber harvest to meet the needs of a fully-recovered population, as defined by the Recovery Plan and the Montana Bald Eagle Management Plan. Effects on food availability were addressed qualitatively.

C. PEREGRINE FALCON:

Historically, peregrine falcon populations were relatively sparse in the Northern Rocky Mountains. Recently, they have been re-introduced in Idaho and Montana.

Habitat: Peregrines breed in a wide variety of habitats, but cliffs are the common element. They nest on cliff ledges, rock outcrops, or talus slopes. Frequently, nesting cliffs dominate the surrounding area and overlook a body of water. Peregrines feed and winter in open habitats where prey concentrate, such as marshes and river bottomlands.

Food Habits: Peregrines feed almost exclusively on birds. They prey on a variety of small- to medium-sized birds that gather on marshes and lakes. Their hunting strategy is to dive on a bird from above. Peregrines travel extensively when hunting and may range up to 18 miles from the nest in search of prey.

Effects analysis described qualitatively the possible impacts of Forest Plan direction, as amended under each alternative, on nesting and feeding habitat and risk of mortality.

CHARTS AND TABLES DESCRIBING ENVIRONMENTAL BASELINE FOR GRIZZLY BEAR HABITAT

The following charts and tables describe the environmental baseline (existing conditions) within the grizzly bear recovery plan.

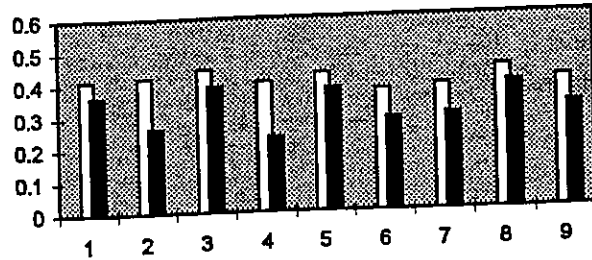
The bar charts display results of the grizzly bear cumulative effects model. Each page contains 5 charts, each depicting one grizzly bear season of use for each Subunit within a BMU. The white bar shows the "seasonal habitat value" index value, which ranges in scale from 0 to 0.6. The adjacent dark bar whos the "habitat effectiveness", a measure of habitat quality when considering both seasonal habitat value and the human disturbance imposed on the habitat.

The height of the white bar gives a relative comparison of the quality of habitat for that season, with taller bars indicating higher habitat quality. A large difference between the white and black bars for a given BMU Subunit indicates a high degree of human impact during that season.

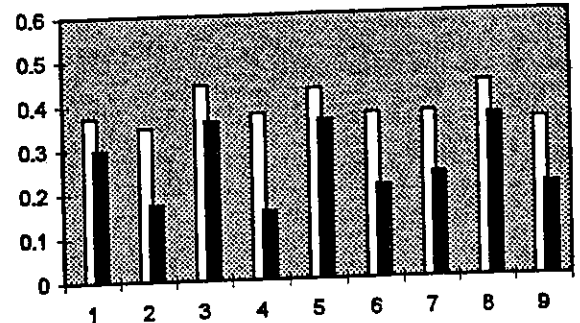
Two tables are shown that describe total motorized access densities, open motorized access densities, and percent security core area within each BMU Subunit. Two scenarios were analyzed: one labelled "All Lands & Roads", to fully describe all impacts on grizzly bear habitat, and one labelled "FS-Coop Mgt" to describe lands and roads on the National Forest (MS-1 and MS-2) and under Forest Service jurisdiction, and adjacent state and industrial private lands.

UPPER NORTH FORK FLATHEAD BMU

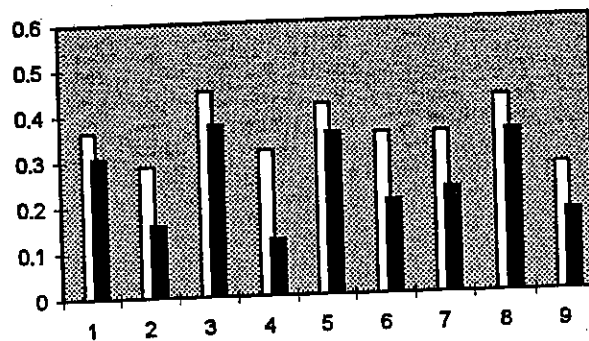
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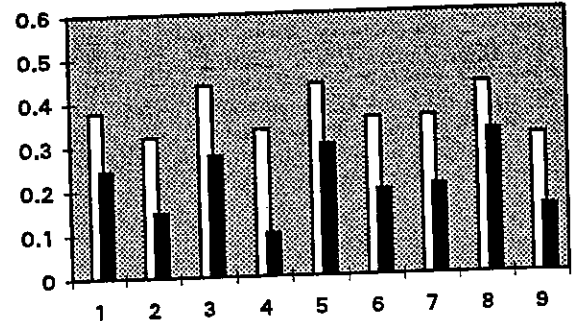
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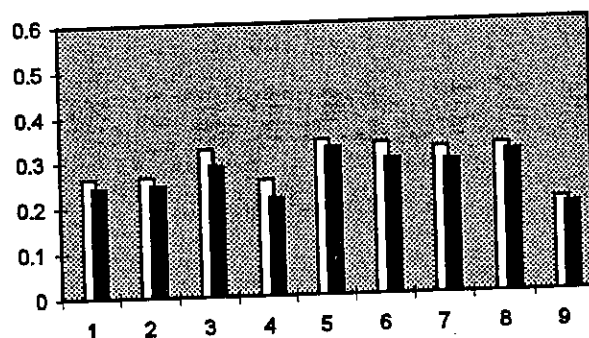
SUMMER



AUTUMN



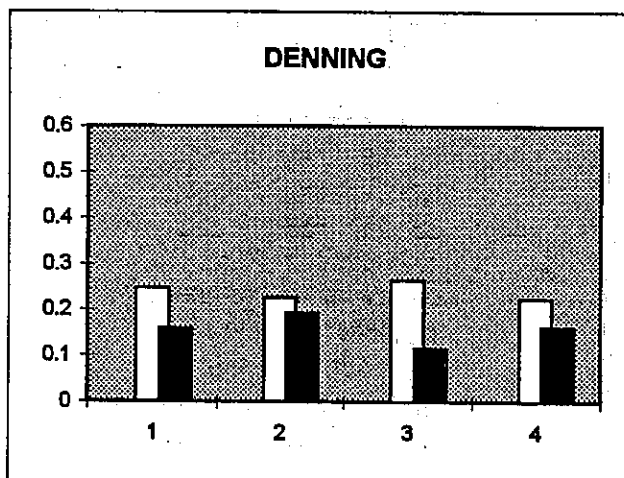
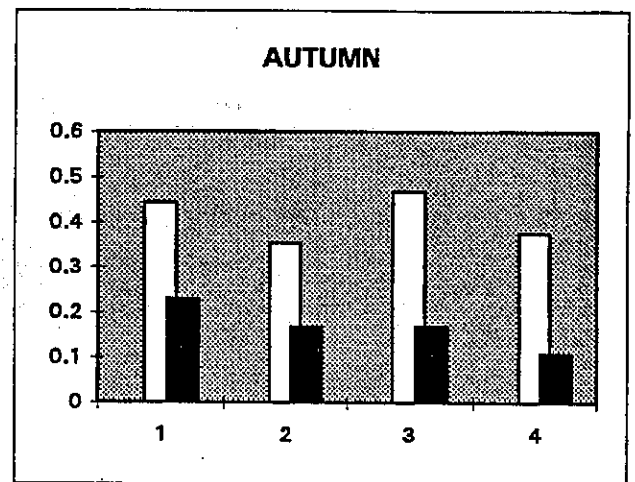
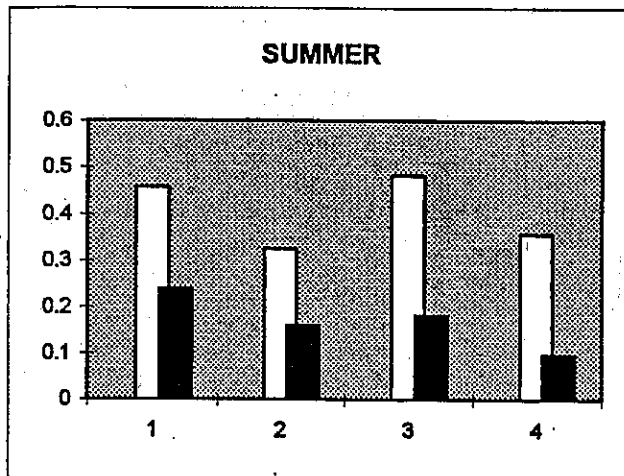
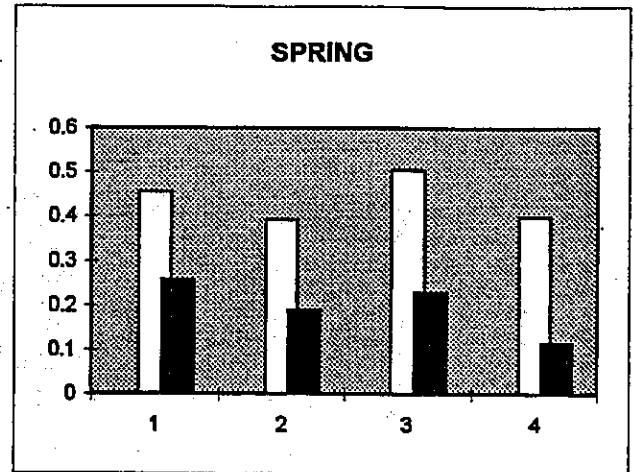
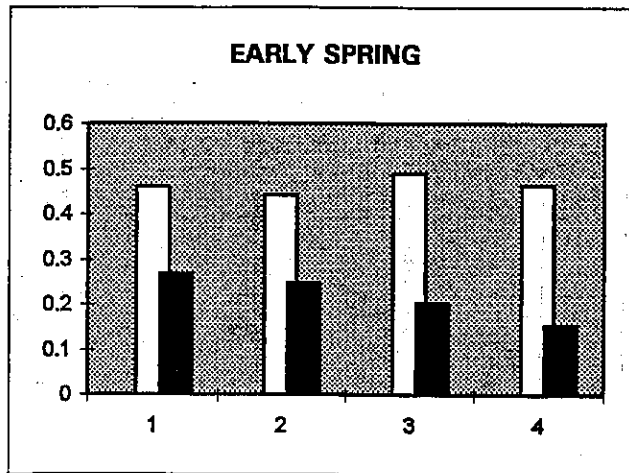
DENNING



SEASONAL HABITAT VALUE (white bar) &
HABITAT EFFECTIVENESS (dark bar)
BY BMU SUBUNIT

- 1: FROZEN LAKE
- 2: KETCHIKAN
- 3: UPPER TRAIL
- 4: LOWER WHALE
- 5: UPPER WHALE SHORTY
- 6: RED MEADOW MOOSE
- 7: HAY CREEK
- 8: COAL & SOUTH COAL
- 9: STATE COAL CYCLONE

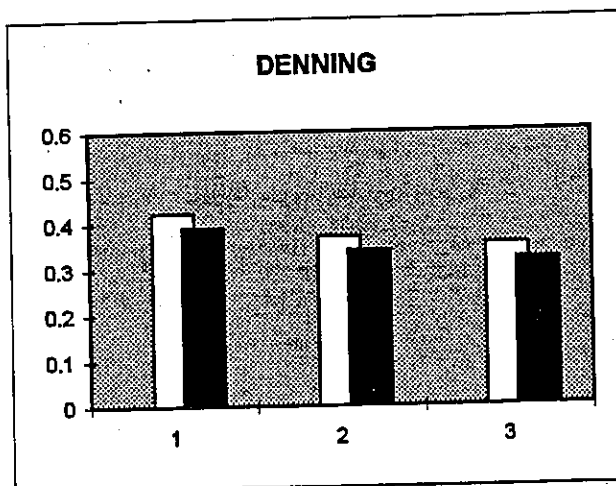
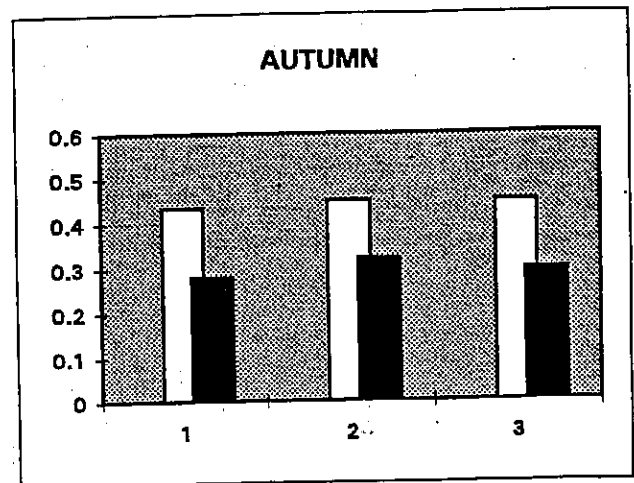
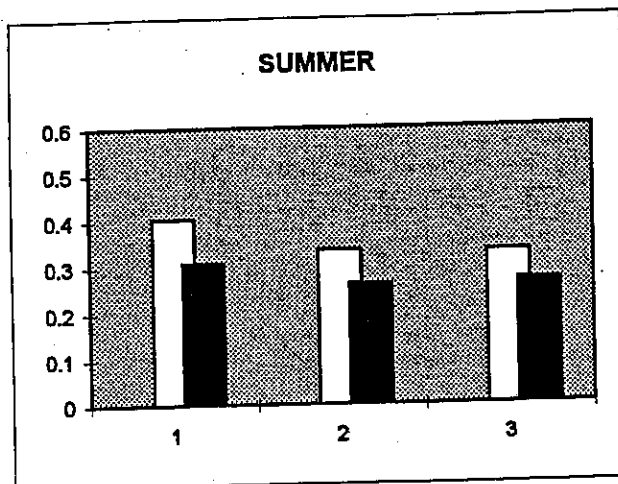
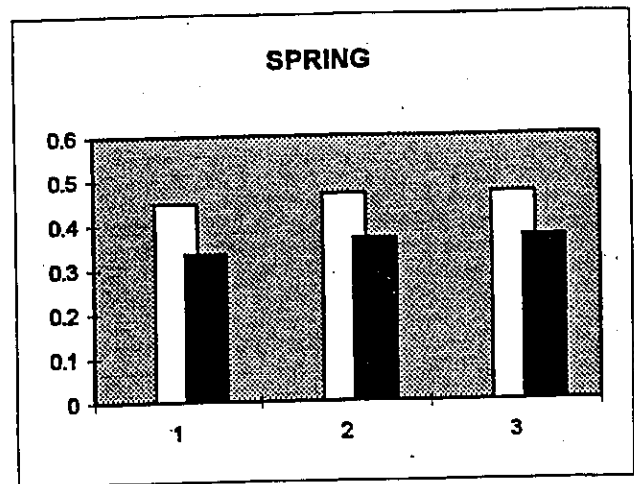
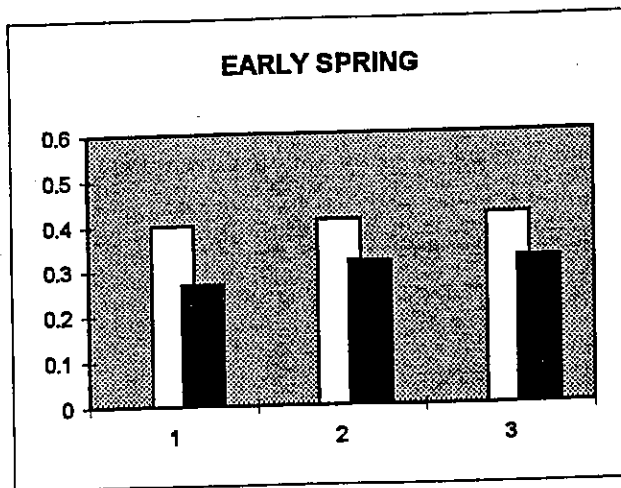
LOWER NORTH FORK FLATHEAD BMU



SEASONAL HABITAT VALUE (white bar) &
HABITAT EFFECTIVENESS (dark bar)
BY BMU SUBUNIT

- 1: WERNER CREEK
- 2: LOWER BIG CREEK
- 3: CANYON/ MCGINNIS
- 4: CEDAR TEAKETTLE

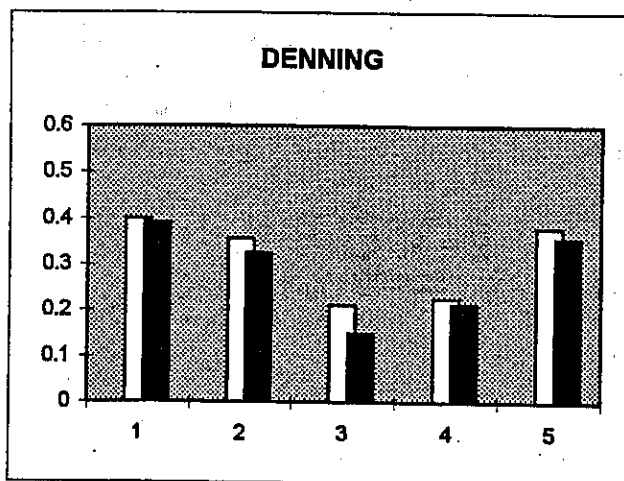
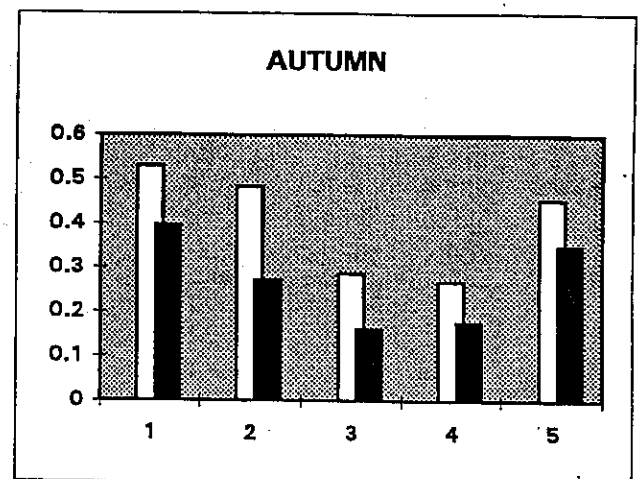
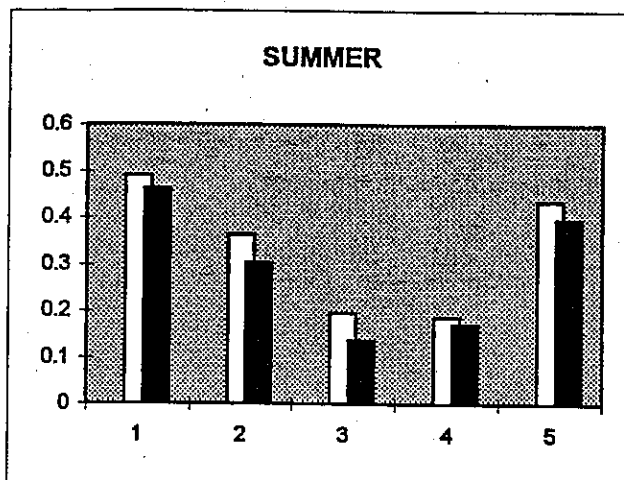
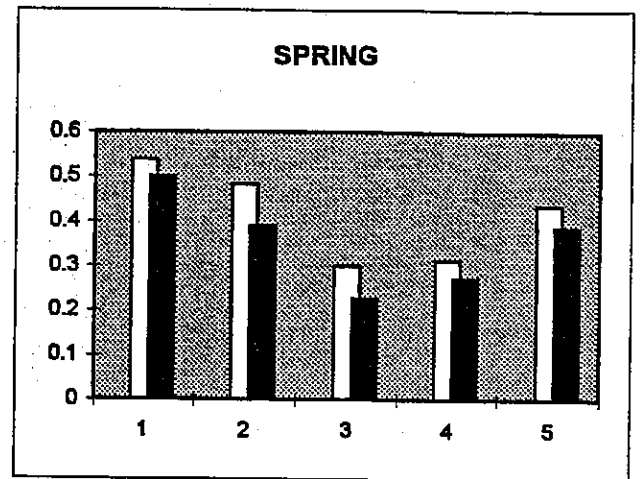
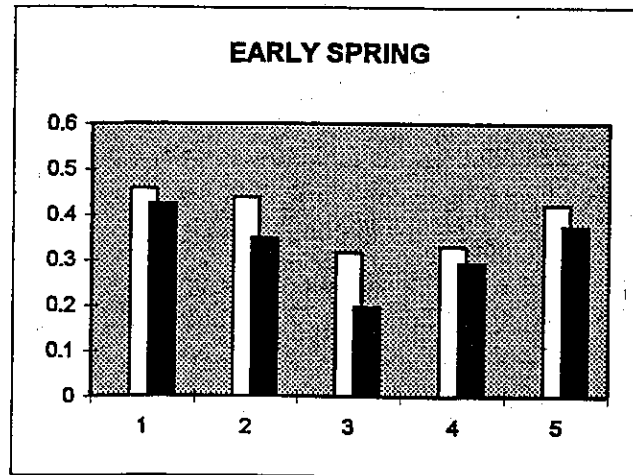
LOWER MIDDLE FORK FLATHEAD BMU



SEASONAL HABITAT VALUE (white bar) &
HABITAT EFFECTIVENESS (dark bar)
BY BMU SUBUNIT

- 1: MOCCASIN CRYSTAL
- 2: STANTON PAOLA
- 3: DICKEY JAVA

UPPER MIDDLE FORK FLATHEAD BMU

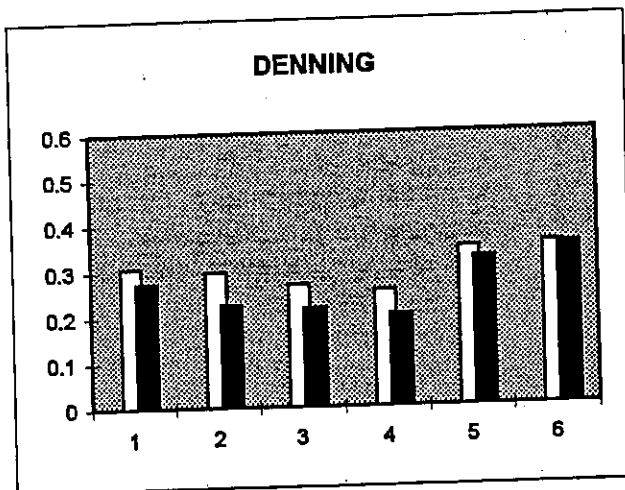
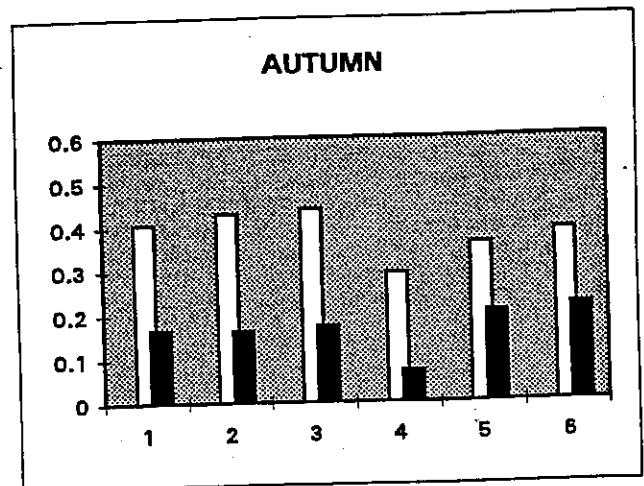
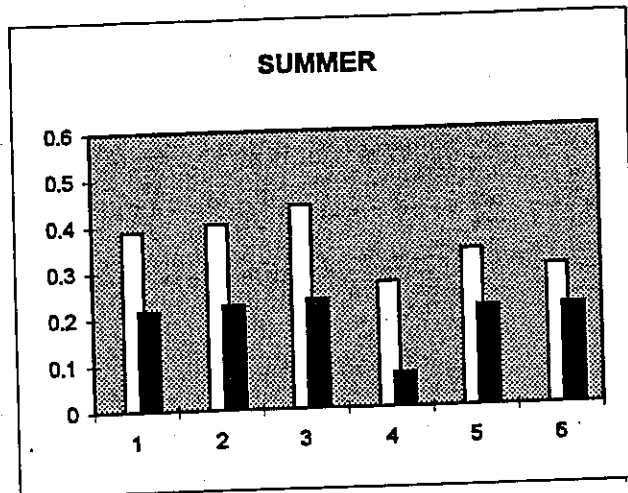
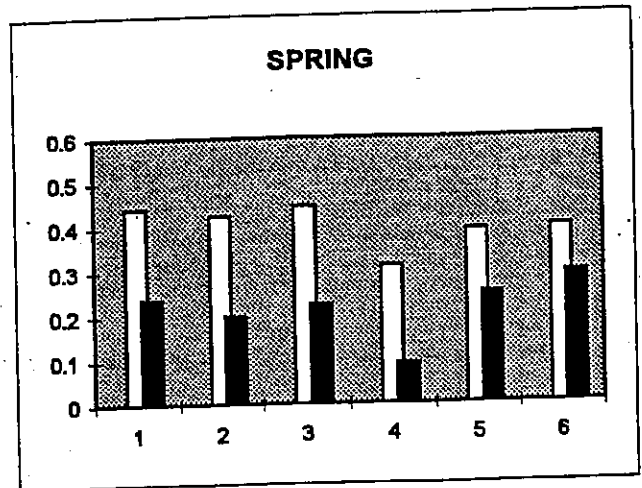
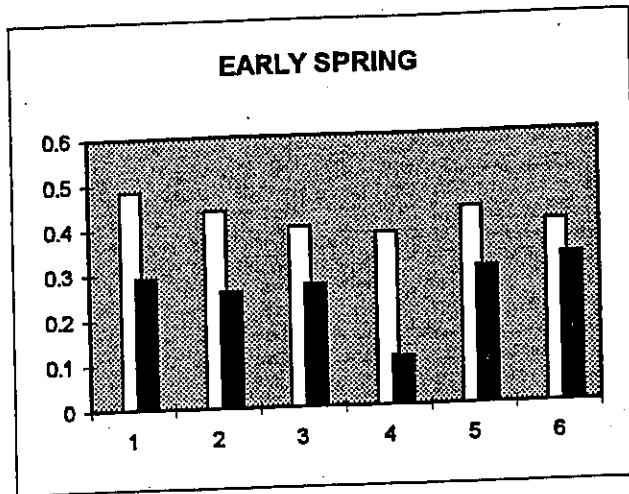


SEASONAL HABITAT VALUE (white bar) &
HABITAT EFFECTIVENESS (dark bar)
BY BMU SUBUNIT

- 1: LONG DIRTYFACE
- 2: TRANQUIL GEIFER
- 3: SKYLAND CHALLENGE *
- 4: PLUME LODGEPOLE *
- 5: FLOTILLA CAPITOL

* Values are artificially low

HUNGRY HORSE BMU

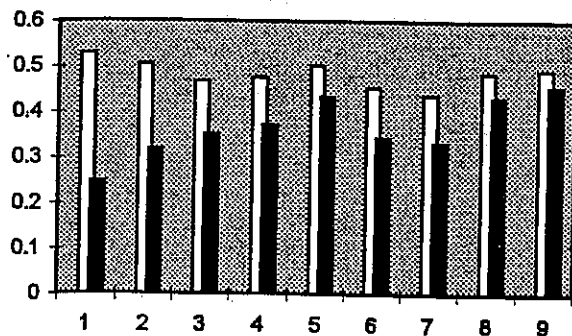


SEASONAL HABITAT VALUE (white bar) &
HABITAT EFFECTIVENESS (dark bar)
BY BMU SUBUNIT

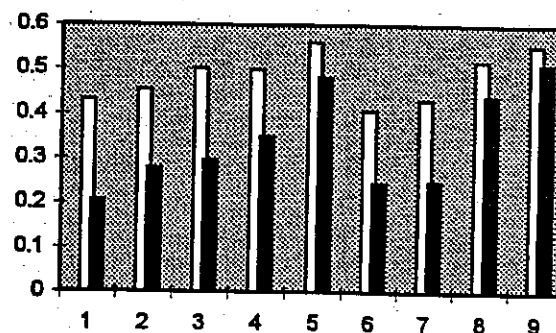
- 1: PETERS RIDGE
- 2: DORIS LOST JOHNNY
- 3: WOUNDED BUCK CLAYTON
- 4: CORAM LAKE FIVE
- 5: EMERY FIREFIGHTER
- 6: RIVERSIDE PAINT

SULLIVAN BMU

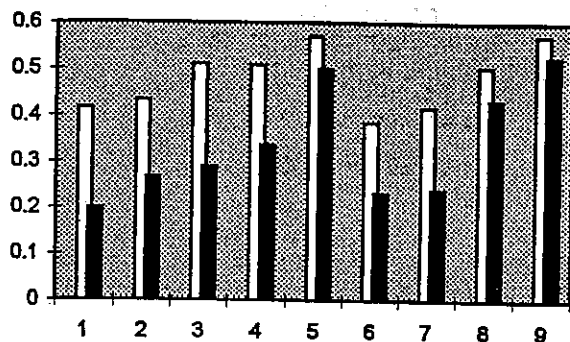
EARLY SPRING



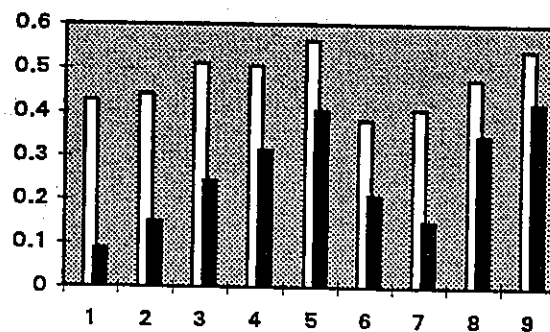
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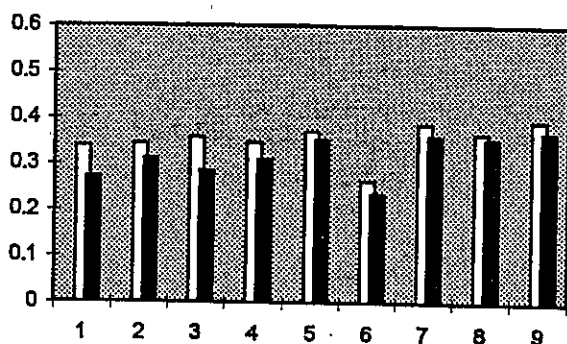
SUMMER



AUTUMN



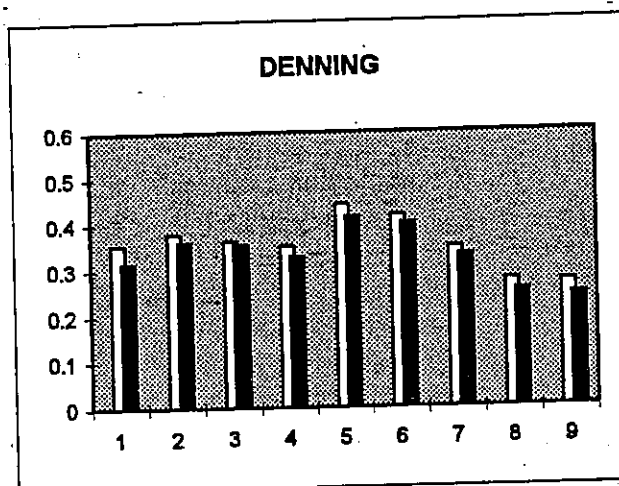
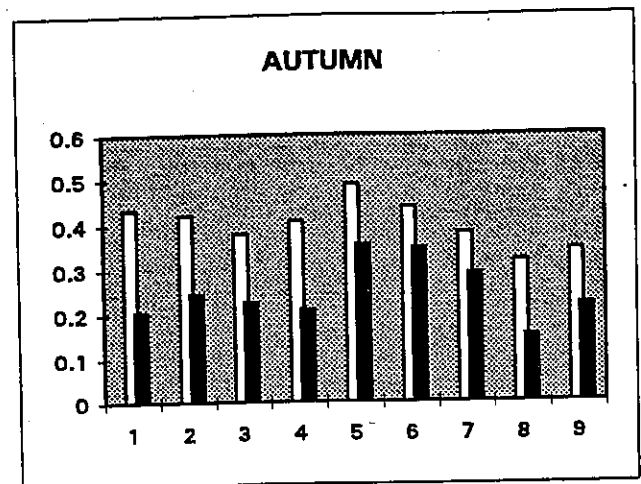
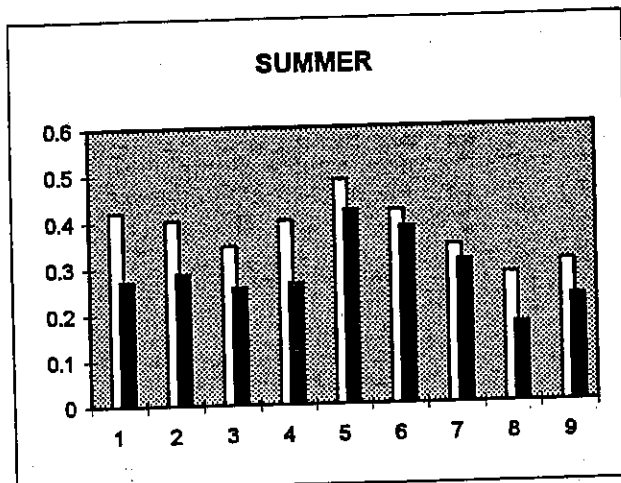
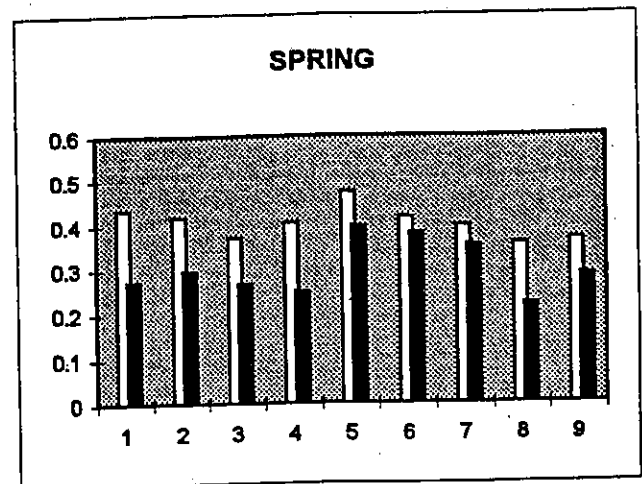
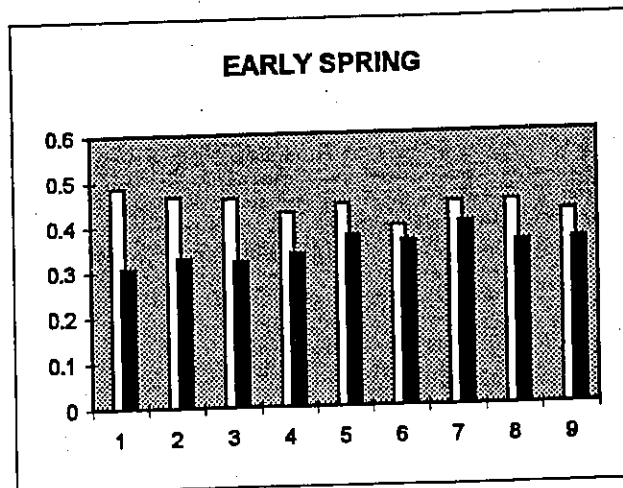
DENNING



SEASONAL HABITAT VALUE (white bar) &
HABITAT EFFECTIVENESS (dark bar)
BY BMU SUBUNIT

- 1: NOISY RED OWL
- 2: SWAN LAKE
- 3: JEWEL BASIN GRAVES
- 4: WHEELER QUINTONKON
- 5: BALL BRANCH
- 6: KAH SOLDIER
- 7: LOGAN DRY PARK
- 8: LOWER TWIN
- 9: TWIN CREEK

BUNKER BMU

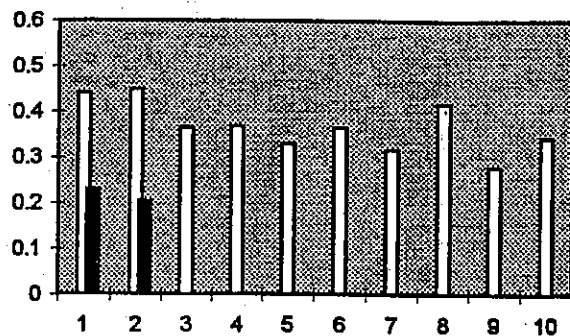


SEASONAL HABITAT VALUE (white bar) &
HABITAT EFFECTIVENESS (dark bar)
BY BMU SUBUNIT

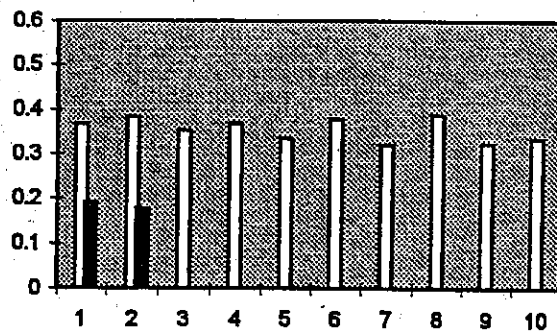
- 1: SOUTH FORK LOST SOUP
- 2: GOAT CREEK
- 3: LION CREEK
- 4: JUNGLE ADDITION
- 5: BUNKER CREEK
- 6: GORGE CREEK
- 7: HARRISON MID
- 8: SPOTTED BEAR MOUNTAIN
- 9: BIG BILL SHELF

BIG SALMON BMU

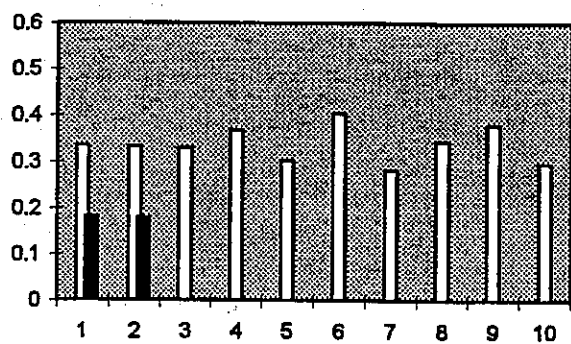
EARLY SPRING



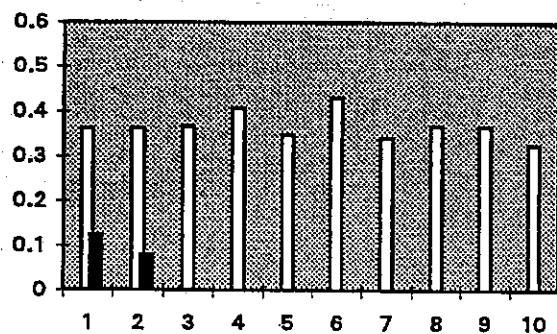
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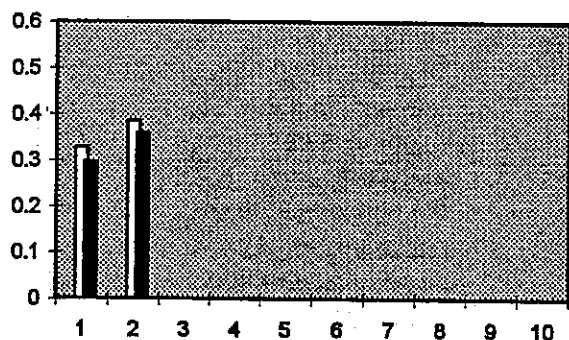
SUMMER



AUTUMN



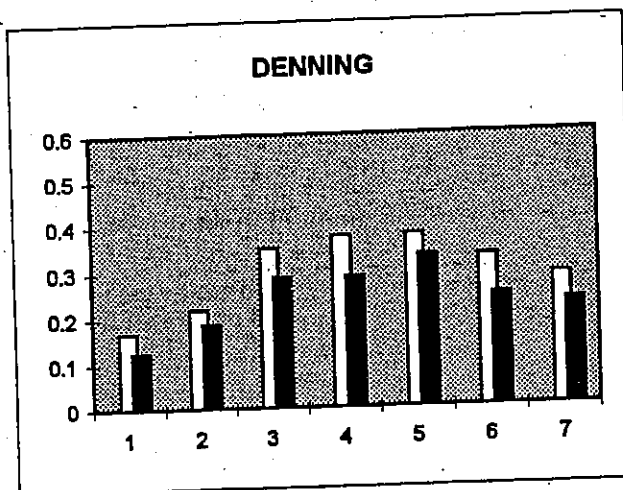
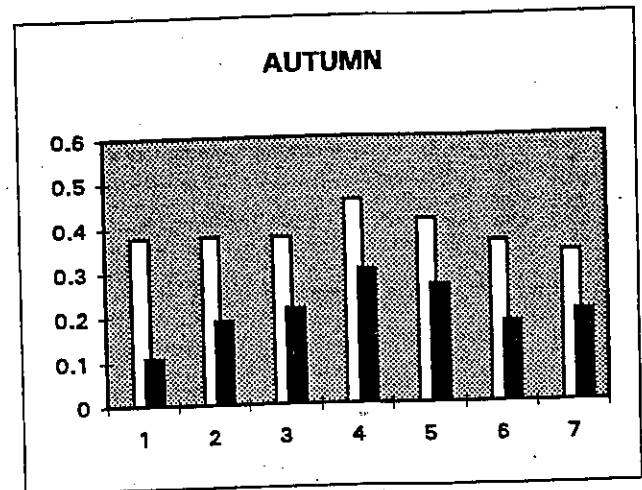
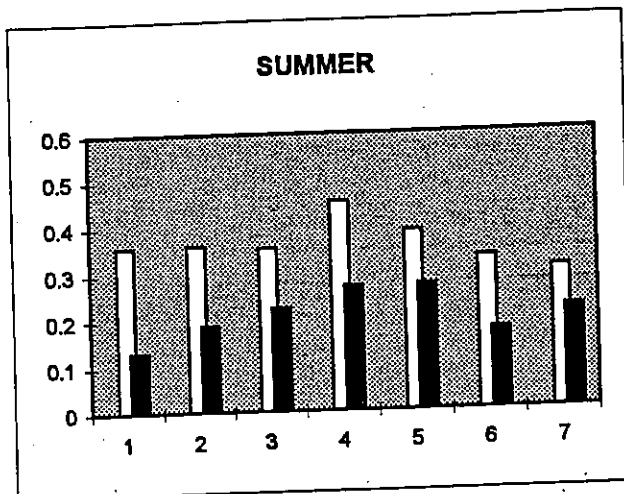
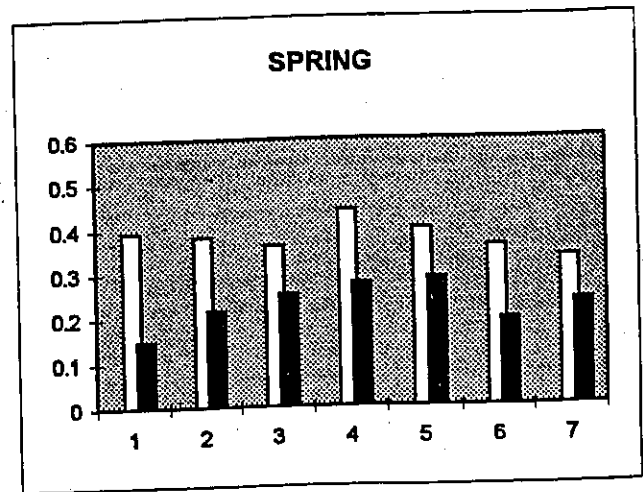
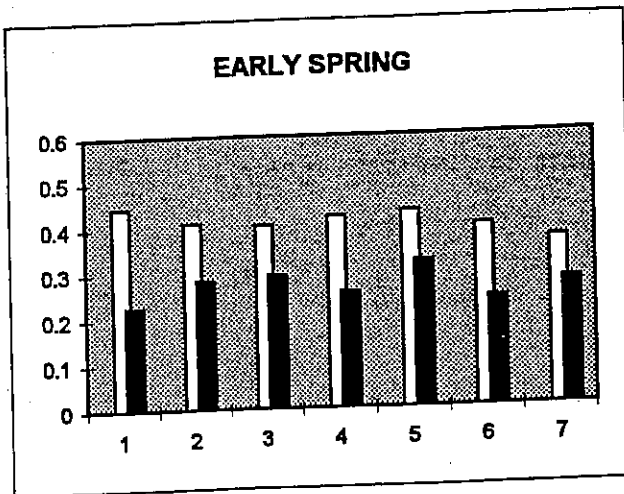
DENNING



SEASONAL HABITAT VALUE (white bar) &
HABITAT EFFECTIVENESS (dark bar)
BY BMU SUBUNIT

- 1: MEADOW SMITH
- 2: BUCK HOLLAND
- 3: HUNGRY CREEK
- 4: LITTLE SALMON CREEK
- 5: BIG SALMON HOLBROOK
- 6: ALBINO PENDANT
- 7: BURNT BARTLETT
- 8: BLACK BEAR MUD
- 9: BRUSHY PARK
- 10: WHITE RIVER

MISSION RANGE BMU



SEASONAL HABITAT VALUE (white bar) &
HABITAT EFFECTIVENESS (dark bar)
BY BMU SUBUNIT

- 1: CRANE MOUNTAIN
- 2: PORCUPINE WOODWARD
- 3: PIPER CREEK
- 4: COLD JIM
- 5: HEMLOCK ELK
- 6: GLACIER LOON
- 7: BEAVER CREEK

FS COOP MGT.								
2/17/95	% Small	% MS-	Total	Motorize	Access	Ope	Motorized	Access
BMU Subunit	Private		0 mi/mi2	0.1 - 2.0	> 2 mi/mi	0 mi/mi2	0.1-1.0	> 1 mi/mi
UPPER NORTH FORK								
Frozen Lake			47.3	45.9	6.8	72.8	16.0	11.2
Ketchikan	17.8		61.4	32.8	5.9	62.8	17.2	20.0
Upper Trail			62.6	32.7	4.7	71.3	10.9	17.8
Lower Whale	11.2		7.6	50.4	41.5	17.3	27.1	55.6
Upper Whale Shorty			70.1	17.5	12.4	73.3	10.0	16.7
Red Meadow Moose	7.7		34.7	42.6	22.7	45.2	20.4	34.5
Hay Creek	8.2		47.6	41.1	11.2	52.0	19.5	28.5
Coal & South Coal			69.3	23.0	7.7	74.5	10.7	14.8
State Coal Cyclone	8.9		47.6	37.5	15.0	54.6	21.9	23.4
LOWER NORTH FORK								
Werner Creek	4.5		18.5	32.3	49.2	39.6	19.2	41.2
Lower Big Creek	1.4		20.1	41.6	38.3	52.3	19.6	28.1
Canyon/McGinnis	6.1		16.2	43.0	40.8	41.9	24.6	33.5
Cedar Teakettle	30.9	9.9	13.6	56.8	29.5	30.8	38.3	30.8
LOWER MIDDLE FORK								
Moccasin Crystal	4.8		66.7	31.6	1.6	72.5	18.3	9.2
Stanton Paola	3.4		66.2	31.0	2.8	69.3	21.4	9.3
Dickey Java	3.3		73.8	26.2	0.0	77.5	18.0	4.5
UPPER MIDDLE FORK								
Long Dirtyface	0.05		99.4	0.6	0.0	99.4	0.6	0.0
Tranquil Geifer	2.1		79.8	18.7	1.5	91.3	6.8	1.9
Skyland Challenge	0.08		43.1	40.7	18.0	70.8	15.1	14.2
Plume Lodgepole			100.0	0.0	0.0	100.0	0.0	0.0
Flotilla Capitol			100.0	0.0	0.0	100.0	0.0	0.0
HUNGRY HORSE								
Peters Ridge	15.0		49.3	31.1	19.6	55.0	17.9	27.1
Doris Lost Johnny	0.8	0.4	32.6	45.6	21.8	50.5	29.5	20.1
Wounded Buck Clayton		0.4	24.0	29.4	46.6	47.9	24.1	28.0
Coram Lake Five	28.2	13.6	8.4	46.6	45.0	43.7	29.9	26.5
Emery Firefighter			29.7	30.0	40.3	44.3	26.2	29.5
Riverside Paint		47.0	44.3	18.7	37.0	63.3	15.3	21.4
SULLIVAN								
Noisy Red Owl	28.4		52.5	34.9	12.6	69.4	16.4	14.1
Swan Lake	8.3	0.2	47.0	31.9	21.0	59.4	14.6	26.0
Jewel Basin Graves			48.5	28.2	23.3	52.2	14.9	32.9
Wheeler Quintonkon			26.5	43.5	29.9	57.9	24.8	17.3
Ball Branch			41.5	46.2	12.3	91.4	6.0	2.5
Kah Soldier			25.5	35.3	39.2	52.7	19.0	28.4
Logan Dry Park	0.03		38.7	22.4	38.1	50.3	17.5	32.2
Lower Twin			85.5	12.9	1.6	87.2	5.0	7.8
Twin Creek			99.6	0.4	0.0	100.0	0.0	0.0

FS - Coop Mgt								
BUNKER								
So Fk Lost Soup	1.5		22.6	46.0	31.3	35.6	28.4	36.0
Goat Creek			35.5	17.6	46.9	60.4	16.7	22.8
Lion Creek	3.0		52.6	8.6	38.7	64.8	11.8	23.4
Jungle Addition			28.8	42.0	29.2	46.5	22.8	30.7
Bunker Creek			47.5	36.0	16.5	88.8	5.9	5.3
Gorge Creek			99.0	1.0	0.0	99.1	0.9	0.0
Harrison Mid			97.2	2.8	0.0	97.2	2.0	0.8
Spotted Bear Mtn			32.3	39.0	28.7	65.4	15.4	19.3
Big Bill Shelf			71.2	23.3	5.5	77.3	14.2	8.5
BIG SALMON								
Meadow Smith	13.9		32.8	15.1	52.1	54.2	22.3	23.4
Buck Holland	15.7		32.8	24.2	43.0	53.4	22.4	24.2
MISSION RANGE								
Crane Mtn	6.3	9.9	3.4	18.8	77.9	28.5	19.2	52.4
Porcupine Woodward	3.3		8.0	33.1	59.0	31.5	20.9	47.6
Piper Creek	2.4		46.5	23.8	29.7	63.3	15.3	21.4
Cold Jim	5.8		35.0	9.0	55.9	61.1	16.5	22.4
Hemlock Elk	5.8		58.8	11.7	29.4	72.8	13.8	13.4
Glacier Loon	14.0		37.9	23.0	39.0	55.4	22.6	22.0
Beaver Creek	4.6		60.8	15.6	23.7	82.3	11.5	6.2
MEAN					24.16			20.16
STANDARD DEV.					18.99			13.52
MEDIAN					23.00			

	A	B	C	D	E	F	G	H
1	ALL LANDS & ROADS							
2	2/17/95	Tot	Motorize	Access	Open	Motorize	Access	Core Area
3	BMU Subunit	0 mi/mi2	0.1 - 2.0	>2 mi/mi	0 mi/mi2	0.1 - 1.0	>1 mi/mi2	
4								
5	UPPER NORTH FORK							
6	Frozen Lake	47.3	45.9	6.8	72.8	16.0	11.2	85.2
7	Ketchikan	42.9	28.2	28.9	44.0	12.5	43.5	56.9
8	Upper Trail	62.7	32.6	4.7	71.3	10.9	17.8	83.2
9	Lower Whale	5.7	42.4	51.9	11.4	22.5	66.1	23.5
10	Upper Whale Shorty	70.1	17.5	12.4	73.3	10.0	16.7	80.5
11	Red Meadow Moose	31.9	39.5	28.7	41.3	18.4	40.3	50.1
12	Hay Creek	42.3	36.5	21.2	42.7	18.0	39.3	58.5
13	Coal & So Coal	69.3	23.0	7.7	74.5	10.7	14.8	81.9
14	State Coal Cyclone	40.7	36.0	23.3	44.6	21.7	33.7	61.8
15								
16	LOWER NORTH FORK							
17	Werner Creek	17.7	32.7	49.7	40.1	19.9	40.0	36.1
18	Lower Big Creek	13.1	47.0	39.9	43.3	21.4	35.3	41.6
19	Canyon/McGinnis	11.8	39.4	48.8	30.4	24.9	44.7	41.3
20	Cedar Teakettle	6.7	27.9	65.4	12.8	17.6	69.6	24.3
21								
22	LOWER MIDDLE FORK							
23	Moccasin Crystal	58.8	33.2	8.0	60.0	17.8	22.2	73.7
24	Stanton Paola	61.9	27.7	10.4	64.5	15.1	20.4	72.9
25	Dickey Java	67.0	28.1	4.9	70.4	15.8	13.8	78.7
26								
27	UPPER MIDDLE FORK							
28	Long Dirtyface	99.3	0.7	0.0	99.3	0.6	0.1	99.7
29	Tranquil Geifer	74.7	21.5	3.8	82.5	9.2	8.3	77.0
30	Skyland Challenge	40.5	40.5	19.0	69.5	14.5	16.0	59.9
31	Plume Lodgepole	100.0	0.0	0.0	100.0	0.0	0.0	95.4
32	Flotilla Capitol	100.0	0.0	0.0	100.0	0.0	0.0	99.9
33								
34	HUNGRY HORSE							
35	Peters Ridge	35.0	30.9	34.1	38.2	19.6	42.2	51.6
36	Doris Lost Johnny	32.0	43.3	24.7	49.6	27.9	22.5	69.1
37	Wounded Buck Clayton	24.0	29.0	47.0	47.8	24.0	28.2	41.1
38	Coram Lake Five	4.7	26.2	69.1	21.6	19.6	58.8	20.3
39	Emery Firefighter	29.7	29.6	40.7	44.3	26.2	29.6	48.1
40	Riverside Paint	44.3	18.4	37.3	63.2	15.3	21.6	57.9
41								
42	SULLIVAN							
43	Noisy Red Owl	34.4	25.0	40.6	42.7	18.0	39.3	48.3
44	Swan Lake	41.5	31.3	27.2	52.1	14.9	32.9	56.7
45	Jewel Basin Graves	48.4	28.0	23.6	62.9	16.9	20.1	55.2
46	Wheeler Quintonkon	26.6	43.1	30.3	57.9	24.8	17.3	57.8
47	Ball Branch	41.5	46.0	12.5	91.4	6.0	2.5	87.7
48	Kah Soldier	25.5	34.6	39.9	52.7	19.0	28.3	49.7
49	Logan Dry Park	38.7	22.1	39.2	50.3	17.5	32.2	50.3
50	Lower Twin	85.4	12.8	1.8	87.2	5.0	7.8	91.3
51	Twin Creek	99.6	0.4	0.0	100.0	0.0	0.0	100.0

All Lands and Roads

	A	B	C	D	E	F	G	H
2	2/17/95	Tot	Motorize	Access	Open	Motorize	Access	Core Area
3	BMU Subunit	0 mi/mi2	0.1 - 2.0	> 2 mi/mi	0 mi/mi2	0.1 - 1.0	> 1 mi/mi2	
52								
53	BUNKER							
54	South Fork Lost Soup	22.1	41.8	36.1	33.8	23.4	42.8	43.5
55	Goat Creek	35.5	15.8	48.7	56.4	17.8	25.8	45.1
56	Lion Creek	51.0	5.3	43.7	62.8	8.8	28.4	54.0
57	Jungle Addition	28.8	41.5	29.7	46.5	22.8	30.7	58.0
58	Bunker Creek	47.5	35.1	17.4	88.8	5.9	5.3	74.6
59	Gorge Creek	99.0	1.0	0.0	99.1	0.9	0.0	98.5
60	Harrison Mid	97.2	2.0	0.8	97.2	2.0	0.8	94.4
61	Spotted Bear Mountain	32.3	38.4	29.3	65.3	15.4	19.3	49.2
62	Big Bill Shelf	71.2	23.1	5.7	77.3	14.2	8.5	86.9
63								
64	BIG SALMON							
65	Meadow Smith	28.3	9.0	62.7	41.6	16.5	41.9	40.3
66	Buck Holland	27.2	14.9	57.9	42.3	14.1	43.6	32.2
67								
68	MISSION RANGE							
69	Crane Mountain	2.9	18.5	78.6	28.5	17.6	53.9	13.2
70	Porcupine Woodward	7.7	30.9	61.4	30.3	20.2	49.5	32.4
71	Piper Creek	45.2	22.3	32.5	61.4	14.2	24.4	60.6
72	Cold Jim	33.0	7.6	59.4	56.7	11.7	31.6	41.0
73	Hemlock Elk	55.4	10.3	34.3	65.1	12.2	22.7	62.6
74	Glacier Loon	32.3	18.2	49.5	44.1	18.7	37.2	42.5
75	Beaver Creek	57.8	15.1	27.1	76.8	13.2	10.0	64.6
76								
77	MEAN	45.37	25.40	29.23	58.97	14.85	26.18	60.39
78	STANDARD DEVIATION	26.88	13.67	21.09	22.88	7.15	17.41	22.35
79								
80	MEDIAN	41.10	27.95	29.10	57.30	15.90	25.10	57.85

INTRODUCTION - This appendix has been added to the amended EA in response to public comments. The definitions of restricted and reclaimed roads have been modified to more clearly express the intent of Alternatives 3-Corrected, 4-Corrected, and 5. Implementation direction has been added regarding administrative use, closure devices, duration of restrictions, and calculation methods for open and total motorized access density in order to address public concerns.

APPENDIX D - FOREST PLAN APPENDIX TT DEFINITIONS AND IMPLEMENTATION DIRECTION FOR RESTRICTED ROADS, RECLAIMED ROADS, AND SECURITY CORE AREAS

RESTRICTED ROAD

Definition:

A road on which motorized vehicle use is restricted during the entire non-denning period. The road requires physical obstruction and motorized vehicle use in the non-denning period is legally restricted by order.

Administrative Use:

Administrative use includes contractors and permittees in addition to agency employees. Administrative activities should be planned so as to not preclude use by bears of important or limited habitats.

(a) Within security core areas, motorized administrative use may not occur on restricted roads during the non-denning period.

(b) Outside of security core areas, motorized administrative use is acceptable at low intensity levels, as defined by either: (1) existing cumulative effects analysis models (currently 1-6 vehicles/week for the NCDE WEST CEM); or (2) minor activities that do not exceed 30 days duration. If administrative use must exceed low intensity levels, reconsultation with USFWS will occur.

Closure Device:

A legal closure order and a physical obstruction must be in place for all restricted roads. The closure device should be of a type and design that is capable of precluding use by the type/class of motorized vehicle expected to be using the site or area. If physical control of motorized vehicles is not possible and rates of use are unacceptable, law enforcement activities should be utilized to enhance success.

(a) Within security core areas, the obstruction must be permanent and includes tank traps, large boulders, and dense vegetation. Although restricted roads are acceptable within security core areas, reclamation is the preferred treatment method.

(b) Outside of security core areas, gates and other more portable closure devices are acceptable.

Duration of Restriction:

(a) Within security core areas, the restriction must be in place for a minimum of 10 years. Due to this time frame and the lack of administrative motorized access for inspection and maintenance, strong consideration should be given to treating road drainage similar to that used for reclaimed roads. If road drainage is not reworked, a monitoring plan must be developed and its implementation assured.

(b) Outside of security core areas, restrictions for an individual road must be in place for a minimum of one year, but may be changed between years so long as BMU Subunit objectives are maintained.

Use of Restricted Roads in Calculations:

All restricted roads will be included in calculating total motorized access route density. Seasonally restricted roads, that are open during the non-denning period, will be considered open for the purpose of calculating open access density.

RECLAIMED ROAD**Definition:**

A reclaimed road has been treated in such a manner so as to no longer function as a road or trail and has a legal closure order until reclamation treatment is effective. This can be accomplished through one or a combination of treatments including: recontouring to original slope, placement of natural debris, or revegetation with shrubs or trees.

Administrative Use:

Administrative use of reclaimed roads may not occur.

Closure Device:

A legal closure order should be utilized until the reclamation treatment is effective. Naturally occurring local materials and native plant species should be utilized in the creation of barriers and revegetation of roadways. Minimum treatment requirements include:

(a) The entire road will receive treatment such that maintenance or entries to maintain "road drainage" is not needed. This will require removal of culverts or other water passage structures that are aligned with stream channels. In most cases this will also require that road related sediment sources be repaired and the road reworked to eliminate ditch water flow without the aid of cross drain culverts.

(b) The first portion of the road (typically 200 to 600 feet) will be treated in such a manner so as to preclude its use as a motorized or non-motorized travel way. This will include: (1) making the road junction area unattractive as a travelway, and (2) treating the remainder of the first portion to make awareness of the road improbable and preclude motorized or non-motorized use.

(c) Treat the road, other than the first portion, in a way that will discourage its use as a motorized or non-motorized travelway. Treatment should include: sporadic placement of natural debris over most of the road length, and surface treatment to encourage natural, planted or seeded revegetation.

(d) It is the intent in many cases that the reclaimed road no longer function as a road again. Recontouring should be considered where resource protection and economics are favorable.

(e) The acceptable lag time for the treatment to become effective and the expected persistence of people to continue to use a road should dictate the amount and type of initial, and perhaps follow-up, treatment required. Greater initial revegetation and barrier work will be required if the expectation is to meet reclaimed road criteria in one year as opposed to ten years, or if heavy ORV pressure is expected on the barrier structures. These factors should be described and considered in the design of treatments for each site.

Use of Reclaimed Roads in Calculations:

Reclaimed roads that fully satisfy the definition of a reclaimed road will not be included in calculations of open motorized access density, total motorized access density, or security core area. Roads that have been treated, but that do not yet fully satisfy the definition of a reclaimed road will be included in calculations for total motorized access route density. These roads will not be included in calculations for open motorized access route density, or security core area if use is low-intensity and non-motorized.

Conversion of Reclaimed Roads to Trails:

Roads scheduled for reclamation to meet total motorized access density objectives may be converted to trails if necessary to maintain access to the existing trail system. Other actions to convert a reclaimed road to a trail must be made in consultation with the U.S. Fish and Wildlife Service.

SECURITY CORE AREA

Definition:

An area that is at least 0.3 miles from open roads and high-intensity, non-motorized trails. Restricted roads may occur within the security core area, provided they have substantial immobile closure devices and legal closure to motorized use during the non-denning period. Legal closure orders for individual roads or trails, or an area closure, may be utilized. Areas must be at least 2500 acres in size, and once established and effective, remain in place for at least 10 years.

Restricted Roads in Security Core Areas:

Restricted roads may occur within security core areas, but they may not receive motorized use during the non-denning period. The number of restricted roads in security core areas should be minimized, with reclamation of roads the preferred treatment. Restriction of roads in security core areas requires adequate permanent physical barriers and legal closure order(s). Restricted roads within security core areas may not receive high levels of non-motorized use. High-intensity non-motorized use is defined as receiving 20 or greater parties per week, based upon the unified Cumulative Effects Model (April 1990) values.

Duration of Security Core Areas:

A security core area once established and effective must remain in place and operational for a minimum of 10 years. The 10 year period begins at the time all criteria for the security core area are met. Lag time required for management actions to become effective (ie,

revegetation or road reclamation) will not be considered a part of the 10-year period, but will be in addition to the 10 year period.

Size and Proximity of Security Core Areas:

The minimum size for a security core area is 2500 acres. It is desirable to have large, contiguous blocks of security core area within each BMU Subunit. If a block straddles a BMU Subunit boundary, consider the whole security core area when determining size, but only the amount within an individual Subunit when determining percent quantities.

Composition of Security Core Area:

Security core area within a BMU Subunit should contain seasonal habitat approximately proportional to its availability in the BMU Subunit. Seasonal availability (snow cover) of spring habitat should be considered in addition to habitat value.

Vegetation Management Within Security Core Areas:

Vegetation management may occur within security core areas so long as the objective and criteria for security core area continues to be met. Access use levels must be met during the non-denning period, and requires that many planned activities, and all motorized activities, occur during the denning period. Exceptions to established criteria require reconsultation with the U.S. Fish and Wildlife Service.

REPORTING REQUIREMENTS:

A monitoring report outlining activities and progress towards objectives for open motorized access, total motorized access, and security core areas will be developed annually, with a copy submitted to the USFWS in December of each year.

United States
Department of
Agriculture

Forest Service



Flathead
National Forest

Feb. 1995

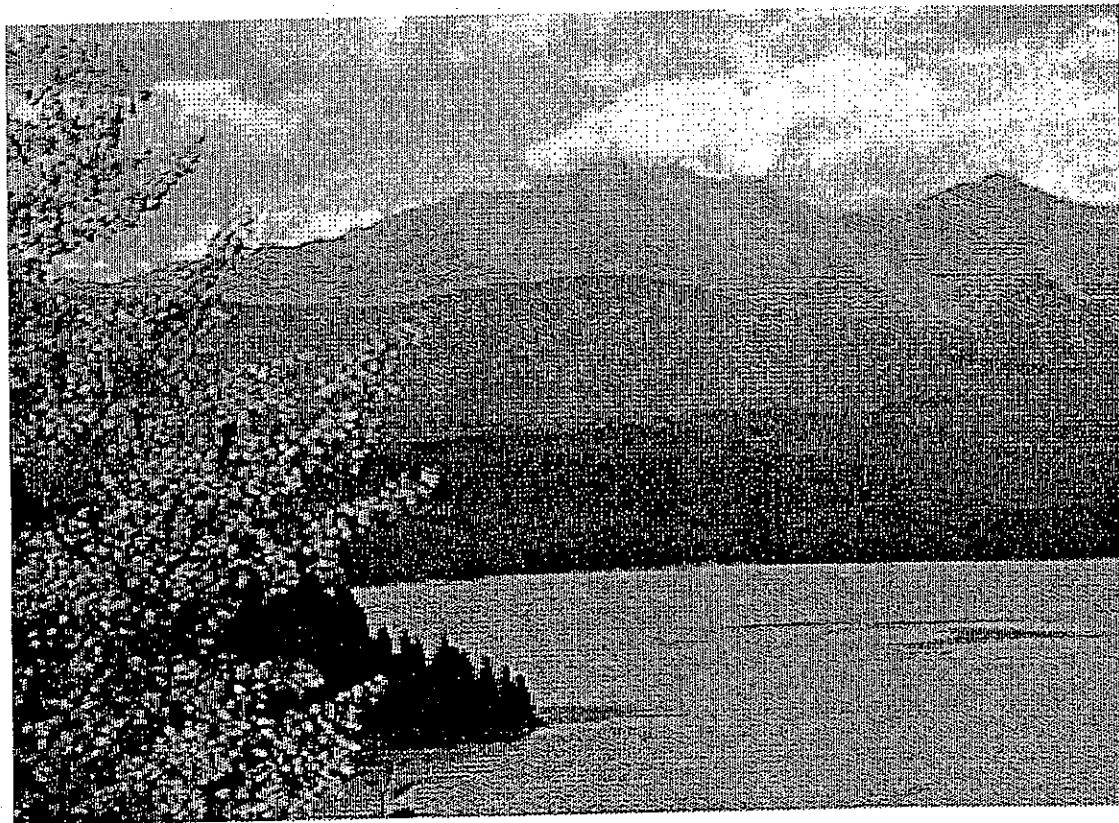
FLATHEAD NATIONAL FOREST



FOREST PLAN AMENDMENT #19

Allowable Sale Quantity and Objectives
and Standards For
Grizzly Bear Habitat Management

DECISION NOTICE



DECISION NOTICE

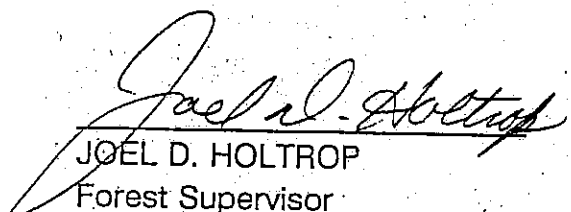
ALLOWABLE SALE QUANTITY
AND
OBJECTIVES AND STANDARDS FOR GRIZZLY BEAR HABITAT MANAGEMENT

Prepared by:

U.S. Department of Agriculture, Forest Service
Flathead National Forest
Northern Region

MARCH, 1995

Responsible Official:


JOEL D. HOLTROP

Forest Supervisor
Flathead National Forest

3/1/95
DATE

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DECISION NOTICE

AMENDMENT TO THE
FLATHEAD NATIONAL FOREST
LAND AND RESOURCE MANAGEMENT PLAN
FLATHEAD NATIONAL FOREST, MONTANA

AMENDMENT NO. 19
ALLOWABLE SALE QUANTITY
AND
OBJECTIVES AND STANDARDS FOR GRIZZLY BEAR HABITAT MANAGEMENT
MARCH, 1995

I. INTRODUCTION

Nature of Forest Plan Decisions

On January 22, 1986, the U.S. Forest Service adopted the Land and Resource Management Plan, or Forest Plan, for the Flathead National Forest. The Forest Plan provides management direction to assure coordination of the various multiple uses and values of the Flathead National Forest, consistent with the applicable laws established by Congress.

The Forest Service Manual provides for two levels of decisionmaking in the management of National Forests. The first level involves the promulgation of Forest Plans that establish programmatic management direction for an entire National Forest. Forest Plans contain six types of decisions:

- 1) Forest-wide multiple-use goals and objectives;
- 2) Forest-wide standards and guidelines;
- 3) Establishment of management areas and management area direction;
- 4) Designation of land suitable for timber production;

- 5) Nonwilderness allocations and wilderness recommendations; and
- 6) Monitoring and evaluation requirements.

The Forest Plan does not authorize or approve any specific actions or activities.

The second level of decisionmaking occurs when site-specific activities are proposed. This stage of decisionmaking requires analysis of the specific proposal, not only to determine consistency with the Forest Plan, but also to ensure compliance with the National Environmental Policy Act, the Endangered Species Act, and other applicable laws and regulations. This analysis may result in a decision not to proceed with a proposed project even though the project may otherwise be permissible under the Forest Plan. Project decisions are subject to administrative appeal.

History of Forest Plan Consultation and Litigation

The Flathead National Forest consulted with the U.S. Fish and Wildlife Service (USFWS) regarding the development of the Forest Plan. The Biological Opinion for the Flathead Forest Plan, dated May 15, 1985 and amended July 18, 1989, concluded that implementation of the Forest Plan is not likely to jeopardize the continued existence of threatened and endangered species (peregrine falcon, bald eagle, gray wolf, and grizzly bear). No incidental take was authorized.

Eighteen previous amendments have been proposed to the Forest Plan dealing with a variety of resource management issues. Amendment #9, approved July 31, 1989, added the Interagency Grizzly Bear Guidelines (IGBG) to the Forest Plan as an unbound appendix and amended the Management Situation descriptions and direction to read exactly as published in the IGBG. The Forest Service consulted with the USFWS on this and other amendments to the Forest Plan. The USFWS has consistently found that the Forest Plan and proposed amendments do not jeopardize the continued existence of threatened and endangered species.

On February 22, 1989, a lawsuit challenging the Flathead Forest Plan and accompanying EIS was filed by Resources Limited, Inc., Swan View Coalition, Inc., Friends of the Wild Swan, Five Valleys Audubon Society, and the Sierra Club. The United States District Court ruled in favor of the Forest Service on all claims. Plaintiffs subsequently appealed to the Ninth Circuit Court of Appeals. The Circuit Court issued an opinion on November

3, 1993, and an order amending the opinion and denying rehearing on July 5, 1994. This opinion affirmed the District Court's ruling on 11 of the 12 claims. The Circuit Court reversed the District Court ruling on one claim, and "... set aside the Forest Service's determination that implementation of the Plan would not jeopardize the continued existence of listed species."

In the July 5, 1994 order, the Ninth Circuit Court held that "...the Forest Service acted arbitrarily and capriciously in concluding, on the record as a whole, that the Plan would not jeopardize listed species even at timber harvest levels of 100 mmbf/year."

The Court concluded that:

"...the Forest Service may reinitiate formal consultation with the FWS concerning the current amended Plan. Alternatively, the Forest Service may propose an amendment to the current amended Plan which shall include an amended ASQ [Allowable Sale Quantity]. In any event, the Forest Service shall formally consult with the FWS concerning the current or proposed amended Plan and provide it with all the data and information required by 50 C.F.R. 402.14(d), including, but not limited to, the Interdisciplinary Team and the District Rangers reports.

After the FWS issues an amended opinion based on its assessment of all the relevant information, the Forest Service must reevaluate its determination that the current or proposed amended Plan would not be likely to jeopardize listed species. The district court will retain jurisdiction over this case to ensure that this process is completed within six months of our mandate."

To comply with this order, the Forest Service proposed Amendment 19 and formally consulted with the U.S. Fish and Wildlife Service in accordance with the procedures of the Endangered Species Act. Early in this consultation, the U.S. Fish and Wildlife Service recommended that the proposed amendment include objectives for open and total road densities and security core areas (Project Record, Exhibit J-6). This decision is the culmination of the Forest Service's efforts to comply with the Court order.

II. DECISION

I have carefully considered the potential environmental impacts of the alternatives analyzed in the Environmental Assessment. I have also consulted with the U.S. Fish and Wildlife Service, other Federal and State agencies, local governments, and the general public. For reasons given in the next section, it is my decision to select Alternative 3-Corrected.

My decision, stated in its simplest terms, is the addition of Forest Plan direction to ensure compliance with the Endangered Species Act, and the recalculation of the maximum amount of timber we can potentially offer for sale during the planning period 1995 to 1999.

The decision amends the Flathead Forest Plan to establish new Forest-wide objectives and standards for grizzly bear habitat and timber management. Appendix A provides the complete text of these changes. The principal changes are:

A. Forest-wide Standards for Grizzly Bear

In all BMU Subunits (Figure 1), there will be no net increase in total motorized access density greater than 2 miles per square mile, no net increase in open motorized access density greater than 1 mile per square mile, and no net decrease in the amount or size of security core area. Forest Service actions will result in a net gain towards the objectives on National Forest System lands.

B. Forest-wide Objectives for Grizzly Bear

On all BMU Subunits that are predominantly (greater than 75 percent) National Forest System land, our objective is to:

- limit high-density (> 1 mile/square mile) open motorized access to no more than 19 percent of a BMU Subunit within 5 years;
- limit high-density (> 2 miles/square mile) total motorized access to no more than 24 percent of a BMU Subunit in 5 years, and no more than 19 percent in 10 years; and
- provide security core areas that equal or exceed 60 percent of each BMU Subunit in 5 years, and 68 percent in 10 years.

On all BMU Subunits that are not predominantly National Forest System land, our objective is to:

- assure that Forest Service activities will not result in an increase in motorized access density or reduction in security core areas on National Forest System lands; and
- improve habitat effectiveness through cooperative management with other landownerships, land adjustments, or other means.

This Decision also includes an objective to establish an active public information and education program that explains the goals and objectives of grizzly bear management and the steps required to recover the population.

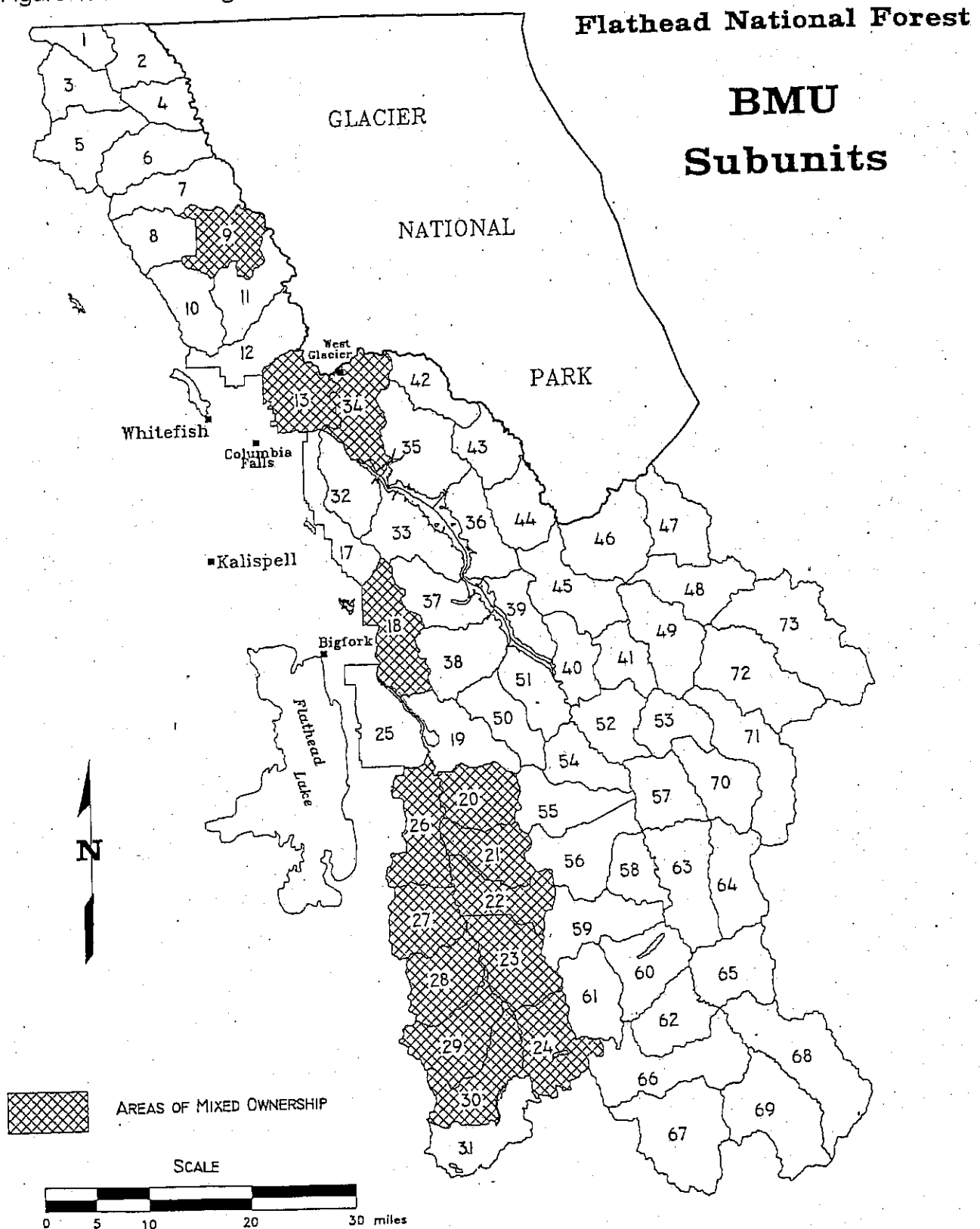
C. Forest-wide Objectives for Timber Management

The Forest's allowable sale quantity (ASQ) is amended to 270 million board feet (MMBF) for the period 1995 to 1999, or an annual average of 54 MMBF. The suitable timber base identified in the 1986 Forest Plan is not altered by this decision. The ASQ is the maximum level of harvest consistent with the Forest Plan's standards and guidelines, and the grizzly bear objectives and standards adopted with this decision.

D. Forest Plan Monitoring

The Forest Plan monitoring decisions are amended to increase efforts to monitor the use of open and restricted roads and trails. In addition, this Decision requires an annual report on implementation of grizzly bear habitat objectives.

Figure 1. Bear Management Unit Subunits



III. REASONS FOR DECISION

One basic fact has dominated my deliberations leading to this decision: the most essential element for grizzly bear conservation is people's understanding, acceptance, and support for the continued existence of the grizzly bear.

As stated in the Grizzly Bear Recovery Plan (U.S. Fish and Wildlife Service, 1993):

"... [L]ocal communities must be owners of the concept of grizzly bear conservation. Value systems that are imposed on local communities will not foster support for the conservation of the grizzly. Local values and traditions must be integrated into grizzly bear preservation to enhance local support. A management system that seeks to integrate all biological, social, valuational, and institutional forces toward a common effort involving grizzly bear conservation will have the highest chance of success..... Gaining the support and confidence of people who live in or near grizzly habitat is one of the greatest challenges to grizzly bear recovery. Efforts which address the attitudes and concerns of the local public serve to foster tolerance and positive attitudes toward grizzly bears in communities throughout grizzly bear habitat."

In considering my decision, I have searched for ways to improve habitat security for grizzly bears while fostering tolerance and positive attitudes towards grizzly bears and wildlife conservation generally. It is indeed a great challenge.

I have seriously considered the many concerns of the public raised in their comments on the proposed amendment. I recognize that the alternatives considered present a range of trade-offs between security for wildlife and many traditional recreational and economic activities. I realize that further limitations on motorized access to the Forest and a reduction in the allowable timber sale volume will affect activities and livelihoods that for many years have been important to the culture and customs of the Flathead Valley. In making this decision, I have attempted to maintain those uses and values of the Flathead National Forest to the fullest extent possible while complying with my obligation to conserve threatened and endangered species.

The truly outstanding water quality, native fisheries, and wildlife resources of the Flathead National Forest are also significant elements of the culture and customs of the Flathead Valley and the United States. For many people, the grizzly bear is the ultimate symbol of these values. The Flathead National Forest provides 40 percent of the habitat for the largest remaining population of grizzly bears in the lower 48 States, and is one of only a

few places in the United States that harbors all the large predators that were present 200 years ago. I remain convinced that our desire and obligation to conserve these priceless resources for future generations can be fulfilled within the principles of multiple-use management.

A. Grizzly Bear Objectives and Standards

Since the Forest Plan was adopted in 1986, a lot of new information has been generated regarding the condition of the grizzly bear population and its habitat on the Flathead National Forest. Some of this information raises concerns about the recovery and long-term conservation of the grizzly bear population.

Monitoring efforts over the last few years reveal that the Northern Continental Divide Ecosystem (NCDE) population of grizzly bears meets all of the criteria for a recovered population, except for the rate of human-caused mortality of female grizzly bears. Recently, the U.S. Fish and Wildlife Service (USFWS) computed grizzly bear population trends for two areas in and adjacent to the NCDE (Servheen et al. 1994). In the South Fork of the Flathead River drainage, which is almost entirely within the Flathead National Forest, the USFWS estimates that the grizzly bear population is declining by approximately 4 percent per year. In the North Fork of the Flathead River drainage, the USFWS estimates that the grizzly bear population is increasing by approximately 6 percent annually. This estimate is based primarily on bear data collected in the British Columbia portion of the drainage. Adult female mortality was the most important factor in determining these results. There are inadequate data to evaluate population trends for the entire NCDE population using these statistical methods. Nevertheless, this information further demonstrates the need to improve habitat security and reduce human-caused mortality.

Preliminary results from recent research conducted in the South Fork of the Flathead River suggest that grizzly bears tend to use areas with high open and total road densities less than expected (Mace and Manley 1993). Thus, areas of high road densities may result in an overall reduction in quality and usefulness of grizzly bear habitat.

In addition, human activities that cause bears to move away from, or avoid, certain areas can lead to the isolation, or fragmentation, of smaller populations. One example is the Swan Valley, where maintaining habitat linkages between the Swan Mountains and Mission Mountains is essential for the long-term occupancy of the Mission Mountains.

This information indicates that we need to increase grizzly bear habitat security and reduce human-caused mortality if we are to allow the grizzly bear population to recover to the point that Endangered Species Act protection is no longer needed.

To accomplish this goal, we have subdivided that portion of the Flathead National Forest that occurs within the grizzly bear recovery zone into areas that are approximately the size of the home range for an adult female grizzly bear. We call these areas "BMU Subunits." The habitat utilization patterns of successfully reproducing adult female grizzly bears provide the best guide for determining the necessary level of habitat security for these BMU Subunits. Fortunately, information on grizzly bear habitat utilization patterns in the South Fork of the Flathead River is available from recent research by the Montana Department of Fish, Wildlife, and Parks.

My decision establishes long-term objectives for habitat security that are the same as conditions known to support adult female grizzly bears. In the BMU Subunits that are predominantly National Forest System lands (Figure 1), the long-term (10 years) objectives for total motorized access density and security core areas, and the short-term (5 years) objective for open motorized access density, are the same conditions as found in the composite home range of radio-collared female grizzly bears in the South Fork of the Flathead River. We know that these bears have been able to survive and reproduce with this level of habitat security.

To ensure steady progress toward the long-term objectives, my decision also establishes short-term (5 years) objectives for total motorized access density and security core areas. The short-term objectives represent the current Forest average of 24 percent total motorized access density, and 60 percent security core areas. The current Forest average for open motorized access density is very close to the composite home range values, so no phase-in is needed.

By establishing short-term and long-term objectives, my decision reduces the immediate impact on some traditional or desired uses of the Forest, while giving priority to improving habitat conditions in those BMU Subunits that currently have the highest impacts from motorized access. This phase-in approach also helps minimize the risk of eroding public support for grizzly bear recovery efforts.

I believe that achieving these habitat conditions will substantially increase habitat security, reduce mortality risk, and result in improved population trends. In the South Fork Study area, open and total road densities outside the composite home range were higher than

within (Mace and Manley 1993). Implementing these objectives will result in a greater level of habitat security than existed in the South Fork Study area. Thus, it is reasonable to conclude that the habitat conditions known to sustain adult female grizzly bears in the South Fork will be conducive to sustaining adult female grizzly bears in other BMU Subunits on the Forest.

There are 14 BMU Subunits that are less than 75 percent National Forest System lands (Figure 1). Because the regulatory authority of the Forest Service is properly limited to National Forest System lands, my decision to amend the Forest Plan does not affect any jurisdictions or landowners other than the National Forest System. In the 14 BMU Subunits that are less than 75 percent National Forest System lands, it is not possible to achieve the BMU Subunit objectives on National Forest System lands alone. Therefore, the Forest Plan objectives described above for open and total access density and security core area do not apply to these BMU Subunits.

In the 14 Subunits with intermingled landownerships, cooperative agreements with other landowners are necessary to promote improvements in habitat security over areas the size of one or more grizzly bear home ranges. I am actively involved in efforts to develop such an agreement with major landowners in the Swan Valley, an area with the highest amount of intermingled landownership relative to the Flathead National Forest. These efforts to develop cooperative agreements are critical to assure a recovery of the Mission Mountain grizzly bear population and the long-term conservation of the Northern Continental Divide population.

In these 14 BMU Subunits and all others on the Forest, my decision requires no net loss of habitat security on National Forest System lands, and that Forest Service activities result in a net gain in habitat security. In addition, this amendment changes the designation of about 11,000 acres of National Forest System land in the Swan Valley from Management Situation 2 to Management Situation 1. This change reflects my recognition of the critical need to maintain habitat linkages between the Mission Mountains and the Swan Mountains. I believe that these decisions will improve habitat effectiveness, maintain habitat linkages, and generally provide greater habitat protection for grizzly bears in these BMU Subunits than the management direction in the current Forest Plan.

Over the last 10 years, the U.S. Fish and Wildlife Service (USFWS) has consistently found that the Forest Plan and project activities of the Flathead National Forest are not likely to jeopardize the continued existence of the grizzly bear. However, on several recent occasions the USFWS has found that the existing open and total road densities on some portions

of the Flathead National Forest are causing significant modifications of grizzly bear habitat resulting in a "take"¹ of the species in violation of the Endangered Species Act. In their January 6, 1995, Biological Opinion on this proposed amendment, the USFWS provided "terms and conditions" that the Forest Service must comply with to avoid violating the Endangered Species Act. Alternative 3-Corrected complies with these terms and conditions. Thus, my decision to establish the objectives of Alternative 3-Corrected is required by law.

I have seriously considered the consequences of this decision on the recreational and other uses of the Forest that rely on roaded access. There are currently about 1900 miles of road open to general use on the Flathead National Forest. Implementation of this decision over the next 5 to 10 years will reduce the amount of open roads to approximately 1600 miles.

Implementation of this decision will reduce the level of motorized access currently used for a variety of activities such as firewood gathering, camping, fishing, trailbike riding, hunting, berry picking, and timber management.

The road use restrictions will not be evenly distributed across the Forest. Some areas will see no change, some will see only a slight amount of new restrictions, and in a few BMU Subunits several additional roads will be restricted. Restricted roads will remain open to nonmotorized use and reclaimed roads may be converted to nonmotorized trails when necessary to maintain access to the existing trail system.

The open motorized access density and security core area objectives apply only during the non-denning period, which is generally from November 15 to March 15. Thus, snowmobiling will not be affected significantly, except in late spring.

¹ Under Section 9 of the Endangered Species Act, it is unlawful for any person to take any threatened or endangered species of fish or wildlife. The term "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The Secretary of Interior may permit, under such terms and conditions as he shall prescribe, taking that would otherwise be prohibited but is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.

Motorized access restrictions and road reclamation will provide other benefits in addition to increased habitat security for grizzly bears. Decreased motorized access density will improve the habitat effectiveness for numerous species of wildlife, including wolves, fisher, lynx, elk, wolverine, and marten. Motorized access restrictions will change hunting opportunities from roaded to unroaded in some portions of the Forest. This is expected to increase the proportion of older bulls and bucks in elk and deer populations. Road reclamation, while likely causing some short-term increases in sediment, will in the long-term improve water quality and fish habitat by reducing fine sediment and stream channel erosion.

My decision to adopt these grizzly bear habitat standards and objectives is guided by the Federal laws governing management of National Forests. The Endangered Species Act requires that Federal agencies use their authorities to conserve threatened and endangered species, and insure that their actions are not likely to jeopardize the continued existence of any threatened or endangered species. Section 9 of the Endangered Species Act makes it unlawful for any person to take any threatened or endangered species. The definition of "take" includes any action to harm or harass listed species. The Secretary of Interior may permit, under such terms and conditions as he shall prescribe, taking that is incidental to otherwise lawful activity. The Multiple-Use Sustained-Yield Act, and the National Forest Management Act, direct the Forest Service to provide a sustained yield of outdoor recreation, range, timber, watershed, and wildlife and fish. My decision strives to achieve these sometimes conflicting purposes. The grizzly bear habitat standards and objectives of this decision accomplish the results required by the Endangered Species Act, and provide for the sustainable production of recreational opportunities, timber, water quality, and other resources at a level consistent with the Endangered Species Act.

B. Forest-wide Resource Management Objectives for Timber

The allowable sale quantity (ASQ) is defined as the maximum amount of timber that may be sold from the area of suitable land for a time period specified by the plan. It is usually expressed as the average annual allowable sale quantity.

Even though the ASQ is a maximum, we need to be as realistic in our estimate as we can be. This means that our estimate must reflect, to the greatest extent possible at the programmatic level, the effect of meeting other objectives, standards, and guidelines for resource protection. To me, this presents a reasonable assurance of protecting or maintaining water quality, scenic quality, important wildlife habitat, and other resource values on the Forest. Recognizing that ASQ is a maximum allows for site-specific

adjustments when projects are planned, based on more specific information and actual application of objectives, standards, and guidelines to a specific area.

It would be inappropriate to select an ASQ that is not feasible or that is inconsistent with other objectives, standards, and guidelines. It is inappropriate from the standpoint of reasonable expectations for industry and from the standpoint of resource protection mandated in law.

In developing the various alternatives, we carefully evaluated whether the proposed ASQ could be achieved consistent with the standards and guidelines of the Forest Plan, and any proposed additions. This analysis is explained in Chapter III of the Environmental Assessment. The analysis concluded that an average annual ASQ of 54 million board feet is feasible and consistent with current Forest Plan standards, including the Interagency Grizzly Bear Guidelines, and the objectives and standards added by this amendment.

In conducting this analysis for Alternatives 3-Corrected, 4-Corrected, and 5, we accounted for consequences of the security core area objectives on the amount of land available for timber management. Motorized access is prohibited in security core areas during the non-denning period. However, motorized activities, including timber management activities, may occur during the denning period. The mechanical and economical feasibility of timber management activities during winter conditions depends on site-specific conditions such as slope steepness and distance to road access. These conditions are highly variable across the affected BMU Subunits. As a result, we are unable to evaluate in this programmatic analysis the degree to which timber management activities are feasible in security core areas. Therefore, we excluded security core areas from the estimation of ASQ, even though timber harvest activities are permissible during the denning period. Decisions to proceed with timber management activities in security core areas during the denning period must be based on site-specific analysis when all the relevant factors can be adequately addressed. The determination to exclude security core areas from the calculation of ASQ is also consistent with the need to assure, to the greatest extent possible at the programmatic level, that the ASQ is achievable consistent with other Forest Plan management direction.

The actual amount of timber that will be sold each year depends on a variety of factors including site-specific environmental analysis, public involvement on project proposals, choice of harvest methods, and the effects of administrative appeals and litigation. In addition, actual levels of timber production are limited by the budget that this Forest receives for that purpose. All of these factors, particularly site-specific environmental

analysis and public involvement, may result in the Flathead National Forest selling less than the maximum allowable volume of timber.

IV. IMPLEMENTATION

This decision will take effect 7 days after publication of legal notice of the Daily Interlake newspaper of Kalispell, Montana.

As described above, this decision establishes both short-term and long-term objectives for open and total motorized access density and security core areas in BMU Subunits that are predominantly National Forest System lands. The short-term objectives are to be achieved in the next five years, and long-term objectives are to be achieved in the next ten years.

Specific access restriction and road reclamation actions to achieve these objectives may be made in conjunction with other actions such as timber management proposals, or independently. In any event, the Forest Service will conduct additional site-specific analysis and public involvement on specific proposals. The Forest Service will consult with the U.S. Fish and Wildlife Service prior to proceeding with actions that may affect listed species, as required by the Endangered Species Act.

Several comments on the Environmental Assessment suggested that the time-frames for these objectives are too long. Some respondents questioned the utility of long-term objectives when the Forest Service anticipates revising the Flathead Forest Plan within the next five years.

After considering these comments, I have concluded that a combination of short-term and long-term objectives is the best approach for total motorized access density and security core areas. This approach assures significant and steady progress while minimizing the risk of major reductions in public support for grizzly bear conservation that may result from sudden and widespread restrictions on access for popular activities. This combination of short-term and long-term objectives is also permissible under the terms and conditions of the U.S. Fish and Wildlife Service's Biological Opinion.

A single 5-year objective of 19 percent is warranted for high density open motorized access. Habitat effectiveness and human-caused mortality risk are affected more by the amount of actual motorized use than by the mere presence of a road bed. Thus, achieving

the composite home range value for open motorized access density will result in a substantial improvement in habitat conditions over the next 5 years.

As with establishing an allowable sale quantity, the grizzly bear habitat objectives should be reasonably achievable. Access restrictions and road reclamation require additional, and more site-specific, environmental analysis. It will take considerable time to complete this environmental analysis for all 22 BMU Subunits that currently do not meet the long-term objectives for either total motorized access or security core area. In addition, it may take more than five years to acquire the total financing needed to achieve the long-term total motorized access density objective.

To ensure steady progress toward these objectives, I anticipate that the Flathead National Forest will make project decisions that achieve at least the short-term objectives at a rate of 4 to 6 BMU Subunits per year over the next 5 years.

To further promote steady implementation, the Forest Service will prepare an annual report documenting our progress toward these objectives. This report will be available for public review. In addition, we will submit this report each year to the the U.S. Fish and Wildlife Service as part of our ongoing consultation.

I do not believe that the anticipated revision of the Forest Plan within the next five years undermines the utility of long-term objectives. The Forest Plan contains many goals and objectives that will take longer than the next five years to achieve. This does not make them invalid. Indeed, long-term objectives are valuable because they encourage efforts to accelerate accomplishments where feasible and appropriate.

Regardless of the anticipated timing of Forest Plan revision, the Forest Service and the U.S. Fish and Wildlife Service will continue their ongoing dialogue on threatened and endangered species recovery, including the effectiveness of the grizzly bear habitat objectives adopted with this decision. Together, and with the public, we will continue to evaluate the results from the monitoring of human-caused mortality, habitat effectiveness, and other recovery parameters. We will also continue to evaluate further research developments. The Forest Plan can be changed whenever the evaluation of new information indicates it is appropriate.

In addition, the U.S. Fish and Wildlife Service's January 11, 1994, amendment to their Biological Opinion on the Lost Silver Timber Sale, recognized that "area-based" habitat objectives measured by geographic information system techniques are untried as a

management tool. Despite the Flathead National Forest's best programmatic efforts to evaluate the consequences of the alternatives considered in the Environmental Assessment for Amendment 19, site-specific application may reveal unanticipated or impractical results in some BMU Subunits. This is also a source of new information that the Forest Service will share with the U.S. Fish and Wildlife Service and the public.

This continuous process of evaluation and consultation regarding monitoring results, research developments, and implementation experience, requires that the Forest Service and the U.S. Fish and Wildlife Service remain able to adapt to new information indicating a need to change, regardless of the anticipated timing of Forest Plan revision. If and when new information dictates, the Forest Service will reinstitute formal consultation with the U.S. Fish and Wildlife Service on these objectives, either in whole or by BMU Subunit. On the other hand, if new information confirms the effectiveness and necessity of these objectives, they will not be changed with revision of the Forest Plan.

V. ALTERNATIVES CONSIDERED

Alternative 1. No Change to the Current Forest Plan (No Action):

The National Environmental Policy Act requires that a no action alternative be considered. "No action" in this case means no change from the current Forest Plan, as previously amended. The current Forest Plan has an annual average allowable sale quantity (ASQ) of 100 million board feet (MMBF) of timber. This figure represents the maximum amount of timber that could be sold from the Flathead National Forest on an average annual basis. Current goals and objectives, standards and guidelines would remain the same.

This alternative was not selected for several reasons. First, monitoring data and experience indicate that the level of harvest described in this alternative cannot be produced while also complying with other Forest-wide and management area goals, objectives, and standards regarding resources other than timber. Second, this alternative does not include the terms and conditions required by the U.S. Fish and Wildlife Service to avoid an unlawful "taking" of the threatened grizzly bear. Thus, implementation of this alternative would violate the Endangered Species Act. Finally, this alternative would not satisfy the order of the Ninth Circuit Court of Appeals to amend the allowable sale quantity.

Alternative 2. Amend the Forest Plan Allowable Sale Quantity (ASQ) to an Achievable Level Consistent with Current Forest Plan Standards.

The Ninth Circuit Court of Appeals ordered that we adjust the ASQ to an achievable level consistent with all current Forest Plan standards, including the 1986 Interagency Grizzly Bear Guidelines. Under this alternative, Forest Plan direction is unchanged and a spatial analysis of existing Forest Plan standards is used to adjust the average annual ASQ for the 1995-1999 period to 64 MMBF per year. A complete description of this alternative is found in Chapter II of the Environmental Assessment.

This alternative was not selected because it does not comply with the terms and conditions required by the U.S. Fish and Wildlife Service to avoid an unlawful "taking" of the threatened grizzly bear. Thus, implementation of this alternative would violate the Endangered Species Act. In addition, while this alternative would allow slightly more motorized access on the Forest, it would provide less habitat security than Alternatives 3-Corrected, 4-Corrected and 5.

Alternative 3-Corrected. Amend Forest Plan objectives (short term and long term) and standards for grizzly bear habitat and for timber management. Amend Forest Plan monitoring items related to access management. Add Unbound Appendices TT and UU to the Forest Plan.

This is the selected alternative. A summary description is found above in the description of my decision. The complete Forest Plan text changes adopted with this alternative can be found in Appendix A.

Federal laws governing National Forest System management define the purposes for managing the National Forests to include both conserving the ecosystems upon which species depend, and at the same time providing raw materials and other resources that are needed to sustain the health and economic well-being of the people of this country. To balance these sometimes conflicting purposes, I adopt the alternative that will further promote the conservation of threatened and endangered species, limit the amount of incidental "take" of grizzly bear habitat to permissible levels, and provide an achievable and sustainable supply of timber, recreational opportunities, and other resources at the highest possible level.

Alternative 3-Corrected best achieves these purposes. It accomplishes the biological results required by law, while minimizing adverse impacts on timber harvest and jobs, recreational opportunities, and other uses of the Flathead National Forest.

Alternative 4-Corrected. Amend Forest Plan objectives and standards for grizzly bear habitat that mirror the statistics of a composite female home range from the South Fork Study area, and amend objectives and standards for timber management. Amend Forest Plan monitoring items related to access management. Add Unbound Appendices TT and UU to the Forest Plan.

A complete description of this alternative is found in Chapter II of the Environmental Assessment. This alternative is different from Alternative 3-Corrected in that there is no phase-in of grizzly bear habitat objectives for BMU Subunits that are predominantly National Forest System land. The long-term objectives of Alternative 3-Corrected would be implemented within 5 years. The average annual ASQ under this alternative is 52 million board feet for the period 1995 to 1999.

This alternative would establish a faster rate of implementation than required by the terms and conditions of the U.S. Fish and Wildlife Service's Biological Opinion. I did not select this alternative for two reasons. First, it would create an unnecessary risk of a major reduction in local public support for grizzly bear conservation that may result from sudden restrictions on motorized access. In addition, given current staffing and funding, there is not reasonable assurance that the shorter timeframe of this alternative can be achieved.

Alternative 5. Amend Forest Plan objectives and standards for grizzly bear habitat and for timber management similarly to Alternative 4-Corrected, except with a greater degree of security provided for grizzly bears. Amend Forest Plan monitoring items related to access management. Add Unbound Appendices TT and UU to the Forest Plan.

This alternative was added to the final Environmental Assessment in response to public comments. It provides a greater degree of security core area and more restrictive open motorized access density objectives than Alternatives 3-Corrected, 4-Corrected or the terms and conditions of the U.S. Fish and Wildlife Service's September 3, 1993, Biological Opinion on the proposed Lost Silver timber sale. The average annual ASQ under this alternative is 46 million board feet for the period 1995 to 1999.

The principal differences between this alternative and Alternatives 3-Corrected and 4-Corrected are that Alternative 5 would establish, for BMU Subunits that are predominantly National Forest System lands, short-term (5 years) objectives to: (1) limit high-density open motorized access (> 1 miles/square mile) to no more than 15% of Management

Situation 1 and 2 lands within a BMU Subunit; and (2) provide security core areas that comprise 80 to 100 percent of each BMU Subunit. A complete description of this alternative can be found in Chapter II of the Environmental Assessment.

This alternative was not selected because it would result in major impacts to motorized access, recreational opportunities; and potential timber harvest levels that are not necessary to provide for the recovery of the grizzly bear. I believe that grizzly bear recovery can succeed without requiring this level of restriction on traditional uses of the Forest. This alternative provides a greater amount of access restriction than required by the terms and conditions of the U.S. Fish and Wildlife Service's January 6, 1995, Biological Opinion. Moreover, because this alternative would significantly reduce motorized access and many traditional uses of the Forest without a clear justification, it would likely result in the further reduction of public support for grizzly bear conservation and wildlife conservation in general. I am convinced that this result is not only unnecessary, it would be counterproductive.

VI. PUBLIC INVOLVEMENT

The Forest Service participated in several information meetings regarding the proposed amendment during the scoping period and following publication of the Draft Environmental Assessment. The 45-day public comment period provided time for comments on the Draft Environmental Assessment and for coordination with all interested parties and agencies. Throughout the preparation of the draft and final Environmental Assessment, members of the interdisciplinary team were available to answer questions. The 1,908 comments received are part of the public record. Chapter V of the Environmental Assessment presents a summary of the comments received and the Forest Service's response.

VII. LEGALLY REQUIRED FINDINGS

A. Court Order: Finding of No Jeopardy to Listed Species

In the opinion filed November 3, 1993, and amended on July 5, 1994, the Ninth Circuit Court of Appeals concluded:

"We remand the case to the district court for remand to the Forest Service. The Forest Service may reinitiate formal consultation with the FWS concerning the current amended Plan. Alternatively, the Forest Service may propose an amendment to the current amended Plan which shall include an amended ASQ. In any event, the Forest Service shall formally consult with the FWS concerning the current or proposed amended Plan and provide with all the data and information required by 50 CFR 402.14(d), including, but not limited to, the Interdisciplinary Team and the District Rangers reports.

After the FWS issues an amended opinion based on its assessment of all the relevant information, the Forest Service must reevaluate its determination that the current or proposed amended Plan would not be likely to jeopardize listed species. The district court will retain jurisdiction over this case to ensure that this process is completed within six months of our mandate.

If the Forest Service concludes that the current or proposed amended Plan will jeopardize listed species, the Forest Service shall again propose a new amendment, subject to the procedures set out above, or amend again the Plan so that it will not be likely to jeopardize listed species.

In any event, if the Forest Service concludes that the current or proposed amended Plan will jeopardize listed species, the district court will retain jurisdiction to ensure that the Forest Service amends the Plan within a year of our mandate."

The Endangered Species Act of 1973, as amended, establishes as policy of Congress and all Federal departments and agencies to seek to conserve endangered species and threatened species and use their authorities in furtherance of these purposes. In consultation with the Secretary of the Interior, each federal agency shall ensure that any action authorized, funded, or carried out by the agency is not likely to jeopardize the continued existence of any endangered species or threatened species, or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary of the Interior to be critical. In fulfilling these requirements, each agency shall use the best scientific and commercial data available. To facilitate consultation under Section 7 of the Act, each agency shall request a list of species which are listed or proposed to be listed, and may occur in the area of proposed action. If species may be present, the agency shall prepare a biological assessment for the purpose of identifying any endangered species or threatened species which is likely to be affected by the proposed action. Upon conclusion of the consultation, the Secretary of the Interior shall provide a written opinion. This statement shall include a summary of the information on which the opinion is based, detailing how the agency action affects the species or its critical habitat. If jeopardy or adverse modification is found, reasonable and prudent alternatives shall

be suggested which can be taken by the federal agency in implementing the agency action.

Under Section 9 of the Act, it is unlawful for any person to take any threatened or endangered species of fish or wildlife. The term "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The Secretary may permit, under such terms and conditions as he shall prescribe, taking that would otherwise be prohibited but is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.

I decided that it was most appropriate to respond to the court order by proposing to amend the Forest Plan, rather than re-initiating consultation on the existing Forest Plan. Several factors led me to this conclusion. These included reduced levels of timber harvest since the Forest Plan was approved; new techniques enabling us to spatially model Forest Plan standards; new information about grizzly bear responses to roads; and recent Biological Opinions on project-level decisions concluding that the environmental baseline is resulting in a taking of grizzly bears, and recommending that the Forest develop programmatic direction to ensure that grizzly bear secure habitat is provided Forest-wide.

In addition to amending the ASQ, I proposed to adjust Forest Plan objectives and standards to provide a greater degree of protection for grizzly bear habitat. I did not propose to amend existing Forest Plan direction regarding other threatened or endangered species.

We have consulted extensively with the U.S. Fish and Wildlife Service regarding proposed Forest Plan amendment 19. Written correspondence from this office included transmittal of: a proposed outline of the contents of the Biological Assessment, to ensure that all necessary information would be supplied to the U.S. Fish and Wildlife Service (dated Aug. 11, 1994, with reply dated Sept. 9, 1994); a request for concurrence with the list of species that may occur on the Flathead National Forest (dated Aug. 31, 1994, with reply dated Sept. 7, 1994); the Biological Assessment and request to initiate formal consultation (dated Oct. 27, 1994, with reply dated Nov. 14, 1994); an Addendum to the Biological Assessment (dated Dec. 2, 1994); a letter responding to correspondence from Keith Hammer and Daniel Rohlf regarding the relationship between Management Area allocations and standards and guidelines for listed species (dated Feb. 8, 1995); and a Supplement to the Biological Assessment requesting concurrence with changes made to the preferred alternative in response to public comments and the Jan. 6, 1995 Biological Opinion, and requesting an amendment to the incidental take statement (dated Feb. 10, 1995, with reply dated Feb. 17, 1995).

The determinations in the Biological Assessment are that the Forest Plan with the proposed amendment, and considering environmental baseline conditions, is "not likely to adversely affect" the threatened grizzly bear, will have "no effect" on the endangered gray wolf and the endangered peregrine falcon, and "may affect beneficially" the endangered bald eagle. The proposed amendment to the Forest Plan, and considering environmental baseline conditions, is determined to have "no effect" on the threatened water howellia. These determinations were re-affirmed in the Addendum to the Biological Assessment and the Supplement to the Biological Assessment.

The U.S. Fish and Wildlife Service concurred with the determinations of effects on gray wolf, peregrine falcon, bald eagle, and water howellia, and issued a biological opinion and incidental take statement regarding effects to the threatened grizzly bear (Jan. 6, 1995 and Feb. 17, 1995). The Biological Opinion concluded that implementation of proposed Forest Plan Amendment 19 is not likely to jeopardize the continued existence of the Northern Continental Divide Ecosystem grizzly bear population, but will result in incidental take because of the condition of the environmental baseline. Reasonable and prudent measures, and terms and conditions were included to minimize incidental take.

I conclude that this amendment will not jeopardize the continued existence of endangered species or threatened species. This decision amends the ASQ in a manner that demonstrates that it is consistent with existing and proposed standards and objectives for protection of threatened and endangered species. My decision also establishes Forest Plan direction that fully complies with the reasonable and prudent measures and the terms and conditions of the Biological Opinion, as amended. Implementation of this decision will result in no net loss of habitat security for grizzly bears on National Forest System lands, and Forest Service activities will result in a net gain in habitat security on the National Forest. In all BMU Subunits that are predominantly National Forest System lands, my decision establishes long-term objectives for motorized access density and security core area that will provide the same conditions as found in a composite home range of adult female grizzly bears known to have survived and reproduced in the South Fork of the Flathead River.

Based on the information presented in the Biological Assessment, Addendum to the Biological Assessment, Supplement to the Biological Assessment, and the Biological Opinion, I believe that implementation of this decision will increase habitat security, reduce mortality risk, and promote the recovery and conservation of endangered and threatened species.

B. National Environmental Policy Act: Finding of No Significant Impact

I have determined that this Forest Plan amendment will not significantly affect the quality of the human environment. I have considered the following factors in reaching this determination:

1. The environmental effects of this Decision must be considered in the context of the Forest Service staged decisionmaking process. This Decision amends the programmatic decisions of the Forest Plan. The Forest Plan is scheduled for revision within the next 5 years.

This Decision does not authorize any specific activities that will disturb the biological or physical environment. It does not make any irreversible or irretrievable commitment of resources. Those decisions will be made later when implementing this Decision. Further site-specific environmental analysis, with appropriate NEPA disclosure and public participation, is required for each subsequent action implementing this Decision. Any irreversible or irretrievable commitment of resources and the significance of any potential environmental impact will be identified and assessed at that time.

2. This Decision has no effect on public health or safety.

3. This Decision will result in no adverse effects to any historical places or loss of scientific, cultural, historic, or other unique resources because no ground disturbing activities are authorized by this Decision. Existing Forest Plan standards adequately address mitigation measures for these resources.

4. This Decision would not likely cause highly controversial environmental effects. Controversy in this context refers to cases where there is a substantial dispute as to the size, nature, or effect of the federal action, rather than opposition to its adoption. Forest Service biologists and other resource specialists utilized the best available scientific and commercial data in evaluating the alternatives.

5. There are no known unusual circumstances associated with this Decision. The Decision does not impose any highly uncertain, unique or unknown environmental risks. The Decision is based on professional scientific interpretation of research and forest conditions. The Environmental Assessment incorporates the review

comments received from State and Federal agencies with expertise in the subjects addressed.

6. This Decision represents a decision in principle about future considerations. The potential programmatic consequences of future actions are disclosed in the Environmental Assessment. Additional environmental analysis with appropriate NEPA documentation and public participation will occur prior to authorizing any ground disturbing activities implementing this Decision.

7. This Decision is not related to other actions with individually insignificant but cumulatively significant impacts because the Decision is programmatic and does not authorize any timber harvest or other ground-disturbing activities. The standards and objectives of this Decision will result in a reduction of potential cumulative impacts that could be caused by actions and conditions that were permissible under the Forest Plan prior to this Decision.

8. There are no structures or objects listed on the National Register of Historic Places that will be adversely affected by this Decision. This Decision will not cause the loss or destruction of significant scientific, cultural, or historic resources.

9. This Decision is designed to improve habitat conditions for species listed as threatened under the Endangered Species Act. Both the U.S. Fish and Wildlife Service and the Forest Service have concluded that the Decision is not likely to jeopardize the continued existence of any listed species. The Decision requires the implementation of measures necessary to comply with the reasonable and prudent measures and terms and conditions of the USFWS's Biological Opinion, as amended.

10. This Decision does not threaten to violate Federal, State, or local requirements imposed for the protection of the environment because no ground-disturbing activities are authorized by this Decision. All subsequent actions to implement this Decision will be subject to further NEPA procedures prior to approval.

C. National Forest Management Act: Finding of Nonsignificant Amendment

The National Forest Management Act provides that forest plans shall "be amended in any manner whatsoever after final adoption and after public notice, and, if such amendment would result in a significant change in such plan, in accordance with subsections (e) and

(f) of this section and public involvement comparable to that required by subsection (d) of this section" (16 U.S.C. 1604(f)(4)).

The Secretary of Agriculture's implementing regulation indicates the determination of significance is to be "[b]ased on an analysis of the objectives, guidelines and other contents of the forest plan" (36 CFR 219.10(f)). The Forest Service has issued guidance for determining what constitutes a "significant amendment" under NFMA. This guidance, in Forest Service Handbook 1909.12 - Chapter 5.32, identifies four factors to be used when determining whether a proposed change to a forest plan is significant or not significant. These four factors are: timing; location and size; goals, objectives, and outputs; and management prescriptions. This Handbook guidance states that "[o]ther factors may also be considered, depending on the circumstances."

1. Timing: The National Forest Management Act requires that Forest Plans be revised at least every 15 years. The Flathead Forest Plan has been in effect for more than 9 years. Revision of the Forest Plan is anticipated within the next 5 years. As stated in the Forest Service Handbook (FSH 1909.12, Chapter 5.32): "the later the change, the less likely it is to be significant for the current forest plan." This amendment occurs relatively late in the lifespan of the Forest Plan. The objectives and standards established by this amendment will be reviewed during the Forest Plan revision process.

2. Location and Size: The grizzly bear habitat objectives and standards for motorized access apply only to the portion of the recovery zone occurring outside of designated Wilderness. Thus, this part of the amendment affects 988,443 non-Wilderness acres, or 40 percent of the acreage of the Flathead National Forest. The Forest Plan identified 670,670 acres of land as suitable for timber production. While this amendment does not change this determination, it does reduce the maximum amount of timber that may be harvested from these lands over the next 5 years, or until the Forest Plan is revised.

3. Goals, Objectives, and Outputs: This amendment is fully consistent with goals of the Forest Plan. These goals include: (1) provide sufficient habitat for a recovered population of grizzly bears, gray wolves, bald eagles, and peregrine falcons; (2) provide a sustained yield of timber products that is cost effective, responsive to the needs of the local economy, and is consistent with other Forest management goals; (3) develop and implement a road management program, with road use restrictions and closures, that is responsive to resource protection needs and public concerns;

and (4) provide a range of quality recreation opportunities, including motorized and nonmotorized, in an undeveloped forest environment (LRMP, pg. II-5).

The amendment establishes additional objectives for wildlife and fish, specifically grizzly bear habitat, consistent with the Forest-wide goals. (LRMP, pg. II-7). In addition, the amendment modifies Forest Plan objectives for timber, specifically the allowable sale quantity. (LRMP, pg. II-7).

The amendment does not alter existing Forest Plan objectives for roads or other multiple-uses. The road management objectives of the existing Forest Plan include: (1) all existing system and nonsystem roads will be reviewed as part of transportation planning for need, possible closure, or obliteration; and (2) implement a road management program that is responsive to resource protection needs, water quality goals, and public concerns. Miles of road left open to public use will be that amount necessary to meet public needs and resource management objectives (LRMP, pg. II-8). The amendment does not change any Management Area designations, the goals and objectives for any Management Areas, or the determination of lands suitable for timber production.

The existing Forest Plan contains projected outputs by time period (LRMP, pg. II-9). Most of the projected outputs remain unchanged by this amendment. However, the amendment does alter the timber and facilities outputs projected for the period 1995 to 1996.

The maximum allowable level of timber harvest is reduced from an annual average of 100 million board feet per year under the existing Forest Plan, to an average annual amount of 54 million board feet (MMBF) after this amendment. The majority of this 46 MMBF reduction is a result of updated analysis of the standards and guidelines of the existing Forest Plan, and not the results of additional standards imposed by this amendment. This is consistent with agency policy, which has repeatedly stated that in a conflict between resource protection standards and projected outputs, outputs must give way. Only 10 MMBF of the 46 MMBF reduction in ASQ is attributable to grizzly bear habitat objectives and standards of this amendment.

This amendment will also result in a reduction in the projected outputs for road construction compared to those projected in the existing Forest Plan. All other outputs projections remain unchanged.

This evaluation of output projections in the existing Forest Plan must be placed in the context of actual output levels from recent years. Actual output levels for timber harvest and road construction have been less than the Forest Plan projected. Compared to actual output levels for timber and roads in recent years, the amendment has little or no effect.

Since adoption of the Forest Plan in 1986, the Flathead National Forest has sold an average of 38.4 MMBF per year chargeable to ASQ. The Forest has not sold more than 47 MMBF of ASQ volume in any year since 1988.

Similarly, the miles of road construction since 1986 have been considerably less than the amount projected in the Forest Plan. The Forest Plan projected 68 miles of road construction per year for the period 1986 to 1995, and 54 miles per year for the period 1996 to 2005 (LRMP, pg. II-9). Since 1986, the Flathead National Forest has constructed a total of 260 miles of road, which averages 32.5 miles per year. Since 1990, the miles of construction per year have been much less than 32 miles. Under this amendment, we estimate the potential construction of about 13 miles per year. Most of this potential road construction is anticipated to occur outside the grizzly bear recovery zone.

Forest Plan projections of road construction must be read in conjunction with Forest Plan road density standards, which require no more than one mile per square mile for all areas affected by the road density objectives of this amendment (LRMP, pgs. II-55 and II-30). As described in the Environmental Assessment, achieving the road density standard of the existing Forest Plan results in 1,754 miles of open road. Achieving the open motorized access density of this decision results in 1,594 miles of open road.

The amendment does foreclose the opportunity to achieve higher output levels for timber and road construction in the future unless the Forest Plan is amended or revised to permit these levels.

All other goals, objectives, and output projections of the existing Forest Plan remain unchanged.

4. Management Prescription: This amendment does not change the Management Area designations or Management Area direction of the existing Forest Plan. It does not alter the determination of lands suitable for commercial timber production.

As explained previously, this amendment does not change Forest-wide goals for any resources. It changes only the Forest-wide objectives for timber and grizzly bear habitat, and Forest-wide standards for grizzly bears.

The amendment is generally consistent with the desired future condition described on page II-13 of the Forest Plan, particularly the statement that "[h]abitat to support threatened and endangered species will be enhanced compared to current levels." The amendment is consistent with the existing Forest-wide standards for grizzly bear habitat. It will help achieve the desired future condition for grizzly bear habitat as expressed in the Forest-wide goals, objectives, and standards for threatened and endangered species.

5. Other Factors: The preparation of a significant amendment to the Forest Plan requires essentially the same procedures, and amount of time, as revision of the Forest Plan (36 CFR 219.10(f)). The experience of the Forest Service indicates that fulfilling these procedures takes at least two years, and normally two to five years.

In its July 5, 1994, opinion, the Ninth Circuit Court of Appeals ordered:

"... the Forest Service may reinstate formal consultation with the FWS concerning the current amended Plan. Alternatively, the Forest Service may propose an amendment to the current amended Plan which shall include an amended ASQ. In any event, the Forest Service shall formally consult with the FWS concerning the current or proposed amended Plan and provide it with all the data and information required by 50 C.F.R. 402.14(d), including, but not limited to, the Interdisciplinary Team and the District Rangers reports.

After the FWS issues an amended opinion based on its assessment of all the relevant information, the Forest Service must reevaluate its determination that the current or proposed amended Plan would not be likely to jeopardize listed species. The district court will retain jurisdiction over this case to *ensure that this process is completed with six months of our mandate.*" (emphasis added).

It is impossible to complete the procedural requirements of a significant amendment while complying with the Court's order. Moreover, immediate adoption of this amendment is required by the Endangered Species Act.

Conclusion: Based on a consideration of these five factors, and considering the Forest Plan in its entirety, I have determined that adoption of this amendment to the Flathead National Forest Land and Resources Management Plan is not significant. This amendment is fully consistent with, but further specifies the means to achieve, current Forest Plan goals and objectives for grizzly bear and roads. The principal change relates to the allowable sale quantity. The change in ASQ is not dramatic when considered in light of actual experience since adoption of the Forest Plan.

Forest plans must be adaptable to new conditions and information. This ability to adjust forest plans within relatively short periods of time is essential to assure sound forest management and to meet the obligations of the Endangered Species Act, the National Forest Management Act, and other environmental laws.

The opinion of the Ninth Circuit Court of Appeals in Resources Ltd. v. Robertson, and the January 6, 1995, Biological Opinion of the U.S. Fish and Wildlife Service demand, as a matter of law, immediate action.

The Forest Service will continue to evaluate the resource issues leading to this amendment. Revision of the Forest Plan is anticipated within the next 5 years. The public will have the opportunity to participate in the review of project proposals and the Forest Plan revision.

VIII. ADMINISTRATIVE APPEAL OPPORTUNITIES

Implementation of this decision shall not occur until 7 days following publication of the legal notice of the the decision in the Daily Interlake newspaper of Kalispell, Montana.

This decision to adopt a nonsignificant Forest Plan amendment is subject to appeal pursuant to 36 CFR 217, not 36 CFR 215. The purpose and review procedures differ between the two sets of regulations. 36 CFR 215 covers project level decisions, while 36 CFR 217 covers approval, amendments, and revisions to Forest Plans.

Any written Notice of Appeal of the decision must be fully consistent with 36 CFR 217.9 (Content of a Notice of Appeal) and must include the reasons for appeal. A written notice of appeal must be filed with Regional Forester, Northern Region, USDA Forest Service, 200 East Broadway, P.O. Box 7669, Missoula, MT 59807. The appeal must be filed within

45 days of the date that the legal notice of this decision appears in the Daily Interlake newspaper of Kalispell, Montana.

The Legal Notice starting the 45-day appeal period will appear in the Daily Interlake on Sunday, March 5, 1995. The appeal period will close on April 19, 1995. For further information concerning this decision or the Forest Service appeal process, contact Jim Morrison, Planning Staff Officer, Flathead National Forest, 1935 Third Avenue East, Kalispell, MT 59901, telephone (406) 755-5401.

APPENDIX A - PROPOSED CHANGES TO THE FOREST PLAN

Alternative 1	Alternative 3-Corrected (selected)
<p><u>Forest Plan Objective A.4</u> (Forest Plan page II-30 through II-33):</p> <p>Complete Grizzly Bear Habitat Component Analysis for the Trail Creek Grizzly Bear Management Area (MA 11) and the Bunker Creek area of the Spotted Bear Ranger District (MA 11A) prior to implementation of management activities.</p>	<p><i>[Replace with following]</i></p> <p>a. Grizzly Bear</p> <p>(1) The Flathead National Forest lies within the Northern Continental Divide recovery area. Within each Bear Management Unit, ensure occupancy by reproducing females and limit mortality to achieve recovery goals in the Recovery Plan.</p> <p>(2) Lands within the recovery zone are to be designated as Management Situation 1, 2, or 3 as defined in the Interagency Grizzly Bear Guidelines (Forest Plan Unbound Appendix OO). Management Situations are shown on page II-24. Objectives for Management Situation 1 are to provide high-quality habitat for seasonal foraging needs, free-ranging movement and dispersal of resident grizzly bears, and low risk of mortality due to human/bear conflicts. Objectives for MS-2 are to provide adequate habitat conditions for short-term occupancy, movement and dispersal, and low risk of mortality due to human/bear conflicts. Objectives for MS-3 are to discourage occupancy by grizzly bears and to minimize risk of human/bear conflicts.</p> <p>(3) Habitat conditions adequate to provide for a successfully reproducing adult female will be provided in all BMU Subunits.</p> <p>(4) In BMU Subunits that are predominantly National Forest (jurisdiction greater than 75%), the following desired levels will be attained within 10 years:</p> <ul style="list-style-type: none"> (a) security core areas are 68 to 100 percent; (b) total motorized access is less than 19% of the MS-1 and MS-2 with density greater than 2 miles/square mile; <p>Within 5 years the following will be attained:</p> <ul style="list-style-type: none"> (a) BMU Subunits having less than the current Forest average of 60% security core area will provide at least 60%; (b) BMU Subunits having total motorized access exceeding the current Forest average of 24% with density >2 miles/square mile will be brought to no more than 24% in MS-1 and MS-2; and (c) open motorized access is less than 19% of the MS-1 and MS-2 with density greater than >1 mile/square mile. <p>(5) Within BMU Subunits with an intermingled ownership pattern and/or are not predominantly National Forest, Forest Service activities will not result in an increase in motorized access density or a reduction in core areas on National Forest system lands. Efforts will be made to improve habitat effectiveness of BMU Subunit through cooperative management, land adjustments, or other means.</p> <p>(6) Establish an active public information and education program that explains goals and objectives of grizzly bear management and steps required to recover the population.</p>

Alternative 1	Alternative 3-Corrected (selected)
<p><u>Forest-wide General Standard No. 1, page 11-15 [Forest Plan Amendment No. 8]</u></p> <p>1. Standards are not discretionary. They apply to all National Forest System Lands and will be followed unless the standards are amended. Any and all amendments of the LRMP standards will be undertaken in compliance with NEPA and the amendment process of the NFMA regulations (36 CFR 219.10(e)), and with public involvement. Amendments may be undertaken in two ways: 1) Standard(s) may be amended for all future activities, or 2) Standard(s) may be amended for a single project only. A project-specific amendment of a Forest Plan standard may be undertaken if it is demonstrated during project analysis that it will fulfill the objective of the standard and related goals. The rationale for project-specific amendments to Forest Plan standards must be described in the project's Decision Memo, Decision Notice, or Record of Decision. A project-specific amendment authorizing an exception to a Forest Plan standard must be issued, by the Forest Supervisor, concurrent with the project decision. Project-specific amendments of Forest Plan standards will in every instance be made in compliance with the Forest Service's legal requirements under the Endangered Species Act, Clean Water Act, NFMA, NEPA, and all other applicable laws.</p> <p>Standards established for threatened and endangered species conservation and protection are mandatory, and thus take precedence when there are conflicting uses. Project-specific amendments of such standards may be considered if they will fulfill the Forest Plan goals related to the conservation of threatened and endangered species. Any amendment to standards established for threatened and endangered species conservation and protection must be preceded by consultation with the U.S. Fish and Wildlife Service.</p>	<p>[No change]</p> <p>[No change]</p>
	<p>2. The grizzly bear objectives and standards of Amendment 19, which are required by the Terms and Conditions of the U.S. Fish and Wildlife Service's Biological Opinion on Amendment 19, are not discretionary. These objectives and standards supersede any conflicting or inconsistent management direction contained in the Forest Plan.</p>
<p><u>Forest-wide General Standard No. 4 (page 11-15) [Forest Plan Amendment No. 11]</u></p> <p>4. Initiate informal consultation procedures with the U.S. Fish and Wildlife Service in the early planning phases of site-specific projects if a "no effect/may affect" determination is unclear. If a "may affect" determination is made, formal consultation with the U.S. Fish and Wildlife Service is required.</p>	<p>[No change]</p>

Alternative 1	Alternative 3-Corrected (selected)
<p><u>Forest-wide Standards for Grizzly Bear</u> (pages II-25 through II-33)</p> <p>a. Introduction <i>[page II-25, not reproduced here]</i></p> <p>b. Management Situations and Direction Ensure that all management activities and projects are planned, designed, and implemented in accordance with the Interagency Grizzly Bear Guidelines (Interagency Grizzly Bear Committee 1986, see Unbound Appendix OO to the Forest Plan). <i>[Forest Plan Amendment No. 9]</i></p>	<p><i>[Delete]</i></p> <p><i>[No change]</i></p>

c. Flathead National Forest Grizzly Bear Situation

Administrative Unit	Current Occupied Habitat							Total
	Mgmt. Sit. 1	Mgmt. Sit. 2	Mgmt. Sit. 3	Total	Mgmt. Sit. 1	Mgmt. Sit. 2	Mgmt. Sit. 3	
NF Acres	1,923,168	111,360	21,120	2,055,648	1,992,765	100,635	12,997	2,106,397
Percent of Occupied Habitat	94%	5%	1%	100%	94%	5%	1%	100%

Alternatives 1 and 2	Alternative 3-Corrected
<p>The grizzly bear is a highly mobile animal. It is imperative to understand that although the grizzly's habitat has been stratified by management units, the ecosystem must continue to function as a whole; i.e. although areas are mapped as Situation 2, many bears will need to be on these areas during the spring as part of their total home range.</p> <p>The precise carrying capacity of the Flathead National Forest's part of the Northern Continental Divide Ecosystem to support grizzly bears is not known at this time. The highest known densities in the continental United States occur in the Northern Continental Divide population. The Flathead National Forest must provide habitat capable of sustaining one bear per 15.5 square miles of occupied habitat to provide its contribution of 207 bears toward a recovered population.</p>	<p><i>[Delete-- refer to Forest Plan objectives]</i></p> <p><i>[Delete-- refer to Forest Plan objectives]</i></p>
<p>d. Grizzly Bear Recovery Objectives</p> <p>The Flathead National Forest's objectives for meeting the Northern Continental Divide Ecosystem's recovery goals are as follows:</p> <p>(1) Achieve the recovery goal for the Northern Continental Divide Ecosystem.</p> <p>(2) Manage all "Situation 1" areas with the grizzly bear as a primary resource which must be maintained or enhanced.</p> <p>(3) Manage "Situations 2 and 3" areas in a manner that multiple-use activities will be compatible with the conservation and recovery of the species.</p>	<p><i>[Delete-- refer to Forest Plan objectives]</i></p>

Alternatives 1 and 2	Alternative 3-Corrected
<p>e. Management Direction</p> <p><u>All Management Functions, All Management Situations</u></p> <p>(1) Maintain close contact with research organizations to ensure that current research data are being used in resource planning and administration affecting grizzlies.</p> <p>At least once a year, District Rangers and biologists will meet to review current research findings and discuss their application in resource management. Review and revise guidelines as necessary to keep them current. Address research needs in terms of Forest management activities.</p> <p>(2) Biological evaluations of all significant projects are required. Refer to General Standard 4, p. 11-15, for direction regarding consultation with U.S. Fish and Wildlife Service. <i>[Forest Plan Amendment No. 11]</i></p> <p>(3) Identify and evaluate for each project proposal the cumulative effects of all activities, both existing uses and other planned projects, relative to both public and private lands.</p> <p>(4) Measures to be taken to protect, maintain, and/or improve grizzly bear habitat and populations as a result of the biological evaluation will be specified in project design.</p> <p>(5) Refine Management Situation stratification based on current grizzly bear habitat suitability, population, and distribution trends. All biological evaluations will assess the current status of management situation stratifications for accuracy and provide analysis data and recommendations for updating as necessary.</p> <p>(6) Establish an active public information and education program discussing grizzly bear management, stressing goals, objectives, and steps required to recover the population.</p> <p>(7) Carcasses of wildlife, livestock, or other attractants along highways, roads, and trails will be removed a distance of one-fourth mile from the roadway or otherwise made unavailable to bears. Removal should occur within 24 hours.</p> <p>(8) The riparian zone is a basic component of suitable grizzly habitat. Its management will maintain grizzly bear habitat and will generally follow established guidelines within the Forest Plan.</p> <p>(9) Active grizzly bear trapping sites that are not tended will be closed to other human use. Warning signs will be posted prior to installation of the trap.</p>	<p>[No change]</p> <p>[No change]</p> <p>[No change]</p> <p>(3) Identify and evaluate for each project proposal the cumulative effects of all activities, both existing uses and other planned projects, relative to both public and private lands.</p> <p>(4) Measures to be taken to protect, maintain, and/or improve grizzly bear habitat and populations {} will be specified in project design.</p> <p>(5) Refine Management Situation stratification based on current grizzly bear habitat suitability, population, and distribution trends. All biological evaluations will assess the current Management Situations for accuracy and provide recommendations and rationale for updating as necessary. Changes to Management Situation stratifications will be made by amending the Forest Plan.</p> <p>[Moved to Objectives section]</p> <p>[No change]</p> <p>[No change]</p> <p>[No change]</p>

Alternatives 1 and 2	Alternative 3-Corrected
<p>(10) Contracts and permits will include a clause providing for the cancellation, suspension, or temporary cessation of activities if such is needed to resolve a grizzly/ human conflict situation. Permits for temporary onsite facilities will require that camps be located to avoid seasonally important bear habitats and contain the grizzly bear clauses developed to prevent people/bear conflict. Contractor and permittees' cooperation in meeting grizzly management goals will be attained with applicable clauses and stipulations.</p> <p>(11) Operating plans and special-use permits involving concerns over human or domestic stock food storage, handling, and garbage disposal will have appropriate clauses applied.</p> <p>(12) Road management will be conducted to assist in meeting grizzly bear habitat management goals. When warranted, roads will be closed seasonally or yearlong, and where appropriate, area closures will be applied. Transportation plans and Forest visitor plans as well as individual project road systems will be evaluated regarding their impacts on habitat effectiveness.</p> <p>(13) Feeding of bears will be prohibited.</p> <p>(14) Areas with a history of grizzly bear/human encounters or areas with documented increased use by bears may be closed to human use temporarily, seasonally, or yearlong, in Situations 1 and 2.</p> <p>(15) No open garbage dumps will be permitted. The Forest will work toward bear proofing all garbage handling facilities.</p> <p>(16) Within Management Situations 1 and 2, provide security areas immediately adjacent to the influence zone of the project area. Decide on a site-by-site basis. Security areas should be 5,000 acres or larger in areas that are roadless or where the open road density averages 1 mile/square mile or less over the area during the bear use period.</p> <p>(17) All land adjustment cases will be evaluated using the biological evaluation process for determining effects on the grizzly bear.</p>	<p>[No change]</p> <p>(11) Operating plans and special-use permits will specify measures to be taken regarding human and domestic stock food storage and garbage disposal in grizzly bear habitat.</p> <p>(12) Human access will be managed to meet grizzly bear recovery goals. When warranted, roads will be closed seasonally or yearlong, and where appropriate, area closures will be applied. On National Forest lands within each BMU Subunit, there will be no net increase in density of open motorized access routes or total motorized access routes. Forest Service activities will result in a net gain towards meeting objectives for total and open motorized access and security core areas on National Forest lands. Refer to Forest Plan Unbound Appendix TT for definitions and implementation direction.</p> <p>[No change]</p> <p>(14) Areas with a history of grizzly bear/human encounters or areas with important seasonal use by bears may be closed to human use temporarily, seasonally, or yearlong in Management Situations 1 and 2.</p> <p>(15) On National Forest lands within the recovery zone, garbage handling facilities will be bear-resistant.</p> <p>(16) On National Forest lands within each BMU Subunit, there will be no net decrease in the size or amount of core areas that provide security. Core areas will be at least 2500 acres in size, and will be distributed to provide all seasonal habitats and elevations. Once established and effective, core areas will remain in place for at least 10 years.</p> <p>[No change]</p>
<p>f. Guidelines [refer to pages II-30 through II-33, not reproduced here]</p>	<p>[No change]</p>

The proposed changes to the Forest Plan related to timber management are:

Alternative 1	Alternative 3-Corrected
<u>Forest Plan Objective A6</u> (Forest Plan page II-7):	
<p>a. Treatments - Program the following treatments during the first decade:</p> <ol style="list-style-type: none"> (1) Regeneration harvest on 66,080 acres (2) Reforestation on 66,080 acres (3) Intermediate harvest on 25,300 acres (sanitation, salvage, and commercial thinning) (4) Selection harvest on 680 acres (5) Slash disposal on 92,060 acres (6) Timber stand improvement on 34,000 acres <p>b. Program management - During the first decade, program up to the allowable sale quantity of 1 billion board feet of timber harvest from suitable lands. So that the uncut volume under contract will remain near 300 MMBF (million board feet), the annual program of sale offerings may range from 70 MMBF to 130 MMBF during this period.</p> <p>In order to support the goal of providing timber offerings keyed to economic demand, the following specific objectives are established for management of programmed sale offerings for the first decade:</p> <ol style="list-style-type: none"> (1) Maintain an annual sell program that will provide at least 20 MMBF in class 5 (2.0 MMBF) and smaller sales. (2) Maintain an average annual program of nonchargeable timber offerings from unsuitable land and/or nonstandard logs of 5 MMBF per year in addition to chargeable volume from suitable lands. (3) Maintain a mix of sale offerings for various logging systems needed to implement the Forest Plan and support local and regional logging systems capabilities. (4) Maintain offerings of firewood and other miscellaneous forest products at least at current levels. (5) Minimize losses from the mountain pine beetle through harvest of 28,850 acres of high and medium risk lodgepole pine stands. <p>Refer to Appendices E, F, H, I, and L in support of these objectives.</p>	<p>a. Treatments - Program the following treatments during the time period 1995-1999. Treatment methods will be compatible with natural disturbance regimes.</p> <ol style="list-style-type: none"> (1) Regeneration harvest on 18,455 acres (2) Reforestation on 18,455 acres (3) Intermediate harvest on 12,645 acres (sanitation, salvage, and commercial thinning) (4) Selection harvest on 530 acres (5) Slash disposal on 31,630 acres (6) Timber stand improvement on 17,000 acres <p>b. Program management - During the planning period, 1995-1999, program up to the allowable sale quantity of 270 million board feet of timber harvest from suitable lands.</p> <ol style="list-style-type: none"> (1) Offer a mix of large and small (< 2.0 MMBF) sales. (2) Maintain an annual program of nonchargeable offerings from lands not suited for timber production and/or nonstandard logs in addition to chargeable volume from suitable lands. [No change] (4) Maintain offerings of firewood and other miscellaneous forest products consistent with demand and other resource management goals. Emphasize treatment in stands with high risk of developing epidemic levels of insect and disease. [No change]
<p><u>Forest Plan objective B</u> (Forest Plan page II-8 and 9):</p> <p>See text and table on page II-8 and 9. Not reproduced here due to length.</p>	<p>Decade 1 projected outputs and activities that will be used for programming, budgeting, and attainment reporting are displayed in Table II-1. Other decades are projected for information only.</p> <p>For the planning period 1995 - 1999, the allowable sale quantity (ASQ) will be 54 MMBF (average annual volume).</p>

The proposed changes to the monitoring plan are as follows:

Alternative 1	Alternative 3-Corrected
<u>Forest Plan monitoring [refer to pages V-8 through V-15, not reproduced here]</u>	<p>Item 1a, Actions/Effects or Resources to be Measured: Sample trails to determine amount of use and whether motorized use occurs.</p> <p>Item 16, Actions/Effects or Resources to be Measured: Grizzly Bear Recovery Plan monitoring items for number of females with cubs, occupancy of BMUs by family groups, and known, human-caused mortality.</p> <p>Item 17, Delete habitat transects as a data source for evaluating habitat suitability for grizzly bears. Monitor seasonal habitat values and habitat effectiveness index values by BMU Subunit, on a 5-year interval.</p> <p>Item 17b, To report compliance with the Endangered Species Act, add a monitoring item to track the number of projects for which biological evaluations are conducted, the determinations of effects by species, and concurrences or Biological Opinions received from the U.S. Fish and Wildlife Service.</p> <p>Item 54, #2. Monitor progress towards the 5 and 10 year objectives for core area, total motorized access, and open motorized access consistent with Forest Plan Unbound Appendix UU. Provide an annual report documenting progress by BMU Subunit to the Forest Supervisor and to the U.S. Fish and Wildlife Service.</p> <p>Item 54, add #3. Monitor the effectiveness of restrictions on motorized use of roads consistent with Forest Plan Unbound Appendix UU.</p>

