

Kootenai National Forest Plan

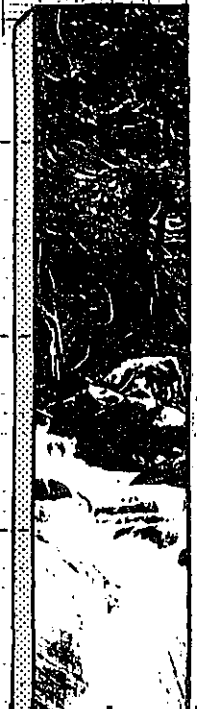
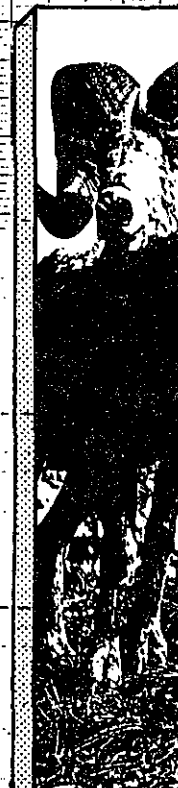
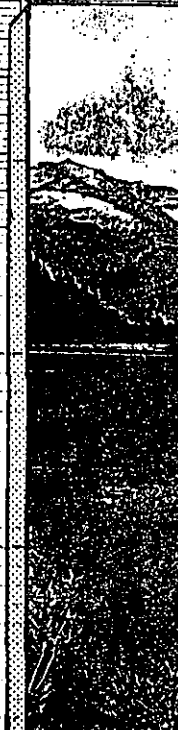
Final Environmental Impact Statement - Volume 1

United States
Department
of Agriculture



Forest Service

Kootenai
National Forest



FINAL ENVIRONMENTAL IMPACT STATEMENT

FOR THE

KOOTENAI NATIONAL FOREST

NORTHERN REGION

FOREST SERVICE

U.S. DEPARTMENT OF AGRICULTURE

1987

VOLUME I

FINAL ENVIRONMENTAL IMPACT STATEMENT

on the

Kootenai National Forest
Land and Resource Management Plan

Type of Action: Administrative

Responsible Federal Agency: Forest Service, USDA

Responsible Official: James C. Overbay, Regional Forester
Northern Region
USDA - Forest Service
Federal Building
Missoula, Montana 59725

Contact for Further Information: James F. Rathbun, Forest Supervisor
Kootenai National Forest
506 U.S. Highway 2 West
Libby, Montana 59923
406-293-6211

Abstract: This Environmental Impact Statement describes the Final Forest Plan and other alternatives, including a "no action" alternative, for managing the land resources of the Kootenai national Forest. The land area involved is 2,245,000 acres in Lincoln, Sanders, and Flathead counties, Montana, and Boundary and Bonner counties, Idaho.

The alternatives provide different mixes of management resulting in different levels of goods and services. The environmental consequences for the Final Plan and the other alternatives are displayed.

* Denotes new or revised item

C. Description of Alternatives*	II-19	VOL-1
1. Alternative A*	II-20	
2. Alternative B*	II-21	
3. Alternative C*	II-23	
4. Alternative D - RPA*	II-25	
5. Alternative E*	II-27	
6. Alternative F*	II-28	
7. Alternative G*	II-30	
8. Alternative H*	II-32	
9. Alternative I - Current Direction*	II-34	
10. Alternative J - Proposed Action*	II-36	
10a. Alternative JF- Final Plan*	II-38	
11. Alternative K - Departure on Proposed Action*	II-40	
12. Alternative L*	II-41	
13. Alternative M - PNV*	II-43	
14. Alternative N*	II-45	
15. Alternative O*	II-46	
D. Comparison of Alternatives*	II-49	
1. Timber*	II-49	
a. Timber Volume*	II-50	
(1) Historic Timber Harvest Volumes on the KNF*	II-50	
(2) Historic and Projected Timber Supplies in the Local 5-County Market Area*	II-51	
(3) Projected Timber Supplies in Northwest Montana and Northern Idaho*	II-56	
(4) Minimum Projected Timber Yields Over Time by Forest Plan Alternative*	II-57	
(5) Allowable Sale Quantity and Total Planned Timber Sale Program*	II-65	
b. Land Suitable for Timber Harvest*	II-70	
c. Lodgepole Pine Management*	II-71	
(1) Lodgepole Pine Harvest*	II-71	
(2) Conversion of Stagnated Lodgepole Pine Stands*	II-74	
d. Silvicultural Systems*	II-75	
e. Timber Utilization Standards*	II-76	
f. Timber Resource Management Summary*	II-76	
(1) Introduction*	II-76	
(2) Timber Resource Information*	II-79	
2. Facilities*	II-84	
a. Road Construction*	II-84	
b. Road Restrictions*	II-86	
3. Wilderness and Roadless Areas*	II-88	
a. The Inventory	II-88	
b. Contiguous Areas on Adjacent Forests	II-94	
c. Ten Lakes Montana Wilderness Study Area	II-94	
d. Recommended Wilderness Alternatives*	II-97	
e. Changes in Roadless Areas Over Time	II-97	
4. Recreation	II-101	
5. Visual Quality Protection (Viewing)	II-103	

Table of Contents-3

6. Wildlife and Fish Production*	II-104	VOL-1
a. Big Game - Elk	II-104	
b. Catchable Trout*	II-106	
c. Old Growth Timber*	II-108	
d. Grizzly Bears*	II-109	
7. Minerals*	II-115	
a. Leasable Minerals*	II-115	
b. Locatable Minerals*	II-116	
8. Landownership Adjustment*	II-118	
9. Range	II-120	
10. Research Natural Areas	II-121	
11. Fire Management	II-121	
12. Cultural Resources	II-122	
13. Energy	II-122	
14. Comparison of Social Effects	II-123	
a. Population Change	II-124	
b. Community Cohesion	II-124	
c. Lifestyles	II-125	
d. Attitudes, Beliefs, and Values	II-125	
e. Aesthetics	II-125	
15. Local Economic Effects (Primary Market Areas)*	II-126	
a. Employment and Income	II-126	
b. Returns to the States*	II-128	
16. Comparison of Alternatives for Response to Major Issues*	II-131	
17. Projected Change From The Current Direction (Alt. I)*	II-134	
18. Significant Differences in Economic Values Among The Alternatives*	II-140	
a. Differences in Present Net Values*	II-140	
b. U.S. treasury Cash Flows and Non-Cash Benefits*	II-151	
(1) Returns to the U.S.*	II-152	
(2) Net Returns to the Treasury*	II-154	
(3) Non-Cash Benefits to Users*	II-156	
c. Budget*	II-156	
d. Present Value Costs*	II-159	
e. Annual Priced Benefits*	II-160	
f. Present Value Benefits*	II-161	
g. Average Costs*	II-162	
(1) Introduction*	II-163	
(2) Discussion*	II-163	
19. Net Public Benefit and Non-Priced Benefits Addressed in the Alternatives*	II-167	
a. Introduction*	II-167	
b. Jobs and Community Stability	II-168	
c. Visual Quality Protection In Sensitive Areas	II-169	
d. Wilderness and Roadless Quality	II-170	
e. Accessibility for Minerals and Oil/Gas Exploration	II-170	
f. Grizzly Bear Recovery	II-171	

* Denotes new or revised item

Table of Contents-4

g. Lodgepole Pine Risk Management	II-172	VOL-1
(1) Stagnated Lodgepole Pine	II-172	
(2) Mountain Pine Beetle	II-173	
h. Miles of Road (Access)	II-173	
i. First Decade Appropriated Budget	II-174	
j. Old-Growth Timber*	II-174	
20. Major Tradeoffs Among Alternatives*	II-176	
a. Introduction*	II-176	
(1) National, Regional and Local Demand Outlook*..	II-176	
(2) Economic Values and Responses to Major Issues, Concerns and Resource Use/Development Opportunities*.....	II-177	
b. Differences and Similarities of Individual Alternatives*.....	II-178	
(1) Alternative M (PNV Benchmark or Maximum PNV) .	II-182	
(2) Alternative N	II-183	
(3) Alternative A	II-185	
(4) Alternative B	II-186	
(5) Alternative C	II-188	
(6) Alternative E	II-189	
(7) Alternative G	II-191	
(8) Alternative D (RPA)	II-192	
(9) Alternative O	II-194	
(10) Alternative L	II-195	
(11) Alternative H	II-197	
(12) Alternative J (Proposed Action)	II-198	
(13) Alternative K (Departure on Proposed Action).	II-200	
(14) Alternative JF (Final Plan)*	II-201	
(15) Alternative F	II-203	
(16) Alternative I (Current Direction)	II-204	
III. <u>AFFECTED ENVIRONMENT</u>	III-1	VOL-2
A. Physical, Biological, Social, and Economic Settings	III-2	
1. General Setting	III-2	
2. Physical Setting	III-3	
a. Geology and Topography	III-3	
b. Soils	III-3	
c. Climate	III-4	
d. Visual Setting	III-4	
3. Biological Setting	III-4	
a. Vegetation	III-4	
b. Wildlife and Fish	III-5	
4. Social/Economic Setting	III-6	
a. Economic Situation	III-6	
b. Social Situation	III-7	
B. Current Resource Situation*	III-10	
1. Timber*	III-10	
2. Facilities*	III-18	
a. Roads*	III-18	
b. Buildings	III-19	

* Denotes new or revised item

3. Protection	III-19
a. Fire Management	III-19
b. Insects and Disease	III-21
4. Recreation	III-27
a. Roaded Natural Recreation.....	III-27
b. Semi-primitive Motorized Recreation	III-28
c. Semi-primitive Non-motorized Recreation	III-28
d. Developed Recreation	III-29
5. Wilderness, Roadless, and Special Areas*	III-30
a. Wilderness	III-30
b. Roadless Areas	III-31
(1) Resources*	III-32
(2) Wilderness Attributes	III-35
c. Special Areas*	III-46
(1) Scenic Areas	III-46
(2) Research Natural Areas	III-46
(3) Wild and Scenic Rivers*	III-47
- Yaak River System*	III-48
- Kootenai River System*	III-51
- Bull River System*	III-55
- Vermilion River System*	III-58
6. Wildlife and Fish*	III-61
a. Big Game Habitat	III-61
b. Indicator Species*	III-65
c. Threatened and Endangered Species.....	III-67
(1) Northern Bald Eagles	III-68
(2) Gray Wolves	III-70
(3) Peregrine Falcons	III-70
(4) Grizzly Bears.....	III-71
(5) Caribou	III-74
d. Special Habitats*	III-74
(1) Riparian Habitat	III-74
(2) Cavity (snag) Habitat	III-75
(3) Old-Growth Timber Habitat*	III-75
e. Fish	III-80
7. Locatable Minerals, Oil and Gas, and Common Variety Materials*	III-82
8. Landownership, Special Uses, and Agreements*	III-85
a. Landownership*	III-85
b. Special Uses	III-86
c. Rights-of-Way and Cost-Share Agreements	III-86
d. Corridors	III-86
e. Property Boundaries*	III-87
9. Watershed	III-87
10. Cultural Resources	III-89
11. Range	III-89
12. Energy	III-90
13. Human and Community Development	III-91
14. Air Quality	III-91
15. Visual Quality	III-91
16. Fire Management*	III-92

Table of Contents-6

IV. <u>ENVIRONMENTAL CONSEQUENCES</u>	IV-1	VOL-2
A. Introduction*	IV-2	
1. Index*	IV-3	
B. Activities and Their Effects	IV-5	
1. Timber Harvest*	IV-5	
a. Introduction*	IV-5	
b. Harvest Systems*	IV-10	
c. Logging Methods	IV-23	
1. Tractor Logging*	IV-23	
2. Cable Logging*	IV-28	
3. Skyline Logging	IV-32	
4. Aerial Logging	IV-37	
d. Slash Control Including Prescribed Burning	IV-41	
e. Site Preparation and Tree Planting*	IV-44	
f. Timber Stand Improvement*	IV-48	
2. Road Management*	IV-50	
3. Wildlife and Fish Habitat Improvement	IV-61	
a. Big Game	IV-61	
b. Threatened and Endangered Species	IV-64	
c. Watershed and Fisheries Improvement	IV-67	
4. Recreation	IV-72	
a. Developed Recreation	IV-72	
b. Dispersed Recreation	IV-74	
5. Mining and Oil and Gas Exploration and Development*	IV-80	
a. Locatable Minerals and Common Variety Materials	IV-81	
b. Oil and Gas	IV-83	
6. Wilderness Management*	IV-84	
7. Management of Roadless Areas	IV-89	
8. Landownership, Uses, and Agreements	IV-91	
a. Landownership and Adjustment	IV-91	
b. Special Uses	IV-93	
c. Rights-of-Way and Cost-Share Agreements	IV-95	
d. Buildings and Other Facilities	IV-96	
e. Powerline Corridors	IV-96	
9. Resource Protection	IV-103	
a. Wildfire Suppression	IV-103	
b. Prescribed (Managed) Fires	IV-105	
c. Insect and Disease	IV-107	
10. Cultural Resources	IV-110	
11. Human and Community Development	IV-112	
12. Range Management	IV-113	
<u>REFERENCES</u>	IV-116	
<u>KOOTENAI REFERENCES</u>	IV-119	
V. <u>LIST OF PREPARERS*</u>	V-1	VOL-2

* Denotes new or revised item

VI. <u>CONSULTATION WITH OTHERS*</u>	VI-1
A. Introduction*	VI-2
B. Consultation Between the Draft and Final EIS*	VI-2
1. Summary of What the Public Said*	VI-2
C. Perspective on the Public Input*	VI-3
1. Organized Input*	VI-3
2. Geographical Distribution*	VI-3
3. Type of Input*	VI-4
4. Issues Raised*	VI-4
D. Intensity and Direction of the Public Input*	VI-5
1. Wilderness and Roadless Areas*	VI-5
a. Site Specific Proposals (Pro-Wilderness)*	VI-6
b. Site Specific Proposals (Anti-Wilderness)*	VI-6
c. Generally in Favor of More Wilderness*	VI-6
d. Generally Opposed to Wilderness*	VI-6
e. Roadless Areas*	VI-7
f. Other Comments about Wilderness and Roadless Areas*	VI-7
2. Timber Harvest*	VI-8
a. Opposed to Increased Timber Harvest*	VI-8
b. Favors Continued or Increased Timber Harvest* ...	VI-8
c. Other Comments about Timber*	VI-9
3. Miles of Roads (Road Building)*	VI-9
4. Wildlife (Including Old-Growth Timber)*	VI-9
5. Soil and Water*	VI-10
6. Plan and DEIS Concerns*	VI-10
7. Economics*	VI-10
8. Threatened and Endangered Species*	VI-11
9. Road Closures*	VI-11
10. Monitoring and Evaluation*	VI-12
11. Fisheries*	VI-12
12. Other Issues*	VI-12
13. Summary of the Intensity & Direction of Public Input*	VI-13
E. Synopsis of Forest Plan Major Public Review Issues* .	VI-13
1. Wilderness*	VI-13
2. Timber Harvest Levels*	VI-14
3. Road Construction*	VI-14
4. Old-Growth Timber*	VI-14
5. Water Quality*	VI-14
6. Effects on the Local Economy*	VI-14
7. Unrealistic Economic Values and Budget*	VI-15
8. Grizzly Bear Recovery*	VI-15
9. Road Closures*	VI-15
10. Monitoring and Evaluation*	VI-15
11. Fisheries*	VI-15

F. Proposed Resolution of the Major Public Issues*	VI-16	VOL-2
1. Wilderness*	VI-16	
a. Issue*	VI-16	
b. Background*	VI-16	
c. Decision Space*	VI-16	
d. Discussion*	VI-17	
e. Resolution*	VI-17	
2. Timber Harvest Levels*	VI-17	
a. Issue*	VI-17	
b. Background*	VI-17	
c. Decision Space*	VI-18	
d. Discussion*	VI-18	
e. Resolution*	VI-18	
3. Road Construction*	VI-19	
a. Issue*	VI-19	
b. Background*	VI-19	
c. Decision Space*	VI-19	
d. Discussion*	VI-20	
e. Resolution*	VI-20	
4. Old-Growth Timber*	VI-20	
a. Issue*	VI-20	
b. Background*	VI-20	
c. Decision Space*	VI-21	
d. Discussion*	VI-21	
e. Resolution*	VI-21	
5. Water Quality*	VI-21	
a. Issue*	VI-21	
b. Background*	VI-22	
c. Decision Space*	VI-22	
d. Discussion*	VI-22	
e. Resolution*	VI-23	
6. Economics, Part I - Effects on the Local Economy*	VI-23	
a. Issue*	VI-23	
b. Background*	VI-23	
c. Decision Space*	VI-23	
d. Discussion*	VI-24	
e. Resolution*	VI-24	
7. Economics, Part II - Unrealistic Economic Values and Budgets*	VI-25	
a. Issue*	VI-25	
b. Background*	VI-25	
c. Decision Space*	VI-25	
d. Discussion*	VI-25	
e. Resolution*	VI-26	
8. Grizzly Bear Recovery*	VI-26	
a. Issue*	VI-26	
b. Background*	VI-26	
c. Decision Space*	VI-26	
d. Discussion*	VI-26	
e. Resolution*	VI-27	

Table of Contents-9

9. Road Closures*	VI-27	VOL-2
a. Issue*	VI-27	
b. Background*	VI-27	
c. Decision Space*	VI-27	
d. Discussion*	VI-27	
e. Resolution*	VI-28	
10. Fisheries*	VI-28	
a. Issue*	VI-28	
b. Background*	VI-28	
c. Decision Space*	VI-28	
d. Discussion*	VI-29	
e. Resolution*	VI-29	
11. Monitoring and Evaluation Plan*	VI-29	
a. Issue*	VI-29	
b. Background*	VI-29	
c. Decision Space*	VI-30	
d. Discussion*	VI-30	
e. Resolution*	VI-30	
12. Direction for Development of a Final Forest Plan as Determined by a Review of the Public Input Analysis*	VI-30	
<u>GLOSSARY*</u>	G-1	
<u>INDEX*</u>	Index-1	
<u>APPENDICES</u>	(The Appendices are separate documents and each one has its own Tables of Contents)	

Appendix A - Issues, Concerns, and Opportunity Identification Process
(Bound with Appendix D)

Appendix B - Description of the Analysis Process*

Appendix C - Inventoried Roadless Area Evaluation*
(Bound in 2 separate volumes)

Appendix D - Grizzly Bear Habitat Description, Management Strategy, and
Effects of Alternatives on Habitat*
(Bound with Appendix A)

Appendix E - Public Comments on the Draft EIS and the Forest Service Response
(Bound in 2 separate volumes)

LIST OF FIGURES

<u>Figure</u>	<u>Title</u>	<u>Page</u>	<u>VOL</u>
S-1	Kootenai National Forest Vicinity Map	S-1a	1

CHAPTER I

<u>Figure</u>	<u>Title</u>	<u>Page</u>	<u>VOL</u>
I-1	Kootenai National Forest Vicinity Map	I-2	1
I-2	Kootenai National Forest Administrative Units Map	I-3	1

CHAPTER II

<u>Figure</u>	<u>Title</u>	<u>Page</u>	<u>VOL</u>
II-1	Developed Recreation Resource Potential	II-8	VOL-1
II-2	Wilderness Resource Potential	II-9	
II-3	Grazing Resource Potential	II-10	
II-4	Timber Resource Potential	II-11	
II-5	Timber Harvest in the First Decade	II-14	
II-6	Suitable Timberland*	II-14	
II-7	New Road Construction Needed*	II-14	
II-8	Wilderness Recommendations*	II-15	
II-9	Roadless Designations in Inventoried Roadless Areas*	II-15	
II-10	Total Roadless Recreation Opportunity	II-15	
II-11	Elk Population by the Third Decade	II-16	
II-12	Visual Quality Protection	II-16	
II-13	Forest-Related Local Private-Sector Employment in the First Decade	II-16	
II-14	Projected Withdrawals for Leasable Minerals (Oil and Gas)*	II-17	
II-15	Projected Withdrawals for Locatable Minerals* ...	II-17	
II-16	Present Net Value*	II-17	
II-16a	Five County Timber Supply Situation Past & Future*	II-54	
II-18	Alternative A - Regulated Timber Harvest	II-61	
II-19	Alternative B - Regulated Timber Harvest	II-61	
II-20	Alternative C - Regulated Timber Harvest	II-61	
II-21	Alternative D - Regulated Timber Harvest	II-61	
II-22	Alternative E - Regulated Timber Harvest	II-62	
II-23	Alternative F - Regulated Timber Harvest	II-62	
II-24	Alternative G - Regulated Timber Harvest	II-62	
II-25	Alternative H - Regulated Timber Harvest	II-62	
II-26	Alternative I - Regulated Timber Harvest	II-63	
II-27	Alternative J - Regulated Timber Harvest	II-63	
II-27a	Alternative JF- Regulated Timber Harvest*	II-63	
II-28	Alternative K - Regulated Timber Harvest	II-63	
II-29	Alternative L - Regulated Timber Harvest	II-64	
II-30	Alternative M - Regulated Timber Harvest	II-64	
II-31	Alternative N - Regulated Timber Harvest	II-64	
II-32	Alternative O - Regulated Timber Harvest	II-64	
II-17	First Decade Timber Harvest*	II-67	

* Denotes new or revised item

II-33	Productive Timberlands & Roadless Areas	II-69
II-34	Productive Timberlands & Grizzly Habitat	II-69
II-35	Productive Timberlands & Elk Summer Range	II-69
II-36	Productive Timberlands & Elk Winter Range	II-69
II-37	Suitable Timberlands*	II-71
II-38	First Decade Lodgepole Pine Harvest*	II-73
II-39	Stagnated Lodgepole Pine Stands Converted by the Fifth Decade*	II-75
II-40	New Road Construction Needed by the Fifth Decade*	II-85
II-41	Additional Road Restrictions Needed by the Fifth Decade*	II-87
II-42	Wilderness, Designated Roadless in Inventoried Roadless Areas and Other Designations*	II-89
II-43	Recommended Wilderness*	II-99
II-44	Designated Roadless Acres in Inventoried Roadless Areas*	II-99
II-45	Inventoried Roadless Acres Developed in First Decade	II-100
II-46	Inventoried Roadless Acres Remaining after First Decade*	II-100
II-47	Total Roadless Recreation Opportunities	II-102
II-48	Visual Quality Protection	II-103
II-49	Elk Population by the Third Decade	II-105
II-50	Catchable Trout by the Third Decade*	II-107
II-51	Old-Growth Timber after Tenth Decade*	II-109
II-52	Grizzly Habitat Designated for Limited or No Development*	II-113
II-53	Projected Withdrawals from Locatable Mineral Exploration*	II-117
II-54	Projected Withdrawals from Oil and Gas Exploration*	II-117
II-55	Land Ownership Adjustment Areas Map	II-119
II-56	Forest-Related Employment in the Private Sector	II-128
II-57	Returns to the States - First Decade*	II-130
II-58	Change in Decade 1 Outputs, Alt. A vs Current ...	II-136
II-59	Change in Decade 1 Outputs, Alt. B vs Current ...	II-136
II-60	Change in Decade 1 Outputs, Alt. C vs Current ...	II-136
II-61	Change in Decade 1 Outputs, Alt. D vs Current ...	II-136
II-62	Change in Decade 1 Outputs, Alt. E vs Current ...	II-137
II-63	Change in Decade 1 Outputs, Alt. F vs Current ...	II-137
II-64	Change in Decade 1 Outputs, Alt. G vs Current ...	II-137
II-65	Change in Decade 1 Outputs, Alt. H vs Current ...	II-137
II-66	Change in Decade 1 Outputs, Alt. J vs Current ...	II-138
II-66a	Change in Decade 1 Outputs, Alt. JF vs Current* .	II-138
II-67	Change in Decade 1 Outputs, Alt. K vs Current ...	II-138
II-68	Change in Decade 1 Outputs, Alt. L vs Current ...	II-138
II-69	Change in Decade 1 Outputs, Alt. M vs Current ...	II-139
II-70	Change in Decade 1 Outputs, Alt. N vs Current ...	II-139
II-71	Change in Decade 1 Outputs, Alt. O vs Current ...	II-139
II-72	Present Net Value at 4%*	II-151

* Denotes new or revised item

Table of Contents-12

II-73	Returns to the U.S. Treasury - First Decade*	II-153	VOL 1
II-74	Capital Investment Funding Needed For Roads in the First Decade*	II-158	
II-75	Total Appropriated Budget - First Decade*	II-158	
II-76	First Decade Average Annual Benefits Market Plus Non-Market Values*	II-161	
II-77	Timber Volume vs. Average Variable Costs*	II-164	
II-78	Timber Volume vs. Average Total Costs*	II-164	

CHAPTER III

<u>Figure</u>	<u>Title</u>	<u>Page</u>	
III-1	Elevational Distribution of Forest Tree Species	III-11	VOL-2
III-2	Montana Forest Regions and Forested Areas	III-12	
III-3	Timber Suitability Map	III-13	
III-3a	Kootenai National Forest Timber Program Balance Sheet Fiscal Year 1985*	III-17	
III-4	Chronology of Mountain Pine Beetle Infestations (1973-1985)*	III-23	
III-5	Roadless Areas Inventory Update Map	III-33	
III-5a	Wild and Scenic River Consideration - Vicinity Map*	III-47a	
III-5b	- Yaak River System Map (1 of 2)*	III-50a	
III-5c	- Yaak River System Map (2 of 2)*	III-50b	
III-5d	- Kootenai River System Map (1 of 2)*	III-54	
III-5e	- Kootenai River System Map (2 of 2)*	III-54a	
III-5f	- Bull River System Map*	III-57	
III-5g	- Vermilion River System Map*	III-60	
III-6	Wildlife Map	III-63	
III-7	Grizzly Ecosystem Map	III-72	
III-8	Summary of Old-Growth Timber Map	III-78	
III-9	Fisheries Map	III-81	
III-10	Minerals Potential Map*	III-84	

CHAPTER IV

<u>Figure</u>	<u>Title</u>	<u>Page</u>	
IV-1	Firewood Demand	IV-20	VOL-2
IV-2	Corridor Windows Map	IV-100	

* Denotes new or revised item

LIST OF TABLES

<u>Table</u>	<u>Title</u>	<u>Page</u>	
S-1	A Tabular Comparison of Alternatives*	S-10	VOL-1

CHAPTER II

<u>Table</u>	<u>Title</u>	<u>Page</u>	
II-1a	Historic Annual Timber Volumes, 1977-1986*.....	II-50	VOL-1
II-1b	Volume Harvested from State, Private and Forest Service Lands in the Five-County Area* .	II-51	
II-1c	Timber Volumes Expected to be Available in the Next Decade*	II-53	
II-1d	Average Timber Volume Harvested in the Past Ten Years & Available in the Next Ten Years*	II-53	
II-1e	Range of Potential Timber Supply Requirements* ..	II-57	
II-1f	Projected Average Annual Timber Harvest Volume (MMBF)*	II-59	
II-1g	Projected Average Annual Timber Harvest Volume (MMCF)*	II-60	
II-2	First Decade Total ASQ and Planned Offerings* ...	II-66	
II-3	Lodgepole Pine Timber Sold and Harvested*	II-72	
II-2x	Timber Resource Management Information*	II-77	
II-2y	Pertinent Timber Data from the Existing Timber Management Plan*	II-79	
II-3b	New Road Construction by Calendar Year (miles)* .	II-85	
II-4	Adjustments Made to RARE II Roadless Areas	II-90	
II-5	Recommended Wilderness Designation for Roadless Areas by Alternative*	II-92	
II-6	Inventoried Roadless Areas - Summary of Management Emphases by Alternative, including Contiguous Areas*	II-95	
II-7	Decade When Recreation Demand Exceeds Recreation Capacity	II-101	
II-8	Grizzly Bear Ecosystems and Interagency Guideline Situation Acres*	II-110	
II-9	Acres of Management Category by Grizzly Ecosystem and Situation*	II-112	
II-10	Acres of Timber Harvest by Decade by Grizzly Ecosystem and Situation*	II-114	
II-11	Estimated Acres and Value of Land Acquisition and Disposal by Landownership Adjustment Area* ..	II-120	
II-12	Average Annual Energy Consumption, Decade 1	II-123	
II-13	Employment and Income	II-127	
II-13a	Returns to the States in First Decade*	II-129	
II-14	Comparison of Alternatives for Response to the Major Issues, Concerns and Opportunities*	II-132	
II-15	Projected Change from Current Direction in the First Decade*	II-135	
II-16	Present Net Value, Discounted Costs and Discounted Benefits*	II-142	

* Denotes new or revised item

II-17	Present Net Value and PNV Change by Alternative Including Total Discounted Benefits and Costs For Resource Groups in Descending Order of PNV.	II-144	VOL-1
II-18	Returns to the Treasury in the First Decade*	II-152	
II-19	Net Returns to the U.S. Treasury*	II-154	
II-20	Average Annual Cash Flows and Non-Cash Benefits In the First and Fifth Decades by Alternative..	II-155	
II-21	Annual Budget Costs for the First Decade*	II-157	
II-22	Total Discounted Costs by Major Resource Group*..	II-159	
II-23	Total Discounted Benefits by Major Resource Group*	II-162	
II-23a	Timber Volume and Average Costs*	II-163	
II-23b	Indicators of Responsiveness of Alternatives To the Major Issues and National Concerns*	II-180	
II-24	Resource Outputs by Base Year, Benchmark, and Alternative*	II-207	

CHAPTER III

<u>Table</u>	<u>Title</u>	<u>Page</u>	
III-1	Slope Classes	III-3	VOL-2
III-2	Population, Employment and Income in the Five-County Region	III-8	
III-3	Stratification of Tentatively Suitable Acres	III-15	
III-3a	Timber Program Balance Sheet FY 1985*	III-16	
III-4	Fire Causes	III-20	
III-5	Acreage Burned	III-20	
III-6	Projected Demand for Roaded Natural Recreation	III-27	
III-7	Demand for Semi-Primitive Motorized Recreation	III-28	
III-8	Demand for Semi-Primitive Non-Motorized Recreation	III-29	
III-9	Projected Demand for Developed Recreation	III-30	
III-10	Inventoried Roadless Areas and Selected Resource Values	III-34	
III-11	Areas Deficient in Old-Growth Timber	III-79	
III-12	Energy Consumption	III-90	
III-13	Wild and Scenic River Consideration - Yaak River System*	III-50	
III-14	- Kootenai River System*	III-53	
III-15	- Bull River System*	III-56	
III-16	- Vermilion River System*	III-59	

* Denotes new or revised item

CHAPTER IV

<u>Table</u>	<u>Title</u>	<u>Page</u>
IV-1	Acreage of Suitable Timberland and Long-Term Sustained Yield (LTSY)*	IV-6
IV-2	Average Annual Timber Yield by Decade*	IV-6
IV-3	Annual Long-Term Sustained Yield and Growth by Alternative*	IV-8
IV-4	Age Class Distribution at End of Fifth Decade* ..	IV-9
IV-5	Timber Harvested by Clearcutting and Shelterwood*	IV-12
IV-6	Area by Visual Quality Objectivies	IV-13
IV-7	Increased Water Yield Over Baseline Condition* ..	IV-15
IV-8	Old Growth Timberland in the Year 2080*	IV-19
IV-9	Impacts of a 100-MMBF Timber Program on the Local Economy	IV-22
IV-10	Energy Consumption Required for Timber Harvest in the First Decade	IV-23
IV-11	Tractor Logging by Alternative*	IV-24
IV-12	Tractor Logging over Time*	IV-25
IV-13	Cable Logging by Alternative*	IV-29
IV-14	Cable Logging over Time*	IV-30
IV-15	Skyline Logging by Alternative*	IV-32
IV-16	Skyline Logging over Time*	IV-34
IV-17	Aerial Logging by Alternative*	IV-37
IV-18	Aerial Logging over Time*	IV-39
IV-19	Average Annual Fuel Treatment*	IV-43
IV-20	Average Annual Site Preparation and Reforestation over Five Decades*	IV-45
IV-21	Average Annual Pre-Commercial Thinning*	IV-49
IV-22	Average Annual Commercial Thinning*	IV-49
IV-23	Total Miles of Roads Restricted Seasonally or Year-Long by the Fifth Decade*	IV-51
IV-24	Total Collector Roads to be Constructed	IV-53
IV-25	Total Local Roads to be Constructed*	IV-53
IV-26	Total Road System*	IV-54
IV-27	Roads With No Restrictions by the Fifth Decade*	IV-57
IV-28	Potential for Significant Sediment Impacts on Third Order Streams by the Fifth Decade	IV-59
IV-29	Energy Required for Road Construction and Maintenance During the First Decade*	IV-61
IV-30	Wildlife Habitat Improvement	IV-61
IV-31	Average Annual Acreage of Watershed Improvement and/or Maintenance by Alternative .	IV-69
IV-32	Average Annual Acres of Fish Habitat Improvements by Alternative and Decade	IV-70
IV-33	Projected Demand for Developed Recreation	IV-73
IV-34	Acreage Available for Dispersed Recreation by Alternative*	IV-76
IV-35	Projected Demand for Dispersed Recreation	IV-77
IV-36	Potential Hunter Recreational Visitor Days*	IV-79
IV-37	Wilderness Acreage by Alternative*	IV-85

VOL-2

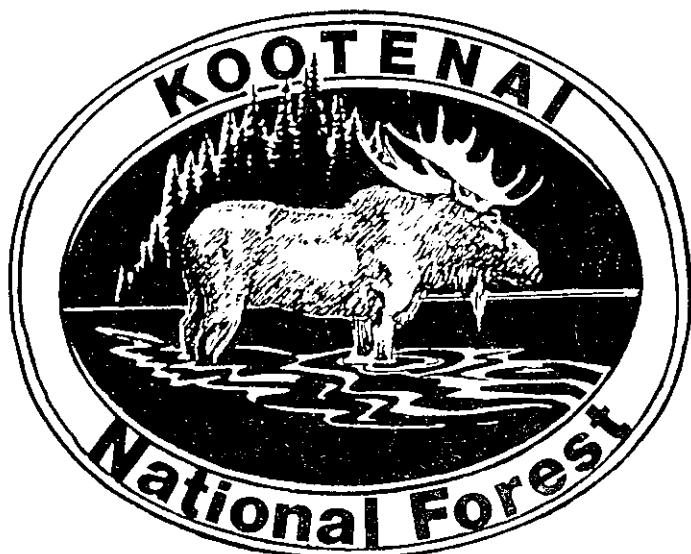
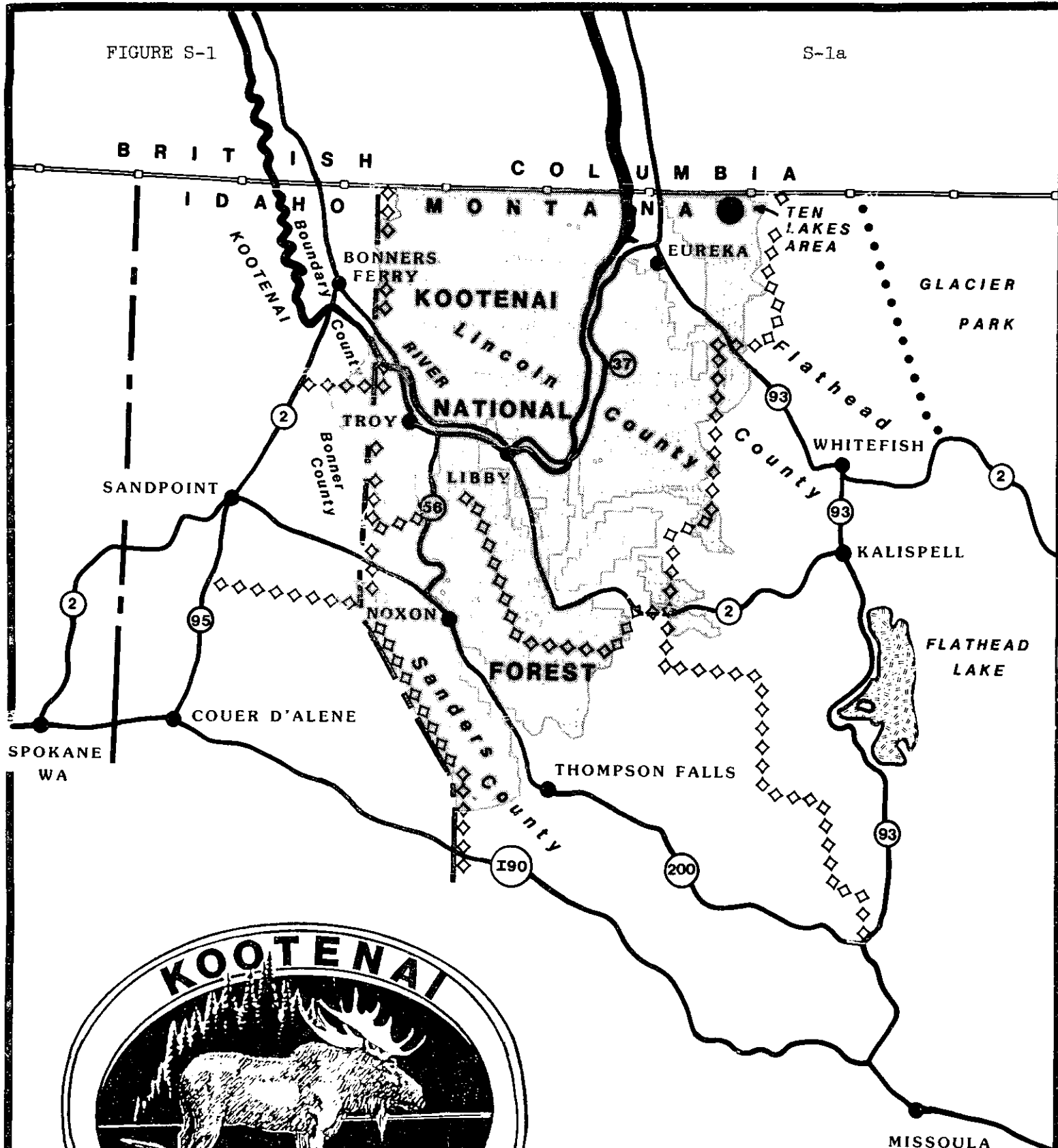
* Denotes new or revised item

IV-38	Commercial Timberland in Proposed Wilderness* ...	IV-88	VOL-2
IV-39	Designated Roadless Areas by Alternative at End of Fifth Decade*	IV-89	
IV-40	Inventoried Roadless Areas Remaining Roadless at End of Fifth Decade*	IV-90	
IV-41	Areas Excluded From Corridor Placement*	IV-97	
IV-42	Avoidance Areas	IV-98	
IV-43	Total Avoidance and Excluded Areas by Alternative*	IV-98	
IV-44	Fire Origin	IV-103	
IV-45	Acreage Burned	IV-103	
IV-46	Projected Timber Harvest of Lodgepole Pine in the First Decade*	IV-108	
IV-47	Potential Livestock Forage	IV-114	

FINAL ENVIRONMENTAL IMPACT STATEMENT
FOR THE
KOOTENAI NATIONAL FOREST PLAN

SUMMARY

This summary highlights the major points brought out in the EIS. The contents of each chapter are condensed to provide the reader with a quick glimpse of the most important factors addressed in the EIS and to help the reader find the location of particular topics in the EIS for further reading.



Vicinity Map

Summary Outline

Chapter I - Purpose and Need for Action	S-2
Introduction, Planning Area, and Issues, Concerns and Opportunities	S-2
Chapter II - Alternatives	S-2
Alternative Development	S-2
Description of Alternatives	S-3
15 Alternatives including the Current Direction and the Proposed Action in the Draft EIS, and the Final Plan	S-3
Comparison of Alternatives	S-5
Chapter III - Affected Environment	S-5
General Setting	S-5
Current Resource Situation	S-6
Timber, Roads, Recreation, Wilderness, Roadless Areas, Wildlife, Fish, Grazing and Minerals	S-6
Chapter IV - Activities and their Effects	S-7
Timber Harvest, Wilderness, Grizzly Bears, and Minerals and Oil/Gas Exploration	S-7
Short-Term Use vs. the Maintenance and Enhancement of Long-Term Productivity	S-8
Irreversible and Irretrievable Commitment of Resources	S-8
Adverse Effects which cannot be Avoided	S-8
Mitigation Measures	S-8
Chapter VI - Consultation with Others	S-8
Summary of What the Public Said	S-8
Summary of Changes between the Draft and Final EIS	S-9
A Tabular Comparison of Alternatives	S-10

SUMMARY

CHAPTER I - PURPOSE AND NEED FOR ACTION

INTRODUCTION: This Final Environmental Impact Statement (EIS) is the required supporting document for the Kootenai Forest Plan and results from the direction of the Forest and Rangeland Renewable Resources Planning Act (RPA), the National Forest Management Act (NFMA), and the National Environmental Policy Act (NEPA). The Final Forest Plan (Alternative JF) described in this Final EIS is the basis for the Forest Plan document, which is a separate volume. The Forest Plan will guide management of the Kootenai Forest for the next 10-15 years unless conditions change significantly. Even though the analysis in the EIS projects results for many decades into the future, the Plan is only valid until it is revised, which is no longer than 15 years.

PLANNING AREA: The 2.2 million acre Kootenai National Forest is located in the extreme northwest corner of Montana and involves portions of Lincoln, Sanders and Flathead Counties in Montana, and Boundary and Bonner Counties in Idaho.

ISSUES, CONCERNS AND OPPORTUNITIES: Issues of concern to both the public and the Forest Service fall into six broad categories and are stated below:

- Timber Production and the associated Road Building, including the harvesting of Lodgepole Pine infested with Mountain Pine Beetle, and the Effect on Water Quality and Fisheries.
- Wilderness and Roadless Management.
- Wildlife and Fish Production, including Management for the Recovery of the Grizzly Bear, Old-Growth Timber-Dependent Species and Riparian Areas.
- Local Economic Effects, including Economic Stability and Diversity.
- Visual Quality Protection and the Effect on Timber Harvest.
- Minerals and Oil/Gas Exploration and Development, including the question of Access as a result of Roadless or Wilderness designation.

As a result of the Public Review of the Draft EIS, the effectiveness of the Monitoring and Evaluation Plan was an additional issue to be resolved.

CHAPTER II - ALTERNATIVES

ALTERNATIVE DEVELOPMENT: The fifteen alternative ways of managing the Kootenai National Forest plus the Final Forest Plan are summarized below and discussed in detail in Chapter II of the EIS. These alternatives were designed to provide different ways to resolve the issues so that the effects of different management options could be assessed. The basis of these alternatives was an Analysis of the Management Situation which explored the production capabilities of the Forest for various resource emphasis, including single and multiple-resource outputs, while meeting the required minimum management requirements.

Each alternative including the Final Forest Plan was formulated so that multiple-resource use occurred. Each alternative harvests timber, provides forage for livestock, provides suitable habitat for elk, grizzly bear and other wildlife species, provides recreation opportunities and so on. The differences between the alternatives and the response of each alternative to the issues and concerns is reflected in the amount of emphasis placed on individual resources.

DESCRIPTION OF ALTERNATIVES

1. Alt. A (No Additional Wilderness) provides the most cost-efficient landbase for timber management while meeting grizzly bear recovery goals as well as the other minimum management requirements. No additional wilderness is recommended in keeping with the intent of providing opportunities for timber management.
2. Alt. B (RARE II Wilderness) displays an historical perspective to the wilderness issue while providing timber management options. The wilderness recommendations portray those endorsed by the Administration in RARE II (April 1979). Otherwise this alternative is very similar to Alternative A and reflects similar tradeoffs of other resources in the effort to manage for timber production outside of the Proposed Wilderness Areas.
3. Alt. C (Montana Wilderness) displays a wilderness recommendation similar to the Montana Wilderness Bill of June 1984, with some additions on contiguous areas in Idaho. Timber management is emphasized outside of the Proposed Wilderness Areas so this alternative is much like Alternatives A and B except that the differing wilderness proposals cause different results.
4. Alt. D - RPA meets or exceeds the Renewable Resources Planning Act (RPA) goals assigned to the Kootenai National Forest for timber, wilderness, and wildlife. The Proposed Wilderness is the same as RARE II, as displayed in Alternative B.
5. Alt. E (RARE II Plus) exceeds the RARE II and June 1984 Montana Wilderness proposals by recommending some large blocks of land as wilderness and wilderness additions, while still providing much opportunity for timber management. Wildlife and fish production and visual quality protection receive less emphasis to provide timber management opportunities outside the recommended wilderness areas.
6. Alt. F (Maximum Elk) provides significant big-game (elk) habitat management opportunities. Elk production receives more emphasis than timber production and no additional wilderness is recommended. This allows for elk management opportunities including the use of timber harvest to benefit elk through manipulation of elk habitat. Visual quality receives a high level of protection because of the lower timber harvest and road building levels.
7. Alt. G (Significant Wilderness) recommends significant amounts of wilderness while providing a high level of timber production. Other wildlife and fish production and visual quality protection receive less emphasis to provide for timber management outside the recommended wilderness areas. This alternative is very similar to Alternatives B, C and E in terms of the types of tradeoffs.
8. Alt. H (Maximum Wilderness) recommends the highest possible amount of wilderness while maintaining a high level of timber production. Other wildlife and fish production and visual quality protection receive less emphasis to provide for timber management outside of recommended wilderness areas. This alternative is very similar to Alternatives B, C, E and G, and serves as a baseline for evaluating wilderness tradeoffs.

9. Alt. I - Current Direction displays the direction that the Kootenai National Forest is currently following. The timber harvest and budget approximate the average amount actually cut and spent during the 1980-82 period. The wilderness recommendations are those endorsed by the Administration in RARE II which is the same as Alternatives B and D. Visual quality protection is provided for in sensitive areas along major travel routes and around local communities. This alternative is the baseline to measure changes in all resources, costs and benefits and is referred to as the "No Action" or "No Change" alternative.

10. Alt. J - Proposed Action provides a combination of wilderness, roadless and timber management designations that provide for both economic stability and future options. The recovery goals for grizzly are met with less risk of losing the population and roadless designations are provided where timber management appears to be environmentally unsound or not cost efficient. Other wildlife and fish production receive more emphasis to provide for a balanced multiple-resource program. Visual quality protection is provided in sensitive areas such as along major travel routes and around local communities and recreation sites. The wilderness recommendation is similar to the RARE II proposal, but is significantly different in the location and amount of individual areas recommended. Regulated timber harvest levels are higher than the Current Direction (Alternative I), but this requires a higher budget. Minerals and oil/gas exploration accessibility is maintained at about the current level and options are preserved for minerals, timber, and wilderness by recommending less additional wilderness and more roadless designations.

10a. Alt. JF - Final Forest Plan displays the final conclusions as a result of the public-review comments analysis and is a variation of the Proposed Action (Alt. J). The intent is to provide a combination of wildlife, wilderness, roadless and timber management designations that provide for balance, economic stability and future options. This was provided with some additional wilderness, and a higher level of old-growth timber for wildlife habitat, while providing timber sell levels which contribute to local economic stability. Other wildlife, especially old-growth timber dependent species receive more emphasis to provide for a balanced resource program. Increased emphasis is also placed on the protection of water quality and fish habitat. The recommended wilderness proposal is a combination of parts of the RARE II Final EIS and the June, 1984, Montana Wilderness Bill.

11. Alt. K - Departure on Proposed Action provides for an increase in timber harvest levels for the first two decades to more closely approach the RPA timber goals and is essentially the same as Alternative J except that a departure from non-declining sustained yield is allowed.

12. Alt. L (Maximum Timber) provides for the highest possible timber yields. No additional wilderness is recommended and roadless recreation is provided only on non-productive lands to provide options for timber management. Wildlife and fish production and visual quality protection receive less emphasis to provide options for timber management. This alternative serves as a baseline for evaluating timber management tradeoffs.

13. Alt. M - PNV provides for the highest possible present net value (PNV). Timber harvest levels are allowed to depart from non-declining yield and no additional wilderness is recommended. Roadless designations are provided where

they achieve the highest PNV. Wildlife and fish production and visual quality protection receive less emphasis because they generally contribute less to PNV than does timber management. This alternative serves as a baseline to measure opportunity costs for all the other alternatives.

14. Alt. N (No Wilderness with Departure) provides high timber harvest levels in the first decade. It is similar to Alternatives A and M, but includes a departure from the non-declining yield schedule of Alternative A. Roadless designations are provided where timber management is not cost efficient. Wildlife and fish production and visual quality protection receive less emphasis to provide timber management options.

15. Alt. O (Maximum Roadless & Visual Quality) provides significant protection for roadless areas and visual quality. The wilderness recommendations are similar to the June 1984 Montana Wilderness Bill (as in Alt. C) and roadless recreation is recommended for all the remaining inventoried roadless areas. Timber management receives less emphasis in order to meet the recommended visual quality goals in all areas outside of identified grizzly habitat.

COMPARISON OF ALTERNATIVES: The ability or potential for each alternative to respond to the major issues is displayed in Chapter II of the EIS and summarizes how each alternative compares in relation to the other alternatives with regard to some of the pertinent indicators of issue resolution. Some of these indicators are: the amount of timber harvest and new road construction in the first decade, inventoried roadless areas remaining after the first decade, the amount of road restrictions needed and many more items.

Following these displays in Chapter II are additional displays of some of the key values or tradeoffs that are considered critical to resolving the major issues of concern. These items determine the Net Public Benefit and are:

- Jobs and Community Stability
- Visual Quality
- Wilderness and Roadless Quality
- Accessibility for Mineral and Oil/Gas Exploration
- Grizzly Bear Recovery
- Options associated with Lodgepole Pine Management
- Road Access
- Options associated with Size of the Appropriated Budget
- Old-Growth Timber Management for Wildlife Habitat

CHAPTER III - AFFECTED ENVIRONMENT

General Setting: The Kootenai National Forest is within the Northern Rocky Mountain physiographic province and includes the Cabinet, Purcell and Salish Mountains, and the Whitefish Range. The Kootenai and Clark Fork rivers are the primary watersheds.

The area is generally tree-covered with almost 80% of the forest capable of commercial timber production. Huntatable populations of all big-game, except antelope, exist and many species of trout and other game fish inhabit the streams and lakes of the Kootenai Forest.

The Forest is essentially developed with 28% of the area roadless.

The local economy is heavily influenced by the wood products industry which comprises the bulk of the total basic employment in Lincoln County, the area most directly affected by Kootenai National Forest activities. Mining is also important with two major mines within the Forest boundary. Chapter III in the EIS has more detailed information on each of the following resources.

CURRENT RESOURCE SITUATION

Timber: The Forest contains 1,788,000 acres of tentatively suitable timber land. As of 1982 about 120,000 acres were infested with Mountain Pine Beetle which has been growing each year and represents a significant potential for timber volume loss of Lodgepole Pine. The historic timber program activities are displayed as follows:

Historic Timber Program Data (1974-1983)

Regulated Volume Sold	- 170 MMbf/yr.	Regulated Volume Cut	- 148 MMbf/yr.
Unregulated Volume Sold	- 28 MMbf/yr.	Unregulated Volume Cut	- 25 MMbf/yr.
Total Volume Sold	- 198 MMbf/yr.	Total Volume Cut	- 173 MMbf/yr.

Roads: There were 6,200 miles of road on the Kootenai as of January 1, 1986. Most of these were constructed for timber activities over the years and are currently used for timber, recreation, and other purposes.

Recreation: Total recreation use on the Forest has been increasing steadily. Recreation opportunities are linked to 28 campgrounds, 7 picnic grounds, one winter sports area, 1,300 miles of trails, and the 6,200 miles of existing roads. Major activities include hunting, fishing, camping, hiking, cross-country and downhill skiing, snowmobiling and driving for pleasure.

Wilderness and Roadless Areas: Existing and potential wilderness includes the 94,000 acre Cabinet Mountain Wilderness plus 404,000 acres of inventoried roadless area in 32 separate locations. In addition, the 34,000 acre Ten Lakes Wilderness Study Area (MWSA) is located in the northeast corner of the Forest. This MWSA is being addressed in a separate planning process and report.

Wildlife: Big-game hunting is linked to populations of the hunted species which are elk, moose, bighorn sheep, mountain goat, whitetail and mule deer, black bear, and mountain lion. Elk is used as an indicator species and the population has been increasing with current estimates of the herd at approximately 5,500 animals. There are several threatened and endangered species on the Forest, including the bald eagle and grizzly bear. Habitat information indicates that the Forest is capable of supporting recovered populations.

Fish: The Forest provides habitat for brook, rainbow, cutthroat and bull trout, whitefish, sturgeon, ling, perch, bass and kokanee salmon. Trout is the indicator species and the protection of the trout population is keyed to the maintenance of water quality.

Grazing: Domestic livestock grazing is seasonal and has amounted to about 13,000 animal unit months of forage use over the last few years. Sufficient transitory range is available to supply more forage than is currently used.

Minerals: Mineral resources on the Kootenai National Forest include gold, silver, copper, building stone, and vermiculite. There has been exploration for oil and gas deposits, but none have yet been verified. The W.R. Grace vermiculite mine is the largest vermiculite producer in the world. The Asarco mine is currently the nation's largest silver producer. Two other mines similar to the Asarco mine have been proposed on the Forest.

CHAPTER IV - ACTIVITIES AND THEIR EFFECTS

Chapter IV of the EIS looks at the alternatives in terms of the activities which would be necessary to implement them. These activities have environmental consequences which are discussed in detail in Chapter IV and summarized below.

Timber harvest directly alters biological communities by changing the composition of the vegetation. On the negative side: timber harvest usually results in the systematic removal of mature timber, and requires road construction which can reduce roadless recreation opportunities and affect water and visual quality. In some circumstances, net reductions to the U.S. Treasury can also result. On the positive side: the maintenance of vigorous and healthy timber stands, and associated effects such as economic stability in timber-dependent communities, positive returns to the U.S. Treasury, supplies of needed products, and in many situations, improvement of wildlife habitat. The size of the impacts both negative and positive are generally associated with the quantity and type of timber that is harvested.

Wilderness or non-motorized recreation designations can have effects upon other resources if suitabilities for those resources exist on the designated lands. On the negative side: timber management is foregone in favor of roadless management and effects can include reductions in wood products supplied to the nation and a net loss of jobs in timber-dependent communities. On the positive side: benefits include maintenance of roadless recreation opportunities and old-growth timber habitat for timber-dependent wildlife species which would be reduced under timber management designations.

Grizzly Bear population recovery activities involve direct habitat improvement plus limitations upon other activities such as timber harvest. On the negative side: where timber management practices are altered, such as through the limitation of the amount of area that can be entered at any one time, long-term as well as short-term harvest quantities may be reduced. On the positive side: the benefit of these activities and limitations is a reduced risk of loss of the Grizzly population.

Minerals, and Oil/Gas exploration generally has minimal long-term effects upon the areas involved. Development on the other hand can have long-term effects upon all the surrounding resources. On the negative side: human activity may displace wildlife species and reduce the quality of their habitat; and removal of the mineral in the present represents a loss of that resource to future generations. On the positive side: jobs and community stability are enhanced during the period that the resource is being removed; and removal of the resource in the present provides opportunities to use the material in ways which benefit both present and future generations.

Short-Term Use vs. the Maintenance and Enhancement of Long-Term Productivity:

Short-term use includes activities such as timber harvest, mineral exploration, recreation use, and livestock grazing which usually occur in localized areas and are, many times, seasonal in duration. Long-term productivity is the capability of the land to provide resources and services over time. Some alternatives emphasize a higher concentration of short-term uses which can result in more negative impacts and costs, but all the alternatives maintain the long-term productivity of the land although some incur a higher degree of risk in the assurance of that goal.

Irreversible and Irretrievable Commitment of Resources: Many activities such as timber harvest, livestock grazing and recreation use, do not cause an irreversible or irretrievable commitment of resources since they involve the use of renewable resources. The utilization of non-renewable resources such as minerals and cultural resources are considered irreversible. All the alternatives allow for the exploration and development of minerals under the rules and regulations prescribed in the 1872 Mining Law and the associated mining regulations.

Adverse Effects Which Cannot Be Avoided: Timber harvest and road construction will alter the status of some lands that are roadless and undeveloped. Wilderness and roadless designations will remove some lands from the suitable timber base and eliminate the opportunity to harvest timber which can provide wood products and jobs for a timber-dependent community. All alternatives except H and O will alter some existing roadless lands. Alternative L provides for the least impact on timber production.

Mitigation Measures: are included in the Forestwide Standards and Guidelines and Management Area prescriptions in the Forest Plan document. Minimum Management requirements are prescribed for each alternative including the Final Forest Plan and are displayed in Chapter II of the EIS.

CHAPTER VI - CONSULTATION WITH OTHERS

290 responses were received from the public review of the Draft EIS and are summarized in Chapter VI of the Final EIS. Copies of the letters received and the Forest Service response is displayed in Appendix E.

Summary of What the Public Said:

A large segment was unhappy with the Proposed Forest Plan as presented in the Draft EIS. This segment was polarized into two general groups: (1) those that felt that the Proposed Action was biased on the side of development; such as timber harvesting and road construction at the expense of wilderness, water quality, old-growth timber, and fisheries, and (2) those that felt that the Proposed Plan favored wilderness, roadless areas and wildlife (including the grizzly bear) at the expense of people, timber harvest and jobs, and minerals and oil/gas.

Within this general polarized situation was some common ground. There was general agreement that the timber harvest levels experienced over the last decade are acceptable and/or should not be reduced. General concern was also expressed about the "realism" involved in the Proposed Plan's budget requirement (a 22% increase) and what will be "sacrificed" if a budget shortfall occurs.

Common ground was also observed in the area of water quality and fisheries. The public requested that these resources receive adequate protection.

Summary of Changes between the Draft and Final EIS;

The Proposed Forest Plan (Alt. J) was modified to resolve the concerns raised during the Public Review period and is presented in the Final EIS as Alt. JF (Final Plan). It provides some additional recommended wilderness, and a higher level of old-growth timber retention for dependent wildlife species. It also maintains a timber sell level which will provide for local economic stability while reducing the total number of new roads needed to support timber production. The first decade annual budget was reduced by \$1,100,000 and the Monitoring and Evaluation Plan was reviewed and strengthened to protect water quality and fisheries.

Table S-1

Kootenai National Forest Final EIS Summary

The following table compares items that are important differences between alternatives.

A Tabular Comparison of Alternatives

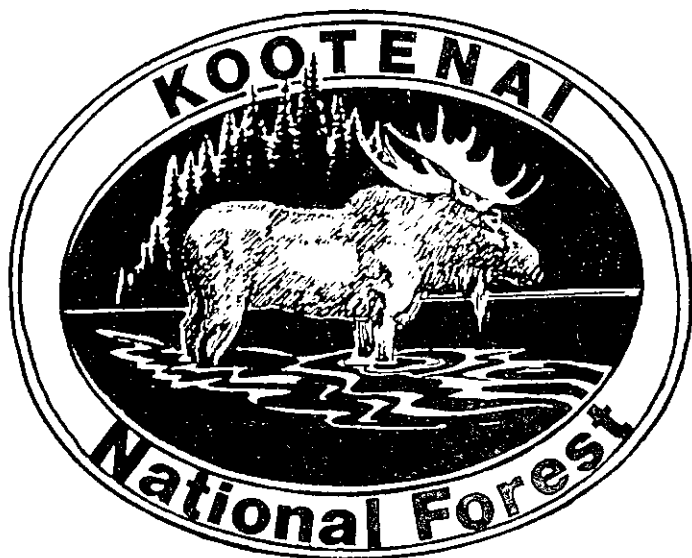
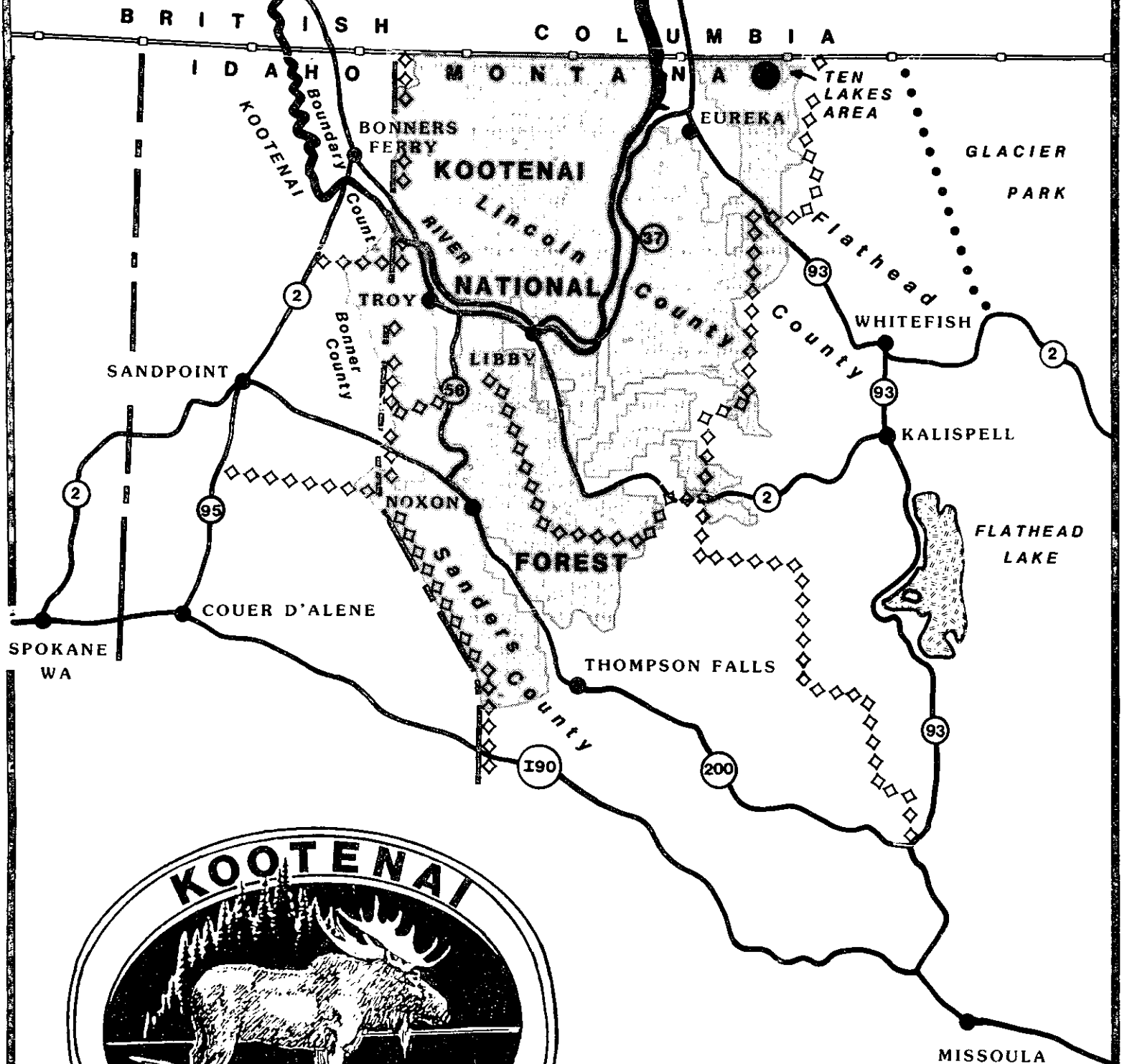
Alternative	/1/ Total Planned Timber Sale Volume (million board feet)	Suitable Timber- land (thous. acres)	/1/ /4/ Total Planned Lodgepole Pine Harvest (million board ft.)	/3/ New Road Constr- uction (miles)	Recom- mended Wilderness (thous. acres)	Total Road- less- Manage- ment (thous. acres)	/5/ Old- Growth Timber Retained (percent of Forest)	/1/ /2/ Appro- priated Budget (million \$)	/2/ Present Net Value (million \$)
A (No Wild)	261	1,470	87	5,070	0	399	8	21.7	1,143
B (RARE II)	257	1,464	88	5,000	63.9	428	8	21.6	1,136
C (MT Wild)	260	1,466	90	4,950	81.3	419	8	21.8	1,129
D (RPA)	262	1,595	84	5,490	63.9	410	8	21.5	1,064
E (RARE II+)	251	1,425	80	4,750	186.6	476	8	21.1	1,113
F (Max.Elkh)	189	1,132	70	3,650	0	401	8	16.8	658
G (Sig.Wild)	246	1,386	74	4,550	304.9	534	8	20.6	1,073
H (Max.Wild)	240	1,361	64	4,390	403.7	583	8	20.0	1,035
I (Cur.Dir.)	173	1,422	97	3,640	62.9	441	8	16.6	460
J (Prop.Act)	233	1,386	94	4,490	66.5	518	8	20.3	911
JF(Final Plan)	233	1,263	98	3,850	78.5	521	10	19.2	733
K (PA-Dep.)	265	1,386	99	4,520	66.5	518	8	22.0	911
L (Max.Tim)	294	1,788	53	6,160	0	349	8	28.1	1,046
M (Max.PNV)	302	1,484	117	5,030	0	389	8	24.1	1,163
N (No Wld/Dep)	285	1,481	107	5,070	0	393	8	23.2	1,148
O (Rdls/View)	248	1,389	94	4,480	81.3	574	8	21.8	1,064

/1/ Average Annual Results, /2/ 1978 Dollars, /3/ As of January 1, 1986, /4/ Included within Column 1.
/5/ Below 5,500 feet Elevation.

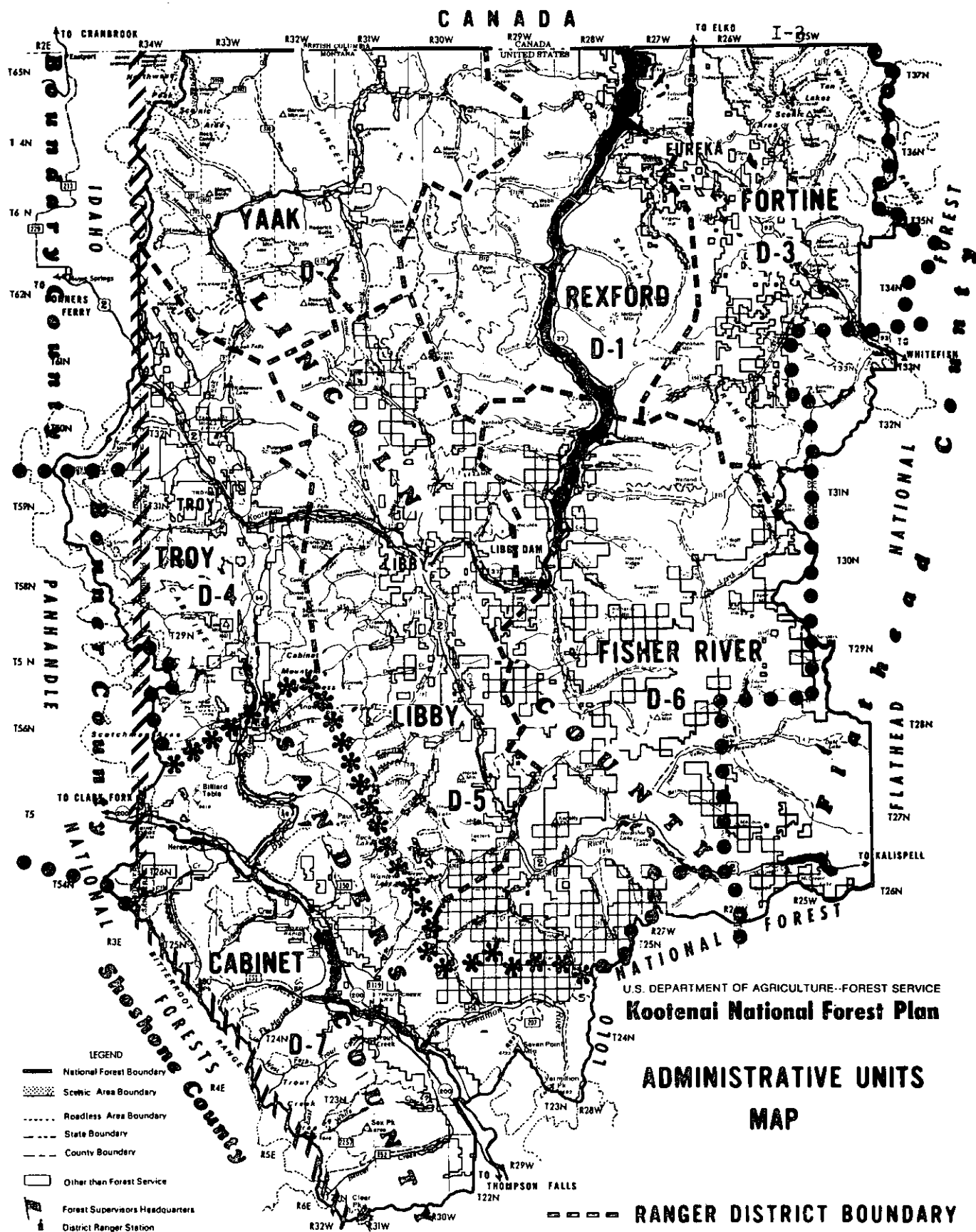
FINAL ENVIRONMENTAL IMPACT STATEMENT
FOR THE
KOOTENAI NATIONAL FOREST PLAN

CHAPTER I
PURPOSE AND NEED FOR ACTION

This chapter describes the legal basis for this EIS and the Forest Plan. Included is a description of the relationship of this document to a Draft EIS that was issued in November of 1982, a brief description of the area and a list of issues, concerns and opportunities that are addressed in the remainder of the document.



Vicinity Map



U.S. DEPARTMENT OF AGRICULTURE--FOREST SERVICE
Kootenai National Forest Plan

I. Purpose and Need for Action

A. Introduction

This Final Environmental Impact Statement (EIS) documents the analysis and discloses the significant environmental effects of alternatives for the future management of the land and resources of the Kootenai National Forest. The preferred alternative (JF) is the basis for the Forest Land and Resource Management Plan (Forest Plan) which is described in a separate document. The Forest Plan will guide management for the next 10-15 years unless conditions or demands change significantly. In the event of a significant change, the Forest Plan will be reviewed and revised as needed.

Development of this EIS and Forest Plan, is required by, and follows direction from the Forest and Rangeland Renewable Resources Planning Act (RPA), the National Forest Management Act (NFMA), and the National Environmental Policy Act (NEPA). Further direction is given by the implementing regulations of NFMA (36 CFR 219) and NEPA (40 CFR 1500-1508).

The analysis in this Final EIS and Forest Plan is designed to ensure multiple-use and provide a sustained yield of goods and services from the Kootenai National Forest. The intent of the Forest Plan is to provide a high level of net public benefits while resolving a series of public issues in an environmentally sound manner. (Net public benefit is the overall long-term value to the nation of all outputs and positive effects (benefits) less all associated Forest inputs and negative effects (costs) of producing priced and nonpriced outputs from Kootenai Forest lands.) It is important to note that while long-term effects have been estimated for many decades into the future, the Forest Plan is only valid until it is revised; committing the Kootenai Forest to a course of action no longer than 15 years.

B. National, Regional, and Forest Planning

The final Forest Plan (and the supporting analysis in this Final EIS) supersedes all previous land and resource management plans prepared by the Kootenai National Forest. The national program, required by RPA, sets national direction and output levels for National Forest system lands and are based on suitability and capability information provided by Forest Service Regions. Each Region, in a Regional Guide, divides its share of the national production levels among the Forests and also delineates standards and guidelines for management within the Region. Thus the Forest Plan includes direction provided by RPA, NFMA (including the implementing regulations) and the Regional Guide.

Projects, such as timber sales, etc, will be tiered to this Final EIS and additional site-specific analysis will be done, if needed, to ensure that the requirements stipulated in the Forest Plan can and will be achieved, e.g. water quality protection. Project monitoring will also be done to insure that the required standards in the Forest Plan and this EIS will be achieved. If significant deviations occur, then further action will be necessary such as increased compliance, project modification or cessation. Forestwide monitoring will determine the cumulative effects of the individual projects and determinations will be made concerning the significance of any

deviations from the projected desired results. If the deviations are significant then a revision of the Forest Plan may be in order which will re-introduce the following planning actions.

Planning Actions

This EIS results from the first 7 of 10 planning actions required by NFMA (36 CFR 219) which are listed below:

1. Identification of issues, concerns, and opportunities.
2. Development of planning criteria.
3. Inventory data and information collection.
4. Analysis of the Management Situation.
5. Formulation of alternatives.
6. Estimate the effects of alternatives.
7. Evaluate alternatives.

Planning records, the documents and files which chronicle the first seven planning steps, are available for inspection at the Forest Supervisor's Office, 506 U.S. Highway 2 West, Libby, Montana. Reference is made to the planning records in both the EIS and Forest Plan. Refer to Appendices A and B for a detailed description of the process used in planning actions 1 through 7.

The public and governmental agencies were asked to comment on the Draft EIS and Proposed Forest Plan which was issued in July, 1985. The comments received were used to examine the results of the first seven planning steps and to modify the Proposed Forest Plan. This Final EIS and Forest Plan will then be used by the Regional Forester as the information base for a record of decision to complete the following planning steps:

8. Selection of the preferred alternative.
9. Plan implementation.
10. Monitoring and evaluation.

C. Overview of the Forest's Location

The Kootenai National Forest is situated in the extreme northwest corner of Montana and located primarily in Lincoln and Sanders Counties, Montana (77% and 19%, respectively). The remaining 4% is located in Flathead County, Montana and Bonner and Boundary Counties, Idaho (2%, 1% and 1%, respectively). See the Vicinity map.

The Forest covers an area about 70 miles wide and 85 miles long which encloses 2.5 million acres. Within this external boundary are 0.3 million acres of various private or State lands, leaving the total net Kootenai Forest acreage at 2.2 million acres.

Principal towns within the Forest boundary include Libby (Lincoln County seat), Eureka, and Troy. The total combined population within the Forest boundary is less than 25,000 people. The closest large urban areas are Kalispell and Missoula, Montana; Sandpoint and Coeur d'Alene, Idaho; and Spokane, Washington.

Productive forest land covers 80% of the Forest which supplies 16% of the total National Forest timber harvest in the Northern Region, and the extraction and processing of timber and minerals comprises the bulk of the total basic employment.

The Kootenai Forest is primarily developed with approximately 75% of the land area containing roaded access. On the portion that is primarily undeveloped with no road access, the Cabinet Mountains Wilderness (94,000 acres) is located in the center of the Forest and the 34,000 acre Ten Lakes Montana Wilderness Study Act (MWSA) Area is located in the northeast corner bordering on Canada. An additional 404,000 acres are roadless (in 32 different locations) which, when combined with the existing wilderness and wilderness study area, accounts for 24% of the total Forest acres (532,000 acres).

The Flathead/Kootenai-Salish Indian Tribes have treaty rights which allow hunting and fishing on the Kootenai Forest. In addition, certain sites are used by Native Americans exercising their rights under the American Indian Religious Freedom Act.

Alternatives for wilderness for 32 roadless areas on the Kootenai are displayed in this Final EIS. (Eleven of these roadless areas are shared with adjacent Forests.) Recommendations for the original Ten Lakes Montana Wilderness Study Act Area will be a part of the Forest Plan record of decision. A separate Report and Proposal was released in November 1982 and the final recommendation to Congress will be contained in a separate document. The Ten Lakes MWSA area will be managed to protect its wilderness character pending review of the final recommendation and final action by Congress.

D. Relationship to Previously Released EIS

In November 1982, the Kootenai National Forest released a proposed Forest Plan and Draft Environmental Impact Statement. The public review period ended April 15, 1983 which included a 45-day extension. The comments received during that review period resulted in many changes being made to that initial Plan. The most significant changes were:

1. The designation of all grizzly habitat situations 1 & 2 (Interagency Guidelines) to management which is compatible with grizzly bears (1,036,000 acres, or 46% of the Kootenai National Forest). This was done to comply with compensation measures suggested by the U.S. Fish and Wildlife Service in the jeopardy opinion resulting from their review of the original proposed Forest Plan.
2. Addition of the wilderness issue whereby 32 inventoried roadless areas on the Kootenai, representing 404,000 acres, were evaluated for wilderness.
3. Specific designations and prescriptions to insure old-growth timber habitat will occur on approximately 8% of the Forest land below 5,500 feet elevation (149,000 acres) and be reasonably distributed in each drainage where available.

4. Additional areas and acreages designated to roadless dispersed recreation to provide a distribution of a variety of roadless and primitive recreation experiences on the Kootenai (an addition of 77,000 acres).

The total effect of these changes resulted in significant modifications to the original alternatives (including the original Proposed Action). In accordance with direction provided by regulations implementing NEPA, it was decided to issue a new Draft EIS in July, 1985, and seek additional public comment before issuing this Final EIS and Forest Plan.

E. Issues, Concerns, and Opportunities

The first of the 10 planning steps involves identification of issues, concerns, and opportunities (ICO's). This step determines what benefits people want in terms of goods, services, uses and environmental conditions. To aid in this step, public workshops were held during October and November 1979 in Libby, Eureka, Troy, and Trout Creek. Agencies, groups, and individuals were solicited for their concerns about Forest land use and management.

Workshops were held in October 1979 concerning the MWSA areas, including Ten Lakes, in Libby and Eureka. Additional public involvement was initiated in September, 1983 to aid in resolution of the roadless designation question. Prior to this, Forest planning efforts had examined a broad range of uses for roadless areas but had not included an evaluation for wilderness designation, except for the Ten Lakes Montana Wilderness Study Act Area. The Forest had relied on earlier evaluations and recommendations made in the RARE II (Roadless Area Review and Evaluation) Final EIS issued in April, 1979. After the Ninth Circuit Court decision on the RARE II EIS, the NFMA regulation (219.17) was revised to include an evaluation of roadless areas for wilderness in the Forest Planning process.

Over 500 separate comments were received during the public participation effort on ICO's. The ICO's were analyzed using criteria including:

- Can the issue be resolved by the Forest Service?
- Can the issue be dealt with more quickly outside the Forest planning process?
- Is the issue widespread across the Forest?
- What is the intensity of the issue?

Comments received from the public during the review period for the November 1982 EIS, served to modify somewhat the original list of ICO's identified in the Fall of 1979. No new issues were raised during the original Draft EIS review period but some issues were shown to be less intense than previously indicated. See Appendix A for more detail on the identification of the issues, concerns and opportunities.

In July 1985, a new Draft EIS was distributed to the public, including various Federal and State agencies, and elected Public officials. Public meetings were held in Libby, Noxon, and Kalispell, Montana, to answer questions and clarify any misunderstandings. As a result of this public

review the original issues were verified and some additional concerns were identified.

Following are the ICO's addressed by the Kootenai Forest Plan:

1. Timber Volume - How much timber should the Kootenai provide for sustained yield purposes? (Associated with this issue is the national concern for timber sales that do not fully recover their costs.) Public comment was polarized on this issue: from requesting no increase over the historic harvest level, to ensuring adequate supplies to provide jobs and community stability. Comments received from State officials and the Public questioned the assumptions used to determine timber supply and demand. This has resulted in the Montana Timber Supply analysis which has been incorporated into this EIS.
2. Transportation Facilities (Roads) - How should roads be designed, constructed, and managed and what are the attendant costs on other resources? Public comment was generally opposed to increased road construction because of the perceived negative impacts to fisheries and water quality.
3. Roadless Recreation - How many roadless recreation opportunities should the Kootenai provide and where should they be located? Public comment was polarized between those wanting more protection for roadless areas to protect wilderness, wildlife and water quality, to those opposed to roadless management because of the perceived negative impact on mineral exploration and timber harvesting.
4. Threatened and Endangered Species - How can the Kootenai provide and maintain identified habitat for threatened and endangered species, especially grizzly bears? Public comment is generally polarized between those wanting increased protection for the grizzly bear to those fearful that increased protection will result in the loss of timber and mining opportunities and the resultant loss of jobs.
5. Special Wildlife Habitat - How should special habitats such as riparian areas, old growth timber areas, and snags be managed and where should they be located? The public generally favored increased protection for old-growth timber habitats for dependent wildlife species, and increased protection for riparian areas (which related to the concern for water quality and fisheries - See Issue #9, below).
6. Local Economic Impacts - How will changes in the Kootenai Forest Plan affect the local communities' economies? The public was generally concerned about the potential loss of jobs due to the perceived decreased opportunities for timber harvest and mining.
7. Wilderness - Which, if any, of the identified roadless areas on the Kootenai should be recommended to Congress for wilderness designation? The Public was generally polarized between more wilderness (especially Pellick Ridge on Scotchman Peak) to no more wilderness because of the perceived negative impact on timber and mining and the resultant loss of jobs.

8. Minerals, Gas and Oil - How should conflicts between mineral exploration and development and other resource values be resolved and where, and under what conditions, should the Kootenai accommodate potential gas and oil development? The public was generally polarized between those concerned about potential increased mining and the perceived negative impacts on various resources such as wilderness and water quality, to those concerned about decreased opportunities and the resultant loss of jobs.
9. Wildlife and Fish Habitat - Where and how much wildlife and fish habitat should the Kootenai provide, how should that habitat be managed, and how can adverse impacts be mitigated? The Public generally supported increased protection for wildlife and fisheries, particularly regarding water quality protection.
10. Esthetics - How much change from the natural appearing landscape is acceptable or desirable? The public generally supported the visual quality protection currently being provided.
11. Landownership Adjustment - How can intermingled ownership patterns be improved to facilitate both Kootenai and private land management objectives? (Includes both large and small landowners.) The public generally supported the Landownership Adjustment direction currently being provided.
12. Diseases and Pests - What is the level of protection necessary to protect the timber resource from unacceptable insect and disease damage, especially from the mountain pine beetle? The public generally supported continued action to reduce the potential losses in Lodgepole Pine timber stands from the Mountain Pine Beetle infestation.
13. Fire Management - What role should Fire Management play in the protection and improvement of resources on the Kootenai, including management fires? The Public generally supports the current level of Fire Management.

Records leading to the identification of major ICO's are available for review at the Forest Headquarters and more detailed information on the development of ICO's and public participation can be found in Appendix A. Appendix A also contains a summary of the changes made to the November 1982 Draft EIS as a result of public comment and how that comment influenced the direction presented in the July 1985 Draft EIS. Chapter VI discusses how the Public Comment was analyzed for use in the resolution of the ICO's including the identification of additional concerns.

F. Changes Between the Draft and Final EIS

The changes that are discussed here came about as a result of input received on the 7/85 Draft EIS and the Proposed Forest Plan, or as a result of additional agency requirements or additional studies, such as the Montana Timber Supply analysis (See Chapter VI for the analysis of the public comment

and how that comment was used to develop a final Forest Plan). Some additional analysis was performed (See Appendix B and Chapters III and IV) to determine the effects of various changes; those effects were assessed and compared (See Chapter II), and a Final Forest Plan was developed. The Final Forest Plan (Alt. JF) is now a variation of the Proposed Forest Plan (Alt. J) that was reviewed by the public during the July-October 1985 review period.

1. New Issues or Concerns

In 1985, timber sale receipts did not recover timber-related costs (See Chapter III). This concern about the economics of the timber program was addressed as an additional management concern and several options to deal with it were explored (See Appendix B). In addition, clarification has been added concerning evenage and unevenage timber management. Clarification has also been provided in the various tables and charts to distinguish between the 10-15 year Forest Plan period and the longer-term period displaying various projections that could result if the Forest Plan continued indefinitely.

The public input received in response to the 7/85 Draft EIS and Proposed Forest Plan reinforced and helped clarify the issues that were identified in the Draft EIS. The profile of several aspects of these issues were raised and they were given consideration in the development of the Final Forest Plan (Alt. JF). In particular, these aspects involved land designations on Pellick Ridge in the Scotchman Peak Roadless Area (Wilderness Issue), Old-Growth Timber Management (Special Wildlife Habitat Issue) and Water Quality (Wildlife and Fisheries Issue). In addition, technical concerns involved the economic values used in the analysis and the adequacy of the Monitoring and Evaluation Plan. Details on the public input and how it led to the Final Plan are provided in Chapter VI.

Additional information on Wild and Scenic Rivers is also provided in Chapter III as a result of public response to some Draft EIS's in the Region and national direction. For similar reasons, additional information on Timber Demand, Timberland Suitability, and other Timber Resource information is provided in Appendix B.

G. Reader's Guide

The remainder of the EIS is organized in the following manner:

Chapter II describes the alternatives and displays the resource outputs, costs, benefits, and major effects of meeting the objectives of each alternative. The environmental, economic, and social effects of alternatives are compared.

Chapter III provides a discussion of the existing condition of physical, biological, social, and economic components of the environment that may be affected by Forest management.

Chapter IV identifies the environmental consequences which could result from Forest management activities scheduled in each alternative.

Chapter V identifies the people who were involved in the Forest Planning Process.

Chapter VI provides a comprehensive discussion of the public input received on the 7/85 Draft EIS and Proposed Forest Plan, and how that input was used to help develop a Final Plan.

Appendices provide detailed subject information such as the development and resolution of original issues, concerns, and opportunities (Appendix A), description of the analysis process (Appendix B), inventoried roadless area descriptions evaluation (Appendix C), grizzly bear situation and management guidelines (Appendix D), and the Public's comments on the 7/85 Draft EIS and the Forest Service response (Appendix E).

The Glossary contains definitions of planning and other technical terms.

All of the documents and their supporting analysis are available for review at the Forest Headquarters, 506 U.S. Highway 2 West, Libby, Montana.

FINAL ENVIRONMENTAL IMPACT STATEMENT
FOR THE
KOOTENAI NATIONAL FOREST PLAN

CHAPTER II
ALTERNATIVES

including the Proposed Action
and Final Plan

This chapter describes the process that was used to develop the alternatives. It describes those alternatives and compares and contrasts them with respect to a wide range of factors. These factors relate to the way in which each alternative resolves the issues addressed in Chapter 1, and how the Public Response influenced the Final Plan.

II. Alternatives including the Proposed Action and Final Plan

A. Introduction

This chapter discusses the development, description, and comparison of alternative ways of managing the Forest's land and resources. The alternatives development process involves an analysis of the management situation which includes a determination of minimum and maximum resource and value potentials. This step identifies the capabilities of the Forest (see section B).

The alternative descriptions outline the objectives of each alternative, show where the alternative fits into the range of alternatives, and explains how the alternative responds to issues. The resource, economic, social, and land designation results are also shown (see section C). Section D compares alternatives by resource outputs, social and economic effects, response to major issues, and nonpriced benefits.

Maps are provided which display the location of land designation for each alternative.

B. Alternative Development

Summary of Changes between the Draft and Final EIS

The Final Forest Plan (Alt. JF) is a variation of the Proposed Forest Plan (Alt. J) that was presented to the public in July, 1985. Alt. JF was developed as a result of the concerns raised by the public during the review, including the concern about timber supply and demand. See Chapter VI for the analysis of the public comment and how the comments were used in the development of the preferred alternative.

1. Overview

Forest planning began by identifying public issues and management concerns (see Appendix A for a description of this process). Once the issues were known, information was needed to determine the Forest's capability to respond to each issue. This step was the "Analysis of the Management Situation" which involved the examination of resource data, economic information, and environmental/legal constraints. Benchmarks were developed and analyzed to measure resource and economic interrelationships and output ranges for alternative development.

Alternatives were developed that respond to issues, present net value (PNV), and net public benefits (NPB). The net public benefit of forest management is the overall value to the nation of all benefits minus all costs, regardless of whether the costs and benefits are expressed in priced or nonpriced terms. The non-priced components of net public benefit are subjectively evaluated. Starting with Maximum PNV benchmark as the base, net public benefit is improved when the benefits of providing additional nonpriced objectives exceed the opportunity cost of doing so. A single, numeric NPB value was not calculated since monetary values associated with

some resources such as timber cannot be added to the qualitative value of nonpriced benefits, such as a scenic view.

An understanding of the various types of values and interrelationships associated with Forest outputs aids in the selection of an alternative that maximizes net public benefits. Several nonpriced benefits were considered by the interdisciplinary (ID) Team during the development of alternatives. Benchmarks were constructed to examine the tradeoffs between PNV and the nonpriced components of net public benefit. For example, protecting grizzly bear habitat reduces PNV because timber management intensity is reduced. The choice of protecting the habitat and giving up some PNV could have a higher net public benefit than the alternative choice of maximizing PNV and sacrificing the habitat. The nonpriced outputs considered in this analysis include: jobs and community stability; visual quality; wilderness and roadless quality; accessibility for minerals and oil/gas exploration; grizzly bear recovery; lodgepole pine risk management; road access; and appropriated budget (see Appendix B, section IV for a further discussion of NPB).

The alternative development process used here is outlined in 36 CFR 219.12. These regulations include the following goals for alternative formulation:

- Provide basis for identifying the alternative that maximizes net public benefits.
- Alternatives shall be distributed between the minimum and maximum resource potential and reflect a range of environmental resource uses and expenditure levels.
- Formulated to facilitate analysis of opportunity costs and tradeoffs.
- Formulated to evaluate effects on present net value, benefits, and costs.
- Provide different ways to respond to major public issues.

1a. Summary of the Public's Concern and How They Influenced the Development of the Final Plan (Alt. JF).

The public's primary concerns were: Wilderness, Timber Harvest Levels, New Road Construction, Old-Growth Timber, Water Quality, Effects on the Local Economy, Economic Values and Budgets, and Fisheries.

They were polarized into two general groups: (1) those that felt that the Proposed Plan was biased on the side of development; such as timber harvesting and road construction at the expense of wilderness, water quality, old-growth timber and fisheries, and (2) those that felt that the Proposed Plan was too biased in favor of wilderness, roadless areas and wildlife (including the grizzly bear) at the expense of people, timber harvest and jobs.

Within this general polarized situation was some common ground. There was general agreement that the timber harvest levels experienced over the last decade are acceptable and/or should not be reduced. General concern was also expressed about the realism involved in the Proposed Plan's budget requirement, and in which resource management categories reductions would take place if a budget shortfall occurred.

The public agreed that water quality and fisheries should receive adequate protection because of their inherent values.

The expressed concerns were re-analyzed and tested against the known information on hand. Some concerns required additional analysis and information which is displayed in Appendix B and Chapter III. This includes the additional analysis and information which resulted from the Montana Timber Supply analysis. (This analysis displayed that with a significant increase in the demand for timber, including a significant price increase during the 10-15 year plan period, the Allowable Sale Quantity could be adjusted upward.)

The Final Forest Plan (Alt. JF) retains the same timber harvest level in the first decade as presented in the Proposed Forest Plan (Alt. J) while also providing additional wilderness, old-growth timber, and less road construction. The Monitoring and Evaluation Plan was revised to insure that environmental quality such as water and fisheries will not be compromised below acceptable standards.

2. Analysis of the Management Situation (AMS)

No Changes occurred between the Draft and Final EIS

The analysis of the management situation determined resource supply potentials by establishing minimum and maximum production levels called benchmarks. A level was also established from which the costs and effects of applying regulation and policy constraints were measured. Production capabilities were determined for single resources and for a set of multiple resource outputs that maximized present net value. This analysis established the benchmark levels required by NFMA regulation 219.12e.

a. Benchmark Levels

Six benchmark levels were developed to define resource supply potentials and economic relationships. Production capabilities were determined for a minimum level, for single resources, and for a set of multiple resource outputs that maximize present net value (NFMA regulation 219.12e). A level was also established from which the costs and effects of applying regulation and policy constraints were measured. A computer model, FORPLAN, was used to help determine the resource supply potentials.

The benchmark levels and analyses are summarized in this Chapter. Appendix B, Section VI provides a detailed discussion of the complete benchmark analysis.

b. Constraints

Regulation and policy constraints as applied in the benchmarks have, in most cases, the net effect of reducing the maximum resource supply potential. NFMA regulation 219.27 specifies that certain minimum management requirements be included in the planning process. The methods to model the effects of the minimum management requirements include developing standards and guidelines and appropriate management practices for management prescriptions, assignment of management prescriptions to analysis areas in FORPLAN, and applying specific constraints in FORPLAN. A complete description of the minimum management requirements can be found in Appendix B, Section VI. Constraints commonly applied to the six benchmark levels except for the minimum level benchmark are:

1. A fixed acreage is assigned to the existing Cabinet Mountain Wilderness Area (94,000 acres), the Ten Lakes Montana Wilderness Study Area (34,000 acres), and existing ranger stations and campgrounds (3,000 acres).
2. An ending timber inventory constraint that forces the timber inventory in 200 years to equal or exceed the inventory necessary to produce the long-run sustained-yield capacity indefinitely.
3. Minimum timber rotation ages set at the age where 95 percent of the culmination of mean annual increment of the timber volume is achieved. This assures that timber stands are not harvested before reaching the age where net growth over the life of the stand is maximized.
4. Non-declining Yield (NDY) timber harvest constraint except for the Maximum Present Net Value Benchmark.
5. Minimum Management Requirements which include providing (1) protection for T&E species (grizzly bear), (2) an upper limit on the amount of clearcutting that can occur in any decade in a watershed based on its existing condition (to protect water quality and soil productivity), (3) retention of at least 8 percent of appropriate acres in old-growth timber adequately distributed for wildlife and diversity purposes, and (4) limiting the size of clearcuts to 40 acres or less.

c. Benchmark Descriptions

(1) Maximum Present Net Value

This benchmark established the mix of resource uses and schedule of outputs and costs that maximized present net value using market and nonmarket assigned values. A limited departure from non-declining yield was used. This benchmark was carried forward as Alternative M and was also used to develop Alternative A. Alternative A provides the base sale schedule for this benchmark. This benchmark is displayed in this DEIS when a comparison of alternatives is made in order to provide a reference to the maximum present net value potential considered.

(2) Maximum Timber

The maximum capability of the Forest to produce timber over a 200 year period was determined by this benchmark. Non-declining yield was used. This benchmark was carried forward as Alternative L and was also used to develop the Resources Planning Act (RPA), Alternative (Alt D).

(3) Maximum Wildlife Habitat Potential

The purpose of this analysis was to analyze the potential for elk habitat based on the availability of cover and forage on summer range. The potential for elk habitat is based on the availability of forage and cover on both summer and winter range and open road densities. This benchmark was carried forward as Alternative F.

(4) Maximum Wilderness

Potential Wilderness designations were maximized in order to determine the benefits, costs, outputs and opportunity costs of wilderness. This benchmark was carried forward as Alternative H and was also used to develop Alternative G and Alternative E. This benchmark was also used to analyze semi-primitive non-motorized (SPNM) recreation use. SPNM use occurs on inventoried roadless areas and this benchmark analyzed all of these areas. Primitive and semi-primitive non-motorized recreation is provided for adequately in this benchmark.

(5) Minimal Level

This benchmark defined the minimum costs of public landownership and the resource outputs which are incidental to Forest management. This benchmark is not a viable alternative because it is not responsive to public issues and management concerns. It also does not provide multiple resource uses and outputs. It was used to compare fixed costs and outputs of public ownership to those outputs induced through management direction and activities.

(6) Current Direction

This benchmark defines the current level of goods and services and the most likely amount of goods and services expected in the future if current management direction continued. This benchmark followed existing approved management plan direction updated to meet all minimum requirements with current budget levels. It was carried forward as Alternative I.

The initial development of this benchmark did not include budget limitations. The initial analysis formed the basis for the Current direction Benchmark and aided in the development of Alternative J. It was not carried forward as a benchmark because the Current Direction Benchmark (Alt. I) served this purpose. It was not carried forward as an alternative because Alternative J was very similar.

Four other benchmarks were developed that were variations of the above. These benchmark levels examined the costs and benefits of grizzly bear recovery, soil and water protection, diversity, and visual management. Details are included in Appendix B, Section VI.

3. Benchmark Analysis

No Changes occurred between the Draft and Final EIS.

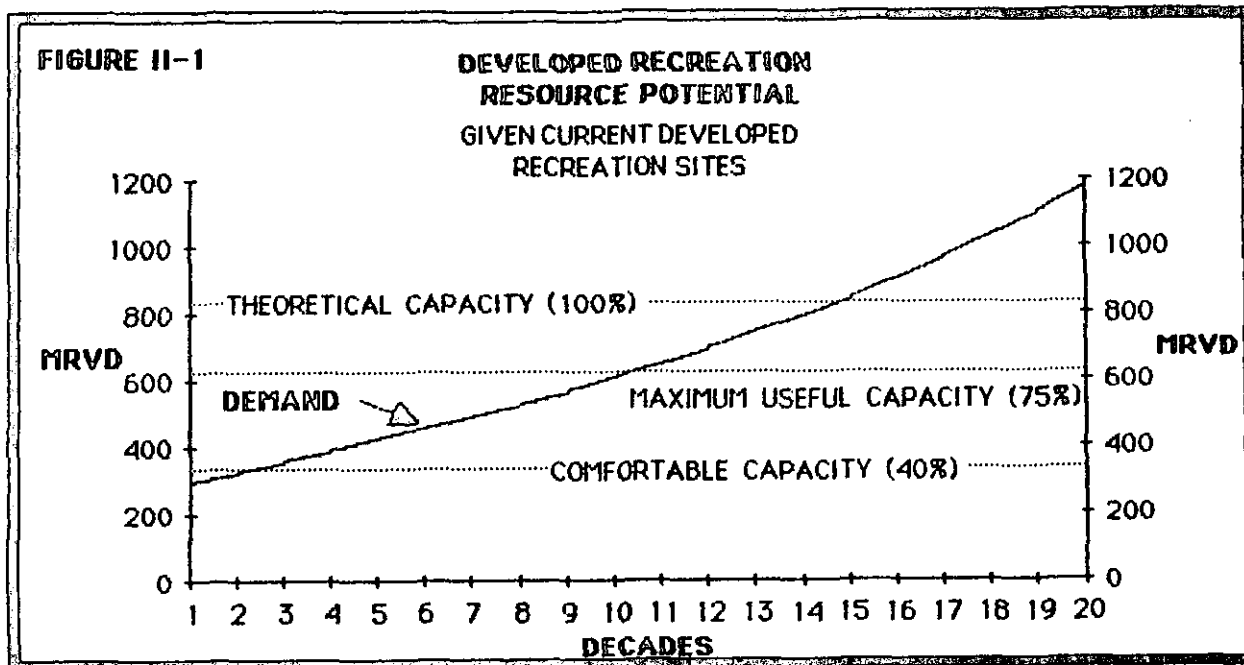
Analysis of the benchmarks established upper and lower potential production levels for selected resources. Additional analysis was done to estimate projected use levels (More detailed information can be found in Appendix B and in Chapter 3, Section B). The following resources were analyzed.

a. Recreation (Total)

The Kootenai's total recreation use in 1984 was 873,000 Recreation Visitor Days (RVDs) spanning most classes of the Recreation Opportunity Spectrum (ROS). They classes include: Primitive or Wilderness (P), Semi-primitive Nonmotorized (SPNM), and Semi-primitive Motorized (SPM). Roaded Natural-Appearing (RNA), and Rural (R) were combined for ease of discussion. There is no "Urban" class of use on the Forest.

b. Developed Recreation

Developed recreation use in 1984 was 297,000 RVDs. The existing developed recreation sites, including campgrounds, boating sites, picnic sites, and ski areas have a total physical capacity of about 831,000 RVDs. Normally use beyond 40 percent of the physical capacity (332,000 RVDs) will degrade the type of experience that users expect. Demand is expected to reach 332,000 RVDs during the third decade. By increasing management intensity (more garbage collection, more law enforcement etc.) use can probably be accommodated up to about 75 percent of physical capacity (623,000 RVDs). Demand is expected to reach 623,000 RVDs during the eleventh decade.



c. Roaded Natural Recreation

Roaded recreation use in 1984 was 435,000 RVDs, and is projected to reach 614,000 in the fifth decade. Roaded recreation capacity varies by alternative, but all alternatives are expected to meet anticipated use for at least the next 100 years. The quality of hunting and fishing, camping and picnicking, or driving for pleasure can decrease in some areas as the population increases and some areas require road closures for various reasons or the existing visual quality changes because of timber harvesting.

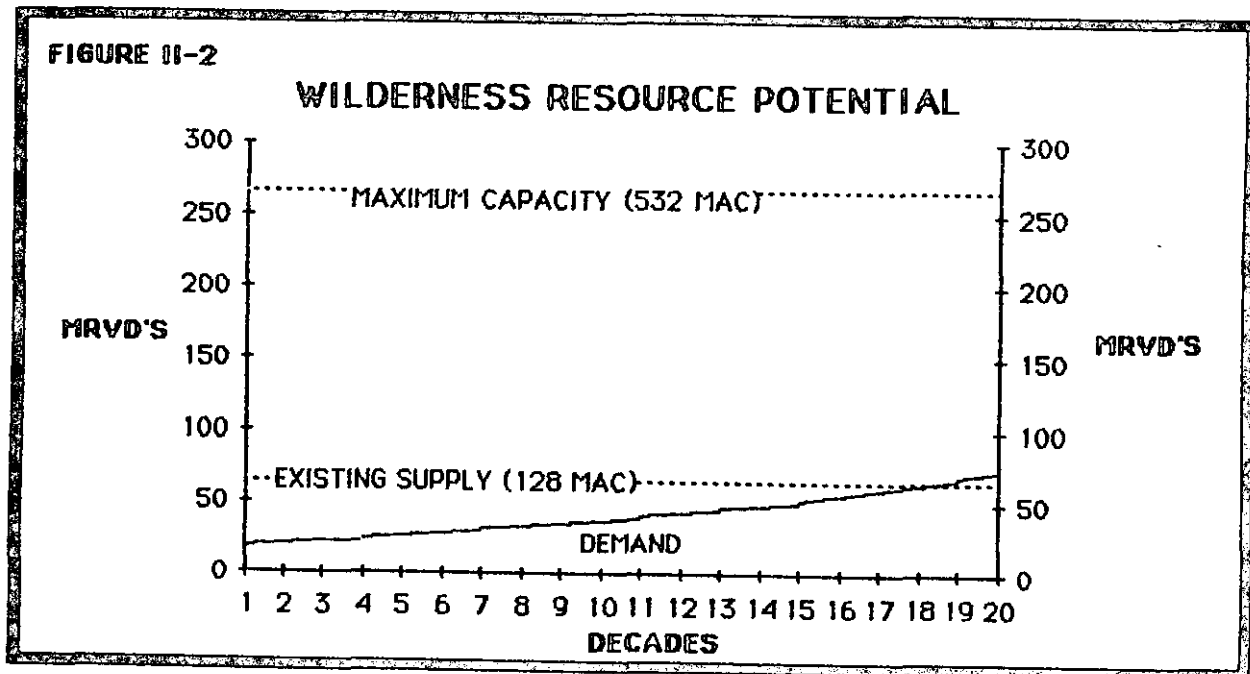
d. Semi-primitive Non-motorized and Primitive Recreation

1984 use was 47,000 RVDs. Projected use in this combined ROS category is 66,000 RVDs in the fifth decade and can be met on 132,000 acres of roadless areas if use could be uniformly distributed. Designation below this level will reduce the quality of experience in roadless areas, shift some use to wilderness areas and displace users to other Forests. The Forest currently has 404,000 acres of inventoried roadless areas.

e. Wilderness Recreation

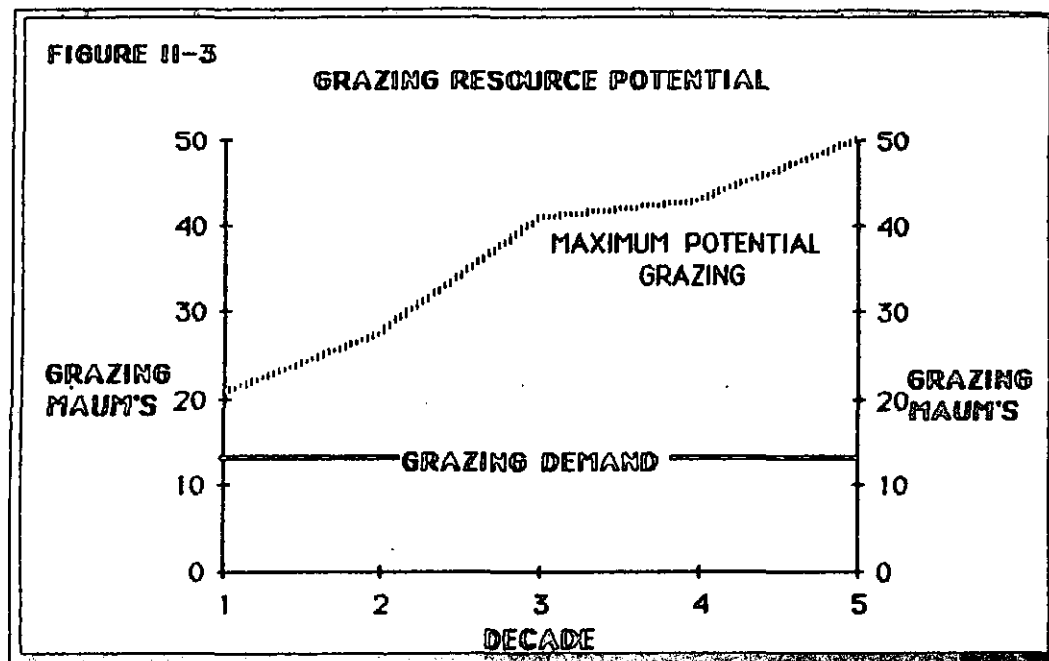
1984 use was 18,000 RVDs and is projected to reach 25,000 RVDs by the fifth decade. Fifth decade projections would require approximately 50,000 acres of wilderness to satisfy, if use could be uniformly distributed. The existing Cabinet Mountain Wilderness contains 94,000 acres and, since use is not uniformly distributed, shows evidence of overuse in specific areas.

The Forest currently has 94,000 acres of wilderness which has a capacity of 47,000 RVDs of wilderness recreation, indicating that current demand is below existing supply if use was distributed uniformly. The Forest has approximately 438,000 acres of potential wilderness which includes the 404,000 acres of inventoried roadless area plus the 34,000-acre Ten Lakes Montana Wilderness Study Area. In the Wilderness Benchmark (Alt. H), all of the above 438,000 acres were assigned a wilderness prescription which resulted in a 219,000 RVD capacity. This potential capacity plus the existing wilderness will provide a total capacity of 266,000 RVDs. Figure II-2 shows the relationship of current capacity, maximum capacity and projected use of wilderness recreation.



f. Livestock Range

The capacity of suitable transitory rangeland to support livestock exceeds current and future demand. The Forest currently (1980) permits livestock grazing in the amount of 12,600 animal unit months per year. Suggested demand levels in the Northern Regional Guide were estimated to reach 20,000 AUMs by the year 2030. Due primarily to considerations of winter weather and other costly problems, the Forest is not likely to see demand for grazing exceed current (1980) levels. The Forest has the capacity to exceed current levels and the suggested demand levels in the Northern Region Guide., as shown in Figure II-3.



g. Elk Habitat

Elk habitat carrying capacity can be increased over current levels. The Forest contains habitat to support more than the present population levels of approximately 5,500 elk (1983). By the end of the third decade, the Forest could provide habitat to allow existing elk herds to increase to about 9,900 animals as displayed in the wildlife benchmark (Alt. F). The goal suggested in the Northern Regional Guide is to provide habitat to allow for a 16 percent increase in herd levels by the year 2000. The Current Direction Benchmark provides for the smallest increase in herd size which still exceeds the Regional goal.

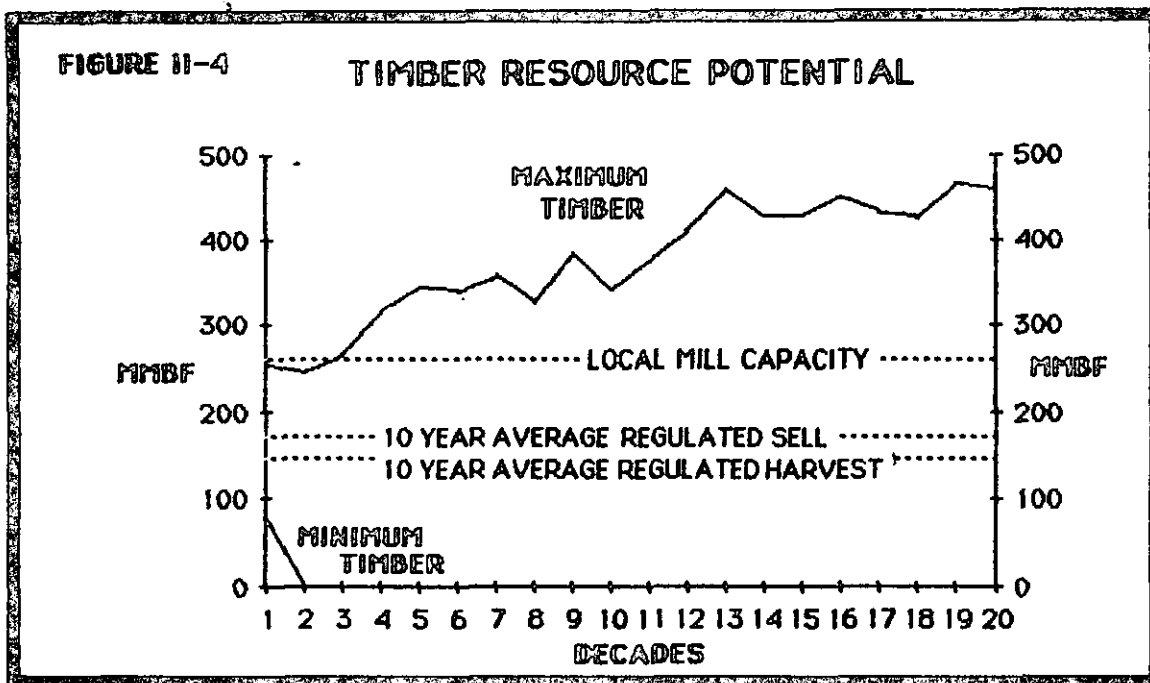
h. Fisheries

The productivity of trout populations is dependent upon the quality of stream, lake, and river habitats. Presently the Forest stream habitats are estimated to have the potential to produce approximately 205,000 two-year-old smolts (migratories) for major river and lake fisheries. The current trout population for all the streams, rivers and lakes is estimated to be 1,016,000 catchable-size fish.

The Minimum Level Benchmark represents the maximum trout production of 1,101,000 catchable-size trout by the end of the fifth decade. The Maximum Timber Benchmark represents the lowest benchmark fish population level of 961,000 trout by the end of the fifth decade.

i. Timber

The land base tentatively suitable for timber production is 1,788,000 acres as shown in the Timber Benchmark (Alt. L) and has the capacity to meet RPA targets for the next 50 years. In the Minimum Level Benchmark only the volume currently under contract is harvested. The maximum timber potential is represented by the Timber Benchmark (Alt. L) shown in Figure II-4. The long-term sustained yield of Alt. L is 455 MMBF/year.



The local area (Lincoln and Sanders Counties) mill capacity is approximately 260 million board feet annually. Over the last ten years (1974 - 1983) the Forest has sold an average of 170 MMBF per year of regulated timber plus 28 MMBF per year of dead trees, pulp, posts, poles and other products. About 53% of this volume (1980) was processed in Lincoln and Sanders Counties. Inventories of uncut Federal timber have increased substantially over the past several years due to depressed lumber markets. By 1983 the volume under contract was about 828 MMBF. On October 1, 1986, the volume under contract was 588 MMBF as a result of the Timber Buyback and an improved lumber market situation.

j. Present Net Value (PNV)

The maximum PNV attainable from the Forest is \$1,163,000,000 as defined by the PNV Benchmark (Alt. M) which meets minimum management requirements, precludes timber management from the existing wilderness, wilderness study area, campgrounds, and ranger stations, and allows a limited departure from non-declining yield.

k. Discounted Cost

The minimum discounted cost (4%) of \$196,000,000 over the 200 year analysis period is represented by the Minimum Level Benchmark.

1. Employment

Local KNF-related private sector employment was 1,666 jobs in 1980. In decade one, KNF-related private sector employment ranges from a potential 2,727 jobs with the Timber Benchmark (Alt. L) to a potential 2,006 jobs in the Wildlife Benchmark (Alt. F). In Decade 2, the minimum level benchmark potential drops to 797 jobs.

4. Range of Alternatives

No Changes occurred between the Draft and Final EIS

The benchmarks presented in the previous section were used to develop alternatives that represent a range of resource outputs. For example, the PNV and Minimum Level Benchmarks show that the allowable timber sale quantity (regulated) can range from a minimum of zero to 262 MMBF per year in Decade 1. Alternatives were then designed to span the benchmark range. The PNV Benchmark was used to determine the opportunity cost of meeting alternative objectives and provided a basis for changing objectives to maximize PNV while still meeting the minimum management requirements.

The benchmark analysis also aided in addressing the broad range of public issues and management concerns. There are six major issues and concerns that are addressed: (1) timber production and its associated road building, (2) wilderness and roadless areas, (3) wildlife and fish production, including managing for the recovery of the grizzly bear, (4) local economic impacts, (5) visual quality protection, and (6) minerals and oil/gas exploration accessibility.

Each alternative considered was formulated so that multiple resource use occurs. Each alternative harvests timber, builds roads, provides security and forage for elk and grizzly bear, provides a diversity of recreation opportunities including wilderness opportunities, protects wildlife, soil, and watersheds, etc. The difference among alternatives and how each alternative responds to the issues and concerns is reflected in the amount and emphasis placed on the individual resources.

The range of alternatives goes from emphasizing resources that are priced and have market outputs such as timber to emphasizing the nonmarket outputs such as the quality of the visual resource and wilderness experiences. There was considerable effort to develop feasible solutions that have a variety of mixes, as well as considering the roadless area proposed for wilderness, roadless or other resources management. One alternative is designed to meet the Resource Planning Act (RPA) goals identified in the Regional Guide (Alternative D).

Details concerning the development of the alternatives are provided in Appendix B, Section VII.

a. Adequate Range of Alternatives

An adequate range of alternatives was developed by first formulating the alternatives that were required by regulation or policy, including: one that maximized timber production and most market opportunities (Alternative L), one alternative that reflected the current program (Alternative I), one that recommended wilderness classification for all roadless lands (Alternative H), one that recommended no additional wilderness classification (Alternative A), and one that recommended wilderness classification for a substantial portion of the roadless areas while providing commodity production on the remainder of the Forest (Alternative G).

These alternatives were then examined to determine where they fit in the range of outputs expressed by the benchmarks, and how they responded to the issues.

Additional alternatives were then developed that responded in different ways to the wilderness issue (Alternatives B, C, and E). Other alternatives considered a departure from nondeclining timber harvest flow (Alternatives K and N) while others considered the maximum production of big game (Alternative F), the protection of visual quality and roadless areas (Alternative O) and the maximum provision for present net value (Alternative M). These alternatives including the one designed to meet RPA targets (Alternative D) and a proposed plan (Alternative J) helped to complete the range of alternatives. The Final Plan (Alternative JF) is a variation of Alternative J and was modified as a result of the Public response on the Draft EIS. All of the alternatives considered are implementable options for management of the Kootenai National Forest.

The 15 alternatives plus the Final Plan were tested against the benchmark capacities in order to determine if a sufficient range had been provided to respond to major issues. The comparison is shown in Figures II-5 to II-16 and in section D of this Chapter.

FIGURE II-5

TIMBER HARVEST IN THE FIRST DECADE
(LIVE GREEN VOLUME ONLY)

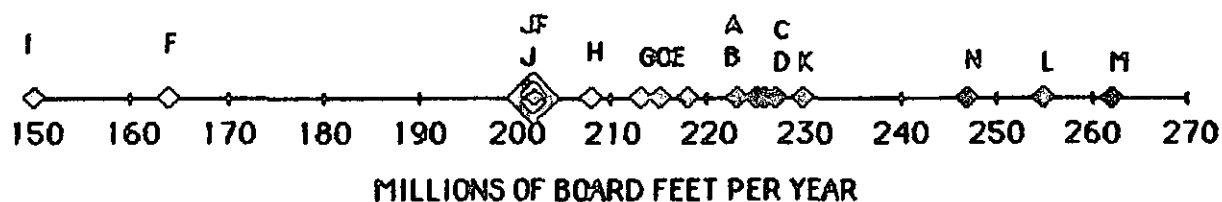


FIGURE II-6

SUITABLE TIMBERLAND

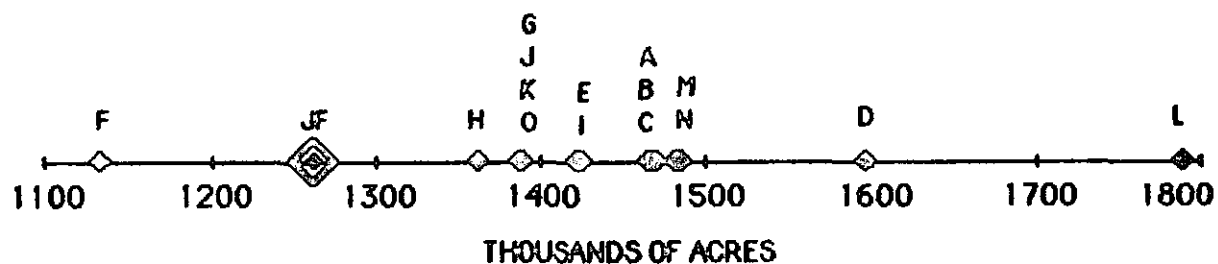


FIGURE II-7

NEW ROAD CONSTRUCTION NEEDED
(After January 1, 1984)

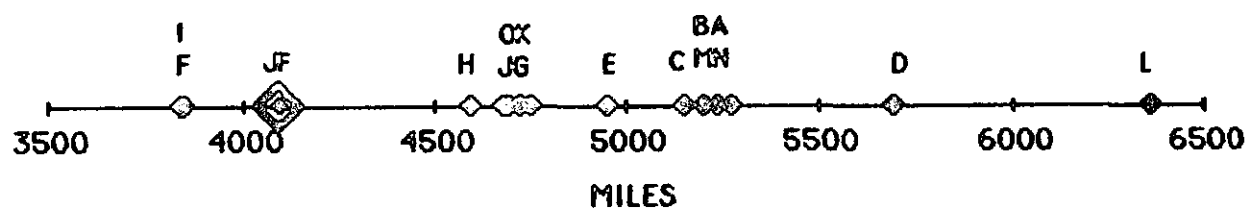


FIGURE 11-8

WILDERNESS RECOMMENDATIONS

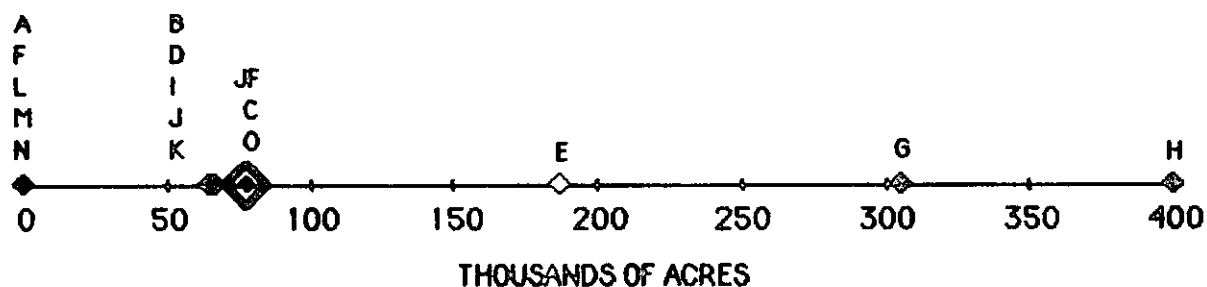


FIGURE 11-9

ROADLESS DESIGNATIONS IN INVENTORIED ROADLESS AREAS

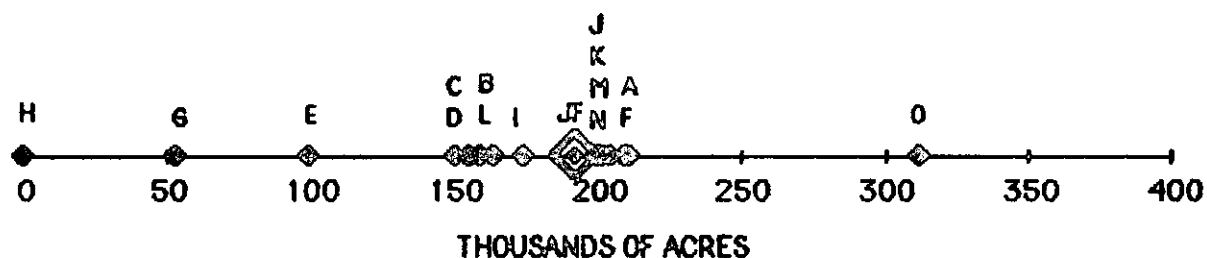


FIGURE 11-10

TOTAL ROADLESS RECREATION OPPORTUNITY

Includes Existing and Recommended Wilderness, Wilderness
Study Area and Roadless Designations

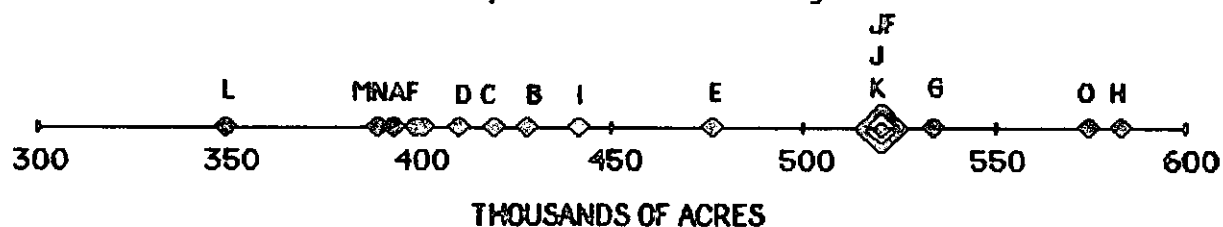


FIGURE II-11

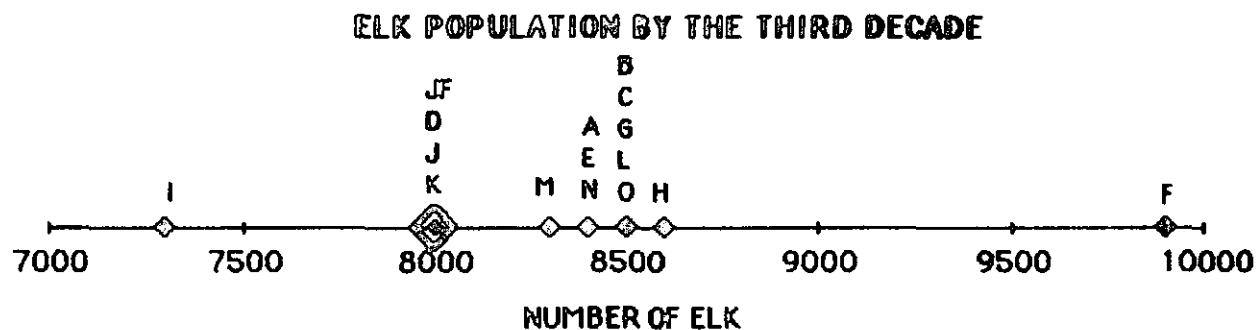


FIGURE II-12

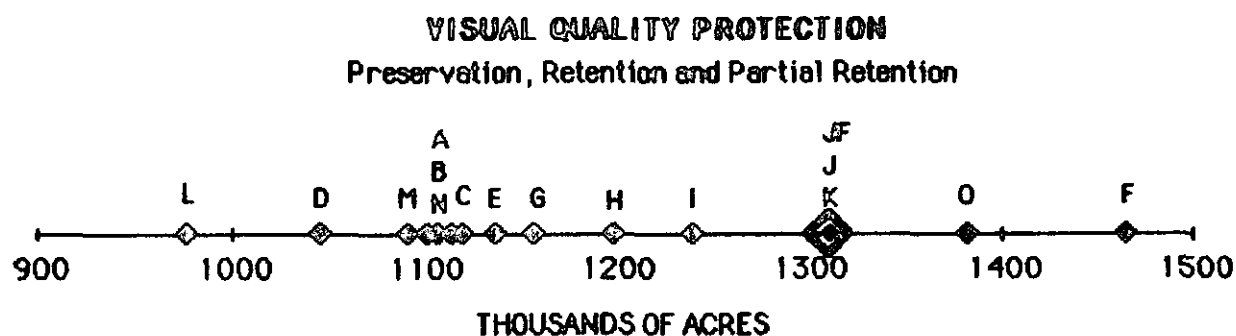


FIGURE II-13

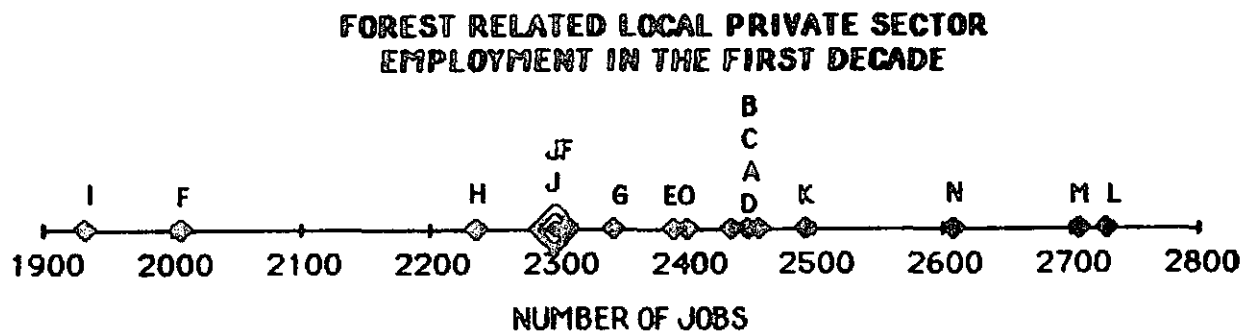


FIGURE II-14

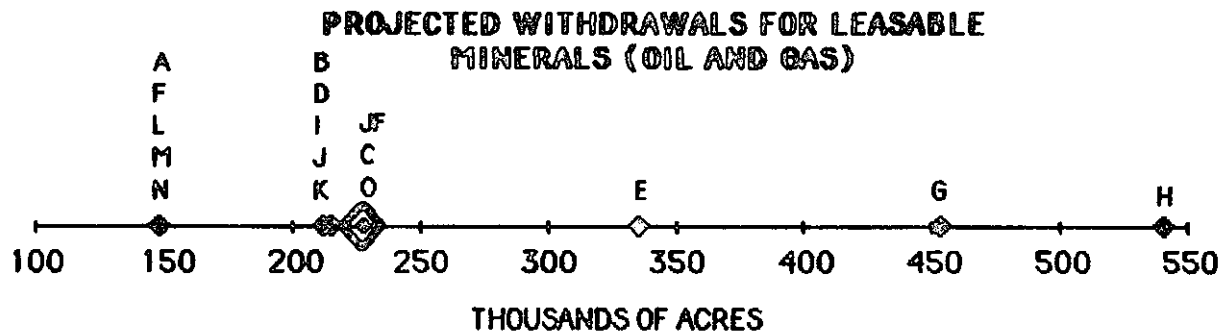


FIGURE II-15

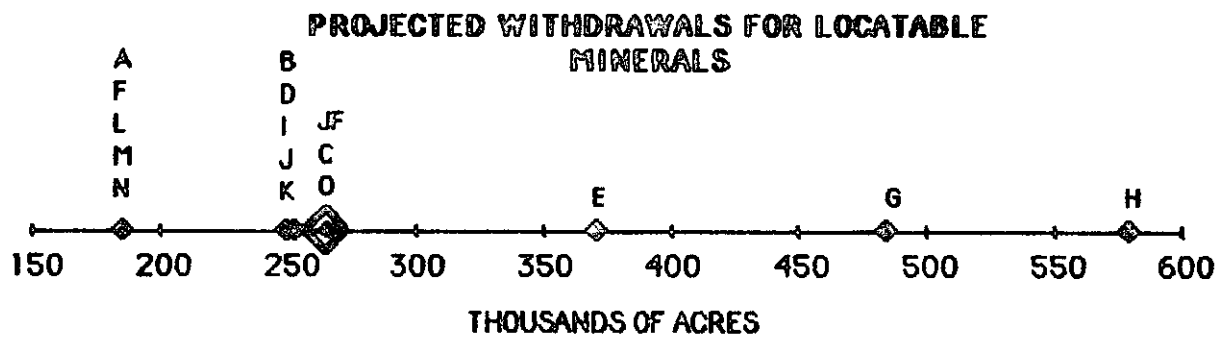
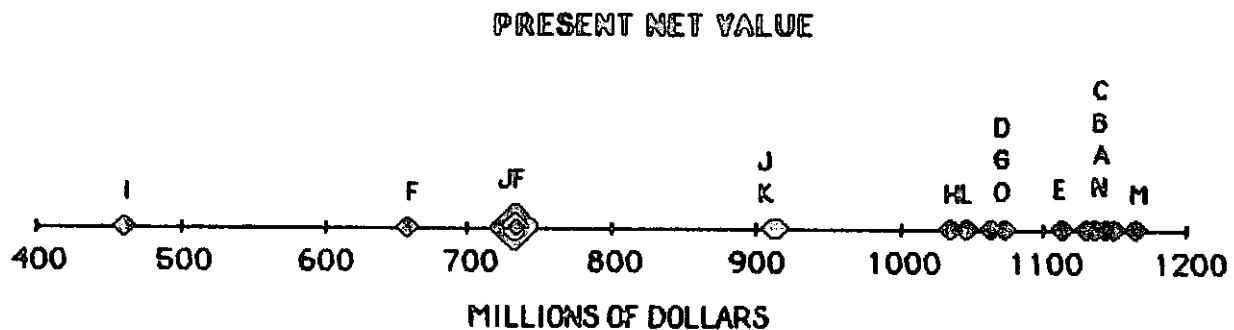


FIGURE II-16



The analysis comparing the alternatives to the benchmarks showed that there is an adequate range of resource outputs. Timber harvest volumes reflect a range that produces timber at 262 MMBF in the first decade compared to the average regulated sell level of 170 MMBF for the last 10 years (1974-83). The low end of the range is 150 MMBF, which is similar to the average historic regulated harvest of 148 MMBF.

Road construction ranges from a maximum total road system of 9,840 to 12,360 miles. This is 3,840 and 6,360 miles, respectively, of new roads in addition to the 6,000 miles existing in 1984.

Wilderness recommendations span the entire range from none to 404,000 acres which is the total inventoried roadless area. This compares to 64,000 acres recommended in the current direction (Alt. I) which reflects the RARE II wilderness recommendation.

Total roadless recreation opportunities (which includes wilderness and designated roadless areas) range from 349,000 to 583,000 acres or from 16% to 26% of the Forest, respectively. This is compared to 441,000 acres or 20% of the Forest in the current direction (Alt. I).

Habitat can be provided to support elk populations from approximately 7,000 to 9,900 elk by the third decade. This is compared to the existing elk herd of 5,500 animals in 1983 and the regional suggested goal of 6,400 elk by the year 2000.

Potential local Forest-related private sector jobs in the first decade can range from 1,931 to 2,727 jobs compared to 1,666 jobs in 1980.

Visual quality is provided in varying degrees from the low end of 976,000 acres in both "retention" and "partial retention" to 1,465,000 acres on the high end. This compares to 1,240,000 acres in the Current Direction (Alt. I).

Projected withdrawals for mineral and energy exploration range from the low end of 148,000 acres for leasable to 579,000 acres for locatable minerals. This compares to 212,000 and 249,000 acres, respectively, in the Current Direction (Alt. I).

Present net value ranges from \$460,000,000 to \$1,163,000,000.

b. Constraints Used to Develop Alternatives

Existing wilderness, wilderness study areas, campgrounds and ranger stations are maintained in all alternatives. Therefore, the primary focus of alternative discussions is on the 2.1 million acres of lands that are available for a variety of prescriptions.

Mitigation measures were incorporated in the management prescriptions, standards, and guidelines.

Minimum management requirements apply to all alternatives. These requirements include: (1) Openings created by management activities will generally be limited to 40 acres or less; (2) Water quality will be maintained such that state standards are met or exceeded; (3) Habitat for grizzly bear, and bald eagle shall be managed to provide for recovered populations; and (4) Sufficient old growth timber stands shall be managed to provide for at least minimum viable populations of old-growth dependent species. Additional minimum management requirements and discussion are found in Appendix B, Section VI.

Alternative constraints are described in detail in Appendix B, Section VII. In addition to the minimum management requirements, there is a common alternative constraint that applies to all the alternatives except K, N, and M. It is a nondeclining yield for timber outputs.

c. Alternatives Eliminated from Further Consideration

Two other alternatives, P and Q, which attempted some variations on recommended wilderness area boundaries were dropped because of their close similarity to Alternatives E and G. Alternative P added 314,000 acres of wilderness as opposed to Alternative G at 305,000 acres. Alternative Q recommended 127,000 acres, but Alternative E recommended 187,000 acres, and had a similar PNV and other resource outputs.

C. Description of Alternatives

Summary of Changes between Draft and Final EIS

The Proposed Forest Plan (Alt. J) was modified to resolve the concerns raised during the Public Review period and is presented in this section as Alternative JF. Alt. JF provides additional recommended wilderness and old-growth timber while retaining the same level of planned timber sale offerings with less road construction. (In addition, the Final Plan provides for an increase in timber sale offerings if significant increases occur in the demand for and the price of timber during the Plan period. Any increase in the Allowable Sale Quantity would require an amendment to the Forest Plan.) The 12,000 acres of additional recommended wilderness is in the Scotchman Peak Roadless Area on Pellick Ridge. The additional 36,000 acres of old-growth timber management is distributed throughout the Forest.

Some additional clarification for oil and gas leasing has been added to all the alternatives.

The 15 alternatives plus the Final Forest Plan (Alt. JF) which were considered in detail are described in the following section. Each alternative has a schedule of resource outputs and a table of economic data projected for 20 decades (Table II-24). Additional details are included in Appendix B, Section VII. Maps portraying the 15 original alternatives accompanied the Draft EIS and are available upon request.

1. Alternative A

The intent of this alternative is to provide the most cost efficient landbase for timber management. No additional wilderness is recommended in keeping with the intent of maximizing opportunities for timber management.

Roadless recreation is provided where timber management is not cost efficient. Other wildlife and fish production and visual quality protection receive less emphasis to provide timber management opportunities. This alternative in conjunction with Alternative H can serve as a baseline for evaluating wilderness tradeoffs.

Timber Production and Associated Road Construction: The suitable timber base is 1,470,000 acres which is 82% of the maximum 1,788,000 acres determined in the timber benchmark (Alt. L). The Plan period (first decade) allowable sale quantity (regulated) of 226 mmbf/yr. is 33% more than the 170 mmbf/yr. average sell for the last 10 years (1974-83) and will provide for a 53% increase over the last 10-year average regulated harvest level of 148 mmbf/yr. The sale schedule increases to 249 mmbf/yr. and 336 mmbf/yr. in the third and fifth decades, respectively.

New road construction necessary to manage the suitable timberlands will increase 15% in the first decade and require 269 miles/yr. compared to the 233 miles/yr. average for the last 5 years (1979-83). This would decrease to 123 miles/yr. in the third decade when the road system will be essentially completed and total 11,270 miles, the third largest road system of all the alternatives. This will be a net increase of 5,270 miles over the existing 6,000 miles in 1984.

Wilderness and Roadless Areas: No additions to the National Wilderness System are recommended. Approximately 211,000 acres or 52% of the 404,000 acres of inventoried roadless areas will be managed to remain in a roadless condition. These 211,000 acres are not cost efficient for timber management. The remaining 192,000 acres will generally be scheduled for timber harvest.

Total roadless recreation opportunities will be available on 399,000 acres which is approximately 18% of the Forest. This includes the 211,000 acres of inventoried roadless acres mentioned above plus the existing Cabinet Mountains Wilderness (94,000 acres), the Ten lakes MWSA (34,000 acres), and 60,000 acres of unsuitable timberlands that are located in scattered parcels of land outside of inventoried roadless areas.

Wildlife and Fish Production: The recovery of the grizzly bear is provided for in all Forest management activities that occur in identified grizzly habitat.

Elk habitat would be managed to provide for an eventual herd size of 8,400 animals, which is 85% of the 9,900 potential as determined in the wildlife benchmark (Alt. F). This increase is estimated to occur over a 30-year period and will require 5,110 miles of road closures to accomplish. This will be a net increase of 3,510 miles over the 1,600 closed miles in 1984. Beyond the third decade, timber harvest activities are at a level that maintains adequate hiding cover, but precludes any more significant increases in big game.

The total catchable trout population will decline approximately 5% over the next 40 years because of the additional road building. The migratory portion of the total trout population will decline the most (approximately 9%). After this period of decline, the population is expected to stabilize and improve, but not recover to current levels.

Local Economic Impacts: Potential Forest-related private sector job opportunities in the first decade could be 2,460 compared to the 1980 level of 1,670.

Return receipts to the State in the first decade could be \$5.9 million/yr., compared to \$2.7 million in 1980.

Visual Quality: Visual quality would be protected on 1,108,000 acres. On the remaining 1,138,000 acres, timber harvest openings and roads will be noticeable or dominate the landscape.

Minerals/Energy: 148,000 acres are projected for eventual withdrawal from oil and gas exploration; 185,000 acres are projected for eventual withdrawal from locatable mineral exploration, the lowest of all the alternatives.

New leases and subsequent lease reissuance will undergo additional analysis as required by NEPA, tiering to this EIS through incorporation by reference the information presented in this EIS. Special stipulations are used whenever the leased area has surface resource values needing special protection to meet the alternative management objectives.

Socio-economics: The present net value (PNV) is \$1,143,000,000 which is the third largest of all the alternatives. The budget during the first decade is \$27.2 million/yr.

2. Alternative B

The intent of this alternative is to display an historical perspective to the wilderness issue while simultaneously maximizing timber management options. The wilderness recommendations portray those endorsed by the Administration in RARE II (April 1979). Roadless recreation is provided where timber management is not cost efficient. Other wildlife and fish production and visual quality protection receive less emphasis to provide timber management opportunities.

Timber Production and Associated Road Construction: The suitable timber base is 1,464,000 acres which is 82% of the 1,788,000 acres determined in the timber benchmark (Alt. L). The Plan period (first decade) allowable sale quantity (regulated) of 223 mmbf/yr. is 31% more than the 170 mmbf/yr. average sell for the last 10 years (1974-83) and will provide for a 51% increase over the last 10-year average harvest level of 148 mmbf/yr.

The sale schedule increases to 247 mmbf/yr. and 333 mmbf/yr. in the third and fifth decades, respectively.

New road construction necessary to manage the suitable timberlands will increase 14% in the first decade and require 266 miles/yr. compared to the 233 miles/yr. average for the last 5 years (1979-83). This would decrease to 125 miles/yr. in the third decade when the road system will be essentially completed and total 11,200 miles, a net increase of 5,200 miles over the existing 6,000 miles in 1984.

Wilderness and Roadless Areas: Wilderness is recommended on 64,000 acres in two locations on the Kootenai National Forest, including Scotchman Peak (48,000 acres) and Cabinet Mountains Wilderness additions (16,000 acres). (An additional 22,000 acres of Scotchman is recommended for wilderness on the adjoining Idaho Panhandle National Forest for a total of 70,000 acres recommended for wilderness on Scotchman.)

In addition to the 64,000 acres of recommended wilderness, approximately 164,000 acres or 41% of the 404,000 acres of inventoried roadless area will be managed in a roadless condition. The remaining 176,000 acres will be scheduled for timber harvest or road building over the next 10-30 years.

Total roadless recreation opportunities will be available on 420,000 acres which is 19% of the Forest. This includes the 164,000 acres of inventoried roadless area and 64,000 acres of recommended wilderness mentioned above, plus the existing Cabinet Mountains Wilderness (94,000 acres), the Ten Lakes MWSA (34,000 acres), and 64,000 acres of unsuitable timberlands that are located in scattered parcels outside of inventoried roadless areas.

Wildlife and Fish Production: The recovery of the grizzly bear is provided for in all Forest management activities that occur in identified grizzly habitat.

Elk habitat would be managed to provide for an eventual herd size of 8,500, which is 86% of the 9,900 potential as determined in the wildlife benchmark (Alt. F). This increase is estimated to occur over a 30-year period and will require 5,110 miles of road closure to accomplish. This will be an increase of 3,500 miles over the 1,600 closed miles in 1984. Beyond the third decade, timber harvest activities are at a level that maintains adequate hiding cover but precludes any more significant increase in big game.

The total catchable trout population will decline approximately 5% over the next 40 years because of the additional road building. The migratory fish portion of the total trout population will decline the most (approximately 9%). After this period of decline the population is expected to stabilize and improve, but not recover to current levels.

Local Economic Impacts: Potential Forest-related private sector job opportunities in the first decade could be 2,440 compared to the 1980 level of 1,670 jobs.

Return receipts to the State in the first decade could be \$5.7 million/yr. compared to \$2.7 million in 1980.

Visual Quality: Visual quality would be protected on 1,114,000 acres. On the remaining 1,132,000 acres, timber harvest openings and roads will be noticeable or dominate the landscape.

Minerals/Energy: 212,000 acres are projected for eventual withdrawal from oil and gas exploration; 249,000 acres are projected for eventual withdrawal from locatable mineral exploration.

New leases and subsequent lease reissuance will undergo additional analysis as required by NEPA, tiering to this EIS through incorporation by reference the information presented in this EIS. Special stipulations are used whenever the leased area has surface resource values needing special protection to meet the alternative management objectives.

Socio-economics: The present net value (PNV) is \$1,136,000,000. The budget during the first decade is \$27.0 million/yr.

3. Alternative C

The intent of this alternative is to display a wilderness recommendation similar to the Montana Wilderness Bill of June 1984, with some additions on contiguous areas in Idaho. Timber management options are maximized. Roadless recreation is provided where timber management is not cost efficient. Other wildlife and fish production and visual quality protection receive less emphasis to provide timber management opportunities. This alternative is similar to Alternative B in timber production. The significant difference is the location and amount of the recommended wilderness.

Timber Production and Associated Road Construction: The suitable timber base is 1,466,000 acres which is 82% of the 1,788,000 acres determined in the timber benchmark (Alt. L). The Plan period (first decade) allowable sale quantity (regulated) of 225 mmbf/yr is 32% more than the 170 mmbf/yr. average sell for the last 10 years (1974-83) and will provide for a 52% increase over the last 10-year average harvest level of 148 mmbf/yr.

The sale schedule increases to 250 mmbf/yr. and 331 mmbf/yr. in the third and fifth decades, respectively.

New road construction necessary to manage the suitable timberlands will increase 15% in the first decade and require 268 miles/yr. compared to the 233 miles/yr. average for the last 5 years (1979-83). This would decrease to 112 miles/yr. in the third decade when the road system will be essentially completed and total 11,150 miles, a net increase of 5,150 miles over the existing 6,000 miles in 1984.

Wilderness and Roadless Areas: Wilderness is recommended on 81,000 acres in five locations on the Kootenai National Forest, including Scotchman Peak (29,000 acres), and the Cabinet Mountains Wilderness additions (30,000 acres), Trout Creek (13,000 acres), Tuchuck (2,000 acres), and Ten Lakes (7,000 acres). (An additional 22,000 acres of Scotchman and 8,000 acres of Trout Creek are recommended for wilderness on the adjoining Idaho Panhandle National Forest, for a total of 51,000 acres for Scotchman and 21,000 acres for Trout Creek.)

The 7,000 acres of recommended wilderness in Ten Lakes are in addition to 26,000 acres recommended inside the original Ten Lakes MWSA for a total of 33,000 acres. For more detail on Ten Lakes, see the Ten Lakes Final Report and Proposal when it becomes available.

In addition to the 81,000 acres of recommended wilderness (excluding the Ten Lakes MWSA), approximately 151,000 acres or 37% of the 404,000 acres of inventoried roadless area will be managed in a roadless condition. The remaining 172,000 acres will be scheduled for timber harvest or other activities.

Total roadless recreation opportunities will be available on 419,000 acres which is 19% of the Forest. This includes the 151,000 acres of inventoried roadless area and 81,000 acres of recommended wilderness mentioned above plus the existing Cabinet Mountains Wilderness (94,000 acres), the Ten Lakes MWSA (34,000 acres), and 59,000 acres of unsuitable timberlands that are located in scattered parcels outside of inventoried roadless areas.

Wildlife and Fish Production: The recovery of the grizzly bear is provided for in all Forest management activities that occur in identified grizzly habitat.

Elk habitat would be managed to provide for an eventual herd size of 8,500, which is 86% of the 9,900 potential as determined in the wildlife benchmark (Alt. F). This increase is estimated to occur over a 30-year period and will require 5,120 miles of road closure to accomplish. This will be a net increase of 3,520 miles over the 1,600 closed miles in 1984. Beyond the third decade, timber harvest activities are at a level that maintains adequate hiding cover but precludes any more significant increases in big game.

Catchable trout populations will decline approximately 5% over the next 40 years because of the additional road building. The migratory fish portion of the population will decline the most (approximately 9%). After this period of decline the population is expected to stabilize and improve, but not recover to current levels.

Local Economic Impacts: Potential Forest-related private sector job opportunities in the first decade could be 2,450 compared to the 1980 level of 1,670 jobs.

Return receipts to the State in the first decade could be \$5.7 million/yr. compared to \$2.7 million in 1980.

Visual Quality: Visual quality would be protected on 1,120,000 acres. On the remaining 1,126,000 acres, timber harvest openings and roads will be noticeable or dominate the landscape.

Minerals/Energy: 228,000 acres are projected for eventual withdrawal from oil and gas exploration; 265,000 acres are projected for eventual withdrawal from locatable minerals.

New leases and subsequent lease reissuance will undergo additional analysis as required by NEPA, tiering to this EIS through incorporation by reference the information presented in this EIS. Special stipulations are used whenever the leased area has surface resource values needing special protection to meet the alternative management objectives.

Socio-economics: The present net value (PNV) is \$1,129,000,000. The budget during the first decade is \$27.1 million/yr.

4. Alternative D - RPA

The intent of this alternative is to meet or exceed the Resources Planning Act (RPA) goals assigned to the Kootenai Forest for timber, wilderness, and wildlife. The wilderness recommendations are similar to Alternative B which is the RARE II recommendation of April 1979. Visual quality protection receives less emphasis because there are no specified goals for this resource.

Timber Production and Associated Road Construction: The suitable timber base is the second highest of all the alternatives. It is 1,595,000 acres which is 89% of the 1,788,000 acres determined in the timber benchmark (Alt. L). The Plan period (first decade) allowable sale quantity (regulated) of 227 mmbf/yr is 33% more than the 170 mmbf/yr average sell for the last 10 years (1974-83) and will provide for a 53% increase over the last 10-year average harvest level of 148 mmbf/yr.

The sale schedule increases to 285 mmbf/yr. and 344 mmbf/yr. in the third and fifth decades, respectively. RPA timber goals for the Kootenai are 228 MMBF/yr annual sell in the first decade, going to 292 MMBF/yr. and 345 MMBF/yr. by the third and fifth decades, respectively.

New road construction necessary to manage the suitable timberlands will increase 15% in the first decade and require 267 miles/yr. compared to the 233 miles/yr. average for the last 5 years (1979-83). This would decrease to 166 miles/yr. in the third decade when the road system will be essentially completed and total 11,690 miles, a net increase of 5,690 miles over the existing 6,000 miles in 1984.

Wilderness and Roadless Areas: Wilderness is recommended on 64,000 acres in two locations on the Kootenai National Forest, similar to Alternative B, including Scotchman Peak (48,000 acres) and Cabinet Mountains Wilderness additions (16,000 acres). (An additional 22,000 acres of Scotchman is recommended for wilderness on the adjoining Idaho Panhandle National Forest for a total of 70,000 acres recommended for wilderness on Scotchman.)

In addition to the 64,000 acres of recommended wilderness, approximately 155,000 acres or 38% of the 404,000 acres of inventoried roadless area will be managed in a roadless condition. The remaining 187,000 acres will be scheduled for timber harvest or road building over the next 10-30 years.

Total roadless recreation opportunities will be available on 410,000 acres which is 18% of the Forest. This includes the 155,000 acres of inventoried roadless area and 64,000 acres of recommended wilderness mentioned above plus the existing Cabinet Mountains Wilderness (94,000 acres), the Ten Lakes MWSA (34,000 acres), and 63,000 acres of unsuitable timberlands that are located in scattered parcels outside of inventoried roadless areas.

Wildlife and Fish Production: The recovery of the grizzly bear is provided for in all Forest management activities that occur in identified grizzly habitat.

Elk habitat would be managed to provide for an eventual herd size of 8,000, which is 81% of the 9,900 potential as determined in the wildlife benchmark (Alt. F). This increase is estimated to occur over a 30-year period and will require 4,770 miles of road closure to accomplish. This will be a net increase of 3,170 miles over the 1,600 closed miles in 1984. Beyond the third decade, timber harvest activities are at a level that maintains adequate hiding cover but precludes any more significant increases in big game.

The total catchable trout population will decline approximately 7% in the next 30 years because of the additional road building. The migratory fish portion of the population will decline the most (approximately 11%). After this period of decline, the population is expected to stabilize and improve, but not recover to current levels.

Local Economic Impacts: Potential Forest-related private sector job opportunities in the first decade could be 2,460 compared to the 1980 level of 1,670 jobs.

Return receipts to the State in the first decade could be \$6.0 million/yr. compared to \$2.7 million in 1980.

Visual Quality: Visual quality would be protected on 1,046,000 acres. On the remaining 1,200,000 acres timber harvest openings and roads will be noticeable or dominate the landscape.

Minerals/Energy: 212,000 acres are projected for eventual withdrawal from oil and gas exploration; 249,000 acres are projected for eventual withdrawal from locatable mineral exploration, similar to Alternative B.

New leases and subsequent lease reissuance will undergo additional analysis as required by NEPA, tiering to this EIS through incorporation by reference the information presented in this EIS. Special stipulations are used whenever the leased area has surface resource values needing special protection to meet the alternative management objectives.

Socio-economics: The present net value (PNV) is \$1,064,000,000. The budget during the first decade will be \$26.9 million/yr.

5. Alternative E

The intent of this alternative is to exceed the RARE II and Montana wilderness proposals by recommending some large blocks of land as wilderness and wilderness additions, while still providing the most opportunity possible for timber management. Roadless recreation is provided where timber management is not cost efficient. Other wildlife and fish production and visual quality protection receive less emphasis to provide timber management opportunities outside the recommended wilderness areas.

Timber Production and Associated Road Construction: The suitable timber base is 1,425,000 acres which is 80% of the 1,788,000 acres determined in the timber benchmark (Alt. L). The Plan period (first decade) allowable sale quantity (regulated) of 218 mmbf/yr. is 28% more than the 170 mmbf/yr. average sell for the last 10 years (1974-83) and will provide for a 47% increase over the last 10-year average harvest level of 148 mmbf/yr.

The sale schedule increases to 238 mmbf/yr. and 323 mmbf/yr. in the third and fifth decades, respectively.

New road construction necessary to manage the suitable timberlands will increase 13% in the first decade and require 263 miles/yr. compared to the 233 miles/yr. average for the last 5 years (1979-83). This would decrease to 111 miles/yr. in the third decade when the road system will be essentially completed and total 10,950 miles, a net increase of 4,950 miles over the existing 6,000 miles in 1984.

Wilderness and Roadless Area: Wilderness is recommended on 187,000 acres, the third highest acreage, in six locations on the Kootenai National Forest, including Scotchman Peak (49,000 acres), the Cabinet Mountains Wilderness additions (68,000 acres), Trout Creek (24,000 acres), Roderick (20,000 acres), Galena (13,000 acres), and Cataract (12,000 acres). (An additional 22,000 acres of Scotchman is recommended for wilderness on the adjoining Idaho Panhandle National Forest for a total of 71,000 acres recommended for wilderness on Scotchman.)

In addition to the 187,000 acres of recommended wilderness, approximately 99,000 acres or 25% of the 404,000 acres of inventoried roadless area will be managed in a roadless condition. The remaining 118,000 acres will be scheduled for timber harvest or road building over the next 10-30 years.

Total roadless recreation opportunities will be available on 476,000 acres which is 21% of the Forest. This includes the 99,000 acres of inventoried roadless area and 187,000 acres of recommended wilderness mentioned above plus the existing Cabinet Mountains Wilderness (94,000 acres), the Ten Lakes MWSA (34,000 acres), and 63,000 acres of unsuitable timberlands that are located in scattered parcels outside of inventoried roadless areas.

Wildlife and Fish Production: The recovery of the grizzly bear is provided for in all Forest management activities that occur in identified grizzly habitat.

Elk habitat would be managed to provide for an eventual herd size of 8,400, which is 85% of the 9,900 potential as determined in the wildlife benchmark (Alt. F). This increase is estimated to occur over a 30-year period and will require 4,880 miles of road closure to accomplish. This will be a net increase of 3,280 miles over the 1,600 closed miles in 1984. Beyond the third decade timber harvest activities are at a level that maintains adequate hiding cover but precludes any more significant increases in big game.

The total catchable trout population will decline approximately 5% in the next 30 years because of the additional road building. The migratory fish portion of the population will decline the most (approximately 9%). After this period of decline, the population is expected to stabilize and improve, but not recover to current levels.

Local Economic Impacts: Potential Forest-related private sector job opportunities in the first decade can be 2,390 compared to the 1980 level of 1,670 jobs.

Return receipts to the State in the first decade can be \$5.7 million/yr. compared to \$2.7 million in 1980.

Visual Quality: Visual quality would be protected on 1,137,000 acres of sensitive lands (retention and partial retention). On the remaining 1,109,000 acres, timber harvest openings and roads will be noticeable or dominate the landscape.

Minerals/Energy: 335,000 acres are projected to be eventually withdrawn from oil and gas exploration; 371,000 acres are projected to be eventually withdrawn from locatable mineral exploration, the third highest of all the alternatives.

New leases and subsequent lease reissuance will undergo additional analysis as required by NEPA, tiering to this EIS through incorporation by reference the information presented in this EIS. Special stipulations are used whenever the leased area has surface resource values needing special protection to meet the alternative management objectives.

Socio-economics: The present net value (PNV) is \$1,113,000,000. The budget during the first decade will be \$26.4 million/yr.

6. Alternative F

The intent of this alternative is to provide significant big game (elk) habitat management opportunities. Elk production receives more emphasis than timber production and visual quality protection and no additional wilderness is recommended in order to provide elk management opportunities. This alternative provides the highest level of elk production.

Timber Production and Associated Road Construction: This alternative produces one of the lowest timber yields and requires one of the smallest road system of all the alternatives.

The suitable timber base is 1,132,000 acres which is 63% of the 1,788,000 acres determined in the timber benchmark (Alt. L). The Plan period (first decade) allowable sale quantity (regulated) of 164 mmbf/yr. is 4% less than the 170 mmbf/yr average sell for the last 10 years (1974-83) and would result in a 11% increase compared to the last 10-year average harvest level of 148 mmbf/yr.

The sale schedule increases to 190 mmbf/yr. and 198 mmbf/yr. in the third and fifth decades, respectively.

New road construction necessary to manage the suitable timberlands will decrease 13% in the first decade and require 202 miles/yr. compared to the 233 miles/yr. average for the last 5 years (1979-83). This would decrease to 103 miles/yr. in the third decade when the road system will be essentially completed and total 9,850 miles, a net increase of 3,850 miles over the existing 6,000 miles in 1984.

Wilderness and Roadless Areas: No additional wilderness is recommended to allow the maximum opportunity to manage elk habitat.

Approximately 209,000 acres or 52% of the 404,000 acres of inventoried roadless area will be managed in a roadless condition. The remaining 195,000 acres will be scheduled for timber harvest or other activities.

Total roadless recreation opportunities will be available on 401,000 acres which is 18% of the Forest. This includes the 209,000 acres of inventoried roadless area mentioned above plus the existing Cabinet Mountains Wilderness (94,000 acres), the Ten Lakes MWSA (34,000 acres), and 64,000 acres of unsuitable timberlands that are located in scattered parcels outside of inventoried roadless areas.

Wildlife and Fish Production: The recovery of the grizzly bear is provided for in all Forest management activities that occur in identified grizzly habitat.

Elk habitat would be managed to provide for an eventual herd size of 9,900, which is the highest of all the alternatives. This increase is estimated to occur over a 30-year period and will require 4,960 miles of road closure to accomplish. This will be a net increase of 3,360 miles over the 1,600 closed miles in 1984. Beyond the third decade, timber harvest activities are at a level that maintains adequate hiding cover but precludes any more significant increases in big game.

The total catchable trout population will decline approximately 5% over the next 40 years because of the continued road building. The migratory portion of the population will decline the most (approximately 8%). After this period of decline, the population is expected to stabilize and improve, but not recover to current levels.

Local Economic Impacts: Potential Forest-related private sector job opportunities in the first decade can be 2,010 compared to the 1980 level of 1,670 jobs.

Return receipts to the State in the first decade can be \$4.4 million/yr. compared to \$2.7 million in 1980.

Visual Quality: Visual quality would be protected on 1,465,000 acres, the highest of all the alternatives. On the remaining 781,000 acres, timber harvest openings and roads would be noticeable or dominate the landscape.

Minerals/Energy: 148,000 acres are projected to be eventually withdrawn from oil and gas exploration; 185,000 acres are projected to be eventually withdrawn from locatable mineral exploration. This is similar to Alternative A and one of the lowest of all the alternatives.

New leases and subsequent lease reissuance will undergo additional analysis as required by NEPA, tiering to this EIS through incorporation by reference the information presented in this EIS. Special stipulations are used whenever the leased area has surface resource values needing special protection to meet the alternative management objectives.

Socio-economics: The present net value (PNV) is \$658,000,000 which is the second lowest of all the alternatives. The budget during the first decade will be \$20.7 million/yr., the second lowest of all the alternatives.

7. Alternative G

The intent of this alternative is to recommend significant amounts of additional wilderness while providing a high level of timber production. Roadless recreation is provided where timber management is not cost efficient. Other wildlife and fish production and visual quality protection receive less emphasis to provide for timber management outside the recommended wilderness areas.

Timber Production and Associated Road Construction: The suitable timber base is 1,386,000 acres which is 78% of the 1,788,000 acres determined in the timber benchmark (Alt. L). The Plan period (first decade) allowable sale quantity (regulated) of 213 mmbf/yr. is 25% more than the 170 mmbf/yr. average sell for the last 10 years (1974-83) and will provide for a 44% increase over the last 10-year average harvest level of 148 mmbf/yr.

The sale schedule increases to 231 mmbf/yr. and 309 mmbf/yr. in the third and fifth decades, respectively.

New road construction necessary to manage the suitable timberlands will increase 8% in the first decade and require 251 miles/yr. compared to the 233 miles/yr. average for the last 5 years (1979-83). This would decrease to 109 miles/yr. in the third decade when the road system will be essentially completed and total 10,750 miles, a net increase of 4,750 miles over the existing 6,000 miles in 1984.

Wilderness and Roadless Areas: Wilderness is recommended on 305,000 acres, the second highest acreage, in 15 locations on the Kootenai National Forest, including Scotchman Peak (52,000 acres) and Cabinet Mountains Wilderness additions (83,000 acres), Trout Creek (30,000 acres), Roderick (25,000 acres), Galena (15,000 acres), Cataract (18,000 acres), Buckhorn Ridge (22,000 acres), Northwest Peaks (13,000 acres), plus seven other areas. (An additional 32,000 acres of Scotchman is recommended for wilderness on the adjoining Idaho Panhandle National Forest for a total of 84,000 acres recommended for wilderness on Scotchman.)

In addition to the 305,000 acres of recommended wilderness, approximately 53,000 acres or 13% of the 404,000 acres of inventoried roadless area will be managed in a roadless condition. The remaining 46,000 acres will be scheduled for timber harvest or other activities.

Total roadless recreation opportunities will be available on 534,000 acres which is 24% of the Forest and the second highest of all the alternatives. This includes the 53,000 acres of inventoried roadless area and 305,000 acres of recommended wilderness mentioned above plus the existing Cabinet Mountains Wilderness (94,000 acres), the Ten Lakes MWSA (34,000 acres), and 48,000 acres of unsuitable timberlands that are located in scattered parcels outside of inventoried roadless areas.

Wildlife and Fish Production: The recovery of the grizzly bear is provided for in all Forest management activities that occur in identified grizzly habitat.

Elk habitat would be managed to provide for an eventual herd size of 8,500, which is 86% of the 9,900 potential as determined in the wildlife benchmark (Alt. F). This increase is estimated to occur over a 30-year period and will require 4,780 miles of road closure to accomplish. This will be a net increase of 3,180 miles over the 1,600 closed miles in 1984. Beyond the third decade, timber harvest activities are at a level that maintains adequate hiding cover but precludes any more significant increase in big game.

The total catchable trout population will decline 5% in the next 30 years because of the additional road building. The migratory fish portion of the population will decline the most (approximately 9%). After this period of decline, the population is expected to stabilize and improve, but not recover to current levels.

Local Economic Impact: Potential Forest-related private sector job opportunities in the first decade could be 2,340 compared to the 1980 level of 1,670 jobs.

Return receipts to the State in the first decade could be \$5.7 million/yr. compared to \$2.7 million in 1980.

Visual Quality: Visual quality would be protected on 1,157,000 acres. On the remaining 1,089,000 acres, timber harvest openings and road construction would be noticeable or dominate the landscape.

Minerals/Energy: 453,000 acres are projected for eventual withdrawal from oil and gas exploration; 184,000 acres are projected for eventual withdrawal from locatable mineral exploration, the second highest of all the alternatives.

New leases and subsequent lease reissuance will undergo additional analysis as required by NEPA, tiering to this EIS through incorporation by reference the information presented in this EIS. Special stipulations are used whenever the leased area has surface resource values needing special protection to meet the alternative management objectives.

Socio-economics: The present net value (PNV) is \$1,073,000,000. The first decade budget is \$25.7 million/yr.

8. Alternative H

The intent of this alternative is to recommend the highest possible amount of wilderness while maintaining a high level of timber production. Roadless recreation is provided only where timber management is not cost efficient. Other wildlife and fish production and visual quality protection receive less emphasis to provide for timber management outside of recommended wilderness areas. This alternative can serve as a baseline for evaluating wilderness tradeoffs.

Timber Production and Associated Road Construction: The suitable timber base is 1,361,000 acres which is 76% of the 1,788,000 acres determined in the timber benchmark (Alt. L). The Plan period (first decade) allowable sale quantity (regulated) of 208 mmbf/yr. is 22% higher than the 170 mmbf/yr. average sell for the last 10 years (1974-83) and will provide for a 40% increase over the last 10-year average harvest level of 148 mmbf/yr.

The sale schedule increases to 223 mmbf/yr. and 294 mmbf/yr. in the third and fifth decades, respectively.

New road construction necessary to manage the suitable timberlands will increase 6% in the first decade and require 248 miles/yr. compared to the 233 miles/yr. average for the last 5 years (1979-83). This would decrease to 111 miles/yr. in the third decade when the road system will be essentially completed and total 10,590 miles, a net increase of 4,590 miles over the existing 6,000 miles in 1984. This alternative produces the third least miles of all the alternatives.

Wilderness and Roadless Areas: Wilderness is recommended on 404,000 acres, the highest acreage, in 27 locations on the Kootenai National Forest, including Scotchman Peak (52,000 acres) and Cabinet Mountains Wilderness additions (86,000 acres). (An additional 32,000 acres of Scotchman is recommended for wilderness on the adjoining Idaho Panhandle National Forest for a total of 84,000 acres recommended for wilderness on Scotchman.)

Total roadless recreation opportunities will be available on 583,000 acres which is 26% of the Forest and the highest of all the alternatives. This includes the 404,000 acres of recommended wilderness mentioned above plus the existing Cabinet Mountains Wilderness (94,000 acres), the Ten Lakes MWSA (34,000 acres), and 54,000 acres of unsuitable timberlands that are located in scattered parcels outside of inventoried roadless areas.

Wildlife and Fish Production: The recovery of the grizzly bear is provided for in all Forest management activities that occur in identified grizzly habitat.

Elk habitat would be managed to provide for an eventual herd size of 8,600, which is 87% of the 9,900 potential as determined in the wildlife benchmark (Alt. F). This increase is estimated to occur over a 30-year period and will require 4,730 miles of road closure to accomplish. This will be a net increase of 3,130 miles over the 1,600 closed miles in 1984. Beyond the third decade, timber harvest levels are at a level that maintains adequate hiding cover but precludes any more significant increase in big game.

The total catchable trout population will decline 7% in the next 30 years because of the additional road building. The migratory fish portion of the population will decline the most (approximately 11%). After this period of decline, the population is expected to stabilize and improve, but not recover to current levels.

Local Economic Impacts: Potential Forest-related private sector job opportunities in the first decade could be 2,240 compared to the 1980 level of 1,670 jobs.

Return receipts to the State in the first decade could be \$5.6 million/yr. compared to \$2.7 million in 1980.

Visual Quality: Visual quality would be protected on 1,199,000 acres. On the remaining 1,047,000 acres, timber harvest openings and roads would be noticeable or dominate the landscape.

Minerals/Energy: 540,000 acres are projected for eventual withdrawal from oil and gas exploration; 579,000 acres are projected for eventual withdrawal from locatable mineral exploration, the highest of all the alternatives.

New leases and subsequent lease reissuance will undergo additional analysis as required by NEPA, tiering to this EIS through incorporation by reference the information presented in this EIS. Special stipulations are used whenever the leased area has surface resource values needing special protection to meet the alternative management objectives.

Socio-economics: The present net value (PNV) is \$1,035,000,000. The first decade budget is \$25.1 million/yr., the third lowest of all the alternatives.

9. Alternative I (Current Direction)

The intent of this alternative is to display the direction that the Kootenai National Forest is currently following. This Current Direction is a composite of 25 separate land use plans completed over a six-year period. It has been updated to meet recovery goals for the grizzly bear and to provide wildlife diversity for old growth timber-dependent species. The budget is constrained to the average amount actually experienced during the 1980-82 period. The wilderness recommendations are those endorsed by the Administration in RARE II which are the same as Alternatives B and D. Visual quality protection is provided for in sensitive areas along major travel routes and around communities. This alternative can be used as a baseline to measure changes in all resources, costs and benefits and is referred to as the "No Action" or "No Change" alternative.

Timber Production and Associated Road Construction: The suitable timber base is 1,422,000 acres which is 80% of the 1,788,000 acres determined in the timber benchmark (Alt. L). The Plan period (first decade) allowable sale quantity (regulated) of 150 mmbf/yr. is 13% less than the 170 mmbf/yr. average sell for the last 10 years (1974-83) and will result in about the same harvest level as has been experienced over the last ten years (148 mmbf).

The sale schedule increases to 157 mmbf/yr. and 162 mmbf/yr. in the third and fifth decades, respectively.

New road construction necessary to manage the suitable timberlands will decrease 21% in the first decade and require 185 miles/yr., the lowest of all the alternatives. This is compared to the 233 miles/yr. average for the last 5 years (1979-83). This would decrease to 138 miles/yr. in the third decade when the road system will be essentially completed and total 9,840 miles, a net increase of 3,840 miles over the existing 6,000 miles in 1984.

Wilderness and Roadless Areas: Wilderness is recommended on 64,000 acres on the Kootenai National Forest, including Scotchman Peak (48,000 acres) and Cabinet Mountains Wilderness additions (16,000 acres). (An additional 22,000 acres of Scotchman is recommended for wilderness on the adjoining Idaho Panhandle National Forest for a total of 70,000 acres recommended for wilderness on Scotchman.)

In addition to the 64,000 acres of recommended wilderness, about 174,000 acres of inventoried roadless areas will be managed in a roadless condition. The remaining 166,000 acres will be scheduled for timber harvest or other activities.

Total roadless recreation opportunities will be available on 441,000 acres which is 20% of the Forest. This includes the 174,000 acres of inventoried roadless area and 64,000 acres of recommended wilderness acres mentioned above plus the existing Cabinet Mountain Wilderness (94,000 acres), the Ten Lakes MWSA (34,000 acres), and 76,000 acres of unsuitable timberlands that are located in scattered parcels outside of inventoried roadless areas.

Wildlife and Fish Production: The recovery of the grizzly bear is provided for in all Forest management activities that occur in identified grizzly habitat.

Elk habitat would be managed to provide for an eventual herd size of 7,300, which is 74% of the 9,900 potential as determined in the wildlife benchmark (Alt. F). This increase is estimated to occur over a 30-year period and will require 4,590 miles of road closure to accomplish, the second lowest of all the alternatives. This will be a net increase of 2,990 miles over the 1,600 closed miles in 1984. Beyond the third decade, timber harvest activities are at a level that maintains adequate hiding cover but precludes any more significant increase in big game.

The total catchable trout population will decline 4% in the next 30 years because of the additional road building. The migratory fish portion of the population will decline the most (approximately 12%). After this period of decline the population is expected to stabilize and improve, but not recover to current levels.

Local Economic Impacts: Potential Forest-related private sector job opportunities in the first decade can be 1,930 compared to the 1980 level of 1,670 jobs.

Return receipts to the State in the first decade could be \$2.3 million/yr. compared to \$2.7 million in 1980.

Visual Quality: Visual quality would be protected on 1,240,000 acres, fourth highest of all the alternatives. On the remaining 1,006,000 acres, timber harvest openings and roads would be noticeable or dominate the landscape.

Minerals/Energy: 212,000 acres are projected for eventual withdrawal from oil and gas exploration; 249,000 acres are projected for eventual withdrawal from locatable mineral exploration, which is similar to Alternatives B and D.

New leases and subsequent lease reissuance will undergo additional analysis as required by NEPA, tiering to this EIS through incorporation by reference the information presented in this EIS. Special stipulations are used whenever the leased area has surface resource values needing special protection to meet the alternative management objectives.

Existing oil and gas leases have been processed under the guidelines of the "Environmental Assessment on Oil and Gas Leasing on Nonwilderness Land" which is incorporated by reference to this EIS. This alternative allows for occupancy leasing opportunities for areas outside existing wilderness and wilderness recommended in the RARE II Final EIS.

Socio-economics: The present net value (PNV) is \$460,000,000, the lowest of all the alternatives. The first decade budget is \$19.6 million/yr., the lowest of all the alternatives.

10. Alternative J (Proposed Action as presented in the Draft EIS)

The intent of this alternative is to provide a combination of wilderness, roadless and timber management designations that provide for both stability and future options. Roadless designations are provided where timber management appears to be environmentally less desirable or not cost efficient. Other wildlife and fish production receive more emphasis to provide for a balanced multiple resource program. Visual quality protection is provided in sensitive areas such as along major travel routes and around communities and recreation sites. The total recommended wilderness acreage is similar to the RARE II proposal, but is significantly different in the location and amount of areas recommended.

Timber Production and Associated Road Construction: The suitable timber base is 1,386,000 acres which is 78% of the 1,788,000 acres determined in the timber benchmark (Alt. L). The Plan period (first decade) allowable sale quantity (regulated) of 202 mmbf/yr. is 19% greater than the 170 mmbf/yr. average sell for the last 10 years (1974-83). It will provide for a 36% increase over the last 10-year average harvest level of 148 mmbf/yr.

The sale schedule increases to 224 mmbf/yr. and 277 mmbf/yr. in the third and fifth decades, respectively.

New road construction necessary to manage the suitable timberlands will increase 5% in the first decade and require 244 miles/yr. compared to the 233 miles/yr. average for the last 5 years (1979-83). This would decrease to 97 miles/yr. in the third decade when the road system will be essentially completed and total 10,690 miles, a net increase of 4,690 miles over the existing 6,000 miles in 1984.

Wilderness and Roadless Areas. Wilderness is recommended on 67,000 acres on the Kootenai National Forest, including Scotchman Peak (24,000 acres) and Cabinet Mountains Wilderness additions (36,000 acres), and additions to the Ten Lakes Montana Wilderness Study Area (7,000 acres). (An additional 22,000 acres of Scotchman is recommended for wilderness on the adjoining Idaho Panhandle National Forest for a total of 46,000 acres recommended for wilderness on Scotchman.) The figure of 67,000 acres does not reflect the 26,000 acres within the Ten Lakes MWSA that Alternative J recommends for wilderness because of the area's Congressionally-designated status as a "wilderness study area"; because of this status, the acreage for the area was not included in the inventory done of roadless areas and is not included in the recommended totals. For more detail on the Ten Lakes MWSA, see the Ten Lakes Report and Proposal when available.

In addition to the 67,000 acres of recommended wilderness, approximately 202,000 acres or 50% of the 404,000 acres of inventoried roadless area will be managed in a roadless condition. The remaining 136,000 acres will be scheduled for timber harvest or other activities.

Total roadless recreation opportunities will be available on 518,000 acres which is 23% of the Forest. This includes the 202,000 acres of inventoried roadless area and 67,000 acres of recommended wilderness mentioned above plus the existing Cabinet Mountains Wilderness (94,000 acres), the Ten Lakes MWSA (34,000 acres), and 122,000 acres of unsuitable timberlands that are located in scattered parcels outside of inventoried roadless areas.

Wildlife and Fish Production: The recovery of the grizzly bear population is provided for in all Forest management activities that occur in identified grizzly habitat.

Elk habitat would be managed to provide for an eventual herd size of 8,000, which is 81% of the 9,900 potential as determined in the wildlife benchmark (Alt. F). This increase is estimated to occur over a 30-year period and will require 6,080 miles of road closure to accomplish. This will be a net increase of 4,480 miles over the 1,600 closed miles in 1984, and the most miles closed of all the alternatives. Beyond the third decade, timber harvest activities are at a level that maintains adequate hiding cover but precludes any more significant increase in big game.

The total catchable trout population will decline 5% in the next 40 years because of the additional road building. The migratory fish portion of the population will decline the most (approximately 9%). After this period of decline, the population is expected to stabilize and improve, but not recover to current levels.

Local Economic Impacts: Potential Forest-related private sector job opportunities in the first decade could be 2,300 compared to the 1980 level of 1,670 jobs.

Return receipts to the State in the first decade could be \$5.3 million/yr. compared to \$2.7 million in 1980.

Visual Quality: Visual quality would be protected on 1,311,000 acres, the third highest of all the alternatives. On the remaining 935,000 acres, timber harvest openings and roads would be noticeable or dominate the landscape.

Minerals/Energy: 215,000 acres are projected for eventual withdrawal from oil and gas exploration; 252,000 acres are projected for eventual withdrawal from locatable mineral exploration, the third lowest of all the alternatives.

New leases and subsequent lease reissuance will undergo additional analysis as required by NEPA, tiering to this EIS through incorporation by reference the information presented in this EIS. Special stipulations are used whenever the leased area has surface resource values needing special protection to meet the alternative management objectives.

Socio-economics: The present net value (PNV) is \$916,000,000. The first decade budget is \$25.2 million/yr.

10a. Alternative JF - (Final Plan)

The intent of this alternative is to provide a combination of wildlife, wilderness, roadless and timber management designations that provide for balance, economic stability and future options. Roadless designations are provided where timber management appears to be environmentally less desirable or not cost efficient. Other wildlife, especially old-growth timber dependent species, receive more emphasis to provide for a balanced multiple resource program. Increased emphasis is also placed on the protection of fish habitat and water quality. Visual quality protection is provided in sensitive areas such as along major travel routes and around communities and recreation sites. The recommended wilderness proposal is a combination of parts of the RARE II Final EIS and the June, 1984, Montana Wilderness Bill.

Timber Production and Associated Road Construction: The suitable timber base is 1,263,000 acres which is 71% of the 1,788,000 acres determined in the timber benchmark (Alt. L). This is a 9% decrease from Alt. J (123,000 acres) and is a result of designating land for old-growth timber dependent species. (The suitable acres could be increased if the demand for timber and its price rose significantly. See Appendix B for more details on the Montana Timber Supply analysis.)

The Plan period (first decade) regulated sell of live green timber is 202 mmbf/yr. which is no change from Alt. J. In addition 25 MMbf of dead lodgepole timber will be planned for harvest which is also no change from Alt. J. This will result in an allowable sale quantity of 227 MMbf which is 34% greater than the 170 mmbf/yr. average regulated sell for the 10-year period of 1974-83. It will provide for a 53% increase over the comparable 10-year average harvest level (regulated) of 148 mmbf/yr. This timber harvest level is a change from Alt. J. in definition only. The total Programmed Sell level (regulated plus unregulated) is planned at 233 mmbf/yr. which is no change from Alt. J.

The regulated sale schedule increases to 227 mmbf/yr. and 234 mmbf/yr. in the third and fifth decades, respectively. This will be a 16% reduction in the fifth decade compared to Alt. J.

New road construction necessary to manage the suitable timberlands in the first decade will require 237 miles/yr. This would decrease to 140 miles/yr. in the second decade when the road system will be essentially completed and total 10,050 miles, a net increase of 3,850 miles over the existing 6,200 miles in January, 1986. This is a 640 mile reduction (6%) from Alt. J.

Wilderness and Roadless Areas: Wilderness is recommended on 79,000 acres. This provides 12,000 acres more than Alt. J; and includes Scotchman Peak (36,000 acres), the Cabinet Mountain Wilderness Additions (36,000 acres), and additions to the Ten Lakes Montana Wilderness Study Area (7,000 acres).

NOTE: An additional 22,000 acres of Scotchman Peak is recommended for wilderness on the adjoining Idaho Panhandle National Forest for a total wilderness recommendation of 58,000 acres within the Scotchman Peak Area.

NOTE: The total figure of 79,000 acres does not reflect the 26,000 acres of additional wilderness recommended within the Ten Lakes MWSA. This is because of the area's Congressionally-designated status as a Wilderness Study Area. The recommendation within the 34,200 acre area is for 26,000 acres of wilderness and 8,200 acres of non-wilderness. The 26,000 acres recommended wilderness inside the Ten Lakes MWSA and the 7,000 acres outside and adjacent would result in a total recommended wilderness of 33,000 acres for the overall Ten Lakes Area. For more detail on the Ten Lakes MWSA, see the Ten Lakes Final Report and Proposal when available.

In addition to the 79,000 acres of recommended wilderness, approximately 193,000 acres or 48% of the 404,000 acres of inventoried roadless area will be managed in a roadless condition. The remaining 132,000 acres will be scheduled for timber harvest or other activities. This is similar to Alt. J.

Total roadless recreation opportunities will be available on 521,000 acres which is 23% of the Forest. This includes the 192,000 acres of inventoried roadless area and 79,000 acres of recommended wilderness mentioned above plus the existing Cabinet Mountains Wilderness (94,000 acres), the Ten Lakes MWSA (34,000 acres), and 122,000 acres of unsuitable timberlands that are located in scattered parcels outside of inventoried roadless areas. This is similar to Alt. J.

Wildlife and Fish Production: The recovery of the grizzly bear population is provided for in all Forest management activities that occur in identified grizzly habitat and the U.S. Fish and Wildlife Service has issued a non-jeopardy opinion on this Final Forest Plan.

The Forest would be managed to provide for habitat to support a potential herd size of 8,000 elk, which is 81% of the 9,900 potential as determined in the wildlife benchmark (Alt. F) and no change from Alt. J. This increase is estimated to occur over a 30-year period and will require 5,730 miles of road closure to accomplish. This will be a net increase of 4,130 miles over the 1,600 closed miles in 1984, and no change from the Proposed Plan (Alt. J) in the proportion of total roads closed (57%). The balance between timber harvest activity and elk habitat security will remain constant beyond the third decade.

The total projected catchable trout population will decline 5% in the next 40 years because of the calculated additional road building. The migratory fish portion of the population is projected to decline the most (approximately 9%). After this period of decline, the population is projected to stabilize and improve. This is the same as projected for the Proposed Plan (Alt. J) but the statistical reliability of the projections are unknown. Because of the low certainty of the projected fish losses, stronger measures for the protection of water quality have been incorporated within the Final Forest Plan to insure against a projected decline of this magnitude.

Local Economic Impacts: If the total Allowable Sale Quantity is harvested, the potential Forest-related private-sector job opportunities in the first decade could be 2,300 compared to the 1980 level of 1,670 jobs. This is the same as Alternative J.

Return receipts to the State in the first decade could be \$6.1 million/yr. compared to \$2.7 million in 1980. This is a 1% decrease from Alt. J and is due to the higher planned harvest of lodgepole pine which is a lower valued specie.

Visual Quality: Visual Quality would be protected on 1,311,000 acres, the highest of all the alternatives. On the remaining 935,000 acres, timber harvest openings and roads would be noticeable or dominate the landscape. This is similar to Alt. J.

Minerals/Energy: 227,000 acres are projected for eventual withdrawal from oil and gas exploration; 264,000 acres are projected for eventual withdrawal from locatable mineral exploration. This is a 5% increase from Alt. J and results directly from a 12,000 acre increase in the wilderness recommendation on Scotchman Peak.

New leases and subsequent lease reissuance will undergo additional analysis as required by NEPA, tiering to this EIS through incorporation by reference the information presented in this EIS. Special stipulations are used whenever the leased area has surface resource values needing special protection to meet the alternative management objectives.

Socio-economic: The present net value (PNV) is \$733,000,000. The first decade budget is \$19.2 million/yr., a decrease of \$1.1 million/yr or 5%, from Alt. J.

11. Alternative K - Departure

The intent of this alternative is to provide for an increase in timber harvest levels for the first two decades to more closely approach the RPA timber goals. This alternative is essentially the same as Alternative J except that a departure from non-declining sustained yield is allowed. Alternative J provides the base sale schedule for this departure alternative.

Timber Production and Associated Road Construction: The suitable timber base is 1,386,000 acres which is the same as Alternative J (Proposed Action). The Plan period (first decade) allowable sale schedule (regulated) of 230 mmbf/yr. is 35% more than the 170 mmbf/yr. average sell for the last 10 years (1974-83) and will provide for a 55% increase over the last 10-year average harvest level of 148 mmbf/yr.

The sale schedule decreases to 216 mmbf/yr. in the third decade, then increases to 271 mmbf/yr. in the fifth decade.

New road construction necessary to manage the suitable timberlands will increase 18% in the first decade and require 276 miles/yr. compared to the 233 miles/yr. average for the last 5 years (1979-83). This would decrease to 60 miles/yr. in the third decade when the road system will be essentially completed and total 10,720 miles. This is a net increase of 4,720 miles over the existing 6,000 miles in 1984 and similar to Alternative J.

Wilderness and Roadless Areas: Wilderness and roadless areas are the same as Alternative J.

Wildlife and Fish Production: The recovery of the grizzly bear is provided for, in a manner similar to that in Alternative J.

Elk habitat and road closures would be similar to Alternative J.

Changes in the catchable trout populations will be similar to Alt. J.

Local Economic Impacts: Potential Forest-related private sector job opportunities in the first decade could be 2,490 compared to the 1980 level of 1,670 jobs.

Return receipts to the State in the first decade could be \$6.1 million/yr. compared to \$2.7 million in 1980.

Visual Quality: Visual quality protection is the same as Alternative J (Proposed Action).

Minerals/Energy: Minerals and oil and gas accessibility and leasing information is the same as Alternative J (Proposed Action).

Socio-economics: The present net value (PNV is \$911,000,000. The first decade budget is \$27.5 million/yr.

12. Alternative L

The intent of this alternative is to provide for the highest possible timber yields over the 200 year analysis period. No additional wilderness is recommended to provide options for timber management. Roadless designations are provided where timber management is not cost efficient. Other wildlife and fish production and visual quality protection receive less emphasis to provide options for timber management. This alternative serves as a baseline for evaluating timber management tradeoffs.

Timber Production and Associated Road Construction: This alternative produces the highest long-term timber yields and the largest road system. The suitable timber base is 1,788,000 acres, the highest of all the alternatives. The Plan period (first decade) allowable sale quantity of 255 mmbf/yr. is the second highest of all the alternatives and is 50% more than the 170 mmbf/yr. average sell for the last 10 years (1974-83). It will provide for a 72% increase over the last 10-year average harvest level of 148 mmbf/yr.

The sale schedule increases to 264 mmbf/yr. and 345 mmbf/yr. in the third and fifth decades, respectively.

New road construction necessary to manage the suitable timberlands will increase 33% in the first decade and will require 310 miles/yr. compared to the 233 miles/yr. average for the last 5 years (1979-83). This would decrease to 187 miles/yr. in the third decade when the road system will be essentially completed and total 12,360 miles, a net increase of 6,360 miles over the existing 6,000 miles in 1984.

Wilderness and Roadless Areas: No additional wilderness is recommended to provide options for timber management.

Approximately 159,000 acres or 39% of the 404,000 acres of inventoried roadless area will be managed in a roadless condition. The remaining 245,000 acres will be scheduled for timber harvest or other activities.

Total roadless recreation opportunities will be available on 349,000 acres which is 16% of the Forest. This includes the 159,000 acres of inventoried roadless area mentioned above plus the existing Cabinet Mountains Wilderness (94,000 acres), the Ten Lakes MWSA (34,000 acres), and 62,000 acres of unsuitable timberlands that are located in scattered parcels outside of inventoried roadless areas.

Wildlife and Fish Production: The recovery of the grizzly bear is provided for in all Forest management activities that occur in identified grizzly habitat.

Elk habitat would be managed to provide for an eventual herd size of 8,500, which is 86% of the 9,900 potential as determined in the wildlife benchmark (Alt. F). This increase is estimated to occur over a 30-year period and will require 5,690 miles of road closure to accomplish. This will be a net increase of 4,090 miles over the 1,600 closed miles in 1984. Beyond the third decade, timber harvest activities are at a level that maintains adequate hiding cover but precludes any more significant increase in big game.

The total catchable trout population will decline 5% in the next 40 years because of the additional road building. The migratory fish portion of the population will decline the most (approximately 9%). After this period of decline, the population is expected to stabilize but not improve.

Local Economic Impacts: Potential Forest-related private sector job opportunities in the first decade could be 2,730 compared to the 1980 level of 1,670 jobs, the highest of all the alternatives.

Return receipts to the State in the first decade could be \$6.5 million/yr. compared to \$2.7 million in 1980, the second highest of all the alternatives.

Visual Quality: Visual quality would be protected on 976,000 acres, the second lowest of all the alternatives. On the remaining 1,270,000 acres, timber harvest openings and roads would be noticeable or dominate the landscape.

Minerals/Energy: 148,000 acres are projected for eventual withdrawal from oil and gas exploration; 185,000 acres are projected for eventual withdrawal from locatable mineral exploration. This is similar to Alternatives A and F and the lowest of all the alternatives.

New leases and subsequent lease reissuance will undergo additional analysis as required by NEPA, tiering to this EIS through incorporation by reference the information presented in this EIS. Special stipulations are used whenever the leased area has surface resource values needing special protection to meet the alternative management objectives.

Socio-economics. The present net value (PNV) is \$1,046,000. The first decade budget is \$34.2 million/yr., the highest of all the alternatives.

13. Alternative M - PNV

The intent of this alternative is to provide for the highest possible present net value. Timber harvest levels are allowed to depart from non-declining sustained yield and no additional wilderness is recommended to provide options for increasing present net value. Roadless designations are provided where it provides the highest present net value. Other wildlife and fish production and visual quality protection receive less emphasis to provide high present net value. This alternative serves as a baseline to measure opportunity costs for all the other alternatives. Alternative A provides the base sale schedule for this departure alternative.

Timber Production and Associated Road Construction: The suitable timber base is the third highest of all the alternatives. It is 1,484,000 acres which is 83% of the 1,788,000 acres determined in the timber benchmark (Alt. L). The Plan period (first decade) allowable sale quantity (regulated) of 262 mmbf/yr. is the highest of all the alternatives and is 54% more than the 170 mmbf/yr. average sell for the last 10 years (1974-83). It will provide for a 77% increase over the last 10-year average harvest level of 148 mmbf/yr.

The sale schedule increases to 274 mmbf/yr. and 437 mmbf/yr. in the third and fifth decades, respectively.

New road construction necessary to manage the suitable timberlands will increase 35% in the first decade and require 315 miles/yr., the highest of all the alternatives, compared to the 233 miles/yr. average for the last 5 years (1979-83). This would decrease to 104 miles/yr. in the third decade when the road system will be essentially completed and total 11,230 miles, a net increase of 5,230 miles over the existing 6,000 miles in 1984.

Wilderness and Roadless Areas: No additional wilderness is recommended to provide options for higher present net value.

Approximately 200,000 acres or 50% of the 404,000 acres of inventoried roadless area will be managed in a roadless condition. The remaining 204,000 acres will be scheduled for timber harvest or other activities.

Total roadless recreation opportunities will be available on 389,000 acres which is 17% of the Forest. This includes the 200,000 acres of inventoried roadless area mentioned above plus the existing Cabinet Mountains Wilderness (94,000 acres), the Ten Lakes MWSA (34,000 acres), and 61,000 acres of unsuitable timberland that are located in scattered parcels outside of inventoried roadless areas.

Wildlife and Fish Production: The recovery of the grizzly bear is provided for in all Forest management activities that occur in identified grizzly habitat.

Elk habitat would be managed to provide for an eventual herd size of 8,300, which is 84% of the 9,900 potential as determined in the wildlife benchmark (Alt. F). This increase is estimated to occur over a 30-year period and will require 5,100 miles of road closure to accomplish. This will be a net increase of 3,500 miles over the 1,600 closed miles in 1984. Beyond the third decade, timber harvest activities are at a level that maintains adequate hiding cover but precludes any more significant increase in big game.

The total catchable trout population will decline 5% in the next 40 years because of the additional road building. The migratory fish portion of the population will decline the most (approximately 9%). After this period of decline, the population is expected to stabilize and improve, but not recover to current levels.

Local Economic Impacts: Potential Forest-related private sector job opportunities in the first decade could be 2,710 compared to the 1980 level of 1,670 jobs, the second highest of all the alternatives.

Return receipts to the State in the first decade could be \$7.0 million/yr. compared to \$2.7 million in 1980, the highest of all the alternatives.

Visual Quality: Visual quality would be protected on 1,092,000 acres, the third lowest of all the alternatives. On the remaining 1,154,000 acres, timber harvest openings and roads will be noticeable or dominate the landscape.

Minerals/Energy: 148,000 acres are projected to be eventually withdrawn from oil and gas exploration; 185,000 acres are projected to be withdrawn from locatable mineral exploration. This is similar to Alternatives A, F, and L and the lowest of all the alternatives.

New leases and subsequent lease reissuance will undergo additional analysis as required by NEPA, tiering to this EIS through incorporation by reference the information presented in this EIS. Special stipulations are used whenever the leased area has surface resource values needing special protection to meet the alternative management objectives.

Socio-economics: The present net value (PNV) is \$1,163,000,000 which is the highest of all the alternatives. The first decade budget is \$30.3 million/yr., the second highest of all the alternatives.

14. Alternative N

The intent of this alternative is to provide high timber harvest levels in the first decade. It is similar to Alternative A except that a limited departure from non-declining sustained yield is allowed. No additional wilderness is recommended to provide options for timber management. Roadless designations are provided where timber management is not cost efficient. Other wildlife and fish production and visual quality protection receive less emphasis to provide timber management options. Alternative A provides the base sale schedule for this departure alternative.

Timber Production and Associated Road Construction: The suitable timber base is the third highest of all the alternatives and similar to Alternative M. It is 1,481,000 acres which is 83% of the 1,788,000 acres determined in the timber benchmark (Alt. L). The Plan period (first decade) allowable sale quantity (regulated) of 247 mmbf/yr. is the third highest of all the alternatives and is 45% more than the 170 mmbf/yr. average sell for the last 10 years (1974-83). It will provide for a 67% increase over the last 10-year average harvest level of 148 mmbf/yr.

The sale schedule increases to 283 mmbf/yr. and 329 mmbf/yr. in the third and fifth decades, respectively. New road construction necessary to manage the suitable timberlands will increase 24% in the first decade and require 290 miles/yr. compared to the 233 miles/yr. average for the last 5 years (1979-84). This would decrease to 109 miles/yr. in the third decade when the road system will be essentially completed and total 11,270 miles. This is a net increase of 5,270 miles over the existing 6,000 miles in 1984 and the third largest road system, similar to Alternative A.

Wilderness and Roadless Areas: No additional wilderness is recommended to provide options for timber management.

Approximately 205,000 acres or 51% of the 404,000 acres of inventoried roadless area will be managed in a roadless condition. The remaining 199,000 acres will be scheduled for timber harvest or other activities.

Total roadless recreation opportunities will be available on 393,000 acres which is 18% of the Forest. This includes the 205,000 acres of inventoried roadless area mentioned above plus the existing Cabinet Mountains Wilderness (94,000 acres), the Ten Lakes MWSA (34,000 acres), and 60,000 acres of unsuitable timberlands that are located in scattered parcels outside of inventoried roadless areas.

Wildlife and Fish Production: The recovery of the grizzly bear is provided for in all Forest management activities that occur in identified grizzly habitat.

Elk habitat would be managed to provide for an eventual herd size of 8,400, which is 85% of the 9,900 potential as determined in the wildlife benchmark (Alt. F). This increase is estimated to occur over a 30-year period and will require 5,130 miles of road closure to accomplish. This will be a net

increase of 3,530 miles over the 1,600 closed miles in 1984. Beyond the third decade, timber harvest activities are at a level that maintains adequate hiding cover but precludes any more significant increase in big game.

The total catchable trout population will decline 5% in the next 40 years because of the additional road building. The migratory portion of the population will decline the most (approximately 9%). After this period of decline, the population is expected to stabilize and improve, but not recover to current levels.

Local Economic Impacts: Potential Forest-related private sector job opportunities in the first decade could be 2,610 compared to the 1980 level of 1,670 jobs, the third highest of all the alternatives.

Return receipts to the State in the first decade could be \$6.3 million/yr. compared to \$2.7 million in 1980, the second highest of all the alternatives and similar to Alternative L.

Visual Quality: Visual quality would be protected on 1,102,000 acres. On the remaining 1,144,000 acres, timber harvest openings and roads would be noticeable or dominate the landscape.

Minerals/Energy: 148,000 acres are projected for eventual withdrawal from oil and gas exploration; 185,000 acres are projected for eventual withdrawal from locatable mineral entry. This is similar to Alternatives A, F, L, and M and the lowest of all the alternatives.

New leases and subsequent lease reissuance will undergo additional analysis as required by NEPA, tiering to this EIS through incorporation by reference the information presented in this EIS. Special stipulations are used whenever the leased area has surface resource values needing special protection to meet the alternative management objectives.

Socio-economics: The present net value (PNV) is \$1,148,000,000 which is the second highest of all the alternatives. The first decade budget is \$29.1 million/yr., the third highest of all the alternatives.

15. Alternative 0

The intent of this alternative is to provide significant protection for roadless areas and visual quality. The wilderness recommendations are similar to the Montana Wilderness Bill (as in Alt. C) and roadless recreation is recommended for all the remaining inventoried roadless areas. Timber management receives less emphasis in order to meet the recommended visual quality goals in all areas outside of identified grizzly habitat. This alternative provides the highest level of visual quality and inventoried roadless area protection.

Timber Production and Associated Road Construction. The suitable timber base is similar to Alternatives G, J, and K. It is 1,389,000 acres which is 78% of the 1,788,000 acres determined in the timber benchmark (Alt. L). The Plan period (first decade) allowable sale quantity (regulated) of 215 mmbf/yr. is 26% more than the 170 mmbf/yr. average sell for the last 10 years (1974-83) and will provide for a 45% increase over the last 10-year average harvest level of 148 mmbf/yr.

The sale schedule increases to 263 mmbf/yr. and 320 mmbf/yr. in the third and fifth decades, respectively.

New road construction necessary to manage the suitable timberlands will increase 10% in the first decade and require 256 miles/yr. compared to the 233 miles/yr. average for the last 5 years (1979-84). This would decrease to 86 miles/yr. in the third decade when the road system will be essentially completed and total 10,680 miles. This is a net increase of 4,680 miles over the existing 6,000 miles in 1984.

Wilderness and Roadless Areas: This alternative achieves the highest protection of the inventoried roadless areas, similar to Alternative H. Wilderness is recommended on 81,000 acres in five locations on the Kootenai National Forest, including Scotchman Peak (29,000 acres), Cabinet Mountains Wilderness additions (30,000 acres), Trout Creek (13,000 acres), Tuchuck (2,000 acres), and Ten Lakes (7,000 acres). (An additional 22,000 acres of Scotchman and 8,000 acres of Trout Creek are recommended for wilderness on the adjoining Idaho Panhandle National Forest for a total of 51,000 acres recommended for wilderness on Scotchman and 21,000 acres for Trout Creek.)

The 7,000 acres of recommended wilderness in Ten Lakes are in addition to 26,000 additional acres inside the Ten Lakes MWSA for a total of 33,000 acres. (For more detail on Ten Lakes, see the Ten Lakes Final Report and Proposal when available.) In addition to the 81,000 acres of recommended wilderness, approximately 322,000 acres or the remaining 80% of the 404,000 acres of inventoried roadless area will be managed in a roadless condition.

Total roadless recreation opportunities will be available on 574,000 acres which is 26% of the Forest and the second highest of all the alternatives. This includes the 322,000 acres of inventoried roadless area and 81,000 acres of recommended wilderness mentioned above plus the existing Cabinet Mountains Wilderness (94,000 acres), the Ten Lakes MWSA (34,000 acres), and 42,000 acres of unsuitable timberlands that are located in scattered parcels outside of inventoried roadless areas.

Wildlife and Fish Production: The recovery of the grizzly bear is provided for in all Forest management activities that occur in identified grizzly habitat.

Elk habitat would be managed to provide for an eventual herd size of 8,500, which is 86% of the 9,900 potential as determined in the wildlife benchmark (Alt. F). This increase is estimated to occur over a 30-year period and will require 4,300 miles of road closure to accomplish. This will be a net increase of 2,700 miles over the 1,600 closed miles in 1984, the lowest of all the alternatives. Beyond the third decade, timber harvest activities are at a level that maintains adequate hiding cover but precludes any more significant increase in big game.

The total catchable trout population will decline 5% in the next 40 years because of the additional road building. The migratory portion of the population will decline the most (approximately 9%). After this period of decline, the population is expected to stabilize and improve, but not recover to current levels.

Local Economic Impacts: Potential Forest-related job opportunities in the first decade could be 2,400 compared to the 1980 level of 1,670 jobs. Return receipts to the State in the first decade could be \$5.3 million/yr. compared to \$2.7 million in 1980.

Visual Quality: Visual quality is protected on 1,382,000 acres, the second highest of all the alternatives. On the remaining 864,000 acres, timber harvest openings and roads will be noticeable or dominate the landscape.

Minerals/Energy: 228,000 acres are projected for eventual withdrawal from oil and gas exploration; 265,000 acres are projected for eventual withdrawal from locatable mineral exploration, similar to Alternative C.

New leases and subsequent lease reissuance will undergo additional analysis as required by NEPA, tiering to this EIS through incorporation by reference the information presented in this EIS. Special stipulations are used whenever the leased area has surface resource values needing special protection to meet the alternative management objectives.

Socio-economics: The present net value (PNV) is \$1,064,000,000. The first decade budget is \$26.9 million/yr.

D. COMPARISON OF ALTERNATIVES

The discussion in this section focuses on how major resource outputs and economic effects vary among alternatives. This information is provided to assist decision-makers in their determination of which alternative provides the highest level of net public benefits. A summary of how each issue is affected by alternatives is in Table II-14 in the middle of this chapter. Total outputs for each alternative and selected benchmarks are shown in Table II-24 at the end of this chapter and outputs that vary significantly among alternatives are discussed below.

Summary of Changes between the Draft and Final EIS

The Proposed Forest Plan (Alt. J) was re-analyzed to resolve the concerns expressed by the Public during the Public Review period, including the concerns expressed by State officials and others questioning the assumptions used to determine timber supply and demand. As stated earlier, the public's primary concerns were; Wilderness, Timber Harvest Levels, New Road Construction, Old-Growth Timber, Water Quality, Effects on the Local Economy, Economic Values and Budgets, and Fisheries. Changes were made in each of these categories to resolve the Public's concern as stated during the Review Period. For a complete description of the Public's concerns, see Chapter VI, Consultation With Others. For those interested in the actual public input and the Kootenai Forest response, see Appendix E, Public Comments and Forest Service Response.

1. Timber

Summary of Changes between the Draft and Final EIS

This section has been rewritten to present recent information on future timber supplies and clarification of timber supplies available on suitable timberlands. The final Forest Plan (Alt. JF) will have a smaller suitable timber base than the Proposed Plan (Alt. J) in the Draft EIS. This is because of the need to provide for adequate amounts of old-growth timber for dependent wildlife species. The suitable timber base will be 1,263,000 acres compared to 1,386,000 acres in Alt. J. This smaller suitable timber base will still provide for the same Total Timber Sell Program and Allowable Sale Quantity (ASQ) as Alt. J. The ASQ in the Final Plan will be 227 MMbf/yr and the Total Planned Timber Sell Program will be 233 MMbf/yr. The Total Timber Sale Program for the Final Plan is the same as displayed for Alt. J in Appendix 11 in the Proposed Forest Plan document in the Draft EIS.

a. Timber Volume

(1) Historic Timber Harvest Volumes on the Kootenai National Forest

Timber harvest volumes on the Kootenai Forest have followed the normal cyclical pattern associated with national lumber markets which are usually correlated with housing starts, interest rates, unemployment rates, etc. The historic pattern of annual timber harvests for the last 10 years is shown on the following Table as well as the annual timber sale offerings, actual amounts sold, and the volume remaining under contract at the end of each year. NOTE TO READER: This Table displays a more recent time period of 1977-1986 which differs from the other Tables in this EIS which display an earlier time period of 1974-1983. Because of this difference, slightly different averages will be evident in other discussions.

Table II-1a Kootenai National Forest
Historic Annual Timber Volumes, 1977-1986
(millions of board feet)

<u>Fiscal Year</u>	<u>Total Volume Offered</u>	<u>Total Volume Sold</u>	<u>Total Volume Harvested</u>	<u>Volume Under Contract</u>
1977	208	197	236	563
1978	188	154	191	518
1979	204	206	185	538
1980	214	176	156	534
1981	245	264	162	665
1982	221	221	132	763
1983	217	245	181	828
1984	223	212	198	835
1985	215	224	180	848
1986	242	228	204	615
10-Year Average	218	189*	182	671

* The average volume sold has been adjusted for the 237 MMbf of Timber Buyback.

The Volume Harvested column indicates the variation in timber harvest patterns which are dependent on the national lumber market, and it is apparent that a low point was reached in 1982 and the harvest level has since been on an increase back to the levels experienced at the beginning of the 10-year period.

The Table indicates that the timber harvested is in close correlation to the actual volume sold over time, although there are yearly variations depending on the actual demand for lumber at the time. The cyclical variation between volume actually sold and harvested is cushioned by the amount of volume under contract, which is usually about 2-3 years of average sell.

The Volume Under Contract reached a high point in 1985 which resulted in the Timber Payment Modification Act (Timber Buyback). This Act allowed for the return of previously purchased timber sales, under certain conditions, to alleviate financial hardships being experienced as a result of the recent recession. After this Timber Buyback period, the Volume Under Contract returned to the normal 3-years sell level.

(2) Historic and Projected Timber Supplies in the Local 5-County Market Area

Recent concern has been expressed about the availability of future timber supplies in the local market area. The concern appears to be that even if the National Forests made more timber available for purchase, an anticipated decline in private supplies would offset these increases. This has implications with regard to anticipated social and economic impacts in the area.

Some of the public response received on the Draft Forest Plan stated that because of the recent speculation on National Forest timber in the late 70's and early 80's, timber companies were having to cut heavier on private timberlands to offset the high prices that they had bid on the National Forest timber. The result of this increased dependence on private timber was an overcutting on the private timberlands. This raised the concern that an increased demand would then shift back to the National Forest timber to offset the inevitable decline on the private lands.

In order to respond to this concern, a study of past and future supply of timber in the five-county impact area (Lincoln, Sanders and Flathead, Montana; Bonner and Boundary, Idaho) was completed. Details of the study are provided in Appendix B, Section V. H.

The following table displays the actual timber volume harvested from all major ownerships in the five-county area over the last ten years. This is used as a basis for comparison of anticipated supply-level changes in the future.

Table II-1b

VOLUME HARVESTED FROM STATE, PRIVATE and FOREST SERVICE LANDS IN THE FIVE-COUNTY SECONDARY IMPACT AREA 1976 TO 1985 MMBF

COUNTY	<u>76*</u>	<u>77</u>	<u>78</u>	<u>79</u>	<u>80</u>	<u>81</u>	<u>82</u>	<u>83</u>	<u>84</u>	<u>85</u>	<u>AVG.</u>
Lincoln	314.5	317.3	284.7	265.4	219.0	255.0	231.6	301.3	314.1	269.8	273.1
Sanders	135.6	112.9	122.8	121.6	81.5	77.4	78.9	107.3	84.2	94.8	101.0
Flathead	217.3	197.3	157.3	175.0	184.9	195.7	156.0	183.4	196.6	188.0	183.0
Bonner	126.9	156.8	114.1	137.9	117.2	106.0	103.1	105.9	129.1	124.8	120.9
Boundary	<u>80.2</u>	<u>83.9</u>	<u>71.7</u>	<u>82.9</u>	<u>82.0</u>	<u>44.2</u>	<u>68.6</u>	<u>78.7</u>	<u>72.7</u>	<u>105.5</u>	<u>76.0</u>
TOTAL:	874.5	868.4	750.6	782.8	684.6	678.3	638.2	776.6	796.7	782.9	754.0

* The Forest Service portion includes the transition quarter
The National Forests that contribute volume are the Kootenai, Flathead, Lolo and Idaho Panhandle.

The above Table displays the actual volumes harvested over the most recent ten-year period that data was available. This is the raw material that was used from the five-county area. It can also be equated to the supply actually available and used in those years.

In order to estimate the future situation, several assumptions are necessary:

1. From a National Forest perspective we shall assume that over a ten-year period the timber offered will actually be sold and harvested. The Forest Plans display the total volume available for sale as the "Timber Sale Program Quantity". These volumes can be prorated out to the counties on the same basis as the historic cut volumes. Inherent, here, is the assumption that Forest Service budget levels will be adequate to provide this timber sell program.
2. In general, State lands are managed for a continuous yield so future volumes from those lands will be assumed to be equal to the 1976 through 1985 average.
3. No specific information is available about private logging plans, but some in the industry have suggested that those lands will be severely depleted in 20 years. The following discussion will address four scenarios ranging from no reduction to 75% reduction in harvest on private lands compared to the last decade of harvest.

Under these assumptions, the volumes expected to be available by county are shown on the following Table:

Table II-1c

TIMBER VOLUMES EXPECTED TO BE AVAILABLE IN THE NEXT DECADE
 (* Scenarios Described below)
 (MMBF Average Annual)

<u>SOURCE</u>	<u>LINCOLN</u>	<u>SANDERS</u>	<u>FLATHEAD</u>	<u>BONNER</u>	<u>BOUNDARY</u>	<u>TOTAL</u>
Kootenai NF	211.4	11.1	6.2	1.4	0.9	231.0
Flathead NF	2.0	0.0	88.7	0.0	0.0	90.7
Lolo NF	0.0	31.2	0.8	0.0	0.0	32.0
Panhandle NF	0.6	0.0	0.0	58.3	48.4	107.3
State	3.8	2.2	9.8	6.6	6.1	28.5
Private:						
Scenario I	103.3	71.4	88.2	62.6	27.4	352.9
Scenario II	77.5	53.6	66.2	47.0	20.6	264.9
Scenario III	51.6	35.7	44.1	31.3	13.7	176.4
Scenario IV	25.8	17.9	22.0	15.6	6.8	88.1
TOTALS:						
Scenario I	320.9	115.9	193.7	128.9	82.8	842.2
Scenario II	295.1	98.1	171.7	113.3	76.0	754.4
Scenario III	269.4	80.2	149.6	97.6	69.1	665.9
Scenario IV	243.4	62.4	127.5	81.9	62.2	577.6

Definitions:

- Scenario I - No decline in private harvest from last decade.
- Scenario II - 25% decline in private harvest from last decade.
- Scenario III - 50% decline in private harvest from last decade.
- Scenario IV - 75% decline in private harvest from last decade.

The following Table displays the past as compared to the future in terms of total timber volume available for harvest:

Table II-1d

AVERAGE TIMBER VOLUME HARVESTED IN THE PAST TEN YEARS
AND
AVERAGE TIMBER VOLUME AVAILABLE FOR HARVEST IN THE NEXT TEN YEARS
 (all volumes are average annual in MMBF)

<u>COUNTY</u>	<u>PAST CUT</u>	<u>POTENTIAL FUTURE CUT: VOLUME AND % CHANGE FROM PAST</u>					
	<u>1976-1985</u>	<u>SCENARIO I</u>	<u>SCENARIO II</u>	<u>SCENARIO III</u>	<u>SCENARIO IV</u>		
Lincoln	273.1	320.9 +18%	295.1 +8%	269.2 - 1%	243.4 -11%		
Sanders	101.0	115.9 +15%	98.1 -3%	80.2 -21%	62.4 -38%		
Flathead	183.0	193.7 + 6%	171.7 -6%	149.6 -18%	127.5 -30%		
Bonner	120.9	128.9 + 7%	113.3 -6%	97.6 -19%	81.9 -32%		
Boundary	76.0	82.8 + 9%	76.0 0%	69.1 - 9%	62.2 -18%		
TOTAL	754.0	842.2 +12%	754.2 0%	665.7 -12%	577.4 -23%		

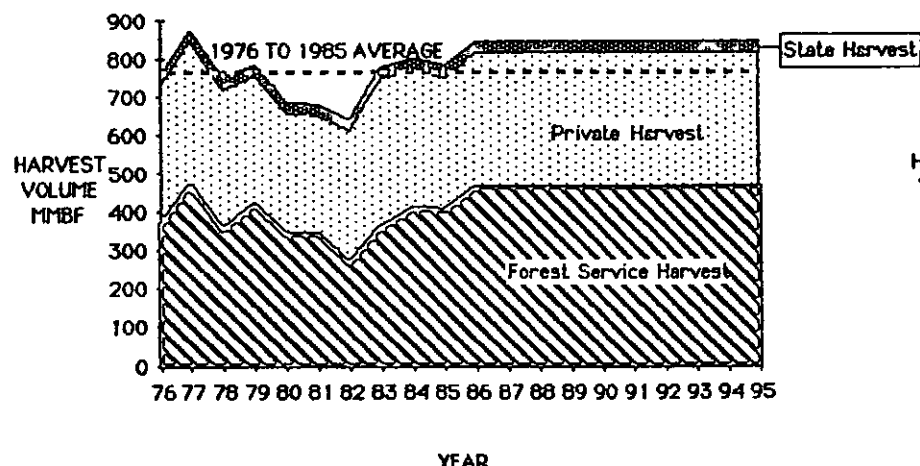
This data is displayed in the following figures:

Figure II-16a. FIVE COUNTY* TIMBER SUPPLY SITUATION PAST AND FUTURE

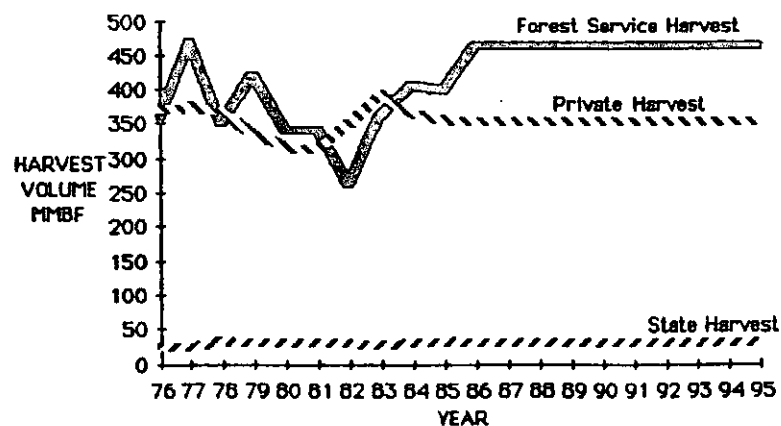
SCENARIO I: The future harvest from private lands will be the same as the last decade harvest level.

SCENARIO II: The future harvest from private lands will be three fourths of the last decade harvest level.

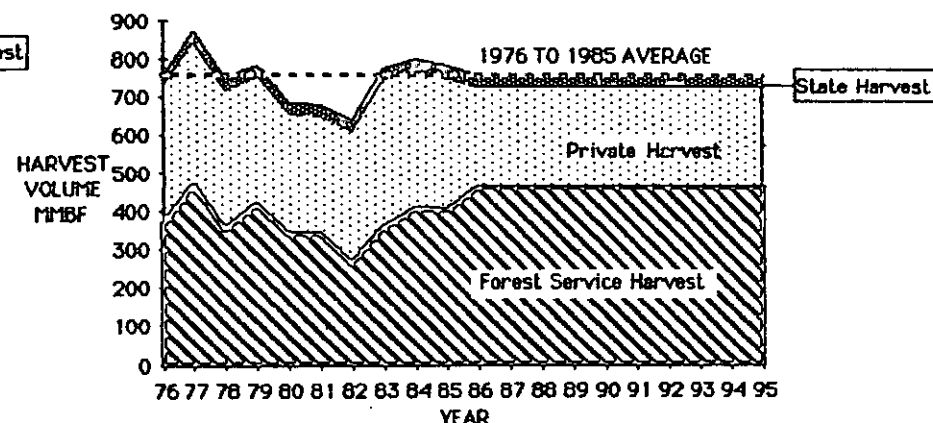
CUMULATIVE AREA CHART



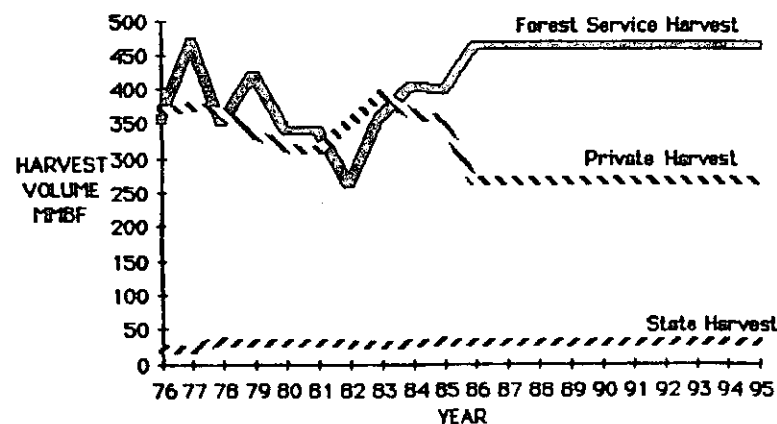
LINE CHART



CUMULATIVE AREA CHART



LINE CHART



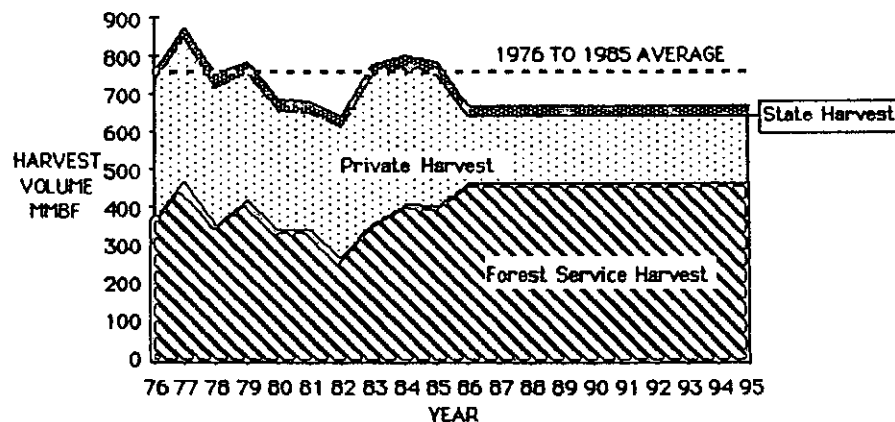
* Montana: Lincoln, Sanders, Flathead Counties
Idaho: Boundary and Bonner Counties

Figure II-16a
(continued)

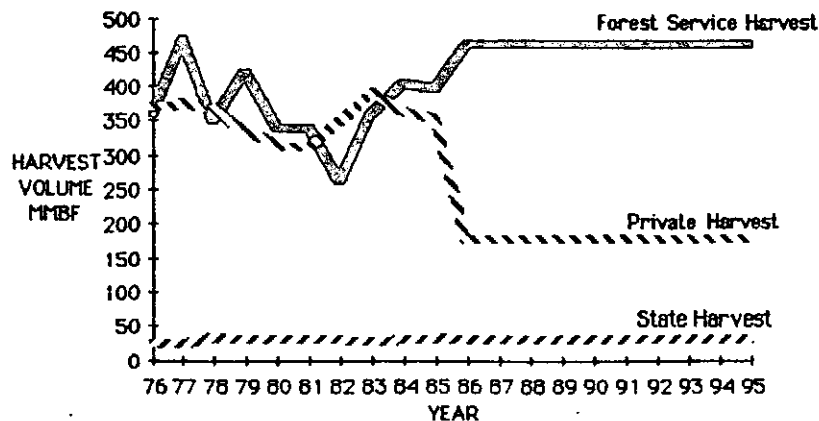
FIVE COUNTY^{II} TIMBER SUPPLY SITUATION PAST AND FUTURE

SCENARIO III: The future harvest from private lands will be one half of the last decade harvest level. Assumption for the Final Plan.

CUMULATIVE AREA CHART

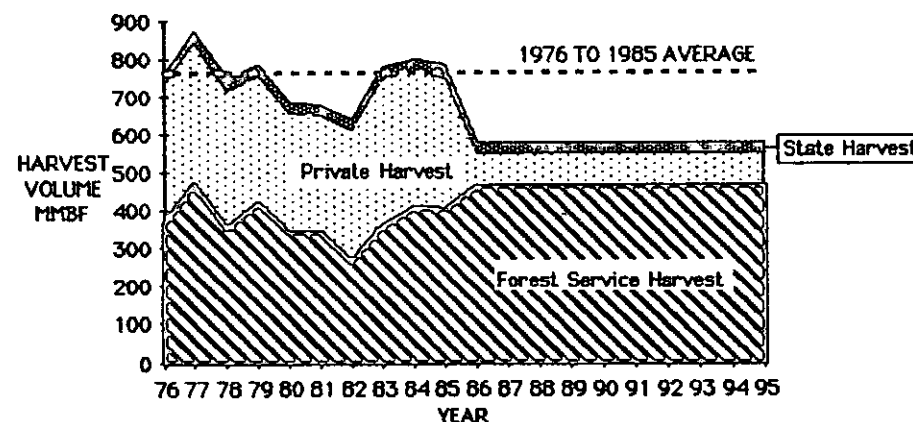


LINE CHART

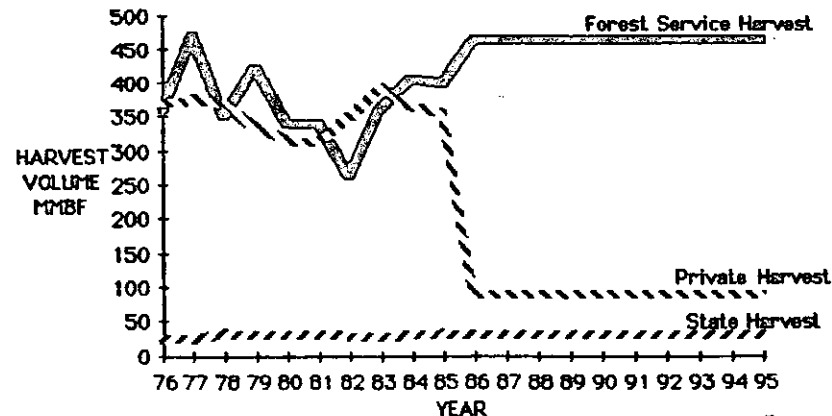


SCENARIO IV: The future harvest from private lands will be one fourth of the last decade harvest level.

CUMULATIVE AREA CHART



LINE CHART



FS 1976 cut does not include the transition quarter

* Montana: Lincoln, Sanders, Flathead Counties
Idaho: Boundary and Bonner Counties

The assumption of Scenario II indicates that no change in the total 5-county timber supply will occur, compared to the last ten years, if private land timber harvest levels decline no more than 25 percent (except for some localized shortages in Sanders and Flathead Counties, Montana, and Bonner County, Idaho). The assumptions of Scenario III and IV (50% and 75% decline in private timber, respectively) indicates that there will be a decline in the total supply of timber in the five-county area compared to supplies available over the last ten years. This occurs because projected increases in harvest from all four National Forests in the area are offset by projected declines in harvest levels on private lands. It is unknown at this time what the magnitude of change will be on private timberlands. Estimates have been suggested that the change will be between 25-50%.

(3) Projected Timber Supplies in Northwest Montana and Northern Idaho
(as indicated by the Montana and Idaho Timber Supply Studies)

The recent concern for future timber supplies resulted in two statewide studies, entitled "Montana's Timber Supply: An Inquiry into Possible Futures", and "A Report on Idaho's Timber Supply". These studies analyzed the total timber supply possibilities from all ownerships in each respective State. The local area of concern in these two studies is Northwest Montana in the Montana Study and Northern Idaho in the Idaho Study.

The results of the Montana Study indicated that, statewide, harvest levels from industrial timberlands cannot be maintained at current levels because of inventory limitations. The existing total Statewide harvest levels can be maintained if the Forest Plans on the National Forests were implemented, and other non-industrial forest owners continue to harvest their lands at the current rate. (The Montana Study did qualify that a supply problem could occur in Northwestern Montana because of inventory limitations on industrial timber lands which supports the analysis of possible timber supply shortages presented in the previous section.)

The results of the Idaho Study (for North Idaho) indicated that timber supply is adequate to maintain recent harvest levels if the Forest Plans on the National Forests are implemented. It also points out that harvest levels from industrial timberlands cannot be maintained, but that increases in harvest from other ownerships, including the National Forests, can offset the anticipated decline.

These two studies were used to determine a more specific range of potential timber supply requirements in each National Forest area. The following Table displays the range of potential timber supply needed in the next five decades for the Kootenai National Forest. The assumptions that are important in the displayed timber supply requirements are that the volumes described in the Forest Plans within the respective areas will be available to the timber industry.

These projections are dependent on existing log flow and marketing patterns as well as expected market share. To the extent that these patterns change, a different requirement could result.

For more detail on future timber supply opportunities on the Kootenai National Forest, see Appendix B, Section V.

Table II-1e

Kootenai National Forest

Range of Potential Timber Supply Requirements for 5 Decades
(Estimated from the Montana and Idaho Timber Studies data)
(million board feet per year)

<u>Decade 1</u>	<u>Decade 2</u>	<u>Decade 3</u>	<u>Decade 4</u>	<u>Decade 5</u>
178-224	192-224	196-259	236-295	295-340

Regional goals based on 1980 RPA projections of demand for Kootenai Forest timber are 228 MMbf/yr. This compares to 231 MMbf/yr for the Standard and Special component of the current Timber Management Plan.

(4) Minimum Projected Timber Yields Over Time by Forest Plan Alternative.

Estimates were made for all alternatives to analyze the minimum timber volumes that would be available over time to meet timber industry needs and provide for local community stability. These estimates were made only for the live green timber on the suitable timberlands using the Forplan linear program model. (For more information on the use of the Forplan model, see Appendix B.) The additional volume that would be available during the life of the Forest Plan (10-15 years) such as salvage of dead timber is discussed in the next section entitled "Allowable Sale Quantity (ASQ) and Total Planned Timber Sell Program".

The following two tables display the projected average annual live green timber volume available for each alternative for 20 decades in both board feet and cubic feet. Graphic displays of both of these two Tables follow to provide for an easier comparison between alternatives.

Although the first decade live green timber volumes in the Final Plan (Alt. JF) are the same as the Proposed Plan (Alt. J), the projected harvest levels during the second through the fifth decades will not increase at the same magnitude as the Proposed Plan. There will be a difference in live green timber volume of 3 mmbf per year to 43 mmbf per year, respectively, because of the decrease in the suitable timber base. This is a 1% and 16% reduction, respectively. (See Table II-1 and the section on suitable timberland.) An analysis has been done in Appendix B, Section V.I and V.J, to determine additional opportunities for increased timber production within the framework of the Final Forest Plan. Any increased opportunities, if implemented, will require an amendment to the Final Plan.

Regional timber targets based on 1980 RPA projections for the Kootenai Forest are 228, 248, 292, 315, and 345 MMBF/yr for the first 5 decades, respectively.

All alternatives provide for increases over the 1977-1986 average timber harvest level of 182 MMbf/yr except Alternatives F and I. Alternative F is short of the 10-year average in the first and eighth decades, while Alternative I does not reach this average harvest level until the 10th decade and then is deficient again until the 17th decade. Alternative I is the Current Direction alternative and is constrained by budgetary limitations to not exceed the average outputs of the 1980-82 period which was a period of low timber harvest. Table II-1f and g, and the graphic displays indicate that timber harvest increases are available on the Kootenai National Forest if budgetary limitations are not excessive.

Alternatives A, B, C, E, G, H, L, N, and O all produce timber in excess of the 260 MMbf/yr estimated existing mill capacity in Lincoln and Sanders Counties. The Kootenai Forest has produced about half of the volume utilized by these mills, the remainder having been supplied by State and private timber lands.

Mill capacity for the 5-county area (Lincoln, Sanders, Flathead Counties in Montana, and Bonner and Boundary Counties in Idaho) is estimated at 800 MMbf/yr

Table II-1f

II-59

Kootenai National Forest

Projected Average Annual Timber Harvest Volume by Decade (MMBF) - Live Green Timber only.

Alternative																	
Decade	Alt. A	Alt. B	Alt. C	RPA Alt. D	Alt. E	Alt. F	Alt. G	Alt. H	CD Alt. I	PA Alt. J	: FP :	Dep Alt. K	Alt. L	PNV Alt. M	Alt. N	Alt. O	Dec.
											: Alt. : : JF :						
1	226	223	225	227	218	164	213	208	150	202	: 202 :	230	255	262	247	215	1
2	253	250	253	248	241	191	234	222	152	233	: 230 :	241	245	224	240	247	2
3	249	247	250	285	238	190	231	223	157	224	: 227 :	216	264	274	283	263	3
4	314	302	300	320	294	185	283	273	143	256	: 213 :	251	316	326	322	301	4
5	336	333	331	344	323	198	309	294	162	277	: 234 :	271	345	437	329	320	5
6	349	348	345	358	338	197	322	310	172	280	: 229 :	274	339	362	340	340	6
7	334	332	331	318	320	193	310	300	163	279	: 222 :	271	360	251	319	328	7
8	313	312	309	213	296	181	282	270	180	258	: 217 :	248	327	245	296	325	8
9	326	323	321	279	328	264	328	348	164	267	: 203 :	261	385	322	317	312	9
10	290	288	286	306	280	224	275	290	194	239	: 190 :	237	341	238	282	321	10
11	295	294	294	310	282	242	276	291	162	256	: 216 :	283	375	306	287	298	11
12	348	348	344	377	342	244	332	323	172	309	: 289 :	311	410	393	345	360	12
13	396	392	388	385	383	241	373	357	169	321	: 282 :	316	458	502	406	371	13
14	391	389	385	404	384	256	373	359	164	296	: 281 :	306	427	371	395	387	14
15	382	378	372	383	362	228	348	337	172	328	: 285 :	326	427	336	381	378	15
16	369	365	363	407	359	261	348	333	177	321	: 267 :	312	449	436	370	386	16
17	373	369	364	390	369	236	367	349	188	313	: 248 :	323	432	445	378	378	17
18	371	368	363	361	369	239	364	350	201	311	: 269 :	310	426	346	377	397	18
19	378	378	376	391	366	243	350	339	207	327	: 284 :	320	464	262	385	378	19
20	345	345	341	383	338	241	327	318	215	309	: 291 :	312	455	278	339	353	20

Table II-1g

II-60

Kootenai National Forest

Projected Average Annual Timber Harvest Volume by Decade (MMCF) - Live green timber only

Alternative																		: FP :		Dep	PNV					
Decade	Alt.	Alt.	Alt.	RPA				Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Decade							
	A	B	C	D	E	F	G	H	I	J	: JF :	: JF :	K	L	M	N	O									
1	56	56	56	56	54	40	52	50	36	51	: 49 :	: 49 :	57	59	66	62	55	1								
2	56	56	56	56	54	40	52	50	36	51	: 49 :	: 49 :	53	59	49	53	55	2								
3	56	56	56	66	54	40	52	50	36	51	: 49 :	: 49 :	48	59	61	63	55	3								
4	71	71	70	76	69	42	66	64	36	59	: 49 :	: 49 :	57	74	77	76	69	4								
5	71	71	70	76	69	42	66	64	36	59	: 49 :	: 49 :	57	74	96	69	69	5								
6	71	71	70	75	69	42	66	64	36	59	: 49 :	: 49 :	57	74	74	69	69	6								
7	71	71	70	66	69	42	66	64	36	59	: 49 :	: 49 :	57	74	55	69	69	7								
8	71	71	70	50	69	42	66	64	39	59	: 49 :	: 49 :	57	74	57	69	69	8								
9	71	71	70	63	69	52	67	70	39	59	: 49 :	: 49 :	57	87	71	69	69	9								
10	71	71	70	78	69	52	67	70	39	59	: 49 :	: 49 :	57	87	59	69	69	10								
11	71	71	70	78	69	54	67	70	39	59	: 49 :	: 49 :	65	87	74	69	69	11								
12	84	83	82	87	81	54	79	76	41	71	: 63 :	: 63 :	71	98	92	84	82	12								
13	84	83	82	87	81	54	79	76	41	71	: 63 :	: 63 :	71	98	110	84	82	13								
14	84	83	82	87	81	54	79	76	41	71	: 63 :	: 63 :	71	98	82	84	82	14								
15	84	83	82	87	81	54	79	76	41	71	: 63 :	: 63 :	71	98	77	84	82	15								
16	84	83	82	87	81	54	79	76	41	71	: 63 :	: 63 :	71	98	93	84	82	16								
17	84	83	82	87	81	54	79	76	41	71	: 63 :	: 63 :	71	98	102	84	82	17								
18	84	83	82	87	81	54	79	76	41	71	: 63 :	: 63 :	71	102	77	84	82	18								
19	84	83	82	87	81	54	79	76	41	71	: 63 :	: 63 :	71	102	58	84	82	19								
20	84	83	82	87	81	54	79	76	41	71	: 63 :	: 63 :	71	102	70	84	82	20								

FIGURE II-18

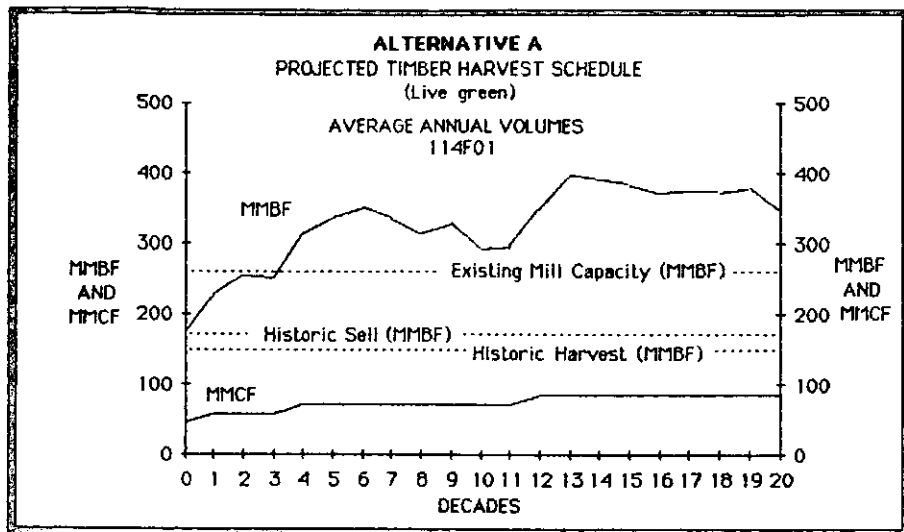


FIGURE II-19

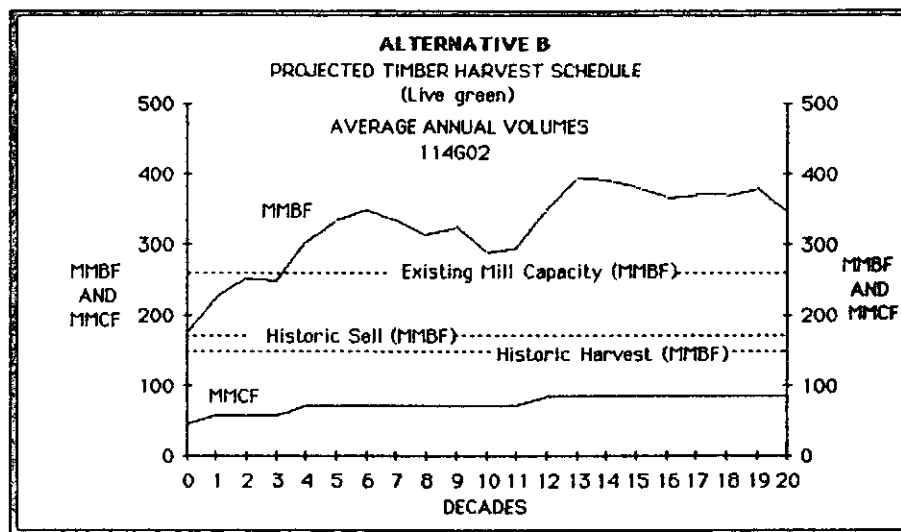


FIGURE II-20

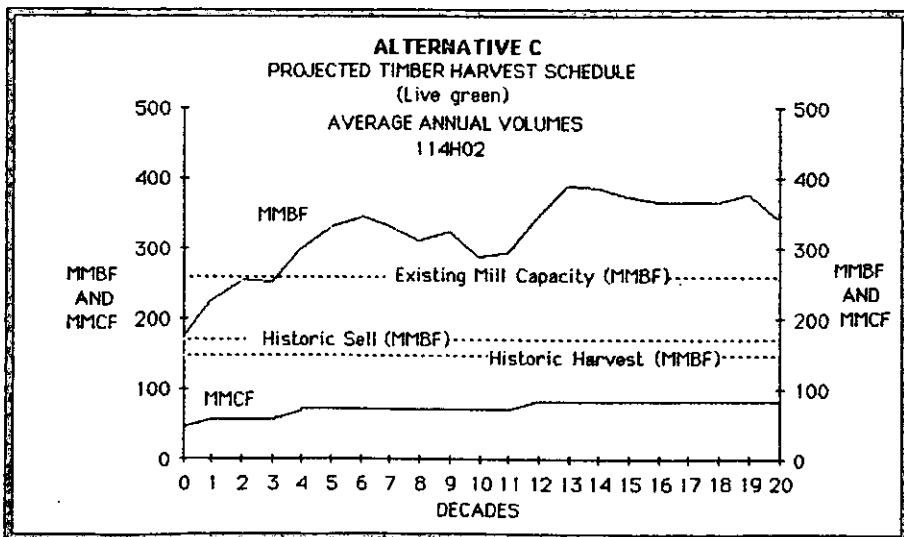


FIGURE II-21

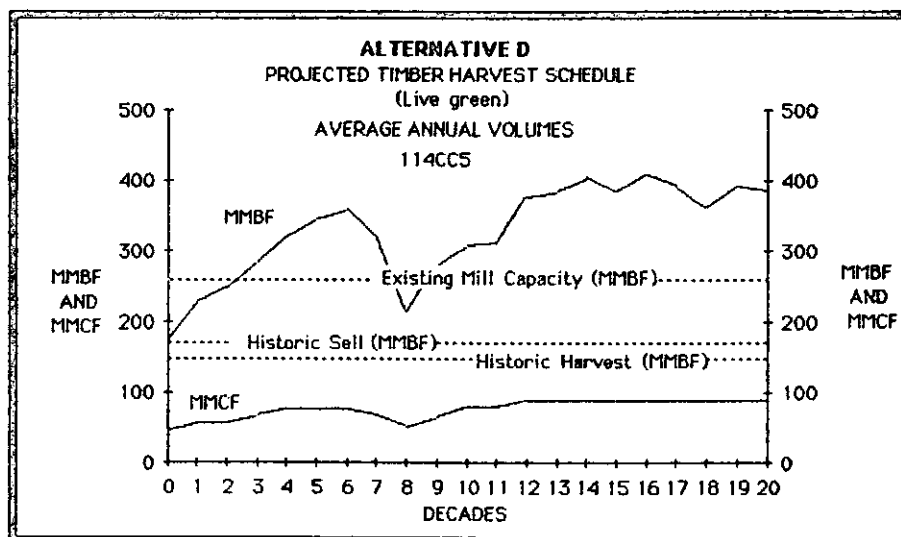


FIGURE II-22

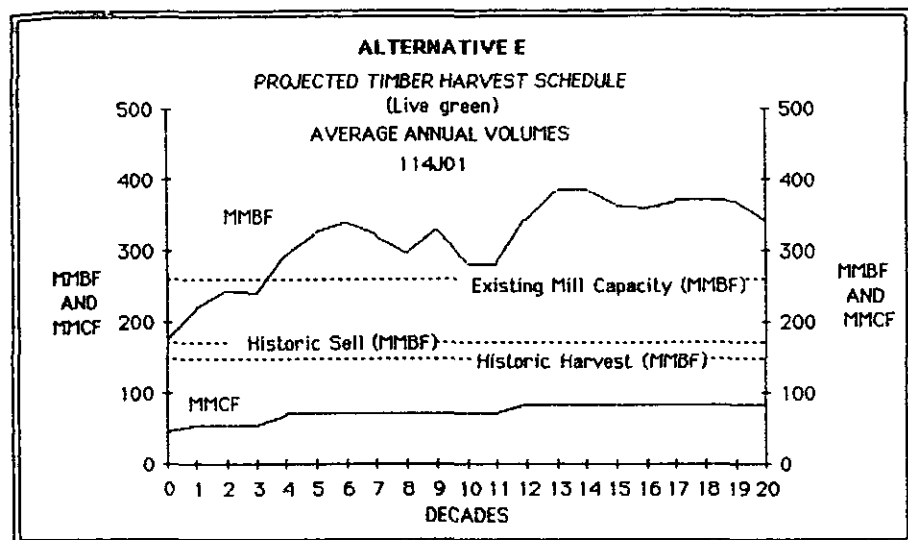


FIGURE II-23

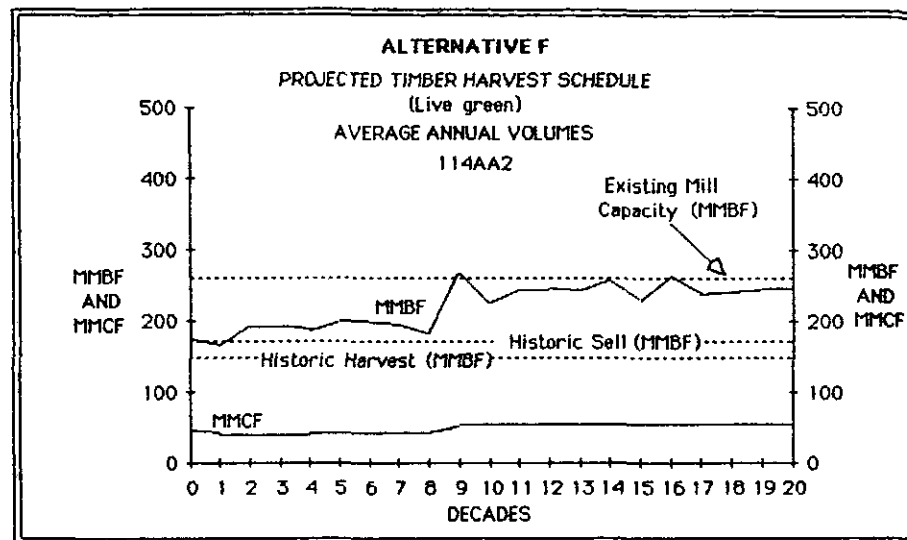


FIGURE II-24

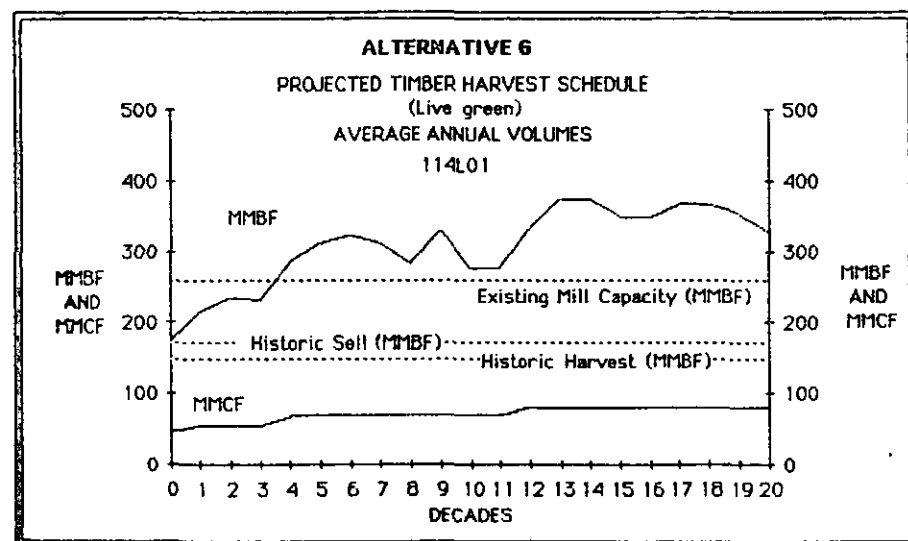


FIGURE II-25

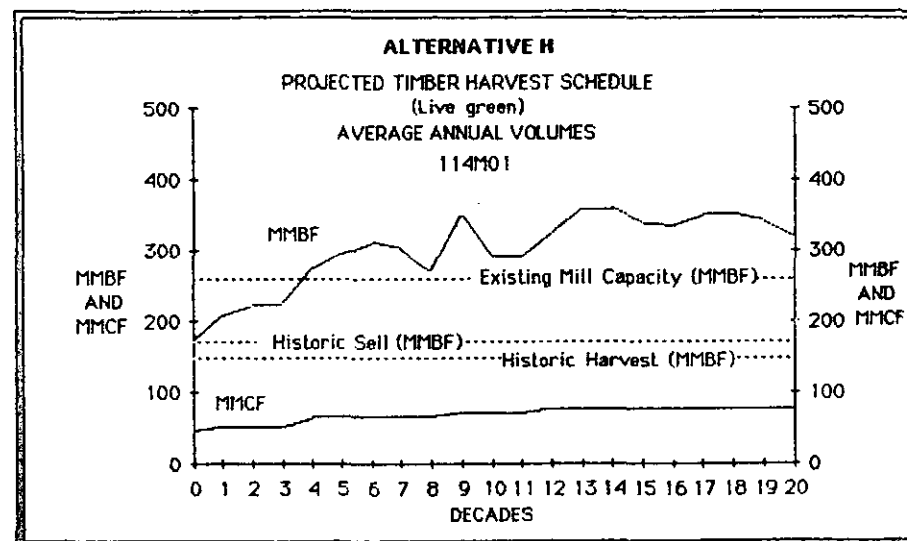


FIGURE II-26

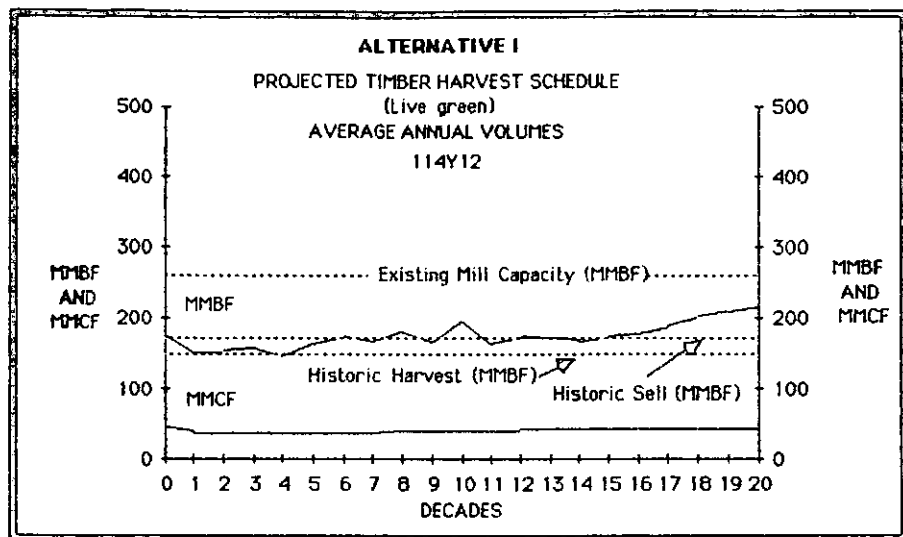


FIGURE II-27

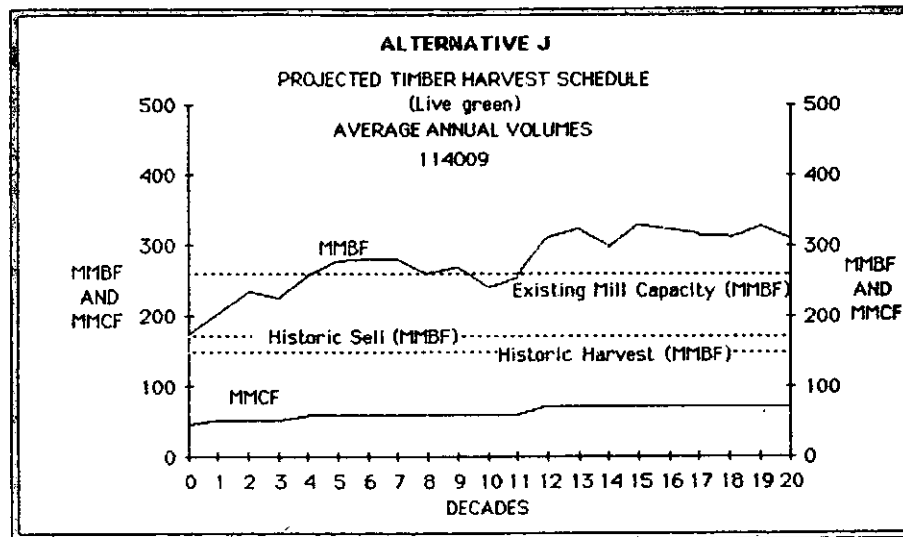


FIGURE II-27A

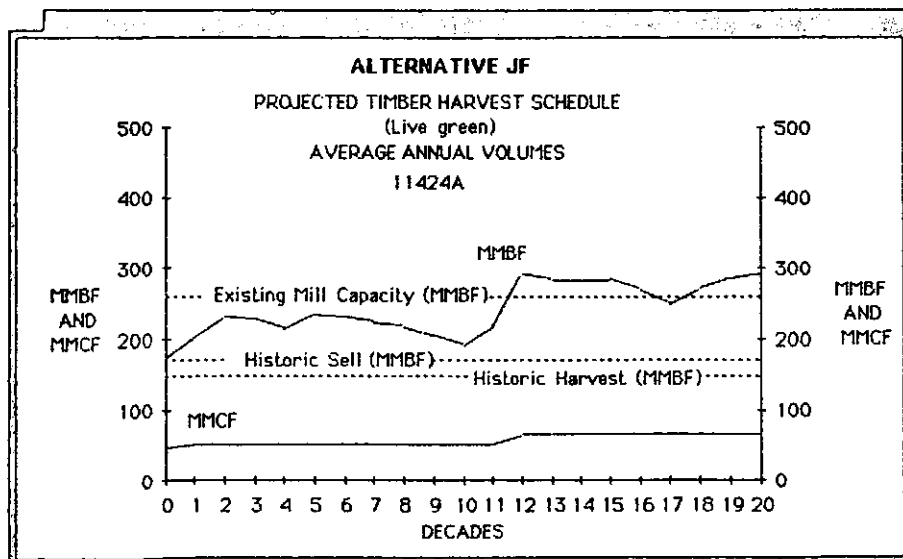


FIGURE II-28

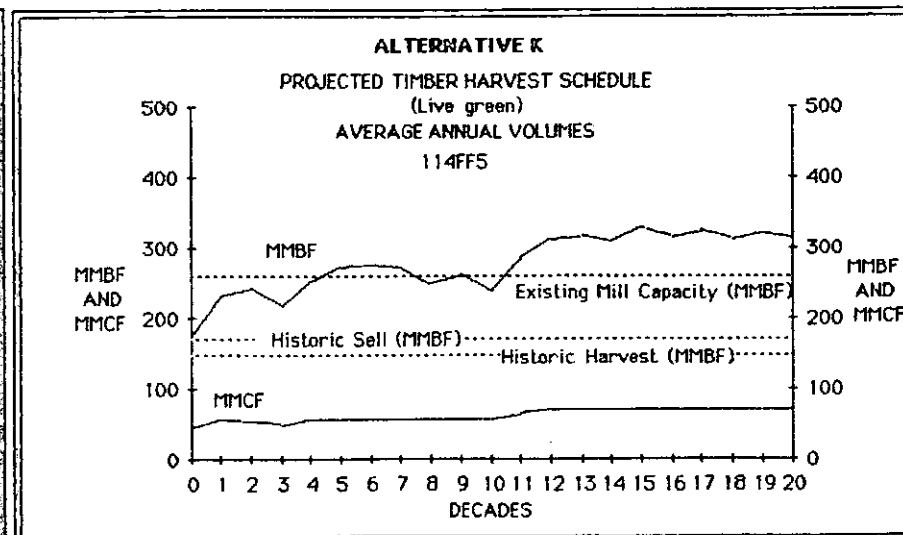


FIGURE 11-29

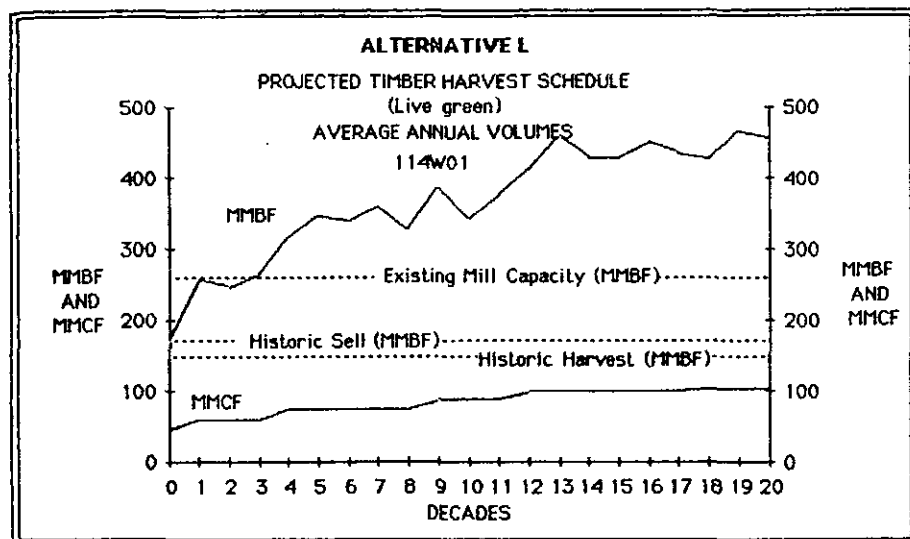


FIGURE 11-30

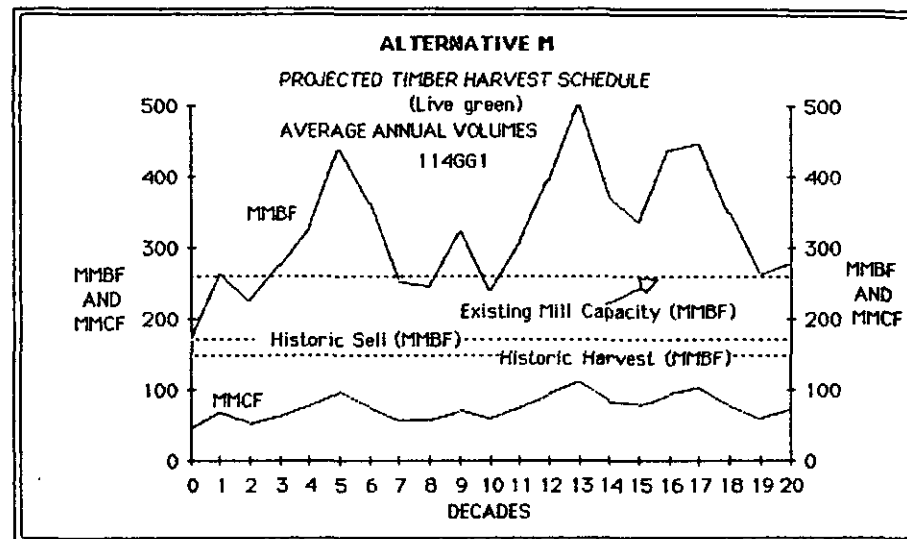


FIGURE 11-31

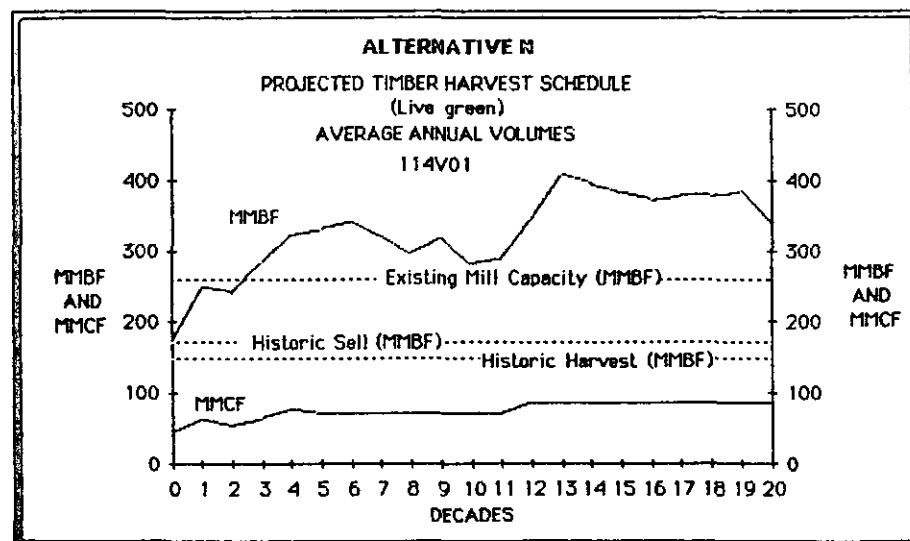
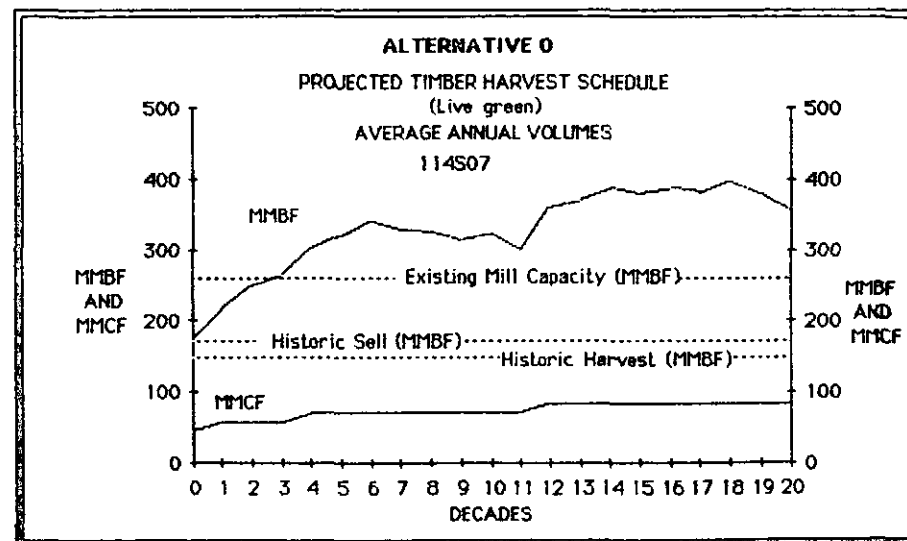


FIGURE 11-32



(5) Allowable Sale Quantity (ASQ) and Total Planned Timber Sale Program.

Summary of Changes between the Draft and Final EIS

Clarification of what is to be included in the allowable sale quantity in the first decade representing the 10-15 year life of the Forest Plan has been added since the Draft EIS. Further clarification has also been added to display the Total Planned Timber Sell Program as outlined in Appendix 11 of the Forest Plan document to more clearly show the total planned timber sale offerings during the life of the Forest Plan.

The Allowable Sale Quantity (ASQ) is the amount of live green plus the dead timber volume on the suitable timberlands. (The dead timber on the suitable timberlands is part of the non-interchangeable component. See Appendix B, Section V, I, for a more complete description of this component. On the Kootenai Forest the non-interchangeable component is primarily dead lodgepole pine timber.) Additional timber volume (both live and dead) can be harvested on unsuitable lands where timber harvest is permissible. This additional volume on unsuitable lands plus the ASQ volume on suitable lands constitutes the Total Planned Sell Program. Because of the uncertainty of the amount of dead timber available on suitable lands and the amount of timber that would be harvested on unsuitable lands, the ASQ and Total Planned Timber Sell Program are calculated only for the first decade which corresponds closely to the life of the Forest Plan (10-15 years).

The Allowable Sale Quantity for the final Forest Plan (Alt. JF) is 202 mmbf/yr (live green harvest) plus 25 MMbf of non-interchangeable component which consists mostly of dead lodgepole pine timber, for a total of 227 MMbf/yr. This is the same as the Proposed Plan (Alt. J). Timber volume in the first decade was retained at the same level as the Proposed Forest Plan to provide for local community stability. See previous Section 2 and Appendix B, Section V, Subsections H, I and J for more detail on the timber volume issue, including timber supply and demand in Northwest Montana and Northern Idaho, and the Kootenai National Forest.

The final Forest Plan will have a Total Planned Timber Sell Program of 233 MMbf/yr which compares to the Regional 1980 RPA projection of 228 MMbf/yr.

This projected timber sale level is a 7% increase over the average annual timber sale offerings of 218 MMbf/yr over the last ten years as displayed in Table II-1a.

The projected sale level of 233 mmbf/yr will provide for an expressed desire of the timber industry to retain the recent timber sale program at the same level or higher to insure against possible shortages in the future because of recent cutting levels on private timberlands. See previous section 2 and Appendix B, Section V. H, for a discussion on Timber Supply in the Local Area.

The following figure displays the first-decade total planned-sell timber volumes for each alternative which includes the live-green and dead timber portion (non-interchangeable component), plus the estimated volume of both live and dead timber on unsuitable timberland where timber harvest is permitted.

Table II-2

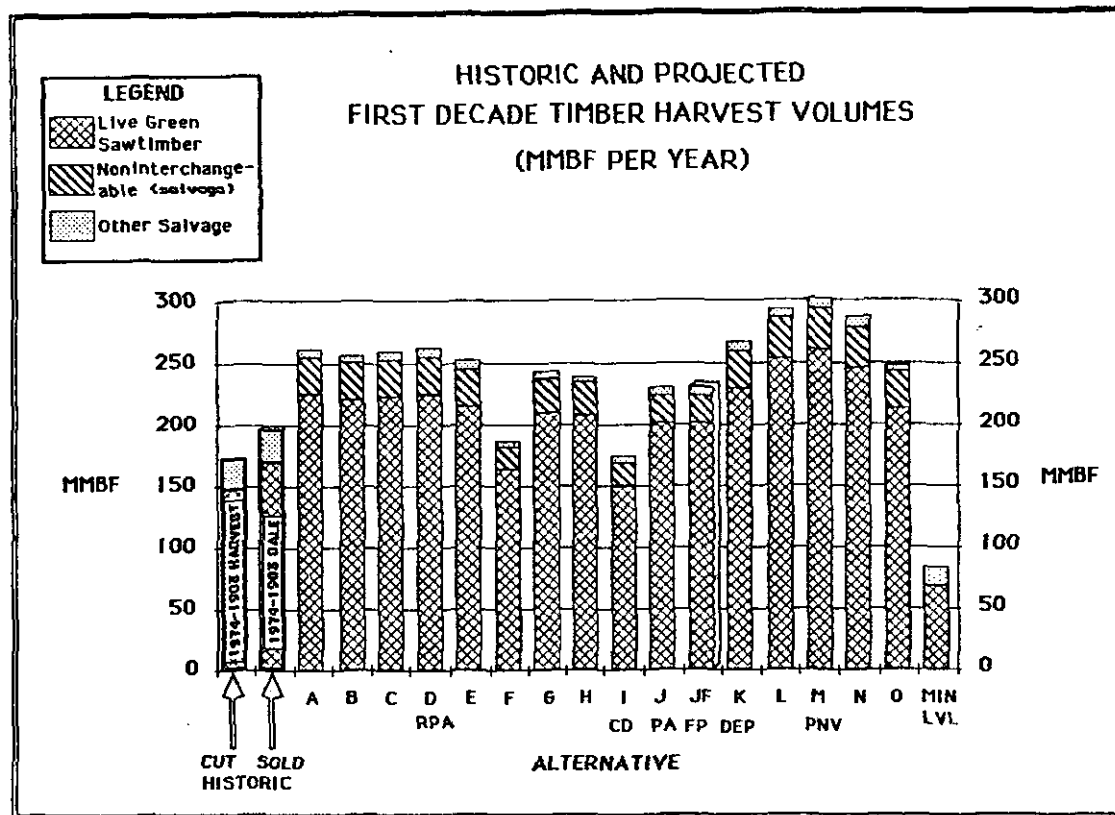
Kootenai National Forest

II-66

FIRST DECADE TOTAL ALLOWABLE SALE QUANTITY (ASQ) AND TOTAL PLANNED TIMBER SALE OFFERINGS (MMBF)

TIMBER CATEGORY	Alternative										:	:	Dep Alt. K	Alt. L	PNV Alt. M	Alt. N	Alt. O
	Alt. A	Alt. B	Alt. C	RPA Alt. D	Alt. E	Alt. F	Alt. G	Alt. H	CD Alt. I	PA Alt. J	:	FP Alt. JF	:					
Live Green Sawtimber on suitable lands	226	223	225	227	218	164	213	208	150	202	:	202	:	230	255	262	247	215
Non-inter- changeable salvage component on suitable lands	28	27	28	28	27	20	27	26	18	25	:	25	:	28	31	32	31	27
TOTAL ASQ (suitable land)	254	250	253	255	245	184	240	234	168	227	:	227	:	258	286	294	278	242
Other Harvest or Salvage on non-suited portion of tentatively suitable lands	7	7	7	7	6	5	6	6	5	6	:	6	:	7	8	8	7	6
TOTAL PLANNED TIMBER SALE VOLUME OFFERINGS	261	257	260	262	251	189	246	240	173	233	:	233	:	265	294	302	285	248

FIGURE II-17



As can be seen in Figure II-17, Alternatives L, M, and N produce the highest timber harvest levels in the first decade. Alternative L produces high yields because it utilizes all the tentatively suitable timberlands. It also requires the highest budget. Alternatives M and N are departure alternatives which utilize approximately 83% of the tentatively suitable timberlands and have the second and third highest budgets, respectively. No additional wilderness is recommended in any of these three alternatives.

While producing high timber yields, Alternative L retains 39% of the inventoried roadless areas and Alternatives M and N retain about 50%. All three of these alternatives provide for a low degree of visual quality protection in sensitive viewing areas with Alternative L giving the least protection.

New road construction requirements are high in these three alternatives. Alternative L requires the highest total miles (6,360) while Alternative M requires the highest amount of road building in the first decade (3,150 miles). Additional road closures to protect big game will be significant, with Alternative L requiring 4,090 miles of road closures because of the large number of road miles to be eventually constructed.

As can also be seen in Figure II-17, Alternatives F and I produce the lowest timber harvest levels. The objective of Alternative F was to produce big game (elk), so only the timber that maximized PNV consistent with this objective was harvested. This resulted in a low budget requirement. Alternative I also produced low timber yields because of a budget constrained to meet the 1980-82 average expenditures which were similar, but lower than those of Alternative F.

Alternative F recommends no additional wilderness and Alternative I recommends 64,000 acres. Alternative F retained 52% of the inventoried roadless areas, while Alternative I retained 43%. Both of these alternatives provide for a high degree of visual quality protection in sensitive areas. These alternatives also require the lowest amount of new road construction and subsequently require fewer road closures than most of the other alternatives.

Most of the remaining alternatives fall within the middle range of timber volume harvest in the first decade in keeping with their stated objectives which were to:

- 1) Recommend wilderness and designate roadless management and that reduced the amount of suitable timberland available (Alts. B, C, D, E, G, H, J, K, and O).
- 2) Protect visual quality which reduced the volume per acre available for harvest (Alts. J, K, and O).
- 3) Specify timber yields to meet RPA goals (Alt. D).
- 4) Provide no additional wilderness and non-declining timber flow (Alt.A)

The Allowable Sale Quantity in the Final Plan in the future could possibly increase 24 MMBF if significant increases occurred in the demand and price paid for timber. See Appendix B, Section V. I, for an analysis of currently unsuitable timberland which could be added to the suitable timber base if certain conditions take place. These additional timber lands would require an amendment to the Forest Plan before the timber volume could be realized. The next section on Suitable Timberlands discusses this item further.

FIGURE II-33

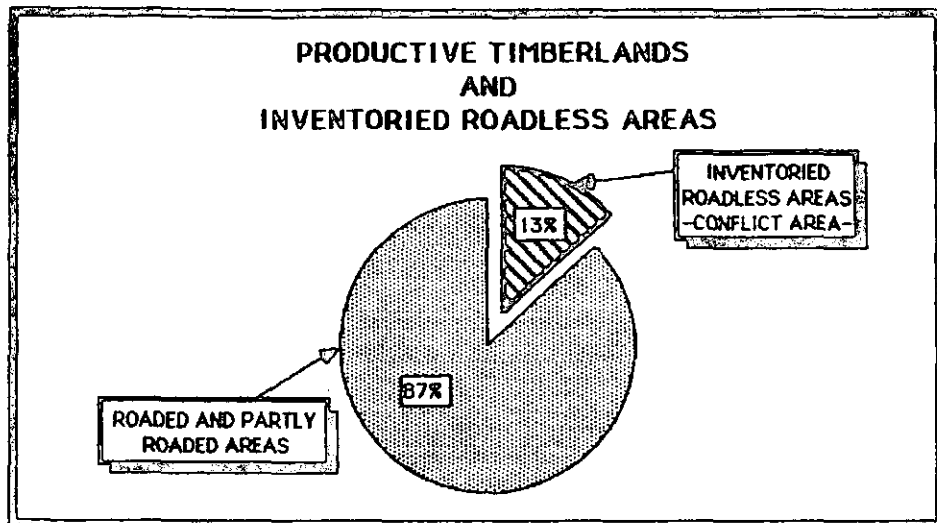


FIGURE II-34

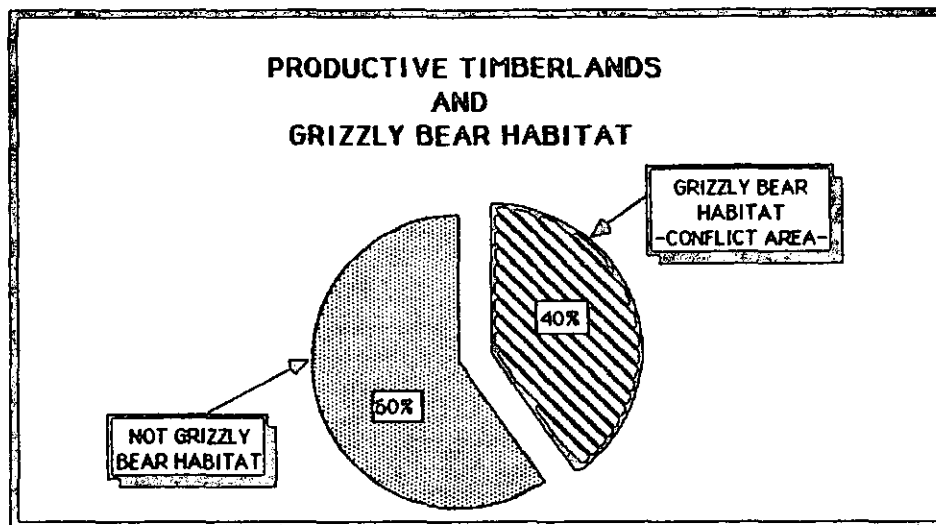


FIGURE II-35

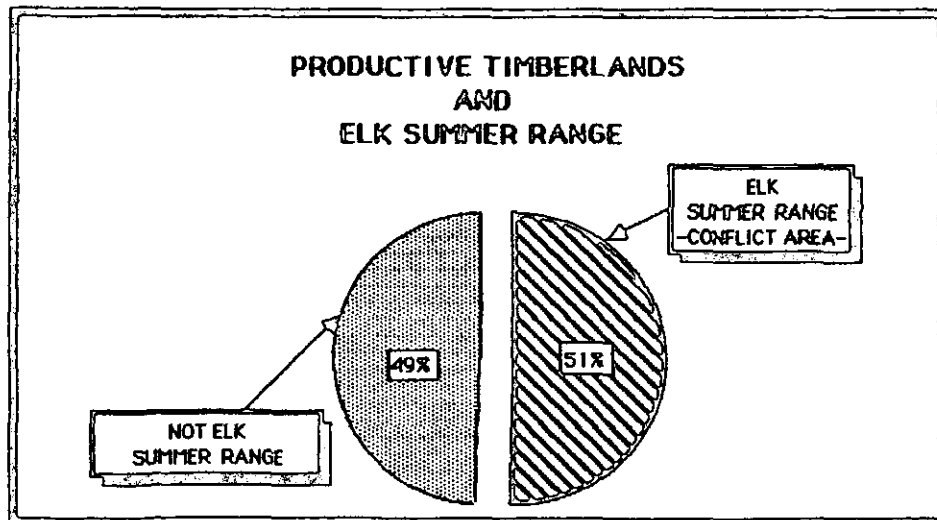
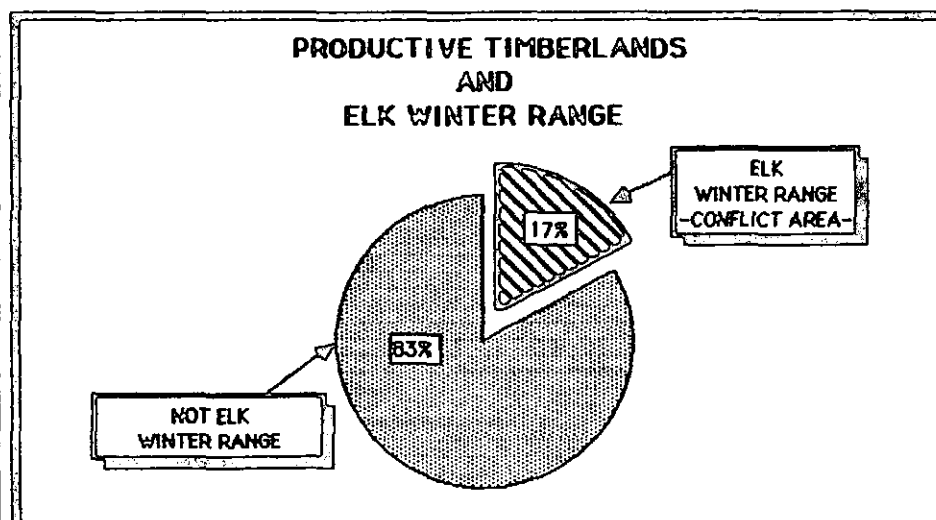


FIGURE II-36



b. Land Suitable for Timber Harvest

Suitable timberlands are those lands considered biologically capable of producing timber, harvestable with present technology, available for harvest (i.e., have not been Congressionally or administratively withdrawn), where timber harvest would not conflict with the management direction for an area and is calculated as being cost-efficient.

Available productive timber land includes all the land which is biologically capable of producing commercial timber except that withdrawn from commercial timber uses by Congress or the Chief of the Forest Service (Wilderness, campgrounds, administrative sites etc.). The preceding page displayed the relationship between four components of the wildlife and roadless area issues and the available productive timber land base. In general, conflicting opinions arise concerning management where suitability for these components exist on available productive timber lands. The degree to which conflicts will occur is usually in direct proportion to the amount of productive timberland area in conflict. As can be seen in Figures II-33 to II-36, the largest amount of conflict with timber production is on elk summer range and grizzly habitat. Elk winter range and inventoried roadless areas have a lesser amount of conflict.

Summary of Changes between the Draft and Final EIS

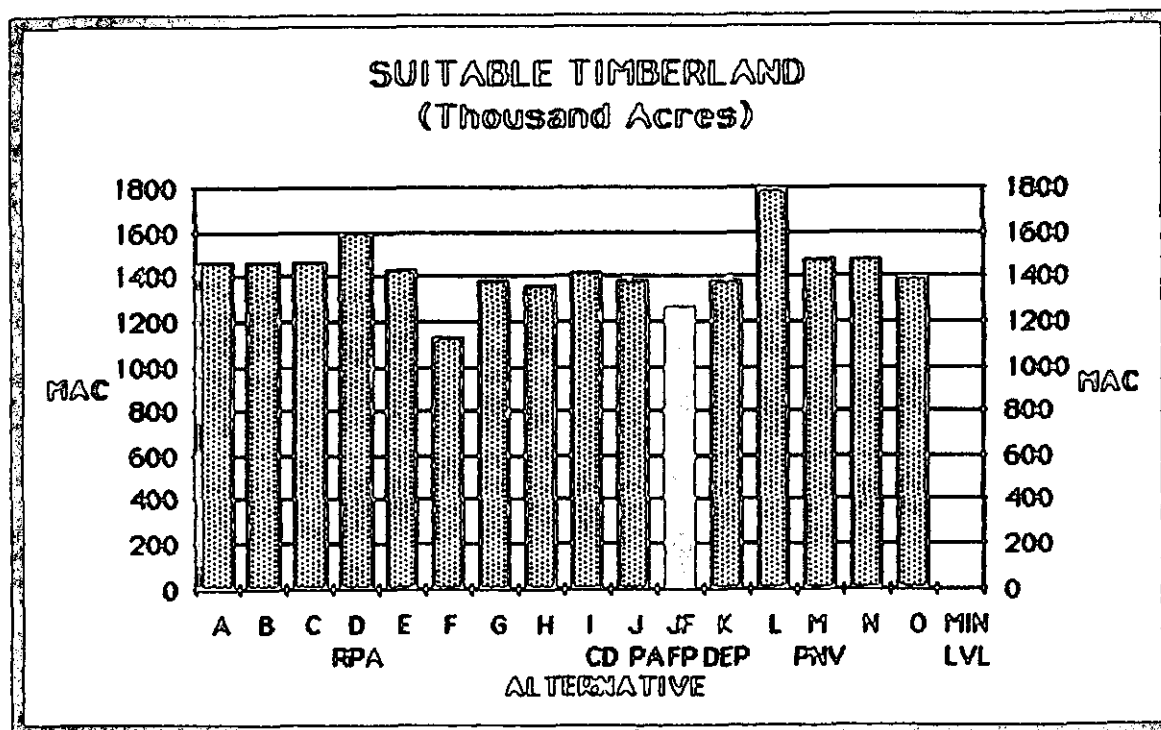
The acreage suitable for timber harvest in the final Forest Plan (Alt.JF) is 1,263,000 acres. This is a reduction of 123,000 acres (9%) compared to Alt. J, and is the result of providing additional acres for old-growth management for wildlife diversity and removing old-growth timber acres from the suitable timber base. This was an on-the-ground determination of existing old-growth timber stands which appeared to provide the highest biological potential for old-growth timber species and the least effect on timber production and costs. See Appendix B for more detail on the analysis of old-growth timber. An analysis has been added to display the relative efficiency and intensity of management on the suitable timberland base within each alternative (See Section f, in this section). Additional analysis has also been done on the amount of potential timberland that would be available if significant increases occurred in the demand and price paid for timber (See Appendix B, Section V.I).

The maximum acreage of suitable timberland is 1,788,000 acres in the timber benchmark (Alt. L). The difference in suitable timberlands between alternatives is due to the amount of roadless, wilderness, or other nondevelopmental designations present in an alternative. The following figure displays the amount of suitable timberlands in each of the alternatives. Appendix B, Section II explains why the remainder of the Forest is never considered suitable timberland.

Alternative M, the PNV Benchmark, utilizes 83% of the suitable timberland identified in Alternative L, the Timber Benchmark. This indicates that 304,000 acres are not cost-efficient for timber production when PNV is maximized. These 304,000 acres are still suitable for timber production, but require higher investments in relation to their potential return.

The Final Plan (Alt. JF) includes 139,000 acres that could be added to the suitable timber base if the demand and price paid for timber increased significantly. These lands are currently considered unsuitable because of the high costs required to manage the site (e.g., habitat types that are difficult and expensive to regenerate, etc.). See Appendix B, Section V.I. for more details on these potentially suitable timberlands. An Amendment or a revision to the Forest Plan would be required before these lands would be added to the suitable timber base.

FIGURE II-37



c. Lodgepole Pine Management

(1) Lodgepole Pine Harvest

The issue of lodgepole pine (LPP) harvest stems from the mountain pine beetle which is infesting stands of lodgepole pine sawtimber 80 years old and older, primarily. The objective of the lodgepole pine harvest would be to salvage as much mature lodgepole pine as possible before being killed by the mountain pine beetle.

Summary of Changes between the Draft and Final EIS

The amount of lodgepole pine scheduled for sale and potential harvest will be 78 mmbf/yr (live green) in the first decade, a 4% increase (3 mmbf/yr.) compared to Alt. J and similar to the Current Direction (Alt. I). In addition, approximately 20 mmbf/yr. of dead lodgepole pine volume (a portion of the non-interchangeable component) is also projected for a total lodgepole pine sell level of 98 mmbf/yr. which is consistent with the lodgepole pine sale schedule of the recent past, as shown in the following table.

Table II-3

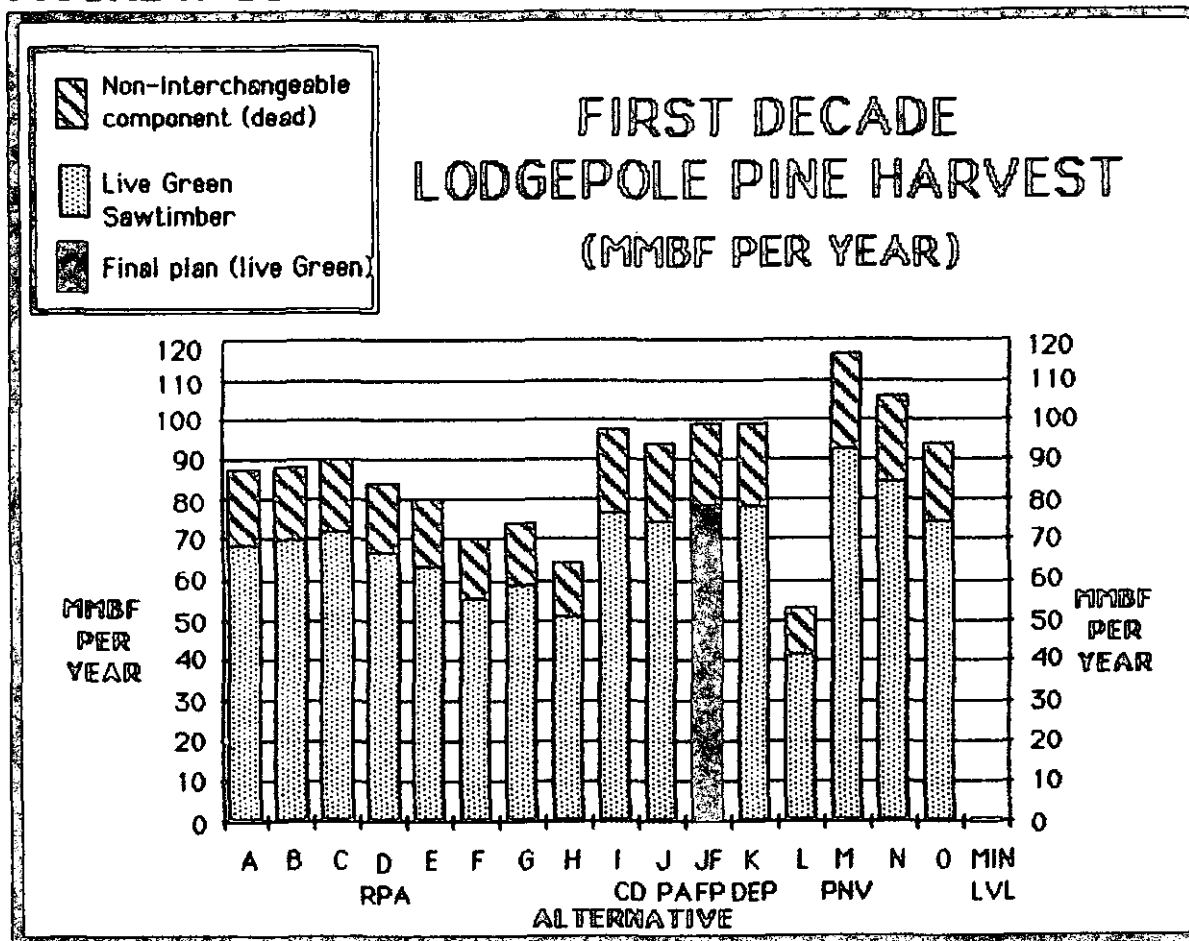
Kootenai National Forest

Lodgepole Pine (LPP) Timber Sold and Harvested (mmbf)

Fiscal Year	Total Timber Volume Sold	Total LPP Volume Sold	% LPP Sold	Total LPP Harvested
1979	206	36	17	46
1980	176	48	26	34
1981	264	93	35	50
1982	221	91	41	50
1983	245	97	39	72
1984	212	98	46	72
1985	224	97	43	67

As can be seen from the Table, the lodgepole pine harvest volume has been on a steady increase indicating continued demand for this stumpage. This demand will enable the continued salvage of mature lodgepole pine to reduce the loss from the current Mountain Pine Beetle infestation.

The following chart displays the amount of live green plus the dead lodgepole pine that would be offered for harvest each year (average) during the first decade for each alternative. Estimates beyond 10 years are considered academic because all high-risk lodgepole pine stands would be infested by that time and the rapid deterioration of this species will prevent successful economic salvage. The lodgepole pine timber volume shown here is a subtotal included within the allowable sale quantity displayed earlier in this section.



Alternatives M and N harvest the highest volume of lodgepole pine sawtimber in the first decade because they are departure alternatives with no restrictions on the suitable timberland base (no recommended wilderness or designated roadless areas).

Alternative L harvests the least volume of lodgepole in the first decade because the objective of this alternative is to maximize timber over the entire 200 year analysis period. This results in postponing the harvest in lodgepole pine sawtimber stands and concentrates the harvest and regeneration into higher-productive and higher volume mixed-conifer stands in the earlier decades so they can be harvested again before the end of the 200 year planning horizon.

Most of the remaining alternatives fall in the middle range of harvest volume in the first decade because of a combination of objectives or a single objective which were to:

- 1) Recommend wilderness and designate roadless areas and that reduces the amount of suitable timberland available (Alts. B, C, D, E, G, H, I, J, K, and O).
- 2) Maximize big game (elk) which results in harvesting only where big game would be the most favorably affected (Alt. F).

- 3) Protect visual quality which reduces the volume per acre available for harvest on the higher volume mixed-conifer stands allowing the lower volume per acre lodgepole pine sawtimber to compete favorably for timber harvest scheduling (Alts. I, J, K, and O).
- 4) Provide no additional wilderness and non-declining timber flow (Alt. A).

(2) Conversion of Stagnated Lodgepole Pine Stands

There are 94,000 acres of lodgepole pine on the Kootenai Forest where the existing small saplings and poles are so thick that annual growth is at a virtual standstill. These stands are very dense and heavily loaded with fuels causing them to be very poor habitat for big-game species and potential fire hazards. These stands need to be completely replaced to regain the inherent productivity of the site.

It is estimated that it will take approximately 50 years to convert the 94,000 acres (approximately 1,880 acres/year) and that it will take approximately 80 years before the new timber stands are mature enough to harvest.

The amount of stagnated lodgepole situated outside inventoried roadless areas is 73,000 acres. The remaining 21,000 acres or 22% are located within 13 inventoried roadless areas.

Summary of Changes between the Draft and Final EIS

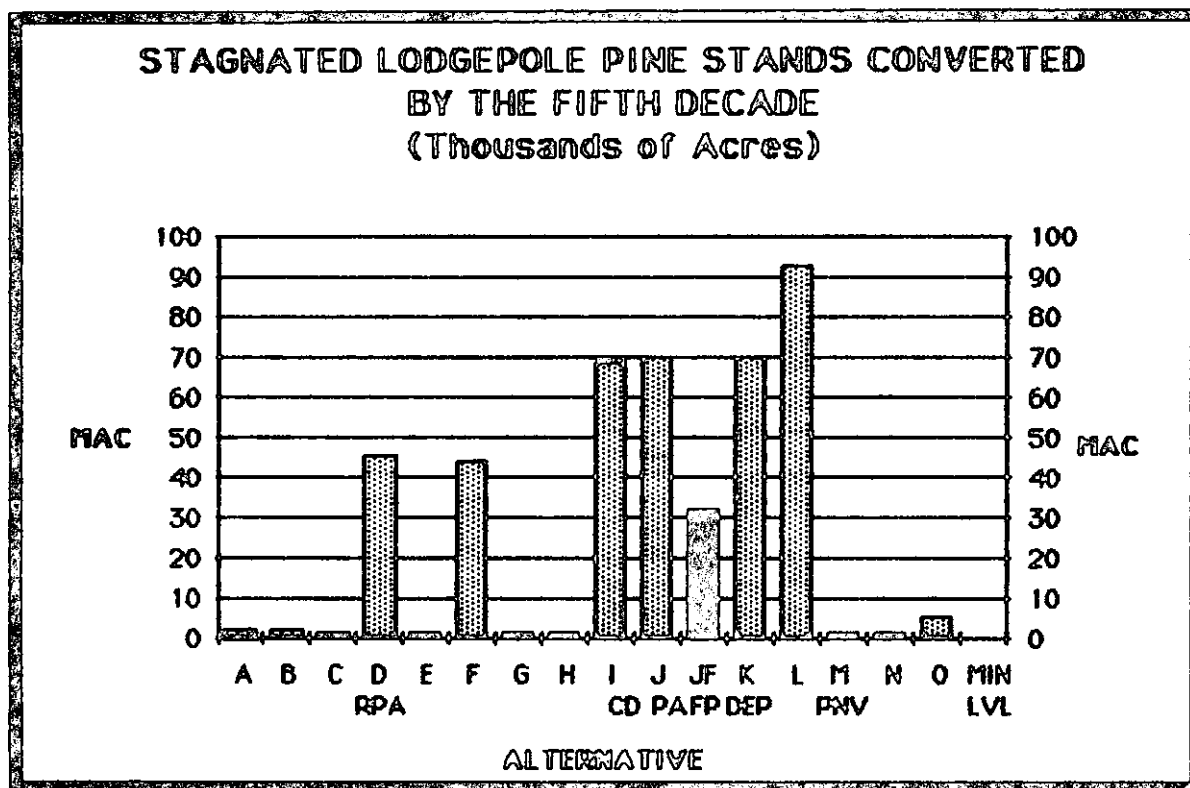
The Final Forest Plan (Alt. JF) projects 32,000 acres of stagnated lodgepole pine are to be converted by the fifth decade. Budget reductions represented in the first part of the planning period necessitated a reduction of 38,000 acres from the Proposed Action (Alt. J) in the Draft EIS. See Appendix B for more detail on this analysis.

The following figure displays how many acres are converted in each alternative by the fifth decade.

As can be seen in the figure, only six alternatives converted a significant amount of stagnated lodgepole pine (Alts. D, F, I, J, K, and L). Alternative F converted 44,000 acres or 47% of the total acreage to produce the highest possible benefit for the elk population. Alternative L converted 93,000 acres or 99% of the total acreage to produce the highest possible timber yield and the lowest risk of catastrophic fire. Alternative D converted almost half of the total acreage (45,000 or 48%) to produce the timber yields of the RPA goals. Alternatives I, J, and K converted approximately 70,000 acres (74%) each to produce desired timber and wildlife benefits. The remaining alternatives did not result in conversion of the stagnated

stands because they were not needed to satisfy the goals and because conversion was not cost-efficient.

FIGURE II-39



d. Silvicultural Systems

The silvicultural systems used will be even-aged and uneven-aged. In most cases, even-aged management will be used because it more nearly parallels the natural processes observed on the Kootenai. Acres shown in the Final EIS for even-aged management, such as clearcutting, are not targets but model projections that indicate optimum levels. Final determination of which silvicultural system to use will be determined by a certified silviculturist after an on-the-ground site survey. See Chapter IV in the Final EIS for acreages of clearcutting harvest, and Appendix 2 in the Forest Plan document for criteria used in determining the appropriate vegetation management practices.

e. Timber Utilization Standards

All timber harvest volumes are based on the desirable Regional Utilization Standards presented in the Regional Guide. The results of an analysis of the volume differences and economic value are displayed in Appendix B, section VI. In summary, the difference between the current and desired Regional utilization standard is approximately 7%.

f. Timber Resource Management Summary

Significant Changes from Draft to Final EIS

This section was not displayed in the Draft EIS and is presented here to give a composite technical review of the timber resource.

(1) Introduction

Management of the timber resource is a complex problem that involves biological and ecological productivity, social compatibility, as well as economic and physical effects. On a large productive Forest such as the Kootenai, the timber resource is involved in every aspect of Forest Management; including fire protection, insect and disease control, recreation and visual quality, water quality and soil protection, wildlife and fisheries, etc. As a general rule, the amount of timber available for harvest usually determines the amount of potential economic activity and the level of environmental effect. An extension of this rule is that the amount of land managed for timber usually determines the level of timber harvest. With these two rules in mind the following discussion is presented along with Tables II-2x and II-2y

Table II-2x displays all of the 15 Alternatives that were presented in the Draft EIS, plus The Final Plan (Alt. JF). The alternatives are presented in descending order from the largest to the smallest suitable timber base (land available for timber management) and the Final Plan is highlighted for ease of reference. Table II-2y displays pertinent information from the existing Timber Management Plan for comparative purposes.

In summary, the Final Plan (Alt. JF) will operate at a higher intensity on an acre-per-acre basis than the Current Direction (Alt. I). The suitable timber base will be smaller as a result of the removal from timber harvest of additional acres for old-growth timber management for wildlife diversity, and the removal of steep lands and lands that are difficult to regenerate from the suitable timber base during the life of the Forest Plan.

A section which further describes the results of an evaluation of timber supply and suitable land on the Forest can be found in Appendix B, Section V, Subsections H, I, and J.

Table II-2x
Kootenai National Forest

Timber Resource Management Information by Benchmark and Alternative

Benchmark or Alternative	Suitable Lands (M Acres)	Timber Inventory			First Decade			Long-Term Sustained Yld.			Ave. Ann. Gross Growth		
		Begin.	Begin./Ac.	End	Average Annual ASQ			(Decade			Begin.	2030	2030
		(MMCF)	(CF)	(MMCF)	(MMCF)	(% Col. 2)	(MMBF)	(MMCF)	(% Col. 4)	Met)	(CF/Ac)	(CF/Ac)	(MMCF)
Column No. --->	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
<u>Benchmark</u>													
Maximum Timber	1,788	4,950	2,770	4,559	59	1.2	255	102	2.2	18	51	78	66
Maximum PNW	1,484	4,311	2,900	3,736	66	1.5	262	84	2.2	NA/1/	54	99	50
<u>Alternative</u>													
L - Max Timber	1,788	4,950	2,770	4,559	59	1.2	255	102	2.2	18	51	78	66
D - RPA	1,595	4,519	2,830	4,465	56	1.2	227	90	2.0	12	54	86	60
M - Max PNW	1,484	4,311	2,900	3,736	66	1.5	262	84	2.2	NA/1/	55	99	50
N - No Wldns/Dep	1,481	4,034	2,720	3,762	62	1.5	247	84	2.2	90%/2/	55	74	40
A - No Wilderness	1,470	4,320	2,940	3,806	56	1.3	226	84	2.2	12	55	80	48
C - MT Wldns Bill	1,466	4,279	2,920	3,750	56	1.3	225	83	2.2	12	55	81	48
B - RARE II Wldns	1,464	4,289	2,930	3,781	56	1.3	223	84	2.2	12	55	81	48
E - RARE II+	1,425	4,210	2,950	3,809	54	1.3	218	82	2.2	12	55	79	44
I - Current Direc	1,422	3,809	2,680	5,715	36	1.0	150	74	1.3	55%/2/	51	55	43
O - Max Rdls/Visl	1,389	4,211	3,030	4,059	55	1.3	215	83	2.0	12	54	89	54
G - RARE II++	1,386	4,119	2,970	3,771	52	1.3	213	80	2.1	12	55	78	42
J - Prop Action	1,386	3,714	2,680	3,416	51	1.4	202	72	2.1	12	51	76	45
K - Prop Act/Dep	1,386	3,714	2,680	3,446	57	1.5	230	72	2.1	12	51	75	47
H - Max Wildernes	1,361	4,055	2,980	3,762	50	1.2	208	78	2.1	12	55	77	40

JF - Final Plan	1,263	3,187	2,528	2,957	49	1.5	202*	63	2.1	12	53	70	39

F - Max Elk	1,132	3,335	2,950	4,634	40	1.2	164	56	1.2	16	51	68	35

NOTES: Tentatively Suitable Lands for all Alternatives is 1,788,000 acres, and Beginning Inventory is 4,950 MMCF.

Column 7 is the Live Green Sawtimber only. Column 13 is Average Annual Net Growth for the 5th Decade.

* The Total ASQ for Alt. JF is 227 MMBf which includes 25 MMBf of non-interchangeable salvage volume.

/1/ LTSY is not reached within the 20 decade analysis period and the percentage is not calculable because of the wide variation in harvest levels.

/2/ The percentage of LTSY that is achieved either during or at the end of the 20 decade analysis period.

Table 11-2x (continued)
Kootenai National Forest

Timber Resource Management Information by Benchmark and Alternative

Benchmark or Alternative	Area and Percent of Suitable Land by Yield Level						First Decade Harvest Method			Total
	Full Yield (100%)		80-100% Yield		50-80% Yield		Overstry			1st Decade
	(# Acres)	(% Col.1)	(# Acres)	(% Col.1)	(# Acres)	(% Col.1)	Clearcut	Shelterwood	Removal	Harvest Acs.
Column No.--->	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(24)
<u>Benchmark</u>										
Max. Timber	811	45	574	32	402	23	192	0	0	11
Max. PNV	644	43	442	30	398	27	166	0	0	11
<u>Alternative</u>										
L - Max Timber	811	45	574	32	402	23	192	0	0	11
D - RPA	734	46	422	26	439	28	136	0	0	8
M - Max PNV	644	43	442	30	398	27	166	0	0	11
N - No Wldns.-Dep	626	42	512	35	344	23	151	0	0	10
A - No Wilderness	623	42	522	36	325	22	137	0	0	9
C - MT Wldns. Bill	616	42	516	35	333	23	138	0	0	9
B - RARE II Wldner	627	43	509	35	328	22	137	0	0	9
E - RARE II +	643	45	438	31	344	24	132	0	0	9
I - Cur. Direction	441	31	437	31	543	38	88	2	0	6
O - Max. Rdls/Visl	0	0	1,185	85	212	15	106	37	0	10
G - RARE II ++	632	46	424	30	330	24	129	0	0	9
J - Prop. Action	315	23	559	40	513	37	117	20	0	10
K - Prop. Act.-Dep	315	23	559	40	513	37	135	20	0	11
H - Max. Wildernes	606	45	440	32	315	23	125	0	0	9

JP - Final Plan	268	21	565	45	426	34	135	22	0	12

F - Max. Elk	30	3	698	62	404	35	97	0	0	9

NOTES: Tentatively Suitable Lands for all Alternatives is 1,788,000 acres. Beginning Inventory is 4.950 MMCF.

Table II-2y
Kootenai National Forest

Pertinent Timber Data from the Existing Timber Management Plan

Average Annual Potential Yield		Average Annual Chargeable Volume Sold (1967-1985)		Total of Standard, Special, and Marginal Lands Used for Potential Yield Calculation
MMCF	MMBF	MMCF	MMBF	Thousand Acres
69	277	50	198 1/ 162 2/	1,490

1/ Includes Salvage Volume and the Timber "Buy-Back" Volumes.

2/ Excludes Salvage Volume and Timber "Buy-Back" Volumes and
is directly comparable to ASQ's in Table II-2x (Column 7).

(2) Timber Resource Information

In Table II-2y, the Average Annual Potential Yield corresponds to the First Decade Average Annual Allowable Sale Quantity (ASQ) in Table II-2x (Columns 5 and 7). The Total of Standard, Special and Marginal Lands corresponds to Suitable Lands in Table II-2x (Column 1).

The Average Annual Chargeable Volume Sold, in Table II-2y is the historical total timber volume sold and represents a combination of budget constraints and local demand. It also includes the timber volume that has since been "Bought Back" under the Timber "Buy-Back" Bill. When the Timber "Buy-Back" is removed from the 198 mmbf/year shown above, the total Chargeable Volume is 186 mmbf/year. This still includes salvage volumes of dead timber which averages 24 mmbf/year. When salvage volume is excluded, the result is a "net" regulated Chargeable Volume of 162 mmbf/year which can be compared to the First Decade Average Annual Allowable Sale Quantity (ASQ) in Table II-2x (Column 7).

Suitable Lands - Column 1, Table II-2x: Suitable lands are those areas that are to be specifically managed to produce regulated yields of green timber (plus the non-interchangeable component) during the life of the Forest Plan (10-15 years). In general, the amount of suitable timberland in each alternative is a direct reflection of the amount of roadless or wilderness recommended; the higher the amount of suitable timberland, the lower the amount of roadless or wilderness. The exception is Alt. F which only selected timberlands that would produce optimum habitat levels for elk management. Alt. L, the maximum timber alternative, has the highest amount of timberland available for management and the lowest available for roadless designation.

Alt. M, the maximum PNV alternative, is the 3rd ranked in descending order because of economic limitations on 304,000 acres of tentatively suitable timberland. Alt. H, the maximum wilderness alternative, utilizes only the

economically-suited timberlands outside of inventoried roadless areas and provides the highest amount of roadless opportunity.

The Final Plan (Alt. JF) has the second lowest suitable timberland because of a combination of a large amount of roadless/wilderness opportunity, a significant amount of old-growth timber (126,000 acres) designated as unsuitable for timber management during the life of the Forest Plan, and lands that are steep and/or difficult to regenerate (116,000 acres). These are the reasons for the difference between the Suitable Land for Alt. JF and the Total Acres of Standard, Special and Marginal lands Used to Calculate the Potential Yield for the Existing Timber Management Plan displayed in Table II-2y. Much of the roadless opportunity provided in Alt. JF are those lands identified as economically unsuitable in Alt. M (Maximum PNV).

Timber Inventory - Columns 2, 3 and 4, Table II-2x: The Beginning Inventory (Column 2) is the total amount of measurable timber volume that is available on the suitable timberlands (Column 1) and is usually directly related. The exceptions are Alts. I, J, K, and JF. These alternatives purposefully selected more suitable timberland with insect-infested lodgepole pine which has a lower timber-volume per acre, and stagnated lodgepole pine stands which do not have any merchantable volume (See Column 3). In addition, Alt. JF has 126,000 acres of old-growth timber designated as unsuitable timberland. These old-growth stands have high volumes-per-acre which, when removed, reduce the beginning inventory.

The Beginning-Timber-Inventory per Acre (Column 3) is the result of dividing Column 2 by Column 1, and indicates the average stocking per acre at the start of the analysis period (200 years). The higher volumes-per-acre are the result of selecting a higher proportion of well-stocked timberland in contrast to Alt. L (Max. Timber) which includes all the tentatively suitable timberlands, including poorly-stocked and stagnated lodgepole pine stands. Alts. I, J, K, and JF had lower volumes-per-acre because of the purposeful selection of more area with insect-infested lodgepole pine which has a lower volume-per-acre, and stagnated lodgepole pine which does not have any merchantable volume per acre. In addition, Alt. JF designated 126,000 acres of old-growth timber as unsuitable timberland. These stands were high volume-per-acre stands which, when removed, reduced the inventory and the resulting inventory per acre.

The Timber Inventory at the End of the Planning Period (Column 4) is a function of the intensity of timber management and the amount of suitable acres (Col.1). The more suitable acres available, the higher the ending inventory; and the more constraints on timber management, such as visual quality which restricts the amount and frequency of timber harvest, the higher the ending inventory.

Alt. I and Alt. F have the highest ending inventories because of budget constraints that limited the regulated timber harvest to 150 mmbf/year (Alt. I), and to limited timber harvesting because of the goal to optimize elk habitat (Alt. F). Both of these alternatives resulted in inventory increases (50% and 39% respectively) in contrast to Alt. L (Maximum Timber) which experienced an 8% reduction. All other alternatives resulted in an inventory reduction. Alt. M (PNV) had the largest inventory reduction of all the alternatives (13%) which resulted from a significant departure schedule. Alt. D, the RPA alternative, had the smallest inventory reduction (1%), indicating that timber management intensities and inventories were in close balance.

First Decade Average Annual Allowable Sale Quantity (ASQ) - Cols. 5, 6 and 7: Columns 5 and 7 display the ASQ (green timber only) for the first decade, which is the planning period for the Forest Plan, and are in cubic and board feet, respectively. Volumes are generally proportional to the amount of suitable land (Column 1). (See the discussion on Table II-2y, above.) The exceptions are Alts. M, N, I, and K. Alts. M, N and K are allowed to depart from the non-declining, even-flow principle of timber harvest. This allows a higher harvest rate earlier in the analysis period (200 years) which is usually the first decade. This higher harvest rate would then have to be offset by a decline sometime in the future, usually 3 to 6 decades later.

Alt. I (Current Direction) has a disproportionately lower harvest level because it is purposefully constrained to simulate the average budget level experienced during the 1980-1982 period. Without this budget constraint, Alt. I could harvest approximately 204 mmbf/year which is similar to Alt. J and JF (See section VI.D.5.e. in Appendix B).

The difference between the Average Annual Potential Yield shown in Table II-2y and Alt. JF (the Final Plan) is because of the combination of the lower suitable timberland base, and the spatial timber harvesting constraints that have been incorporated for the recovery of the grizzly bear; a species that is threatened with extinction. The lower suitable timberland base in Alt. JF is primarily because the old-growth timber designations (Management Area 13) were revised to not allow the production of regulated timber yields during the life of the Forest Plan, and the steep and difficult-to-regenerate lands were removed from the suitable base (Management Areas 19 and 18, respectively). The spatial timber-harvesting constraints for the grizzly bear have been designed and incorporated since the Existing Timber Management Plan was formulated in 1967. These spatial constraints restrict the amount of acreage that can be developed or impacted at any time to approximately 8% of the identified grizzly habitat.

Column 6 is the result of dividing Column 5 by Column 2. It displays the relative intensity of timber management in the first decade regarding the amount of land treated to produce the yields stated in Columns 5 and 7. Alt. I (Current Direction) has the lowest rate of intensity because of the budget constraint stated above. Alts. M, N and JF have the highest rate of intensity. Alts. M and N are departure alternatives and are producing high timber volume levels in the first decade as stated above. Alt. JF, the Final Plan, has a high rate of intensity also because it is attempting to produce high timber volumes in the first decade on a non-declining basis on a small suitable timberland base.

Long-Term Sustained Yield - Columns 8, 9 and 10, Table II-2x: Long-Term Sustained Yield (LTSY) is the average annual timber harvest level that could be sustained indefinitely at some point in the future. It is usually directly related to the amount of suitable land available for timber management (Col.1); the higher the amount of suitable land, the higher the potential LTSY. The exceptions to this are when the suitable timberland is not being utilized efficiently for timber management; such as in Alt. I (Current Direction) which is purposefully constrained to simulate a particular budget level. This budget level constraint does not allow the harvest level to reach its potential which results in a high ending inventory as displayed in Column 4.

Column 10 displays the time period (decade) when LTSY is reached. It is an indication of the relative productive efficiency of the timber management program; the earlier the LTSY is reached, the more efficient the Alternative. The exception is Alt. L, the maximum timber alternative. This alternative is producing the highest possible amount of timber and the Minimum Management Requirements that are necessary dictate that 18 decades will be needed to achieve the LTSY on 1,788,000 acres.

Alts. M and I do not reach LTSY within the analysis period (200 years). Alt. M, the maximum PNV alternative, does not achieve LTSY because of the nature of the departures allowed in the harvest schedule; the decadal harvest level can increase or decrease plus or minus 25% from the preceding decade. This departure allowance never achieves LTSY within the 200 year analysis period. Alt. I, the Current Direction alternative, does not achieve LTSY within the 200 year planning period because of the constrained budget mentioned above which resulted in reduced timber harvest levels.

Column 9 is the result of dividing Column 8 by Column 4. This also gives a relative comparison of the efficiency of the timber management program inherent in the alternative. As can be seen, Alts. I and F have the lowest ratings. Alt. I is low because of the previously-decried harvest level constraints. Alt. F is low because of the emphasis on providing for optimum elk habitat. Both of these alternatives produce high ending inventories (Column 4) which results in a low rating.

Average Annual Gross Growth - Columns 11, 12 and 13, Table II-2x: The Beginning Average Annual Gross Growth Per Acre (Column 11) is an indication of the efficiency of the alternative for timber production. The alternatives with the highest growth-per-acre are utilizing the most productive lands. Alts. L, I, J, K and F have the lowest Beginning Growth-per-acre. This is because they all have a higher percentage of insect-infested lodgepole pine which is a lower total volume-per-acre (and therefore a lower total growth-per-acre) species. They also include significant amounts of stagnated lodgepole pine stands which do not produce any growth. (NOTE: Columns 11 and 12 displays gross growth-per-acre instead of net growth-per-acre because net-growth data was not available for Column 11. The comparisons between the Alternatives in Columns 11 and 12 are still valid.)

Column 12 is the Average Annual Gross Growth Per Acre at the end of 50 years. Alt. M, the Maximum PNV alternative, has the highest average net growth because it selected only the highly productive lands which produced the highest economic returns. Alt. I, the Current Direction, has the lowest gross growth because of the combination of reduced harvest levels dictated by a restricted budget, a significant amount of insect-infested lodgepole pine stands as well as a large acreage of stagnated lodgepole pine.

Column 13 is the Total Average Annual Net Growth in million of cubic feet that could be expected at the end of 50 years. It is comparable to Columns 8 and is usually in direct proportion to the suitable timber base (Column 1). Alt. L, the Maximum Timber alternative has the highest total net growth and Alt. F, the Maximum Elk Habitat alternative, has the lowest total net growth.

Area and Percent of Suitable Land by Yield Level, Columns 14-19: Columns 14 and 15 display the acres of Full-Yield Timber Production (Management Area 15) and the percent of the Suitable Timber Base (Column 1). It displays the relative intensity of timber production among the alternatives. Alt. L, the Maximum Timber alternative, has the highest total acreage in the Full Yield Category. Alt. O, the Roadless/Visual Quality Protection alternative, has the least amount of acres in this category with Alt. F also on the low end. These two alternatives did not have high timber harvest levels as an important objective. Alts. D and G have the highest percentage of Suitable Timber in the Full-Yield Timber category. Both of these alternatives were attempting to produce high timber harvest levels as well as resolve other issues such as wilderness. Alt. JF, the Final Plan, has a relatively low acreage and percentage because of the goal of producing wildlife and visual quality as well as timber production (See Columns 16 and 17).

Columns 16 and 17 display the acres of Suitable Timber (Column 1) and the percentage in the reduced production range of 80-100%. Timber management prescriptions in this category are usually those associated with visual quality protection and elk summer range management (Management Areas 16, 17 and 12 respectively). As can be seen, Alt. O, the Visual Quality Protection alternative, has the highest total acreage and percentage in this category. Alt. D, the RPA alternative, had the lowest amount and percentage in this category because visual quality protection was not a primary objective. Alt. JF, the Final Plan, has a relatively high amount of area and percentage in this category because of the emphasis on visual quality protection and elk summer-range management.

Columns 18 and 19 display the acres of Suitable Timber (Column 1) and the percentage in the reduced production range of 50-80%. Timber management prescriptions in this category are those associated with big-game winter range, grizzly bear and old-growth timber management (Management Areas 11, 14 and 13 respectively). Alt. I, the Current Direction, has the highest acreage and percentage because of the combination of emphasis on winter-range, grizzly bear and old-growth timber management. Alt. O, the roadless/visual quality alternative, has the lowest acreage and percentage in this category because of its goal of visual quality (See Column 16 and 17).

First Decade Harvest Method, Columns 20-22: These three columns display the acres of clearcutting, shelterwood and overstory removal that was modeled for each alternative in the first decade which is the approximate life of the Forest Plan. In general, the amount of clearcutting is closely related to the amount of Suitable Acres displayed in Column 1. The exception is Alt. O, the Visual Quality Protection alternative, which has the lowest clearcut acreage (Column 20). Alts. O, J, K and JF were the only alternatives that utilized extensive acreages of shelterwood harvesting in the first decade because of their concern for visual quality protection (Column 21). No alternatives utilized overstory removal in the first decade (Column 22).

Total First Decade Harvest Acres, Column 24: This Column is the total of Columns 20-22 and divided by Column 1. It is a relative indicator of the intensity of timber management for each alternative. Alt. JF, the Final Plan, has the highest percentage of suitable acreage available for harvest in the first decade. This is because of the goal of harvesting as much insect-infested lodgepole pine as possible as well as maintaining an historical level of timber for sale to provide for local economic stability. Alt. I, the Current Direction, has the lowest percentage because of the restrained harvest level dictated by a given budget level.

2. Facilities

Summary of Changes between the Draft and Final EIS

The total amount of roads needed to manage the Kootenai Forest in the Final Plan (Alt. JF) was reduced by 6% from the Proposed Plan (Alt. J) because the suitable timberland base was reduced to provide for old-growth timber-dependent species. No change occurred in the proportion of road restrictions needed.

a. Road Construction

There were approximately 6,000 miles of roads (3,750 miles of local roads and 2,250 miles of arterials and collector roads) in place on the Kootenai on January 1, 1984. (There were 6,200 miles of road as of January 1, 1986.) Each alternative requires additional miles of road construction, the amount of which is dependent on the size of the area from which timber will be harvested (suitable timberland).

Summary of Changes between the Draft and Final EIS

The projected additional miles of road to be built (as of 1/1/86) in the Final Forest Plan (Alt. JF) is 3,850 or a 62% increase from the existing mileage of 6,200. This construction will occur in the next 20 years and will result in a final total of 10,050 miles of road needed to manage the suitable timberland base and a 6% decline from the Proposed Plan (Alt. J).

The maximum rate of road construction is calculated at 2,370 miles in the first decade during the life of the Forest Plan. This is a 3% decline from the Proposed Plan (Alt. J).

As of January, 1986 there were 6,200 miles of existing road on the Kootenai National Forest, including 3,950 miles of local roads (200 miles more than the January 1, 1984 data presented in the Draft EIS) and 2,250 miles of arterial and collector roads.

The rate of new road construction was projected using results from previous years. Recent experience indicates that the rate is on a decline as a result of more intense timber sale design to protect water quality and reduce total timber sale costs. The following Table II-4 displays the actual road construction mileages for 1980-1985.

Table II-3b

Kootenai National Forest

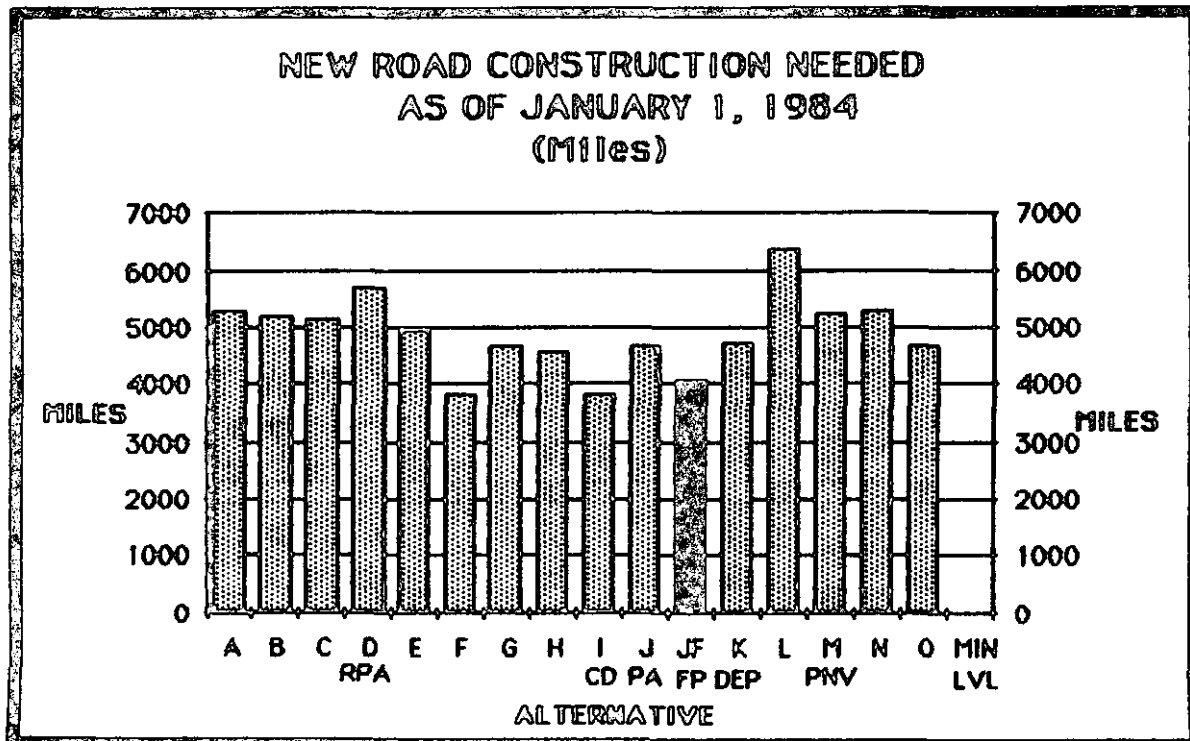
New Road Construction by Calendar Year (miles)

Calendar Year	Road Construction
1980	257
1981	223
1982	168
1983	187
1984	230
1985	165

As can be seen from the above table, the road construction rate has declined since 1980. If this rate continues, fewer roads would be built during the life of the Forest Plan than what is displayed in 2.a., above.

The following chart displays the total miles of new road to be built by the fifth decade as of January 1, 1984.

FIGURE II-40



The alternative displaying the highest new road construction is Alternative L. This is because Alternative L has the largest acreage of suitable timberland (see the previous section on suitable timberland). Conversely, Alternative F has the smallest acreage of suitable timberland and one of the smallest needs for new road construction.

The exception is Alternative I which did not call for building of all the required roads within the 200-year planning horizon because of the required budget limitations. (Approximately 740 more miles of road would have been built and considerably more timber harvested if adequate funding had been available.)

All the other alternatives follow the pattern displayed above by Alternatives L and F, that is, the more suitable timberland designated in an alternative, the more road construction needed to manage the total acreage.

b. Road Restrictions

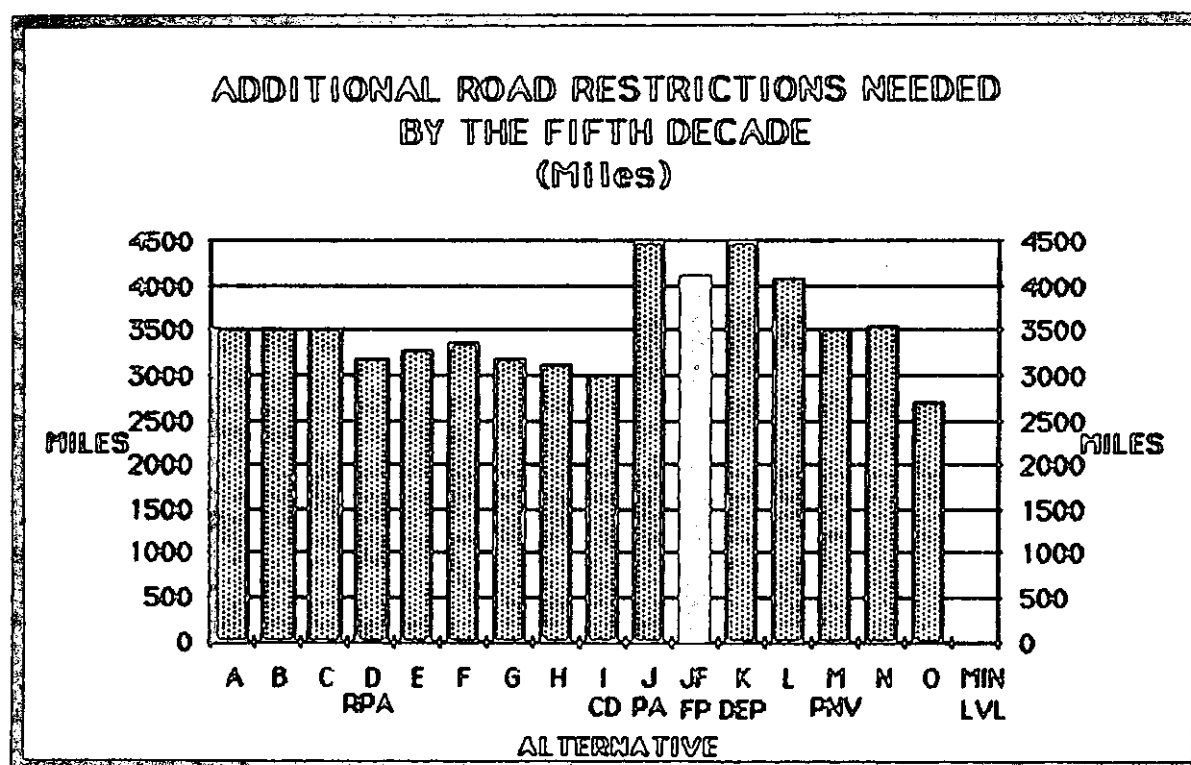
Road restrictions, either year long or seasonally, are done in order to minimize the cost of maintaining a road after a project has been completed, to protect recreation values of an area, or to protect wildlife values during seasons of wildlife use. Each alternative proposes a certain amount of roads to be closed. There are currently 1,600 miles of roads on the Kootenai that are closed either seasonally or year-long (700 and 900 miles, respectively).

Summary of Changes between the Draft and Final EIS

The total miles of restricted roads under the Final Forest Plan (Alt.JF) will be 5,730 miles. This is a 6% decrease from the Proposed Plan (Alt. J) because of the 6% decrease in the total miles of road needed to manage the suitable timberland. The percentage of closed roads is still the same as Alt. J (57%).

The following chart displays the additional miles of road needing eventual restrictions for all the alternatives, either during a portion of each year or year-long, by the year 2030.

FIGURE II-41



In general, the amount of road restrictions is in direct proportion to the amount of road construction needed to manage the suitable timberland and the goal of the alternative. A certain minimum amount is required to provide for the recovery of the grizzly bear. Approximately 48% to 68% of all total road restrictions needed in any alternative are considered necessary to meet the recovery goal for grizzly. These restrictions also protect recreation and other wildlife and soils values.

Alternative L requires more miles of road than any other alternative and also requires a high level of additional road restrictions. Alternative F, in contrast, requires the fewest miles of additional roads but requires a significant amount of additional road restrictions because of the emphasis on elk management. Alternative O requires the least amount of additional road restrictions because of a moderate amount of new road construction and a low emphasis on elk management. Alternatives J and K require the highest amount of additional road restriction because of the emphasis on wildlife and non-motorized recreation management.

3. Wilderness and Roadless Areas

Summary of Changes between the Draft and Final EIS

An additional 12,000 acres of wilderness have been recommended on Pellick Ridge in the Scotchman Peak Roadless Area, in response to public comment received during the review period and more recent information on mineral potential in that area. See section II.D.7, Locatable Minerals.

a. The Inventory

No Changes occurred between the Draft and Final EIS

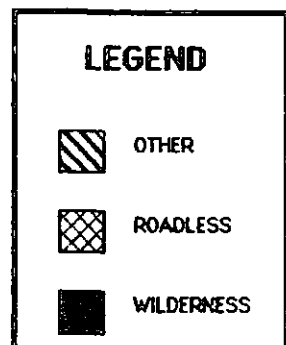
The Cabinet Mountains Wilderness, at 94,360 acres, is the only designated wilderness on the Forest. During the 1979 RARE II study, twenty seven roadless areas were evaluated for wilderness. As a result of this study, four roadless areas were recommended for wilderness totalling about 64,000 acres. The areas included Scotchman Peaks, and Cabinet Face West, Chippewa Creek, and McKay Creek. The latter three are collectively referred to as "Cabinet Additions." (Scotchman Peaks proposed wilderness also included about 22,500 acres located on the Idaho Panhandle National Forest). These areas were not designated as wilderness prior to the 1983 re-inventory, however. See Chapter III for a general discussion of the roadless areas on the Forest and Appendix C for a detailed discussion of each roadless area.

In 1983, the Forest updated the inventory of the roadless areas from the 1979 RARE II Final EIS, a nation-wide study. Added to the inventory were roadless lands that were part of unit plans completed prior to RARE II. In addition, portions of roadless areas were deleted from the inventory because of developmental activities that had occurred in them.

The 1983 inventory update identified 403,700 acres of roadless areas in 32 separate locations which met the roadless criteria. This includes 376,100 acres in Montana and 27,600 acres in Idaho. TABLE II-4 shows the areas considered for wilderness in this EIS and shows how and why they have changed in acres from the RARE II inventory.

Figure II-42 shows how the Forest is designated for Wilderness, other roadless recreation, and other categories which generally involve roads. Each column represents the total acreage of the Forest. The top portion (grey) represents those acres which may involve roads. The dotted portion represents the acreage of the inventoried roadless areas on the Forest which are designated for roadless, non-wilderness recreation. The solid black area represents areas of existing and proposed Wilderness.

FIGURE II-42



WILDERNESS, DESIGNATED ROADLESS IN INVENTORIED ROADLESS AREAS AND OTHER DESIGNATIONS

(Primarily Roded)

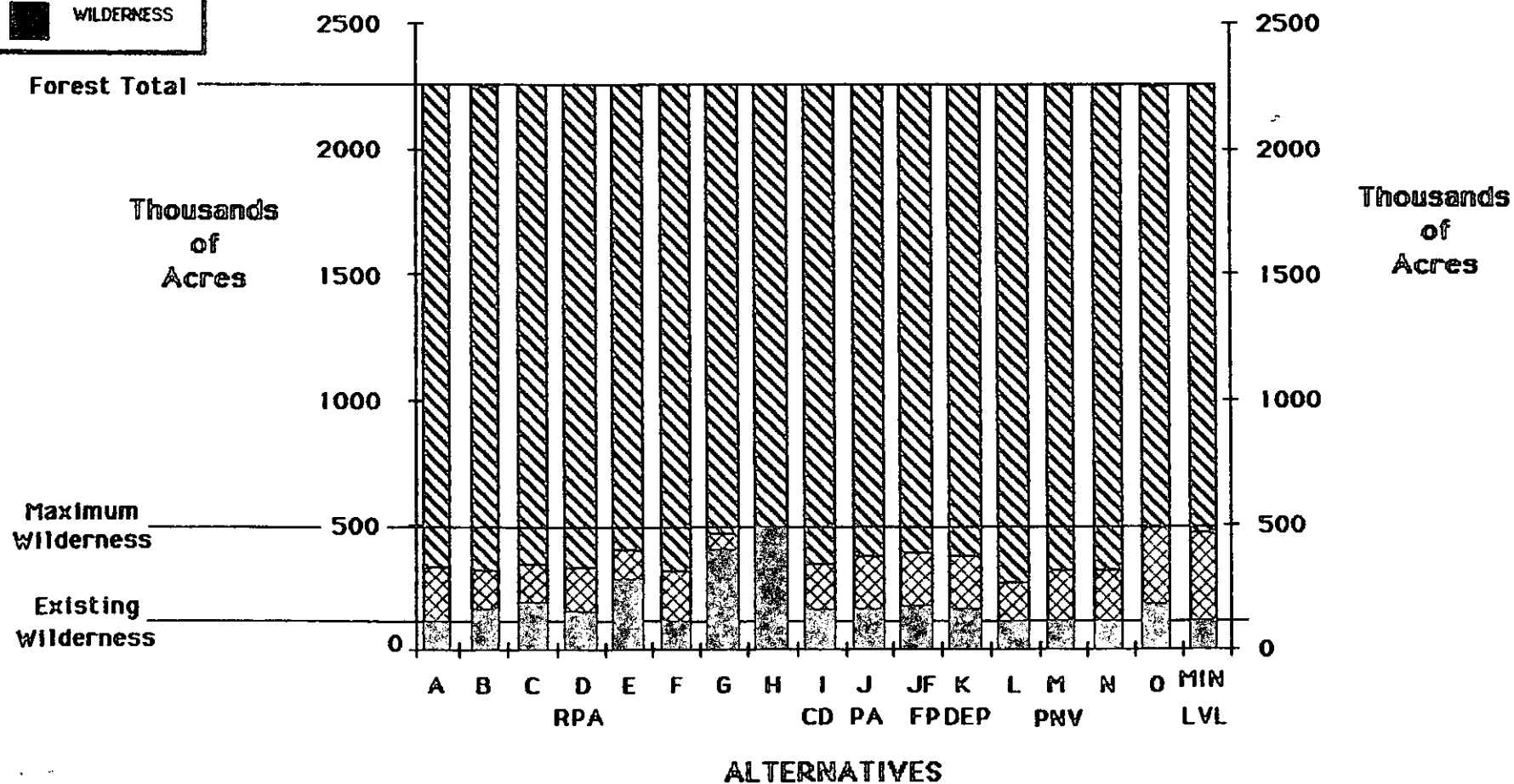


Table II-4, Part 1

ADJUSTMENTS MADE TO RARE II ROADLESS AREAS

AREA ID	AREA NAME	GROSS ACRES	NET ACRES	CHANGE IN GROSS ACRES	CHANGE IN NET ACRES	REASON FOR CHANGE	REVISED GROSS ACRES	REVISED NET ACRES
672	Berray Mountain	8600	8200	0	+100	data base adjustment	8600	8300
661	Buckhorn Ridge - Koot.	2900	2900	+20000	+20000	Combined with a former RARE I Area	22000	22000
	IPNF	5500	5500	+4300	+4300	Additional acres identified.	9800	9800
671	Cabinet Face East	18200	18000	+36600	+32400	Combined with a RARE I and former RARE II Area.	54800	50400
670	Cabinet Face West	12000	9600	+1300	+1300	data base adjustment	13300	10900
665	Cataract - Koot.	18200	18100	-400	-400	Timber sale affecting 1200 acres plus 300 additional acres identified plus data base adjustment	17800	17700
	Lolo	9900	9900	0	0		9900	9900
682	Chippewa	1000	1000	+1300	+1300	Additional acres identified adjacent to Cabinets plus data base adjustment	2300	2300
784	Cube-Iron - Koot.	400	400	+800	+800	data base adjustment	1200	1200
	Lolo	24200	23900	+15000	+13800	Timber sale affecting 1200 acres plus additional acres identified.	39200	37700
678	East Fork Elk Creek	6400	6400	-1400	-1400	Timber sale affecting 1000 acres & data base adjustment	5000	5000
X690	Flagstaff Mountain	0	0	+9500	+9500	New Roadless Area	9500	9500
677	Galena	17000	15000	+500	+500	Timber sale affecting 1400 acres plus addition of former Canyon Peak roadless area (3200 gross acres) plus data base adjustment	17500	15500
668	Gold Hill	17300	17300	-6600	-6600	Timber sale scheduled will affect 7900 acres; plus 1300 additional acres	10700	10700
X176	Gold Hill (West)	0	0	+10200	+10200	RARE I Roadless Area	10200	10200
673	Government Mountain	8600	8600	0	0		8600	8600
667	Grizzly Peak	5900	5900	+100	+100	data base adjustment	6000	6000
674	Lone Cliff-Smeads	14200	14200	-7600	-7600	7600 acres affected by a timber sale	6600	6600
507	LeBeau	0	0	+800	+800	New acres identified	800	800
	Koot Flathead	5400	5400	0	0		5400	5400

Table II-4, Part 2

ADJUSTMENTS MADE TO RARE II ROADLESS AREAS

AREA ID	AREA NAME	GROSS ACRES	NET ACRES	CHANGE IN GROSS ACRES	CHANGE IN NET ACRES	REASON FOR CHANGE	REVISED GROSS ACRES	REVISED NET ACRES
141	Maple Peak - Koot. IPNF	900 8820	900 8740	+500 -90	+500 -90	data base adjustment 90 acres affected by road construction.	1400 8730	1400 8650
	Lolo			+6960	+6960	6960 acres identified.	6960	6960
X172	Marston Face	0	0	+6000	+6000	RARE I Roadless Area	6000	6000
676	McKay Cr.	11800	11700	+2700	+2700	Additional acres identified (2300) plus data base adjust.	13600	13500
675	McNeeley	8800	8800	-1100	-1100	data base adjustment	7700	7700
663	Northwest Peak - Koot. IPNF	8800 5670	8800 5670	+5100 0	+5100 0	4200 additional roadless acres identified plus data base adjustment	13400 5670	13400 5670
X691	Roberts Mountain	0	0	+8000	+8000	RARE I Roadless Area	8000	8000
X693	Rock Creek	0	0	+400	+400	New Roadless Area adjacent to Cabinets	400	400
684	Roderick	1600	1600	+23200	+23200	Combined with former Rare I roadless acres plus 2900 additional roadless acres.	24800	24800
662	Scotchman Peaks - Koot. IPNF	52600 33660	52100 32190	-200 +190	-200 -350	data base adjustment Timber Sale	52400 33850	51900 31840
683a	Ten Lakes Contiguous	0	0	+7100	+7100	New Roadless Area adjacent to TEN LAKES MWSA	7100	7100
483	Thompson-Seton - Koot. Flathead	5700 23000	5700 23000	+14400 +29650	+14400 +29650	Combines Deep Creek roadless area (10,400 acres) plus 4000 additional acres. 700 acre deletion due to recalculation of acreage plus additional 30350 identified.	20100 52650	20100 52650
664	Trout Creek - Koot. IPNF	32600 8500	32600 8400	-800 -100	-800 -100	Timber sale affecting 800 acres.	31400 8300	31400 8300
482	Tuchuck - Koot. Flathead	2300 18600	2300 18600	0 -1080	0 -1080	data base adjustment	2300 17520	2300 17520
X692	West Fork Elk Creek	0	0	+4800	+4800	New Roadless Area	4800	4800
173	Willard-Lake Estelle-Koot. IPNF	0 0	0 0	+18500 +35300	+18500 +35300	RARE I Roadless Area RARE I Roadless Area	18500 35300	18500 35300
X166	Zulu Creek	0	0	+6400	+6400	RARE I Roadless Area	6400	6400

Table 11-5, Part 1

RECOMMENDED WILDERNESS DESIGNATION FOR ROADLESS AREAS BY ALTERNATIVE (thousands of acres)

Roadless Area	No.	MAcs	RPA								CD	PA			Dep.			PNV	
			Alt. A	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F	Alt. G	Alt. H	Alt. I	Alt. J	Alt. JF	Alt. K	Alt. L	Alt. M	Alt. N	Alt. O	
Scotchman Peaks	662	83.7	0	70.8 84%	51.4 61%	70.8 85%	71.8 86%	0	83.7 100%	83.7 100%	50.1 60%	46.7 56%	59.0 70%	46.7 56%	0	0	0	51.4 61%	
Kootenai		51.9		48.3	28.9	48.3	49.3		51.9	51.9	47.6	24.2	36.5	24.2				28.9	
Idaho Panhandle		31.8		22.5	22.5	22.5	22.5		31.8	31.8	22.5	22.5	22.5	22.5				22.5	
Ten Lakes Contiguous	683a	7.1	0	0	7.1 100%	0	0	0	0	7.1 100%		6.9 96%	6.8 96%	6.8 96%	0	0	0	7.1 100%	
Trout Creek	664	39.7	0	0	21.4 54%	0	24.1 61%	0	38.6 97%	39.7 100%	0	0	0	0	0	0	0	21.4 54%	
Kootenai		31.4			13.1		24.1		30.3	31.4								13.1	
Idaho Panhandle		8.3			8.3		0		8.3	8.3								8.3	
Cabinet Face West	670	10.9	0	8.1 74%	6.7 62%	8.1 74%	9.8 90%	0	10.4 95%	10.9 100%	8.2 75%	8.0 73%	8.0 73%	8.0 73%	0	0	0	6.7 61%	
Cabinet Face East	671	50.4	0	.4 1%	17.9 35%	0	46.7 92%	0	50.2 99%	50.4 100%	.4 1%	20.4 40%	20.4 40%	20.4 40%	0	0	0	17.9 35%	
Government Mt.	673	8.6	0	0	0	0	1.1 13%	0	6.2 72%	8.6 100%	0	0	0	0	0	0	0	0	
McKay Creek	676	13.5	0	6.7 50%	5.0 37%	6.7 50%	10.5 78%	0	13.5 100%	13.5 100%	6.3 46%	6.7 50%	6.7 50%	6.7 50%	0	0	0	5.0 37%	
Chippewa Creek	682	2.3	0	.4 17%	.4 17%	.4 17%	.4 17%	0	2.3 100%	2.3 100%	.4 17%	.4 17%	.4 17%	.4 17%	0	0	0	.4 17%	
Rock Creek	693	.4	0	0	0	0	0	0	.4 100%	.4 100%	0	0	0	0	0	0	0	0	
Roderick	684	24.8	0	0	0	19.7 79%	0	0	24.8 100%	24.8 100%	0	0	0	0	0	0	0	0	
Galena	677	15.5	0	0	0	0	12.7 82%	0	15.5 100%	15.5 100%	0	0	0	0	0	0	0	0	
Cataract	665	27.6	0	0	0	0	12.3 45%	0	17.7 64%	27.6 100%	0	0	0	0	0	0	0	0	
Kootenai		17.7					12.3		17.7	17.7									
Lolo		9.9					0		0	9.9									
Buckhorn Ridge	661	31.6	0	0	0	0	0	0	31.6 100%	31.6 100%	0	0	0	0	0	0	0	0	
Kootenai		22.0							22.0	22.0									
Idaho Panhandle		9.6							9.6	9.6									
Ni Peaks	663	19.1	0	0	0	0	0	0	18.9 98%	19.1 100%	0	0	0	0	0	0	0	0	
Kootenai		13.6							13.2	13.6									
Idaho Panhandle		5.7							5.7	5.7									
West Fork Elk Creek	692	4.8	0	0	0	0	0	0	4.8 100%	4.8 100%	0	0	0	0	0	0	0	0	
Gold Hill	668	10.7	0	0	0	0	0	0	10.7 100%	10.7 100%	0	0	0	0	0	0	0	0	

Table 11-5, Part 2

RECOMMENDED WILDERNESS DESIGNATION FOR ROADLESS AREAS BY ALTERNATIVE (thousands of acres)

Roadless Area	No.	MAcs	RPA								CD	PA	FP	Dep	PNV	Alt.	Alt.	Alt.
			Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.								
			A	B	C	D	E	F	G	H	I	J	JF	K	L	M	N	O
Gold Hill (West)	X176	10.2	0	0	0	0	0	0	10.2	10.2	0	0	0	0	0	0	0	0
									100%	100%								
Berray Mountain	672	8.3	0	0	0	0	0	0	8.0	8.2	0	0	0	0	0	0	0	0
									96%	100%								
East Fork Elk Creek	678	5.0	0	0	0	0	0	0	5.0	5.0	0	0	0	0	0	0	0	0
									100%	100%								
Lone Cliff Smeads	674	6.6	0	0	0	0	0	0	0	6.6	0	0	0	0	0	0	0	0
										100%								
McNeeley	675	7.7	0	0	0	0	0	0	0	7.7	0	0	0	0	0	0	0	0
										100%								
Flagstaff Mountain	690	9.5	0	0	0	0	0	0	0	9.5	0	0	0	0	0	0	0	0
										100%								
Roberts Mountain	691	8.0	0	0	0	0	0	0	0	8.0	0	0	0	0	0	0	0	0
										100%								
Grizzly Peak	667	6.0	0	0	0	0	0	0	0	6.0	0	0	0	0	0	0	0	0
										100%								
Zulu Creek	166	6.4	0	0	0	0	0	0	0	6.4	0	0	0	0	0	0	0	0
										100%								
Marston Face	172	6.0	0	0	0	0	0	0	0	6.0	0	0	0	0	0	0	0	0
										100%								
Willard-Lake Estelle	173	53.7	0	0	0	0	0	0	0	53.7	0	0	0	0	0	0	0	0
										100%								
Idaho Panhandle	35.3									35.3								
Kootenai	18.4									18.4								
Cuba-Iron	784	38.9	0	0	0	0	0	0	0	38.9	0	0	0	0	0	0	0	0
										100%								
Lolo	37.7									37.7								
Kootenai	1.2									1.2								
Thompson-Seton	483	72.7	0	0	0	0	0	0	28.0	72.7	0	0	0	0	0	0	0	0
									38%	100%								
Flathead	52.6								22.3	52.6								
Kootenai	20.1								5.7	20.1								
Tuchuck	482	19.8	0	0	19.7	0	0	0	19.8	19.8	0	0	0	0	0	0	0	19.7
					98%				100%	100%								98%
Flathead	17.5				12.5				17.5	17.5								12.5
Kootenai	2.3				2.2				2.3	2.3								2.2
Maple Peak	141	17.0	0	0	0	0	0	0	0	17.0	0	0	0	0	0	0	0	0
										100%								
Idaho Panhandle	8.6									8.6								
Lolo	7.0									7.0								
Kootenai	1.4									1.4								
LeBeau	507	6.2	0	0	0	0	0	0	0	6.2	0	0	0	0	0	0	0	0
										100%								
Flathead	5.5									5.5								
Kootenai	.7									.7								

b. Contiguous Areas on Adjacent Forests**No Changes occurred between the Draft and Final EIS**

Eleven roadless areas extend into the three adjoining Forests which are the Flathead National Forest to the east; the Lolo National Forest to the south; and the Idaho Panhandle National Forest to the west.

The roadless areas adjoining the Flathead Forest are Tuchuck (#482), Thompson-Seton (#483), and LeBeau (#507).

The roadless areas adjoining the Lolo Forest are Cube Iron (#784) and Cataract (#665) and Maple Peak (141). The roadless areas adjoining the Idaho Panhandle Forest are: Maple Peak (#141), Trout Creek (#664), Scotchman Peak (#662), Willard-Lake Estelle (# X173), Buckhorn Ridge (#661), and Northwest Peaks (#663). Information is shown for the respective Forests in Appendix C and summarized in Table II-5.

c. Ten Lakes Montana Wilderness Study Area**No Changes occurred between the Draft and Final EIS**

The Ten Lakes Montana Wilderness Study Act Area (MWSA) contains 34,000 acres and is discussed in a separate document. The roadless inventory below, however, includes the "Ten Lakes Contiguous" areas (an additional 7,100 acres). A portion of the original 34,000 acre Montana Wilderness Study Area was included in the Montana Wilderness Bill of June 1984. A similar portion (26,000 acres) is being recommended for wilderness in the Final Ten Lakes Report and Proposal. The contiguous portion of 7,100 acres is being evaluated for wilderness in this Draft EIS and 7,000 acres are being recommended for wilderness in the Proposed Action (Alt. J). This would result in a total of 33,000 acres of recommended wilderness in the Ten Lakes Area. (See the Ten Lakes Final Report and Proposal which includes maps).

Table 11-5, Part 1

Inventoried Roadless Areas
Summary of Management Emphases by Alternative, Including Contiguous Areas* (thousands of acres)

Management Emphasis	Alternatives															
	Alt. A	Alt. B	Alt. C	RPA Alt. D	Alt. E	Alt. F	Alt. G	Alt. H	CD Alt. I	PA Alt. J	FP Alt. JF	Dep Alt. K	Alt. L	PNV Alt. M	Alt. N	Alt. O
Nonwilderness (Roadless)																
Primitive/Semiprimitive Recreation, Viewing, Minimum Use Areas																
Kootenai:	211.2	164.4	150.8	155.4	98.9	209.0	53.1	0	174.2	202.1	193.1	202.1	158.6	199.6	204.8	322.4
Idaho Panhandle NF:	70.7	52.4	48.9	63.4	66.0	70.7	0	0	63.5	65.6	65.6	65.6	70.7	70.7	70.7	62.8
Flathead NF:	26.6	67.2	44.9	20.2	20.2	26.6	44.9	0	27.8	37.4	37.4	37.4	26.6	26.6	26.6	44.9
Lolo NF:	8.0	3.6	3.6	3.6	8.0	3.6	7.7	0	2.0	8.0	8.0	8.0	8.0	8.0	8.0	3.5
Nonwilderness (Some Development)																
Big Game Winter Range																
Kootenai:	9.4	9.4	9.4	9.0	7.9	9.4	5.4	0	23.0	41.6	39.1	41.6	9.4	9.4	9.4	0
Idaho Panhandle NF:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Flathead NF:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lolo NF:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nonwilderness (Development)																
Timber Harvest With Wildlife and/or Viewing Management, Minimum Use Areas due to Steep Slopes or Regeneration Problems																
Kootenai:	183.1	166.0	162.2	175.4	110.3	185.3	40.3	0	143.6	93.5	93.5	93.5	235.7	194.7	189.5	0
Idaho Panhandle NF:	37.4	33.8	31.5	22.2	25.6	37.4	0	0	23.1	19.9	19.9	19.6	37.4	37.4	37.4	14.5
Flathead NF:	5.4	31.5	5.0	31.5	31.5	5.4	.5	0	39.6	6.1	6.1	6.1	5.4	5.4	5.4	5.0
Lolo NF:	1.9	2.2	2.2	2.2	1.9	2.2	2.2	0	7.9	1.9	1.9	1.9	1.9	1.9	1.9	2.2
Wilderness																
Recommended Wilderness																
Kootenai	0	63.9	81.3	63.9	186.6	0	304.9	403.7	62.9	66.5	78.5	66.5	0	0	0	81.3
Idaho Panhandle	0	22.5	30.8	22.5	22.5	0	108.8	108.8	22.5	22.5	22.5	22.5	0	0	0	30.8
Flathead	0	0	0	0	0	0	22.6	97.7	0	0	0	0	0	0	0	0
Lolo	0	0	0	0	0	0	0	9.9	0	0	0	0	0	0	0	0

Table 11-5, Part 2

Inventoried Roadless Areas
Summary of Management Emphasis by Alternative, Including Contiguous Areas* (thousands of acres)

	Alt. A	Alt. B	Alt. C	RPA Alt. D	Alt. E	Alt. F	Alt. G	Alt. H	CD Alt. I	PA Alt. J	FP Alt. JF	Dep Alt. K	Alt. L	PNW Alt. M	Alt. N	Alt. O
Summary of Management Emphasis																
Nonwilderness																
Developed - Decade 1:																
Kootenai:	46.2	50.4	44.7	38.7	45.0	48.6	17.4	0	34.0	10.5	10.5	10.5	57.0	54.6	41.7	0
Idaho Panhandle NF:	16.4	17.7	17.6	13.9	14.2	16.4	0	0	8.0	11.9	11.9	10.1	16.4	16.4	16.4	12.8
Flathead NF:	.7	4.3	.5	4.8	4.8	.7	.5	0	4.9	2.2	2.2	2.2	.7	.7	.7	.5
Lolo NF:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Decade 5:																
Kootenai:	183.1	166.0	162.2	175.4	110.3	185.3	40.3	0	143.6	93.5	93.5	93.5	235.7	194.7	189.5	0
Idaho Panhandle NF:	53.4	39.4	33.8	31.2	27.7	53.4	0	0	34.8	29.2	29.2	28.9	53.4	53.4	53.4	23.3
Flathead NF:	16.1	30.5	5.0	30.5	30.5	16.1	5.0	0	28.5	12.2	12.2	12.2	16.1	16.1	16.1	5.0
Lolo NF:	1.9	2.2	2.2	2.2	1.9	2.2	2.2	0	7.9	1.9	1.9	1.9	1.9	1.9	1.9	2.2
Roadless - Decade 1:																
Kootenai:	351.5	289.4	277.7	301.1	171.8	355.1	81.4	0	306.8	326.7	314.7	326.7	346.7	349.1	362.0	322.4
Idaho Panhandle NF:	94.4	62.6	60.4	56.5	72.1	94.4	0	0	78.3	69.6	69.6	71.4	94.4	94.4	94.4	60.2
Flathead NF:	97.0	92.3	49.4	92.3	92.3	97.0	49.4	0	6.0	6.0	6.0	6.0	6.2	6.2	6.2	6.2
Lolo NF:	9.9	9.9	9.9	9.9	9.9	9.9	9.9	0	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9
Decade 5:																
Kootenai:	211.2	154.4	150.8	155.4	98.9	209.0	53.1	0	174.2	202.1	190.1	202.1	158.6	199.6	204.8	322.4
Idaho Panhandle NF:	55.4	46.9	44.2	55.1	57.9	55.4	0	0	51.0	55.5	55.5	55.5	55.4	55.4	55.4	53.2
Flathead NF:	20.9	56.7	44.9	66.7	66.7	80.9	44.9	0	69.4	85.5	85.5	85.5	80.9	80.9	80.9	44.9
Lolo NF:	8.0	3.6	3.6	3.6	8.0	3.6	7.7	0	2.0	8.0	8.0	8.0	6.0	8.0	8.0	3.6
Recommended Wilderness																
Kootenai:	0	63.9	81.3	63.9	186.6	0	304.9	403.7	62.9	66.5	78.5	66.5	0	0	0	81.3
Idaho Panhandle NF:	0	22.5	30.8	22.5	22.5	0	108.8	108.8	22.5	22.5	22.5	22.5	0	0	0	30.8
Flathead NF:	0	0	0	0	0	0	22.5	97.7	0	0	0	0	0	0	0	0
Lolo NF:	0	0	0	0	0	0	0	9.9	0	0	0	0	0	0	0	0

*Does not include acreage on the Lolo for Cube-Iron and the Idaho Panhandle and the Lolo for Maple Peak.

d. Recommended Wilderness Alternatives

Summary of Changes between the Draft and Final EIS

79,000 acres of wilderness are recommended in the Final Forest Plan (Alt. JF) an increase of 12,000 acres (18%) over the Proposed Plan (Alt. J). This 12,000 acre increase occurs on Pellick Ridge within the Scotchman Peak Roadless Area and was in response to the concern expressed by the public during the review period. This results in a total of 59,000 acres of recommended wilderness within the 83,700 acre Scotchman Peak Roadless Area (70%). 36,000 acres are now located on the Kootenai Forest while 22,500 acres (no change) are located on the Idaho Panhandle Forest. See Appendix C for more detail on the Scotchman Peak Roadless Area. No changes occurred on any of the two other recommended wilderness areas.

The above results are summarized in Table II-5 which is described next.

Table II-5 displays the acres recommended for wilderness in each roadless area in each alternative. Alternatives range from complete wilderness for inventoried roadless areas (Alt. H) to no wilderness other than the existing Cabinet Mountains Wilderness (Alternatives A, F, L, M, and N).

The remainder of the alternatives address resolution of the wilderness issue to varying degrees. Alternatives B, D and I (Current Direction), portray the original RARE II recommendations while Alternative C and O portray the Montana Wilderness Bill of June, 1984. The intent of Alternative E is to exceed the wilderness recommendation in the RARE II proposal. Alternative G recommends significant acres of wilderness while still maintaining or increasing commodity production on the other Forest lands. Alternative J is the proposed action which is a combination of parts of the RARE II recommendation and the June, 1984, Montana Wilderness Bill.

e. Changes in Roadless Areas Over Time

No Changes occurred between the Draft and Final EIS. There was no change between the Draft and Final EIS in the amount of area developed within the inventoried roadless areas. See Appendix C for the category changes that occurred in the Scotchman Peak area because of the recommended wilderness change mentioned above.

Table II-6 shows how the roadless resource will be managed under different alternatives. Management is summarized by "Management Emphasis" which is: (1) Wilderness and (2) Non-wilderness. The Non-wilderness is further broken out by "Roadless Management", "Some Development", and "Development". A summary of the Management Emphasis is displayed at the end of the table to interpret how the roadless resource will change over time. The "developed" category indicates the rate of access into roadless lands which are assigned to the "Development" (or timber harvest) emphasis. The "roadless" category is the sum of all the roadless area acres still in a roadless condition. This includes the "Roadless Management" acres plus the "Development" acres that have not yet been accessed. Many of these roadless areas are 5,000 acres or larger and will be available for future consideration for wilderness. Similar information for each individual roadless area is displayed in Appendix C.

The following charts compare the alternatives in terms of the acreages of the inventoried roadless areas designated for various categories of use.

FIGURE II-43

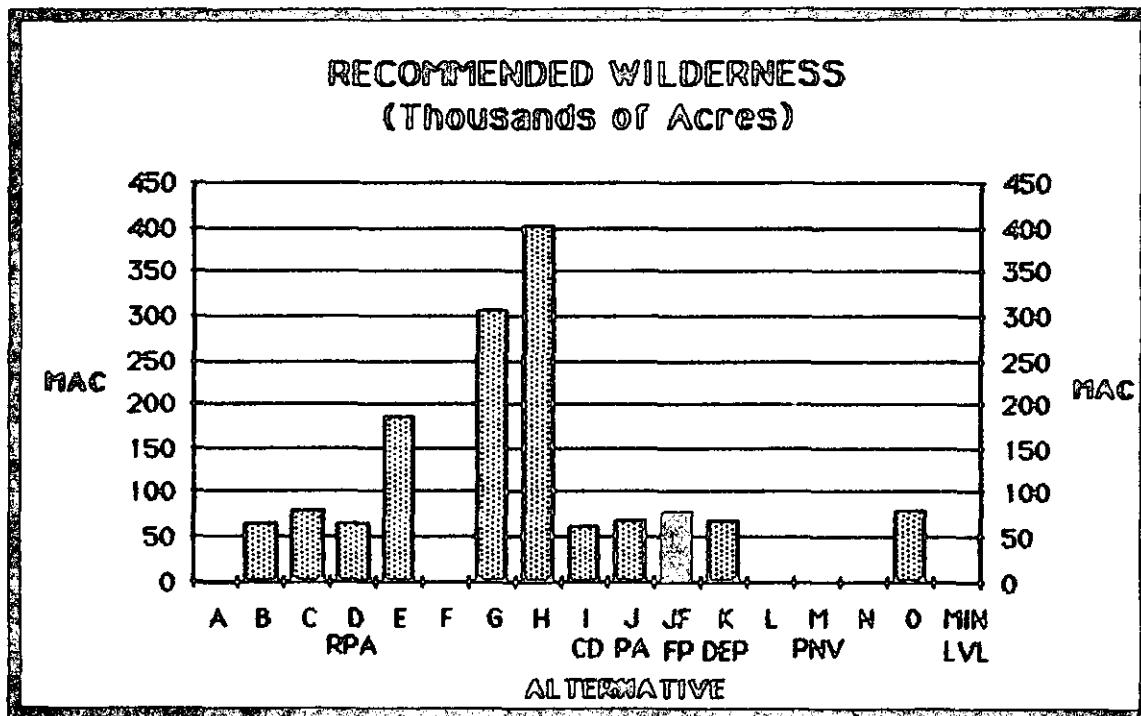


FIGURE II-44

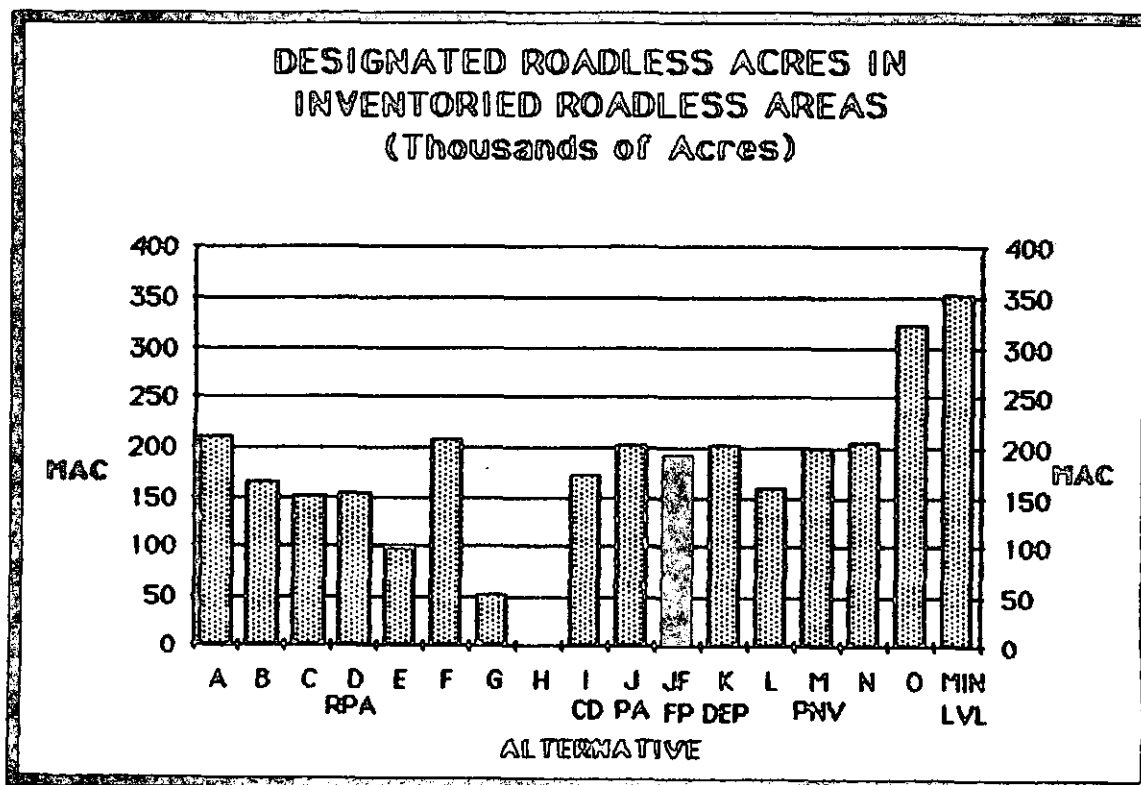


FIGURE II-45

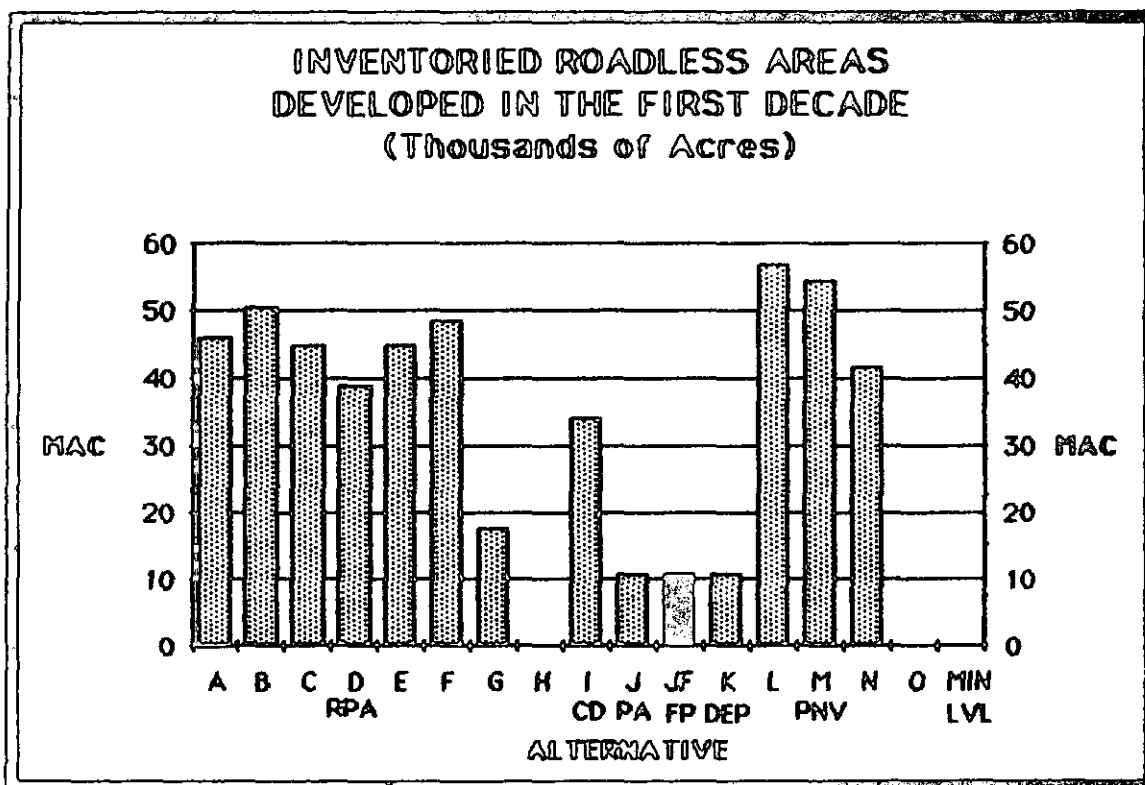
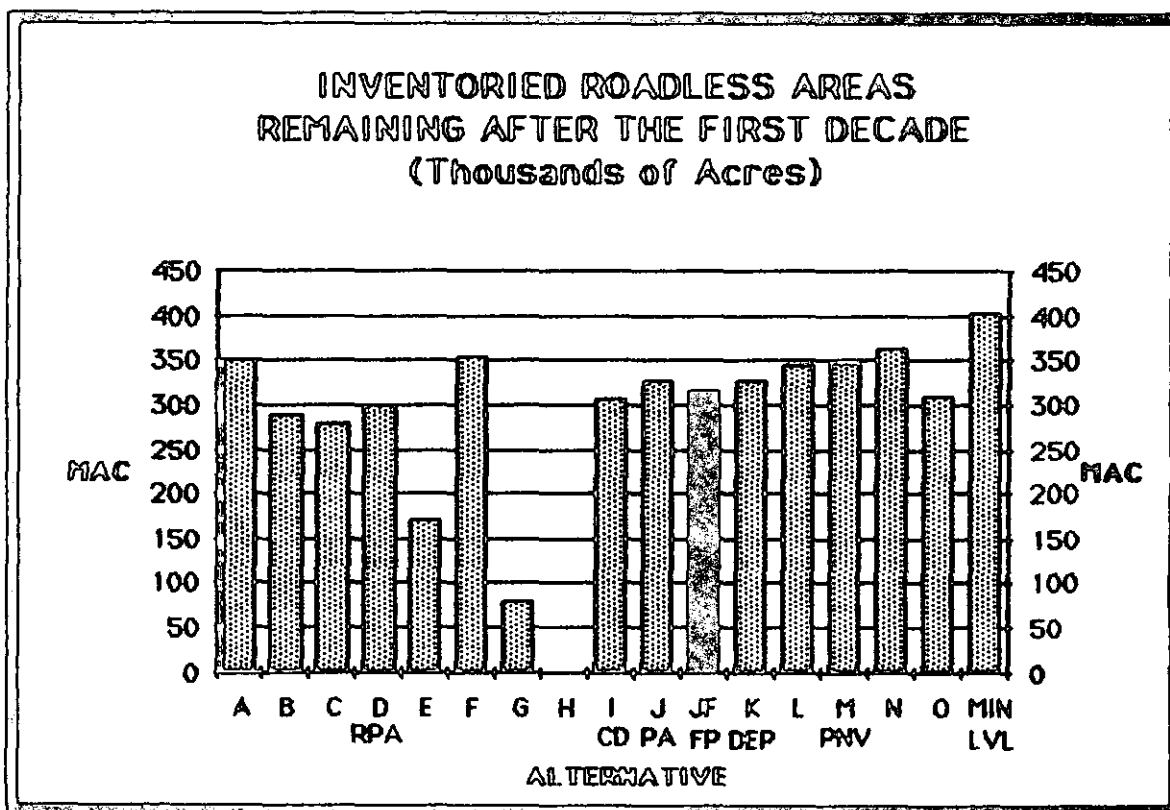


FIGURE II-46



4. Recreation

No Changes occurred between the Draft and Final EIS.

Each alternative provides varying amounts of the developed and dispersed recreation, both motorized and nonmotorized, expressed in Recreation Visitor Days (RVDs). According to demand projections, all alternatives, except Alternative F, provide enough RVD's to meet roaded recreation through at least 13 decades, but only 4 alternatives (I, J, K, and O) provide enough semiprimitive motorized recreation beyond the first decade (see following chart). All alternatives provide nonmotorized recreation opportunities (outside wilderness) and wilderness recreation opportunities sufficient to meet demand well beyond the fifth decade. Developed recreation would be met through decade eleven in all alternatives.

TABLE II-7

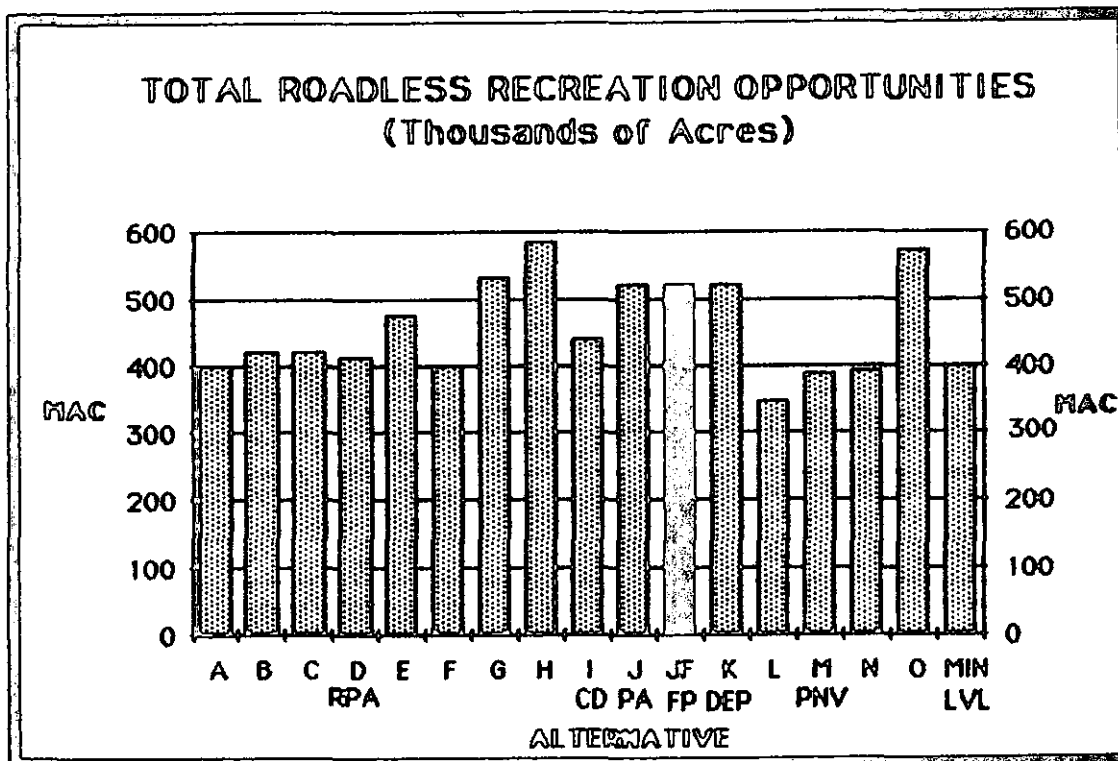
Decade When Recreation Demand Exceeds Recreation Capacity

Alt.	Roaded Recreation	Semiprimitive Motorized	Semiprimitive Nonmotorized	Wilderness	Developed /1/ Recreation
A	14	1	beyond 20	19	11
B	14	1	beyond 20	beyond 20	11
C	14	1	beyond 20	beyond 20	11
D (RPA)	13	1	beyond 20	beyond 20	11
E	13	1	beyond 20	beyond 20	11
F	10	1	beyond 20	19	11
G	13	1	beyond 20	beyond 20	11
H	13	1	18	beyond 20	11
I (CD)	beyond 20	5	beyond 20	beyond 20	11
J (PA)	beyond 20	6	beyond 20	beyond 20	11
JF (FP)	beyond 20	6	beyond 20	beyond 20	11
K (Dep)	beyond 20	6	beyond 20	beyond 20	11
L	beyond 20	1	beyond 20	19	11
M (PNV)	13	1	beyond 20	19	11
N	14	1	beyond 20	beyond 20	11
O	beyond 20	4	beyond 20	beyond 20	11

/1/ At 75% of physical capacity.

The following graph displays the combined acreages of all land areas contributing to roadless recreation opportunities (wilderness and semi-primitive non-motorized recreation). The land areas include the existing Cabinet Mountains Wilderness (94,000 acres), the recommended wilderness areas, the designated roadless acres within the inventoried roadless areas, the designated roadless acres located in scattered parcels outside of the inventoried roadless areas, and the Ten Lakes Montana Wilderness Study Area (34,000 acres).

FIGURE II-47

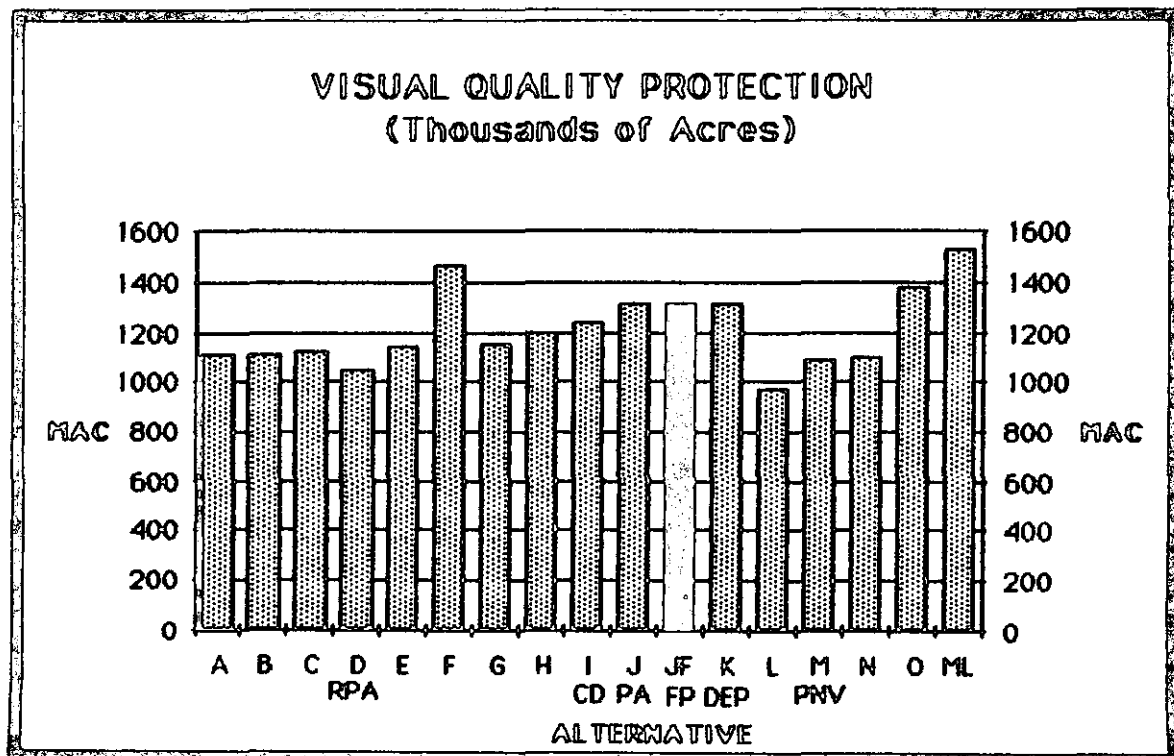


5. Visual Quality Protection (Viewing)

No Changes occurred between the Draft and Final EIS

Visual quality is measured in terms of "Visual Quality Objectives," (VQOs) which are standards that indicate how much sensitivity to the view should be applied while conducting Forest management activities. Each alternative allocates land that prescribes different amounts of certain VQOs. The sensitive VQOs include "Preservation," which applies to wilderness and other special areas where no development will occur; "Retention," which is where developmental activities are subordinate to the landscape; and "Partial Retention," which is where developmental activities should not be noticeable to the casual Forest visitor. The other VQOs are "Modification" and "Maximum Modification" which are applied to less sensitive areas where activities can be noticeable and/or dominate the landscape. The VQOs of Retention and Partial Retention are considered the most sensitive because of their association with important viewing areas that can be affected by Forest management activities such as timber harvesting and road construction. An inventory was conducted to determine a recommended baseline for visual quality. Alternative O was designed to meet the recommended visual quality objectives outside of identified grizzly bear habitat because visual management often requires frequent management activities which can be detrimental to recovery of the grizzly bear population. Other alternatives gave different emphasis to meeting the recommended VQOs depending on the intent of the alternative. The following chart displays the different amounts of visual quality protection resulting from the intent of the alternative.

FIGURE II-48



Alternative L had the least amount of visual quality protection because the goal of this alternative was to produce high timber yields with a significant amount of new road construction. Alternative O provided a high degree of protection because it was designed to protect visual quality outside of grizzly bear habitat. It also provided visual quality protection as an indirect result of providing roadless area protection. Alternative F resulted in a high degree of visual quality protection as an indirect result of managing for wildlife which involved only a limited amount of timber harvest and road construction. Alternatives J and K resulted in a high degree of visual quality protection because of a combination of managing for both wildlife and visual quality.

6. Wildlife and Fish Production

Summary of Changes between the Draft and Final EIS

The Final Forest Plan (Alt. JF) provides for a minimum of 10% Old-Growth Timber (Forest-wide) compared to the 8% provided for in the Proposed Plan (Alt. J). In addition, the old-growth timber designations are removed from the suitable (regulated) timber base. The Forest will, during the next ten years, attempt to better define the components of old-growth timber habitat and determine if a regulated yield can be anticipated in the future. Until that determination is made, the old-growth designation will remain unsuitable.

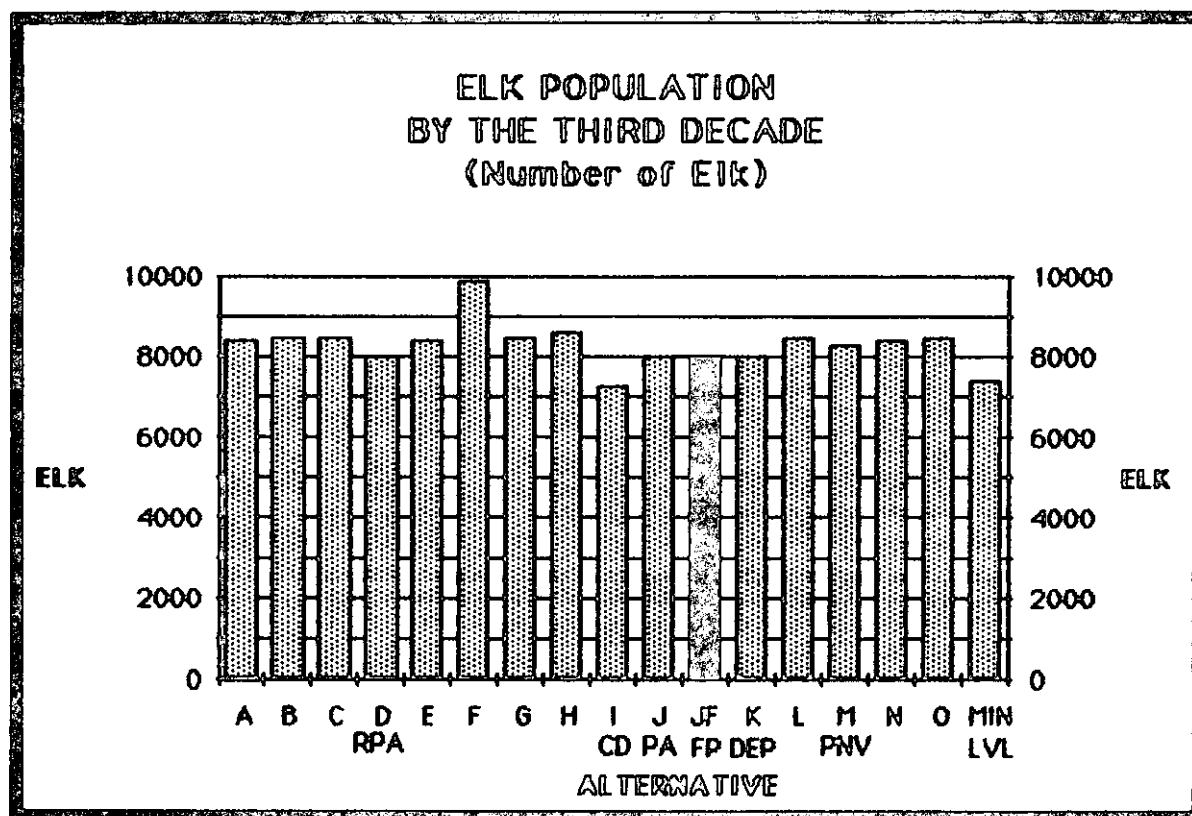
a. Big Game - Elk

No Changes occurred between the Draft and Final EIS

Increases in elk numbers are related to more acres being managed for big-game summer range and road use restrictions in elk habitat during critical periods. Summer range is the limiting factor on the Kootenai in relation to elk populations. Browse production estimates on winter range indicate that a four-fold increase in elk population is supportable. Because of the behavioral adaptations of the elk that tend to set a natural limit on densities in the summer range, an environment must be provided for them to utilize the available summer range effectively. A balance of the environmental requirements which elk need (cover, forage, security, etc.) is necessary to provide this habitat.

The following graph displays the expected elk population for each alternative by the third decade. The Regionally suggested goal for elk on the Kootenai is 6,400. The estimated population in 1983 was 5,500. The third decade is displayed because it is estimated that this is the time required for the existing population to reach its potential under the management scheme envisioned by each alternative. After the third decade, the population is projected to be relatively stable.

FIGURE II-49



All alternatives are projected to exceed the Regional goal of 6,400 elk. Many areas have been harvested on the Forest and are now providing forage for elk. The application of road use restrictions to provide security and scheduled timber harvest to maintain forage will allow the population to grow.

Because of the management requirements needed to recover the grizzly bear, security will be provided for elk indirectly on approximately 46% of the Forest under all alternatives. This is why the elk population increases under all the alternatives including the Minimum Level Benchmark.

All alternatives provide adequate security to increase the population at least 33%. Alternative F provides for a combination of forage production and security that results in an 80% increase in population.

b. Catchable Trout

The existing catchable trout population on the Kootenai National Forest is estimated at approximately 1,016,000 fish in 1980. This population consists of resident fish which inhabit the streams year-long and the migratory fish, those that move from the lakes, rivers and reservoirs into the streams to spawn. This does not include stocked fish numbers such as those in Lake Koocanusa or the high mountain lakes.

The resident population is estimated to be approximately 77% (784,000 fish) of the total population with the migratory fish constituting the remaining 23% (205,000 fish). Of these two fish populations, the migratory fish are considered to be the most sensitive to Forest management activities, particularly road construction. Roads have been identified as the most significant contributor of sediment to the streams which are necessary for successful spawning.

Summary of Changes between the Draft and Final EIS

No Changes occurred between the Draft and Final EIS in the first decade for the calculation of fish production potential. This is because the potential was calculated from a sediment model which is correlated to the acres disturbed by road construction and logging; and the final Forest Plan projects a similar amount of road construction and logging in the first decade. The sediment model was used as a risk indicator and Table IV-28 in this Final EIS displays the relative risk for degrading water quality for each alternative.

Public comment received during the review period expressed concern for the protection of water quality and fish habitat. They asked that the Monitoring and Evaluation Plan be strengthened to ensure that developmental activities such as road building and logging do not degrade the water and fisheries resource on the Kootenai Forest. The public also expressed concern about the statistical reliability of the sediment model. As a result of the public concern, soil and water conservation practices are to be used in all proposed activities to assure that they meet or exceed the State water quality standards. These practices are outlined in a handbook entitled "Soil and Water Conservation Practices" (FSH 2509.22) and will be a part of the basic functional land management direction for the National Forests. In addition, language is included in the Forest Plan Goals and Objectives that state that all projects are to be evaluated to ensure that State water quality standards are not

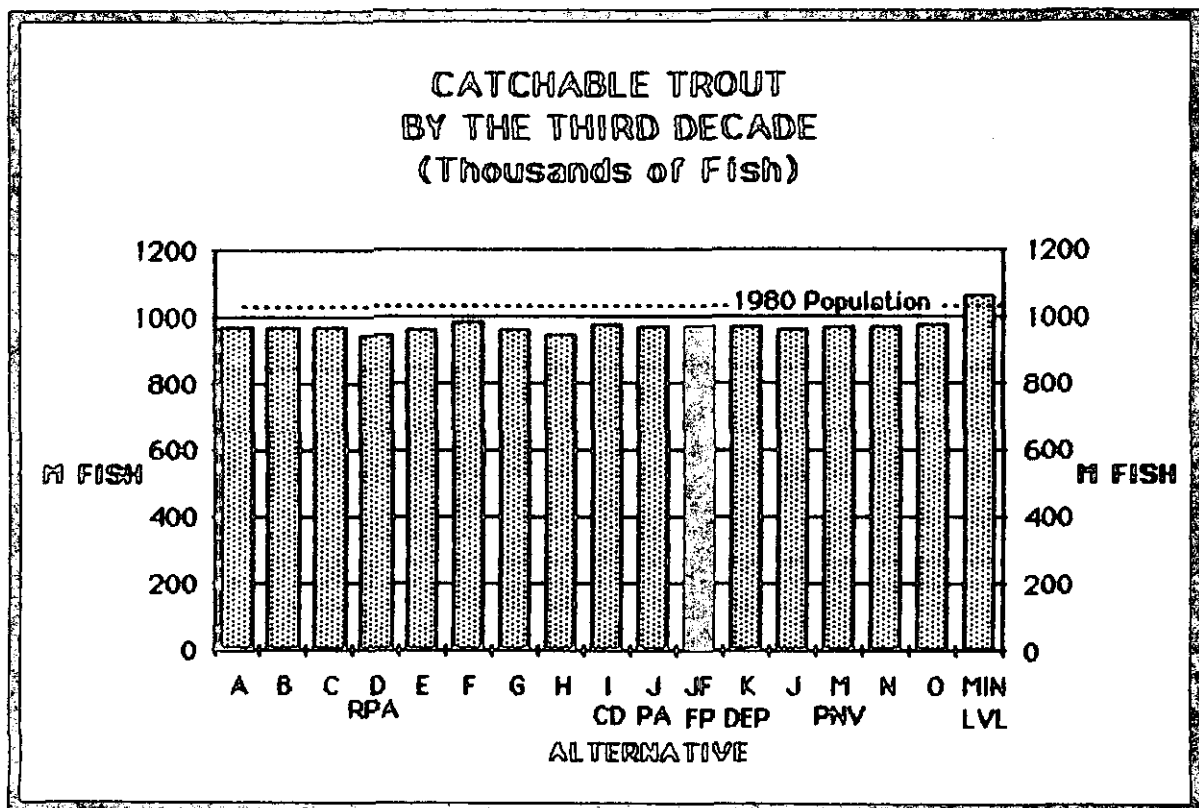
exceeded. Projects that can not meet these standards will be redesigned, rescheduled or eliminated. (Also see Chapter IV for mitigation changes and the Monitoring and Evaluation Plan in the Forest Plan document for water quality monitoring changes.)

Using the above-mentioned fish model, all alternatives except the Minimum Level Benchmark project a decline in the total fish population from approximately 4% to 7% and no alternative will meet the desired Regional goal of approximately 1,054,000 fish by the third decade. This projected decline is primarily the result of additional new road construction which will affect the migratory fish population mostly, although the resident fish population is also affected. The migratory fish population is projected to decline approximately 7% to 12% under all the alternatives.

Alternatives D and H will have the greatest effect on the fish population because of a combination of the miles of new road construction and the location of the road construction which results in higher sediment production. Alternative F will have the least effect on the fish population because of a combination of low road miles and location which yields lower sediment production.

The following chart displays the total fish population expected for each alternative in the third decade.

FIGURE II-50



c. Old-Growth Timber

Old-growth timber is known to be an important component of wildlife habitat for some species (pileated woodpeckers, barred owls, etc.) Roughly 58 wildlife species on the Kootenai (about 20% of the total) find optimum breeding or feeding in old growth timber stands. Since old-growth stands often have high wood-volumes per acre and are not producing new wood as fast as some of their younger counterparts, they have usually been considered a high priority for timber harvest. Once harvested, however, old-growth timber cannot be readily replaced.

Because of the predictable, eventual diminishing acreage of old growth timber in some areas, it is important to ensure beforehand that a certain amount is managed to ensure viability of timber-dependent species. On the Kootenai, the areas generally below 5,500 feet elevation appear to provide the conditions suitable for reproduction of old-growth-dependent species. Approximately 1,860,000 acres are located below 5,500 feet elevation. Within this area, approximately 149,000 acres, or 8%, have been identified as necessary for old-growth timber management. These areas will be maintained to ensure that a desirable distribution of old-growth timber is maintained.

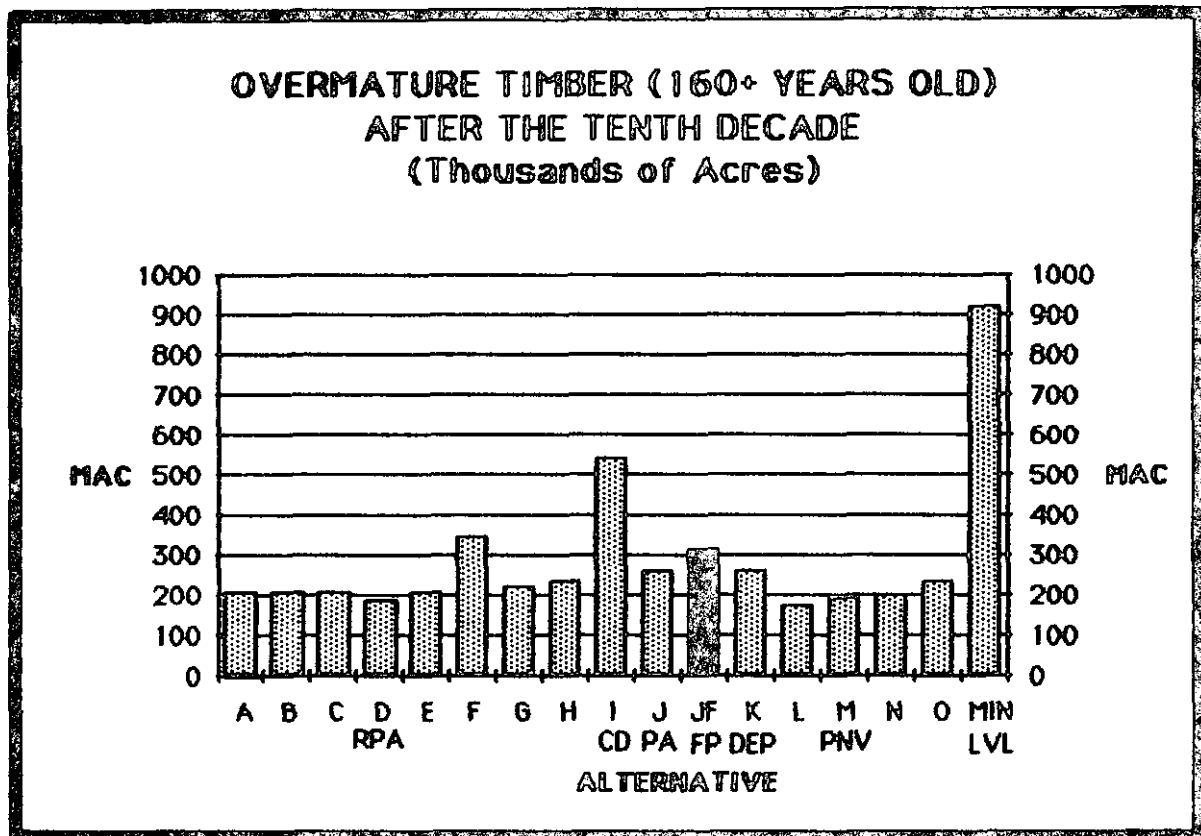
Summary of Changes between the Draft and Final EIS

The Final Forest Plan (Alt. JF) provides for a 10% level of old-growth timber compared to 8% for the Proposed Plan (Alt. J). This was in response to the public concern for the adequacy of the 8% level. It will provide for a total of 126,000 acres of designated old-growth timber (Management Area 13) in addition to the 60,000 acres identified within other non-developmental designations such as wilderness, roadless management, etc. In addition, the 126,000 acres of designated old-growth timber will be removed from the suitable timber base. This will provide for a 25% increase, and a total of 186,000 acres of old-growth timber compared to the 149,000 acres provided in the Proposed Plan (Alt. J). See Appendix B for more detail on the Old-Growth Timber analysis.

All alternatives provide for the minimum desired acreage of 149,000 acres of old-growth timber (8%). Some alternatives, because of their goals for providing wilderness and roadless opportunities, will provide more. Other alternatives, because of their goals to provide high timber yields, will tend to provide only the minimum.

The following chart displays the acreage of old-growth timber represented by stands of trees 160 years old or older on the commercial forest lands on the Kootenai for all alternatives after 100 years. 100 years is displayed because that is the calculated time that it will take to reach the lowest amount of old-growth timber acreage among all the alternatives.

FIGURE II-51



Alternative I provides the highest level of old-growth timber because this alternative is restricted by budget limitations to harvesting the least amount of timber of all the alternatives which indirectly provides for old-growth timber. Alternative F provides a high level of old-growth timber because of the low level of timber harvest associated with the goal of providing the maximum elk habitat. Alternative L, in contrast, harvests the greatest amount of timber and provides the lowest level of old-growth timber. Alternatives M, N, and D provide high timber yields and consequently a low acreage of old-growth timber. Alternatives H, J, K, and O provide a high level of old-growth timber because of the significant amounts of timberland that are designated for non-development such as wilderness and roadless recreation.

d. Grizzly Bears

The Kootenai National Forest is responsible, under provisions of the Endangered Species Act, for ensuring that Forest Management activities do not jeopardize the continued existence of grizzly bears or adversely modify their habitat.

Grizzly bears on the Kootenai occupy portions of two primary ecosystems, the Northern Continental Divide Ecosystem (NCDE) and the Cabinet-Yaak Ecosystem (CYE). The Kootenai contributes about 3%, or 207,200 acres, to the total NCDE. The Kootenai's contribution to the CYE is about 70%, or 828,400 acres. (See Appendix D for a detailed description of the grizzly situation on the Forest, ecosystem descriptions, and management guidelines.)

Grizzly management on the Kootenai has focused on habitat. Over most of the Forest a data base has been developed down to the habitat component level. Because of the difficulty in locating or trapping grizzly bears, little data on the actual number of grizzlies or any population characteristics exist. It is generally agreed among the appropriate agencies that suitable habitat exists in the CYE but that a low density, small population of grizzlies is present in that ecosystem. On the other hand, the Kootenai's portion of the NCDE supports a relatively high density of grizzlies and is intrinsically bound to populations of bears in the Flathead drainage, which have been relatively well-studied in the past 10 years.

All National Forests in the Northern Region have stratified their grizzly habitat along the guidelines established in the "Guidelines for Management Involving Grizzly bears in the Greater Yellowstone Area," otherwise known as the "Interagency Guidelines" (IG). A definition of the guidelines are contained in Appendix D and the Glossary, and summarized as:

Situation 1 - Areas considered key to the survival of the species.

Situation 2 - Areas which may be necessary for survival and recovery of the species, pending ongoing evaluation.

Situation 3 - Areas where grizzly presence is possible and where management is necessary to exclude the bear (i.e., high human use areas such as resorts, campgrounds, etc.).

The following table displays the acres of Management Situations by Ecosystem on the Kootenai.

TABLE II-8

**Grizzly Bear Ecosystems and
Interagency Guideline Situation Acres**

	<u>Cabinet Yaak Ecosystem</u>	<u>Northern Continental Divide Ecosystem</u>	
Sit. 1	628,000	116,500	
Sit. 2	199,600	90,400	
Sit. 3	800	400	
Total	828,400	207,300	= 1,035,700

Following the jeopardy opinion rendered by the U.S. Fish and Wildlife Service on the November 1982 DEIS and Draft Forest Plan, the agreement was made to designate every acre of grizzly habitat (Situations 1 and 2) to either supportive or compatible management emphases. Management emphases considered supportive include existing and recommended wilderness and any other nondevelopmental management emphasis. Compatible emphases can include developmental designations, such as timber harvest while accommodating grizzly habitat, as long as the emphases includes compensation measures during and after project activities. Compensation measures include restricting use of roads upon completion of the activity and scheduling activities during periods of light or no use by the bears. Scheduling involves not only seasonal considerations but long-term, decadal scheduling as well. (See Proposed Forest Plan - Section III - Management Area 14).

Summary of Changes between the Draft and Final EIS

No Changes occurred in the grizzly bear's status between the Draft and Final EIS. The U.S. Fish and Wildlife Service has issued a non-jeopardy opinion on the Final Forest Plan (Alt. JF) and have made several on-the-ground suggestions that were accepted. Please refer to Letter #1 in Appendix E for further details on the U.S. Fish and Wildlife Service response. In addition, the "Yellowstone Guidelines" are now known as the "Interagency Guidelines."

Since all alternatives contain Minimum Management Requirements (MMRs) to ensure recovery of the grizzly bear, all alternatives are projected to meet the recovery goals. The following chart displays how each alternative manages the available grizzly habitat on the Kootenai, either through developmental land designations where compensation for impacts to the bear are included in the management emphasis, or by non-development (or limited development) where management activities do not occur. The ecosystems are broken down by Interagency Guideline Situations 1 and 2, shown as IG1 and IG2.

Table II-9

Acres of Management Category by Grizzly Ecosystem and Situation (thousands of Acres)

Management Category	Grizzly Ecosystem & Situation	RPA								CD	PA	: FP		: Dep.	PNV			
		Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.			Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.
		A	B	C	D	E	F	G	H	I	J	: JF	: K	L	M	N	O	
Developmental (Scheduled timber harvest & road building on suitable timberland)	CY IG1	341	326	335	318	285	386	253	233	255	210	: 188	: 210	393	347	346	295	
	CY IG2	135	139	136	130	138	171	138	138	130	127	: 131	: 127	154	133	133	150	
	CY IG3	1	1	1	1	1	1	1	1	1	1	: 1	: 1	1	1	1	1	
	Total	477	466	472	449	424	558	392	372	386	338	: 320	: 338	548	481	480	446	
	NC IG1	62	64	50	50	64	56	57	45	29	40	: 34	: 40	55	49	64	72	
	NC IG2	67	68	68	64	69	85	69	70	67	69	: 65	: 69	75	67	66	71	
	NC IG3	0	0	0	0	0	1	0	0	0	0	: 0	: 0	0	0	0	0	
	Total	129	132	118	114	133	142	126	115	96	109	: 99	: 109	130	116	130	143	
Non-Develop- mental (Occasional timber salvage & wildlife habitat burning on unsuitable timberlands)	CY IG1	41	38	38	39	37	3	37	33	83	70	: 82	: 69	11	40	42	32	
	CY IG2	40	37	38	47	36	2	31	27	53	37	: 43	: 33	30	45	44	26	
	CY IG3	0	0	0	0	0	0	0	0	0	0	: 0	: 0	0	0	0	0	
	Total	81	75	76	86	73	5	68	60	136	107	: 125	: 102	41	85	86	58	
	NC IG1	8	7	4	5	7	0	5	6	13	7	: 6	: 7	1	6	7	3	
	NC IG2	24	21	20	24	20	3	20	18	22	18	: 21	: 18	14	21	23	16	
	NC IG3	0	0	0	0	0	0	0	0	0	0	: 0	: 0	0	0	0	0	
	Total	32	28	24	29	27	3	25	24	35	25	: 27	: 25	15	27	30	19	
Roadless & Undeveloped (Includes existing & recommended wilderness, wilderness study, & designated roadless management)	CY IG1	250	270	259	277	313	245	343	366	289	348	: 348	: 348	230	245	247	302	
	CY IG2	14	15	17	15	15	18	22	26	15	36	: 31	: 36	6	14	14	25	
	CY IG3	0	0	0	0	0	0	0	0	0	0	: 0	: 0	0	0	0	0	
	Total	264	285	276	292	328	263	365	392	304	384	: 379	: 384	236	259	261	327	
	NC IG1	46	44	61	60	45	60	54	66	75	69	: 74	: 69	60	61	45	37	
	NC IG2	2	2	2	2	2	2	2	3	1	4	: 4	: 4	2	2	2	3	
	NC IG3	0	0	0	0	0	0	0	0	0	0	: 0	: 0	0	0	0	0	
	Total	48	46	63	62	47	62	56	69	76	73	: 78	: 73	62	63	47	40	
Total		1,036*																

CY = Cabinet Yaak Ecosystem

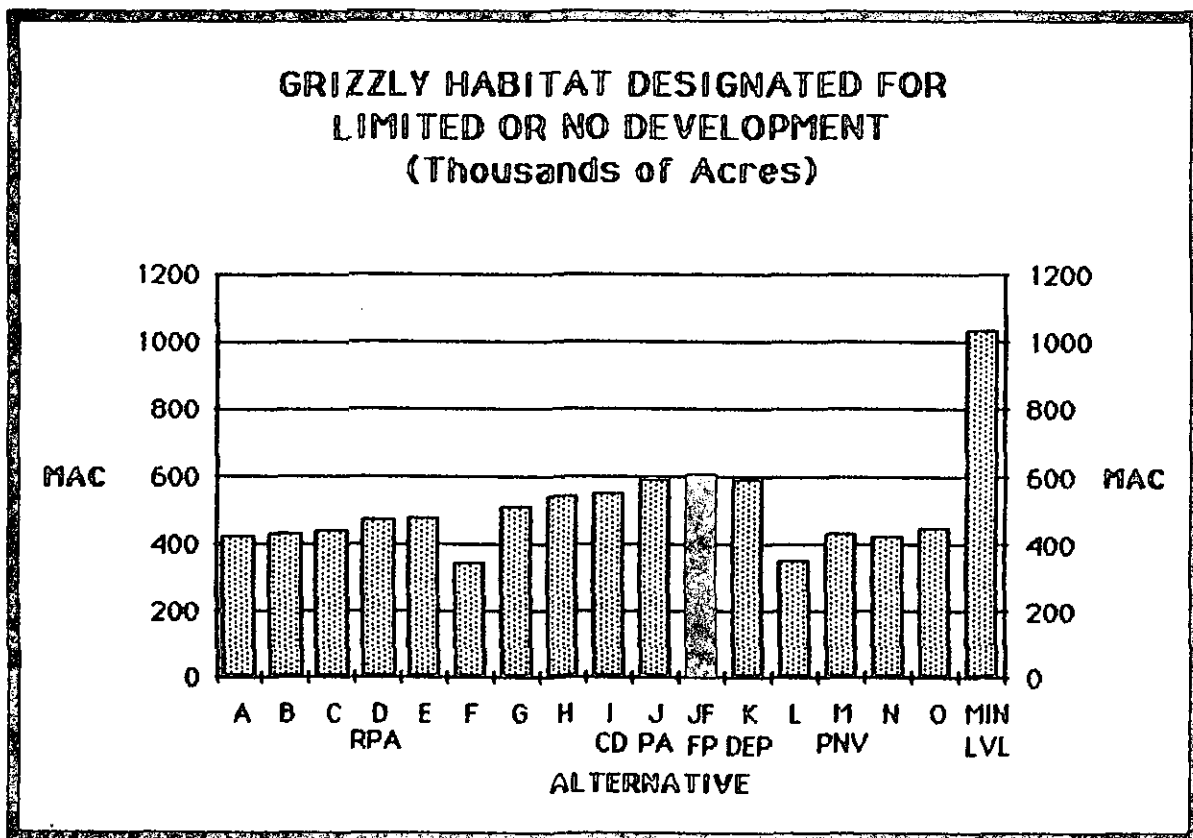
NC = Northern Continental Divide Ecosystem

IG = Interagency Guideline

* = Column totals do not always match because of rounding

The preceding table and the following graph show that Alternatives F and L designate the higher proportion of the available grizzly habitat (both ecosystems) to developmental management emphases where compensation must occur to assure no adverse impacts occur in grizzly habitat. Alternatives J, JF and K designate the higher proportion of the available grizzly habitat to limited, or non-developmental management emphases where no activities are scheduled.

FIGURE II-52



The following table shows the expected decadal timber harvest acres within the grizzly ecosystems, in each of the management situations. The table indicates the amount of human activity that will occur by alternative, in each ecosystem and grizzly management situation. The acres do not include the additional acres that could be affected by the normal amount of associated road building.

The table shows that through the first decade, Alternatives F, L, M and N would generate the most activity while Alternatives B and C would produce the least. Alternatives L, M, and N are high timber-producing alternatives which would require timber harvesting everywhere on the Forest, including in grizzly habitat. Alternative F has a goal to support high elk production, habitat for which is much the same as for grizzlies. Alternatives B and C are the RARE II and Montana Wilderness Alternatives, respectively, and postpone entry into grizzly habitat until the second and third decades.

Table II-10

Acres of Timber Harvest By Decade, by Grizzly Ecosystem & Situation (thousands of acres)

Grizzly Ecosystem & Situation	Alt. A	Alt. B	Alt. C	RPA Alt. D	Alt. E	Alt. F	Alt. G	Alt. H	CD Alt. I	PA Alt. J	: FP Alt. JF	: Dep. Alt. K	Alt. L	PNV Alt. M	Alt. N	Alt. O
CY IG1																
Decade 1	22.2	15.0	18.2	36.5	35.6	58.9	42.2	44.6	23.4	29.9	: 28.6	: 37.6	48.9	47.3	47.5	40.1
2	59.4	60.1	64.8	62.3	48.5	42.4	39.8	32.4	18.5	44.4	: 21.8	: 39.9	55.0	47.3	48.5	36.7
3	53.9	56.0	57.6	48.6	40.4	50.9	36.6	33.1	9.7	33.1	: 27.5	: 36.6	55.5	62.0	62.5	31.3
4	25.9	23.5	22.9	65.9	22.4	56.0	22.6	21.8	14.8	25.2	: 4.0	: 25.9	62.5	43.1	27.3	27.6
5	54.1	50.7	49.8	71.2	46.4	78.8	46.2	36.3	50.4	45.5	: 8.6	: 45.1	83.8	89.5	65.4	58.3
CY IG2																
Decade 1	19.3	17.3	17.3	17.8	18.2	23.3	18.8	18.2	15.4	24.2	: 19.5	: 24.2	19.0	21.0	19.0	24.1
2	24.0	25.0	25.4	25.9	24.8	19.7	25.4	25.4	9.1	18.0	: 15.0	: 18.7	22.8	21.4	24.3	19.3
3	19.1	18.4	18.8	21.1	17.4	18.1	17.3	18.8	16.8	15.0	: 16.4	: 17.0	20.2	20.9	20.9	20.0
4	12.1	16.0	16.1	22.2	16.0	15.7	13.6	13.2	8.1	16.4	: 11.8	: 14.0	9.6	22.0	13.1	22.9
5	27.9	27.3	27.5	28.1	27.2	19.4	27.2	27.1	14.8	26.2	: 17.0	: 26.2	15.7	28.4	27.4	29.5
CY IG3																
Decade 1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	0.1	: 0.1	: 0.1	0.1	0.2	0.2	0.1
2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	0.1	: 0.1	: 0.1	0.2	0.2	0.2	0.1
3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	: 0.1	: 0.1	0.2	0.2	0.2	0.1
4	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0	0.1	: 0.1	: 0.1	0	0.1	0.1	0
5	0	0	0	0	0	0	0	0	0	0	: 0.1	: 0	0	0	0	0
NC IG1																
Decade 1	5.0	5.0	4.3	3.2	3.4	9.8	7.0	7.0	4.8	7.0	: 7.4	: 7.0	8.6	6.1	9.9	2.1
2	5.8	7.6	5.2	9.0	8.1	1.7	7.3	3.9	5.3	3.6	: 3.2	: 3.6	4.5	3.3	6.0	8.2
3	9.9	8.2	7.5	8.9	8.9	2.8	7.4	5.5	3.6	3.8	: 4.5	: 6.0	6.0	10.0	11.2	2.0
4	2.6	2.6	1.4	6.4	2.5	6.3	1.6	1.3	0.6	2.6	: 1.6	: 2.6	5.7	2.1	2.8	2.5
5	7.0	6.4	4.6	11.5	6.7	11.4	3.3	2.8	5.2	4.8	: 2.3	: 3.8	8.5	10.7	8.0	9.6
NC IG2																
Decade 1	8.4	8.3	8.3	8.5	8.3	8.5	8.3	8.3	8.4	8.2	: 7.7	: 8.3	9.0	8.5	8.5	8.2
2	8.1	7.7	7.7	7.0	7.7	8.2	7.7	7.7	6.2	7.8	: 7.6	: 7.8	6.4	8.5	8.4	7.7
3	6.9	7.0	7.0	8.7	7.0	6.4	7.0	6.7	6.6	6.5	: 7.3	: 6.5	5.9	6.9	7.0	6.8
4	2.7	2.9	3.4	8.7	3.9	6.9	4.1	4.5	8.0	7.0	: 7.4	: 7.1	5.7	8.8	2.5	8.7
5	10.7	10.7	10.7	11.7	10.7	5.8	10.7	10.6	5.0	7.4	: 7.6	: 7.4	10.7	11.1	10.7	10.6
NC IG3																
Decade 1	0	0	0	0	0	0	0	0	0	0	: 0	: 0	0	0	0	0
2	0.1	0.1	0	0	0.1	0	0.1	0.1	0	0	: 0	: 0	0	0	0.1	0
3	0.1	0.1	0	0	0.1	0	0	0	0	0	: 0	: 0	0	0	0.1	0
4	0	0	0	0	0	0	0	0	0	0	: 0	: 0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	: 0	: 0	0	0	0	0

CY = Cabinet Yaak Ecosystem

NC = Northern Continental Divide Ecosystem

IG = Interagency Guidelines 1, 2, & 3

7. Minerals

Forest lands were placed in four categories which generally depict the degree of operability or the conditions that will be necessary to meet legal or environmental requirements.

These categories are:

- Category A: - Areas that are withdrawn or proposed for withdrawal from mineral entry.
- Category B: - Administrative or environmental conditions that severely limit the operability for exploration.
- Category C: - Environmental conditions that require some special lease stipulations or plan of operation conditions to mitigate, such as timing of operations, etc.
- Category D: - Areas where standard lease stipulation and plan of operation conditions apply.

The geologic potential for locatable (hard rock) and leasable (oil and gas) resources have been evaluated.

Acreages for all of the operability categories are compared with the geologic potential rating in the main table (Table II-24).

Summary of Changes between the Draft and Final EIS

The land area on the Kootenai Forest that will be eventually withdrawn from oil/gas and locatable mineral exploration increased 5%. This is a direct result of the 12,000 acres of additional wilderness recommended on Pellick Ridge within the Scotchman Peak Roadless Area.

a. Leasable Minerals

The Final Forest Plan (Alt. JF) will result in a 12,000 acre increase in the acres proposed for withdrawal from oil and gas exploration. This will be 227,000 acres compared to 215,000 acres displayed in the Proposed Plan (Alt. J) in Table II-24. As stated above, all of the 12,000 acres are on Pellick Ridge within the Scotchman Peak Roadless Area which is considered to be of moderate potential for oil and gas.

Oil and gas leases generate revenues of \$1.00 per acre per year to the U.S. Treasury. Currently there are approximately 600,000 acres of oil and gas leases on the Kootenai Forest.

b. Locatable Minerals

The Final Forest Plan (Alt. JF) will result in a 12,000 acre increase in the acres proposed for withdrawal from locatable mineral exploration. This will be 264,000 acres compared to 252,000 acres displayed in the Proposed Plan (Alt. J) in Table II-24. As stated above, all of the 12,000 acres are on Pellick Ridge within the Scotchman Peak Roadless Area which is considered to be primarily low mineral potential. The exception is a 1,200 acre area within Star Gulch which is now considered to be of moderate potential. In the Draft EIS, the Star Gulch area was presented as a high mineral potential. See Chapter III, Minerals Section for more recent information about the Star Gulch mineral potential.

The following two tables display the results determined for each alternative in category A which is considered to be the most restrictive for mineral and energy (oil/gas) exploration.

The acres of projected withdrawals (Category A) in both the leasable and locatable minerals are directly correlated to the amount of recommended wilderness. Alternative H has the highest amount of recommended wilderness and displays the highest amount of projected withdrawals. In contrast, Alternatives A, F, L, M, and N do not recommend any additional wilderness and they display the lowest level of withdrawals. Other alternatives range in between depending on their recommended wilderness acreage. The other categories, B, C, and D, are considered operable, although Category B would be more restrictive than Category C, and C more restrictive than D. These different restriction levels would generally result in increased costs of exploration because of timing of operation, scale of operation, type of access, etc. Table II-24 displays the acreage of each category by the estimated mineral potential for each alternative.

FIGURE II-53

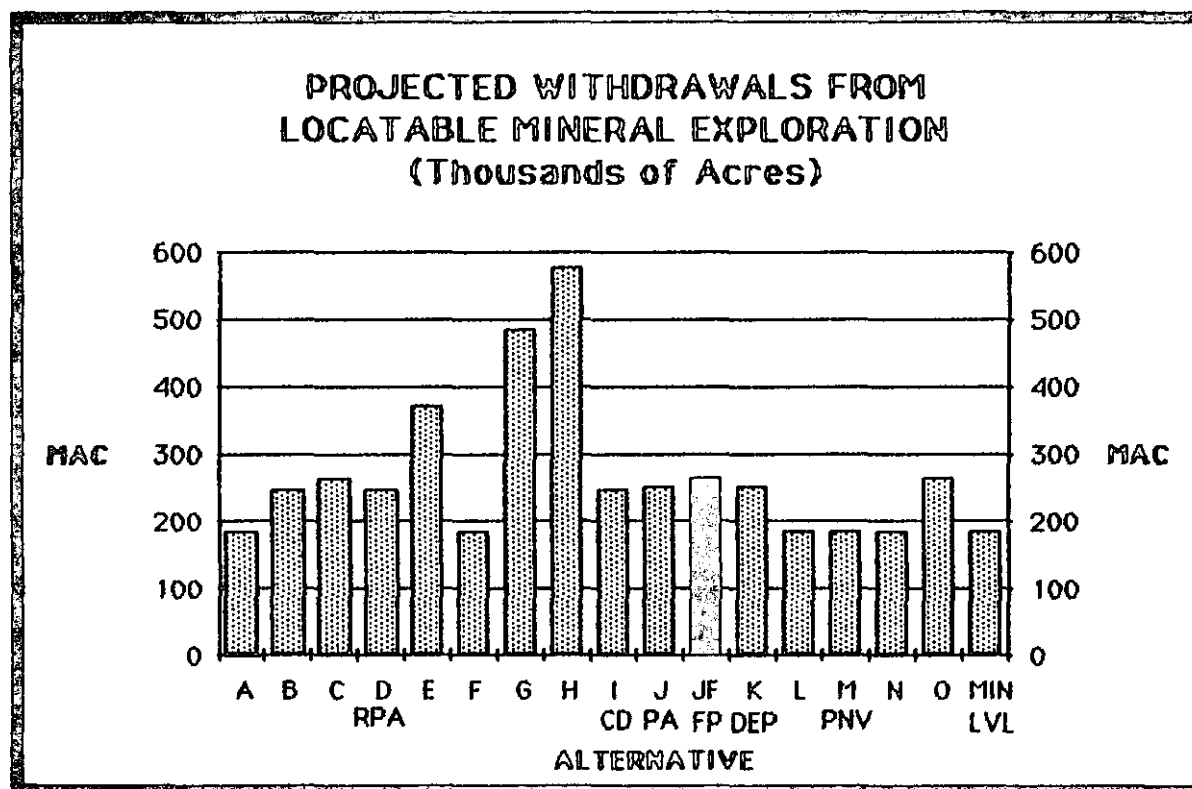
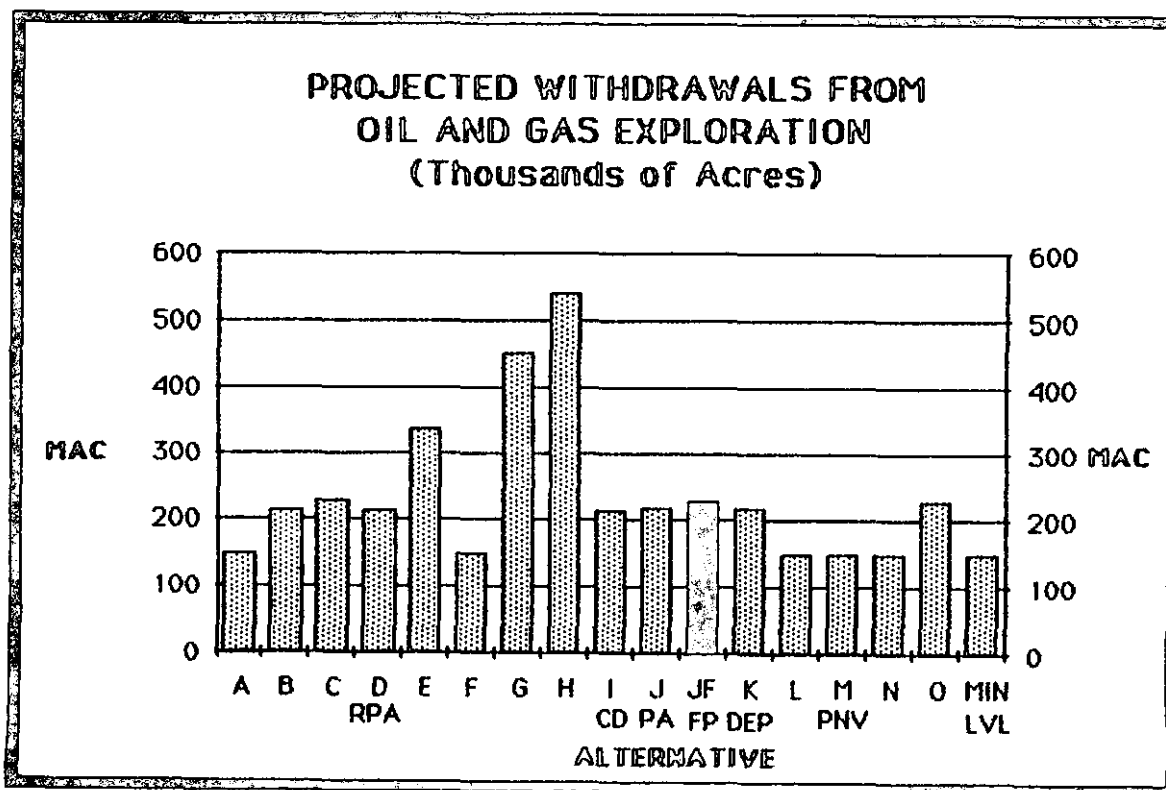


FIGURE II-54



8. Landownership Adjustment

No Changes occurred between the Draft and Final EIS (except for some acreage changes in Table II-11).

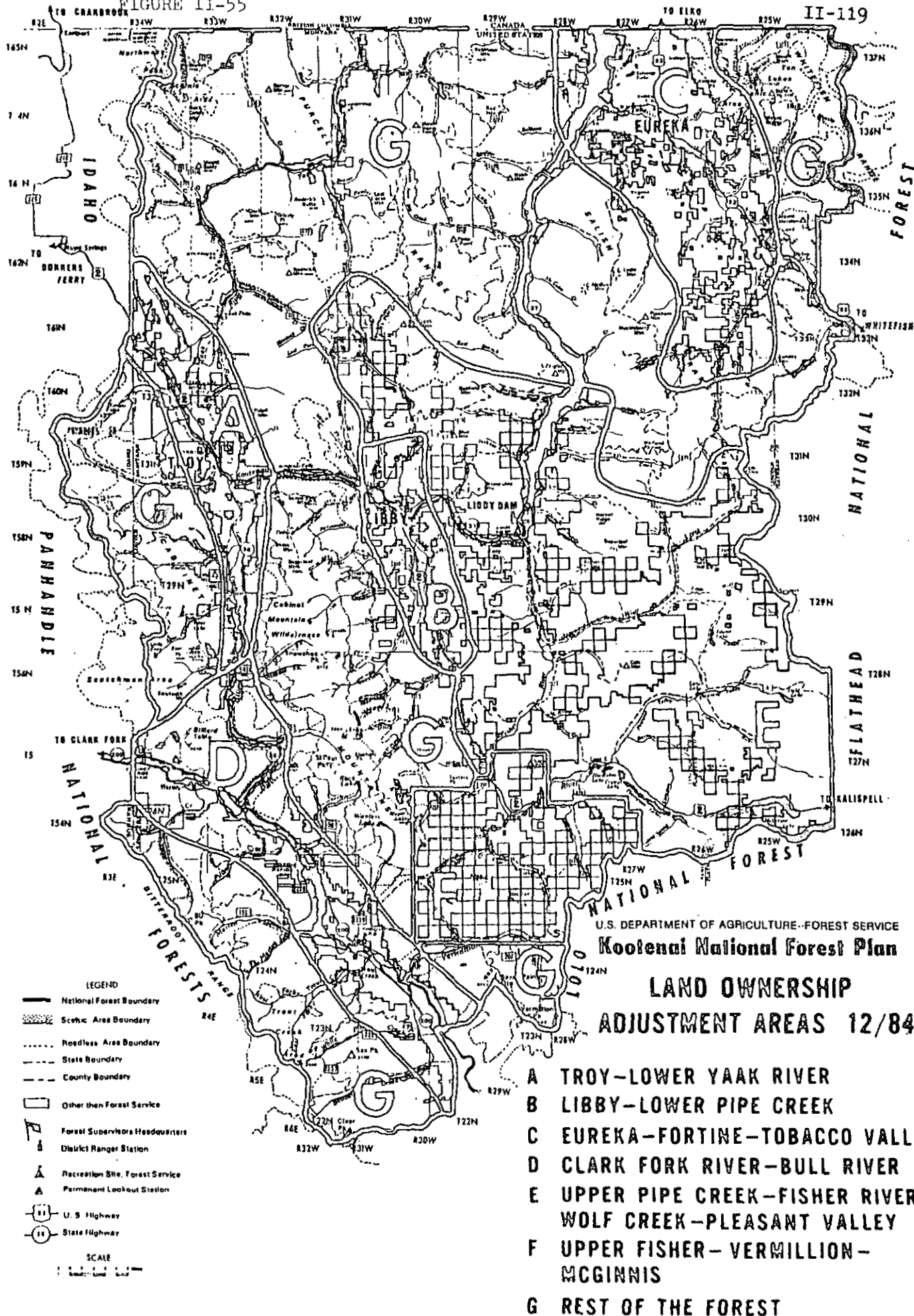
The Forest has identified about 90,990 acres of private land that would be desirable to acquire (by exchange) to permit more productive management of National Forest lands. (88,300 acres was the figure displayed in the DEIS.) This enhanced productivity would occur by providing desirable wildlife habitat for grizzly bear recovery and by providing areas needed for wilderness and roadless recreation management. This landownership adjustment plan represents the current land management direction and the total value of these proposed acquisition acres is about \$86,000,000. In return, the Kootenai has identified approximately 68,930 acres of National Forest land that should be disposed of, largely to rectify conflicting management objectives with private landowners and to resolve innocent trespass situations. (69,900 acres displayed in the DEIS.) This 68,930 acres of National Forest land is estimated to be worth about \$87,000,000 indicating that adequate value is available to achieve the desired land acquisition proposal. (It is important to understand that land is traded for equal value not for equal acreage.) (For a more detailed discussion of the Kootenai's land adjustment plan, see Appendix 9 of the Kootenai Draft Forest Plan).

The landownership adjustment plan addresses the acquisition and disposal of lands according to specific areas on the Forest (see map on next page). These areas are:

- A. Troy-Lower Yaak River: A complex pattern of intermingled National Forest and private lands.
- B. Libby-Lower Pipe Creek: Predominantly private land with some intermingled National Forest lands.
- C. Eureka-Fortine-Tobacco Valley: A complex pattern of intermingled National Forest and private land, similar to Area A.
- D. Clark Fork River-Bull River: A complex pattern of intermingled blocks of private and National Forest land.
- E. Upper Pipe Creek-Fisher River-Wolf Creek-Pleasant Valley: A complex pattern of intermingled National Forest and private lands as well as large corporate ownership blocks.
- F. Upper Fisher-Vermilion-McGinnis: Primarily a "checkerboard" ownership pattern with private and National Forest lands alternating.
- G. Rest of Forest: Predominantly National Forest land with some scattered parcels of private land.

FIGURE II-55

II-119



As can be seen in the following table, the largest proposed acreage of land acquisition would be in area "F" in the southern portion of the Forest. This area is in a "checkerboard" ownership pattern with alternate sections of land in large corporate ownership. Plum Creek Timberlands, Inc. is the major landowner. This area has identified grizzly habitat and large portions are roadless and undeveloped. Road construction and timber harvest will be expensive on much of the area. Consolidation into National Forest ownership would provide greater assurance for grizzly bear recovery.

TABLE II-11

**ESTIMATED ACRES AND VALUE OF LAND ACQUISITION AND DISPOSAL
BY LANDOWNERSHIP ADJUSTMENT AREA
(Current Direction and Final Plan)**

Landownership Adjustment Area	Estimated		Estimated	
	To Acquire (Acres)	Value (Million \$)	To Dispose (Acres)	Value (Million \$)
A	11,310	15.0	3,150	11.2
B	840	0.3	5,600	20.0
C	13,760	10.7	11,060	9.8
D	16,740	9.7	910	2.3
E	9,660	10.3	47,740	43.8
F	30,250	25.7	130	0.2
G	8,430	14.2	340	0
TOTAL	90,990	85.9	68,930	87.3

Area "E" is the largest proposed land disposal area. This large area is located within the southeast corner of the Forest and contains large blocks of corporate ownership. By trading out of this area, corporate timberland management would be facilitated. The remaining land adjustment areas would also be involved in exchanging lands to facilitate grizzly recovery and at the same time allow for the productive use of the concerned private lands.

Each alternative was compared to the Current Direction landownership adjustment plan. The comparison showed that the plan would be implementable in all alternatives; there is essentially no change in the landownership adjustment scheme by alternative. The primary emphasis for landownership adjustment, from the Forest standpoint, is to enhance existing grizzly bear habitat and to provide adequate roadless recreation opportunities where such opportunities exist.

9. Range

No Changes occurred between the Draft and Final EIS

Currently, there are 41 cattle allotments on the Kootenai. Many of these allotments occur on transitory range in timber areas. The only primary range is found in the northeast part of the Forest in the Tobacco Valley area.

Current use is about 13,000 AUMs per year, with about 3,100 animals being grazed. The Region has established a suggested goal of 20,000 AUMs for the Kootenai. All alternatives can exceed the Regional goal if demand exists. It should be noted that, based upon 1970-79 production figures for Lincoln and Sanders Counties, production trends for livestock show a gradual decline in numbers of livestock. It is not likely that the 20,000 AUM goal will be reached because the demand does not exist in this area.

The projected use of AUMs was a priced resource and was included in the calculation of the PNV.

10. Research Natural Areas

No Changes occurred between the Draft and Final EIS

The Forest has no established Research Natural Areas (RNAs) at this time but does have 7 proposed in Alternatives J and JF, and one in Alternative I. Total acreage involves approximately 3,320 acres in Alternatives J and JF, and 670 acres in Alternative I. These areas would be removed from the suitable timberland category and be proposed as RNAs in the Forest Plan. The small acreages involved make the differences between the alternatives negligible in terms of resource outputs and effects. The Regional goals for RNA designations would be satisfied by Alternative J. For further details refer to Chapter III, Section B.

11. Fire Management

No Changes occurred between the Draft and Final EIS

At present there are two approved fire action areas on the Kootenai Forest, one for the Cabinet Mountains Wilderness and one for the Troy Ranger District. It is the intent, regardless of the alternative, to develop fire action plans for the entire Forest. The fire action plan for the Cabinets allows fire to play as nearly a natural role as possible. Protection of life and property on areas adjacent to the wilderness will be taken into consideration if the fire comes close to the borders.

Prescribed burns are fires set deliberately to meet some management objective. Prescribed fire is used to burn underbrush in thinned stands as well as slash from logging operations. Some burning is done to enhance wildlife habitat. Between 1979 and 1983, an average of 11,570 acres were burned annually by prescription. Of that, 2,370 acres (or 20%) were burned annually to benefit wildlife.

Prescribed fires can result from planned and unplanned ignitions. Planned ignitions, such as those described above, are used to accomplish the goals of a specific land allocation. The only area where planned ignitions are not used is in the Cabinet Mountains Wilderness. Policy allows such ignitions only for the purpose of perpetuating the wilderness, but none are planned.

An unplanned ignition, such as one started by lightning, can be treated as a prescribed fire if it serves the purposes of the management area where it is located and if resources adjacent to it are not in danger. Unplanned ignitions are not appropriate in areas with high timber values or in developed recreation areas. Such fires are considered wildfires and are suppressed.

The type of suppression used depends on where the fire is occurring and the burning conditions. Response can vary from confinement (where natural barriers are used and suppression limited to surveillance), to containment and control whereby the fire is surrounded by line, completely checked and extinguished. The appropriateness of the suppression action is based on the Fire Action Plan which, in turn, is developed from land use designations for the area in question.

In the event a fire cannot be checked by initial suppression efforts and the fire "escapes", other strategies are used which take into account the fire situation, costs and damages, and land management objectives.

12. Cultural Resources

No Changes occurred between the Draft and Final EIS.

The Kootenai National Forest contains many historic and prehistoric sites that are known and probably many that have yet to be discovered. The implementation of any alternative calls for actions which are intended to prevent the loss of information that can be derived from these sites. To this extent the alternatives are the same.

The risk of loss of information from these sites tends to be higher where the site is subject to disturbance. Road building and timber harvesting are the two activities which generate the most ground disturbance because of their use of heavy equipment. The more timber and road building that is called for in an alternative, the greater the risk that some cultural site will be damaged. Alternative L requires the most roads and harvests the most timber over the 200 year analysis period thus it generates the most risk of losing cultural resource information. Alternatives F and I have the lowest roading needs and timber harvests thus generating a lower risk of damage to cultural resources.

13. Energy

No Changes occurred between the Draft and Final EIS

Energy consumption for each alternative was determined by multiplying Regional coefficients of energy use for various activities times 8 variable factors. Most of the factors were related to timber harvest volume, acres harvested, and road construction. Dispersed and developed recreation factors varied by RVD use and included energy expended by the user from home to recreation area or site.

As can be seen from the following table, nearly 75% of the energy consumed in each alternative is related to timber harvest activities. In general, the higher the timber volume in an alternative, the greater the energy consumption. Recreation uses vary only slightly among alternatives.

Table II-12

Average Annual Energy Consumption, Decade 1 (Billion BTUs)

	RPA								CD	PA	:	FP	:	Dep.	PNV			
	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	:	Alt.	:	Alt.	Alt.	Alt.	Alt.	
Category	A	B	C	D	E	F	G	H	I	J	:	JF	:	K	L	M	N	O
Recreation	36	35	35	35	35	36	34	34	36	36	:	36	:	36	36	36	36	36
Administration	16	16	16	16	16	16	16	16	16	16	:	16	:	16	16	16	16	16
Road Maintenance	15	15	15	15	15	15	15	15	15	15	:	15	:	15	15	15	15	15
Road Construction/ Reconstruction	86	85	86	85	83	64	81	79	49	77	:	77	:	88	69	100	93	82
Range	0	0	0	0	0	0	0	0	0	0	:	0	:	0	0	0	0	0
Timber	122	120	122	121	117	89	111	112	83	107	:	107	:	122	140	140	132	114

14. Comparison of Social Effects

No Changes occurred between the Draft and Final EIS

While employment and income are important to the quality of life, other social values such as maintaining aesthetic qualities or preserving community social ties are also important. The effects of Forest resource use on these latter activities are less quantifiable than employment or income estimates; however, they are important to the lifestyles of residents on the regional and local level, as well as at a National level.

Five social variables were used to compare the effects generated by Forest outputs and activities (see Appendix B, Chapter V). The variables include (1) population change, (2) community cohesion, (3) lifestyles, (4) attitudes, beliefs, and values, and (5) aesthetics. Comparisons were made to the current situation (1980) expressed by residents in interviews conducted as part of the Social Impact Assessment. The analysis is subjective (see Appendix B, Chapter V). Following is a description of what was identified as a desirable situation for the social variables:

Population change - Changes in population directly attributable to Forest Service activities. Change should be a steady, gradual increase, avoiding sharp, dramatic changes not exceeding plus or minus 20% in a decade.

Community cohesion - Promote cohesiveness of local interest groups and organizations with respect to local identification; seek to minimize polarization of issues.

Lifestyles - Provide "traditional" forms of employment (timber industry, mining, recreation), promote local use of Forest recreation opportunities and continuation of existing lifestyles.

Attitudes, beliefs, and values - Avoid rapid, drastic changes that would alter the perception the public has of the forest and their place in it.

Aesthetics - Provide for the recreation and other amenity features valued by the public; avoid drastic or sudden disruption of the existing recreation patterns.

a. Population Change

The population of the local area, represented by Lincoln and Sanders Counties, Montana, and the affected portions of Flathead County, Montana, and Bonner and Boundary Counties, Idaho, is expected to continue to increase slowly and steadily (approximately 10% per decade). Population increases (or decreases) in excess of 20% over a ten year period are considered to be disruptive to the social structure of the communities. Population increases that can be directly attributed to Forest Service activities are calculated for each alternative.

Each alternative projects a population increase based upon expected activities and programs that will occur. Alternatives with larger projected timber harvests and associated activities could be expected to project larger increases in population because of employment opportunities while in the less commodity oriented alternatives, the increase is not as large. No alternative projects population increases larger than 20% per decade.

b. Community Cohesion

Community cohesion is maintained or enhanced when local interest groups and organizations remain intact. This situation will occur as long as there are no large shifts in population or employment. Community cohesion also relates to the polarization that occurs over resource issues, particularly development versus nondevelopment.

All alternatives satisfy this variable insofar as the maintenance of local interest groups and organizations is concerned. Those alternatives that emphasize one aspect of the development/nondevelopment issue could widen the polarization that already exists. Alternatives G, H, and O emphasize wilderness or roadless management whereas Alternatives L and M emphasize the timber resource. These alternatives have the potential of weakening community cohesion.

c. Lifestyles

Traditional qualities of life such as individuality, freedom, and permanence, are important values to local residents. It is presumed that all alternatives will have only a minor effect on lifestyle and, in most cases, will help to reinforce these characteristics.

d. Attitudes, Beliefs, and Values

This variable relates to the way people perceive the Forest and how it should be used. Those alternatives which emphasize commodity production as a means of producing timber, wildlife benefits, and providing jobs, would encourage the "extractive" perception people have of the Forest. Alternatives which emphasize the nondevelopmental approach and protection of currently unroaded areas, would encourage the "nonextractive" perception.

Most alternatives do not project a re-emphasis of resource use that would produce significant effects on public perception of the Forest. Those alternatives which emphasize timber harvest (Alternatives L and M) and those alternatives which emphasize wilderness or roadless management (Alternatives G, H, and O), have the potential of producing a change in people's perception.

e. Aesthetics

This variable deals with the amenity values people attach to the Forest, primarily recreation opportunities that are available. Recreation on the Forest is characterized as motorized or nonmotorized with most participation usually associated with motorized. Nonmotorized, or roadless recreation, is increasingly important because of the perception that opportunities for this form of recreation are diminishing.

All alternatives provide a mix of motorized/nonmotorized recreation opportunities that do not deviate significantly from what is available now. However, because of emphasis on wilderness or roadless management, Alternatives G, H, and O provide for long term assurance that roadless recreation opportunities will be available in the future. Alternatives L and M project significant increases in timber harvest and roading which will lessen the roadless recreation opportunities but will emphasize motorized recreation.

15. Local Economic Impacts (Primary Market Areas)

Summary of Changes between the Draft and Final EIS

As a result of the public review, some errors were found in the calculation of the "Returns to the States" and are presented below in section b.

a. Employment and Income

No Changes occurred between the Draft and Final EIS

Changes in total personal income and employment resulting from the Forest Plan alternatives produce significant impacts on the primary market area of Lincoln and Sanders Counties, Montana. A larger five-county market area which is also affected by the Forest Plan includes Flathead County in Montana, and Bonner and Boundary Counties in Idaho.

The local economic impact resulting from timber, recreation, and grazing outputs is substantial in the primary market area, but limited within the total five county market area. This is due to the existence of the two rapidly developing rural growth centers of Kalispell, Montana, and Sandpoint, Idaho. Within the primary market area, Forest-related private sector job opportunities account for 1,670 person years of employment and \$23.4 million in personal income. By producing resources that are exported to the surrounding counties, the Kootenai contributes to their economic stability. Assuming that the current patterns of log flows continue, changes in the magnitude of local economic impacts are evident throughout the range of alternatives.

Table II-24 displays local economic impacts in relation to jobs and personal income by alternative for the primary market area. These impacts have been estimated using an input/output computer model (IMPLAN).

The following table displays the changes from the 1980 base year that would occur in the primary market area under each alternative for the first decade. The number of Forest-related private sector jobs for the 1980 base year is 1,666 and the portion of personal income for Lincoln and Sanders Counties is \$23,450,000.

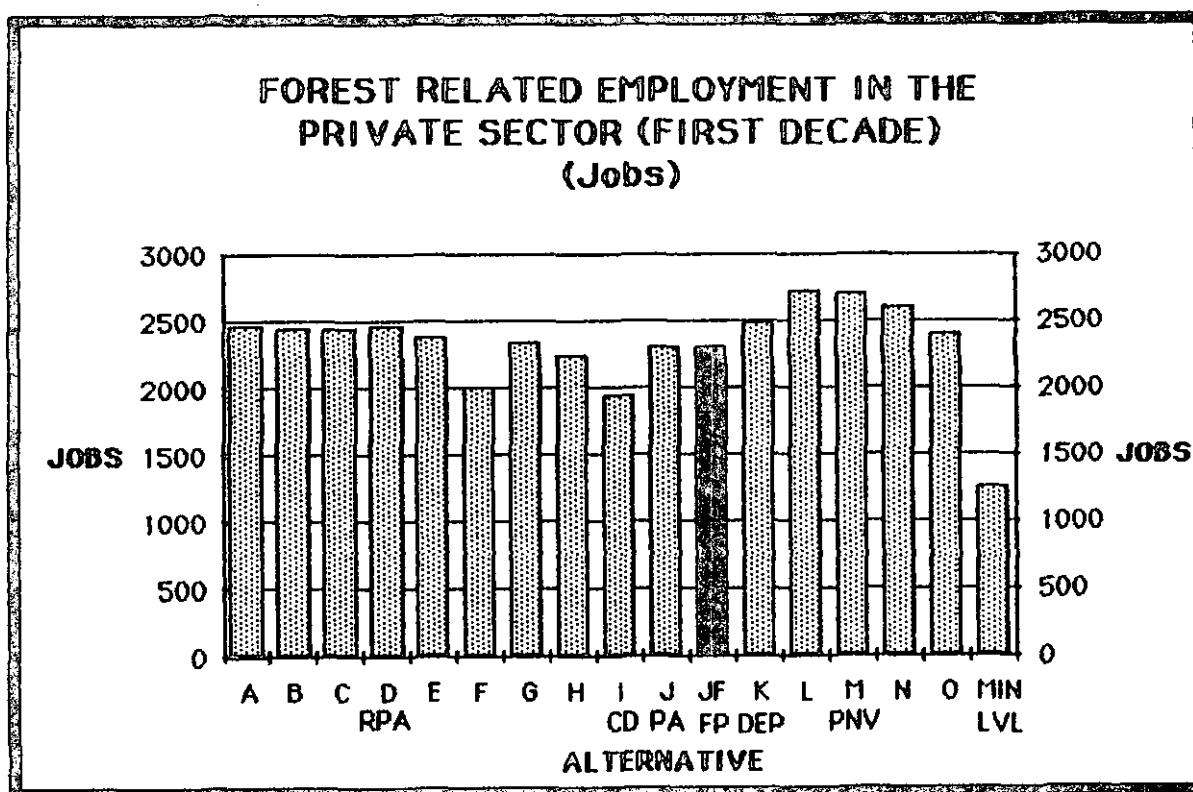
TABLE II-13

- EMPLOYMENT and INCOME in the First Decade -
 AVERAGE ANNUAL FOREST-RELATED PRIVATE SECTOR JOBS
 and PERSONAL INCOME in LINCOLN and SANDERS COUNTIES

Alternative	Jobs		Income (\$MM)	
	Total	% Change	Total	% Change
In 1980	1666	0	23.4	0
A	2457	+47	43.2	+85
B	2436	+46	42.8	+83
C	2447	+47	43.0	+84
D (RPA)	2457	+47	43.2	+85
E	2391	+43	41.9	+79
F	2006	+20	34.1	+46
G	2343	+40	41.0	+75
H	2237	+34	39.5	+69
I (CD)	1931	+16	32.4	+38
J (PA)	2299	+38	39.9	+71
<hr/>				
JF (FP)	2299	+38	39.9	+71
<hr/>				
K (Dep)	2492	+49	43.8	+87
L	2727	+63	48.5	+107
M (PNV)	2706	+62	48.3	+106
N	2608	+56	46.2	+97
O	2401	+44	41.9	+79
MIN LVL	1256	-25	20.0	-15

All alternatives project an increase in the number of jobs and an increase in personal income. Alternatives L and M produce the largest projected increases because of the strong emphasis on timber harvest and road construction. The remaining alternatives generally follow the pattern of timber harvesting, i.e., increasing timber harvests generate the potential for increased employment and personal income. Alternative I produces the smallest projected increase because of the constrained timber harvest which was used to keep the budget at current levels. Where timber harvest is lower and recreation opportunities are higher there is less employment in timber-related jobs and more in recreation-related jobs. In general the increase in recreation jobs will not offset decreases in timber jobs.

FIGURE II-56



b. Returns to the States

Summary of Changes between the Draft and Final EIS

An error in this calculation was found during the public review period (See Letter #301 in Appendix E). The result was an average increase of 16% in the Returns to the States and is presented in the following Table. A 1% decrease occurred between the Proposed Plan (Alt. J) and the Final Plan (Alt. JF) because of the 4% increase in the amount of lodgepole pine harvested in the Final Forest Plan. Lodgepole pine is a lower-priced timber species. See Section II.1.c.

Table II-13a

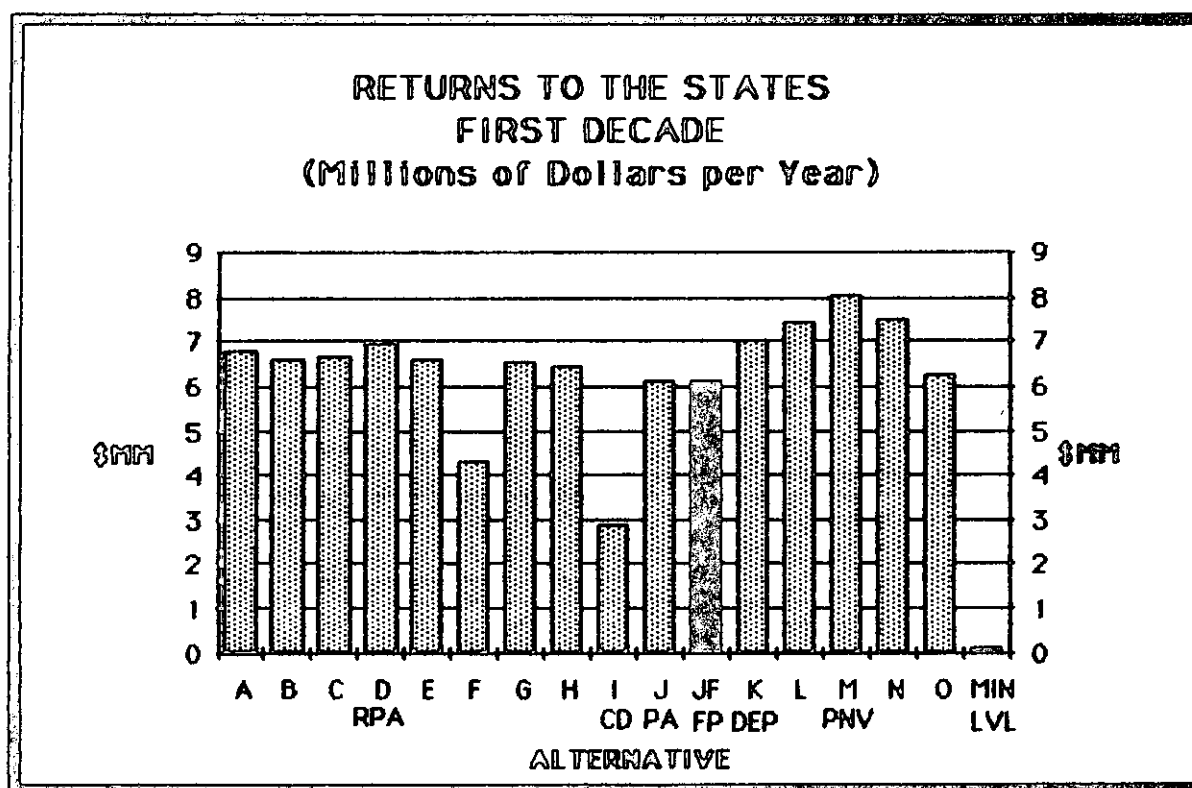
Kootenai National Forest

Returns to the States in the First Decade (Million \$ per yr.)

DEIS Alts.	Million \$	FEIS Alts.	Million \$
A	5.88	A	6.80
B	5.69	B	6.60
C	5.72	C	6.65
D - RPA	6.04	D - RPA	6.96
E	5.72	E	6.60
F	4.44	F	4.33
G	5.69	G	6.55
H	5.60	H	6.43
I - CD	2.30	I - CD	2.88
J - PA	5.33	J - PA	6.15
-----		-----	
-	-	JF- FP	6.10
-----		-----	
K - DEP	6.08	K - DEP	7.02
L	6.47	L	7.46
M - PNV	6.97	M - PNV	8.04
N	6.52	N	7.54
O	5.34	O	6.25
MinLvl	0.06	MinLvl	0.07

The following chart displays the total expected returns to the States by alternative for the first decade. These returns are significant because of their contribution to the funding base for local schools and roads. Table II-24 displays the total returns to the States beyond the first decade for all the alternatives. These estimates are heavily dependent upon projected, real, stumpage price increases, i.e., stumpage prices that are forecast to rise higher than inflation due to increased demand and finite supplies.

FIGURE II-57



These returns to the States are a result of 25% in-lieu tax payments that are calculated from the receipts to the U.S. Treasury. These receipts are greatly influenced by the amount of timber harvested because timber is the biggest contributor to the receipts to the Treasury.

As can be seen in the chart, Alternatives K, L, M and N produce the highest returns to the States. This is because of the high timber harvest levels associated with these alternatives. In contrast, Alternative I produces the smallest returns because of the lower timber harvest levels. The remaining alternatives are generally correlated to the amount of timber harvesting done in each alternative. All alternatives except Alternative I project increases in revenues over the 1980 level. Alternative I projects a decrease because the 1980 harvest level includes both regulated and unregulated harvest volumes.

16. Comparison of Alternatives for Response to Major Issues

Summary of Changes between the Draft and Final EIS

The Final Forest Plan (Alt. JF) is a modification of the Proposed Plan (Alt. J). It now contains more recommended wilderness acreage and provides for more old-growth timber. These two modifications result in several other changes which help to further resolve other issues such as operating budgets and miles of new road construction.

The following table presents some key indicators that display how the major issues, concerns and opportunities (ICO's) are addressed. The ICO's are outlined in Chapter 1 and Appendix A and are restated here for your convenience.

<u>ICO NUMBER</u>	<u>NAME</u>	<u>Indicator No. On Next Page</u>
1	Timber Volume	1, 2
2	Transportation Facilities	3, 4, 5, 12
3	Roadless Recreation	10
4	Threatened and Endangered Species	15
5	Special Wildlife Habitat	14
6	Local Economic Impact	21
7	Wilderness	6, 7, 8, 9
8	Minerals, Oil and Gas	19, 20
9	Wildlife and Fish Habitat	11, 12, 13
10	Esthetics	16
11	Landownership Adjustment	25
12	Diseases and Pests	17, 18
13	Fire Management	-

Table II-14. Part 1

COMPARISON OF ALTERNATIVES FOR RESPONSE
TO THE MAJOR ISSUES, CONCERNS, AND OPPORTUNITIES

No.	Indicator of Issues, Concerns, & Opportunities	RPA								CD	PA	: FP	: Dep.	PNV			
		Alt. A	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F	Alt. G	Alt. H	Alt. I	Alt. J	: Alt. : JF	: Alt. : K	Alt. L	Alt. M	Alt. N	Alt. O
1.	Decade 1 regulated tmbr. harv.(mmbf/yr)	226	223	225	227	218	164	213	208	150	202	: 202	: 230	255	262	247	215
	& % change from last 10-yr. average											: :	: :				
	regulated harvest	+53	+51	+52	+53	+47	+11	+44	+40	0	+36	: +36	: +55	+72	+77	+67	+45
2.	Suitable tmbrland managed(MAcres) & % of total	1470	1464	1466	1595	1425	1132	1386	1361	1422	1386	: 1263	: 1386	1788	1484	1481	1389
	available	82	82	82	89	80	63	78	76	80	78	: 71	: 78	100	83	83	78
	New road const. needed by Decade 5											: :	: :				
3.	(miles) and % change from exist. miles on 1/1/84	5270	5200	5150	5690	4950	3850	4750	4590	3840	4690	: 4050	: 4720	6360	5230	5270	4680
		+88	+87	+86	+95	+83	+64	+79	+77	+64	+78	: +68	: +79	+106	+87	+88	+78
	Miles of new road const. needed in 1st decade	2690	2660	2680	2670	2630	2020	2510	2480	1850	2440	: 2370	: 2760	3100	3150	2890	2560
5.	Total road system eventually required (mi.)	11270	11200	11150	11690	10950	9850	10750	10590	9840	10690	: 10050	: 10720	12360	11230	11270	10680
6.	Rec. wilderness (MAcres) & number of locations	None	64	81	64	187	None	305	404	64	66	: 78	: 66	None	None	None	81
		0	2	5	2	6	0	15	27	2	3	: 3	: 3	0	0	0	5
	Designated rdless acres in invent. rdless areas (M Acres) & % of total	211	164	151	155	99	209	53	0	174	202	: 192	: 202	159	200	205	322
7.		52	41	37	38	25	52	13	0	43	50	: 48	: 50	39	50	51	80
	Inventoried rdless acres developed in Decade 1 (MAcres)	46	50	45	39	45	49	17	0	34	10	: 10	: 10	57	55	42	0
												: :	: :				
9.	Inventoried rdless acres remain after 1st decade (MAcres) & % of total	358	289	278	301	172	355	81	0	307	327	: 315	: 327	347	349	362	322
		89	72	69	75	43	88	20	0	76	81	: 78	: 81	86	86	90	80
	Total roadless rec. opportunities provided (MAcres) and % of the total Forest	399	428	419	410	476	401	534	583	441	518	: 521	: 518	349	389	393	574
10.		18	19	19	18	21	18	24	26	20	23	: 23	: 23	16	17	18	26
	Elk population by 3rd decade	8400	8500	8500	8000	8400	9900	8500	8600	7300	8000	: 8000	: 8000	8500	8300	8400	8500
	Additional road re- strictions needed by 5th decade(mi.)	3510	3510	3520	3170	3280	3360	3180	3130	2990	4480	: 4130	: 4480	4090	3500	3520	2700
13.	Migratory fish (smolts) prod. in Decade 1 (MM fish/ yr.) & % change	191	192	191	190	192	194	193	193	199	192	: 192	: 192	188	192	189	190
		-7	-6	-7	-7	-6	-5	-6	-6	-3	-6	: -6	: -6	-8	-6	-8	-7
	Old growth timber (160+ yr.) after Decade 10 (MAcres)	204	203	204	186	206	344	218	230	537	255	: 311	: 255	168	191	196	232

Table II-14, Part 2

COMPARISON OF ALTERNATIVES FOR RESPONSE
TO THE MAJOR ISSUES, CONCERNS AND OPPORTUNITIES

No.	Indicator of Issues, Concerns, & Opportunities	RPA								CD	PA	FP	Dep.	PNV			
		Alt. A	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F	Alt. G	Alt. H	Alt. I	Alt. J	Alt. JP	Alt. K	Alt. L	Alt. M	Alt. N	Alt. O
15.	Grizzly habitat design. for limited or no development (M Acres) & % of total habitat	425	434	439	469	475	339	514	545	551	589	: 609	: 589	354	434	424	444
		42	42	42	45	46	33	50	53	53	57	: 59	: 57	34	42	41	43
	Visual quality protection(preser- vation,retention, & partial retent. VQOs) (MAcres)	1108	1114	1120	1046	1137	1465	1157	1199	1240	1311	: 1311	: 1311	976	1092	1102	1382
17.	Decade 1 lodgepole pine harvest (NMBF/yr) & % change from last 5 yrs.	69	70	72	67	64	56	59	51	77	75	: 78	: 79	42	93	85	75
		+38	+40	+44	+34	+28	+12	+18	+2	+54	+50	: +56	: +58	-16	+86	+70	+50
	Stagnated lodgepole pine stands covert. by Decade 5(MAcres)	2	2	1	45	1	44	1	1	69	70	: 32	: 70	93	1	1	5
19.	Projected withdraw- als from oil & gas exploration(MAcres)	148	212	228	212	335	148	453	540	212	215	: 227	: 215	148	148	148	228
	Projected withdrawals from locatable mineral explor.(M Acres)	185	249	265	249	371	185	484	579	249	252	: 264	: 252	185	185	185	265
	Forest-related employmt.(jobs) in Decade 1 in private sector & % change from 1980	2460	2440	2450	2460	2390	2010	2340	2240	1930	2300	: 2300	: 2490	2730	2710	2610	2400
22.	Decade 1 total aver. ann. budget needed (million dollars)	27.2	27.0	27.1	26.9	26.4	20.7	25.7	25.1	19.6	25.2	: 24.0	: 27.5	34.2	30.4	29.1	26.9
	Average annual capital investmt. road const.	4.3	4.2	4.3	4.3	4.1	3.4	3.9	3.8	2.4	3.7	: 3.6	: 4.2	5.2	5.1	4.6	3.9
	funding needed in Decade 1 (million dollars)											:	:				
24.	Decade 1 appropriated budget needed:capital investments + operation & maint. (million dollars)	21.7	21.6	21.8	21.5	21.1	16.8	20.6	20.0	16.6	20.3	: 19.2	: 22.0	28.1	24.1	23.2	21.8
												:	:				
												:	:				
25.	Landownership Adjustment	All alternatives treated landownership adjustment similarly - Dispose of approximately 69,000 acres and acquire approximately 91,000 acres to meet grizzly recovery goal, recreation and wildlife needs, solve trespass, etc.															

17. Projected Change From The Current Direction (Alt. I)

Summary of Changes between the Draft and Final EIS.

The Final Forest Plan (Alt. JF) recommends more wilderness and old-growth timber than the Proposed Plan (Alt. J) which results in several changes that helped resolve other issues, such as the miles of new road construction, etc. These changes are presented in the following Table II-15 that shows the projected change in the first decade for each alternative when compared to the Current Direction (Alt. I)

Table II-15

PROJECTED CHANGE from the CURRENT DIRECTION (Alt. I) in the First Decade (Percent)

	Alternatives																
Issue Indicator	A	B	C	RPA D	E	F	G	H	CD I	PA J	: FP : JF	: Dep. : K	L	PNV M	N	O	
Lodgepole pine harvest volume	-10	-10	-6	-13	-17	-27	-23	-34	0	-3	:	:	+3	-45	+21	+10	-3
Leasable mineral acres withdrawn	-30	0	+8	0	+58	-30	+114	+155	0	+1	:	:	+1	-30	-30	-30	+8
Locatable mineral acres withdrawn	-26	0	+6	0	+49	-26	+94	+133	0	+1	:	:	+1	-26	-26	-26	+6
Designated old growth timber	-4	-4	-4	+108	+17	+62	+30	+45	0	-1	:	:	-1	+56	-4	-4	-6
Visual quality protection	-11	-10	-10	-16	-8	+18	-7	-3	0	+6	:	:	+6	-21	-12	-11	+11
Number of jobs	+27	+26	+27	+27	+24	+4	+21	+16	0	+19	:	:	+29	+41	+40	+35	+24
PNV	+148	+147	+145	+125	+142	+43	+133	+125	0	+99	:	:	+98	+127	+153	+150	+131
Migratory fish	-4	-4	-4	-5	-4	-3	-3	-3	0	-4	:	:	-4	-6	-4	-5	-5
Timber harvest in grizzly habitat	+6	-12	-5	+27	+26	+4	+47	+51	0	+33	:	:	+48	+65	+60	+63	+43
Elk population	0	0	0	0	0	0	0	0	0	0	:	:	0	0	0	0	0
Total dispersed recreation RVDs	-1	-1	-2	-2	-3	-1	-7	-13	0	0	:	:	0	-2	-1	-1	0
Motorized Recreation RVDs	-1	-2	-3	-2	-4	-1	-6	-7	0	0	:	:	0	-2	-1	-1	0
Inventoried Roadless Acres Protected	+21	-6	-13	-11	-43	+20	-70	-100	0	+16	:	:	+16	-9	+15	+18	+85
Recommended wilderness	-100	0	+29	0	+197	-100	+384	+541	0	+5	:	:	+5	-100	-100	-100	+29
Miles of new road construction	+45	+44	+45	+44	+42	+9	+36	+34	0	+32	:	:	+6	+49	+68	+70	+56
Suitable timberland	+3	+3	+3	+12	0	-20	-3	-4	0	-3	:	:	-11	-3	+26	+4	+4
Timber harvest volume	+51	+49	+50	+51	+45	+9	+42	+39	0	+35	:	:	+35	+53	+70	+75	+65
											:	:					

FIGURE II-58

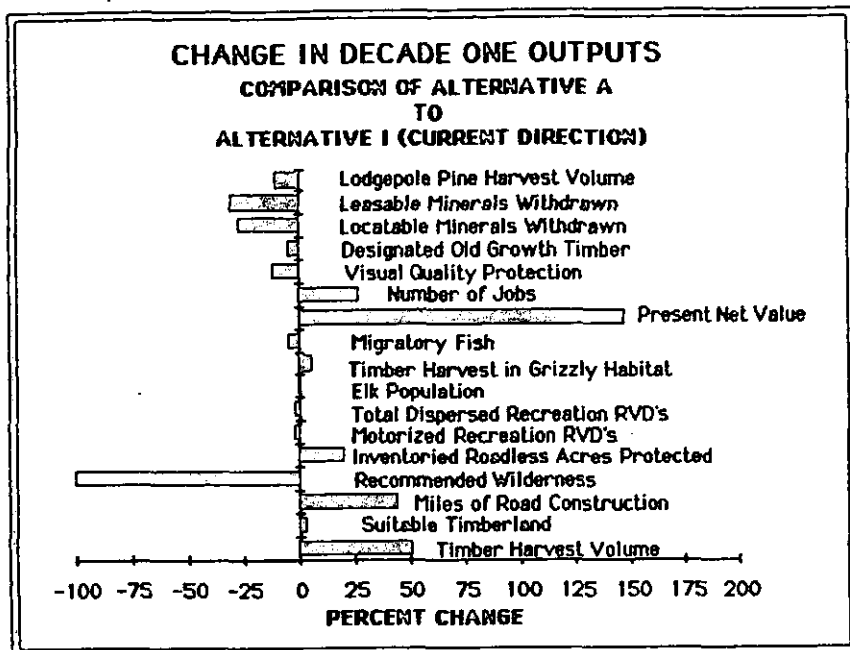


FIGURE II-59

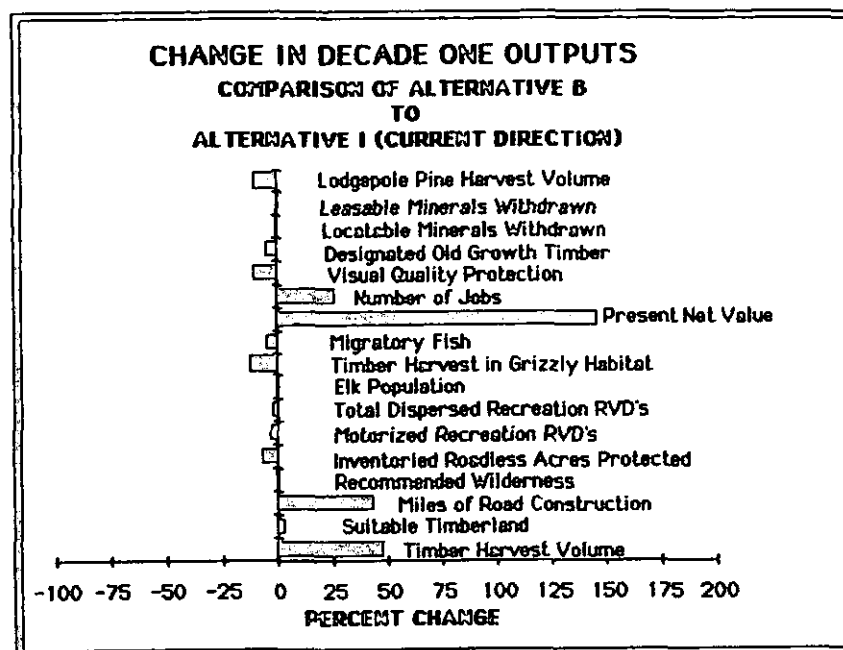


FIGURE II-60

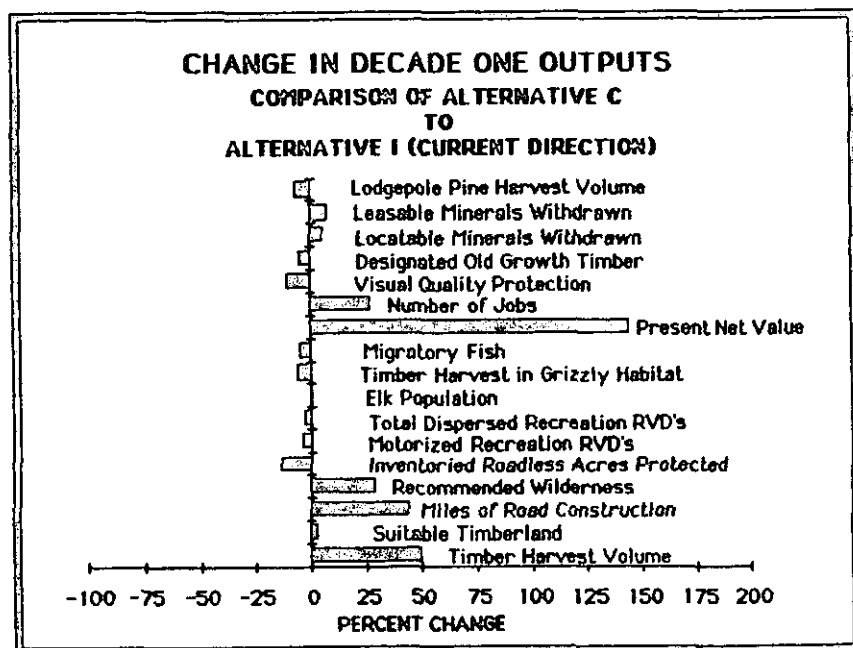


FIGURE II-61

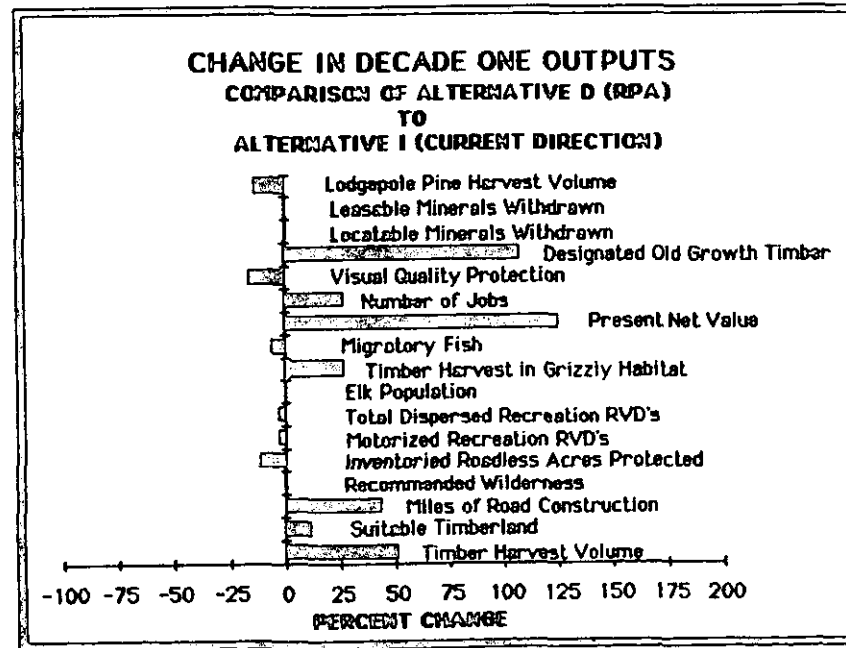


FIGURE II- 62

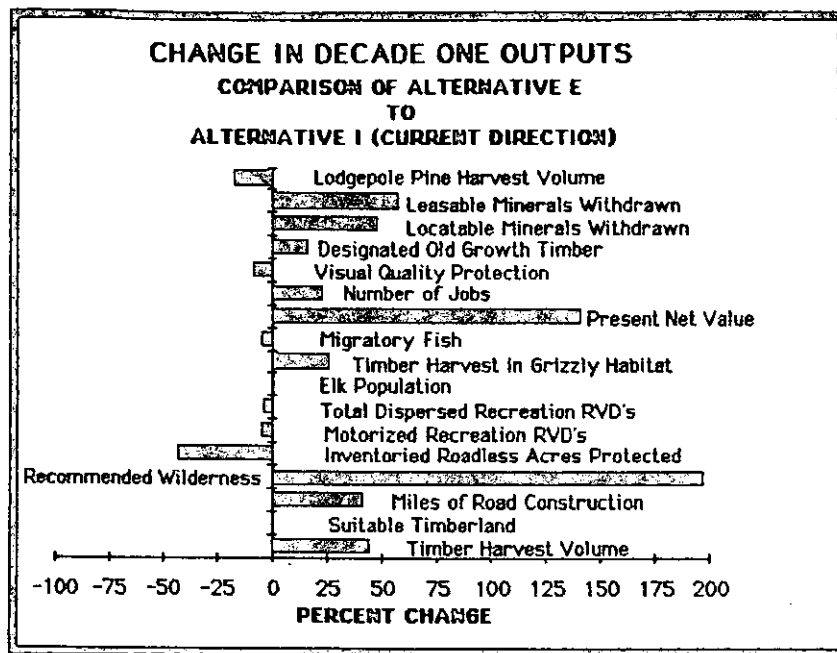


FIGURE II- 63

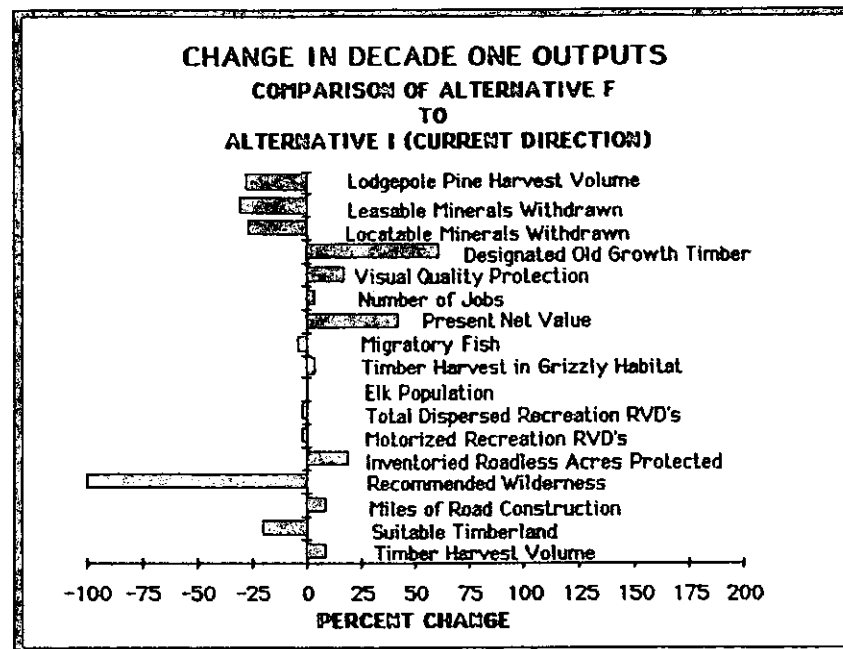


FIGURE II- 64

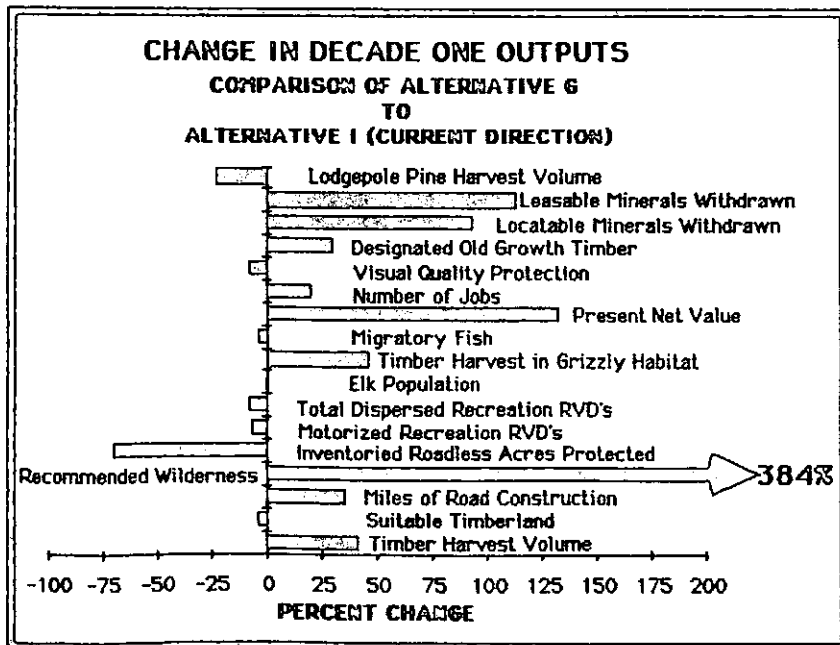


FIGURE II- 65

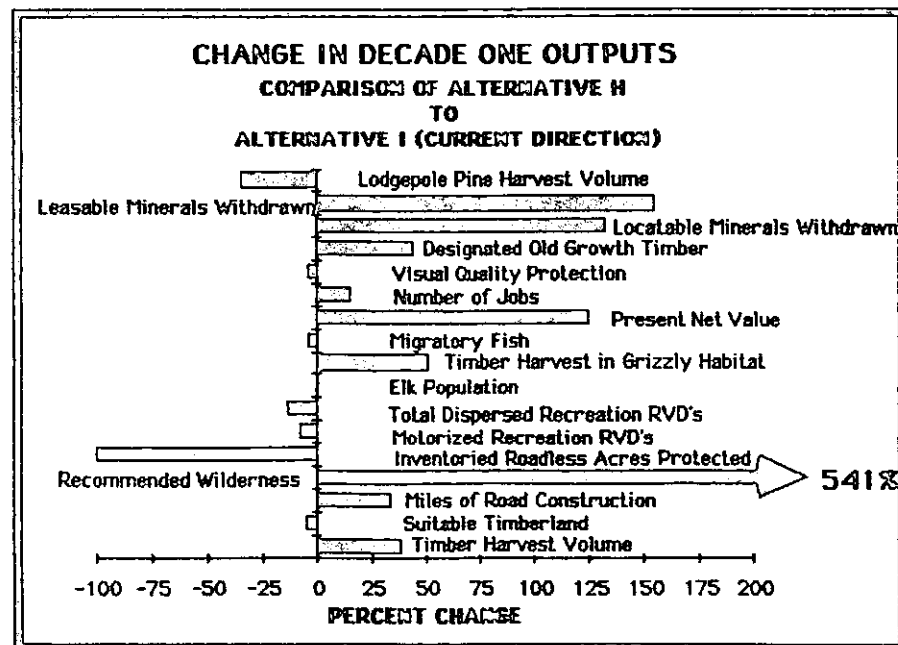


FIGURE II- 66

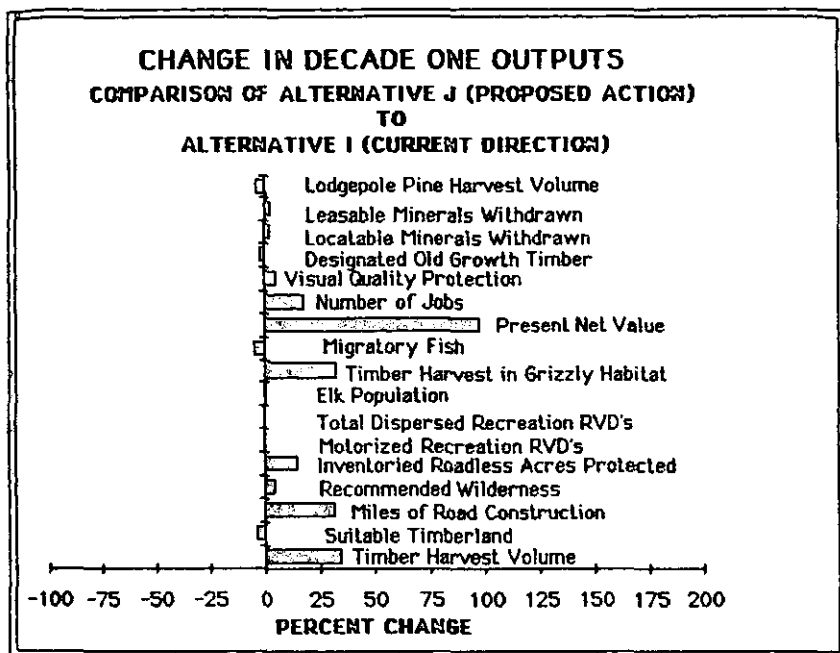


FIGURE II- 66A

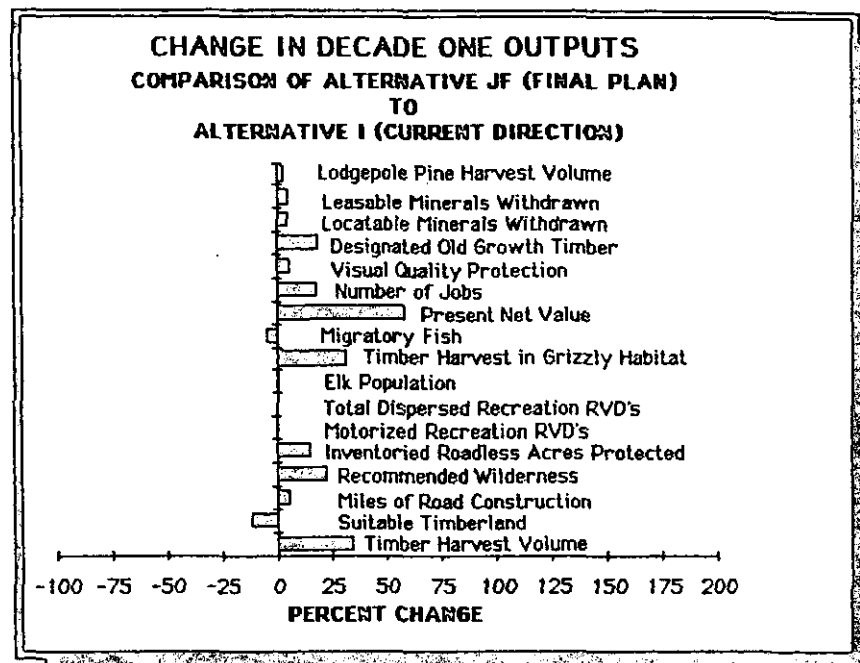


FIGURE II- 67

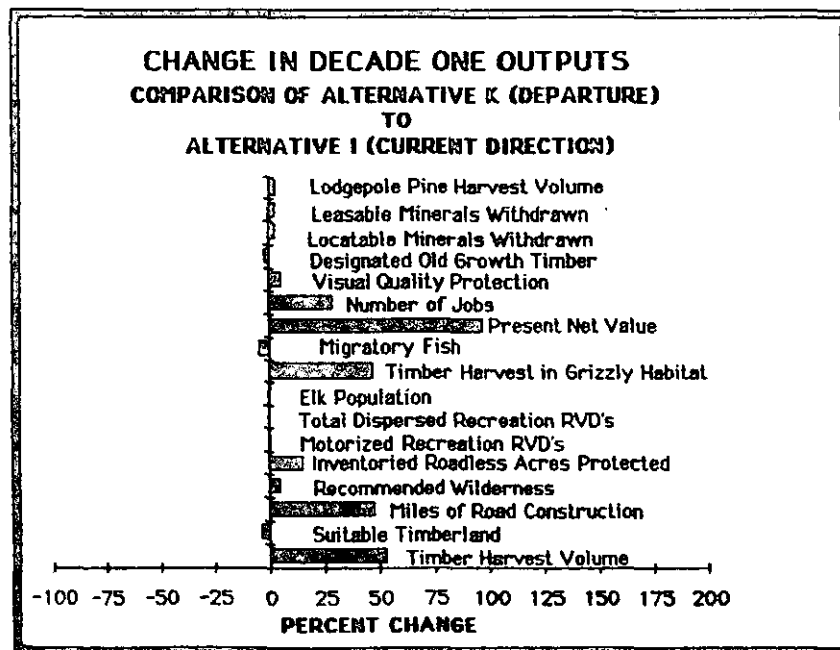


FIGURE II- 68

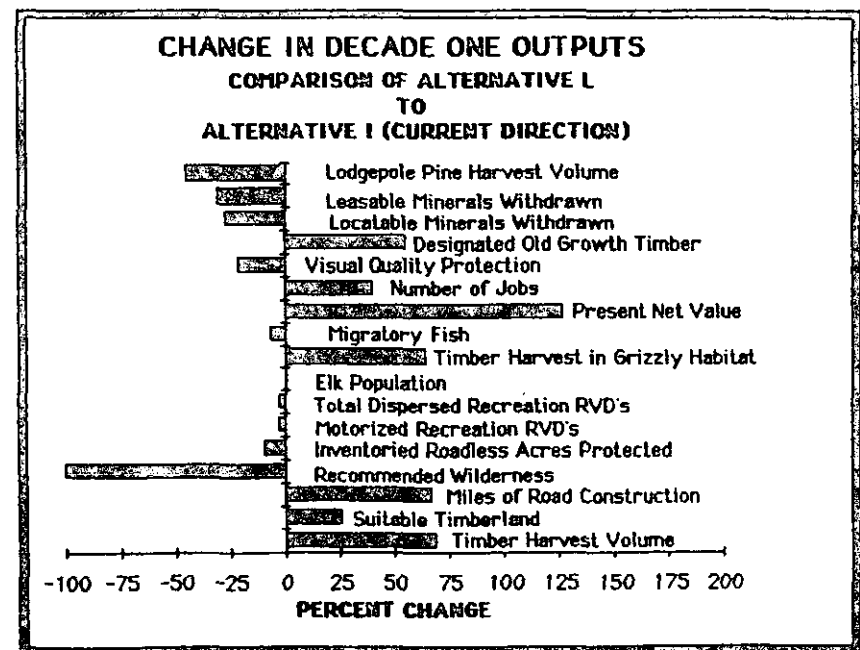


FIGURE II- 69

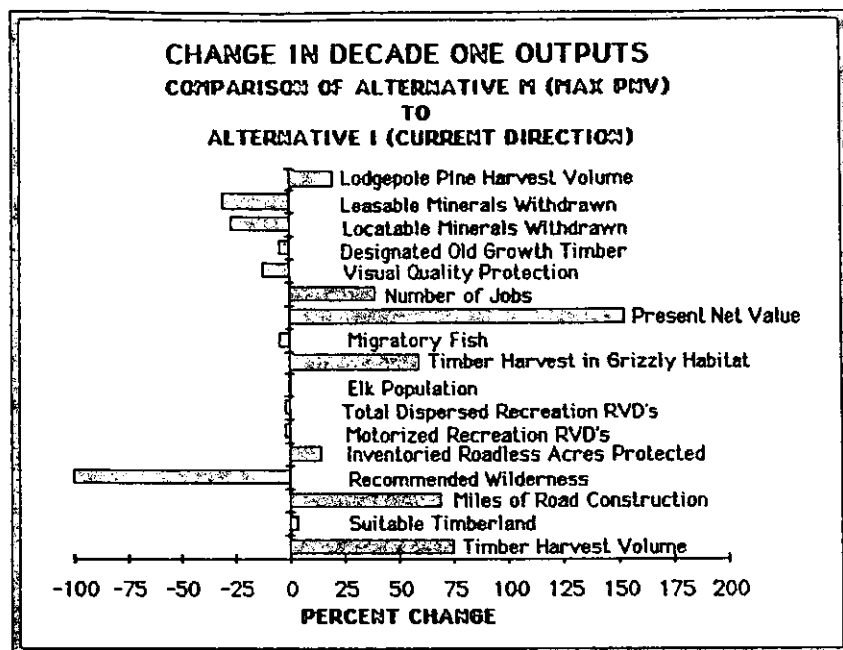


FIGURE II- 70

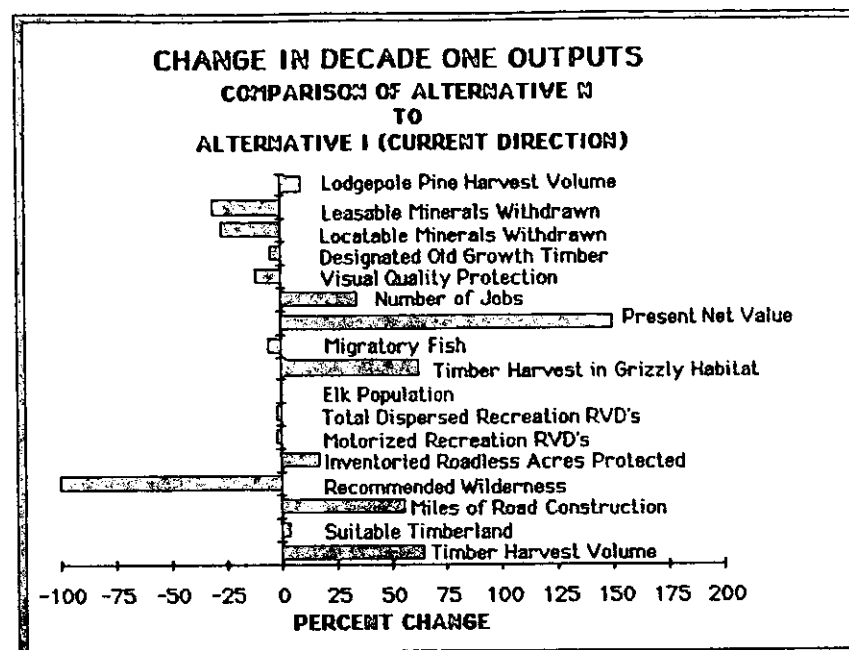
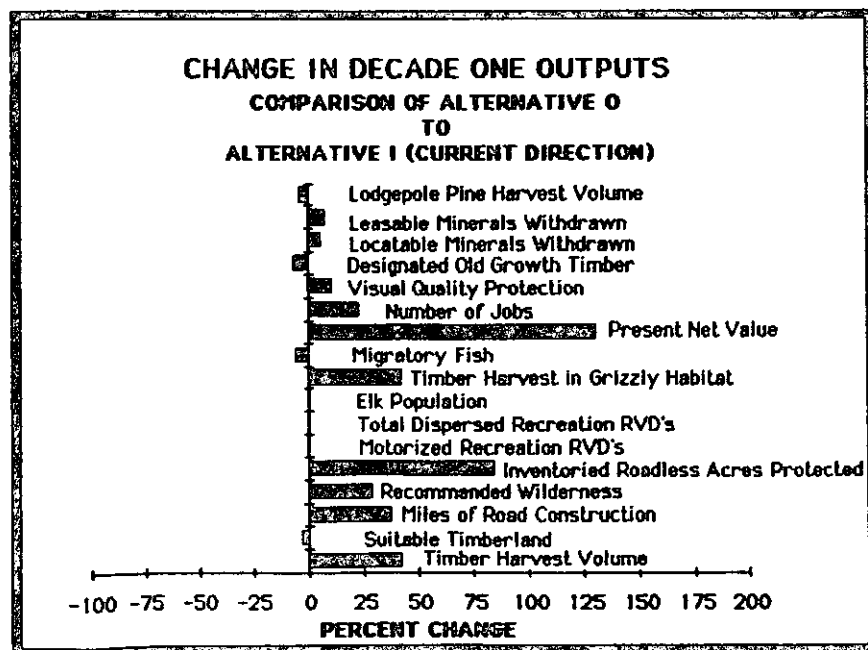


FIGURE II- 71



18. Significant Differences in Economic Values Among Alternatives

This section explains tradeoffs that would occur among the quantified economic benefits and outputs. Additional tradeoffs involving outputs and benefits not quantified in economic terms by PNV together with community effects and different responses to Forest issues are explained in section 19 of this chapter.

Summary of Changes between the Draft and Final EIS

The Final Forest Plan (Alt. JF) recommends more wilderness and old-growth timber than the Proposed Plan (Alt. J) to respond to public requests for more balance in the management of the Kootenai. The additional wilderness recommendation did not significantly affect the total Present Net Value because the land area involved was already designated for roadless and other non-developmental uses.

The designation of more old-growth timber removed regulated timberland from the suitable timber base which lowered the total Present Net Value and caused a similar increase in the Opportunity Cost. The smaller suitable timber base also reduced the Discounted Costs because of the lower road mileage and future logging needed. The resultant lower future timber harvests caused a decrease in the Discounted Benefits.

Other attempts to satisfy public concerns, such as reducing the operating budgets, had some effect on the overall economics of the Final Forest Plan.

In addition, an error in calculating the Returns to the Treasury was found by a member of the public during the review period (See Letter #301 in Appendix E). This resulted in a 16% average increase for the Returns to the Treasury which also resulted in similar increases in the Net Returns. These corrections are presented in this section.

a. Differences in Present Net Values

The primary measure of economic efficiency is present net value (PNV) which is the sum of discounted benefits for both market and non-market priced benefits minus the total discounted costs of each alternative calculated over the planning horizon (200 years) and discounted at 4 percent. The PNV of the alternatives is displayed in Figure II-72, at the end of this sub-section, and Tables II-16 and II-17. The maximum PNV attainable from the Forest is \$1163 million as defined by the PNV benchmark (Alternative M). Most of the change in PNV among alternatives is due to changes in the net value of the timber resource.

In general, decreases in PNV are the result of reductions in net timber benefits, because timber benefits constitute approximately 77-88% of the priced resource values of each alternative. These decreases are caused primarily by two factors constraining timber production: prescriptions which preclude timber development on otherwise cost-efficient lands including those for wilderness and roadless area management, and increased costs in access roads and harvests on lands that are not usually cost-efficient, such as stagnated lodgepole, etc. where these lands are needed to increase the overall timber yields.

The alternatives are ranked by present net value in Table II-16, where PNV is defined to be the difference between the discounted benefits and the discounted costs of each alternative. The second column in Table II-16 shows the differences in PNV between pairs of alternatives. These figures are estimates of the net economic values that would be foregone if a lower ranked alternative rather than the preceding one were selected. Because timber values are the major component of PNV, these potentially forgone values are largely due to factors which limit timber production levels.

The changes in PNV are associated with achieving the particular objectives pertinent to the alternative. The PNV changes result from either increased costs or decreased benefits or both. Increased costs are the result of achieving nonpriced goals, such as visual quality, or from achieving priced goals that are set above the level which maximizes PNV (such as timber harvest levels that are set higher than the optimum indicated). Decreased benefits are the result of achieving priced goals that are set below the level which maximizes PNV, such as a reduced timber harvest level set below the optimum as indicated. Differences in alternatives can be analyzed in relation to the changes in PNV as displayed in the following Table II-16.

Table II-16 displays the alternatives in descending order of PNV along with the total discounted benefits and costs (present value benefits and present value costs). As can be seen in Table II-16 all alternatives have fewer present value benefits than Alternative M because Alternative M was able to optimize the harvest of timber (without the non-declining yield constraint) which accounted for approximately 88% of the total benefits. This resulted in the highest average annual timber harvest in the first decade. In contrast, Alternatives D and L have higher total costs than Alternative M because of their goal to achieve timber harvest levels which were set above the economically optimum 200 year total cut demonstrated by Alternative M.

Table II-16

Kootenai National Forest

Present Net Value, Discounted Costs and Discounted Benefits
(Millions of dollars discounted at 4% over 200 years)

Alts.	PNV	Change	Discounted Costs	Change	Discounted Benefits	Change
M-PNV	1,163		698		1,861	
		- 15		- 9		- 23
N	1,148		689		1,838	
		- 5		- 14		- 19
A	1,143		675		1,819	
		- 7		- 2		- 10
B	1,136		673		1,809	
		- 7		0		- 6
C	1,129		673		1,803	
		- 16		- 14		- 31
E	1,113		659		1,772	
		- 40		- 12		- 52
G	1,073		647		1,720	
		- 9		+ 72		+ 62
D-RPA	1,064		719		1,782	
		0		- 30		- 29
O	1,064		689		1,753	
		- 18		+ 87		+ 70
L	1,046		776		1,823	
		- 11		- 146		- 160
H	1,035		630		1,663	
		- 119		+ 16		- 100
J-PA	916		646		1,563	
		- 5		+ 16		+ 11
K-Dep	911		662		1,574	
		- 178		- 51		- 230
JF-FP	733		611		1,345	
		- 75		- 71		- 145
F	658		540		1,199	
		- 198		+ 7		- 193
I-CD	460		547		1,006	
		- 457		- 351		- 807
MinLvl	3		196		199	

NOTE: Some numbers vary due to rounding.

Summary of Changes Between the Draft and Final EIS

The PNV of the Final Forest Plan (Alt. JF) is \$733,000,000 which is a 20% reduction from the Proposed Plan (Alt. J). This is a result of the lower projected outyear timber harvests which will occur because of the 9% smaller suitable timber base. The timber base was reduced to provide wildlife habitat for old-growth timber dependent species. See section II.D.6.c. and II.D.1.b. for more information on old-growth timber and suitable timberland. In addition, the requirement for substantial commercial thinning was removed. This is discussed in detail in Appendix B [sections VI.B.4.c, VI.C.3.e, VI.D.6.c and VIII.C.2.p(2)(a & b)]. Finally, the long range schedule of harvest was altered to maximize timber production in the first decade, thus reducing the PNV further (see Appendix B section VI.C.3.i.). The \$733,000,000 of PNV is a 59% increase over the Current Direction (Alt. I). See Table II-17 for a display of the PNV for all the alternatives.

Table II-17

PRESENT NET VALUE AND PNV CHANGE BY ALTERNATIVE INCLUDING
TOTAL DISCOUNTED BENEFITS AND COSTS FOR RESOURCE GROUPS IN DESCENDING ORDER OF PNV
(Millions of 1978 Dollars, Discounted at 4%)

Alternatives and Benchmarks	Present Net Value	Change in PNV from Previous Alt.	Discounted Benefits				Discounted Costs					
			Recreation/ Timber Wildlife Range			Total(1) Discounted Benefits (PVB)	Recreation/ Timber Wildlife Range			Total (1) Discounted Costs (PVC)		
			Timber	Wildlife	Range		Timber	Wildlife	Range	Roads	Other	
M (PNV)	1163	0	1631	227	3	1860	251	80	2	204	161	697
N	1148	14	1603	231	3	1837	245	81	2	200	161	689
A	1143	5	1588	228	3	1819	236	81	2	195	161	676
B	1136	8	1575	231	3	1809	236	81	2	194	160	674
C	1129	7	1569	231	3	1803	236	81	2	194	160	674
E	1113	16	1538	231	3	1772	229	81	2	186	161	658
G	1073	40	1490	227	3	1720	222	80	2	183	160	647
D (RPA)	1064	8	1552	227	3	1782	267	81	2	205	163	718
O	1064	1	1514	236	3	1753	263	83	2	178	163	689
L	1046	17	1591	229	3	1823	300	81	2	227	166	776
H	1035	12	1441	219	3	1662	218	76	2	175	159	627
J (PA)	916	19	1328	232	3	1563	223	82	2	175	164	647
K (Dep.)	911	5	1339	232	3	1573	231	82	2	182	164	662
<hr/>												
JF (FP)	733	178	1134	232	3	1369	220	81	2	170	163	636
<hr/>												
F	658	75	962	234	3	1198	151	80	2	149	158	541
I (CD)	460	198	776	227	3	1006	169	82	2	125	169	547
MIN LVL	3	457	26	172	1	199	2	45	0	2	147	196

(1) Figures do not always add exactly because of rounding.

Note: The direct comparison of individual resource benefits and costs can be misleading because not all costs are allocated to each resource. The "other" cost category includes inseparable joint costs associated with several resources.

Note: Costs are limited to National Forest Expenditures and exclude payments to counties.

The following discussion describes the alternatives, individually, in relation to their respective PNVs and discusses the predominant reasons for their differences. Table II-16, which summarizes the discussion, shows the changing PNV, discounted costs and discounted benefits from one alternative to the next in order of decreasing PNV. (The changes in PNV do not always add exactly because of rounding.) Table II-17 shows the discounted benefits and costs by resource group. It reveals that, as mentioned above, timber values make up the majority of the PNV values. Most of the changes in PNV are due to changes in the net value of the timber resource. PNV declines because some cost efficient timber sales are forgone while increases in recreation related benefits are not sufficient to offset the decline in timber benefits. This occurs because timber has higher priced benefits than the other resources and management for some nontimber resources do not provide priced benefits.

Alternative M (Maximum PNV and PNV Benchmark)

PNV: \$1,163,000,000

Change in PNV from previous alternative: 0

Alternative M achieves the maximum PNV by being able to select the most cost-efficient timberlands under a schedule which is allowed to depart somewhat from non-declining flow. A departure of plus or minus 25% is allowed between any decade if PNV could be increased by so doing. The highest harvest level in the first decade is achieved and no additional wilderness is proposed.

Alternative N

PNV: \$1,148,000,000

Change in PNV from previous alternative: \$15,000,000

Alternative N achieves 99% of the PNV of Alternative M by also being able to select the most cost-efficient timberlands and by being able to depart from a non-declining flow of timber harvest. The \$15,000,000 reduction in PNV is the result of a more constrained upper and lower bound on the departure (plus 20% and minus 15% compared to plus/minus 25% in the PNV benchmark). The first decade harvest decreases by 6% compared to the maximum PNV benchmark and no additional wilderness is proposed.

Alternative A

PNV: \$1,143,000,000

Change in PNV from previous alternative: \$5,000,000

Alternative A represents a 2% reduction from the maximum PNV and is the result of the non-declining timber flow constraint. First decade timber harvest is reduced approximately 14% from the maximum PNV and 9% from Alternative N. No additional wilderness is proposed, similar to the PNV benchmark and Alternative N.

Alternative B

PNV: \$1,136,000,000

Change in PNV from previous alternative: \$7,000,000

Alternative B also represents a 2% reduction from the maximum PNV. This resulted from a combination of a 20,000-acre reduction in the suitable timberland base from Alternative M and the requirement of a non-declining timber flow constraint. Alternative B is similar to Alternative A except for the 64,000 acres of proposed wilderness, similar to the RARE II recommendation. The \$8,000,000 change in PNV from Alternative A is due entirely to the 6,000 fewer acres of suitable timberland available because of the RARE II wilderness recommendation. First decade timber harvest is 15% less than the maximum PNV and 1% less than Alternative A.

Alternative C

PNV: \$1,129,000,000

PNV change from previous alternative: \$7,000,000

Alternative C also represents a 2% reduction from the maximum PNV. This resulted from a combination of an 18,000-acre reduction in the suitable timberland base from Alternative M and the requirement of a non-declining timber flow constraint. First decade timber harvest is 14% less than the maximum PNV and similar to Alternative B. The \$7,000,000 change in PNV from Alternative B is primarily the result of reduced timber benefits occurring as a result of a different geographical location of the recommended wilderness. Alternative C recommends 81,000 acres of additional wilderness compared to 64,000 acres in Alternative B. The suitable timberland bases are similar.

Alternative E

PNV: \$1,113,000,000

PNV change from previous alternative: \$16,000,000

Alternative E represents a 4% reduction from the maximum PNV because of a combination of a 59,000-acre reduction in the suitable timberland base from Alternative M and the non-declining timber flow constraint. The \$16,000,000 change from Alternative C is the result of a 41,000-acre decline in the suitable timberland base. Alternative E recommends 187,000 acres of additional wilderness compared to 81,000 acres in Alternative C. First decade timber harvest is 17% below the maximum PNV and 3% below Alternative C.

Alternative G

PNV: \$1,073,000,000

PNV change from previous alternative: \$40,000,000

Alternative G represents an 8% reduction from the maximum PNV. This is the result of a combination of the non-declining timber flow constraint and a 98,000-acre reduction in the suitable timberland base from Alternative M. The \$40,000,000 change from Alternative E is a result of a 39,000-acre reduction in the suitable timberland base. Alternative G recommends 305,000 acres of wilderness compared to 187,000 acres in Alternative E. First decade timber harvest is 19% less than the PNV benchmark and 2% below Alternative E.

Alternative D (RPA)

PNV: \$1,064,000,000

PNV change from previous alternative: \$9,000,000

Alternative D represents a 9% reduction from the maximum PNV. This is a result of the timber flow constraint necessary to reach desired harvest levels in the first five decades and the cost of managing an additional 111,000 acres of suitable timberlands compared to the maximum PNV. This alternative also includes the conversion of 45,000 acres of stagnated lodgepole pine stands and a recommended wilderness proposal of 64,000 acres, similar to Alternative B. First decade timber harvest decreases by 13% compared to maximum PNV.

Alternative O

PNV: \$1,064,000,000

PNV change from previous alternative: \$0

Alternative O represents a 9% reduction from the maximum PNV. This is a result of a combination of (1) the non-declining timber harvest constraint, (2) a 95,000-acre reduction in the suitable timberland base from Alternative M, and (3) a visual quality constraint on 829,000 acres of suitable timberland. The reduction in the suitable timberland base is a result of a proposed 80,000 acres of recommended wilderness additions and 322,000 acres of designated roadless areas. The first decade timber harvest is 18% below the maximum PNV and similar to Alternative G.

Alternative L

PNV: \$1,046,000,000

PNV change from previous alternative: \$18,000,000

Alternative L represents a 10% reduction from the maximum PNV. This is a result of a combination of the non-declining timber flow constraint and the cost of managing an additional 304,000 acres of suitable timberland compared to the maximum PNV. This includes the conversion of 93,000 acres of stagnated lodgepole pine stands. First decade timber harvest is similar to the maximum PNV and no additional wilderness is recommended. The first decade budget is the highest of all the alternatives.

Alternative H

PNV: \$1,035,000,000

PNV change from previous alternative: \$11,000,000

Alternative H represents an 11% reduction from the maximum PNV. This is a result of a combination of the non-declining timber flow constraint and a reduction of 123,000 acres of suitable timberland base from Alternative M. Alternative H proposes 404,000 acres of recommended wilderness. First decade timber harvest decreases by 21% compared to the maximum PNV.

Alternative J (Proposed Action)

PNV: \$916,000,000

PNV change from previous alternative: \$119,000,000

Alternative J represents a 21% reduction from the maximum PNV. This is a result of a combination of (1) the non-declining timber flow constraint, (2) a reduction of 98,000 acres of suitable timberland base from Alternative M, (3) a visual quality constraint on 124,000 acres of suitable timberland, and (4) the conversion of 70,000 acres of stagnated lodgepole pine stands. The reduction in the suitable land base is the result of a proposed 66,000 acres of recommended wilderness and 324,000 acres of designated roadless areas. The first decade harvest is 23% below the maximum PNV and similar to Alternative H.

Alternative K (Departure on Proposed Action)

PNV: \$911,000,000

PNV change from previous alternative: \$5,000,000

Alternative K represents a 22% reduction from the maximum PNV. This is for the same reasons as Alternative J (Proposed Action) except for the timber flow constraint necessary to reach desired harvest levels in the first two decades. The \$5,000,000 drop in PNV is a result of higher timber management and road building costs in the first decade. The first decade harvest is 12% below the maximum PNV and similar to Alternative A.

Alternative JF (Final Plan)

PNV: \$733,000,000

PNV change from previous alternative: \$178,000,000

Alternative JF represents a 37% reduction from the maximum PNV benchmark (Alt. M) because of constraints similar to Alt. J. These constraints are a combination of (1) the non-declining timber flow constraint, (2) a reduction of 221,000 acres of suitable timberland base from Alt. M, (3) a visual quality constraint on 120,000 acres of suitable timberland, and (4) the conversion of 32,000 acres of stagnated lodgepole pine stands. The reduction in the suitable timberland base is the result of a proposed 79,000 acres of recommended wilderness, 314,000 acres of designated roadless areas, and 124,000 acres of old-growth timber management for wildlife habitat diversity.

In addition, Alt. JF removes commercial thinning as a required management technique. This reduces budgets, but was initially proposed because recent experience has shown that selling these type of sales will probably not be realistic in current markets. Thus, even though calculated PNV drops, it appears impractical to expect that that portion of PNV could actually be achieved under any alternative.

The final key change in the development of the Final Plan is that timber harvest levels in the first decade are maximized to contribute to local community stability. Increasing first decade harvest levels beyond the level that maximizes PNV (given all the other limiting factors) causes PNV to drop. These combined constraints produced a 20% reduction in PNV from Alt. J. The first decade harvest is 23% below the maximum PNV and the same as Alternative J.

Alternative F

PNV: \$658,000,000

PNV change from previous alternative: \$75,000,000

Alternative F represents a 43% reduction from the maximum PNV. This is a result of a combination of (1) the non-declining timber flow constraint, (2) a reduction of 352,000 acres of suitable timberland base from Alternative M, and (3) the conversion of 44,000 acres of stagnated lodgepole pine to improve big game (elk) habitat. The reduction in the suitable timberland base is the result of the goal to provide the combination of security and forage which can support the largest possible elk population. The first decade harvest is 37% below the maximum PNV.

Alternative I (Current Direction)

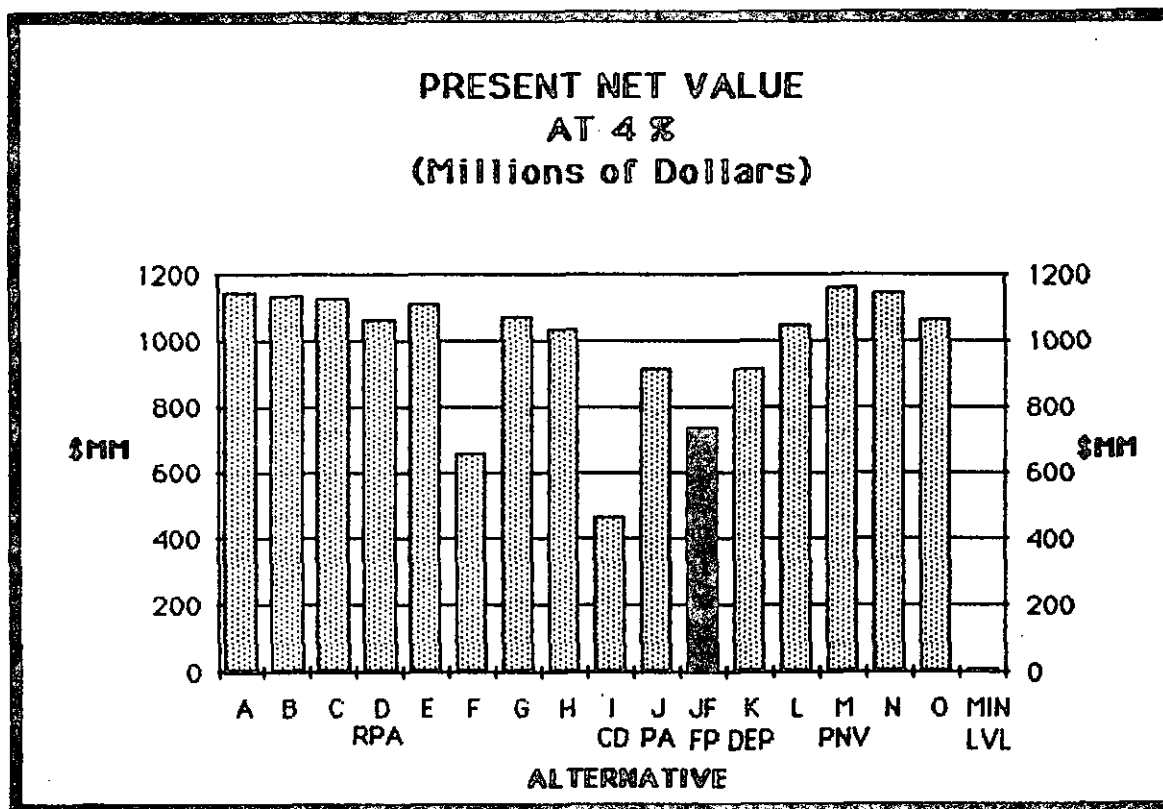
PNV: \$460,000,000

PNV change from previous alternative: \$198,000,000

Alternative I represents a reduction of 60% from the maximum PNV. This is a result of a combination of (1) the non-declining timber flow constraint, (2) a reduction of 62,000 acres of suitable timberland base, (3) a visual quality constraint on 243,000 acres of suitable timberland, (4) the conversion of 69,000 acres of stagnated lodgepole pine stands, and (5) a constrained budget equal to the average of 1980-1982 fiscal year expenditures which limited the timber offered for sale to match those years. The reduction in the suitable land base is the result of a proposed 64,000 acres of recommended wilderness and 250,000 acres of designated roadless areas. The first decade harvest is 43% below the maximum PNV.

Figure II-72 displays PNV by alternative. The maximum PNV is \$1,163 million as defined by Alternative M, the maximum PNV benchmark. The Figure shows that there are significant differences in economic values among the alternatives.

FIGURE II-72



b. U.S. Treasury Cash Flows and Non-Cash Benefits

Summary of Changes between the Draft and Final EIS

This section was combined with the section which followed it in the DEIS ("Income Transfer Benefits"). In addition, an error was found in the calculation of the Returns to the U.S. Treasury during the public review period (See Letter #301 in Appendix E). The error resulted in a 16% average increase for all the alternatives which is displayed in Table II-18. A 1% decrease in the Returns to the U.S. Treasury occurred between the Final Plan (Alt. JF) and the Proposed Plan (Alt. J) because of a 4% increase in the amount of lodgepole pine harvested. Lodgepole pine is a lower-valued timber species. See section II.D.1.c.(1).

TABLE II-18

Kootenai National Forest

Returns to the Treasury in the First Decade (Million \$ per yr.)

DEIS Alts.	Million \$	FEIS Alts.	Million \$
A	23.51	A	27.19
B	22.76	B	26.41
C	22.91	C	26.59
D - RPA	24.16	D - RPA	27.83
E	22.86	E	26.40
F	14.74	F	17.33
G	22.74	G	26.18
H	22.38	H	25.72
I - CD	9.20	I - CD	11.53
J - PA	21.31	J - PA	24.61
-	-	JF- FP	24.39
K - Dep	24.33	K - Dep	28.06
L	25.88	L	29.82
M - PNV	27.89	M - PNV	32.16
N	26.08	N	30.14
O	21.34	O	24.99
MinLvl	0.25		0.27

(1) Returns to the U.S. (Including Value of Purchaser Roads)

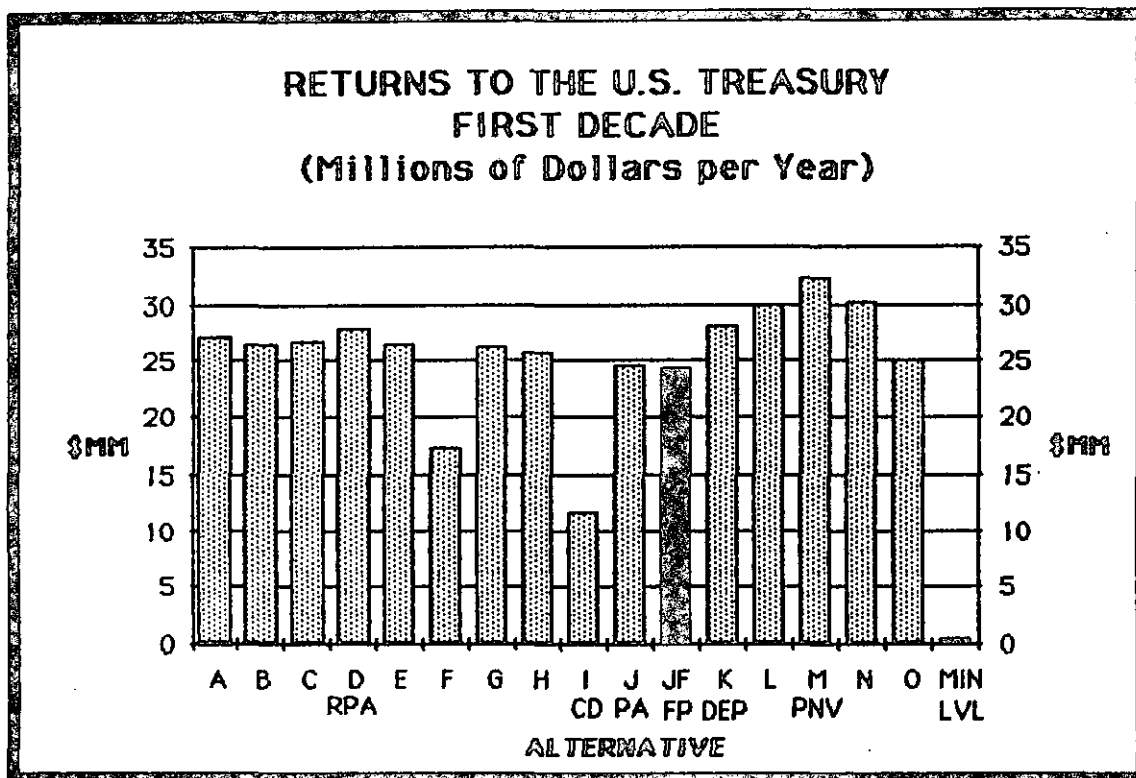
Average annual economic benefits associated with market and non-market resources are displayed by alternative in Table II-24 by decade. Market resources include timber, livestock grazing, campgrounds and special uses for which fees are collected. Non-market resource values are dollar values assigned to various types of recreation use (dispersed, Wilderness, hunting etc.). The purpose of assigning dollar values is to reflect the full economic value even though none or only part of the value associated with particular resources are actually collected as fees under current laws and policies.

Comparison of economic benefits to budget costs measure the overall economic efficiency of alternatives. Cash receipts and costs measure actual flows to and from the U.S. Treasury and the taxpayers. On this Forest, the major differences among both economic values and cash receipts are due to differing levels of timber production. Net cash flows for the first and fifth decade are displayed in Table II-20 by decreasing first decade net receipts.

The portion of the market benefits which are projected cash flows to the U.S. Treasury (total receipts) are displayed in Figure II-73 for Decade 1. Total receipts results primarily from the sale of timber and includes purchaser road credits. Other receipts are campground fees and special use fees and are estimated at less than \$100,000/year in all alternatives. Net receipts (total receipts minus total costs) are expected to increase by the fifth decade in all alternatives because of real stumpage price increases, because the timber harvest level increases, and because the roads will be in place by that time. The differences in net receipts among alternatives are due to differences in the value and amount of timber harvest. Receipts in the first decade for all alternatives except Alternative I are significantly higher than the 1980 returns of \$10.8 million. The total receipts (returns to the U.S. Treasury) by category for Decades 1-20 are displayed in Table II-24. Twenty-five percent of the receipts are returned to the States for payment in-lieu of taxes, and are also displayed in Table II-24.

FIGURE II-73

FIGURE II-73



(2) Net Returns to the Treasury (Excluding Purchaser Credit Road Values)

The returns discussed above and listed in Table II-18 include the value of purchaser credit roads even though this item does not directly contribute cash to the U.S. Treasury. Net returns are the actual cash returns to the U.S. Treasury (which exclude purchaser road credits in this discussion) less total Forest Service appropriated-budget costs (this does not include purchaser road credits because these are not considered appropriated-budget costs). This represents the net cash flow to or from the U.S. Treasury as a result of managing the Forest under each alternative. Forest Service appropriated-budget costs exceed cash returns to the U.S. Treasury in half of the alternatives for the first decade (Table II-19). By the second decade, a positive cash flow to the U.S. Treasury occurs in most alternatives except the Current Direction and the Minimum Level benchmark because the volume of timber harvested and its associated value has risen sufficiently to cover the costs of most capital investment road construction work. By the fifth decade (Table II-20) all alternatives are generating positive cash flows.

Table II-19

Kootenai National Forest

Net Returns to the U.S. Treasury (Millions of 1978 dollars)
First Decade

Alts.	Cash Returns to U.S. Treasury (excludes Pur- chaser Credits)	Total Appropriated Budget (Operation & Maintenance plus Capital Investments)	Net Cash Flow Difference to the Treasury (plus or minus)
A	21.8	21.8	0
B	21.0	21.6	- 0.6
C	21.2	21.7	- 0.5
D-RPA	22.4	21.5	+ 0.9
E	21.2	21.1	+ 0.1
F	13.4	16.8	- 3.4
G	21.1	20.6	+ 0.5
H	20.7	20.1	+ 0.6
I-CD	8.5	16.6	- 8.1
J-PA	19.7	20.3	- 0.6
JF-FP	19.6	19.2	+ 0.4
K-Dep	22.6	22.0	+ 0.6
L	23.7	28.1	- 4.4
M-PNV	25.9	24.1	+ 1.8
N	24.2	23.2	+ 1.0
O	19.8	21.7	- 1.9
MinLvl	0.3	5.6	- 5.3

Table II-19 indicates that the Final Forest Plan (Alt. JF) will have a positive cash flow compared to the negative cash flow of the Proposed Plan (Alt. J).

NOTE: Table II-19 is not directly comparable to Table III-1 in Chapter III because of different economic values. Table III-1 uses actual 1985 values while Table II-19 uses values for the the period 1974-1980 expressed in 1978 dollars. In addition the timber harvest level for 1985 was 180 mmbf in Table III-1 while Alt. JF presumed a timber harvest level (live green) of 202 mmbf.

TABLE II-20

**AVERAGE ANNUAL CASH FLOWS AND NON-CASH BENEFITS
IN THE FIRST AND FIFTH DECADES BY ALTERNATIVE**

Average Annual Values
(Millions of 1978 Dollars)

ALT	DECADE ONE				DECADE FIVE			
	NET RECEIPTS	TOTAL COSTS	TOTAL RECEIPTS	NONCASH BENEFITS TO USERS	NET RECEIPTS	TOTAL COSTS	TOTAL RECEIPTS	NONCASH BENEFITS TO USERS
M	1.8	30.4	32.2	6.5	130.8	22.1	152.9	12.3
N	1.0	29.1	30.1	6.5	92.6	17.9	110.5	12.5
D	0.9	26.9	27.8	6.5	107.0	19.6	126.6	12.4
H	0.6	25.1	25.7	6.1	95.1	16.9	112.0	12.5
K	0.6	27.5	28.1	6.5	71.1	19.9	91.0	12.4
G	0.5	25.7	26.2	6.4	96.4	17.6	114.0	12.4
JF	0.4	24.0	24.4	6.6	61.2	14.8	76.0	12.5
A	0.0	27.2	27.2	6.5	100.9	18.0	118.9	12.4
E	0.0	26.4	26.4	6.5	100.7	17.8	118.5	12.5
C	-0.5	27.1	26.6	6.5	100.4	18.0	118.4	12.7
B	-0.6	27.0	26.4	6.5	100.8	18.2	119.0	12.7
J	-0.6	25.2	24.6	6.5	72.3	20.1	92.4	12.4
O	-1.9	26.9	25.0	6.6	95.2	19.0	114.2	12.9
F	-3.4	20.7	17.3	6.5	47.8	15.0	62.8	12.8
L	-4.4	34.2	29.8	6.4	93.8	19.1	112.9	12.4
I	-8.1	19.6	11.5	6.6	38.1	18.0	56.1	12.0

NOTE: Returns to the States are a discretionary expenditure from the U.S. Treasury and are not deducted from total receipts. Total costs include purchaser credit road costs.

(3) Non-Cash Benefits to Users

The non-cash benefits to users as shown in Table II-20 are the non-market resource benefits which are also displayed in Table II-24. This includes all recreation benefits, except developed recreation for which fees are charged, and the difference between RPA grazing values and the fees collected. The non-cash benefits to forage users (grazing) amounts to about \$94,000 per year based upon returns of \$1.38 per AUM and benefits of \$8.61 per AUM. The balance is a non-cash benefit to recreationists (hunters, campers, firewood gatherers, etc.) for which no returns are collected and benefits ranging from \$3.00 to \$21.00 per Recreation Visitor Day are estimated. As of April 1, 1985 a charge for firewood collection was assessed which reduced non-cash benefits by increasing returns to the treasury. The income from firewood collections amounted to \$17,415 in Fiscal Year 1986 and was insufficient to affect the figures shown above.

c. Budget

The annual appropriated budget costs for Decade 1 by alternative are displayed in Figure II-21 by two cost categories: capital investment and operation and maintenance. Capital investment costs are appropriated dollars (not purchaser credits) used primarily for road construction. Operation and maintenance costs are all other costs, exclusive of purchaser credit road costs. For a detailed breakdown of cost categories, see Appendix B, Section IV. The annual budget costs for all alternatives are the same or higher than the average 1980-1982 expenditure level of \$16.6 million. This occurs because there is a significant potential to increase PNW on the Forest if adequate investments are made. Alternative I (Current Direction) was restricted by the historic budget level.

Fifteen to twenty-five percent of the costs in all alternatives are for activities which are not significantly influenced by the objectives of the alternatives (overhead costs). These costs are approximately \$5.6 million/year and include general administration, fire control, law enforcement, threatened and endangered species habitat maintenance, planning and inventory, firewood administration, and other programs. The other 75-85% of the costs are for resource management activities which are determined by the objectives of the alternatives.

Alternatives with emphasis on market resources have higher road and timber management costs while alternatives with emphasis on nonmarket resources have higher recreation and wildlife costs. The exception is Alternative H which provides high wilderness acreages which reduce recreation costs. Total costs decrease in all alternatives after Decade 3 because most of the roads are constructed. The annual costs for decades beyond Decade 1 are displayed in Table II-24.

Summary of Changes between the Draft and Final EIS

The annual appropriated budget costs were reduced by \$1.1 million per year (5%) in the Final Forest Plan (Alt. JF). This was in response to the public concern over the size of the budget, especially in light of today's economic and budgetary climate. The Final Forest Plan has the third lowest budget of all the alternatives. The budget was reduced by decreasing planned commercial thinning and delaying the conversion of stagnated lodgepole pine stands. Actual experience revealed that economic commercial thinning opportunities are uncommon. Thus this practice was removed from the forest planning model as a budget-reducing measure. See Appendix B for more detail on the Analysis of Commercial Thinning.

TABLE II-21

KOOTENAI NATIONAL FOREST ANNUAL BUDGET COSTS
(APPROPRIATED DOLLARS) FOR THE FIRST DECADE
(Millions of 1978 dollars)

ALT	Operations & Maintenance (O&M)	Capital Investment (C.I.)	Total Appropriated Budget Costs
A	17.4	4.3	21.7
B	17.4	4.2	21.6
C	121.8	4.3	21.8
D (RPA)	17.2	4.3	21.5
E	17.0	4.1	21.1
F	13.4	3.4	16.8
G	16.7	3.9	20.6
H	16.2	3.8	20.0
I (CD)	14.2	2.4	16.6
J (PA)	16.6	3.7	20.3
JF (FP)	15.6	3.6	19.2
K (Dep.)	17.8	4.2	22.0
L	22.9	5.2	28.1
M (PNV)	19.0	5.1	24.1
N	18.6	4.6	23.2
O	17.9	3.9	21.8
MIN LVL	5.6	0	5.6

FIGURE II-74

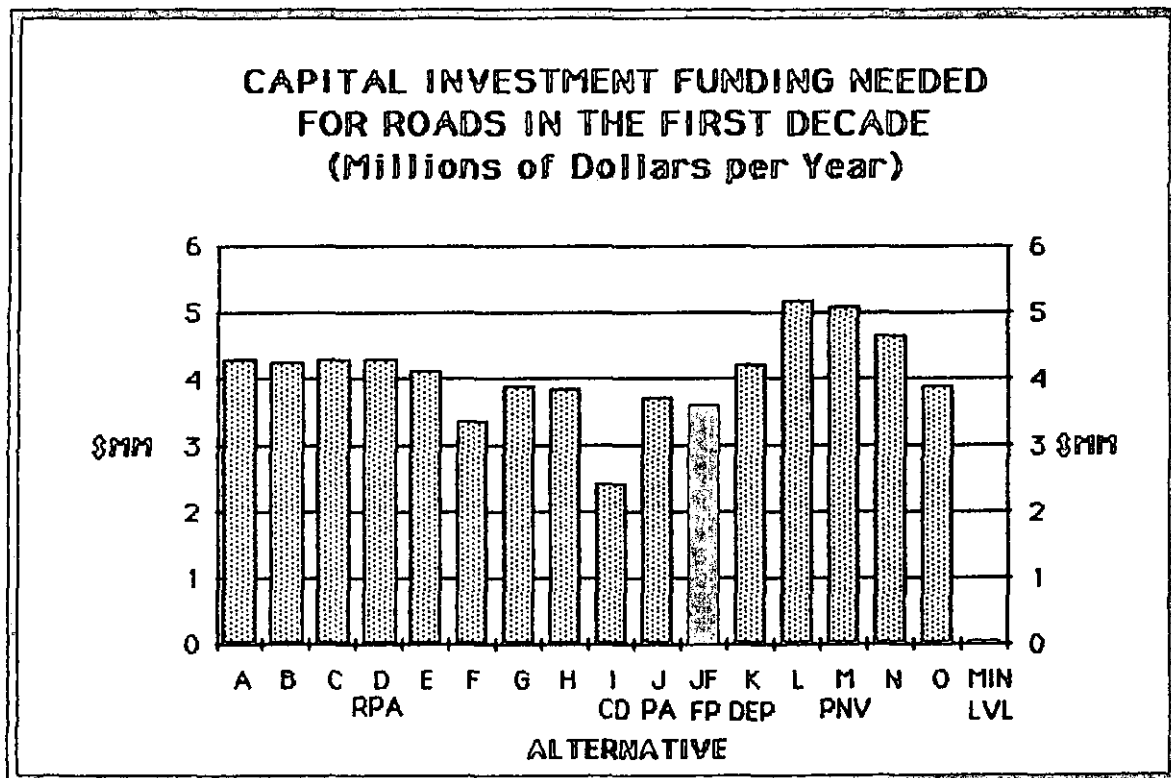
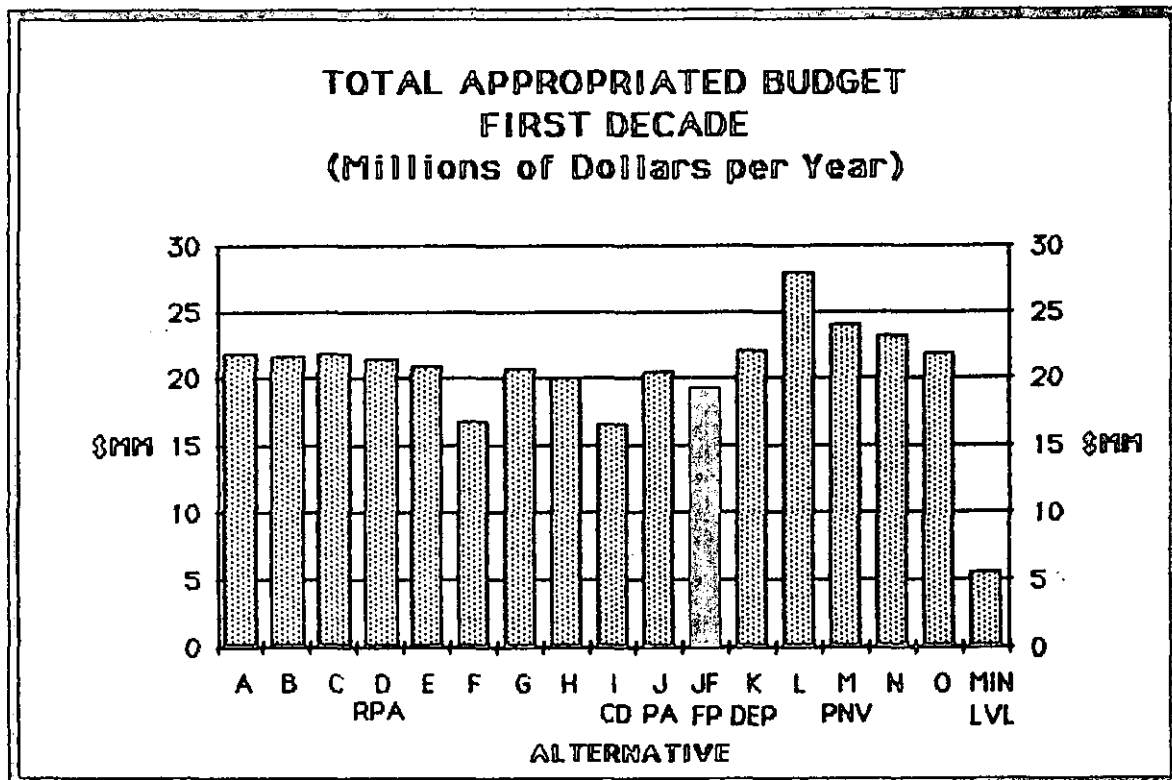


FIGURE II-75



d. Present Value Costs

Summary of Changes between the Draft and Final EIS

The Final Forest Plan (Alt. JF) has a 6% lower Total Discounted Cost compared to the Proposed Forest Plan (Alt. J). This is the result of a 9% reduction in the suitable timber base. This reduced the needed roads by 6% which also lowered the projected future logging needed. In addition, less commercial thinning is planned to reduce the total operating budget. See sections II.D.1.b. for a discussion of the suitable timber base and Appendix B for the analysis of commercial thinning.

The discounted costs for 200 years by major resource group by alternative are displayed in Tables II-22 and II-24. The discounted cost is the sum of all expenditures (discounted at 4%) for 200 years. The minimum discounted cost for Federal ownership of the Forest is \$196 million as defined by the Minimum Level Benchmark (MIN LVL). The maximum discounted cost is \$776 million from Alternative L. All alternatives include costs to provide both priced and nonpriced outputs.

TABLE II-22

TOTAL DISCOUNTED COSTS (4%) BY MAJOR RESOURCE
GROUP BY ALTERNATIVE
(Millions of 1978 Dollars)

Alternative	Timber	Recreation/ Wildlife	Range	Roads	Other	Total ¹
A	236	81	2	195	161	676
B	236	81	2	194	160	674
C	236	81	2	194	160	674
D (RPA)	267	81	2	205	163	718
E	229	81	2	186	161	651
F	151	80	2	149	158	541
G	222	80	2	183	160	647
H	218	76	2	175	159	627
I (CD)	169	82	2	125	169	547
J (PA)	223	82	2	175	164	647
JF (FP)	197	82	2	163	167	611
K (Dep.)	231	82	2	182	164	662
L	300	81	2	227	166	776
M (PNV)	251	80	2	204	161	697
N	245	81	2	200	161	689
O	263	83	2	178	163	689
MIN LVL	2	45	0	2	147	146

¹Total is not exact because of rounding.

NOTE: The "other" cost category includes inseparable joint costs associated with several resources.

e. Annual Priced Benefits

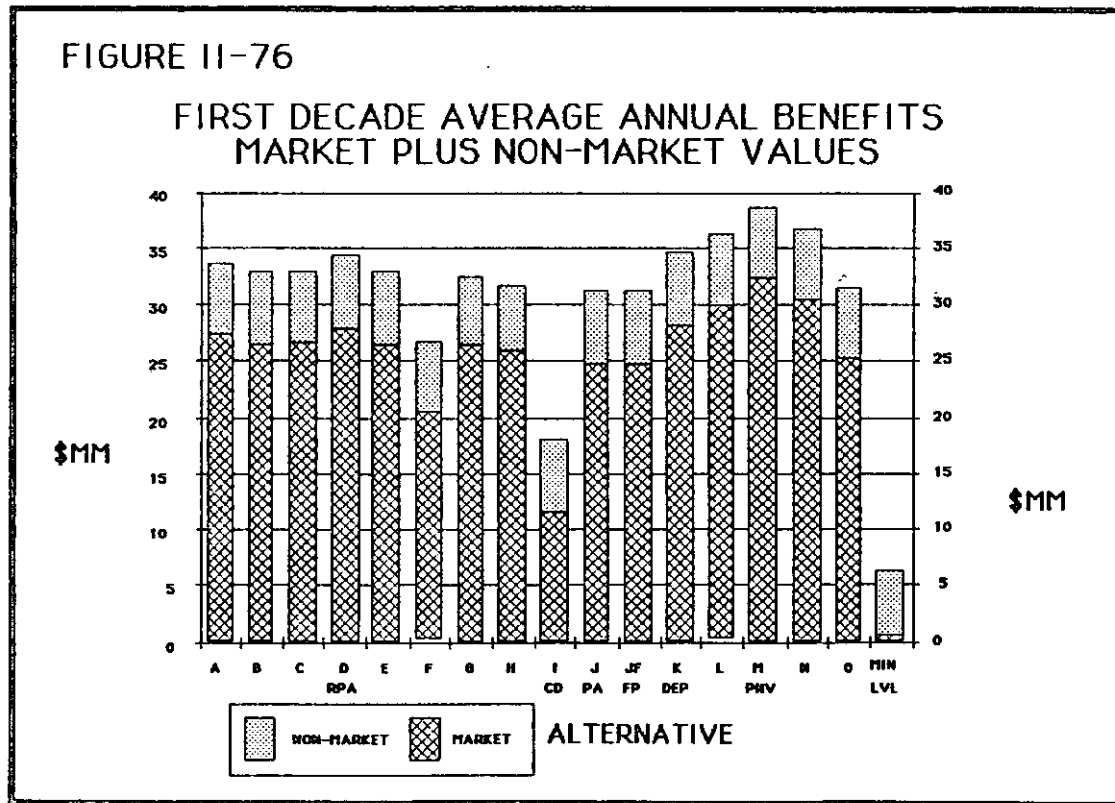
This section describes the values associated with outputs that can be measured in dollars. (See Section D.19. of this chapter for a discussion of nonpriced output benefits.) Values may be derived from market activity (timber, grazing and developed recreation) or from studies of willingness-to-pay or other approaches (roadless recreation, hunting and wilderness use). Only these priced benefits can be included in calculations of PNV or discounted benefits. The non-priced benefits, which will be discussed later, can not be included in these calculations and must be assessed in a subjective manner.

Average Annual Benefits for the First decade are displayed in the following Figure. They are the sum of market and non-market benefits and are both displayed to indicate the relative proportion of each category. Market values are the total of all the dollars received for timber sale stumpage receipts, grazing fees, special land-use fees, and recreation fees paid at campgrounds, etc. These receipts are displayed in Table II-24. The non-market values are the dollar values assigned to dispersed recreation and wilderness use, big-game hunting, and the difference in the grazing value above the cash cost of grazing on the National Forest. (Appendix B has a detailed discussion of both the market and non-market values.)

Dollar values, or market values, contribute 64-83% of the total benefits on the Kootenai National Forest. Timber stumpage receipts are the predominant contributor of the market value portion (98%). The non-market values are similar among all the alternatives because of the limited demand for the resources involved.

Alternative M (PNV) has the largest market value (83%) in the first decade as a result of the highest possible timber harvest. Alternative I (Current Direction) has the smallest market value (64%) because the timber harvest is limited by a budget constraint that limits timber sale offerings to the average harvested during the period 1980-1982. The Final Plan (Alt. JF) has a market value of 79% and will be a significant increase over the Current Direction and similar to the Proposed Action in the Draft EIS (Alt. J).

Figure II-76 indicates that there is no change in relative ranking among the alternatives when the total values are compared. This is because of the significant difference in the market value of timber in relation to the non-market values of dispersed recreation, wilderness, etc.



f. Present Value Benefits

Discounted benefits are the sum of market and nonmarket values (discounted at 4%) for 200 years. The timber benefits contain only the timber stumpage values. Appendix B, Section IV, includes a detailed discussion of priced (market and nonmarket) and nonpriced benefits. Discounted benefits by major resource group are displayed in Tables II-23 and II-24. The discounted benefits resulting from custodial level management activities are \$199 million as defined by the Minimum Level Benchmark. The minimum benefits are: \$172 million from recreation use and \$27 million from timber sales and livestock grazing permits currently under contract. Under the minimum management benchmark, only timber currently under contract would be harvested.

The maximum discounted benefits result from managing for maximum present net value as defined by Alternative M and totals \$1860 million.

Dollar values associated with market resources contribute 77% to 88% of the discounted benefit value in all alternatives.

TABLE II-23				
TOTAL DISCOUNTED BENEFITS (4%) BY MAJOR				
RESOURCE GROUP BY ALTERNATIVE				
(Millions of 1978 Dollars)				
	Recreation/			
Alternative	Timber	Wildlife	Range	Total ¹
A	1588	228	3	1819
B	1575	231	3	1809
C	1569	231	3	1803
D (RPA)	1552	227	3	1782
E	1538	231	3	1772
F	962	234	3	1198
G	1490	227	3	1720
H	1441	219	3	1662
I (CD)	776	227	3	1006
J (PA)	1328	232	3	1563
JF (FP)	1109	233	3	1345
K (Dep.)	1339	232	3	1573
L	1591	229	3	1823
M (PNV)	1631	227	3	1860
N	1604	231	3	1837
O	1514	236	3	1753
MIN LVL	26	172	1	199
¹ Total is not exact because of rounding.				

g. Average Costs

Summary of Changes Between the Draft and Final EIS

This section was not included in the DEIS. It is provided here to help address public concerns about the size of the Forest budget displayed in the DEIS and to compare the relative production costs of the various alternatives.

(1) Introduction

The DEIS discussed costs in terms of their totals or their discounted totals. Sometimes it is helpful to view costs in terms of units of production. In the Forest Plan, the production of the various amenity products occurs without much variation in cost. The level of domestic livestock grazing remains constant across the alternatives. Thus, timber production is the major item affecting variable costs. The more timber production and associated activities (such as road building), the more the total cost of operating under the Forest Plan. We can look at the cost of operating the Forest in terms of volume of timber by expressing the costs on a per unit timber basis (\$/MBF). In the following discussion, no attempt is made to separate timber program costs from other related costs. Instead the total Forest Service cost (including purchaser credit) is divided by the total first decade average annual timber volume (ASQ).

(2) Discussion

The Forest Service costs come from Table II-24 at the end of this chapter. The timber volume is equal to the Allowable Sale Quantity (Table II-24). Table II-23a shows the total timber volume, short-run average cost and long-run average cost for each alternative. The short-run average cost is the total cost minus \$5,160,000, the estimated fixed costs, divided by the total timber volume. The long-run average costs is simply the total cost again divided by the total timber volume.

Table II-23a			
TIMBER VOLUME AND AVERAGE COSTS			
(Decade 1 - 1978 dollars)			
Alternative	Timber Volume MMBF/yr	Short-Run Avg Cost \$/MBF	Long-Run Avg Cost \$/MBF
A - No Wilderness	254	87	107
B - RARE II	250	87	108
C - MT Wilderness	253	87	107
D - RPA	255	85	106
E - RARE II+	245	86	108
F - Maximum Elk	184	84	112
G - RARE II++	240	86	107
H - Max Wilderness	234	85	107
I - Current Direct	168	86	117
J - Proposed Action	227	88	111
JF - Final Plan	227	83	106
K - PA Departure	258	87	107
L - Maximum Timber	286	102	120
M - Maximum PNV Dep	294	86	103
N - No Wilder Dep	278	86	105
O - Max Roadless/View	242	90	111

Figures II-77 and II-78 display this data in the form of scatter diagrams along with a fitted curve. For details on the significance of the fitted curve and other aspects of this analysis see the Planning Records (Cost Analysis - Alternative Forest Plans, Haugen, September 5, 1986).

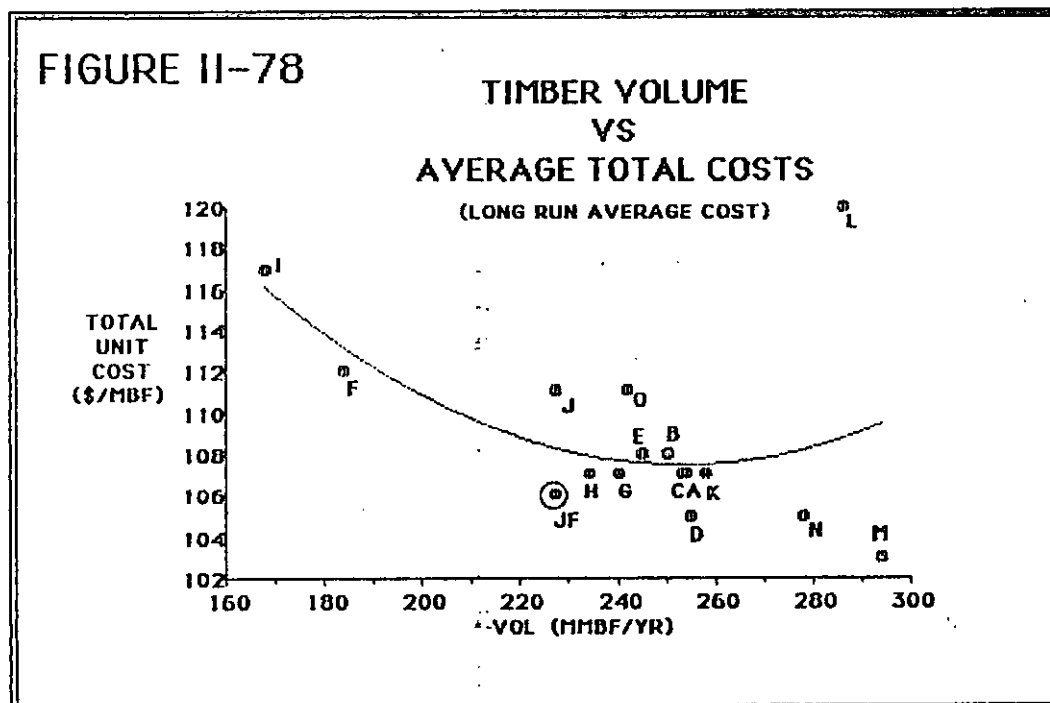
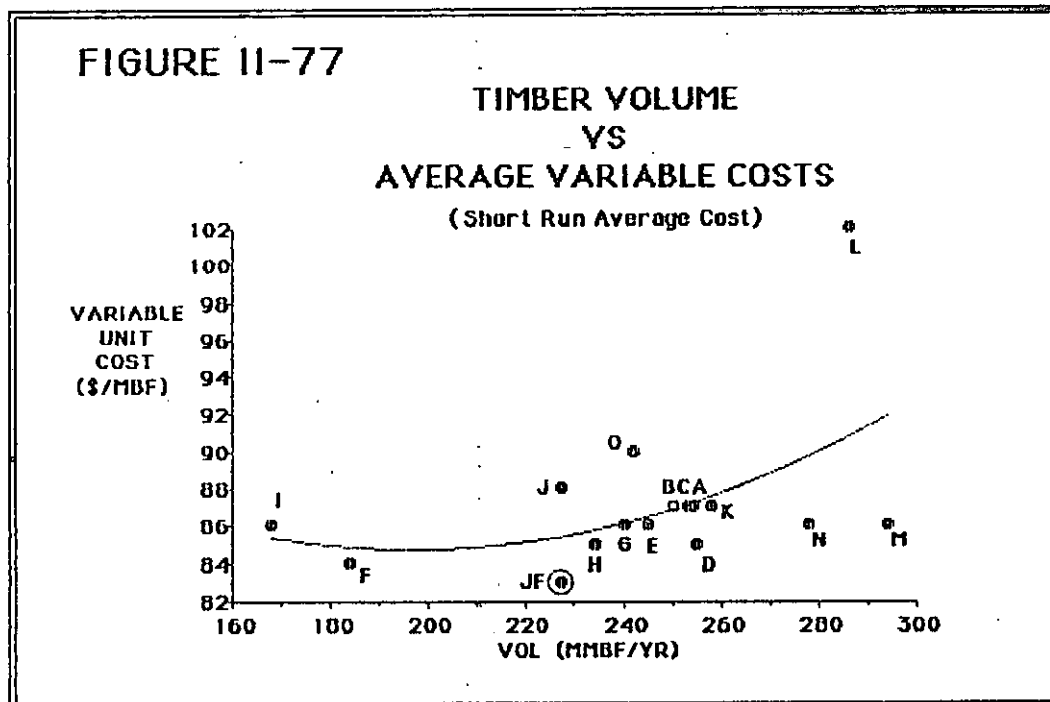


Figure II-77 displays the average variable costs on a unit timber volume basis. This is sometimes referred to as the short-run average cost curve. Fixed costs can not be changed in the short run, thus those costs are not included here. The variable costs can be changed relatively quickly by altering management of the Forest. The trend is for increasing cost per MBF as the harvested volume increases after a decline in those costs between 165 and 200 MMBF. In a classic variable cost relationship such as displayed in Figure II-77, the first few units of production tend to be costly, the mid-range levels of production tend to be cheaper, and the very high production levels again become more expensive. At the lower production levels certain base costs are necessary to generate outputs, but the output levels can be increased without much increase in those costs. Thus the initial decline in short-term average unit costs. Figure II-77 shows that between about 190 and 210 MMBF the average short-run costs are lowest. It is in this range that costs and production levels are well balanced and those costs are the lowest on a unit production basis. Beyond 210 MMBF, the unit costs tend to rise because the higher production levels tend to decrease the efficiency of the operation. The alternatives do not all fall on the regression line because they represent different ways of managing the Forest as well as different production levels.

In comparing the alternatives in terms of their position on the scatter diagram, we can see that Alternative L is the most costly. This was the maximum timber benchmark. In maximizing timber, all the tentatively suitable timber base is put into production. This includes lands that can produce timber, but that require large infusions of money to make that production possible. Steep and unroaded ground which requires expensive road construction drives up the average cost of this alternative. Alternative M produces slightly more timber volume in the first decade than does alternative L, but it is done on lands which are cheaper to manage. Alternative M is the maximum PNV benchmark. It gets more volume than Alternative L in the first decade (but not over the 200 year time horizon) because a departure sequence is followed.

Alternative I (Current Direction) has a low volume and slightly higher costs because harvest levels are kept low even though most of the initial costs which would be needed for higher production levels are already being expended.

Alternatives O and J are more costly than other alternatives which produce similar volumes because shelterwood cutting is stressed.

Alternative J (Proposed Action) and Alternative JF (Final Plan) produce the same timber volume, but the Final Plan does it at a considerably lower cost. In response to public concerns about the budget presented in the Proposed Action, the Final Plan was modified to reduce costs. The major modification was elimination of commercial thinning as a means to produce timber volume. By getting the volume from final harvests rather than from expensive intermediate cuts, the costs drop on a unit volume basis. The unit cost is the lowest of all the alternatives due to this difference.

Figure II-78 displays the timber volume vs the average total costs. This curve is sometimes called the long-run average cost curve. Figure II-77 differs from Figure II-78 because the fixed costs are included in Figure II-78. Typically at higher production levels the average total costs will decline as the fixed costs are divided over more units of production. Alternative L is an outlier in this analysis because in maximizing timber production the variable costs rise so much that they override the decrease in fixed cost per unit of production.

Alternatives I and F, which had low variable unit costs, have much higher total unit costs because the fixed costs are divided over fewer units of production than the other alternatives. The scale of production isn't sufficient to bring the total unit costs down.

Alternatives O and J produce more timber than Alternative I, but the costs are as high because shelterwood cutting is stressed.

Alternative L has high total unit costs because the variable costs associated with roading and managing the steep and unroaded lands overrides the declining unit contribution of the fixed costs.

Alternative M has the lowest total unit costs because the scale of production reduces the unit contribution of the fixed costs while the variable costs are also relatively low as discussed above.

Alternative JF (Final Plan) has essentially the same relationship to Alternative J (Proposed Action) as when only variable costs are considered. The fact that the fixed costs are divided by the same timber volume causes this. Again, the Final Plan is considerably cheaper than the Proposed Action because commercial thinning is not used.

The Final Plan falls near the bottom of the cost scale regardless of whether total or variable costs are considered. As noted by several people that commented on the DEIS, Alternative J resolved most of the issues fairly well, but was rather costly. The elimination of commercial thinning as a standard practice in the Final Plan reduces the costs significantly. This allows the Final Plan to be in a favorable position among all the alternatives when Forest Service costs are the prime consideration.

19. Net Public Benefit and Non-Priced Benefits Addressed in the Alternatives.

Summary of Changes between the Draft and Final EIS

Old-growth timber habitat management has been added as an indicator of Net Public Benefit as a result of comments received on the DEIS.

a. Introduction

Net public benefit is the overall long-term value to the nation of all outputs and positive effects (benefits) less all associated Forest inputs and negative effects (costs) of producing priced and non-priced outputs from Kootenai National Forest lands. Thus, net public benefit represents the sum of present net value (PNV) plus the value of non-priced outputs (See Appendix B, Section IV). A goal of Forest planning is to provide analysis-derived information that helps decision-makers maximize the net public benefits of managing the National Forest. The previous section discussed the relationships among the alternatives with respect to the priced benefits which are summarized by PNV. This section will address the non-priced benefits which are handled subjectively. The final section of this chapter will discuss the combination of priced and non-priced factors and the tradeoffs between them.

Net public benefit is maximized by the alternative which has the greatest excess of benefits over the costs. The choice of the alternative that maximizes net public benefit is a subjective decision because many of the benefits are not quantifiable in dollar terms.

The numeric portion of the net public benefit is described as Present Net Value. Recall that Present Net Value (PNV) represents the net discounted value of the benefits and costs which have been assigned a monetary value. PNV is the basis for the economic comparisons among the alternatives and is closely correlated to the level of timber harvest.

The non-numeric portion of net public benefit is the perceived value of outputs which can not be given monetary value. Market transaction evidence or other methods are not available to develop prices for these benefits thus they must be valued subjectively. Benefits which do not have dollar values are simply called non-priced benefits.

If the selection of a Final Plan were based only upon priced benefits and costs, the alternative with the highest PNV would normally be proposed for implementation. Since non-priced benefits do have value, a series of alternatives with different approaches to supplying packages of non-priced benefits were developed. In general, supplying more of some non-priced benefit either costs more in budget dollars or causes a reduction in some priced benefit or both.

The most important non-priced outputs in this analysis, along with the issues to which they are related, are as follows:

- Jobs and Community Stability (Local Economic Impacts Issue)
- Visual Quality Protection in Sensitive Areas (Esthetics Issue)
- Wilderness and Roadless Quality (Wilderness & Roadless Recreation Issues)
- Mineral Accessibility (Minerals, Oil and Gas Issue)
- Grizzly Bear Recovery (Threatened & Endangered Species Issue)
- Lodgepole Pine Risk Management (Disease and Pests Issue)
- Miles of Road Needed for Management (Transportation Facilities Issue)
- First Decade Appropriated Budget (Management Concern)
- Old Growth Timber habitats (Special Wildlife Habitat Issue)

This section describes these major non-priced outputs, who is affected by changes in output levels, generally how these outputs relate to PNW and what indicators were used to measure them. non-priced outputs are addressed more fully in Appendix B and are discussed, as issues, in Appendix A.

b. Jobs and Community Stability

Jobs and community stability, which are linked, are major non-priced benefits. Their value is associated with the value of life satisfaction to individuals. Life satisfaction of individuals is, in turn, linked to satisfaction with work and standard of living. The ability to have a job is, of course, directly related to these elements of life satisfaction.

JOBS. Jobs in the private sector which are related to Kootenai National Forest activities are estimated at 1,666 jobs (1980) of the 6,380 total jobs (26%) in the Lincoln and Sanders County region. In addition there were about 600 Forest Service jobs thus about 36% of the total employment in the region is associated with Kootenai National Forest activities.

Another segment of the employment situation is related to mining. These activities are not directly related to Forest Service activities even though they often occur on or adjacent to National Forest lands because they are dependent upon private sector initiative. It is estimated that about 10% of the jobs in the region (1980) are related to mining activities.

The forest products sector has been dependent on the Forest for about half (1974-1983) of the raw materials harvested in the region. Changes in the timber harvest program on the Forest will influence jobs, incomes, and lifestyles directly in the forest products industry as well as indirectly in all sectors.

In general, the PNV of the Forest increases as the level of private sector Forest related employment in the first decade increases, because more timber is harvested. An exception to this rule occurs when harvests are forced to occur on lands which do not have a positive return. This causes a decline in PNV, but a higher timber harvest level and more jobs.

As the level of harvest decreases it is generally the case that roadless types of recreation opportunity increase thus to some extent timber related jobs are replaced by jobs in industries which service the increased number of recreation users. The relationship between the decline in timber harvest and increase in roadless sorts of recreation is such that a net decline in jobs occurs as timber harvest declines. In addition recreation related jobs which are generally in the service industries tend to be lower paid than those in the manufacturing of lumber.

COMMUNITY STABILITY. Community stability is best served when drastic and rapid changes in population are avoided. The number of available jobs is a fair predictor of population. Thus, a gradual increase in jobs is seen as more desirable because this would allow at least a portion of new job hunters (both new comers and young adults just entering the job market) to stay in the area. A constant or gradually declining number of jobs would be preferable to a rapid decline because lifestyles could be gradually adjusted causing less of an overall impact on community services and allowing time to develop plans to deal with foreseen difficulties. Likewise a gradual increase provides more opportunity for mitigation than would a rapid increase.

The measurable indicator of stability in the local community is the number of Forest-related jobs in the private sector for the two-county area (Lincoln and Sanders) and its relationship to population change.

It is assumed that a change in the population of more than 20% in a decade would produce social disruption. This rate of change can be compared to the 44% increase from 1950 to 1960 and from 1960 to 1970 caused by the spruce logging activities and the Libby Dam construction respectively. Both of these decades saw rapid expansion and associated community growing pains which could be avoided with a slower rate of change.

c. Visual Quality Protection in Sensitive Areas

Visual quality is a major issue because over 50 percent of the non-wilderness area is visible from major travel corridors and population centers. Changes in the visual quality of the Forest may affect the people who live in or visit the area as well as those who travel through the Forest. The dollar value of visual quality to people who hike and drive in the Forest is partially included in the value assigned to recreation. However, these assigned prices do not reflect the total value of scenery on the Forest. The value of visual quality to the people who live in the area, as well as the people who visit the area was not assigned a monetary value in the planning process.

Visual quality is maintained or enhanced as more of the Forest is managed to satisfy recommended visual quality objectives (VQO's).

As the level of visual quality is increased from maximum modification to preservation, the PNV tends to decrease because cost-efficient timber management activities are replaced with more costly practices. Visual quality generally increases or is maintained as the timber cut is decreased and the acres of roadless management and wilderness increases. The indicator of visual quality is the area in the VQO categories of preservation, retention and partial retention in visually sensitive areas on the Forest.

d. Wilderness and Roadless Quality

A major issue on the Forest is how to allocate 403,700 acres of inventoried roadless area made up of 32 areas on the Forest. While an average monetary value has been assigned to wilderness and dispersed recreation, these prices do not account for the total value of an above-average-quality wilderness and roadless recreation experience on the Forest. The benefactors are recreationists who desire undeveloped, roadless recreation even though they may never use it and those that want areas reserved for the future or just to know they are there.

The measurable indicator is acres of wilderness and/or roadless land. Present net value decreases as the availability of valuable timberlands decreases and the recreation budget generally increases.

Visual quality, wildlife diversity, water quality, old-growth timber and non-motorized recreation-related employment increase with an increase in wilderness and/or roadless areas. Timber harvest, forests products industry employment, and motorized recreation-related employment will normally decrease as wilderness and roadless lands increase.

The indicator of wilderness and roadless quality is the acreage of all the potential roadless recreation opportunities which include the existing Cabinet Mountains Wilderness (94,000 acres), any recommended wilderness, any designated roadless areas including inventoried and other roadless areas and the Ten Lakes Montana Wilderness Study Area (34,000 acres).

e. Accessibility for Minerals, Oil and Gas Exploration

The preservation of the option to explore for minerals, or oil and gas deposits has a social value even though it was not assigned a monetary value in the analysis. This value can be forgone by designating land to management prescriptions which preclude such exploration. These prescriptions include Wilderness, recommended wilderness, wilderness study, developed recreation and administrative sites (Management Areas 7, 8, 9, 6 and 20 respectively) which would be withdrawn from mineral entry.

Existing withdrawals include 16,000 acres for oil and gas and 53,000 acres for locatable minerals. The existing withdrawals include portions of some of the management areas noted above plus some special withdrawals for items such as the Burlington Northern railroad tunnel and Koocanusa Reservoir.

Accessibility for exploration decreases with increases in lands designated to the noted management prescriptions. On a site-by-site basis, as the land which would be withdrawn increases, commercial timberland is eventually withdrawn. As commercial timberland is withdrawn, the PNV will decrease. One technical point is important to note here: exploration is not precluded for locatable minerals until and unless the area actually receives Congressional designation as Wilderness. The analysis here addresses the situation under the assumption that the noted acres will receive Congressional approval under the respective alternative.

The unit of measure for the accessibility concern is total acres that will be withdrawn if the alternative is implemented. This includes both the specified management areas and the existing withdrawals outside those areas.

f. Grizzly Bear Recovery

All alternatives and benchmarks have been designed to include a minimum management requirement intended to assure recovery of the grizzly population. This is a minimum requirement that will satisfy the letter of the Endangered Species Act of 1973. Any effort to retain a dynamic yet irreplaceable asset such as a grizzly population entails some level of risk.

There are many factors which can affect the grizzly population and many of these are beyond the control of any manager. Some may be beyond the level of knowledge defined as the current state-of-the-art. Any effort to accommodate the known needs of the grizzly bear beyond those that will minimally satisfy the requirements of law reduces the risk of losing the population.

The existence of the Endangered Species Act is evidence that retaining the population has value. The opportunity cost of the minimum management requirement is one way of monetarily valuing the population. Any other effort which reduces the risk of losing the population has additional value. It is this additional value, which is not quantified, that is of concern here.

The minimum management requirement that is modeled in FORPLAN involves removing timber harvest options from grizzly habitat unless due consideration is given to grizzly habitat needs. In addition the model is constrained so that only a limited amount of acreage in grizzly habitat is harvested each decade. Beyond this minimum management requirement the alternatives provide varying amounts of land designated to uses with no scheduled timber harvest in grizzly habitat.

These designations provide reduced potential for human/grizzly encounters and reduced potential for grizzly (and human) mortality. As more land in grizzly habitat is designated to uses with no scheduled timber harvest, the risk of losing the population is decreased as is the PNV.

The unit of measure for reducing the risk to grizzly bear recovery is the amount of land in identified grizzly habitat that will have little or no development. Development is defined as scheduled timber harvest and its associated road building which causes the increased risk of human/grizzly encounters even though road restrictions would be a normal management practice.

g. Lodgepole Pine Risk Management

The costs and values associated with managing lodgepole pine are priced benefits. There are other values associated with managing lodgepole pine stands which are not quantified but which are addressed here.

(1) Stagnated Lodgepole Pine

A stagnated stand is a stand which due to excessive stocking has essentially stopped growing at a size that is not merchantable. Lodgepole pine is associated with conditions that result in stagnation more than other species.

The typical way of returning these stands to a condition where merchantable timber can be produced is to remove the existing trees then start a new stand, usually with a mix of species, and manage the new stand through precommercial and/or commercial thinning to prevent stagnation. Thinning in a stand which has already stagnated usually does not help much.

The PNV associated with management of a stagnated stand is very low, and usually negative, because of the high costs associated with removing the existing trees and starting a new stand and the long delay before the trees are large enough to be sold. For this reason the FORPLAN model will not usually convert these stands unless forced to by other resource objectives (maximizing timber or wildlife).

There is a non-priced value in converting these stands. This value derives from the improvement in big game and grizzly bear habitat quality along with reductions in fire hazards and potential for mountain pine beetle infestation. Elk and other big game are often restricted from even travelling through these stands because of the quantity of dead and down material and the density of the stand. A stagnated lodgepole pine stand will provide no forage and only low quality cover to these species.

The dead materials in these stands are generally associated with blowdown and mountain pine beetle activity. This dead material provides excellent fuel and increases the risk of forest fire. Removing the stand would reduce this risk.

A stagnated stand is generally less healthy than a similar but non-stagnated stand and thus can not survive a pine beetle attack as well. The question of mountain pine beetle will be discussed in the next section.

As the acres of stagnated lodgepole pine converted increases, the PNV tends to decrease but the unquantified values discussed above tend to increase.

The indicator of measure are the acres of stagnated lodgepole converted by the fifth decade.

(2) Mountain Pine Beetle

Mountain pine beetles are endemic to the Forest and there is no reasonable way to eliminate them. Losses related to infestation of this beetle are considered in the FORPLAN model to some extent because the lodgepole pine timber yield tables take into account the associated mortality.

The primary non-priced value associated with harvesting dead or high risk lodgepole pine is the reduced risk of catastrophic fire. Fires destroy much of the value of standing timber and are generally expensive to fight. Harvesting lodgepole pine directly reduces the risk of fire by removing those trees which are likely to die and produce fuel concentrations.

Indirectly, the harvest of mature lodgepole pine removes the food source for the beetles and tends to slow their impacts upon adjacent stands.

The lodgepole pine that is merchantable now provides the largest element of risk. The indicator of reduced risk is the lodgepole pine volume harvested in the first decade. As the lodgepole pine volume harvested goes up the PNV tends to increase because more stands are brought into solution and most have a positive contribution to PNV.

h. Miles of Road (Access)

Roads are considered in the FORPLAN model in terms of their construction, reconstruction and maintenance costs, but there is a value to having fewer roads beyond the reduced costs associated with fewer roads. The unquantified values associated with fewer roads come from several sources.

First, roads impact the soils upon which they are built and contribute to increased sedimentation and reduced water quality which impact fisheries.

Second, the construction of roads effectively removes options for future non-roaded management. Primitive, semi-primitive and wilderness recreation categories are most directly affected.

Third, fewer roads implies greater assurance of improved security for wildlife. The assurance is greater because access is non-existent rather than simply closed to use.

Road construction is directly linked to timber volume harvested, so, as noted earlier, when PNV increases with increased harvest - road miles also increase.

The indicator for this value is the number of miles of new road construction needed.

i. First Decade Appropriated Budget

The first decade appropriated budget is a direct function of the activities which are necessary to produce the outputs from any alternative. Most of the budget costs are included in the FORPLAN model. In as much as a lower budget involves lower costs it can be seen as a benefit and can be quantified.

The unquantified benefit of a lower budget is associated with the added options that the Federal government has when deciding how to allocate funds to competing agency needs. At issue is not the increase in funds that would be available for other uses, because that can be quantified, but rather the added value in being able to divide the total funds differently.

The indicator of this value is the first decade appropriated budget. This excludes purchaser credit because unused purchaser credit is essentially trees that are left to grow and this value is quantified in the FORPLAN model.

PNV tends to decrease with decreases in budget except where activities which do not contribute to increased PNV are pursued.

j. Old-Growth Timber Habitat Management

Old-growth timber is known to be an important component of wildlife habitat for some species on the Kootenai (e.g. pileated woodpeckers). Since many old-growth timber stands have high wood-volumes per acre and are ready for harvest, they are considered a high priority for harvest scheduling. Because of this high scheduling priority, an eventual reduction or harvest of much of the old-growth timber is predictable.

All alternatives and benchmarks have been designed to include a minimum management requirement intended to ensure the perpetuation of an assigned level of old-growth timber acreage. This is a minimum acreage to satisfy the state-of-the-art knowledge and recommendation made by recent research on old-growth timber-dependent species.

The minimum management requirement that is modeled in FORPLAN involves assigning certain timber stands to a specific management prescription that perpetuates old-growth timber. This results in a removal of this acreage from timber harvest options. The timber acreage removed can be measured by FORPLAN and the present net value decreases as the suitable timber acreage decreases.

What isn't measured in FORPLAN is the risk that the minimum levels provided for old-growth timber habitat will not remain in-place and be further reduced through fires or windthrow. Any provision which could reduce this risk would have value.

The unit of measure for decreasing the risk that adequate amounts of old-growth timber habitat will not be provided is the percentage of the total Forest land acreage below 5,500 feet elevation that is assigned to an old-growth management designation. The higher the percentage of old-growth timber management provided, the less the risk of loss of the habitat component.

20. Major Tradeoffs Among Alternatives

Summary of Changes between the Draft and Final EIS

The Final Forest Plan (Alt. JF) is a modification of the Proposed Forest Plan (Alt. J). As a result of the Public's concern expressed during the review period, a change was made to provide for an increase in the amount of wilderness recommended. In addition, an increase in the minimum amount of old-growth timber habitat for timber-dependent wildlife species was also provided. Changes were also made to reduce the appropriated budget because of the current budgetary climate, and to strengthen the Monitoring Plan to protect water quality and fisheries.

a. Introduction

The tradeoff concept is useful in describing the differences between alternatives. The net quantified benefits are described in section 18 and the non-priced benefits are described in section 19 of this chapter. This section compares the alternatives in terms of the tradeoffs between these two types of benefits. Except for the quantified economic outputs, the adequacy of each alternative's attempt to address the Issues, Concerns and Opportunities is subject to the values individual reviewers attribute to the different resource mixes and degrees of response.

(1) National, Regional and Local Demand Outlook

This subsection briefly describes the projected long term demand for resources from this National Forest. This will provide a framework for assessing responses to the issues, concerns and opportunities which are described in detail in Appendix A. More details on projected demand for specific resources are provided in Appendix B.

The RPA analysis projects increases in total national demand for all outputs of National Forests. These outputs involve timber, minerals, forage, outdoor recreation opportunities, wildlife, wilderness, water supply and many amenity uses of the forest. There is also a strong desire to protect and enhance the quality of the environment while meeting these demands. The nation benefits when these resources can be efficiently supplied. In general the Kootenai National Forest has these resources and can supply them to the region and nation efficiently.

Generally users of National Forest outdoor recreation, wildlife and wilderness are local people or people from the region adjacent to the National Forest. In Montana, for example, about 84% of the recreation use comes from those who are residents of the state (SCORP, 1983). Nationwide, over 90% of hunters travelled less than 100 miles from their residences for hunting opportunities. Salmon fishing in Lake Koocanusa has drawn visitors from longer distances, but these users are predominately from the region composed of eastern Washington, northern Idaho, western Montana and parts of Canada. Projections of recreation demand and available capacities are described in section B.3.a,b,c,d and e of this chapter.

The local communities are quite dependent on National Forest activities for the jobs and income they produce. In 1980 it is estimated that about 36% of the total jobs in the Lincoln/Sanders counties area were associated with activities on the Kootenai National Forest. In addition about 10% of the total jobs are associated with the mining industry which is not directly related to Forest Service activities although mining often occurs on or adjacent to National Forest lands.

(2) Economic Values and Responses to Major Issues, Concerns and Resource Use/Development Opportunities

Relationships between priced and non-priced outputs illustrate the interactions between various alternative objectives and constraints. It is clear that competitive public issues, management concerns, and resource opportunities exist and that it is impossible to fully meet all wants and desires at the same time. By examining an array of priced outputs and indicators of non-priced outputs it becomes possible to see more clearly what is actually given up and what is actually achieved as a range of alternatives is explored. An understanding of the tradeoffs between alternatives is required to help decision-makers determine which alternative maximizes net public benefits. The mixes of priced and non-priced outputs resulting from each alternative are a direct result of the varied attempts to resolve the issues described in Chapter I.

Appendix A fully discusses each of the issues, concerns and opportunities. The 10 major issues with the greatest influence on the alternatives and their indicators of responsiveness are:

1. Timber Volume
 - 1st decade timber harvest
 - available timberlands
 - lodgepole pine harvest (also Insect and Disease Issue)
 - stagnated LPP stands converted (also Insect and Disease Issue)
2. Transportation Facilities
 - New road construction needed
 - First decade new road miles
 - Total eventual size of the road network
 - Additional road use restrictions needed

3. Roadless Recreation
 - Lands from the inventoried roadless areas that are designated to remain roadless
 - Lands from the inventoried roadless areas that are to be developed in decade 1
 - Inventoried roadless lands that will still be roadless at the end of decade 1
 - Total roadless recreation opportunities provided
4. Threatened and Endangered Species
 - Grizzly habitat with little or no development
5. Special Wildlife Habitat
 - Acres of overmature timber (approaching or existing "old-growth") at the end of 100 years
 - Percent of key land in old-growth condition
6. Local Economic Impacts
 - Forest related private sector jobs
7. Wilderness
 - Recommended Wilderness acres
 - Number of areas recommended for Wilderness designation
8. Minerals, Oil and Gas
 - Acres withdrawn from exploration
9. Wildlife and Fish Habitat
 - Elk forage potential
 - Migratory fish produced in the first decade
10. Esthetics
 - Acres with preservation, retention and partial retention as visual quality objectives

In addition, the nation as a whole has an interest in ensuring that the Forest is managed in a financially prudent manner while the quality of the physical environment is protected and enhanced. The indicators associated with this are:

- Present net value
- cash receipts to the treasury
- non-cash benefits to Forest users
- Appropriated Budget items

The mixes of priced and non-priced outputs resulting from each alternative are a direct result of the varied attempts to resolve the broad public issues discussed above. Other issues that were defined in Chapter 1 have been resolved through KNF policy or standards and guidelines, and include landownership adjustment, and fire management. All of these issues are discussed in Appendix A. As can be seen, the issues identified during public participation, including the Draft EIS review period, cover the entire range of priced and non-priced resources.

b. Differences and Similarities of Individual Alternatives

The following table and discussion identify the tradeoffs between monetary goals (returns to the Treasury and PNV) and addressing the issues. The alternatives are listed in order of decreasing PNV. For a more detailed discussion of tradeoffs, see Appendix B, Section IV.C and Section VIII.

In general PNV tends to decline with increases in grizzly bear habitat security, retention of over-mature timber, conversion of stagnated lodgepole pine, visual quality protection and roadless management. PNV tends to increase with increases in timber harvest. Road construction, jobs and accessibility for mineral, oil and gas exploration also are linked to increases in PNV because they are directly associated with timber harvest levels and the size of the land area managed for timber. These relationships are described in more detail in Appendix B section IV.C.

Increased grizzly habitat security, retention of over-mature timber (and old-growth) and increased roadless management generally reduce PNV by excluding timber harvest from areas where it can be profitable. Visual quality protection and conversion of stagnated lodgepole pine stands tend to decrease PNV by making timber management more costly. Converting stagnated stands is costly and there is a long time span before returns are generated so PNV tends to drop when more of this activity is planned. A portion of the decline in PNV associated with improved visual quality is linked to the exclusion of timber management from potentially profitable areas. The remainder is associated with the increased costs associated with shelterwood harvests which are less visually impacting but which do not remove all the saleable timber. In this last situation, the costs of logging may be only slightly higher, but the returns generated on a per-acre basis are lower because not as many trees are removed.

Table II-23b displays the indicators discussed above. It shows the degree of response of each alternative to the issues, concerns and opportunities. The following sections discuss the tradeoffs between alternatives in more detail.

Table II-23b (Part 1)

INDICATORS OF RESPONSIVENESS OF ALTERNATIVES
TO THE MAJOR ISSUES AND NATIONAL CONCERNS

	PNV						RPA					PA	FP			CD
	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.
	M	N	A	B	C	E	G	D	O	L	H	J	K	JF	F	I
QUANTIFIED COSTS AND BENEFITS																
Present Net Value (\$MM)	1163	1148	1143	1136	1129	1113	1073	1064	1064	1046	1035	916	911	733	658	460
Average Annual Net receipts (\$MM/yr)																
Decade 1	1.8	1.0	0.0	-0.6	-0.5	0.0	0.5	0.9	-1.9	-4.4	0.6	-0.6	0.6	0.4	-3.4	-8.1
Decade 5	130.8	92.6	100.9	100.8	100.4	100.7	96.4	107.0	95.2	93.8	95.1	72.3	71.1	61.2	47.8	38.1
Average Annual Non-Cash Benefits (\$MM/yr)																
Decade 1	6.5	6.5	6.5	6.5	6.5	6.5	6.4	6.5	6.6	6.4	6.1	6.5	6.5	6.6	6.5	6.6
Decade 5	12.3	12.5	12.4	12.7	12.7	12.5	12.4	12.4	12.9	12.4	12.5	12.4	12.4	12.5	12.8	12.0
Average Appropriated Budget (\$MM/yr)																
Decade 1	24.1	23.2	21.8	21.6	21.7	21.1	20.6	21.5	21.7	28.1	20.1	20.3	22.0	19.2	16.8	16.6
Average Total Budget - Including purchaser Credit (\$MM/yr)																
Decade 1	30.4	29.1	27.2	27.0	27.1	26.4	25.7	26.9	26.9	34.2	25.1	25.2	27.5	24.0	20.7	19.6
Average Capital Investment Road Construction (\$MM/yr)																
Decade 1	5.1	4.6	4.3	4.2	4.3	4.1	3.9	4.3	3.9	5.2	3.8	3.7	4.2	3.6	3.4	2.4
ISSUE RESPONSE INDICATORS																
Timber Issue																
Regulated (live green) Timber Harvest (MMBF/yr)																
Decade 1	262	247	226	223	225	218	213	227	215	255	208	202	230	202	164	150
Suitable Timberland Managed																
M Acres	1484	1481	1470	1464	1466	1425	1386	1595	1389	1788	1361	1386	1386	1263	1132	1422
Total Lodgepole Pine Harvest - Including dead (MMBF/yr)																
Decade 1	117	107	87	88	90	80	74	84	94	53	64	94	99	98	70	97
Stagnated LPP Stands Converted by Decade 5																
M Acres	1	1	2	2	1	1	1	45	5	93	1	70	70	32	44	69
Transportation Facilities Issue																
Total New Roads needed after 1/1/84																
Miles	5230	5270	5270	5200	5150	4950	4750	5690	4680	6360	4590	4690	4720	4050	3850	38400
Miles of new road (decade total)																
Decade 1	3150	2890	2690	2660	2680	2630	2510	2670	2560	3100	2480	2440	2760	2370	2020	1850
Total Road System Eventually Required																
Miles	11250	11270	11270	11200	11150	10950	10750	11690	10680	12360	10590	10690	10720	10050	9850	9840
Additional Road Restrictions needed by Decade 5																
Miles	3500	3520	3510	3510	3520	3280	3180	3170	2700	4090	3130	4480	4480	4130	3360	2990

Table 11-23b (Part 2)

**INDICATORS OF RESPONSIVENESS
TO THE MAJOR ISSUES AND NATIONAL CONCERNS**

	PNV							RPA				PA		FP		CD	
	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.	Alt.
	M	N	A	B	C	E	G	D	O	L	H	J	K	JF	F	I	
<u>Roadless Recreation</u>																	
Designated Roadless Lands in Inventoried Roadless Areas																	
M Acres	200	205	211	164	151	99	53	155	322	159	0	202	202	192	209	174	
Inventoried Roadless Lands Developed in Decade 1																	
M Acres	55	42	46	50	45	45	17	39	0	57	0	10	10	10	49	34	
Inventoried Roadless Lands Remaining After Decade 1																	
M Acres	349	362	358	289	278	172	81	301	322	347	0	327	327	315	355	307	
Total Roadless Recreation Opportunities Provided																	
M Acres	389	393	399	428	419	476	534	410	574	349	583	518	518	521	401	441	
<u>Threatened & Endangered Species</u>																	
Grizzly Habitat with little or No Development																	
M Acres	434	424	425	434	439	475	514	469	444	354	545	589	589	609	339	551	
<u>Special Wildlife Habitat</u>																	
Overmature (age 160+) Timber After Decade 10																	
M Acres	191	196	204	203	204	206	218	186	232	168	230	255	255	311	344	537	
Minimum Acres Below 5500 feet in Old Growth Condition																	
Percent	8	8	8	8	8	8	8	8	8	8	8	8	8	10	8	8	
<u>Local Economic Impacts</u>																	
Forest-related Employment in the Private Sector																	
Jobs	2710	2610	2460	2440	2450	2390	2340	2460	2400	2730	2240	2300	2490	2300	2010	1930	
<u>Wilderness</u>																	
Recommended Wilderness																	
M Acres	None	None	None	64	81	187	305	64	81	None	404	66	66	78	None	64	
Sites	0	0	0	2	5	6	15	2	5	0	27	3	3	3	0	2	
<u>Minerals, Oil & Gas</u>																	
Withdrawals from Oil & Gas Exploration																	
M Acres	148	148	148	212	228	335	453	212	228	148	540	215	215	227	148	212	
Withdrawals from Locatable Mineral Exploration																	
M Acres	185	185	185	249	265	371	484	249	265	185	579	252	252	264	185	249	
<u>Wildlife & Fish Habitat</u>																	
Elk Population By Decade 3																	
Number	8300	8400	8400	8500	8500	8400	8500	8000	8500	8500	8600	8000	8000	8000	9900	7300	
Migratory Fish (Smolts) Produced in Decade 1																	
MM Fish/year	192	189	191	192	191	192	193	190	190	188	193	192	192	192	194	199	
<u>Esthetics</u>																	
Visual Quality Protection (VQO of P, R, & PR)																	
M Acres	1092	1102	1108	1114	1120	1137	1157	1046	1382	976	1199	1311	1311	1311	1465	1240	

(1) **ALTERNATIVE M (PNV Benchmark or Maximum PNV)**

Alternative M identifies the maximum PNV that can be reasonably generated from the Forest at \$1,163,000,000. A harvest volume of 262 MMBF (live green) was achieved in decade 1 while meeting minimum management requirements and permitting timber volume fluctuations as high as 25% from one decade to the next. In the absence of competing goals of other resources, timber harvest occurs on the most economically efficient lands. A total of 1,484,000 acres, out of the 1,788,000 acres that were tentatively suitable, are managed for timber production.

Costs and Budget: Alt. M has the highest PNV (\$1,163,000,000) of all the alternatives because it has the highest discounted benefits and the third highest discounted costs. The first decade appropriated budget is the second highest of all the alternatives and 45% higher than the average for the the 1980-1982 period. Due to the relatively unrestricted goal of maximizing PNV, this alternative generates the highest net returns to the treasury of all the alternatives in both the first and fifth decades.

Jobs and Community Stability: The high PNV is achieved with the highest timber harvest in the first decade. This will provide for short-term community stability with a potential for a 40% increase in jobs over the Current Direction and is the second highest increase of all the alternatives. Job opportunities would be expected to fluctuate considerably after the first decade due to the rise and fall in timber harvest levels. This would tend to increase instability in the local economy in the long run.

Mineral Accessibility: The potential for exploration for minerals and oil/gas is increased 26% and 30%, respectively, over the Current Direction. This alternative has some of the fewest restrictions compared to other alternatives because no additional wilderness is recommended.

Miles of New Road Construction: Fisheries, wildlife and water quality will be affected because the road system will increase 87% over the system (1984) existing. This is the fourth largest of all the alternatives and will be needed to manage the designated suitable timberlands.

Lodgepole Pine Management: Mountain pine beetle infestations and potential fire risk will be reduced with an 86% increase in lodgepole pine timber harvest compared to the last five year average. This is a result of the high timber harvest levels in the first decade and is the highest lodgepole pine harvest level of all the alternatives.

In contrast, the risk of potential mountain pine beetle and fire will not improve in the stagnated lodgepole pine stands. Almost none (1%) of the available stands will be converted in the next 50 years because of the high investment costs required. This is a 99% decrease from the Current Direction.

Visual Quality Protection: Forest management activities, such as timber harvesting and road construction, will be more evident as visual quality protection is reduced approximately 12% from the Current Direction. This is because of the high level of timber harvest and is the third lowest level of visual quality protection of all the alternatives.

Wilderness and Roadless Quality: Roadless recreation opportunities will be available on 17% of the forest. This will be a 12% reduction from the Current Direction and is the second lowest amount available of all the alternatives. Fewer roadless recreation opportunities are provided because only roadless lands determined to be unsuitable for timber management are selected for roadless designation. No additional wilderness is recommended.

Grizzly Bear Recovery: The risk of failing to recover the grizzly bear is increased in relation to the the Current Direction. Approximately 21% less grizzly habitat will be left in an undisturbed manner which will produce a higher probability of human/bear encounters. This is the fifth highest risk of all the alternatives.

Old-Growth Timber Management: 8% of all the Forest land below 5,500 feet elevation is managed to provide wildlife habitat for old-growth timber-dependent species. This is similar to all the other alternatives except the Final Plan (Alt. JF). The amount of overmature timber remaining after 10 decades is the third lowest of all the alternatives because the departure harvest sequence permits this valuable timber to be scheduled for harvest before then.

(2) ALTERNATIVE N

Alternative N is quite similar to alternative M except that the latitude to depart from non-declining yield is less broad. Rather than the +25% fluctuation from one decade to the next of alternative M, this alternative permits up to a 20% increase or a 15% decrease from one decade to the next and returns to a non-declining schedule after decade 5. This flexibility in harvest scheduling and the absence of other resource goals beyond the minimum management objectives permits the generation of the second highest PNV of the alternatives. The land base managed for timber production is about the same as Alternative M, but the first decade timber harvest is slightly lower due to the reduced flexibility in long range harvest scheduling.

Costs and Budget: Alt. N has the second highest PNV (\$1,148,000,000) of all the alternatives generated by the second highest discounted benefits and the fourth highest discounted costs. The first decade appropriated budget is the third highest of all the alternatives and 40% higher than the average for the 1980-1982 period. The net receipts to the treasury are the second highest of all the alternatives.

Jobs and Community Stability: The PNV is achieved with the third highest timber harvest in the first decade. This will provide for community stability with a potential for a 35% increase in jobs over the Current Direction, and is the third highest of all the alternatives. The slight decline in the second decade harvest level would generate some community instability then.

Mineral Accessibility: The potential for exploration for minerals and oil/gas is increased 26-30% over the Current Direction. This is one of the lowest amount of restrictions of all the alternatives because no new wilderness is recommended, similar to ALT. M.

Miles of New Road Construction: Fisheries, wildlife and water quality will be affected because the road system will need to increase 88% over the existing system in 1984. This is the third largest of all the alternatives and will be needed to manage the designated suitable timberlands.

Lodgepole Pine Management: Mountain pine beetle infestations and potential fire risk will be reduced with a 70% increase in lodgepole pine timber harvest compared to the last five year average. This is the second highest lodgepole pine harvest level of all the alternatives.

In contrast, the risk of potential mountain pine beetle and fire will not improve in the stagnated lodgepole pine stands. Almost none (1%) of the available stands will be converted in the next 50 years because of the high investment costs required. This is a 99% decrease from the Current Direction and similar to ALT. M.

Visual Quality Protection: Forest management activities, such as timber harvesting and road construction, will be more evident as Visual Quality Protection is reduced approximately 11% from the Current Direction. This is the fourth lowest level of visual quality protection of all the alternatives.

Wilderness and Roadless Quality: Roadless recreation opportunities will be available on 18% of the forest. This will be a 11% reduction from the Current Direction and is the third lowest amount available of all the alternatives. No additional wilderness is recommended, similar to ALT.M.

Grizzly Bear Recovery: The risk of failing to recover the grizzly bear is increased in relation to the the Current Direction. Approximately 23% less grizzly habitat will be left in an undisturbed manner which will produce a higher probability of human/bear encounters. This is the third highest risk of all the alternatives.

Old-Growth Timber Management: 8% of all the Forest land below 5,500 feet elevation is managed to provide wildlife habitat for old-growth timber- dependent species. This is similar to all the other alternatives except the Final Plan (Alt. JF). The over-mature timber remaining after decade 10 is the fourth lowest of all the alternatives because much of this valuable timber is cut early.

(3) ALTERNATIVE A

Alternative A has the highest PNV of all the alternatives which constrain timber harvest to a non-declining schedule. The suitable timber base and the first decade harvest level are both slightly smaller than Alternatives M and N because of the limitations on harvest scheduling.

Costs and Budget: Alt. A generates the third highest PNV (\$1,143,000,000) of the alternatives with the fourth highest discounted benefits and the fifth highest discounted costs. The first decade appropriated budget is the sixth highest of all the alternatives and 31% higher than the average for the the 1980-1982 period. The average annual net returns to the treasury balance to zero in the first decade meaning that income to the treasury matches the expenses of managing the Forest.

Jobs and Community Stability: The PNV is achieved with the sixth highest timber harvest in the first decade. This will provide for community stability with a potential for a 27% increase in jobs over the Current Direction, and is the fifth highest of all the alternatives. Stability is retained into the future due to the non-declining harvest schedule.

Mineral Accessibility: The potential for exploration for minerals and oil/gas is increased 26 and 30%, respectively, over the Current Direction. This is one of the lowest amount of restrictions of all the alternatives, similar to Alts. M and N, because no additional wilderness is recommended.

Miles of New Road Construction: Fisheries, wildlife and water quality will be affected because the road system will need to increase 88% over the existing system in 1984. This is the third largest of all the alternatives (similar to Alt. N) and will be needed to manage the designated suitable timberlands.

Lodgepole Pine Management: Mountain pine beetle infestations and potential fire risk will be reduced with a 38% increase in lodgepole pine timber harvest compared to the last five year average. This is the eighth highest lodgepole pine harvest level of all the alternatives.

In contrast, the risk of potential mountain pine beetle and fire will not improve in the stagnated lodgepole pine stands. Almost none (2%) of the available stands will be converted in the next 50 years because of the high investment costs required. This is a 97% decrease from the Current Direction.

Visual Quality Protection: Forest management activities, such as timber harvesting and road construction, will be more evident as visual quality protection is reduced approximately 11% from the Current Direction (similar to Alt. N). This is because of the emphasis on timber harvest and is the fifth lowest level of visual quality protection of all the alternatives.

Wilderness and Roadless Quality: Roadless recreation opportunities will be available on 18% of the forest (similar to Alt. N). This will be a 10% reduction from the Current Direction and is the fourth lowest amount available of all the alternatives. Fewer roadless recreation opportunities are provided because only roadless lands determined to be unsuitable for timber management are selected for roadless designation. No additional wilderness is recommended.

Grizzly Bear Recovery: The risk of failing to recover the grizzly bear is increased in relation to the the Current Direction. Approximately 23% less grizzly habitat will be left in an undisturbed manner which will produce a higher probability for human/bear encounters. This is the fourth highest risk of all the alternatives.

Old-Growth Timber Management: 8% of all the Forest land below 5,500 feet elevation is managed to provide wildlife habitat for old-growth timber-dependent species. This is similar to all the other alternatives except the Final Plan (Alt. JF).

(4) ALTERNATIVE B

Alternative B is similar to alternative A except that 64,000 acres are recommended for Wilderness designation. About 6,000 of these acres were in the suitable timber base in Alternative A. Their removal from the suitable base causes a reduction in decade 1 timber harvest levels and a lower PNV compared to Alternative A.

Costs and Budget: Alt. B has the fourth highest PNV (\$1,136,000,000) of all the alternatives generated by the fifth highest discounted benefits and the sixth highest discounted costs. The first decade appropriated budget is the seventh highest of all the alternatives and 30% higher than the average for the the 1980-1982 period. The intensity of management and the reduced flexibility to schedule harvest over time results in a net negative return (cash outflow) to the treasury.

Jobs and Community Stability: The PNV is achieved with the eighth highest timber harvest in the first decade. This will provide for community stability with a potential for a 26% increase in jobs over the Current Direction, and is the seventh highest of all the alternatives.

Mineral Accessibility The potential for exploration for minerals and oil/gas is the same as the Current Direction. This is the second lowest amount of restrictions of all the alternatives.

Miles of New Road Construction: Fisheries, wildlife and water quality will be affected because the road system will need to increase 87% over the existing (1984) system. This is the fifth largest of all the alternatives (similar to Alt.M) and will be needed to manage the designated suitable timberlands.

Lodgepole Pine Management: Mountain pine beetle infestations and potential fire risk will be reduced with a 40% increase in lodgepole pine timber harvest compared to the last five year average. This is the seventh highest lodgepole pine harvest level of all the alternatives.

In contrast, the risk of potential mountain pine beetle and fire will not improve in the stagnated lodgepole pine stands. Almost none (2%) of the available stands will be converted in the next 50 years because of the high investment costs required. This is a 97% decrease from the Current Direction and similar to Alt. A.

Visual Quality Protection: Forest management activities, such as timber harvesting and road construction, will be more evident as Visual Quality Protection is reduced approximately 10% from the Current Direction. This is the sixth lowest level of visual quality protection of all the alternatives.

Wilderness and Roadless Quality: Roadless recreation opportunities will be available on 19% of the forest. This will be a 3% reduction from the Current Direction and is the seventh lowest amount available of all the alternatives. Wilderness recommendations are made in two locations, similar to RARE II and are the same as the Current Direction.

Grizzly Bear Recovery: The risk of failing to recover the grizzly bear is increased in relation to the the Current Direction. Approximately 21% less grizzly habitat will be left in an undisturbed manner which will produce a higher probability for human/bear encounters. This is the fifth highest risk of all the alternatives and similar to Alt. M.

Old-Growth Timber Management: 8% of all the Forest land below 5,500 feet elevation is managed to provide wildlife habitat for old-growth timber- dependent species. This is similar to all the other alternatives except the Final Plan (Alt. JF).

(5) ALTERNATIVE C

Alternative C continues the trend of Alternatives A and B. It is the same as those two alternatives except that the Wilderness recommendation is different. About 19,000 acres in the Wilderness recommendation were suitable in Alternative A. This reduction of 19,000 acres of suitable base due to Wilderness recommendations was offset by an increase of about 15,000 acres which became cost efficient to manage for timber. Thus Alternative C has about 4,000 fewer acres in the suitable timber base than Alternative A. The 15,000 acres which became cost efficient did so because of the altered age class distribution that was available for management with the change in Wilderness recommendation. Managing this particular 15,000 acres for timber permits a schedule of harvest which will generate a higher PNV in the long run than if this land were not managed for timber production.

Costs and Budget: Alt. C has the fifth highest PNV (\$1,129,000,000) of all the alternatives because of the sixth highest discounted benefits and the sixth highest discounted costs. The first decade appropriated budget is the fifth highest of all the alternatives and 31% higher than the average for the 1980-1982 period. Returns to the treasury are slightly higher than for Alternative B due to the slightly higher timber harvest level.

Jobs and Community Stability: The PNV is achieved with the seventh highest timber harvest in the first decade. This will provide for community stability with a potential for a 27% increase in jobs over the Current Direction, and is the sixth highest of all the alternatives and similar to Alt. A.

Mineral Accessibility: The potential for exploration for minerals and oil/gas is decreased from 6-8%, respectively, compared to the Current Direction. This is the fourth highest amount of restrictions of all the alternatives because of the additional wilderness being recommended.

Miles of New Road Construction: Fisheries, wildlife and water quality will be affected because the road system will increase 86% over the existing (1984) system. This is the sixth largest of all the alternatives and will be needed to manage the designated suitable timberlands.

Lodgepole Pine Management: Mountain pine beetle infestations and potential fire risk will be reduced with an 44% increase in lodgepole pine timber harvest compared to the last five year average. This is a result of the moderate timber harvest levels in the first decade and is the sixth highest lodgepole pine harvest level of all the alternatives.

In contrast, the risk of potential mountain pine beetle and fire will not improve in the stagnated lodgepole pine stands. Almost none (1%) of the available stands will be converted in the next 50 years because of the high investment costs required. This is a 99% decrease from the Current Direction and similar to Alts. A, B, M, and N.

Visual Quality Protection: Forest management activities, such as timber harvesting and road construction, will be more evident as visual quality protection is reduced approximately 10% from the Current Direction. This is because of the moderate level of timber harvest and is the seventh lowest level of visual quality protection of all the alternatives.

Wilderness and Roadless Quality: Roadless recreation opportunities will be available on 19% of the forest. This will be a 5% reduction from the Current Direction and is the eighth highest amount available of all the alternatives. Wilderness recommendations are similar to the Montana Wilderness Bill of June, 1984. The recommended wilderness acreage is similar to the RARE II total acreage but the geographic locations are significantly different. Wilderness is recommended in five locations.

Grizzly Bear Recovery: The risk of failing to recover the grizzly bear is increased in relation to the the Current Direction. Approximately 20% less grizzly habitat will be left in an undisturbed manner which will produce a higher probability for human/bear encounters. This is the sixth highest risk of all the alternatives.

Old-Growth Timber Management: 8% of all the Forest land below 5,500 feet elevation is managed to provide wildlife habitat for old-growth timber- dependent species. This is similar to all the other alternatives except the Final Plan (Alt. JF).

(6) ALTERNATIVE E

Alternative E is again similar to alternatives A, B and C except for its different Wilderness recommendation. The suitable timber base and the timber harvest level is lower than those alternatives discussed above because of the larger Wilderness recommendation.

Costs and Budget: Alt. E has the sixth highest PNV (\$1,113,000,000) of all the alternatives because of the eighth highest discounted benefits and the eighth highest discounted costs. The first decade appropriated budget is the ninth highest of all the alternatives and 27% higher than the average for the the 1980-1982 period. The net returns to the treasury are zero as expenditures match income.

Jobs and Community Stability: The PNV is achieved with the ninth highest timber harvest in the first decade. This will provide for community stability with a potential for a 24% increase in jobs over the Current Direction, and is the ninth highest of all the alternatives.

Mineral Accessibility: The potential for exploration for minerals and oil/gas is reduced compared to the Current Direction. Exploration restrictions are increased 49-58%, respectively, because of increased acres of wilderness recommendations. This is the third highest level of exploration restrictions of all the alternatives.

Miles of New Road Construction: Fisheries, wildlife and water quality will be affected because the road system will need to increase 83% over the existing (1984) system. This is the seventh largest increase of all the alternatives and will be needed to manage the designated suitable timberlands.

Lodgepole Pine Management: Mountain pine beetle infestations and potential fire risk will be reduced with a 28% increase in lodgepole pine timber harvest compared to the last five year average. This is the tenth highest lodgepole pine harvest level of all the alternatives. In contrast, the risk of potential mountain pine beetle and fire will not improve in the stagnated lodgepole pine stands. Almost none (1%) of the available stands will be converted in the next 50 years because of the high investment costs required. This is a 99% decrease from the Current Direction and similar to Alts. C, M, and N.

Visual Quality Protection: Forest management activities, such as timber harvesting and road construction, will be more evident as visual quality protection is reduced approximately 8% from the Current Direction. This is the seventh highest level of visual quality protection of all the alternatives.

Wilderness and Roadless Quality: Roadless recreation opportunities will be available on 21% of the forest. This will be an 8% increase over the Current Direction and is the fifth highest amount available of all the alternatives. Wilderness is recommended on six different locations on the forest.

Grizzly Bear recovery: The risk of failing to recover the grizzly bear is increased in relation to the the Current Direction. Approximately 14% less grizzly habitat will be left in an undisturbed manner which will produce a higher probability for human/bear encounters. This is the fifth lowest risk of all the alternatives.

Old-Growth Timber Management: 8% of all the Forest land below 5,500 feet elevation is managed to provide wildlife habitat for old-growth timber- dependent species. This is similar to all the other alternatives except the Final Plan (Alt. JF).

(7) ALTERNATIVE G

Alternative G is the same as alternative A, B, C and E except that it has a different Wilderness recommendation. The Wilderness recommendation of 305,000 acres is 163% of that for Alternative E and the suitable timber base is 3% smaller. Because of this, the first decade timber harvest is also slightly lower.

Costs and Budget: Alt. G has the seventh highest PNV (\$1,073,000,000) of all the alternatives resulting from a combination of the tenth highest discounted benefits and the ninth highest discounted costs. The first decade appropriated budget is the fifth lowest of all the alternatives and 24% higher than the average for the 1980-1982 period. The net returns to the treasury is positive, in contrast to Alternatives B, C and E, because of the particular lands being managed for timber production and the associated harvest schedule.

Jobs and Community Stability. The PNV is achieved with the fifth lowest timber harvest in the first decade. This will provide for community stability with a potential for a 21% increase in jobs over the Current Direction, and is the fifth lowest increase of all the alternatives.

Mineral Accessibility: The potential for exploration for minerals and oil/gas is reduced compared to the Current Direction. Exploration restrictions are increased 94-114%, respectively, because of increased acres of wilderness recommendations. This is the second highest level of exploration restrictions of all the alternatives.

Miles of New Road Construction: Fisheries, wildlife and water quality will be affected because the road system will need to increase 79% over the existing (1984) system. This is the eighth largest increase of all the alternatives and will be needed to manage the designated suitable timberlands.

Lodgepole Pine Management: Mountain pine beetle infestations and potential fire risk will be reduced with an 18% increase in lodgepole pine timber harvest compared to the last five year average. This is the fourth lowest lodgepole pine harvest level of all the alternatives.

In contrast, the risk of potential mountain pine beetle and fire will not improve in the stagnated lodgepole pine stands. Almost none (1%) of the available stands will be converted in the next 50 years because of the high investment costs required. This is a 99% decrease from the Current Direction and similar to Alts. A, B, C, E, M, and N.

Visual Quality Protection: Forest management activities, such as timber harvesting and road construction, will be more evident as visual quality protection is reduced approximately 7% from the Current Direction. This is the sixth highest level of visual quality protection of all the alternatives.

Wilderness and Roadless Quality: Roadless recreation opportunities will be available on 24% of the forest. This will be a 21% increase over the Current Direction and is the third highest amount available of all the alternatives. Wilderness is recommended on six different locations on the forest.

Grizzly Bear Recovery: The risk of failing to recover the grizzly bear is increased in relation to the the Current Direction. Approximately 7% less grizzly habitat will be left in an undisturbed manner which will produce a higher probability for human/bear encounters. This is the fourth lowest risk of all the alternatives.

Old-Growth Timber Management: 8% of all the Forest land below 5,500 feet elevation is managed to provide wildlife habitat for old-growth timber- dependent species. This is similar to all the other alternatives except the Final Plan (Alt. JF). The overmature timber remaining after 10 decades is larger than that remaining in the alternatives discussed above primarily because the land base managed for timber production is smaller than for those alternatives.

(8) ALTERNATIVE D (RPA)

Alternative D is the same as Alternative B except that timber volumes in decades one through five are forced to match those developed for the Kootenai National Forest as part of the 1980 RPA process. The Wilderness recommendation also matches the recommendation on which the 1980 RPA analysis was based. In order to achieve these timber goals a departure from non-declining yield was necessary and additional lands had to be brought into production. The result is a larger suitable timber base than Alternative B, a higher timber harvest level and a lower PNV. The PNV drops because the lands added to the suitable base are not as cost effective as those of Alternative B and because the schedule of harvest is forced to differ from that which would generate a higher PNV.

Costs and Budget: Alt. D is the eighth most efficient of all the alternatives, with a PNV of \$1,064,000,000, because of the combination of the seventh highest discounted benefits and the second highest discounted costs. The first decade appropriated budget is the eighth highest of all the alternatives and 30% higher than the average for the 1980-1982 period. The net returns to the treasury are higher in decade one than the other alternatives discussed above, but they are lower in the fifth decade than most of those alternatives. This results from the higher, but relatively efficient harvest level in decade one and the required high volume in decade 5 which forces the scheduling of less cost effective lands for harvest. Only Alternative M (due to broad departure options) and L (maximize timber) scheduled more timber for harvest in decade 5.

Jobs and Community Stability: The PNV is achieved with the fifth highest timber harvest in the first decade. This will provide for community stability with a potential for a 27% increase in jobs over the Current Direction, and is the fifth highest increase of all the alternatives and similar to Alts. A, B, and C.

Mineral Accessibility: The potential for exploration for minerals and oil/gas is the same as the Current Direction. This is the second lowest amount of restrictions of all the alternatives and similar to Alt. B.

Miles of New Road Construction: Fisheries, wildlife and water quality will be affected because the road system will need to increase 95% over the existing (1984) system. This is the second largest of all the alternatives and will be needed to manage the designated suitable timberlands.

Lodgepole Pine Management: Mountain pine beetle infestations and potential fire risk will be reduced with a 34% increase in lodgepole pine timber harvest compared to the last five year average. This is the ninth highest lodgepole pine harvest level of all the alternatives.

The risk of potential mountain pine beetle and fire will improve in the stagnated lodgepole pine stands. Approximately 48% of the available stands will be converted in the next 50 years to increase timber production. This is a 35% decrease from the Current Direction.

Visual Quality Protection: Forest management activities, such as timber harvesting and road construction, will be more evident as visual quality protection is reduced approximately 16% from the Current Direction. This is the second lowest level of visual quality protection of all the alternatives.

Wilderness and Roadless Quality: Roadless recreation opportunities will be available on 18% of the forest. This will be a 7% reduction from the Current Direction and is the sixth lowest amount available of all the alternatives. Wilderness is recommended in two locations, similar to RARE II, and is the same as Alt. B and the Current Direction.

Grizzly Bear Recovery: The risk of failing to recover the grizzly bear is increased in relation to the the Current Direction. Approximately 15% less grizzly habitat will be left in an undisturbed manner which will produce a higher probability for human/bear encounters. This is the sixth lowest risk of all the alternatives.

Old-Growth Timber Management: 8% of all the Forest land below 5,500 feet elevation is managed to provide wildlife habitat for old-growth timber- dependent species. This is similar to all the other alternatives except the Final Plan (Alt. JF). The over-mature timber remaining after 10 decades is the lowest of all the alternatives discussed above because the high harvest levels force most of it to be cut early in the time horizon.

(9) ALTERNATIVE 0

Alternative 0 is the same as Alternative C except that added emphasis is given to visual quality by altering harvest practices, or eliminating them entirely, in areas of high visual significance. This reduced the suitable timber base and the first decade harvest level to the second lowest of the alternatives discussed above.

Costs and Budget: Alt. 0 has the ninth highest PNV (\$1,064,000,000) of all the alternatives resulting from the combination of the ninth highest discounted benefits and the fourth highest discounted costs. The first decade appropriated budget is the fifth highest of all the alternatives and 31% higher than the average for the 1980-1982 period. The first decade returns to the treasury are the lowest of the alternatives discussed above primarily because of the increased costs and reduced returns of shelterwood harvest methods.

Jobs and Community Stability: The PNV is achieved with the tenth highest timber harvest in the first decade. This will provide for community stability with a potential for a 24% increase in jobs over the Current Direction, and is the eighth highest increase of all the alternatives and similar to Alt. E.

Mineral Accessibility: The potential for exploration for minerals and oil/gas is reduced compared to the Current Direction. Exploration restrictions will increase approximately 6-8%, respectively, because of an increase in recommended wilderness. This is the fourth highest amount of restrictions of all the alternatives and similar to Alt. C.

Miles of New Road Construction: Fisheries, wildlife and water quality will be affected because the road system will need to increase 78% over the existing (1984) system. This is the fourth lowest amount of all the alternatives and will be needed to manage the designated suitable timberlands.

Lodgepole Pine Management: Mountain pine beetle infestations and potential fire risk will be reduced with a 50% increase in lodgepole pine timber harvest compared to the last five years' average. This is the fifth highest lodgepole pine harvest level of all the alternatives.

The risk of potential mountain pine beetle and fire will not improve in the stagnated lodgepole pine stands. Approximately 5% of the available stands will be converted in the next 50 years to increase timber production. This is a 93% decrease from the Current Direction.

Visual Quality Protection: Forest management activities, such as timber harvesting and road construction, will be less evident as visual quality protection is increased approximately 11% over the Current Direction. This is the second highest level of visual quality protection of all the alternatives.

Wilderness and Roadless Quality: Roadless recreation opportunities will be available on 26% of the forest. This will be a 30% increase over the Current Direction and is the second highest amount available of all the alternatives. Wilderness is recommended in five locations, similar to Alt. C.

Grizzly Bear Recovery: The risk of failing to recover the grizzly bear is increased in relation to the the Current Direction. Approximately 19% less grizzly habitat will be left in an undisturbed manner which will produce a higher probability for human/bear encounters. This is the seventh lowest risk of all the alternatives.

Old-Growth Timber Management: 8% of all the Forest land below 5,500 feet elevation is managed to provide wildlife habitat for old-growth timber- dependent species. This is similar to all the other alternatives except the Final Plan (Alt. JF). The amount of over-mature timber remaining after decade 10 is the largest of the alternatives discussed above, primarily because of the smaller suitable timber base.

(10) ALTERNATIVE L

Alternative L is the maximum timber benchmark. It is like alternative A except that, instead of maximizing PNV, timber production over the entire 200 year time horizon is maximized. To maximize timber production, all the tentatively suitable timberlands are managed for timber production. Due to the non-declining harvest schedule, the first decade harvest level is lower than Alternative M, but higher than all the other alternatives.

Costs and Budget: Alt. L has the tenth highest PNV (\$1,046,000,000) of all the alternatives because of the combination of the third highest discounted benefits and the highest discounted costs. The first decade appropriated budget is the highest of all the alternatives and is 69% higher than the average for the the 1980-1982 period. Due to the high costs of managing some of the more difficult timber lands, including converting stagnated lodgepole pine stands, this alternative returns a net loss of \$4.4 MM to the treasury.

Jobs and Community Stability: The PNV is achieved with the second highest timber harvest in the first decade. This will provide for community stability with a potential for a 41% increase in jobs over the Current Direction and is the highest increase of all the alternatives and similar to Alt. M.

Mineral Accessibility: The potential for exploration for minerals and oil/gas is increased 26-30%, respectively, over the Current Direction. This is one of the lowest amounts of restrictions of all the alternatives because no new wilderness is recommended and is similar to Alts. A, M, and N.

Miles of New Road Construction: Fisheries, wildlife and water quality will be affected because the road system will need to increase 106% over the existing (1984) system. This is the largest amount of all the alternatives and will be needed to manage the designated suitable timberlands.

Lodgepole Pine Management: Mountain pine beetle infestations and potential fire risk will increase because of a 16% decrease in lodgepole pine timber harvest compared to the last five year average. This is the lowest lodgepole pine harvest level of all the alternatives.

The risk of potential mountain pine beetle and fire will improve in the stagnated lodgepole pine stands. Approximately 99% of the available stands will be converted in the next 50 years to increase timber production. This is a 35% increase over the Current Direction and the highest of all the alternatives.

Visual Quality Protection: Forest management activities, such as timber harvesting and road construction, will be more evident as visual quality protection is reduced approximately 21% from the Current Direction. This is the lowest level of visual quality protection of all the alternatives.

Wilderness and Roadless Quality: Roadless recreation opportunities will be available on 16% of the forest. This will be a 21% reduction from the Current Direction and is the lowest amount available of all the alternatives. No additional wilderness is recommended, similar to Alts. A, M, and N.

Grizzly Bear Recovery: The risk of failing to recover the grizzly bear is increased in relation to the the Current Direction. Approximately 36% less grizzly habitat will be left in an undisturbed manner which will produce a higher probability for human/bear encounters. This is the second highest risk of all the alternatives.

Old-Growth Timber Management: 8% of all the Forest land below 5,500 feet elevation is managed to provide wildlife habitat for old-growth timber- dependent species. This is similar to all the other alternatives except the Final Plan (Alt. JF). This alternative cuts most of the older timber early so that a second roatation can be harvested before the end of the time horizon. The result is that it has the smallest amount of over-mature timber remaining after the tenth decade.

(11) ALTERNATIVE H

Alternative H is like Alternatives A, B, C, E and G except that all the inventoried roadless areas are recommended for Wilderness designation. This results in the smallest suitable timber base and the smallest first decade harvest level of the alternatives discussed above.

Costs and Budget: Alt. H has the eleventh highest PNV (\$1,035,000,000) of all the alternatives because of a combination of the eleventh highest discounted benefits and the tenth highest discounted costs. The first decade appropriated budget is the third lowest of all the alternatives and 20% higher than the average for the 1980-1982 period. The net returns to the treasury are positive.

Jobs and Community Stability: The PNV is achieved with the twelfth highest timber harvest in the first decade. This will provide for community stability with a potential for a 16% increase in jobs over the Current Direction, and is the third lowest increase of all the alternatives.

Mineral Accessibility: The potential for exploration for minerals and oil/gas is reduced compared to the Current Direction. Exploration restrictions are increased 133-155%, respectively, because of increased acres of wilderness recommendations. This is the highest level of exploration restrictions of all the alternatives.

Miles of New Road Construction: Fisheries, wildlife and water quality will be affected because the road system will need to increase 77% over the existing (1984) system. This is the third smallest increase of all the alternatives and will be needed to manage the designated suitable timberlands.

Lodgepole Pine Management: Mountain pine beetle infestations and potential fire risk will be maintained at approximately the same level with a 2% increase in lodgepole pine timber harvest compared to the last five year average. This is the second lowest lodgepole pine harvest level of all the alternatives.

In contrast, the risk of potential mountain pine beetle and fire will not improve in the stagnated lodgepole pine stands. Almost none (1%) of the available stands will be converted in the next 50 years because of the high investment costs required. This is a 99% decrease from the Current Direction and similar to Alts. C, E, G, M, and N.

Visual Quality Protection: Forest management activities, such as timber harvesting and road construction, will be more evident as visual quality protection is reduced approximately 3% from the Current Direction. This is the fifth highest level of visual quality protection of all the alternatives.

Wilderness and Roadless Quality: Roadless recreation opportunities will be available on 26% of the forest. This will be a 32% increase over the Current Direction and is the highest amount available of all the alternatives. Wilderness is recommended on 27 different locations on the forest.

Grizzly Bear Recovery: The risk of failing to recover the grizzly bear is similar to the the Current Direction. Approximately 1% less grizzly habitat will be left in an undisturbed manner which will contribute to the probability for human/bear encounters. This is the third lowest risk of all the alternatives.

Old-Growth Timber Management: 8% of all the Forest land below 5,500 feet elevation is managed to provide wildlife habitat for old-growth timber- dependent species. This is similar to all the other alternatives except the Final Plan (Alt. JF). Among the alternatives discussed above, Alternative H retains more over-mature timber after decade 10 than do all the alternatives except Alternative O.

(12) ALTERNATIVE J (Proposed Action)

Alternative J was the Proposed Action presented in the Draft EIS. This alternative differs from those discussed above in three ways: 1) shelterwood harvest methods are used in sensitive viewing areas, 2) a different Wilderness recommendation is presented and, 3) all management designations are designed to retain future option. This resulted in a suitable timber base similar to Alternative G, but a lower first decade harvest level.

Costs and Budget: Alt. J has the twelfth highest PNV (\$916,000,000) of all the alternatives because of the thirteenth highest discounted benefits and the ninth highest discounted costs. The first decade appropriated budget is the fourth lowest of all the alternatives and 22% higher than the average for the the 1980-1982 period. It generates a flow of cash out of the treasury.

Jobs and Community Stability: The PNV is achieved with the thirteenth highest timber harvest in the first decade. This will provide for community stability with a potential for a 19% increase in jobs over the Current Direction, and is the fourth smallest increase of all the alternatives.

Mineral Accessibility: The potential for exploration for minerals and oil/gas is similar to the Current Direction. Exploration restrictions are 1% more than the Current Direction because of an increase in wilderness recommendations. This is the third lowest amount of restrictions of all the alternatives.

Miles of New Road Construction: Fisheries, wildlife and water quality will be affected because the road system will need to increase 78% over the existing (1984) system. This is the fifth smallest of all the alternatives (similar to Alt. 0) and will be needed to manage the designated suitable timberlands.

Lodgepole Pine Management: Mountain pine beetle infestations and potential fire risk will be reduced with a 50% increase in lodgepole pine timber harvest compared to the last five years' average. This is the fifth highest lodgepole pine harvest level of all the alternatives and similar to Alt. 0.

The risk of potential mountain pine beetle and fire will be maintained in the stagnated lodgepole pine stands. Approximately 74% of the available stands will be converted in the next 50 years to provide increased timber yields and wildlife benefits. This is a 1% increase over the Current Direction and the second highest of all the alternatives.

Visual Quality Protection: Forest management activities, such as timber harvesting and road construction, will be less evident as visual quality protection is increased approximately 6% over the Current Direction. This is the third highest level of visual quality protection of all the alternatives.

Wilderness and Roadless Quality: Roadless recreation opportunities will be available on 23% of the forest. This will be a 17% increase over the Current Direction and is the fourth highest amount available of all the alternatives. Wilderness recommendations are made on three different locations on the Forest.

Grizzly Bear Recovery: The risk of failing to recover the grizzly bear is decreased in relation to the the Current Direction. Approximately 7% more grizzly habitat will be left in an undisturbed manner which will produce a lower probability for human/bear encounters. This is the lowest risk of all the alternatives.

Old-Growth Timber Management: 8% of all the Forest land below 5,500 feet elevation is managed to provide wildlife habitat for old-growth timber-dependent species. This is similar to all the other alternatives except the Final Plan (Alt. JF). Only three other alternatives retain more over-mature timber beyond decade 10. This is a result of retaining future options.

(13) ALTERNATIVE K (Departure on Proposed Action)

Alternative K is like Alternative J except that timber harvest levels are forced upward in the first two decades followed by a decline in decade 3. These manipulations result in a decreased PNV from Alternative J.

Costs and Budget: Alt. K has the thirteenth highest PNV (\$911,000,000) of all the alternatives because of the twelfth highest discounted benefits and the seventh highest discounted costs. The first decade appropriated budget is the fourth highest of all the alternatives and 33% higher than the average for the 1980-1982 period. Returns to the treasury are positive in the first decade, in contrast to Alternative J, because of the higher timber harvest level.

Jobs and Community Stability: The PNV is achieved with the fourth highest timber harvest in the first decade. This will provide for community stability with a potential for a 29% increase in jobs over the Current Direction. This is the fourth highest increase of all the alternatives.

Mineral Accessibility: The potential for exploration for minerals and oil/gas is similar to the Current Direction. Exploration restrictions are 1% more than the Current Direction because of an increase in wilderness recommendations. This is the third lowest amount of restrictions of all the alternatives (similar to Alt. J).

Miles of New Road Construction: Fisheries, wildlife and water quality will be affected because the road system will need to increase 79% over the existing (1984) system. This is the sixth smallest of all the alternatives (similar to Alt. J) and will be needed to manage the designated suitable timberlands.

Lodgepole Pine Management: Mountain pine beetle infestations and potential fire risk will be reduced with a 58% increase in lodgepole pine timber harvest compared to the last five year average. This is the third highest lodgepole pine harvest level of all the alternatives.

The risk of potential mountain pine beetle and fire will be maintained in the stagnated lodgepole pine stands. Approximately 74% of the available stands will be converted in the next 50 years to provide increased timber yields and wildlife benefits. This is a 1% increase over the Current Direction and the second highest of all the alternatives.

Visual Quality Protection: Forest management activities, such as timber harvesting and road construction, will be less evident as visual quality protection is increased approximately 6% over the Current Direction. This is the third highest level of visual quality protection of all the alternatives and similar to Alt. J.

Wilderness and Roadless Quality: Roadless recreation opportunities will be available on 23% of the forest. This will be a 17% increase over the Current Direction and is the fourth highest amount available of all the alternatives (similar to Alt. J). Wilderness recommendations are made on three different locations on the Forest.

Grizzly Bear Recovery: The risk of failing to recover the grizzly bear is decreased in relation to the the Current Direction. Approximately 7% more grizzly habitat will be left in an undisturbed manner which will produce a lower probability for human/bear encounters. This is the lowest risk of all the alternatives and similar to Alt. J.

Old-Growth Timber Management: 8% of all the Forest land below 5,500 feet elevation is managed to provide wildlife habitat for old-growth timber- dependent species. This is similar to all the other alternatives except the Final Plan (Alt. JF). The over-mature timber that remains after decade 10 is the same as for Alternative J because the suitable timber base is the same and the first 10 decades of harvest is similar.

(14) ALTERNATIVE JF (Final Plan)

Alternative JF is similar to the Proposed Action (Alt. J) except that: 1) the Wilderness recommendation is larger, 2) the retention of old-growth habitats is increased, 3) commercial thinning will not occur very often, 4) stagnated lodgepole stands will not be converted during the life of the plan with appropriated funds, and 5) timber is maximized in decade one subject to non-declining yield. The retention of more old-growth and the maximization of timber reduced PNV. The removal of commercial thinning requirements also reduced PNV, but recent experience indicates that it would be very difficult to sell sales involving much thinning even if the allowable cut effects associated with that activity would increase PNV [see Appendix B sections VI.B.4.c, VI.C.3.e, VI.D.6.c and VIII.C.2.p(2)]. Avoiding the conversion of stagnated lodgepole pine stands increases PNV.

Costs and Budget: The first decade appropriated budget is a 5% reduction from Alt. J and was the result of a 3% decline in the miles of new road construction, and a reduction in the amount of planned commercial thinning. Alt. JF is the third lowest budget of all the alternatives and 16% higher than the average for the 1980-1982 period. These budget changes reverse the situation of Alternative J and result in a positive return to the treasury. The PNV is \$733,000,000.

Jobs and Community Stability: There is no difference from Alt. J. This means there is a potential for a 16% increase in jobs over the Current Direction (Alt. I) based on Forest Service activities. An overall picture of the economy in terms of jobs and income from all sources is described in Appendix B.

Mineral Accessibility: The potential for exploration for mineral and oil/gas exploration is reduced 5% from Alt. J. This is the result of adding 12,000 acres of recommended wilderness on Pellick Ridge in the Scotchman Peak Roadless Area which is similar to Alts. C and O. It will also be a 6% increase over the Current Direction (Alt.I).

Miles of New Road Construction: The potential for affecting fisheries, wildlife and water quality will be reduced because of 6% fewer roads needed to manage the 9% smaller suitable timberland base. The rate of road construction in the first decade is reduced 3% from Alt.J. It will still be a 62% increase in new roads which will require strengthened monitoring to ensure that water quality and fisheries are adequately protected.

Lodgepole Pine Management: The harvest of lodgepole pine will be increased 4% over Alt. J and is similar to the Current Direction (Alt. I). This should provide for an increase of 50% over the last five years average harvest level.

The risk of potential mountain pine beetle and fire will not improve in the stagnated lodgepole pine stands because of a 54% reduction in the amount of stands converted from Alt. J. Only 32,000 acres will be converted because of the high investment costs required.

Visual Quality Protection: No change from Alt. J occurred. Specifically, this means that visual quality will be increased 6% over the Current Direction (Alt. I).

Wilderness and Roadless Quality: Roadless recreation opportunities on the Forest are unchanged from Alt. J. Specifically, this means that 23% of the Forest will be managed to provide roadless and wilderness opportunities. Wilderness is provided on three locations on the Forest and was increased in the Scotchman Peak roadless area compared to Alt. J.

Grizzly Bear Recovery: No significant change occurred from Alt. J. This means that the grizzly bear will have the least amount of risk of all the alternatives in the attempt to reach a recovered status.

Old-Growth Timber Habitat Management: In the Final Forest Plan (Alt. JF) the minimum level of old-growth timber was raised from 8% to 10% of the total Forest acreage below 5,500 feet elevation. This is a 25% increase and was done in response to the public concern received during the review period to reduce the risk of loss of this habitat component. In addition to the increased percentage (and acreage) provided, the designated old-growth timber (Management Area 13) was removed from the regulated (suitable) timber base. This will reduce pressures to harvest these areas. These changes also increased the amount of over-mature timber that will remain after decade 10.

(15) ALTERNATIVE F

Alternative F differs from the other alternatives because management is altered to maximize the production of elk habitat. This alternative has the smallest regulated timber base and the second lowest first decade timber harvest. The timber values are essentially traded off to values associated with elk habitat which contribute less in terms of dollar value and thus result in a lower PNV.

Costs and Budget: Alt. F has the fourteenth highest PNV (\$658,000,000) of all the alternatives because of the fourteenth highest discounted benefits and the twelfth highest discounted costs. The first decade appropriated budget is the second lowest of all the alternatives and 1% higher than the average for the 1980-1982 period. Net returns to the treasury are negative.

Jobs and Community Stability: The PNV is achieved with the second lowest timber harvest in the first decade. This will provide for community stability with a potential for a 4% increase in jobs over the Current Direction, and is the second smallest increase of all the alternatives.

Mineral Accessibility: The potential for exploration for minerals and oil/gas is increased from 26-30%, respectively, over the Current Direction. This is one of the lowest amount of restrictions of all the alternatives because no additional wilderness is recommended and is similar to Alts. A, L, M, and N.

Miles of New Road Construction: Fisheries, wildlife and water quality will be affected because the road system will need to increase 64% over the existing system in 1984. This is the second lowest of all the alternatives and will be needed to manage the designated suitable timberlands.

Lodgepole Pine Management: Mountain pine beetle infestations and potential fire risk will be reduced with a 12% increase in lodgepole pine timber harvest compared to the last five year average. This is the third lowest lodgepole pine harvest level of all the alternatives.

The risk of potential mountain pine beetle infestation and fire will be reduced in the stagnated lodgepole pine stands. Approximately 47% of the available stands will be converted in the next 50 years to improve wildlife habitat. This is a 36% decrease from the Current Direction and the fifth highest of all the alternatives.

Visual Quality Protection: Forest management activities, such as timber harvesting and road construction, will be less evident as visual quality protection is improved approximately 18% over the Current Direction. This is because of the emphasis on big-game habitat management and it indirectly results in the highest level of visual quality protection of all the alternatives.

Wilderness and Roadless Quality: Roadless recreation opportunities will be available on 18% of the forest (similar to Alts. A and N). This will be a 9% reduction from the Current Direction and is the fifth lowest amount available of all the alternatives. Fewer roadless recreation opportunities are provided because only roadless lands determined to be unsuitable for big game management are selected for roadless designation. No additional wilderness is recommended which is similar to Alts. A, L, M, and N.

Grizzly Bear Recovery: The risk of failing to recover the grizzly bear is increased in relation to the the Current Direction. Approximately 38% less grizzly habitat will be left in an undisturbed manner because of management to improve big-game wildlife habitat. This will produce a higher probability for human/bear encounters and result in the highest risk of all the alternatives.

Old-Growth Timber Management: 8% of all the Forest land below 5,500 feet elevation is managed to provide wildlife habitat for old-growth timber-dependent species. This is similar to all the other alternatives except the Final Plan (Alt. JF). The amount of over-mature timber remaining after decade 10 is the second largest of all the alternatives because of the small suitable timber base and low harvest levels.

(16) ALTERNATIVE I (CURRENT DIRECTION)

Alternative I is quite different from the other alternatives because it describes the land designations as included in the Unit Plans that have been developed for the forest. It represents the current way the land is being managed. The other alternatives have budgets that are determined by the activities necessary to carry them out. This alternative limits the amount of activity to budget levels which approximate the current situation. The result is activities at levels similar to what has occurred in the recent past. The timber harvest level in the first decade is the lowest of all the alternatives even though the suitable timber base is larger than several of them. Timber harvest is simply deferred because budgets aren't available to support levels which would otherwise be possible. The PNV is the lowest of all the alternatives and would rise to \$909 MM if budgets were not constraining.

Costs and Budget: Alt. I has the fifteenth highest PNV (\$460,000,000) of all the alternatives because of the fifteenth highest discounted benefits and the eleventh highest discounted costs. The first decade appropriated budget is the lowest of all the alternatives and is the average for the 1980-1982 period. Net returns to the treasury are the lowest of all the alternatives.

Jobs and Community Stability: The PNV is achieved with the lowest timber harvest in the first decade. This will provide for community stability by retaining the projected level of jobs which is 1,930 in the first decade compared to 1,670 in 1980, and is the lowest level of increased jobs of all the alternatives.

Mineral Accessibility: The potential for exploration for minerals and oil/gas is retained at the present level. This is the second lowest amount of restrictions of all the alternatives, similar to Alts. B and D.

Miles of New Road Construction: Fisheries, wildlife and water quality will be affected because the road system will need to increase 64% over the existing system in 1984. This is similar to Alt. F, is the lowest of all the alternatives and will be needed to manage the designated suitable timberlands.

Lodgepole Pine Management: Mountain pine beetle infestations and potential fire risk will be reduced with a 54% increase in lodgepole pine timber harvest compared to the last five year average. This is the fourth highest lodgepole pine harvest level of all the alternatives.

The risk of potential mountain pine beetle and fire will be reduced in the stagnated lodgepole pine stands. Approximately 73% of the available stands will be converted in the next 50 years to improve wildlife habitat and timber yields. This is the third highest level of conversion of all the alternatives.

Visual Quality Protection: Forest management activities, such as timber harvesting and road construction, will be evident at the existing level as visual quality protection is retained at its present emphasis. This is the fourth highest level of visual quality protection of all the alternatives.

Wilderness and Roadless Quality: Roadless recreation opportunities will be available on 20% of the forest. This will be the sixth highest of all the alternatives. The Wilderness recommendations are similar to the RARE II proposal and propose wilderness in two locations on the Forest (similar to Alts. B and D).

Grizzly Bear Recovery: The risk of failing to recover the grizzly bear is maintained at its present level. Approximately 53% of the grizzly habitat will be left in an undisturbed manner which will help reduce the probability for human/bear encounters. This is the second lowest risk of all the alternatives.

Old-Growth Timber Management: 8% of all the Forest land below 5,500 feet elevation is managed to provide wildlife habitat for old-growth timber- dependent species. This is similar to all the other alternatives except the Final Plan (Alt. JF). This alternative retains the most over-mature timber after decade 10 because of the continuing low harvest levels.

The following 26-page table, commonly referred to as the "Monster Matrix", contains all the outputs by alternative that are discussed in this chapter.

More detailed information on many of these items can be found in Appendix B.

TABLE II-24

Resource Outputs by Base year, Benchmark, and Alternative.

Average annual outputs. All money figures are in 1978 Dollars.

Columns might not always add due to rounding.

Alternative/Benchmark

Category	Decade	Unit of Measure	Alternative/Benchmark								MAX	MIN
			A	B	C	RPA	E	F	G	M	LVL	
			114F01	114G02	114H02	D	114J01	114AA2	114L01	114GG1	114DD1	
Developed Recreation	1	M RVD	297	297	297	297	297	297	297	297	297	297
1980 Base: 297 MRVD	3		354	354	354	354	354	354	354	354	354	0
	5		417	417	417	417	417	417	417	417	417	0
Roaded Recreation	1	M RVD	436	436	436	436	435	435	435	435	435	435
1984 Base: 436 MRVD	3		521	521	521	521	521	521	521	521	521	521
	5		614	614	614	614	614	614	614	614	614	550
	10		885	885	885	885	885	850	885	885	885	550
	15		1108	1104	1097	1152	1074	850	1053	1073	1073	550
	20		1108	1104	1097	1152	1074	850	1053	1073	1073	550
Semiprimitive	1	M RVD	65	57	51	53	44	68	27	63	63	76
Motorized Recreation	3		65	57	51	53	44	68	27	63	63	91
1984 Base: 76 MRVD	5		65	57	51	53	44	68	27	63	63	94
	10		65	57	51	53	44	68	27	63	63	94
	15		65	57	51	53	44	68	27	63	63	94
	20		65	57	51	53	44	68	27	63	63	94
Semiprimitive	1	M RVD	47	47	47	47	47	47	47	47	47	47
Nonmotorized	3		56	56	56	56	56	56	56	56	56	56
Recreation	5		66	66	66	66	66	66	66	66	66	66
1984 Base: 47 MRVD	10		95	95	95	95	95	95	95	95	95	95
	15		133	133	133	133	133	133	133	133	133	133
	20		185	185	185	185	185	185	185	185	185	185
Wilderness Recreation	1	M RVD	18	18	18	18	18	18	18	18	18	18
1984 Base: 18 MRVD	3		22	22	22	22	22	22	22	22	22	22
	5		25	25	25	25	25	25	25	25	25	25
	10		37	37	37	37	37	37	37	37	37	37
	15		51	51	51	51	51	51	51	51	51	51
	20		64	72	72	72	72	64	72	64	64	64
Elk Hunting	1	M RVD	26	26	26	26	26	26	26	26	26	27
Potential	3		70	70	70	66	70	82	70	69	69	61
1980 Base: 23 MRVD	5		107	108	108	102	107	127	108	105	105	95
	10		108	108	109	102	108	126	108	106	106	95
	15		106	107	107	102	107	127	107	105	105	95
	20		109	109	109	103	109	126	109	107	107	95

Table II-24 (cont.)

Alternative/Benchmark

2 of 26.

Category	Decade	Unit of Measure	CUR	PROP	FINAL	DEP	L	N	O	MAX	MIN	
			DIR	ACT	PLAN					PNV		
			H	I	J	JF	K			M	LVL	
			114M01	114Y12	114009	11424A	114FF5	114W01	114V01	114S07	114GG1	114DD1
Developed Recreation	1	M RVD	297	297	297	297	297	297	297	297	297	297
1984 Base: 297 MRVD	3		354	354	354	354	354	354	354	354	354	0
	5		417	417	417	417	417	417	417	417	417	0
Roaded Recreation	1	M RVD	436	436	436	436	436	436	436	436	436	436
1984 Base: 435 MRVD	3		521	521	521	521	521	521	521	521	521	521
	5		614	614	614	614	614	614	614	614	614	550
	10		885	885	885	885	885	885	885	885	885	550
	15		1084	1241	1241	1241	1241	1220	1100	1241	1073	550
	20		1084	1728	1728	1728	1728	1220	1100	1296	1073	550
Semiprimitive	1	M RVD	16	76	76	76	76	52	64	76	63	76
Motorized Recreation	3		16	91	91	91	91	52	64	91	63	91
1984 Base: 76 MRVD	5		16	103	107	107	107	52	64	91	63	94
	10		16	103	109	109	111	52	64	91	63	94
	15		16	103	109	109	111	52	64	91	63	94
	20		16	103	109	109	111	52	64	91	63	94
Semiprimitive	1	M RVD	47	47	47	47	47	47	47	47	47	47
Nonmotorized	3		56	56	56	56	56	56	56	56	56	56
Recreation	5		66	66	66	66	66	66	66	66	66	66
1984 Base: 47 MRVD	10		95	95	95	95	95	95	95	95	95	95
	15		133	133	133	133	133	133	133	133	133	133
	20		156	185	185	185	185	185	185	185	185	185
Wilderness Recreation	1		18	18	18	18	18	18	18	18	18	18
1984 Base: 18 MRVD	3		22	22	22	22	22	22	22	22	22	22
	5		25	25	25	25	25	25	25	25	25	25
	10		37	37	37	37	37	37	37	37	37	37
	15		51	51	51	51	51	51	51	51	51	51
	20		72	72	72	72	72	67	72	72	64	64
Elk Hunting	1	M RVD	26	26	26	26	26	26	26	26	26	26
Potential	3		71	60	66	66	66	70	69	71	69	61
1980 Base: 23 MRVD	5		109	92	99	99	99	108	106	109	105	95
	10		110	94	102	102	102	108	107	111	106	95
	15		108	93	101	101	101	107	106	111	105	95
	20		110	93	103	103	103	108	108	110	107	95

3 of 26

[illegible]

Table II-24 (cont.)

Category	Unit of Measure	Alternative/Benchmark										
		CUR				FINAL	DEP				MAX	MIN
		H	I	J	PLAN	K	L	N	O	PNV	LVL	
		114M01	114Y12	114009	11424A	114FF5	114W01	114V01	114S07	114GG1	114DD1	
Wilderness Management	M Acres											
Existing Cabinet Mtn Wilderness		94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	
1980 Base: 94.4 M Acres												
Recommended Wilderness												
Scotchman Peaks (662)		51.9	47.6	24.2	36.2	24.2	0	0	28.9	0	0	
Ten Lakes Contiguous (683A)		7.1	0	6.8	6.8	6.8	0	0	7.1	0	0	
Trout Creek (664)		31.4	0	0	0	0	0	0	13.1	0	0	
Cab. Face West (670)		10.9	8.2	8.0	8.0	8.0	0	0	6.7	0	0	
Cab. Face East (671)		50.4	0.4	20.4	20.4	20.4	0	0	17.9	0	0	
Government Mtn. (673)		8.6	0	0	0	0	0	0	0	0	0	
McKay (676)		13.5	6.3	6.7	6.7	6.7	0	0	5.0	0	0	
Chippewa (682)		2.3	0.4	0.4	0.4	0.4	0	0	0.4	0	0	
Rock Creek (693)		0.4	0	0	0	0	0	0	0	0	0	
Roderick (684)		24.8	0	0	0	0	0	0	0	0	0	
Galena (677)		15.5	0	0	0	0	0	0	0	0	0	
Cataract (665)		17.7	0	0	0	0	0	0	0	0	0	
Buckhorn (661)		22.0	0	0	0	0	0	0	0	0	0	
NW Peaks (663)		13.4	0	0	0	0	0	0	0	0	0	
W. Fork Elk Crk (692)		4.8	0	0	0	0	0	0	0	0	0	
Gold Hill (668)		10.7	0	0	0	0	0	0	0	0	0	
Gold Hill West (176)		10.2	0	0	0	0	0	0	0	0	0	
Berray Mtn. (672)		8.3	0	0	0	0	0	0	0	0	0	
E.Fork Elk Crk (678)		5.0	0	0	0	0	0	0	0	0	0	
Lone Cliff-Smeads (674)		6.6	0	0	0	0	0	0	0	0	0	
McNeeley (675)		7.7	0	0	0	0	0	0	0	0	0	
Flagstaff (690)		9.5	0	0	0	0	0	0	0	0	0	
Roberts Mtn. (691)		8.0	0	0	0	0	0	0	0	0	0	
Grizzly Pk (667)		6.0	0	0	0	0	0	0	0	0	0	
Zulu (166)		6.4	0	0	0	0	0	0	0	0	0	
Marston (172)		6.0	0	0	0	0	0	0	0	0	0	
Willard Lk Estelle (173)		18.5	0	0	0	0	0	0	0	0	0	
Cube-Iron (784)		1.2	0	0	0	0	0	0	0	0	0	
Thompson-Seton (483)		20.1	0	0	0	0	0	0	0	0	0	
Tuchuck (482)		2.3	0	0	0	0	0	0	2.2	0	0	
Maple Peak (141)		1.4	0	0	0	0	0	0	0	0	0	
Le Beau (507)		0.7	0	0	0	0	0	0	0	0	0	
Total Rec. Wilderness	1980 Base:0	403.7	62.9	66.5	78.5	66.5	0	0	81.3	0	0	
Total Exist./ Rec. Wild.	1980 Base:94.4	498.1	157.3	160.9	172.9	160.9	94.4	94.4	175.7	94.4	94.4	
Wilderness Study Area												
Ten Lakes (683)	1980 Base: 34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	

Table II-24 (cont.)

Table II-24 (cont.)		Alternative/Benchmark							5 of 26	
Category	Unit of Measure	RPA							MAXPNV	MIN
		A 114F01	B 114G02	C 114H02	D 114CC5	E 114J01	F 114AA2	G 114L01	M 114GG1	LVL 114DD1
Non-Motorized Recreation Management (Roadless Mgmt.)										
Scotchman Peaks (662)	M Acres	33.3	0.7	7.5	3.6	0.8	30.4	0	32.5	52.0
Ten Lakes Contiguous (683A)		0	0	0	0	0	0	0	0	0
Trout Creek (664)		15.4	15.0	6.6	9.4	2.7	12.8	1.1	12.9	30.8
Cab. Face West (670)		6.4	1.8	1.8	2.7	0.5	4.6	0	5.5	7.3
Cab. Face East (671)		35.6	34.9	22.8	33.7	0.8	36.2	0.2	34.9	46.9
Government Mtn. (673)		3.6	3.6	3.6	3.6	3.3	3.6	1.1	3.7	6.8
McKay (676)		7.5	3.1	4.2	6.8	1.7	7.0	0	7.1	11.9
Chippewa (682)		1.1	0.6	0.6	1.9	0.6	0.6	0	1.0	2.2
Rock Creek (693)		0.4	0.4	0.4	0.4	0.4	0.4	0	0.4	0.4
Roderick (684)		5.7	5.2	5.2	5.7	3.0	6.6	0	5.4	24.6
Galena (677)		8.3	8.3	8.3	8.3	1.7	8.6	0	8.3	12.3
Cataract (665)		11.8	10.6	10.6	10.7	3.6	10.1	0	11.6	16.0
Buckhorn (661)		14.5	14.6	14.3	14.1	14.7	14.9	0	14.3	18.6
NW Peaks (663)		9.5	9.5	9.5	9.5	9.5	9.5	0.4	9.5	13.2
W. Fork Elk Crk (692)		1.1	1.1	1.1	0	1.1	2.3	0	0.3	4.3
Gold Hill (668)		3.8	3.5	3.3	0.9	3.4	4.4	0	1.7	9.8
Gold Hill West (176)		3.7	3.7	3.7	0	3.7	5.4	0	3.7	9.9
Berray Mtn. (672)		0.4	0.4	0.4	0.4	0.4	1.2	0	0.4	3.0
E.Fork Elk Crk (678)		1.8	1.6	1.7	1.6	1.8	1.6	0	1.8	3.7
Lone Cliff-Smeads (674)		0.2	0.2	0.2	0.2	0.2	1.4	0.2	0.2	3.8
McNeeley (675)		1.6	1.4	1.4	0	1.4	2.1	1.4	0	5.2
Flagstaff (690)		3.4	2.9	2.8	2.7	2.8	3.5	2.8	2.7	5.2
Roberts Mtn. (691)		1.1	1.1	1.1	1.1	1.1	2.3	1.1	1.1	7.8
Grizzly Pk (667)		1.2	1.2	1.2	1.4	1.2	1.0	1.2	1.2	5.4
Zulu (166)		3.3	3.3	3.3	1.5	3.3	4.6	3.3	4.1	5.5
Marston (172)		5.1	5.1	5.1	5.1	5.1	5.7	5.1	5.1	5.7
Willard Lk Estelle (173)		10.3	10.3	10.3	10.0	10.3	9.5	9.8	10.2	16.7
Cube-Iron (784)		1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Thompson-Seton (483)		16.3	15.5	15.0	15.3	15.0	14.3	14.6	15.6	18.5
Tuchuck (482)		2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.6
Maple Peak (141)		1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Le Beau (507)		0	0	0	0	0	0	0	0	0.7
Total Inventoried Roadless Mgmt.		211.2	164.4	150.8	155.4	98.9	209.0	53.1	199.6	353.4
Other Roadless Mgmt. (Not RARE II)		60.0	63.4	59.0	63.0	63.0	64.0	48.0	61.0	25.0
Total Designated Roadless Mgmt.		271.2	227.8	209.8	218.4	161.9	273.0	101.1	260.6	378.4
Visual Quality Objectives M Acres										
Retention and Preservation		398	420	419	410	492	402	534	390	507
Partial retention		710	694	701	636	645	1063	623	702	1018
Modification		306	300	302	275	278	460	269	303	440
Maximum modification		788	788	779	882	793	278	777	808	237

Table II-24 (cont.)

Table II-24 (cont.)		6 of 26											
Category	Unit of Measure	CURDIR				PROACT	FINAL	Alternative/Benchmark				MAXPNV	MIN
		H	I	J		DEP	L	N	O	M	LVL		
		114M01	114Y12	114O09	11424A	114FF5	114W01	114V01	114S07	114GG1	114DD1		
Non-Motorized Recreation Management (Roadless Mgmt.)													
Scotchman Peaks (662)	M Acres	0	3.5	19.6	9.6	19.6	28.4	33.3	23.0	32.5	52.0		
Ten Lakes Contiguous (683A)		0	0	0	0	0	0	0	0	0	0		
Trout Creek (664)		0	22.4	22.5	22.5	22.5	6.9	15.4	18.3	12.9	30.8		
Cab. Face West (670)		0	0.2	1.4	1.4	1.4	4.5	5.7	4.2	5.5	7.3		
Cab. Face East (671)		0	34.6	27.1	27.1	27.1	28.2	35.6	32.5	34.9	46.9		
Government Mtn. (673)		0	3.6	5.6	5.6	5.6	2.8	3.6	8.6	3.7	6.8		
McKay (676)		0	1.9	1.4	1.4	1.4	6.4	7.5	8.5	7.1	11.9		
Chippewa (682)		0	0.4	0.4	0.4	0.4	0.5	0.6	1.9	1.0	2.2		
Rock Creek (693)		0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4		
Roderick (684)		0	6.6	10.7	10.7	10.7	4.7	5.5	24.8	5.4	24.6		
Galena (677)		0	10.2	10.8	10.8	10.8	8.2	8.3	15.5	8.3	12.3		
Cataract (665)		0	10.9	11.1	11.1	11.1	9.4	11.8	17.7	11.6	16.0		
Buckhorn (661)		0	15.1	18.2	18.2	18.2	11.4	14.5	22.0	14.3	18.6		
NW Peaks (663)		0	13.0	13.2	13.2	13.2	9.8	9.5	13.4	9.5	13.2		
W. Fork Elk Crk (692)		0	4.5	0.4	0.4	0.4	0	0.4	4.8	0.3	4.3		
Gold Hill (668)		0	1.0	1.8	1.8	1.8	0.5	1.7	10.7	1.7	9.8		
Gold Hill West (176)		0	1.4	0	0	0	0	3.7	10.2	3.7	9.9		
Berray Mtn. (672)		0	0	0	0	0	0	0.4	8.3	0.4	3.0		
E.Fork Elk Crk (678)		0	3.2	0.7	0.7	0.7	0	1.8	5.0	1.8	3.7		
Lone Cliff-Smeads (674)		0	0	0	0	0	0	0.2	6.6	0.2	3.8		
McNeeley (675)		0	0.5	0	0	0	0	0	7.7	0	5.2		
Flagstaff (690)		0	1.2	3.9	3.9	3.9	0	2.9	9.5	2.7	5.2		
Roberts Mtn. (691)		0	0	5.5	5.5	5.5	1.1	1.1	8.0	1.1	7.8		
Grizzly Pk (667)		0	2.3	3.1	3.1	3.1	1.0	1.2	6.0	1.2	5.4		
Zulu (166)		0	0	0.4	0.4	0.4	0.8	4.1	6.4	4.1	5.5		
Marston (172)		0	5.6	3.8	3.8	3.8	5.1	5.1	6.0	5.1	5.7		
Willard Lk Estelle (173)		0	11.5	17.1	17.1	17.1	9.3	10.2	18.5	10.2	16.7		
Cube-Iron (784)		0	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2		
Thompson-Seton (483)		0	16.0	17.8	17.8	17.8	14.8	15.8	20.1	15.6	18.5		
Tuchuck (482)		0	1.1	2.1	2.1	2.1	2.2	2.2	0.1	2.2	2.6		
Maple Peak (141)		0	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4		
Le Beau (507)		0	0.5	0.5	0.5	0.5	0	0	0.7	0	0.7		
Total Inventoried Roadless Mgmt.		0	174.2	202.1	192.1	202.1	158.6	204.8	322.4	199.6	353.4		
Other Roadless Mgmt. (Not RARE II)		54.0	76.0	122.0	122.0	122.0	62.0	60.0	42.0	61.0	25.0		
Total Designated Roadless Mgmt.		54.0	250.2	324.1	314.1	324.1	220.6	264.7	364.9	260.6	378.4		
Visual quality objectives M Acres													
Retention(including Preservation)		590	529	545	545	545	349	393	676	390	507		
Partial retention		609	711	766	766	766	627	709	706	702	1018		
Modification		263	388	412	412	412	271	307	729	303	440		
Maximum modification		747	580	486	486	486	957	791	98	808	237		

Table II-24 (cont.)

Alternative/Benchmark

7 of 26

Category	Decade	Unit of Measure	Alternative/Benchmark								MAXPNV M 114GG1	MINLVL 114DD1
			A 114FO1	B 114GO2	C 114HO2	D 114CC5	E 114JO1	F 114AA2	G 114LO1			
Wildlife Habitat Imp	1	M Acres	0.6	0.6	0.6	0.6	0.5	0.3	0.4	0.6	0.5	
1980 Base: 3.8 MAC												
Elk Forage Potential	1	M Elk	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	
1983 Base: 5.5 M Elk	3		8.4	8.5	8.5	8.0	8.4	9.9	8.5	8.3	7.4	
	5		8.3	8.4	8.4	8.0	8.4	9.9	8.4	8.2	7.4	
	10		8.4	8.4	8.4	8.0	8.4	9.8	8.4	8.3	7.4	
	15		8.3	8.3	8.4	7.9	8.3	9.9	8.4	8.1	7.4	
	20		8.5	8.5	8.5	8.0	8.5	9.8	8.5	8.3	7.4	
Managed to provide old-growth habitats		M Acres	89	89	89	193	109	151	121	89	105	
1983 Base: 93 M Acres												
Commercial Forest	1	M Acres	452	452	453	452	453	452	453	452	452	
land With trees 160	3		335	341	339	338	344	350	346	335	451	
years or older	5		402	406	405	390	416	455	423	384	728	
1980 Base: 452 MAC	10		204	203	204	186	206	344	218	191	922	
	15		413	419	429	413	459	786	503	413	1776	
	20		389	393	376	383	435	751	482	389	1740	
Fish habitat Imp	1	Acres	120	120	120	120	120	100	120	140	40	
1980 Base: 471 Ac												
Catchable Trout-Total	1	M Fish	975	985	975	974	985	995	986	975	1032	
1980 Base:	2		974	974	974	985	974	995	975	985	1049	
1016 M Fish	3		971	971	971	948	961	986	961	971	1066	
	4		961	961	961	961	962	972	962	961	1083	
	5		972	972	972	961	962	975	971	962	1101	
Migratory Trout	1	M Fish	191	192	191	190	192	194	193	191	205	
1980 Base:	2		190	190	190	192	190	194	191	192	205	
205 M Fish	3		188	188	188	183	186	193	186	188	205	
	4		186	186	186	186	187	189	187	186	205	
	5		189	189	189	186	187	191	188	187	205	
Resident Trout	1	M Fish	784	793	784	784	793	801	793	784	827	
1980 Base:	2		784	784	784	793	784	801	784	793	844	
784 M Fish	3		783	783	783	765	775	793	775	783	861	
	4		775	775	775	775	775	783	775	775	878	
	5		783	783	783	775	775	784	783	775	896	
Potential Range	1	M AUM	20	20	19	18	19	15	19	19	15	
Forage	2		22	22	22	22	22	16	21	25	8	
1980 Base: 12 MAUM	3		30	30	30	37	29	21	28	30	8	
	4		36	35	35	42	34	24	33	36	6	
	5		43	43	42	48	41	29	39	46	5	

Table II-24 (cont.)

Alternative/Benchmark

8 of 26

Category	Decade	Unit of Measure	CUR					Alternative/Benchmark					MAX	
			H	I	J	FINAL	DEP	L	N	O	MAX	MIN	PNV	LVL
			114M01	114Y12	114009	PLAN JF 11424A	114FF5	114W01	114V01	114S07	114GG1	114DD1		
Wildlife Habitat Imp	1	M Acres	0.1	3.8	5.6	5.6	5.6	0.6	0.6	0.6	0.6	0.5		
1980 Base: 3.8 M Ac														
Elk Forage Potential	1	M Elk	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5		
1983 Base: 5.5 M Elk	3		8.6	7.3	8.0	8.0	8.0	8.5	8.4	8.5	8.3	7.4		
	5		8.5	7.2	7.7	7.7	7.7	8.4	8.3	8.5	8.2	7.4		
	10		8.5	7.3	7.9	7.9	8.0	8.4	8.3	8.6	8.3	7.4		
	15		8.4	7.2	7.9	7.9	7.9	8.3	8.2	8.6	8.1	7.4		
	20		8.6	7.2	8.0	8.0	8.0	8.4	8.4	8.6	8.3	7.4		
Managed to provide old-growth habitat		M Acres	135	93	93	126	93	145	89	87	89	105		
1983 Base: 93 M Ac														
Commercial Forest	1	M Acres	453	458	458	454	458	452	452	458	452	452		
Land With trees 160	3		352	420	351	349	349	334	335	409	335	451		
years or older	5		428	582	422	407	408	392	388	444	384	728		
	10		230	537	255	311	255	168	196	232	191	922		
	15		532	860	541	544	541	267	402	509	413	1776		
	20		511	584	500	604	500	240	382	482	389	1740		
Fish Habitat Imp														
1980 Base: 471 Ac	1	Acres	150	100	120	120	120	130	130	120	140	40		
Catchable Trout-Total	1	M Fish	986	1010	985	985	972	971	972	974	975	1032		
1980 Base: 1016 M Fish	2		974	996	985	985	974	972	975	974	985	1049		
	3		948	974	972	972	972	962	971	975	971	1066		
	4		961	996	962	962	962	961	961	962	961	1083		
	5		971	985	972	972	962	961	962	971	962	1101		
Migratory Trout	1	M Fish	193	199	192	192	189	188	189	190	191	205		
1980 Base:	2		190	195	192	192	190	189	191	190	192	205		
205 M Fish	3		183	190	189	189	189	187	188	191	188	205		
	4		186	195	187	187	187	186	186	187	186	205		
	5		188	192	197	197	187	186	187	188	187	205		
Resident Trout	1	M Fish	793	811	793	793	783	783	783	784	784	827		
1980 Base:	2		784	801	793	793	784	783	784	784	793	844		
784 M Fish	3		765	784	783	783	783	775	783	784	783	861		
	4		775	801	775	775	775	775	775	775	775	878		
	5		783	793	775	775	775	775	775	783	775	896		
Potential Range Forage	1	M AUM	19	19	18	18	18	21	20	20	19	15		
1980 Base: 12 M AUM	2		20	20	21	21	23	28	23	25	25	8		
	3		27	27	29	29	31	41	30	32	30	8		
	4		32	28	33	33	33	43	37	33	36	6		
	5		37	30	38	38	38	50	45	40	46	5		

Table II-24 (cont.)

Category	Decade	Unit of Measure	Alternative/Benchmark							9 of 26	
			RPA							MAXPNV	MIN
			A 114F01	B 114G02	C 114H02	D 114CC5	E 114J01	F 114AA2	G 114L01	M 114GG1	LVL 114DD1
Allowable Sale											
Quantity (ASQ) ***	1	MMBF	254	250	253	255	245	184	240	294	0
1980 Base: 176 MMBF											
Projected Live Green	1	MMBF	226	223	225	227	218	164	213	262	80
Volume only, exclus-	3		249	247	250	285	238	190	231	274	0
ive of non-inter-	5		336	333	331	344	323	198	309	437	0
changeable volume	10		290	288	286	306	280	224	275	238	0
and Other harvest.	15		382	378	372	383	362	228	348	336	0
1980 Base: 156 MMBF	20		345	345	341	383	338	241	327	278	0
Projected Live Green	1	MMCF	56	56	56	56	54	40	52	66	20
Volume only, exclus-	3		56	56	56	66	54	40	52	61	0
ive of non-inter-	5		71	71	70	76	69	42	66	96	0
changeable volume	10		71	71	70	78	69	52	67	59	0
and Other harvest.	15		84	83	82	87	81	54	79	77	0
1980 Base: 43 MMCF	20		84	83	82	87	81	54	79	70	0
Long-Term Sustained											
Timber Yield		MMCF	84	84	83	90	82	56	80	84	0
Total Lodgepole Pine											
Timber Sale Schedule*	1	MMBF	87	88	90	84	80	70	74	117	0
1983 Base: 72 MMBF											
Reforestation	1	M Acres	14.4	14.4	14.6	14.5	13.8	11.3	13.3	17.4	0
1980 Base: 16.0 M Ac	3		19.6	19.3	19.2	21.1	18.9	11.4	18.4	20.7	0
	5		15.6	15.6	15.5	17.0	15.2	12.3	14.5	21.2	0
Commercial Thinning	1	M Acres	17.4	17.2	17.1	13.1	16.6	2.8	16.5	15.8	0
1980 Base: 0.7 M Ac	3		3.4	3.4	3.3	17.6	3.4	1.3	3.1	4.0	0
	5		5.3	5.9	5.5	8.1	5.3	4.4	6.3	7.9	0
Pre-Commercial	1	M Acres	1.8	1.9	1.8	0.2	1.8	1.4	1.8	2.1	0
Thinning	3		9.9	10.4	10.4	11.2	9.0	3.5	8.1	13.3	0
1980 Base: 5.0 M Ac	5		8.9	8.9	8.7	11.9	10.1	4.4	10.3	9.7	0
Land Suitable for											
Timber Harvest		M Acres	1470	1464	1466	1595	1425	1132	1386	1484	169
1980 Base: 1422 M Ac											
Stagnated Lodgepole pine		M Acres	2	2	1	45	1	44	1	1	0
converted by 5th decade											
Other Timber Harvest											
where permissible on	1	MMBF	7	7	7	7	6	5	6	8	0
non-suited lands**											

* = Included within the ASQ and includes the non-interchangeable component.

** = In addition to the ASQ. This volume plus the ASQ constitutes the Total Planned Timber Sale Offering or Program.

*** = Includes the non-interchangeable volume on suitable lands, and excludes Other Timber Harvest volumes.

Table II-24 (cont.)

Table II-24 (cont.)			Alternative/Benchmark								10 of 26		
Category	Decade	Unit of Measure	CUR DIR			PROP ACT	FINAL PLAN					MAX PNV	MIN
			H 114M01	I 114Y12	J 114O09	JF 11424A	DEP K 114FF5	L 114W01	N 114V01	O 114S07	M 114GG1	LVL 114DD1	
Allowable Sale													
Quantity (ASQ) ***	1	MMBF	234	168	227	227	258	286	278	242	294	0	
1980 Base: 176 MMBF													
Projected Live Green	1	MMBF	208	150	202	202	230	255	247	215	262	80	
Volume only, exclus-	3		223	157	224	227	216	264	283	263	274	0	
ive of non-inter-	5		294	162	277	234	271	345	329	320	437	0	
changeable volume	10		290	194	239	190	237	341	282	321	238	0	
and Other harvest.	15		337	172	328	283	326	427	381	378	336	0	
1980 Base: 156 MMBF	20		318	215	309	291	312	455	339	353	278	0	
Projected Live Green	1	MMCF	50	36	51	49	57	59	62	55	66	20	
Volume only, exclus-	3		50	36	51	49	48	59	63	55	61	0	
ive of non-inter-	5		64	36	59	49	57	74	69	69	96	0	
changeable volume	10		70	39	59	49	57	87	69	69	59	0	
and Other harvest.	15		76	41	71	63	71	98	84	82	77	0	
1980 Base: 43 MMCF	20		76	41	71	63	71	102	84	82	70	0	
Long-Term Sustained													
Timber Yield		MMCF	78	74	72	63	72	102	84	83	84	0	
Total Lodgepole Pine													
Timber Sale Schedule*	1	MMBF	64	97	94	98	99	53	107	94	117	0	
1983 Base: 72 MMBF													
Reforestation	1	M Acres	12.5	9.9	12.2	14.1	14.1	21.1	16.0	10.6	17.4	0	
1980 Base: 16.0 M Ac	3		17.5	12.0	16.0	16.4	14.2	17.7	21.4	9.0	20.7	0	
	5		14.1	14.9	18.0	12.9	17.6	17.0	15.1	10.7	21.2	0	
Commercial Thinning	1	M Acres	16.0	15.2	12.6	0	12.9	15.5	18.6	19.8	15.8	0	
1980 Base: 0.7 M Ac	3		3.0	8.1	7.8	0	7.7	12.9	3.8	3.9	4.0	0	
	5		5.0	3.3	4.8	0	4.8	4.6	5.0	6.8	7.9	0	
Pre-Commercial	1	M Acres	1.7	2.3	1.8	1.7	1.8	2.7	1.9	2.7	2.1	0	
Thinning	3		7.8	3.7	9.9	8.5	11.1	15.4	9.5	11.1	13.3	0	
1980 Base: 5.0 M Ac	5		9.8	7.0	4.7	5.5	4.6	10.0	9.5	10.5	9.7	0	
Land Suitable For													
Timber Harvest		M Acres	1361	1422	1386	1263	1386	1788	1481	1389	1484	169	
1980 Base: 1422 M AC													
Stagnated Lodgepole Pine		M Acres	1	69	70	32	70	93	1	5	1	0	
Converted By 5th Decade													
Other Timber Harvest													
where permissible on	1	MMBF	6	5	6	6	7	8	7	6	8	0	
non-suited lands**													

* = Included within the ASQ and includes the non-interchangeable component.

** = In addition to the ASQ. This volume plus the ASQ constitutes the Total Planned Timber Sale Offering or Program.

*** = Includes the non-interchangeable volume on suitable lands, and excludes Other Timber Harvest volumes.

Table II-24 (cont.)

Alternative/Benchmark

11 of 26

Category	Decade	Unit of Measure	Alternative/Benchmark								MAX PNV M	MIN LVL 114DD1
			A 114F01	B 114G02	C 114H02	RPA D 114CC5	E 114J01	F 114AA2	G 114L01	114GG1		
Minerals Management												
Locatable Minerals	1	Cases	100	100	100	100	100	100	100	100	100	100
1984 Base: 85 Cases												
Common Variety	1	Cases	35	35	35	35	35	35	35	35	35	15
1984 Base: 25 Cases												
Oil and Gas	1	Cases	350	350	350	350	350	350	350	350	350	350
1984 Base: 200 Cases												
Locatable Minerals Potential**												
Category A		M Acres										
Low			169	216	231	216	288	169	397	169	-	
Moderate			9	21	26	21	54	9	50	9	-	
High			1	4	2	4	20	1	28	1	-	
Very high			6	8	6	8	9	6	9	6	-	
Total			185	249	265	249	371	185	484	185	-	
Category B		M Acres										
Low			546	495	470	372	456	884	398	532	-	
Moderate			35	26	29	24	0	29	0	35	-	
High			20	17	22	13	6	23	0	15	-	
Very high			4	4	3	3	3	3	3	5	-	
Total			605	542	524	412	465	940	401	587	-	
Category C		M Acres										
Low			787	785	794	812	736	1018	698	778	-	
Moderate			16	17	13	12	12	31	17	22	-	
High			25	23	24	25	21	27	18	28	-	
Very high			8	6	8	6	7	10	7	7	-	
Total			836	831	839	861	776	1086	740	835	-	
Category D		M Acres										
Low			604	611	614	708	626	35	613	628	-	
Moderate			10	3	1	6	2	1	2	4	-	
High			5	5	2	9	3	0	4	6	-	
Very high			1	5	1	1	2	0	1	1	-	
Total			620	624	618	724	633	36	620	639	-	

** Category A: Areas that are withdrawn or proposed for withdrawal from mineral entry.

Category B: Administrative or environmental conditions severely limit operability for exploration.

Category C: Environmental conditions require some special lease stipulations or plan of operation conditions to mitigate, such as timing of operations, etc.

Category D: Areas where standard lease stipulations and plan of operation conditions apply.

Table II-24 (cont.)

Category	Decade	Unit of Measure	Alternative/Benchmark										12 of 26	
			CUR	PROP	FINAL	DEP	L	N	O	MAX	MIN			
			DIR	ACT	PLAN									
			H	I	J	JF	K				M	LVL		
			114M01	114Y12	114O09	11424A	114FF5	114W01	114V01	114S07	114GG1	114DD1		
Minerals Management														
Locatable Minerals	1	Cases	100	100	100	100	100	100	100	100	100	100		
1984 Base: 85 Cases														
Common Variety	1	Cases	35	35	35	35	35	35	35	35	35	15		
1984 Base: 25 Cases														
Oil and Gas			350	350	350	350	350	350	350	350	350	350		
1984 Base: 200 Cases														
Locatable Minerals Potential**														
Category A		M Acres												
Low			496	215	217	228	217	169	169	231	169	-		
Moderate			57	21	26	27	26	9	9	26	9	-		
High			17	4	2	2	2	1	1	2	1	-		
Very high			9	8	7	7	7	6	6	6	6	-		
Total			579	248	252	264	252	185	185	265	185	-		
Category B		M Acres												
Low			323	400	456	456	456	267	543	452	532	-		
Moderate			0	32	28	28	28	15	37	28	35	-		
High			5	18	24	24	24	16	17	24	15	-		
Very high			3	2	5	5	5	2	5	4	5	-		
Total			331	452	513	513	513	300	602	508	587	-		
Category C		M Acres												
Low			702	828	989	989	989	905	789	618	778	-		
Moderate			8	13	36	36	36	35	20	11	22	-		
High			25	18	20	20	20	21	29	15	28	-		
Very high			7	9	7	7	7	11	8	8	7	-		
Total			742	868	1052	1052	1052	972	846	652	835	-		
Category D		M Acres												
Low			585	664	422	422	422	764	605	787	628	-		
Moderate			5	4	2	2	2	11	3	4	4	-		
High			3	9	5	5	5	13	4	10	6	-		
Very high			1	1	1	1	1	1	1	20	1	-		
Total			594	678	430	430	430	789	613	821	639	-		

- ** Category A: Areas that are withdrawn or proposed for withdrawal from mineral entry.
 Category B: Administrative or environmental conditions severely limit operability for exploration.
 Category C: Environmental conditions require some special lease stipulations or plan of operation conditions to mitigate, such as timing of operations, etc.
 Category D: Areas where standard lease stipulations and plan of operation conditions apply.

Table II-24 (cont.)

Alternative/Benchmark

13 of 26

Category	Unit of Measure	Alternative/Benchmark							MAX	MIN
		A	B	C	RPA	E	F	G	PNV	LVL
		114F01	114G02	114H02	114CC5	114J01	114AA2	114L01	114GG1	114DD1
Leasable Minerals Potential**										
Category A	M Acres									
Low		0	0	0	0	0	0	0	0	-
Moderate		148	212	228	212	335	148	453	148	-
High		0	0	0	0	0	0	0	0	-
Very high		0	0	0	0	0	0	0	0	-
Total		148	212	228	212	335	148	453	148	-
Category B	M Acres									
Low		0	0	0	0	0	0	0	0	-
Moderate		626	569	550	437	485	964	409	612	-
High		0	0	0	0	0	0	0	0	-
Very high		0	0	0	0	0	0	0	0	-
Total		626	569	550	437	485	964	409	612	-
Category C	M Acres									
Low		0	0	0	0	0	0	0	0	-
Moderate		859	849	861	872	792	1114	761	852	-
High		0	0	0	0	0	0	0	0	-
Very high		0	0	0	0	0	0	0	0	-
Total		859	849	861	872	792	1114	761	852	-
Category D	M Acres									
Low		0	0	0	0	0	0	0	0	-
Moderate		618	616	607	725	634	22	623	634	-
High		0	0	0	0	0	0	0	0	-
Very high		0	0	0	0	0	0	0	0	-
Total		618	616	607	725	634	22	623	634	-

** Category A: Areas that are withdrawn or proposed for withdrawal from mineral entry.

Category B: Administrative or environmental conditions severely limit operability for exploration.

Category C: Environmental conditions require some special lease stipulations or plan of operation conditions to mitigate, such as timing of operations, etc.

Category D: Areas where standard lease stipulations and plan of operation conditions apply.

Table II-24 (cont.)

Table II-24 (cont.)			Alternative/Benchmark								14 of 26	
Category	Decade	Unit of Measure	CUR	PROP	FINAL					MAX	MIN	
			DIR	ACT	PLAN	DEP	L	N	O	PNV	LVL	
			I	J	JF	K	W	V	S	M	D	
			H	114Y12	114O09	11424A	114FF5	114W01	114V01	114S07	114GG1	114DD1
Leasable Minerals Potential**												
Category A		M Acres										
Low			0	0	0	0	0	0	0	0	0	-
Moderate			540	212	215	227	215	148	148	228	148	-
High			0	0	0	0	0	0	0	0	0	-
Very high			0	0	0	0	0	0	0	0	0	-
Total			540	212	215	227	215	148	148	228	148	-
Category B		M Acres										
Low			0	0	0	0	0	0	0	0	0	-
Moderate			353	452	515	515	515	309	616	522	612	-
High			0	0	0	0	0	0	0	0	0	-
Very high			0	0	0	0	0	0	0	0	0	-
Total			353	452	515	515	515	309	616	522	612	-
Category C		M Acres										
Low			0	0	0	0	0	0	0	0	0	-
Moderate			757	915	1094	1094	1094	988	867	682	852	-
High			0	0	0	0	0	0	0	0	0	-
Very high			0	0	0	0	0	0	0	0	0	-
Total			757	915	1094	1094	1094	988	867	682	852	-
Category D		M Acres										
Low			0	0	0	0	0	0	0	0	0	-
Moderate			596	667	422	422	422	801	615	814	634	-
High			0	0	0	0	0	0	0	0	0	-
Very high			0	0	0	0	0	0	0	0	0	-
Total			596	667	422	422	422	801	615	814	634	-

- ** Category A: Areas that are withdrawn or proposed for withdrawal from mineral entry.
 Category B: Administrative or environmental conditions severely limit operability for exploration.
 Category C: Environmental conditions require some special lease stipulations or plan of operation conditions to mitigate, such as timing of operations, etc.
 Category D: Areas where standard lease stipulations and plan of operation conditions apply.

Table II-24 (cont.)

Alternative/Benchmark

15 of 26

Category	Decade	Unit of Measure	Alternative/Benchmark							MAX PNV M	MIN LVL 114DD1
			A 114F01	B 114G02	C 114H02	RPA D 114CC5	E 114J01	F 114AA2	G 114L01		
Total Roads For Management		Miles	11272	11203	11153	11687	10951	9847	10748	11228	6000
1984 Base: 6000 Miles											
Roads With Restricted Use		Miles	5112	5109	5124	4773	4881	4965	4786	5100	451
1984 Base: 1600 Miles											
Road Construction	1	Miles	269	266	268	267	263	202	251	315	1
(Total)	3		123	125	112	166	111	103	109	104	1
1980 Base: 224 Miles	5		0	0	0	0	0	0	0	0	2
	10		0	0	0	0	0	0	0	0	7
	15		0	0	0	0	0	0	0	0	5
	20		0	0	0	0	0	0	0	0	1
Road Construction	1	Miles	6	6	6	6	6	4	6	7	0
(Collectors)	3		6	6	6	7	6	4	6	6	0
1980 Base: 6 Miles	5		0	0	0	0	0	0	0	0	1
	10		0	0	0	0	0	0	0	0	3
	15		0	0	0	0	0	0	0	0	0
	20		0	0	0	0	0	0	0	0	0
Road Construction	1	Miles	263	260	261	261	257	198	245	308	1
(Locals)	3		116	119	106	159	105	98	103	98	0
1980 Base: 218 Miles	5		0	0	0	0	0	0	0	0	1
	10		0	0	0	0	0	0	0	0	4
	15		0	0	0	0	0	0	0	0	5
	20		0	0	0	0	0	0	0	0	18
Road Reconstruction	1	Miles	62	62	62	66	57	38	62	69	1
(Total)	3		42	43	42	75	40	34	42	46	0
1980 Base: 361 Miles	5		66	72	70	81	64	45	67	97	1
	10		92	98	97	110	88	125	100	97	5
	15		68	67	66	79	74	117	74	72	5
	20		67	65	65	58	64	97	64	61	5
Road Reconstruction	1	Miles	9	8	9	8	8	6	8	10	0
(Arterials &	3		9	8	9	10	8	6	8	9	0
Collectors)	5		11	11	11	12	10	6	10	15	1
1980 Base: 34 Miles	10		11	11	11	12	10	8	10	9	4
	15		13	13	12	13	12	8	12	12	4
	20		13	13	12	13	12	8	12	11	4
Road Reconstruction	1	Miles	54	53	54	57	49	32	54	59	1
(Locals)	3		33	35	34	65	32	28	34	37	0
1980 Base: 327 Miles	5		55	61	60	69	54	38	57	82	0
	10		81	87	86	98	77	117	90	88	1
	15		55	54	54	65	62	109	62	60	1
	20		54	53	53	45	52	89	52	50	2

Table II-24 (cont.)

Alternative/Benchmark

16 of 26

Category	Decade	Unit of Measure	CUR			PROP ACT	FINAL PLAN	Alternative/Benchmark				MAX		
			H	I	J			DEP	L	N	O	PNV	MIN	
			114M01	114Y12	114009	11424A	114FF5	114W01	114V01	114S07	114GG1	114DD1		
Total Roads For Management		Miles	10591	9837	10692	10050	10725	12363	11267	10685	11228	6000		
1984 Base: 6000 Miles														
Roads With Restricted Use		Miles	4731	4590	6081	5730	6084	5689	5134	4300	5100	451		
1984 base: 1600 Miles														
Road Construction	1	Miles	248	185	244	237	276	310	290	256	315	1		
(Total)	3		111	138	97	37	60	187	109	92	104	0		
1980 Base: 224 Miles	5		0	3	0	0	0	0	0	0	0	2		
	10		0	0	0	0	0	0	0	0	0	7		
	15		0	0	0	0	0	0	0	0	0	5		
	20		0	0	0	0	0	0	0	0	0	2		
Road Construction	1	Miles	6	4	6	6	6	7	7	6	7	0		
(Collectors)	3		6	4	6	6	5	6	6	6	6	0		
1980 Base: 6 Miles	5		0	3	0	0	0	0	0	0	0	1		
	10		0	0	0	0	0	0	0	0	0	3		
	15		0	0	0	0	0	0	0	0	0	0		
	20		0	0	0	0	0	0	0	0	0	0		
Road Construction	1	Miles	242	181	238	232	270	303	283	250	308	1		
(Locals)	3		105	133	91	31	55	181	102	86	98	0		
1980 Base: 218 Miles	5		0	0	0	0	0	0	0	0	0	1		
	10		0	0	0	0	0	0	0	0	0	4		
	15		0	0	0	0	0	0	0	0	0	5		
	20		0	0	0	0	0	0	0	0	0	1		
Road Reconstruction	1	Miles	57	30	53	54	60	62	72	60	69	1		
(Total)	3		40	29	49	48	45	103	47	34	46	0		
1980 Base: 361 Miles	5		59	32	68	60	67	62	61	68	97	1		
	10		93	35	108	126	95	120	102	89	97	5		
	15		73	51	71	76	73	85	71	73	72	5		
	20		58	21	61	63	51	84	71	62	61	6		
Road Reconstruction	1	Miles	8	6	8	7	9	9	9	8	10	0		
(Arterials &	3		8	6	8	7	7	9	10	8	9	0		
Collectors)	5		10	6	9	7	9	11	10	11	15	1		
1980 Base: 34 Miles	10		11	6	9	7	9	13	10	11	9	4		
	15		12	6	11	9	11	15	13	12	12	4		
	20		12	6	11	9	11	15	13	12	11	4		
Road Reconstruction	1	Miles	50	24	45	46	51	54	62	51	59	1		
(Locals)	3		32	24	42	41	38	94	37	26	37	0		
1980 Base: 327 Miles	5		49	26	59	53	58	51	51	57	82	0		
	10		82	29	100	119	85	107	91	78	88	1		
	15		61	45	60	67	62	70	59	61	60	1		
	20		47	14	50	53	40	68	59	50	50	2		

Table II-24 (cont.)

Alternative/Benchmark

17 of 26

Category	Decade	Unit of Measure	Alternative/Benchmark								MAX PNV M	MIN LVL
			A 114F01	B 114G02	C 114H02	RPA D 114CC5	E 114J01	F 114AA2	G 114L01	114GG1	114DD1	
Local Forest-Related	1	Jobs	2457	2436	2447	2457	2391	2006	2343	2706	1256	
Pvt Sector Employment	2		2666	2685	2703	2727	2616	2273	2559	2498	797	
1980 Base: 1666												
Local Forest-Related	1	MM\$	43.20	42.77	43.02	43.21	41.92	34.08	41.04	48.29	20.02	
Pvt. Sector Income	2		46.93	47.01	47.40	47.75	45.68	38.60	44.59	43.28	9.95	
1980 Base: 23.45 MM\$												
Forest Service	1	MM\$	27.18	26.97	27.12	26.94	26.35	20.70	25.67	30.35	5.60	
Costs (Total)	3		21.86	21.82	21.38	26.90	20.91	16.76	20.30	22.23	5.45	
1980 Base: 17.93 MM\$	5		18.04	18.18	18.02	19.57	17.78	15.05	17.58	22.10	5.72	
	10		18.86	18.97	18.87	20.35	18.46	15.95	18.52	17.64	6.57	
	15		18.94	18.61	18.54	20.23	18.94	16.28	18.67	18.84	6.52	
	20		18.22	18.12	18.00	18.24	17.91	15.12	17.66	16.67	6.24	
Forest Service	1	MM\$	1.57	1.66	1.66	1.66	1.65	1.66	1.63	1.65	1.44	
Costs (Recreation	3		2.24	2.27	2.27	2.24	2.26	2.28	2.22	2.22	1.79	
and Wildlife)	5		2.78	2.85	2.85	2.80	2.84	2.70	2.73	2.76	2.14	
1980 Base: 0.53 MM\$	10		3.01	3.07	3.07	3.03	3.06	2.87	2.83	2.95	2.31	
	15		3.18	3.14	3.09	3.06	3.06	3.08	2.84	3.10	2.53	
	20		3.20	3.16	3.11	3.08	3.10	3.08	2.98	3.11	2.82	
Forest Service	1	MM\$	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.04	
Costs (Range)	3		0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0	
1980 Base: 0.08 MM\$	5		0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0	
	10		0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0	
	15		0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0	
	20		0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0	
Forest Service	1	MM\$	9.05	9.01	9.07	8.73	8.70	5.78	8.44	10.28	0.05	
Costs (Timber)	3		9.67	9.62	9.58	12.11	9.26	5.77	8.93	10.59	0.04	
1980 Base: 6.69 MM\$	5		9.86	9.87	9.77	10.94	9.67	7.61	9.42	13.15	0.15	
	10		10.08	10.06	10.01	11.05	9.80	6.46	9.61	8.80	0.61	
	15		10.37	10.37	10.32	11.61	10.54	6.98	10.33	10.51	0.67	
	20		9.96	9.91	9.80	10.09	9.74	6.61	9.55	8.60	0.53	

Table II-24 (cont.)

Table II-24 (cont.)			Alternative/Benchmark								18 of 26	
Category	Decade	Unit of Measure	CUR	PROP	FINAL						MAX	
			DIR	ACT	PLAN	DEP	L	N	O	PNV	MIN	
			H	I	J	JF	K	L	N	O	M	LVL
			114M01	114Y12	114009	11424A	114FF5	114W01	114V01	114S07	114GG1	114DD1
Local Forest-Related	1	Jobs	2237	1931	2299	2299	2492	2727	2608	2401	2706	1256
Pvt Sector Employment	2		2399	2047	2584	2550	2644	2680	2619	2706	2498	797
1980 Base: 1666 Jobs												
Local Forest Related	1	Jobs	39.98	32.44	39.91	39.91	43.83	48.53	46.23	41.94	48.29	20.02
Pvt Sector Income	2		42.04	33.91	44.82	44.24	46.06	46.90	45.64	47.25	43.28	9.95
1980 Base: 23.45 MM\$												
Forest Service	1	MM\$	25.09	19.62	25.20	24.00	27.52	34.18	29.13	26.90	30.35	5.60
Costs (Total)	3		20.09	19.00	20.60	17.64	18.55	27.33	22.39	21.20	22.23	5.45
1980 Base: 17.93 MM\$	5		16.93	17.95	20.10	14.75	19.86	19.06	17.88	19.05	22.10	5.72
	10		18.55	13.42	17.47	18.77	16.80	21.37	18.91	18.89	17.64	6.57
	15		18.40	13.79	17.50	15.88	17.62	21.77	19.20	20.68	18.84	6.52
	20		17.15	12.38	17.67	15.31	17.28	22.48	18.50	19.34	16.67	6.24
Forest Service	1	MM\$	1.52	1.68	1.68	1.69	1.68	1.65	1.67	1.68	1.65	1.44
Costs (Recreation	3		2.08	2.22	2.27	2.27	2.27	2.23	2.28	2.31	2.22	1.79
and Wildlife)	5		2.79	2.77	2.83	2.84	2.82	2.77	2.80	2.90	2.76	2.14
1980 Base: 0.53 MM\$	10		2.68	3.48	3.56	3.55	3.55	3.12	3.05	3.36	2.95	2.31
	15		2.80	4.30	4.46	4.46	4.46	3.15	3.21	3.58	3.10	2.53
	20		2.94	5.25	5.49	5.42	5.50	3.16	3.23	3.83	3.11	2.82
Forest Service	1	MM\$	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.04
Costs (Range)	3		0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0
1980 Base: 0.08 MM\$	5		0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0
	10		0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0
	15		0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0
	20		0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0
Forest Service	1	MM\$	8.09	6.54	8.34	7.44	9.27	14.06	9.96	9.53	10.28	0.05
Costs (Timber)	3		8.55	6.55	9.19	8.52	8.61	10.95	10.58	10.39	10.59	0.04
1980 Base: 6.69 MM\$	5		8.99	10.42	11.85	6.77	11.63	10.73	9.63	10.89	13.15	0.15
	10		9.85	5.95	8.31	9.38	7.95	11.66	9.93	10.27	8.80	0.61
	15		10.10	5.94	9.13	7.52	9.20	12.84	10.55	12.35	10.51	0.67
	20		9.19	5.19	9.51	7.24	9.35	13.57	10.15	11.23	8.60	0.53

Table II-24 (cont.)

Alternative/Benchmark

19 of 26

Category	Decade	Unit of Measure	Alternative/Benchmark							MAX	MIN
			A	B	C	RPA	E	F	G	PNV	LVL
			114FO1	114GO2	114HO2	114CC5	114JO1	114AA2	114LO1	114GG1	114DD1
Forest Service	1	MM\$	4.82	4.72	4.72	4.80	4.71	4.47	4.69	4.74	4.01
Costs (Other)	3		4.11	3.98	4.07	4.30	4.06	3.81	3.86	4.13	3.59
1980 Base: 3.56 MM\$	5		3.58	3.52	3.50	3.64	3.49	3.43	3.60	3.60	3.32
	10		3.37	3.30	3.29	3.41	3.28	3.27	3.48	3.47	3.15
	15		3.50	3.23	3.28	3.39	3.29	3.05	3.46	3.27	2.94
	20		3.19	3.21	3.26	3.37	3.25	3.05	3.33	3.26	2.65
Forest Service	1	MM\$	11.66	11.50	11.59	11.67	11.21	8.71	10.83	13.60	0.06
Costs (Roads-Total)	3		5.76	5.87	5.38	8.17	5.25	4.82	5.21	5.21	0.03
1980 Base: 7.07 MM\$	5		1.74	1.86	1.82	2.11	1.70	1.23	1.75	2.51	0.11
	10		2.32	2.46	2.42	2.78	2.24	3.27	2.52	2.39	0.50
	15		1.81	1.79	1.77	2.09	1.97	3.09	1.96	1.88	0.38
	20		1.79	1.76	1.75	1.62	1.74	2.30	1.72	1.62	0.24
Purchaser Credit	1	MM\$	5.43	5.36	5.40	5.45	5.24	3.94	5.12	6.28	0.03
Road Costs (Total)	3		4.19	4.29	3.87	6.08	3.79	3.60	3.76	3.69	0.01
1980 Base: 2.66 MM\$	5		0.93	1.03	0.99	1.19	0.92	0.65	0.97	1.38	0.04
	10		1.37	1.47	1.44	1.68	1.32	1.84	1.54	1.48	0.13
	15		0.92	0.91	0.90	1.12	1.06	1.72	1.07	1.01	0.17
	20		0.91	0.89	0.88	0.77	0.89	1.41	0.89	0.85	0.05
Purchaser Credit	1	MM\$	5.43	5.36	5.40	5.45	5.24	3.94	5.12	6.28	0.03
Road Costs	3		3.63	3.71	3.30	4.98	3.24	3.16	3.17	3.07	0.01
(Construction)	5		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
	10		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12
	15		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15
	20		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
Purchaser Credit	1	MM\$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Road Costs	3		0.56	0.58	0.56	1.11	0.55	0.00	0.59	0.62	0.00
(Reconstruction)	5		0.93	1.03	0.99	1.19	0.92	0.44	0.97	1.38	0.00
	10		1.37	1.47	1.44	1.68	1.32	1.84	1.54	1.48	0.01
	15		0.92	0.91	0.90	1.12	1.06	1.72	1.07	1.01	0.02
	20		0.91	0.89	0.88	0.77	0.89	1.41	0.89	0.85	0.02

Table II-24 (cont.)

Table II-24 (cont.)			Alternative/Benchmark								20 of 26	
Category	Decade	Unit of Measure	CUR	PROP	FINAL						MAX	MIN
			DIR	ACT	PLAN	DEP	L	N	O	PNV	LVL	
			H	I	J	JF	K				M	
			114M01	114Y12	114009	11424A	114FF5	114W01	114V01	114S07	114GG1	114DD1
Forest Service	1	MM\$	4.78	4.84	4.80	4.74	4.81	4.95	4.73	4.73	4.74	4.01
Costs (Other)	3		4.18	4.27	4.18	4.16	4.18	4.35	4.08	4.07	4.13	3.59
1980 Base: 3.56 MM\$	5		3.50	3.73	3.64	3.60	3.65	3.81	3.77	3.50	3.60	3.32
	10		3.58	3.03	2.92	2.89	2.92	3.47	3.34	3.05	3.47	3.15
	15		3.49	2.22	2.02	1.97	2.02	3.43	3.48	2.83	3.27	2.94
	20		3.35	1.27	1.29	1.01	0.97	3.42	3.16	2.58	3.26	2.65
Forest Service	1	MM\$	10.62	6.48	10.30	10.05	11.68	13.44	12.69	10.88	13.60	0.06
Costs (Roads)	3		5.20	5.88	4.88	2.61	3.41	9.72	5.37	4.35	5.21	0.03
1980 Base: 7.07 MM\$	5		1.57	0.95	1.70	1.46	1.68	1.67	1.60	1.68	2.51	0.11
	10		2.36	0.88	2.60	2.87	2.30	3.04	2.51	2.13	2.39	0.50
	15		1.93	1.25	1.81	1.85	1.86	2.27	1.88	1.84	1.88	0.38
	20		1.59	0.59	1.30	1.56	1.38	2.25	1.88	1.62	1.62	0.24
Purchaser Credit	1	MM\$	5.00	2.98	4.86	4.77	5.51	6.11	5.92	5.16	6.28	0.03
Road Costs	3		3.78	3.77	3.48	1.58	2.29	7.42	3.82	3.02	3.69	0.01
(Total)	5		0.85	0.41	0.96	0.82	0.96	0.87	0.84	0.88	1.38	0.04
1980 Base: 2.66 MM\$	10		1.41	0.45	1.63	1.85	1.41	1.83	1.51	1.20	1.48	0.13
	15		1.05	0.71	0.98	1.03	1.02	1.20	0.97	0.94	1.01	0.17
	20		0.80	0.23	0.82	0.82	0.66	1.16	0.97	0.77	0.85	0.05
Purchaser Credit	1	MM\$	5.00	2.98	4.86	4.77	5.51	6.11	5.92	5.16	6.28	0.03
Road Costs	3		3.23	3.77	2.80	0.95	1.67	5.82	3.21	2.62	3.07	0.01
(Construction)	5		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
	10		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12
	15		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15
	20		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
Purchaser Credit	1	MM\$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Road Costs	3		0.55	0.00	0.68	0.63	0.62	1.60	0.61	0.40	0.62	0.00
(Reconstruction)	5		0.85	0.41	0.96	0.82	0.96	0.87	0.84	0.88	1.38	0.00
	10		1.41	0.45	1.63	1.85	1.41	1.83	1.51	1.20	1.48	0.01
	15		1.05	0.71	0.98	1.03	1.02	1.20	0.97	0.94	1.01	0.02
	20		0.80	0.23	0.82	0.82	0.66	1.16	0.97	0.77	0.85	0.02

Table II-24 (cont.)

Alternative/Benchmark

21 of 26

Category	Decade	Unit of Measure	Alternative/Benchmark								MAX	MIN
			A	B	C	RPA	E	F	G	M	PNV	LVL
			114FO1	114GO2	114HO2	114CC5	114JO1	114AA2	114LO1	114GG1		114DD1
Capital Investment	1	MM\$	4.29	4.23	4.27	4.28	4.11	3.37	3.88	5.08		0.02
Road Costs	3		0.61	0.60	0.61	0.68	0.58	0.43	0.56	0.64		0.02
(Total)	5		0.42	0.42	0.41	0.45	0.40	0.30	0.39	0.56		0.05
1980 Base: 4.41 MM\$	10		0.42	0.42	0.41	0.46	0.40	0.30	0.39	0.35		0.30
	15		0.49	0.49	0.48	0.51	0.48	0.32	0.46	0.45		0.16
	20		0.49	0.49	0.48	0.51	0.48	0.32	0.46	0.41		0.16
Capital Investment	1	MM\$	3.05	3.01	3.05	2.97	2.96	2.63	2.66	3.71		0.01
Road Costs	3		0.28	0.28	0.28	0.30	1.27	0.20	0.26	0.28		0.01
(Construction)	5		0.00	0.02	0.00	0.00	0.00	0.05	0.00	0.00		0.02
	10		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.14
	15		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
	20		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Capital Investment	1	MM\$	1.24	1.22	1.22	1.31	1.15	0.74	1.28	1.37		0.01
Road Costs	3		0.33	0.33	0.33	0.38	0.31	0.23	0.31	0.36		0.01
(Reconstruction)	5		0.42	0.42	0.41	0.45	0.40	0.24	0.39	0.56		0.03
	10		0.42	0.42	0.41	0.46	0.40	0.30	0.39	0.35		0.16
	15		0.49	0.49	0.48	0.51	0.48	0.32	0.46	0.45		0.16
	20		0.49	0.49	0.48	0.51	0.48	0.32	0.46	0.41		0.16

Table II-24 (cont.)

Alternative/Benchmark

22 of 26

Category	Decade	Unit of Measure	Alternative/Benchmark									
			CUR	PROP	FINAL	DEP	L	N	O	MAX	MIN	
			DIR	ACT	PLAN					PNV		
			H	I	J	JF	K			M	LVL	
			114M01	114Y12	114009	11424A	114FF5	114W01	114V01	114S07	114GG1	114DD1
Capital Investment	1	MM\$	3.84	2.43	3.71	3.58	4.21	5.16	4.65	3.88	5.08	0.02
Road Costs	3		0.54	1.14	0.54	0.53	0.52	0.61	0.65	0.60	0.64	0.02
(Total)	5		0.37	0.33	0.34	0.29	0.34	0.44	1.40	0.41	0.56	0.05
1980 Base: 4.41 MM\$	10		0.41	0.23	0.34	0.29	0.34	0.51	0.40	0.41	0.35	0.30
	15		0.45	0.24	0.42	0.37	0.42	0.57	0.49	0.48	0.45	0.16
	20		0.45	0.24	0.42	0.37	0.42	0.60	0.49	0.48	0.41	0.16
Capital Investment	1	MM\$	2.69	1.83	2.68	2.58	3.03	3.90	3.26	2.76	3.71	0.01
Road Costs	3		0.24	0.55	0.24	0.24	0.24	0.26	0.28	0.28	0.28	0.01
(Construction)	5		0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
	10		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14
	15		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	20		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Capital Investment	1	MM\$	1.15	0.60	1.03	1.00	1.18	1.26	1.39	1.12	1.37	0.01
Road Costs	3		0.30	0.59	0.30	0.29	0.28	0.35	0.37	0.32	0.36	0.01
(Reconstruction)	5		0.37	0.21	0.34	0.29	0.34	0.44	0.40	0.41	0.56	0.03
	10		0.41	0.23	0.34	0.29	0.34	0.51	0.40	0.41	0.35	0.16
	15		0.45	0.24	0.42	0.37	0.42	0.57	0.49	0.48	0.45	0.16
	20		0.45	0.24	0.42	0.37	0.42	0.60	0.49	0.48	0.41	0.16

Table II-24 (cont.)

Alternative/Benchmark

23 of 26

Category	Decade	Unit of Measure	Alternative/Benchmark								MAX PNV M	MIN LVL LVL
			A 114F01	B 114G02	C 114H02	D 114CC5	E 114J01	F 114AA2	G 114L01			
Forest Service	1	MM\$	17.45	17.39	17.46	17.22	17.00	13.39	16.67	18.99	5.55	
Operations and	3		17.07	16.93	16.90	20.13	16.54	12.73	16.18	17.90	5.42	
Maintenance Costs	5		16.69	16.73	16.62	17.93	16.46	14.10	16.22	20.16	5.63	
1980 Base: 10.86 MM\$	10		17.07	17.08	17.02	18.22	16.73	13.80	16.59	15.82	6.14	
	15		17.52	17.21	17.16	18.60	17.41	14.24	17.16	17.38	6.19	
	20		16.81	16.74	16.63	16.96	16.54	13.39	16.31	15.41	6.03	
Returns to the States	1	MM\$	6.80	6.60	6.65	6.96	6.60	4.33	6.55	8.04	0.07	
1980 Base: 2.69 MM\$	3		11.22	10.98	10.91	12.26	10.75	8.47	10.47	11.41	0.10	
	5		29.74	29.76	29.59	31.66	29.63	15.70	28.49	38.23	0.38	
	10		28.00	28.18	27.87	32.16	26.88	18.33	26.76	19.05	2.58	
	15		33.65	32.97	32.35	31.60	31.52	18.47	30.36	29.52	2.53	
	20		50.77	50.36	49.93	49.08	48.94	21.47	47.30	42.01	1.94	
Returns to the	1	MM\$	27.19	26.41	26.59	27.83	26.40	17.33	26.18	32.16	0.27	
U.S. Treasury	3		44.88	43.91	43.65	49.05	43.00	33.89	41.87	45.65	0.38	
(Total)	5		118.94	119.05	118.37	126.62	118.51	62.81	113.95	152.93	1.52	
1980 Base: 10.79 MM\$	10		112.01	112.41	111.48	128.65	107.53	73.32	107.02	76.18	10.32	
	15		134.58	131.89	129.41	126.39	126.09	73.87	121.44	118.07	10.11	
	20		203.08	201.43	199.71	196.31	195.77	85.86	189.19	168.04	7.77	
Returns to the	1	MM\$	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.04	
U.S. Treasury	3		0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	
(Special Uses)	5		0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	
1980 Base: 0.08 MM\$	10		0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	
	15		0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	
	20		0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	
Returns to the	1	MM\$	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	
U.S. Treasury	3		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.00	
(Range)	5		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.00	
1980 Base: 0.02 MM\$	10		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.00	
	15		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.00	
	20		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.00	
Returns to the	1	MM\$	27.09	26.31	26.49	27.73	26.30	17.23	26.08	32.06	0.22	
U.S. Treasury	3		44.78	43.81	43.55	48.95	42.90	33.79	41.77	45.55	0.38	
(Timber)	5		118.84	118.95	118.27	126.52	118.41	62.71	113.85	152.83	1.52	
1980 Base: 10.70 MM\$	10		111.91	112.31	111.38	128.55	107.43	73.22	106.92	76.08	10.32	
	15		134.48	131.79	129.31	126.29	125.99	73.77	121.34	117.97	10.11	
	20		202.98	201.43	199.61	196.21	195.67	85.76	189.09	167.94	7.77	

Table II-24 (cont.)

Alternative/Benchmark

24 of 26

Category	Decade	Unit of Measure	Alternative/Benchmark									
			CUR	PROP	FINAL	DEP	L	N	O	MAX	MIN	
			DIR	ACT	PLAN							
			H	I	J	JF	K			M	LVL	
			114M01	114Y12	114009	11424A	114FF5	114W01	114V01	114S07	114GG1	114DD1
Forest Service	1	MMS	16.24	14.21	16.63	15.65	17.80	22.91	18.55	17.86	18.99	5.55
Operations and	3		15.77	14.10	16.58	15.53	15.75	19.30	17.92	17.58	17.90	5.42
Maintenance Costs	5		15.70	17.20	18.80	13.64	18.57	17.75	16.63	17.76	20.16	5.63
1980 Base: 10.86 MMS	10		16.73	12.74	15.50	16.64	15.06	19.03	16.99	17.28	15.82	6.14
	15		16.89	12.84	16.10	14.48	16.18	20.00	17.74	19.26	17.38	6.19
	20		15.90	11.91	16.42	14.11	16.20	20.72	17.03	18.08	15.41	6.03
Returns to the States	1	MMS	6.43	2.88	6.15	6.10	7.02	7.46	7.54	6.25	8.04	0.07
1980 Base: 2.69 MMS	3		10.03	7.12	10.86	10.91	9.96	11.07	11.64	12.00	11.41	0.10
	5		27.99	14.03	23.09	19.00	22.76	28.22	27.64	28.55	38.23	0.38
	10		29.40	17.43	24.39	14.66	24.19	38.44	25.93	27.39	19.05	2.58
	15		29.69	15.43	29.82	26.88	29.49	34.90	33.62	34.22	29.52	2.53
	20		45.49	20.94	38.20	25.86	38.85	54.09	51.83	46.81	42.01	1.94
Returns to the	1	MMS	25.72	11.53	24.61	24.39	28.06	29.82	30.14	24.99	32.16	0.27
U.S. Treasury	3		40.12	28.49	43.44	43.65	39.89	44.28	46.54	48.01	45.65	0.38
(Total)	5		111.95	56.10	92.37	76.01	91.02	112.86	110.54	114.19	152.93	1.52
1980 Base: 10.79 MMS	10		117.58	69.72	97.57	58.62	96.76	153.74	103.73	109.54	76.18	10.32
	15		118.76	61.72	119.27	107.50	117.75	139.59	134.49	136.87	118.07	10.11
	20		181.94	83.76	152.78	103.44	155.39	216.35	207.33	187.24	168.04	7.77
Returns to the	1	MMS	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.04
U.S. Treasury	3		0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00
(Special Uses)	5		0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00
1980 Base: 0.08 MMS	10		0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00
	15		0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00
	20		0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00
Returns to the	1	MMS	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01
U.S. Treasury	3		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.00
(Range)	5		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.00
1980 Base: 0.02 MMS	10		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.00
	15		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.00
	20		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.00
Returns to the	1	MMS	25.62	11.43	24.51	24.29	27.96	29.72	30.04	24.89	32.06	0.22
U.S. Treasury	3		40.02	28.39	43.34	43.55	39.74	44.18	46.44	47.91	45.55	0.38
(Timber)	5		111.85	56.00	92.27	75.91	90.92	112.76	110.44	114.09	152.83	1.52
1980 Base: 10.70 MMS	10		117.48	69.62	97.47	58.52	96.66	153.64	103.63	109.44	76.08	10.32
	15		118.66	61.62	119.17	107.40	117.65	139.49	134.39	136.77	117.97	10.11
	20		181.84	83.66	152.68	103.34	155.29	216.25	207.23	187.14	167.94	7.77

Table II-24 (cont.)

Alternative/Benchmark

25 of 26

Category	Decade	Unit of Measure	RPA							MAX	MIN
			A	B	C	D	E	F	G	PNV	LVL
			114F01	114G02	114H02	114CC5	114J01	114AA2	114L01	M	114DD1
Market Resource Benefits	1	MMS	27.20	26.42	26.60	27.84	26.41	17.34	26.20	32.18	0.33
	3		44.89	43.92	43.66	49.06	43.01	33.91	41.89	45.67	0.50
	5		118.95	119.06	118.38	126.63	118.53	62.82	113.96	152.94	1.64
	10		112.02	112.42	111.49	128.66	107.55	73.33	107.03	76.19	10.43
	15		134.59	131.90	129.43	126.40	126.10	73.88	121.45	118.08	10.22
	20		203.09	201.54	199.72	196.32	195.78	85.87	189.20	168.05	7.89
Nonmarket Resource Benefits	1	MMS	6.47	6.50	6.48	6.51	6.47	6.47	6.41	6.46	5.93
	3		9.64	9.79	9.79	9.60	9.74	10.12	9.66	9.57	8.19
	5		12.42	12.68	12.71	12.39	12.48	12.83	12.40	12.29	10.33
	10		13.03	13.28	13.32	13.00	13.35	12.22	12.76	12.85	10.79
	15		13.46	13.43	13.32	13.09	13.30	13.81	13.17	13.18	11.37
	20		13.58	13.55	13.44	13.17	13.51	13.78	13.36	13.29	12.13
Costs Discounted at 4%		MMS									
Recreation/wildlife			80.56	81.31	81.26	80.75	80.98	80.26	79.60	80.19	44.63
Range			1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	0.32
Timber			236.48	236.36	236.35	266.66	229.23	151.19	222.21	250.58	2.38
Roads			195.43	194.26	194.19	204.83	185.69	149.30	182.97	203.57	1.99
Other			161.47	159.73	160.46	163.76	160.94	157.79	159.78	161.13	147.03
Benefits Discounted at 4%		MMS									
Recreation/Wildlife			228.29	231.46	231.38	227.21	230.58	233.71	226.78	226.76	171.65
Range			2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	0.92
Timber			1588.12	1574.93	1568.86	1552.36	1538.31	961.96	1490.11	1630.64	26.47
Economic Indicators (4%)		MMS									
Present value benefits			1819.21	1809.19	1803.04	1782.37	1771.69	1198.47	1719.69	1860.20	199.04
Present value costs			675.91	673.63	674.23	717.97	658.81	540.51	646.53	697.44	196.35
Present net value			1143.30	1135.56	1128.81	1064.40	1112.88	657.96	1073.16	1162.76	2.69
Opportunity cost			19.46	27.20	33.95	98.36	49.88	504.80	89.60	0.00	1160.07
Benefit/cost ratio			2.69	2.69	2.68	2.48	2.69	2.22	2.66	2.67	1.01
Economic Indicators (7 1/8%)		MMS									
Present value benefits			752.90	745.92	745.83	737.46	730.10	541.78	713.95	780.70	107.58
Present value costs			398.57	396.88	397.68	420.59	386.44	318.18	380.47	415.42	114.93
Present net value			354.33	349.04	348.15	316.87	343.66	223.60	333.48	365.28	-7.35
Research natural areas		Acres	0	0	0	0	0	0	0	0	0
Forest Work Force	1	Work-year	664	659	662	658	643	505	627	741	137
1980 Base: 519 WYE		equiv.									
Energy Consumption	1	Billion BTU	274	272	273	274	267	219	257	307	60
	3		263	282	287	336	266	236	262	324	61
	5		282	281	279	328	318	217	263	366	61

Table II-24 (cont.)

Alternative/Benchmark

26 of 26

Category	Decade	Unit of Measure	CUR				PROP	FINAL	Alternative/Benchmark					
			DIR		ACT	PLAN	DEP	MAX				MIN		
			H	I	J		JF	K	L	N	O	M	LVL	
			114M01	114Y12	114009	11424A	114FF5	114W01	114V01	114S07	114GG1	114DD1		
Market Resource	1	MMS	25.73	11.54	24.62	24.40	28.07	29.83	30.15	25.00	32.18	0.33		
Benefits	3		40.13	28.50	43.45	43.66	39.85	44.29	46.55	48.02	45.67	0.50		
	5		111.96	56.11	92.38	76.02	91.04	112.87	110.22	114.21	152.94	1.64		
	10		117.60	69.74	97.58	58.63	96.77	153.76	103.75	109.56	76.19	10.43		
	15		118.77	61.73	119.28	107.51	117.76	139.60	134.50	136.88	118.08	10.22		
	20		181.95	83.77	152.80	103.45	155.40	216.36	207.34	187.25	168.05	7.89		
Nonmarket Resource	1	MMS	6.11	6.57	6.53	6.60	6.53	6.45	6.51	6.56	6.46	5.93		
Benefits	3		9.31	9.36	9.66	9.66	9.66	9.64	9.81	9.91	9.57	8.19		
	5		12.46	12.00	12.39	12.50	12.36	12.42	12.50	12.89	12.29	10.33		
	10		12.82	13.96	14.42	14.40	14.40	13.36	13.18	14.16	12.85	10.79		
	15		13.23	15.97	16.80	16.83	16.78	13.39	13.57	14.73	13.18	11.37		
	20		13.80	18.50	19.60	19.46	19.63	13.45	13.69	15.38	13.29	12.13		
Costs discounted at 4%		MMS												
Recreation/wildlife			76.26	81.54	82.38	82.48	82.33	80.70	81.19	83.09	80.19	44.63		
Range			1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	0.32		
Timber			217.79	169.13	223.42	195.85	230.76	300.46	244.96	262.53	250.58	2.38		
Roads			175.34	124.58	174.81	163.09	182.54	227.07	200.19	177.83	203.57	1.99		
Other			158.77	169.31	164.31	167.36	164.36	165.93	160.72	163.40	161.13	147.03		
Benefits discounted at 4%		MMS												
Recreation/wildlife			218.59	227.38	231.92	232.65	231.64	228.81	230.92	235.93	226.76	171.65		
Range			2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	0.92		
Timber			1440.63	776.25	1328.34	1108.72	1338.61	1590.92	1603.71	1514.27	1630.64	26.47		
Economic Indicators (4%)		MMS												
Present value benefits			1662.02	1006.43	1563.06	1344.16	1573.06	1822.53	1837.43	1753.00	1860.20	199.04		
Present value costs			627.13	546.53	646.89	610.75	661.96	776.13	689.03	688.82	697.44	196.35		
Present net value			1034.89	459.90	916.17	733.41	911.10	1046.40	1148.40	1064.18	1162.76	2.69		
Opportunity cost			127.87	702.86	246.59	429.35	251.66	116.36	14.36	98.59	0	1160.07		
Benefit/cost ratio			2.65	1.84	2.42	2.20	2.38	2.35	2.67	2.54	2.67	1.01		
Economic Indicators (7 1/8%)		MMS												
Present value benefits			687.99	422.28	667.36	595.14	685.79	743.17	771.98	717.67	780.70	107.58		
Present value costs			370.73	315.42	378.44	343.52	393.99	466.46	409.90	402.70	415.42	114.93		
Present net value			317.26	106.86	288.92	251.62	291.80	276.71	362.08	314.97	365.28	-7.3		
Research Natural Areas		Acres	0	0	2105	2105	2105	0	0	0	0	0		
Forest Work Force	1	Work-year	613	479	615	615	672	835	711	657	741	137		
1980 Base: 519 WYE		equiv.												
Energy Consumption	1	Billion BTU	256	198	253	253	278	274	292	264	307	60		
	3		263	234	240	240	246	343	338	258	324	61		
	5		254	180	246	246	289	320	277	273	366	61		

FINAL ENVIRONMENTAL IMPACT STATEMENT

FOR THE

KOOTENAI NATIONAL FOREST

INDEX

Items listed in Chapters I and II are located in Volume 1

Items listed in Chapters III thru VI are located in Volume 2

FEIS INDEX

	<u>Page</u>
Access	II-164, 167
Adequate Range of Alternatives.....	II-13-17
Air Quality.....	III-92; IV-42, 44, 88, 105, 106
Allowable Sale Quantity	II-48
Alternative Comparisons	II-131
Alternative Development and Range	I-5-7; II-2
Alternatives Eliminated from Further Consideration	II-19
Alternatives	
A	II-20, 151, 177
B	II-21, 151, 178
C	II-23, 152, 179
D(RPA)	II-25, 153, 183
E	II-26, 152, 180
F	II-28, 155, 191
G	II-30, 152, 182
H	II-32, 132, 153, 186
I(Current Direction)	II-34, 125, 143, 155, 192
J(Prop Action in DEIS).....	II-36, 154, 187
JF(Final Plan).....	II-38
K(Dep on Proposed)	II-40, 154, 188
L	II-41, 135, 153, 185
M(Max PNV)	II-43, 136, 150, 175
N	II-44, 151, 176
O	II-46, 153, 184
Analysis Area	
Analysis of Management Situation(AMS)	II-4
Benchmarks	II-4, 5, 7
Current Direction	II-6
Max PNV	II-5, 11, 150
Max Timber	II-6, 11
Max Wilderness	II-6, 9
Max Wildlife	II-6
Min Level	II-6
Benefit	II-129, 131, 135, 161
Benefit-Cost(B/C Ratio)	II-140
Big Game	II-162; III-62; IV-16, 27, 35, 40, 43 IV-47, 48, 50, 52, 56, 61, 92, 94, 106 IV- 109
Buildings	III-19; IV-96
Cabinet Mountains Wilderness	I-6; II-164; III-30
Campground	IV-115
Caribou	III-68, 75; IV-65
Cavity/Old Growth Dependent Species	I-6, 8; II-93; III-75, 76; IV-17, 31, 35 IV-40, 47, 48, 87
Climate	III-4
Community Development and Stability	II-162, 163, 175; IV-112
Compaction	IV-26, 31
Constraint	II-5, 18
Corridor	III-87, IV-96
Cost Share	IV-95
Costs	I-8; II-11, 131, 133, 135, 142, 147, 175

Index-2

Cultural Resources	II-113; III-90; IV-56, 74, 110
Current Direction	II-6, 34, 125, 155, 192
Departure	II-40, 151, 188
Diversity	II-7, 12; IV-16
Eagle, Bald	III-69; IV-64
Economic Impacts	I-8; II-126, 140, 143, 161, 175; IV-21 IV-36, 40, 43, 45, 47, 54, 62, 72, 74 IV-77, 82, 86, 87, 90, 92, 95, 111 VI-10, 14, 23, 25
Elk.....	II-10, 95; III-62
Employment.....	II-11, 117, 162, 175; IV-112
Energy	II-113; III-90; IV-23, 31, 41, 63, 67 IV-72, 74, 80, 83, 84, 88, 93, 95, 102 IV-105, 107, 110, 112, 113, 115
Facilities	III-18
Fire Management	I-9; II-112, 167; III-19; IV-41, 48, 66 IV-86, 91
Fire Suppression	IV-55, 88, 103, 105
Firewood	IV-19, 41
Fish(Fisheries)	I-9; II-10, 95, 97; III-81; IV-22, 27 IV-28, 31, 42, 45, 59, 92, 94, 106, 108 IV-109, 113; VI-12, 15, 28
Forest Plan	I-4; II-37; VI-10
Forplan	II-4, 165, 168
Genetic Tree Improvement	IV-8
Geology	III-3
Grazing	II-9, 111; III-90; IV-113, 65
Grizzly Bear	I-6, 8; II-100, 165, 176; III-72; IV-10 IV-17, 45, 64, 81, 92;VI-15, 26
Implementation	I-5
Indicator Species	III-66
Insect and Disease	III-21; IV-8, 20, 26, 43, 47, 48, 88 IV-107
Interagency Guidelines.....	I-6; II-95
Issues	I-7; II-174; VI-4, 5, 15
Income	II-3
Jobs/Employment .(see employment).....	
Jeopardy Opinion.....	II-111
Non-Jeopardy Opinion.....	II-111
Landownership Adjustment	II-118; III-86; IV-91
Lodgepole Pine	II-62, 166, 167, 175
Lodgepole Pine(stagnated).....	II-65
Logging Methods	IV-23
LTSY(Long Term Sustained Yield)	IV-6
Mill Capacity.....	II-50
Minerals	I-9; II-115, 164, 175; IV-20- 65, 80, 88
Leasable.....	II-115
Locatable.....	II-116; III-83
Minimum Management Level.....	II-6
Mitigation	II-174
Monitoring and Evaluation	I-5; VI-11, 15, 29
Montana Timber Study Analysis.....	I-8, 9; II-4, 37
Municipal Watershed	IV-70
MWSA(Montana Wilderness Study Act)	I-6, 7; II-33, 41, 66, 85
NDSY	II-4
Net Public Benefit	I-4; II-160, 169, 174
NFMA	I-4, 5, 7; II-3, 4, 45

Oil and Gas	II-164; IV-83
Old Growth Timber	I-6, 8; II-108; III-76; IV-9, 17, 91 VI-9, 14, 20
Old Growth/Cavity Dependent Species- See Cavity	
Opportunity Cost	II-145, 161
Overland Flow	IV-26, 27, 31, 42, 72, 113
Overview	II-2
Peregrine Falcon	III-71; IV-65
Pine Beetle	II-167
Planning Criteria	I-5
Present Net Worth(PNV)	II-5, 11, 42, 144; 146, 161, 166, 175
Proposed Action	II-36, 154, 187
Public Comment.....	VI-2, 3, 4
Range- See Grazing	
RARE II	I-7; III-31, 36
Recommended Wilderness (see wilderness)	
Recreation (total).....	II-7,101; III-27; IV-13, 27, 36, 40 IV-43, 55, 76, 92
Recreation Demand.....	II-101
Recreation, Developed	II-7; III-30; IV-72
Recreation, Dispersed	I-6, III-27; IV-51, 52, 65, 74
Recreation, Primitive	I-6; II-8
Recreation, Roaded	II-8; III-27;
Recreation, Roadless	I-8; II-8, 163; III-27
Reforestation	IV-44
Research Natural Area(RNA)	II-112
Return Receipts	II-119
Riparian	I-8; III-75; IV-59, 94, 113, 114, 115
Road Closure/Restrictions	II-8, 71; IV-20, 50, 51, 56, 59
Road Construction	II-69, 163, 171; IV-30, 51, 53, 69, 82 IV-83, 93, 94, 108, VI-9, 14, 18
Road Management	II-77; VI-11, 15, 27
Roadless Areas	I-6-8, 10, 11; II-88, 94; 97, III-31 IV-54, 89, 102; VI-5, 7
Roadless Areas (Inventoried)	
Berray Mountain	III-41
Buckhorn Ridge	III-40
Cabinet Face East	III-37
Cabinet Face West	III-37
Cataract	III-39
Chippewa	III-38
Cube-Iron	III-44
East Fork Elk Creek	III-41
Flagstaff Mountain	III-42
Galena	III-39
Gold Hill	III-41
Gold Hill(West)	III-41
Government Mountain	III-38
Grizzly Peak	III-43
Le Beau	III-45
Lone Cliff Smeads	III-42
Maple Peak	III-45
Marston Face	III-43
McKay Creek	III-38
McNeeley	III-42
Northwest Peaks	III-40
Roberts Mountain	III-43

Rock Creek	III-39
Roderick	III-39
Scotchman Peaks	III-31, 36
Ten Lakes Contiguous	II-6, 21, 41, 66, 79, 164; III-31, 36 III-44
Thompson-Seton	III-44
Trout Creek	III-36
Tuchuck	III-45
West Fork Elk Creek	III-40
Willard-Lake Estelle	III-44
Zulu Creek	III-43
Roads	I-8, II-75; III-18
RPA	I-4; II-50, 53, 153, 183
Sediment	IV-27, 31, 42, 58, 59, 67, 94, 96, 106 IV-113
Silvicultural Systems	II-66
Site Preparation	IV-44
Slash	IV-16, 40, 41, 45, 48
Snags	IV-40
Social Effects	II-114; III-6
Soils	III-3;
Special Uses	III-87; IV-93
Summary of Changes between Draft & Final EIS	I-9; II-2, 3, 19, 48, 49, 62, 65, 75, 77 II-88, 95, 97, 99, 102, 106, 117, 119, 1 II-125, 116, 119
Summer Range	II-89
Ten Lakes MWSA	I-6, 7; II-85, 160; III-31, 36
Threatened and Endangered	I-8; II-165; III-68; IV-64, 87, 92 VI-11
Timber	I-6, 8, 9; II-6, 11, 48; III-10; IV-59
Timber Harvest(incl. Systems)	II-146, 162; IV-5, 10; VI-7, 13, 17
Timber Inventory	II-5
Timber Rotation	II-4
Timber Suitability	I-4; II-60, 62; III-13, 15
Trails	IV-79, 115
Tree Planting	IV-44
Trout	III-81
Utilization Standards	II-66
Viewing (visual Quality).....	II-103, 169 III-4, 92; IV-11, 12, 22, 28 IV-31, 35, 40, 41, 45, 46, 47, 48, 55 IV-102, 106; G-24, 25
Water and Soils	IV-13, 26, 28, 31, 35, 36, 42, 45, 47 IV-50, 66, 70, 82, 94; VI-9
Water Quality.....	VI-14, 21
Water Yield	IV-14
Watershed	II-3-5; III-88; IV-13
Wilderness	I-6-8; II- 6, 8, 88, 97, 164, 176 III-30; IV-84, 85, 102; VI-5, 13, 16
Wildfire	IV-8, 103,109
Wildlife and Fish	I-8, 9; II-6, 95; III-5, 62; VI-9
Winter Range	II-6
Wolf, Gray	III-71; IV-64
Yellowstone Guidelines (see Interagency Guidelines)	I-6; II-95