United States
Department of
Agriculture

Forest
Service

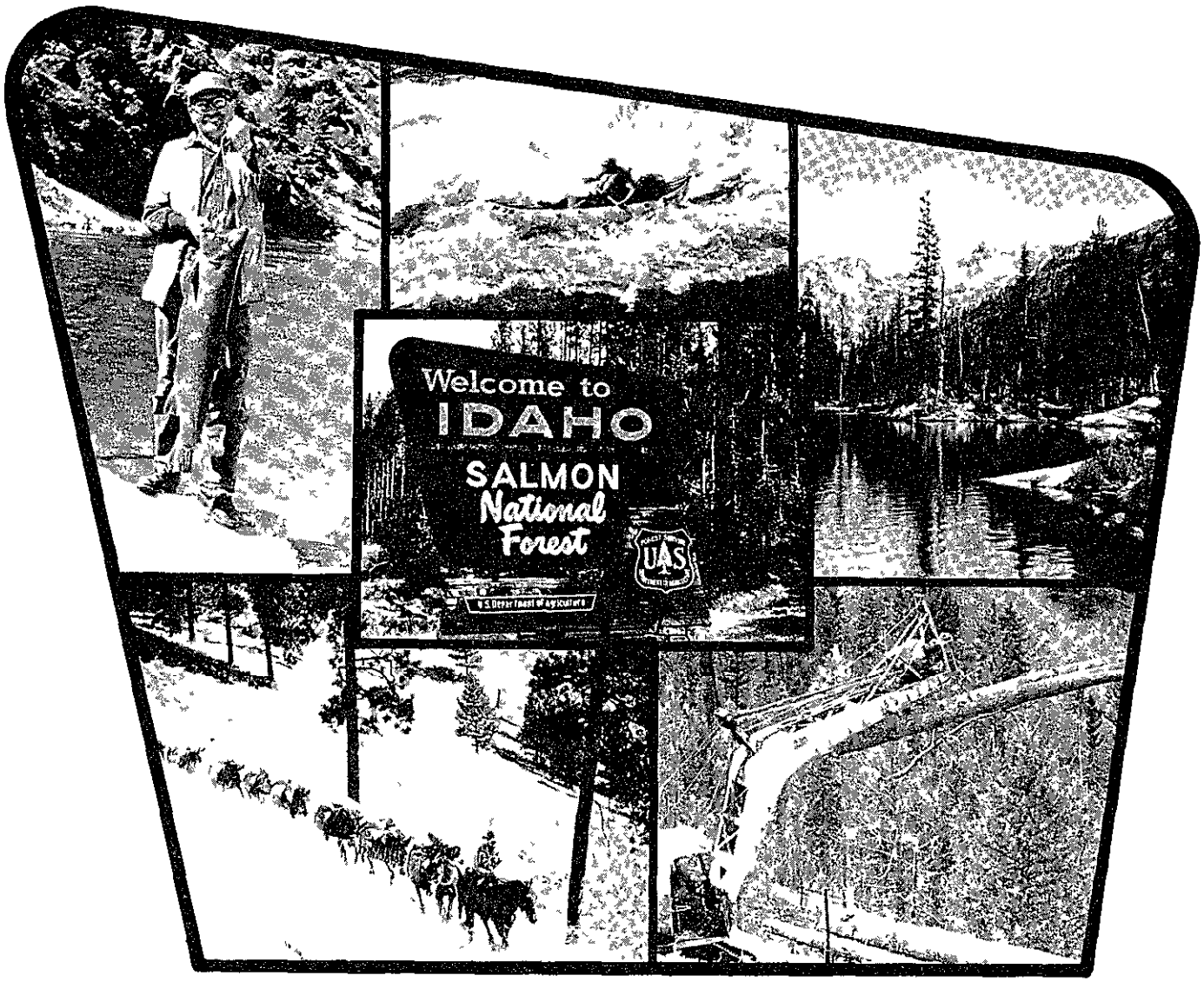
Salmon
National
Forest

APPENDICES

for the

SALMON
National Forest

Land and Resource Management Plan



A Public Involvement

B Analysis

C roadless area analysis

D allotments

E Rx

APPENDIX A

ISSUES, CONCERNS, AND OPPORTUNITY IDENTIFICATION PROCESS

Identification of public issues and management concerns was an important and essential step in the planning process. On the Salmon National Forest, identification of issues and concerns included three stages spanning the period of June 1979 to present time.

1. Internal Issue and Concern Identification

   The forest management staff and primary resource contacts tentatively identified draft issues and internal management concerns. The list included information developed from past public involvement efforts (e.g., RARE I and II; project analysis; and special use evaluations) - June 1979 - April 1980.

2. Public Involvement and Issue Documentation

   The draft public issues and internal management concerns identified in Stage 1, above, were indirectly described in a Briefing Guide in the form of questions and points to consider and made available to the publics that included State, Federal, and local officials, special interest groups and individuals. In addition, the Briefing Guide summarized planning actions and provided a brief discussion of the various resource elements. Personal contacts were made and public meetings held. The Forest asked that people let them know which issues should be addressed. As a result of public input, some new areas were identified and draft issues were refined (April 1980 - December 1980). A second request for public input was solicited during December 1983 to further address issues related to wilderness.

3. Issue Analysis and Selection

   A forest interdisciplinary work group, under the direction of the Forest Planning Interdisciplinary Team, reviewed, evaluated, and ranked the issues and concerns in an effort to determine the final list to be addressed in the Forest Plan - December 1980 - present.

ISSUE IDENTIFICATION PROCESS

Public Involvement. Active public involvement of issue identification began with selection of a Forest Public Involvement Team (PIT). Objectives of this group were to develop a public involvement work plan, public participation schedule, and to finalize plans for public meetings. Review of other Forest's public involvement procedures were evaluated.

Selection of the Nominal Group Process (NGP) was made and necessary training was undertaken with the aid of Targhee National Forest personnel.

The Notice of Intent to begin forest planning activities on the Salmon National Forest was filed in the Federal Register October 10, 1980. Public meeting dates and locations were detailed in the Notice of Intent. To provide a starting point for public contact, mailing lists from throughout the forest

were collected. These lists included names from special use permits, permittees, timber sale bidders, recreation rosters, District mailing lists, previous EIS documents, and other agencies including local, State, and Federal. At that time, the Forest Plan mailing list contained 511 names and addresses.

Additional methods of public contact included development of posters which were located in area Post Offices, Forest Service Offices, and the meeting hall in Cobalt. Contact sheets were available at each poster location so that those wishing to be placed on the mailing list could make it known. Contact sheets were mailed to all those on the mailing list and published in local newspapers. Media contacts through written news releases, local radio interviews, and public service announcements were made.

A Briefing Guide was developed to give the public a better understanding of the planning process and to briefly display forest resources. The Briefing Guide was completed and mailed to all those on the mailing list on November 17, 1980. The Briefing Guide was also made available at all poster locations and was publicized in the newspaper and on the local radio station. A newsletter was developed and attached to the Briefing Guide. Its purpose was to introduce the Briefing Guide and to reinforce importance of the planning effort and public participation in the planning process. The newsletter was the first in a series of similar letters used to make contact with the public.

Public meetings were held in November and December 1980. Meeting locations were in Salmon, North Fork, Leadore, and Cobalt. Because of the structure of the NGP process, a separate meeting for Forest Service employees was held to surface issue statements important to that group of the public. Meeting dates, locations, and attendance are summarized as follows:

Date	Location	Attendance
November 5, 1980	Salmon, Idaho	31 (Forest Service employees)
November 6, 1980	Salmon, Idaho	115 (Forest Service employees)
November 24, 1980	North Fork, Idaho	42
November 25, 1980	Salmon, Idaho	57
December 2, 1980	Leadore, Idaho	26
December 3, 1980	Salmon, Idaho	7
December 11, 1980	Cobalt, Idaho	15

This public involvement step of issue identification surfaced over 1900 issue statements from individuals, special interest groups, and government agencies. A second stage of public involvement resulting from direction to evaluate all roadless lands for their wilderness potential was much more specific and public responses were directed toward the wilderness/nonwilderness management issue in much greater detail. As a result, the initial issue package was supplemented by an addendum containing additional issue statements and an evaluation of how this information effected the status of forest planning issues.

A summarization of public input follows:

Number of Issue Statements	Source	Remarks
1066	NGP Meeting	36 separate groups at the four meeting locations.
856	Written Correspondence	63 separate input documents were received (21 from special interest groups and government agencies; 42 from individuals).
289	Written Correspondence	134 input letters received during wilderness re-evaluation.

Management concern statements were generated by an Interdisciplinary Team consisting of primary resource contacts and management team members. In addition, management concerns that surfaced in national and regional planning efforts were also considered and identified. Preliminary development opportunities were surfaced by primary resource contacts, management teams, and Forest Planning ID Team.

Issue statements generated at the public meetings and from written comments, along with management concern statements and development opportunities, were assembled and passed on to the next stage of issue identification.

ISSUE EVALUATION AND ANALYSIS

Issue evaluation and analysis began with selection of an interdisciplinary Issue Analysis Team. Objectives were to process the issue and management concern statements through the evaluation and analysis procedures (Figure 1). A preliminary task was development of screening criteria and disposition categories by which each statement could be evaluated (Figure 2). Each statement was tracked through the screening criteria and determination of final disposition made. Statements receiving "yes" answers to the four screening criteria were passed on to the next step of evaluation and analysis. Their disposition was relegated to resolution within the plan. Those statements receiving "no" answers to any of the criteria were assigned to specific categories for resolution outside of the planning effort. It is important to note transmittal of a statement of resolution outside of the plan did not detract from the Forest's commitment for resolution of the issue statement.

Statements retained within the plan were combined into general management categories (e.g., Recreation, Lands, Timber, Wildlife, Range, etc.). Determination of Planning Issues, Planning Questions, and Primary Issue Area Statements were based on the General Management Categories and the statements contained in each category. Results of the screening process were reviewed by the Forest Planning ID Team and members of the Management Team and revision suggestions were incorporated into the issue and concern evaluation and analysis.

Final planning issues were then subjected to a final analysis which was designed to allow determination of significance. Criteria used in importance or significance ranking included consideration of the following:

A. National and Regional Significance
B. Resolvability
C. Duration
D. Magnitude
E. Scope
F. Intensity
G. Relationship to NFMA Concerns

ISSUE DEVELOPMENT PROCESS

Public Correspondence

Issue and Concern statements given in written correspondence. No specific format written input.

Public Meeting

Issue and Concern statements generated at NGP meetings. NGP format discussed in previous documents.

Correspondence Scoping

Each letter was reviewed by two observers. Issue statements were highlighted and transferred to an Involvement Correspondence Form

Issue Screening

Each statement was exposed to the screening criteria and either retained in the plan for resolution or identified as needing resolution outside of the plan, based on one of the disposition categories.

Categorization of Statements

Statements were combined into general management categories (i.e., Recreation, Lands, Minerals, etc.).

Determination of Planning Issues, Planning Questions and Primary Issue Area Statements

General management categories were further analyzed and Planning Issues determined. Planning questions were formulated and Issue and Concern statements combined into primary issue areas.

Significance/Importance Determination

Each Planning Issue subjected to analysis criteria and categorized as either high, moderate, or low significance.

Final Issues, Concerns, and Opportunities

Final development of issues, concerns, and opportunities to be addressed in the Forest Plan.

Figure 1

ISSUE
OR
CONCERN
STATEMENT

SCREENING CRITERIA

1. Scope: A. Is the issue located on the Salmon NF, or is it primarily influenced by the Salmon National Forest?
   B. Is the issue broad enough to be handled in the Forest Plan?
2. Duration: Can resolution of the issue be delayed until 1982? Issues and Concerns requiring resolution prior to 1982 will not be included plan.
3. Capability:
   A. Can the issue be resolved within the authority of the Salmon National Forest?
   B. Are techniques and knowledge available to resolve the issue?
4. Status: If the issue has been addressed in previous documents is there still a conflict?
   NOTE: If the answer to any question is no, the issue will not be considered in the plan.

RESOLUTION OUTSIDE OF PLAN

DISPOSITION CATEGORIES

1. Referred to another agency which has the authority to resolve it.
2. Currently addressed in other documents (EA's, EIS, etc.).
3. Needs to be addressed in a separate document.
4. Currently addressed by laws and regulations or covered by internal Forest Service policy.
5. Limited issue. Will be addressed by District Ranger or Forest Supervisor.
6. Issue requires resolution by Supervisor before September 1982.
7. Issue is outside the authority of the Salmon National Forest. It will be sent to Regional and/or Washington offices or Congressional authorities.
8. Technology does not exist to resolve the issue. Research requests will be developed where appropriate.

RESOLUTION IN PLAN

SUBJECT GROUPING | SIGNIFICANCE CRITERIA H.M.L. | FINAL ISSUE DOCUMENTATION | REVIEW

ALTERNATIVE FORMULATION

The alternatives considered were developed in response to both legal requirements and public response.

There were 22 major planning issues to be resolved in the Forest Plan. Each issue must be addressed in at least one alternative. "Issue Grouping" was a process used to combine compatible issues into groups in order to reduce the number of prescriptions and alternatives to a reasonable number.

Resolution Criteria

Issues were divided into three resolution categories:

Input related issues - will be resolved by varying inputs.

Output related issues - will be resolved by varying outputs.

Effect related issues - will be resolved by varying effects.

Prescription development and alternative formulation was directed toward resolving the output related issues. It was assumed that input and effect related issues would be resolved indirectly as the output related issues are resolved.

Screening Criteria

Issues meeting all the following screening criteria will be addressed within the alternatives.

Issues not meeting all the following criteria will be addressed as variations to all alternatives (outside alternatives).

1. Issue must allow for assigning resource outputs. Resolution depends on assignation of resource outputs. (Law Enforcement can be handled separately irrespective of other assigned resources.)

2. Issue must be forestwide. Resolution must have a significant effect on the resolution of other forestwide issues. (Developed recreation is not forestwide.)

3. Issue must be nonprobabalistic. Future activities must be reasonably predictable. (Mining is probabalistic.)

Output Related Issues to be Addressed Within Alternatives

	Issue	Output
2a	Big Game	Number of Animals
2b	Non-Game	Number of Animals
2c	Fish	Lbs. Res./Lbs. Anadromous
3	Timber Quantity	MBF
6b	Roaded Natural Recreation	RVD
6c	Semi-Primitive Recreation	RVD
7	Watershed	Tons of Sediment
9	Range	AUM
11	Firewood	Cord
12	Visuals	VQO Acres
16a	Utilization	MBF
17	T&E Habitat	Number of Animals

Issue Grouping Criteria

Combine compatible issues into issue groups.

Two issues are compatible when maximizing the resource associated with one issue does not adversely affect maximizing the resource associated with the other.

Issue Groups (Within Alternatives)

	Issue Group	Issues
1.	Wildlife	
		Big Game
		Non-Game
		T&E
2.	Watershed	
		Fish
		Watershed
3.	Timber	
		Quantity
		Firewood
		Utilization
4.	Roaded Natural	
5.	Semi-Primitive	
6.	Range	
7.	Visuals	

For issues to be resolved outside of alternatives, no grouping is expected and each issue was considered independently of the others.

I.C.O.'s

WITHIN ALTERNATIVES (JOINT PRODUCTION)

OUTSIDE ALTERNATIVES (NO JOINT PRODUCTION)

ALTERNATIVES

VARY OUTPUTS
Big Game
Non Game
T & E
Fish
Water
Timber Management-Quantity
Firewood
Dispersed Recreation
Range
Visuals

EFFECTS
Community
Stability

INPUTS
Transportation
Timber Methods
Insects/Disease
Undeveloped Area Management
Pesticide/Herbicide
Fire
Timber Utilization
Riparian
Land Ownership

OTHER Rx's
Minerals
Dev. Recreation
Special Areas
Special Uses
Law Enforcement

Completed Alternative

CONSULTATION WITH OTHERS

Agencies and Tribes

Numerous Federal, State, County, local government agencies, and tribes were contacted during the public involvement process to solicit information helpful in the planning process. Responses from these groups were incorporated into the development of the planning issues. In addition, numerous additional informal contacts were made with local agencies and interest groups. The nature of these contacts was for clarification of specific planning points, periodic updates on the planning process, and adjustment of planning issues as necessary. Documentation of the input received is on file in the Forest planning records.

There are no Indian reservations within the boundaries of the Salmon National Forest. Contacts were made with Indian tribes and the Bureau of Indian Affairs to solicit their input for the Plan and to insure conformation to conditions stated in the treaties.

The Forest and the Idaho Department of Fish and Game are engaged in continual coordination involving activities of mutual concern involving wildlife and fisheries management. Overall state goals, objectives, and policies along with projected harvests and populations are documented in the Department's publication "A Plan for the Future Management of Idaho's Fish and Wildlife Resources, Volume I. Goals, Objectives and Policies, 1975-1990" and in "species management plans."

The U.S. Fish and Wildlife Service is charged, under the Threatened and Endangered Species Act, with the responsibility for threatened and endangered species. Their objective is removal of species from the Threatened and Endangered list through encouraging improvement of habitat and species population increase. Continual contact is maintained with this agency and informal and formal consultation on the proposed Forest Plan has been requested.

Goals and objectives of the Bureau of Land Management affect management of the Salmon National Forest because the majority of the non-National Forest System lands bordering the forest are public domain lands administered by the BLM. Coordination with the BLM is an ongoing process and includes such items as fire protection, communications, special uses, rights-of-way, timber management, and range allotment management plans.

Most of the responses received from other agencies and tribes described their issues and concerns in terms that related to their specific goals and objectives. Some of these goals and objectives would have been formalized into agency plans, others were less formalized and were related to the agency's mission.

A listing of those agencies contacted is enclosed to provide an assessment of the scope of other agency involvement in our planning process.

OTHER CONSULTATIONS

Most contact with interest groups, adjacent land owners, and industry groups was through the formal public involvement process. Input received was again structured around each respondent's goals and objectives. There were also several informal contacts made with some of these groups or individuals. The nature of these contacts was for specific planning classification, planning process updates, and modification of planning issues.

Names and locations of those contacts are also included on the listing previously mentioned.

Adv. Council Historic Pres.
American Fisheries Society
American Mining Congress
American Wilderness Alliance
Aminoil USA
Anaconda Minerals
Arco Oil and Gas Co.
Atlantic Richfield Co.
Beaverhead National Forest
Terrance M. Belton
Bitterroot National Forest
Black Eagle Mining
Boise Cascade Corp.
Boise National Forest
Bonneville Power Admin.- Idaho Falls
Bonneville Power Admin.- Portland
Bureau of Land Management
B.I.A. - Lands Services Branch
B.I.A. - Supt. Ft. Hall Agency
B.L.M. - Dillon Res. Area
B.L.M. - Idaho State Office
B.L.M. - Salmon District
B.L.M. - Shoshone Dis. Office
Carmen Grange
Central Idaho Mining Assn.
Challis National Forest
Chamber of Commerce - Salmon
Champion Building Products
Champion Timberlands
City of Leadore
Coastal Mining Co.
Columbia R. Inter-Tribal Fish Comm.
Conoco, Inc.
Continental Divide Trail Soc.
Cornell University
Earth First!
Ellsworth Land & Cattle Co.
Exxon Co. USA
U.S. Fish and Wildlife Service
Forever Wilderness
Gibbonsville Improvement
Goldstone Mining Co.
Holiday River Expeditions
Id. Inter-Tribal Policy Board
Idaho Cattle Assn.
Idaho Conser. League
Idaho Department of Fish and Game
Idaho Department of Recreation
Idaho Department of Water Resources
Idaho Division of Highways
Idaho Environmental Council
Idaho Mining Assoc.
Idaho Parks and Rec. Dept.
Idaho Petroleum Council
Idaho Power Company
Idaho State Clearinghouse
Idaho Trail Machine Assoc.
Indian Creek Guest Ranch, Inc.
Inland Forest Resource Comm.
Intermountain Forestry Services
Lemhi County Commissioners
Lemhi County Planning Comm.
Lemhi County Agr. Ext. Agent
Lemhi Soil Conser. District
Louisiana Pacific
Minatone Corporation
National Forest Prod. Assn.
National Audubon Society
National Forest Rec. Assoc.
National Off-Road Bicycle Assoc.
National Wildlife Federation
Natural Resources Committee
Nez Perce Tribe of Idaho
Noranda Mining, Inc.
NW Power Planning Council
Outdoor Program - Id. St. Univ.
Outdoors Unlimited, Inc.
Pacific NW River Basin Comm.
Payette National Forest
Phillips 66
Rocky Mtn. Oil and Gas Assoc.
Rocky Mtn. River Tours
Salmon City - Plng Commission
Salmon City Council

Salmon Grange
Salmon Public Library
Salmon River Lodge
Salmon Search and Rescue
Shoshone-Bannock Tribes
Shoshone-Paiute Tribes
Shell Western E&P, Inc.
Sierra Club
Sierra Club - Eastern ID Group
Sierra Club-N. R. Chapter
Sierra Club-N Rockies Chpt.
Sierra Club-N. W. Office
Sierra Club-Sawtooth Chapter
Sierra Western Rivers Guides
State Historical Society
State of Idaho - Office of the
Attorney General
State of Idaho Dept. of Land
State Recreation Division
Stoltze-Conner Lumber Co.
Supt. of Schools - Jim Smith
District 291
Targhee National Forest
Texaco U.S.A.
Union Oil Co.
Union Oil Co. of California
University of Montana
U.S. Geological Survey Idaho
USDA-SCS
USDI-Fish and Wildlife Service
USDI-Office of the Secretary
U.S. Dept. of Interior -
Regional Envir. Officer Idaho
Western Forest Ind. Assn.
Wildlife Federation
Wilderness Society
Wilderness Studies, Inc.
Wildlife Management Institute
Yale Law School
Yellow Jacket Mines, Inc.
Yellowjacket Mines, Inc.

SELECTED ISSUES, CONCERNS, AND OPPORTUNITIES

The nature of the planning issues surfaced during issue documentation precluded elimination of an issue based on significance or importance. The decision was made to address all planning issues in the forest planning process. Certain planning issues could be resolved or addressed within joint production analysis. In these cases, resolution would be the same for all alternatives depending on funding, levels, and administration direction.

Planning Issues deferred for resolution outside the forest planning process. - None

Planning Issues which may be treated the same in all alternatives.
- #1 Mineral Management
- #6 Management of Developed Recreation
- #20 Special Areas
- #21 Special Land Uses
- #22 Law Enforcement

Planning Issues treated differently in alternative design.
- #2 Wildlife and Fish Habitat Management
- #3 Timber Management - Quantity
- #4 Management of Undeveloped Areas
- #6 Dispersed Recreation
- #7 Watershed Management
- #8 Timber Management - Treatment Methods
- #9 Rangeland Resource
- #10 Insect and Disease
- #11 Firewood
- #12 Visual Resources
- #13 Community Stability
- #14 Pesticides and Herbicides
- #15 Fire Management
- #16 Timber Utilization
- #17 Threatened and Endangered Species Habitat Management
- #18 Riparian Habitat Management
- #19 Land Ownership

PLANNING ISSUE 1: Mineral and Energy Resources

Planning Problem: How should mineral, oil and gas, and geothermal resource exploration and development be integrated with management of other forest resources?

Background Situation - Mineral development forms the core of the historical background of Lemhi County and the forest, beginning with gold discovery in 1866 and continuing through present plans to mine cobalt and other deposits. There is moderate to excellent potential for discovery

and development of new deposits of locatable minerals. Leasable mineral and energy resources on the forest include phosphate rock, oil, gas, and geothermal. Past mineral exploration and extraction activities have created serious environmental problems, especially in the area of degraded water quality and loss of fishery habitat. One of the factors contributing to the minerals issue was the presence of cobalt, a strategic metal. Other factors included magnitude of mineral and energy development impacts on other forest resources and the long term and sustained effects of exploration and development.

At present, mineral resources are not being tracked through joint production analysis. Therefore, potential trade-off between resources will not be explicit or quantifiable and should be addressed in qualitative terms. The major factors associated with this issue are mineral availability, development potential and management of exploration and development impacts.

A critical component associated with resolution of this planning problem will be to reconcile management direction provided by the various laws and to develop an appropriate administrative approach necessary for multiple resource management.

PLANNING ISSUE 2: Wildlife and Fish Habitat Management

Planning Problem: How should wildlife and fish habitat management be integrated with other forest resources and coordinated with State and Federal species management goals?

Background Situation - Wildlife habitat management on the Salmon National Forest presents a variety of very complex management options. Diversity of wildlife and wildlife habitat is reflected by the 315 species of mammals, birds, reptiles, and amphibians that have been identified on the forest. In addition, numerous species of fish utilize forest aquatic habitats during all or portions of their lives. Anadromous fish species have recently gained Regional and National significance. Forest management activities often adversely influence certain wildlife species and habitat while at the same time improving conditions for other species. The major factors associated with the wildlife habitat issue were general habitat management, big game habitat management, multiple resource coordination, anadromous and resident fish habitat management and cooperation with other agencies interested and involved in fish and wildlife management.

Wildlife and fish habitat management will be competitive with numerous other resources. Habitat quality and quantity levels identified in the various alternatives may be in conflict with State species management goals and State water quality (beneficial use) standards.

Coordination of habitat management objectives with other resource activities is significant.

The potential exists for meeting State species goals and beneficial use criteria. To accomplish this, increased coordination between resources and increased administration and enforcement of management decisions will be needed.

PLANNING ISSUE 3: Timber Management - Quantity

Planning Problem: How much timber should be produced from the Salmon National Forest considering economics and other resource objectives?

Background Situation - The quantity of timber harvest on the forest surfaced as a highly significant issue. Some factors associated with the timber quantity issue include inventory information, historical harvest information and timber demand estimates. Harvest volumes have increased during the last three decades. Records show that 15-20 million board feet were cut annually in the late 1950's. Timber harvest in the 1960's averaged 27 million board feet and increased to 34 million board feet in the 1970's. The current timber action plan addresses a sell program of about 30 million board feet annually for the next five year period. Additional factors associated with the quantity of timber harvest on the Salmon National Forest include the economics related to timber harvest and management and relationships of timber harvest to wildlife and other forest resources.

Conflicting relationships of timber harvest include wildlife, fish, and visuals. The relationship between timber harvest activities and fish habitat influences is amplified by recent clarification of nonpoint pollution standards.

Timber sale viability is also an important component of this timber issue. At present market conditions, only a fraction of the offered timber is being purchased. High road costs, low volumes per acre, species mix, and coordination requirements are factors influencing timber sale economics.

The potential exists for the Forest to continue a moderate timber sale program. Sale economics will continue to influence viability and coordination between timber and other resources will need to be increased.

PLANNING ISSUE 4: Management of Undeveloped Areas

Planning Problem: What should be the level and direction of management in undeveloped areas?

Background Situation - Management of presently undeveloped areas on the forest relates directly and indirectly to many resources. Presently, undeveloped areas will be closely scrutinized for future resource development and for opportunities to provide primitive nonwilderness and wilderness experiences. Factors related to this issue are commodity demands, area attributes, multiple resource management coordination, and resource management needs.

The Forest Service can only make wilderness recommendations; Congressional action will determine final wilderness classification.

Considerable input was received relative to wilderness/nonwilderness management of undeveloped areas. Comments received supported both sides of this primary issue area. The statements reflected the high emotional sentiment associated with this issue. Overall, comments supporting

nonwilderness were very general, while statements supporting wilderness were more specific.

A substantial number of comments supporting roadless management of presently undeveloped areas were received. The sentiment tied to these comments pointed to a concern that many other forest resources are being unduly impacted from road building and subsequent use. Protection of wildlife and semi-primitive recreation were the factors cited most often. Several of the comments were stated in terms of either wilderness or roadless, indicating not so much a demand for additional wilderness for wilderness' sake, but rather protection and preservation of other values such as wildlife and semi-primitive recreation utilizing either roadless or wilderness management methods. Responses also expressed a desire for a mix in semi-primitive motorized and nonmotorized opportunities.

The public involvement process also requested respondents to identify areas for nonwilderness management. The majority of comments received pertained directly to commodity resources development. Mineral resource exploration and development along with timber management received a considerable amount of comment. The statements generally addressed several specific areas in common. Specific support for individual undeveloped areas was less clear than the wilderness issue.

The Forest has the opportunity to resolve the management of undeveloped areas by providing a mix of developed and undeveloped land uses within presently undeveloped areas.

PLANNING ISSUE 5: Transportation System Management

Planning Problem: What transportation system does the Salmon National Forest need and how should it be managed?

Background Situation - Transportation system management has been and continues to be an issue and concern to the public and land managers. Road construction and management associated with resource development (e.g., timber and minerals) are the primary factors related to the transportation system planning issue. At present, 50-70 miles of new road are constructed on the forest annually. A portion of the public is opposed to this development or desires increased emphasis on the needs of other resources such as wildlife. Still others object to change or have special interests which are affected either favorably or unfavorably by the presence of roads. Maintenance of existing transportation facilities and factors such as budget constraints influencing maintenance are critical to the transportation issue. The safety, capacity and convenience of the existing system needs to be improved in many cases. The current system contributes to some wildlife disturbance and soil erosion; road closures to resolve these problems may be needed. Transportation system costs are one of the primary factors influencing sale viability in the timber program.

The primary factors included in this planning problem include the level and amount of transportation planning and design and road administration.

To a large degree, resolution of the transportation planning problem will be associated with other resource development. Maintenance and

administration of transportation facilities will continue to generate both conflicting and complementary effects on other resources.

PLANNING ISSUE 6: Recreation

Planning Problem: How should recreation resources on the Forest be managed and what opportunities should be provided?

Background Situation - The Salmon National Forest offers a wide range of recreational opportunities such as camping, hiking, hunting, fishing, water sports, picnicking, and winter sports.

This wide range of recreation opportunities is possible not only because much of the forest is accessible (by car, foot, horse, trail bike, etc.) but also because land and water resources are suitable for many recreation uses. These factors resulted in 414,300 "Visitor Days" in 1979. Approximately 21 percent of total visitor days use was associated with developed recreation; the remaining 79 percent was in the form of dispersed recreation. Conflicts are occurring among resource users and between recreation and other forest resource development.

There are five primary factors which relate directly to this planning problem: general management, administration of developed sites, semi-primitive recreation opportunities, trail system management, and winter recreation management.

The Forest has the opportunity to address most aspects of this issue through providing a mix of recreation opportunities.

PLANNING ISSUE 7: Watershed Management

Planning Problem: How should the water resource and watershed management be integrated with other resource management?

Background Situation - Water produced on the forest is a basic resource upon which other forest resources and downstream water users are dependent. Watersheds on the forest yield 1.5 million acre feet of water each year. Factors associated with watershed management include watershed improvement projects, support services to other management programs, water quality, water rights and water resource inventories. Another critical element in watershed management is managing the soil resource. Soils on the forest are derived from granitic, volcanic, quartzite and sedimentary rock types. Soils that have developed from granitic and volcanic parent materials have proven to be fragile and more unstable than soils derived from quartzite and sedimentary deposits.

Present State Water Quality Standards are complementary to fishery resource values and sometimes conflict with timber, range and mineral resource development. The primary planning factors associated with this issue are watershed coordination and water quality/quantity management.

The Forest will address this issue by looking at possible impacts of development activities upon the watershed resource.

PLANNING ISSUE 8: Timber Management - Treatment Methods

Planning Problem: What cutting methods, harvest systems and post sale treatments should be used on the Salmon National Forest?

Background Situation - Under the current timber action plan, a sell program of 30 million board feet annually is scheduled, with one half of this volume planned for logging by conventional tractor methods. The remaining volume is planned for either helicopter and/or skyline logging. In many cases, low volumes per acre, high roading costs and the need for expensive logging systems cause sales on the forest to be marginal operations. These factors related to harvest methods are critical elements in this planning issue. Another factor is the silvicultural method used. Clearcutting is often necessary due to insect and disease and fuel treatment problems. There is public concern over the amount and size of clearcuts. Clearcuts are normally planted except where natural regeneration will occur rapidly, such as in lodgepole pine. Reforestation and timber stand improvement activities surfaced as an area of timber treatment methods which had both public issue and management concern statements.

Treatment methods often conflict with resources such as wildlife and visuals. At the same time, certain treatment methods help maintain a more healthy forest community.

Factors important to this planning problem include cutting methods and logging systems, timber cleanup, reforestation, and timber stand improvements.

Timber treatment methods are closely related to the species mix and harvest levels. Options exist for coordination to reduce resource conflicts and to increase effectiveness of stand improvement activities.

PLANING ISSUE 9: Rangeland Resource

Planning Problem: How should the rangeland resources on the forest be managed?

Background Situation - Historically, much of the forest was grazed by domestic livestock. In general, sheep grazed the steep slopes and high elevation alpine lands. Cattle grazed the more gentle slopes and accessible valley bottoms. Today, 190,000 acres of suitable range has been identified for livestock grazing. In 1979, 12,165 cattle, 789 horses, and 4,700 sheep were permitted to graze on the forest for a total of 52,576 AUM's. The actual number of AUM's grazed was 49,740. Factors associated with the issues and concerns related to grazing include: conflicts with other resources; improving range conditions; maintaining or increasing AUM's; and providing for dependent family unit livestock operations.

The Forest has limited opportunity for increases in range use without major investments to improve forage production. Opportunity for demand by sheep producers to take advantage of presently unoccupied suitable sheep range is limited.

PLANNING ISSUE 10: Insect and Disease

Planning Problem: How should the impacts of forest insects and diseases be considered, and how will various management activities respond to insect and disease effects?

Background Situation - Although this issue was seldom raised by the general public, insect and disease problems play an important part in the management of forest timber resources. Dwarfmistletoe is present in many lodgepole pine and Douglas-fir stands reducing growth and killing trees. Natural regeneration methods are often impractical in heavily infected stands because the young trees become infected to the point that they won't develop into a merchantable stand. Periodic outbreaks of western spruce budworm in Douglas-fir and subalpine fir stands cause growth loss, damage cones needed for establishing new seedlings and sometimes kill the smaller trees. This, coupled with pinegrass and other vegetative competition, considerably lengthens the natural regeneration time for Douglas-fir. Multistoried stands are especially susceptible to budworm damage. When large areas of lodgepole pine reach maturity, the hazard of a major mountain pine beetle outbreak considerably increases. Most lodgepole areas have not reached the high potential outbreak category yet; however, harvesting must proceed in order to prevent a major outbreak as has happened in the past. Ponderosa pine and Douglas-fir are also affected by bark beetles.

Most insect and disease problems can be reduced by preventing stands from becoming overly dense, harvesting before trees become overmature and by special practices such as clearcutting.

PLANNING ISSUE 11: Firewood

Planning Problem: How should the Salmon National Forest provide firewood?

Background Situation - Firewood gathering is increasingly important. In 1979, about 1200 permits were issued for 13,000 cords of fuelwood.

People are concerned that "good" firewood is harder to get. Many people feel that better access should be provided specifically for firewood. Factors in this issue include the degree of firewood regulation, whether there should be a charge, and the amount of information that should be provided. These factors are related to level of administration and will likely be addressed through budget level constraints.

A fourth significant factor is conflict with other resources, primarily wildlife. This conflict relates to removal of dead trees, which serve as nesting and perching sites, and extended use of forest roads.

In the near term, firewood supplies are expected to exceed demand while accessibility of firewood near population centers will decline. Continued coordination will be required to lessen impacts to other resources, especially wildlife.

PLANNING ISSUE 12: Visual Resources

Planning Problem: How should visual resources be integrated with other forest resource management programs?

Background Situation - Factors related to the visual resources of the Salmon National Forest have become increasingly important to the public. The increased emphasis on quality of the visual environment has been reflected in Forest Service management through a landscape management system. Public use of the Salmon River and the future increased use of the Frank Church--River of No Return Wilderness will focus additional attention to visual qualities of the forest.

The Forest has the capability through activity scheduling and design of achieving visual quality objectives and preserving the scenic beauty of the area.

PLANNING ISSUE 13: Community Stability

Planning Problem: To what degree can and should future forest management contribute to local community stability?

Background Situation - Community ties to the Salmon National Forest are related to market commodity resources such as timber, grazing, and minerals, and to certain nonmarket commodity resources such as recreation, wildlife, fish, soil and water. Mills in Salmon, Dillon, and Darby are all partially dependent on timber products from the forest. Grazing of livestock on forest rangelands is essential to many family unit livestock operations. Mineral related resources are beginning to have a greater influence on the community. In addition, area communities are influenced by recreation related activities (hunting, fishing, water sports, and backpacking). All of the above factors directly tie forest commodities to community stability. Federal jobs provided by the Salmon National Forest also play an important role in community stability and area economics. The public expressed a concern for creating more jobs through forest resource management and administration. County residents expressed a strong opinion that forest management decisions effecting community stability provide preferential treatment for area residents.

The Forest has the capability of assisting in the economic stability of the local communities, but to a lesser extent than in the past. Timber utilization will likely be less than during the previous two decades. Range use is expected to remain close to present levels. Businesses related to nonmarket forest resources are projected to increase as user demand increases. Budget levels will determine the extent to which the Forest will be able to provide seasonal jobs and support to small businesses.

PLANNING ISSUE 14: Pesticides and Herbicides

Planning Problem: How should the Salmon National Forest use chemicals to control insects, weeds and other vegetation?

Background Situation - Current chemical use is primarily spraying noxious weeds along roadways to prevent their spread. Treated acreage has varied

from 65-210 acres in recent years. Other potential projects on the Salmon National Forest are:

Range vegetative management including sagebrush and wyethia spraying; timber-related vegetative management including spraying brush (primarily sitka alder) to allow replanting or to release existing seedlings from overtopping brush; spraying dense sod grasses to improve survival of newly planted seedlings or to prepare a site for natural regeneration; reducing pocket gopher populations in some tree plantations; and other unforeseen events such as spraying for a major grasshopper or other insect outbreak.

Resolution will identify areas where efforts need to be concentrated to control the spread of noxious weeds and to treat competitive brush species. Funding levels will dictate the scope of control programs. Continued coordination with other government agencies for pesticide use will be maintained.

PLANNING ISSUE 15: Fire Management

Planning Problem: How should fire management activities be conducted on the forest?

Background Situation - Fire management on the forest is primarily aimed at protecting and enhancing the resources of wood, water, wildlife habitat, range and recreation. This is accomplished through fire control (including prevention, detection and suppression), fuels management and prescribed burning. Factors in this issue include fighting all fires versus allowing some "natural fires" and the level of prescribed fire. Untreated fuel and smoke management are of particular concern to management.

Suppression activities associated with fire control often create significant resource impacts which should be evaluated and included into fire management decisions. Use of fire as a management tool was also a concern.

Resolution of fire management issues will be handled in each alternative subject to the objectives of the individual objectives.

PLANNING ISSUE 16: Timber Utilization

Planning Problem: What should the Salmon National Forest do to foster total wood utilization and what should be the role of small timber sales (small size sales and sales of small products)?

Background Situation - There is concern that federally managed wood is not fully utilized, particularly logging residue, small diameter trees and dead trees. Proper management of many diseased stands and many lodgepole stands requires clearcutting or at least falling of worthless trees. Most of these trees have no future growth potential and many are too small for sawlogs (under 7" diameter at breast height). Presently, most of this submerchantable material is not utilized. This is also the case with logging slash (limbs and tops), cull material and thinning slash. Some of this material is used for firewood when it is immediately adjacent to roads; use is expected to increase as dead wood becomes harder to get. In

some areas, multi-product sales may become feasible, where small diameter material is sold along with the sawtimber. Another factor in this issue is the role of small sales and small wood product sales on the forest.

To a degree, resolution of this issue is complementary to the firewood issue. Many individuals view firewood utilization of nonmerchantable materials as the only logical use. Increased concentration of efforts to improve timber products use will likely result in additional conflicts in wildlife, visuals, and, possibly, watershed management.

The Forest has limited opportunity to totally resolve the utilization issue because market conditions control utilization levels. However, minor changes in timber sale administration may improve utilization of nonmerchantable materials.

PLANNING ISSUE 17: Threatened and Endangered Species Habitat Management

Planning Problem: How should management of threatened, endangered and sensitive species' habitats be managed and how will it influence other forest resource management?

Background Situation - The forest presently provides habitat for three endangered species - grey wolf, peregrine falcon, and bald eagle - and one threatened species - grizzly bear. Historically, wolves existed over the entire forest. Recent unconfirmed reports of grey wolves suggest limited activity in the upper Lemhi River drainage in areas of high big game density. Peregrine falcons have nested on the forest in the past, but no nesting has been recorded in recent years. There may be potential for reintroduction of the species. Bald eagles migrate into the area and winter on the forest from November through May. The major wintering area is along the Salmon River and the Middle Fork of the Salmon River. Bald eagles are not known to nest on the forest. There have been no confirmed grizzly bear sightings in Central Idaho in several years, however, a highly probably sighting was made on the forest in 1974, and another in 1977. If these animals were grizzly, it is not known if they were resident of transient. A Management Plan has been developed by the forest for each of these species. To date, there have not been any critical or essential habitat designations on the Salmon. Several plant species are being considered for designation as either threatened or endangered.

Reintroduction and recovery efforts for any or all listed species could conflict with other resource developments.

The Forest's ability to support and participate in future recovery efforts will be directly related to the various alternatives being considered. All alternatives will address present threatened and endangered species conditions and take into account legal requirements for species protection.

PLANNING ISSUE 18: Riparian Management

Planning Problem: How should multiple use management be conducted and coordinated in riparian zones?

Background Situation - Past and current management activities in riparian zones are coming to the attention of many publics. Resource uses within riparian zones often produce conflicts which management programs must identify and attempt to minimize. On the Salmon National Forest, resolution of these conflicts presents one of the most complex issues on the forest. The importance of riparian habitats is directly related to habitat and biological diversity and is further magnified by the relatively small amount of riparian habitat on the forest.

Current riparian zone management direction greatly reduces administrative options associated with resource development. While other resource use and development are not excluded, the costs associated with resource activities within riparian zones will likely be higher.

In general, there will be a high degree of specificity in the riparian management requirements covering all alternatives. Outputs expected from riparian associated resources will vary somewhat between alternatives.

PLANNING ISSUE 19: Lands Ownership

Planning Problem: How should the Salmon National Forest be managed adjacent to private lands and what land ownership or management adjustments should be made?

Background Situation - The present forest landownership is the result of changes made since the original Salmon River Forest Reserve was established in 1906. Since then, 1,725 acres of private land have been acquired and 23,900 acres have become patented private lands (approximately the present acreage of private land within the forest boundary). To date, the objectives of the forest landownership adjustment have been to (1) acquire specific private tracts within the forest that are needed to meet management goals, and (2) to consolidate ownership. Factors in this issue include management of National Forest land adjacent to private land and land acquisition. Small tracts of forest lands mixed with private land are nearly impossible to manage.

There was considerable public opposition to Forest Service purchase of private holdings. There was concern for the resulting impacts of forest management on private land values.

Resolution of this issue will be tied to alternative selection and budget constraints. Decisions on land ownership will be directly tied to the goals and objectives of the selected alternative.

PLANNING ISSUE 20: Special Areas

Planning Problem: How many special areas are needed and/or required; and what constraints do existing or potential special areas place on management of other forest resources?

Background Situation - Primary factors in this issue are related to providing protection for (1) areas suitable for Research Natural Areas (RNA) and (2) various cultural sites. Several areas have been identified as suitable for Research Natural Areas and one has been officially designated. There are nine Society of American Foresters recognized

ecological types on the forest, with two of the types represented in the existing RNA. The Kuchler classification lists eight types on the forest with three represented in the existing RNA. There are opportunities for additional RNA's on the forest. Cultural resources, or evidence of man's past activity are widespread throughout the forest.

Resolution of this issue could be handled irrespective of the alternatives, because the scope of special areas management is not expected to conflict with other resources.

PLANNING ISSUE 21: Special Land Uses

Planning Problem: What special uses are needed on the forest and how should they be managed?

Background Situation - The Forest currently has 290 Special Use Permits , with 160 requiring an annual fee. About 74 percent of these fees are from Communications or Outfitting and Guiding permits. Categories and number of permits are: Recreation Uses - 56; Agriculture - 26; Community Uses - 3; Industrial Uses - 8; Public Information - 1; Transportation - 77; Utilities and Communication - 33; and Water Uses - 86. There are 31 cabins, residences or recreation residences on the forest. Many of these are nonrenewable and will expire in the 1980's. Administration of the nonrenewable cabin permits has created some specific problems.

Resolution of this issue will be similar for each alternative. Administration of permits and the granting of new permits will be affected by the level of funding and manpower.

PLANNING ISSUE 22: Law Enforcement

Planning Problem: What should the level of law enforcement be and what areas should be given special attention?

Background Situation - Higher populations and increased use of the forest has resulted in more law enforcement problems. The primary factor in this issue is the public concern that we need more law enforcement. Funding and manpower limitations may be a problem in fully resolving this issue.

Resolution will be the same for all alternatives and will be directly tied to funding and manpower.

APPENDIX B

TABLE OF CONTENTS

I. Introduction

A. Planning Problem

A primary responsibility of the Forest Service is to decide how best to manage National Forest lands to produce the goods and services the public desires. These lands must be managed to provide adequate levels of resources and services for both current and future uses.

The Salmon National Forest consists of approximately 1,777,000 acres and is extremely diverse in terms of geology and biological capability. Forest uses vary from commodities with market values, such as timber, fuelwood, developed recreation, and grazing; to noncommodities, such as dispersed recreation, wildlife, and wilderness.

Land and resource management planning is required on all National Forests by the Forest and Rangeland Resource Planning Act (RPA) of 1974, and as amended by the National Forest Management Act (NFMA) of 1976. Planning under NFMA responds to the increasing complexity and social significance of the forest and the magnitude of the analysis and management decisions. The regulations (36 CFR 219) developed to comply with NFMA provide the analytical framework needed to make such decisions. The NFMA Act and regulations also state that the requirements of the National Environmental Policy Act (NEPA) and its regulations (40 CFR 1500-1508) must be applied in this analysis process. The NEPA Regulations require that the environmental effects of a proposed action and alternatives to that proposed action must be disclosed in an Environmental Impact Statement (EIS).

The planning and environmental analysis process brings a new outlook and a new technology to National Forest land management, principally: (1) processes formerly used to make individual resource decisions are now combined to help make integrated management decisions, and (2) new mathematical modeling techniques are used to assist in the land allocation problem including identifying the most cost-efficient pattern of land management.

B. Planning Process

The NFMA regulations describes a 10-step process (36 CFR 219.12) to be used by National Forests in their planning effort. These steps are:

1. Identification of Public Issues, Management Concerns, and Resource Use and Development Opportunities,
2. Development of Planning Criteria,
3. Inventory Data and Information Collection,
4. Analysis of the Management Situation,
5. Formulation of Alternatives,

6. Estimated Effects of Alternatives,

7. Evaluation of Alternatives,

8. Preferred Alternative Recommendation,

9. Plan Approval (Plan Implementation), and

10. Monitoring and Evaluation.

Appendix B describes and explains the analytical phase of the process, or steps 3, 4, 5, and 6. The judgmental phase, steps 1, 2, 7, and 8, is described in Chapters I, II, and in Appendix A. The execution phase, steps 9 and 10, is displayed in the Forest Plan.

1. Identification of Purpose and Need.

   Through public participation, including contacts with other Federal agencies, and State and local governments, the Forest Interdisciplinary Team identified public issues, management concerns, and resource opportunities (ICO's). The Forest Supervisor then identified the major ICO's to be addressed in the planning process.

2. Development of Planning Criteria.

   The Forest Management Team developed criteria based on the identified ICO's to direct the collection and use of inventory data, the analysis of the management situation, and the design, formulation, and evaluation of alternatives.

3. Inventory Data and Information Collection.

   National Forests collect, maintain, and update data necessary for planning and managing the resources under their jurisdiction. The interdisciplinary team, comprised of specialists from different resource areas, used appropriate existing data whenever possible to address the issues and concerns. This was supplemented by new data and professional judgment to help resolve sensitive issues and management concerns. Data, including resource capability areas and acreages, supply and demand, and the expected outputs, values and costs from management prescriptions, are needed to develop the integrated resource model (FORPLAN) used in the analysis of the management situation, formulation of alternatives, and estimated effects of the alternatives. Data is on file at the Forest Supervisor's Office.

4. Analysis of the Management Situation.

   The Analysis of the Management Situation (AMS) is the determination of the Forest's capability to supply goods and services to meet society's demands. This step provides the

basis for formulating a wide range of alternatives, while remaining within the resource boundaries constructed through this supply analysis. The FORPLAN linear programming model was used to determine these boundaries, in addition to meeting several specific requirements. The requirements include, (1) determining the maximum present net worth (PNW) the Forest can generate using market values, (2) determining the maximum PNW the Forest can generate using market and assigned values, (3) projecting the current management program, (4) evaluating the feasibility of meeting national production goals as expressed by the Resource Planning Act (RPA) targets, (5) determining the PNW with maximum Wilderness, (6) determining the PNW with minimum Wilderness, (7) displaying the minimum costs necessary to retain the lands in the National Forest System, (8) determining the maximum timber production, and (9) determining the maximum range production. The AMS document (with revisions) is on file in the Supervisor's Office.

5. Formulation of Alternatives.

The information gathered during the first four planning steps is combined and analyzed to formulate alternative management plans. The alternatives reflect a range of resource management direction, and each major public issue and management concern was addressed in one or more of the alternatives. The programs formulated represent the most cost-efficient way of attaining the objective set forth in each alternative. Both priced and nonpriced outputs were considered when developing the alternatives. The following lists the type of alternatives considered:

a. The current (no action and current budget) program which projects the current level of goods and services to be provided in the future,

b. The emphasis on market outputs that produce an income for the government,

c. The emphasis on nonmarket outputs and amenity values.

d. The outputs and program emphasis which responds to the Forest's portion of the 1980 RPA program,

e. The constrained budget emphasizes outputs at a constrained 1982 budget level minus 25 percent and straightlined across the planning horizon,

f. The emphasis on high productivity responding to the 1985 Alternative 9, and

g. The other alternatives emphasize some combination market and/or nonmarket output production.

6. Estimation of Effects of Alternatives.

The physical, biological, social and economic effects of each alternative were estimated and analyzed to determine how the alternative meets the various goals and objectives, how the alternative responds to the public issues and management concerns, and how each alternative compares to the other alternatives. The output levels, benefits and costs were generated both through the FORPLAN model, and by analysis outside FORPLAN. The estimation of alternative effects included: (a) direct effects, (b) indirect effects, (c) conflict with other Federal and State land use plans, (d) other environmental effects, (e) energy requirements and conservation potential, (f) natural or depletable resource requirements and conservation potential, (g) historic and cultural resources, and (h) means of mitigation.

7. Evaluation of Alternatives.

Using the previously selected planning criteria, the Interdisciplinary Team analyzed the significant physical, biological, economic, and social effects of each of the twelve alternatives considered in detail. The analysis included present net value, social and economic effects, outputs of goods and services, and systematically documented each step of the process.

8. Preferred Alternative Recommendation.

Using the analysis described in step 7, the Forest Supervisor recommended a preferred alternative to the Regional Forester. The preferred alternative is identified in Chapter II of this Draft Environmental Impact Statement (DEIS), and is displayed as the proposed plan in the accompanying Forest Plan.

9. Plan Approval.

After the issuance of the Final Environmental Impact Statement/Forest Plan (FEIS/Plan), the Regional Forester will review the FEIS/Plan and will either approve or disapprove it in accordance with 36 CFR 219.10(c). If the Plan is approved, a Record of Decision (ROD) will be issued according to NEPA requirements, (40 CFR 1505.2). In addition to the NEPA requirements, the ROD will include a summary comparing the selected alternative with (1) any environmentally preferred alternatives, and (2) any other alternative with a higher present net value.

10. Monitoring and Implementation.

A Monitoring Plan is included in Chapter V of the Forest Plan. It includes the actions, effects, or resources to be monitored; the frequency of measurement; the expected precision and reliability of the monitoring process; the monitoring schedule;

and the allowed variation limits. Implementation will be evaluated at intervals established by the Monitoring Plan to determine how well Plan objectives are being met, and how closely management standards and guidelines are being followed. Based on this evaluation, the interdisciplinary team may recommend to the Forest Supervisor changes in management direction, revisions and amendments to the Forest Plan.

II. Inventory Data and Information Collection

A. Forest Data Base

Inventory data are needed for developing the planning model used in the analysis of the management situation, the formulation and evaluation of alternatives, and monitoring of accomplishments. The Interdisciplinary Team collected and assembled data necessary for making management decisions. Some data existed prior to initiation of the NFMA Forest planning effort, while other data were collected to supplement information needed to resolve issues and concerns.

B. Stratification, Capability Areas and Geographic Areas

In order to respond to Issues, Concerns and Opportunities and to assess and analyze the ability of the resources to produce goods and services, the Forest must be stratified into various components or component sets. An analysis of the interaction and inter-relationships among the components then indicates the ability of those components to produce under a given set of inputs and constraints.

The problem is to determine the extent of specificity to which the stratification must be done. To attempt to determine the degree of specificity required, a number of meetings were held involving members of the Management Team, the Forest Plan ID Team and the various Resource Specialists. Four initial assumptions were made:

1. Not all information from all resources would be necessary as a component in the stratification.

2. At some point the usefulness of information gained by further specificity would be outweighed by the cost of supplying the information.

3. Over-broad stratification could result in "averaging away" the problem.

4. Due to time frames involved, the stratification would be based on existing inventories unless additional inventory was absolutely necessary to address critical issues.

In the above meetings, the inventory layers for each resource were reviewed with the specialists outlining their proposals for stratification of their respective resources in the final layer. The stratified components within each resource layer were termed

individual resource capability areas (IRCA). It quickly became apparent that to stratify the Forest by overlaying each IRCA and using each unique intersect of all IRCA's as the basic unit would result in a stratification too cumbersome for planning purposes. The resulting number of analysis areas would have far exceeded the FORPLAN model capability. The size of individual analysis areas would have been too small to effectively implement a management scheme and the degree of specificity would have exceeded the specificity of any individual inventory.

After further consideration, it was realized that not all IRCA's needed to be recognized in the joint stratification scheme. A set of criteria was generated to identify those IRCA's which would not enter into the stratification.

The screening criteria to identify those IRCA's not essential for joint production analysis were:

1. Yields do not substantially affect allocation or activity scheduling of other acres and yields; or

2. The IRCA stratification does not identify factors which contribute to a yield function; or

3. Resource for which capability is mapped does not:

    a. Address an ICO,

    b. Allow deterministic analysis.

IRCA's identified by one or more of the screening criteria above would be analyzed independently as needed. Representative examples of these layers are developed recreation, special use sites and historic sites.

The IRCA's remaining after the above screening were those whose production functions were related. That is, variations in the yields of one resource will affect the allocation, activity scheduling, or yields of one or more of the other resources. These IRCA's included vegetation (Timber and Range), Transportation, Visuals, Dispersed Recreation, Wildlife Habitat, critical riparian areas, and a sediment/anadromous fisheries stratification on selected portions of the forest. Further explanation of these individual stratifications is contained in separate documentation.

The IRCA's whose production functions were related, fell into two categories. The nonvegetation layers tended to have outputs which were consistent over a comparatively large area and were not necessarily related to vegetational characteristics on any particular acre. For example, sediment production does not depend on the vegetational type or on individual acre as much as it depends on other variables such as type of parent material, slope, and amount of road construction necessary to manage a particular area. These types of outputs could be averaged over a large area of land having similar

characteristics. Different outputs would occur only when significant changes occurred in one or more of the characteristics determining the output. On the other hand, the vegetational outputs varied were on a "per acre" basis. For example, a lodgepole pine sawtimber timber class would have a different set of prescriptions applicable to it than a Douglas-fir sawtimber timber class yet the outputs of the other resource layer could remain the same over both timber classes.

Based on the above assumption, it was decided that the base used for stratification should be the vegetation layers and that the individual timber class on timbered lands or range type on non-timbered lands would constitute the smallest stratification unit. It was also determined that Range and Timber would not be analyzed together and that they would therefore be stratified separately. An explanation of the range stratification is contained in separate documentation and can be found in the Supervisor's Office.

The next step in the process then was to delineate units in which outputs of the nonvegetative resource capability areas were the same for the entire unit. This was accomplished by overlaying the mapping of each concerned resource and attempting to match the lines of all resources to one common unit line. The assumption was that the boundary of an individual resource unit was not critical within certain limitations and could therefore be adjusted within those limitations to match other lines or a compromise line. The resulting units were called "geographic locator areas" or "geographic areas." The actual delineation of the geographic areas was accomplished during meetings in which the resource specialists concerned worked together. The boundaries of the units were arrived at based on the following criteria:

1. All lines would be adjusted to the most critical line.

2. The geographic area delineation must be agreed to by all resource specialists.

3. If a resource specialist requires an area to address a specific problem and the problem is "averaged away" by moving the line, then that area will not be adjusted.

As each geographic area was delineated, it was given a number that reflected the District on which it occurred and the general location on the District. In addition, a record in the form of a matrix, was generated which identified each geographic area and the resource characteristics present within the area. For example, in Areas 5-58, the characteristics are key winter big game range, nonmotorized semi-primitive, retention, conventional logging, and medium sediment production.

Once the geographic areas were identified, they were transferred to the vegetation base layer. To the extent possible, the geographic area lines were matched to the vegetation strata lines. In addition, the current allocation from Land Management Unit Plans and Multiple

Use Plans was delineated in order that the current allocation of any geographic area could be determined. This will allow the comparison of allocations resulting under the various alternatives with the allocations as they currently exist.

The stratification resulting from the above process identifies the individual vegetative classes within geographic areas. The vegetative classes may reoccur in numerous locations throughout the geographic area. The individual occurrences of a vegetative class are the capability areas. The combination of all capability areas within a geographic area are the analysis areas for FORPLAN. Individual geographic areas were identified and recorded separately for bookkeeping and later locational analysis purposes. However, individual geographic areas having similar nonvegetative characteristics and capabilities are combinable and become one geographic area for modeling purposes even though they are non-contiguous. For example, in a geographic area in which a timber class 3 occurs in four different places, timber class 19 occurs in two places and timber class 21 occurs three places a prescription for timber class 3 would apply to the total acres of the four different occurrences. The same would apply to prescriptions for timber classes 19 and 21. If another geographic area occurred having the same nonvegetative characteristics, then the geographic areas could be combined and the total acres of timber class 3 in both geographic areas would take the same prescription as would all acres of timber class 19 and 21.

After the final stratification lines were drawn, the acreage of each unique intersection was determined and recorded. A unique intersection consists of an individual vegetative capability area within a current allocation unit within a geographic area. For example, a 90-acre unit of timber class 4 within the current allocation unit RR 3.2 in geographic area 1-21 would be a unique intersection and the acreage would be calculated and recorded for it. The acreage was calculated from 7-1/2 minute quads using an electronic planimeter. Recording was done by timber class code, current allocation unit, geographic area and quad sheet number.

A computer storage and retrieval system has been developed and the geographic area information including acreages has been entered. Programs for sorting by characteristic, calculating acreages by combinations of characteristic, and so forth, have been developed or are being developed in order that the information may be more efficiently manipulated than would be possible through manual methods.

The final stratification maps, working maps and overlays, geographic area characteristic matrices, area calculation sheet and so forth are stored in files in the Supervisor's Office.

C. Analysis Areas

Analysis areas are one or more capability areas or parts of capability areas combined for the purpose of analysis in formulating

alternatives and estimating various impacts and effects. Analysis areas are the basic building blocks in the FORPLAN model. They are described in the model by a number, six levels of identification, age and area. The Salmon National Forest is stratified into 547 analysis areas. All acres of a given analysis area are assumed to respond similarly to treatment, regardless of where they occur on the Forest. (See Section III of this Appendix.)

D. Development of Production Coefficients

Production Coefficients were developed for all scheduled outputs in the Salmon National Forest FORPLAN model. These scheduled outputs include:

TIMBER - Timber volume in cubic feet
VISIMP - Index of visual impact from harvest activities 1.0 = maximum impact; 0.0 = minimum impact
CUTOVR - Acres in cutover condition
PSDSED - Acres cut for pseudosediment constraints outside the five watersheds; first entry = 1.0; later entries = .4
ROADS - Miles of road required per acre treated; used only in five watersheds
ROADSED - Tons of sediment from building roads; used only in five watersheds
COVER - Acres of cover per acre treated; Thompson's definition of cover is used. Forage = 1.0 - cover 1.0 = 100% cover; 0.0 = 0% cover
CLEARCUT- Percentage clearcut
PLANTING- Percentage planted
THINS - Used to track actual commercial thins; dummy thins are employed to get the cover tables to work correctly. This output is tracked to get an accurate report of actual acres thinned.

Output yields were based on historical data, research, professional judgment, and projection models. Yields vary with management intensity (investment level).

E. Prescriptions

Prescriptions represent choices for management of each analysis area. These choices differ in the kind, amount, and timing of activities used and outputs produced. Therefore, the major function of prescription information is to portray the activities and outputs involved in each choice. Development of prescriptions for the Salmon National Forest FORPLAN model is discussed in Section III of this appendix.

F. Lands Tentatively Suitable for Management Practices

Determination of suitability is the process of ascertaining "...the appropriateness of applying certain resource management practices to a particular area of land, as determined by an analysis of economic and environmental consequences and the alternative uses foregone. A

unit of land may be suitable for a variety of individual or combined management practices."

Range

Determination of land available, capable and suitable for range production follows instructions in U.S. Forest Service, Intermountain Region, Range Analysis Handbook (FSH 2209.21, Dec. 1981). Determination on lands lacking range analysis (25 percent of the Forest acreage) was accomplished by extrapolation or estimate.

Suitable range is land accessible or made accessible to livestock, which produces forage or has inherent forage producing capabilities, and can be grazed on a sustained yield basis under reasonable management goals. Transitory range, which is timbered land made temporarily suitable for grazing through fire or as a result of timber management practices, theoretically exists on the Forest. However, it does not contribute a significant amount of forage to warrant inclusion in the evaluation. The planning assumption made is commercial timber land is unsuitable for forage production. For a more detailed explanation of the range suitability see the Analysis of the Management Situation document, and/or the process records located in the Forest Supervisor's office.

Timber

National Forest System lands were identified by four major categories in the process of determining lands capable of timber production; nonforested, forest land with inadequate information, productive forest land--not suitable, and tentatively suitable lands. All 1,777,000 acres of land were classified as follows:

Nonforest Land. The Salmon National Forest identified land that has never supported forests and lands formerly forested where use for timber production is precluded by development for other use. (Note: Includes areas used for crops, improved pasture, residential or administrative areas, improved roads of any width and adjoining clearings. powerline clearings of any width, barren, grass, etc. If intermingled in forest areas, unimproved roads and nonforest strips must be more than 120 feet wide, and clearings, meadows, etc., more than one acre in size to qualify as nonforest land.) The nonforest land is classified as land not suited for timber production.

Forest Land--Inadequate Information. Forest land which was initially identified as not capable of growing industrial crops of wood at least at the minimum biological growth potential established in Forest inventory definitions. Little information on these less productive lands exists, and they are currently considered unsuitable for timber production.

Productive Forest Land--Not Suitable. Forest land which is capable of growing industrial crops of wood at or above the minimum biological growth established in Forest inventory definitions. This classification includes both accessible and inaccessible, stocked and

nonstocked land. Some productive forest land was classed as not suitable because timber cannot be harvested without impairing soil productivity and/or watershed conditions, or because there is not reasonable assurance that adequate restocking can be obtained within five years after final harvest. Additional productive forest land was classed as not suitable because it was withdrawn from timber production by legislative action (Frank Church--River of No Return Wilderness).

Tentatively Suitable for Timber Production. Lands remaining after nonforest land (including water), forest land (inadequate information), and productive, not suitable lands are subtracted from the National Forest System lands total base. Lands tentatively suitable for timber production are a fixed input to the Forest planning model in the establishment and evaluation of benchmarks and alternatives.

Table B-1 identifies the major land classification for Salmon National Forest lands.

TABLE B-1
SALMON NATIONAL FOREST LANDS CLASSIFICATION

		Thousands of Acres	
1.	National Forest System Lands (Net)		1,777.0
2.	Lands Not Suited for Timber Production:		
	a. Nonforested, including water	422.8	
	b. Forest land--not capable	235.1	
3.	Productive Forest Land--Not Suitable:		
	a. Soil or watershed damage, five-year regeneration not assured	50.7	
	b. Withdrawn by legislative action	323.5	
		1,032.1	1,032.1
4.	Tentatively Suitable for Timber Production		744.9

Of the 744,900 acres of tentatively suitable land on the Salmon National Forest, 71,879 "old growth" acres and a fixed amount of riparian acres are forced to minimum level management in all benchmarks and alternatives. Additional acres are forced to minimum level management and these amounts vary by benchmark and alternative. These additional acres include those in roadless areas, special big game areas and proposed wilderness areas. These acres are displayed for all alternatives in Table B-7 in this appendix. Acres considered economically unsuitable for timber production, given the goals of the benchmark or alternative, are also sent to minimum level management. Tentatively suitable lands are considered economically suitable for timber production if, and only if, they are included in the set of lands that are efficient in meeting the timber production goals of the Forest Plan.

The choice of timber production goals for the Forest Plan depends upon the issues and concerns addressed by the alternatives. An alternative which places a higher emphasis upon timber production will generally allocate a larger land base to timber production. The exception to this rule occurs where it is more efficient to manage

timber more intensively rather than increase the land base for timber production.

Several important points must be recognized at this stage:

1. The analysis starts with a fixed land base of tentatively suitable acres (744.9 M Ac.). Of this fixed land base, specific areas are forced to minimum level prescriptions in all benchmarks and alternatives. This is done in order to meet management objectives common to all benchmarks and alternatives, i.e., management of old growth and riparian habitat. Also, additional acres are forced to minimum level prescriptions (roadless areas, special big game areas and proposed wilderness). Since these acres vary by benchmark and alternative, the final number of acres available to timber management prescriptions in the FORPLAN model varies by benchmark and alternative (see Table II-8 and Table II-12 in Chapter II). If land is tentatively suitable for timber production and if it is not forced to minimum level management for any of the above reasons, it is eligible for assignment to a mix of multiple uses, including some intensity of timber production. The intensity of production assigned to these Forest subunits depends upon the objectives of the benchmark or alternative and the comparative advantage of these Forest subunits to provide mixes of multiple uses.

2. The extent to which tradeoffs are made among resources will depend upon their relative values only when surplus resources exist (land and capital) to meet the minimum output requirements of the Forest alternative.

3. A Forest alternative considers timber production requirements over the entire length of the harvest schedule, not just the first decade. Land that is required to efficiently meet timber production goals for a Forest alternative for any decade of the planning period is suitable for timber production. This includes lands required to efficiently meet timber production goals for the RPA planning horizon (50 years) and to efficiently meet sustained yield criteria for the remainder of the harvest period.

4. Any or all of the tentatively suitable forestland acres may be available for vegetative manipulation. However, the actual amount of acres suitable for such manipulation is a function of management objectives and will vary by alternative. The number of acres suitable for timber management, by alternative, is shown in Table II-8 in Chapter II and Table II-12 in Chapter II. The selected alternative defines the land unsuitable for timber production. No harvest for timber production purposes can occur on these lands. When the Forest Plan is revised, however, this land is again available to meet the objectives of the Forest alternatives. If social objectives and Forest conditions have not changed, it will be designated as unsuitable once again. If conditions have changed, a different

set of lands, larger or smaller, may be designated as unsuitable.

Once an alternative has been selected and adopted as the Forest Plan, any land identified as not suitable for timber production remains as such throughout the planning period. When a plan is revised or there is significant amendment, the process of land classification must be repeated. In other words, land classification divisions in one plan are subject to review and revision in subsequent revisions of the plan.

G. Monitoring and Evaluation

The planning data provides a base from which changes can be measured and as a control for the monitoring actions which are detailed in the Forest Plan. Assumptions and coefficients will be verified and the data will be refined and updated as the Forest Plan is implemented.

H. Plan Implementation

The physical and biological data contained in the planning data base provides starting point information for programming and plan implementation. As monitoring and use provide more accurate information, the data base will be improved and updated.

I. Sources of Data and Information

1. Definitions of outputs, activities and effects--Forest Service Manual, Management Information Handbook (FSH 1309.11a).

2. Administrative boundaries and landownership--Salmon National Forest base map.

3. Capability, analysis area, zone and roadless area maps--7-1/2 minute quads for the Salmon National Forest.

4. Empirical timber yield data--1973 inventory data.

5. Managed stand yield table--prognosis used.

6. Analysis of the Management Situation (AMS) for the Salmon National Forest.

7. Timber strata, analysis area, roadless area, and zone maps.

8. Recreation Information Management System (RIM).

9. "Visual Management System," Agriculture Handbook 461.

10. "Recreation Opportunity Spectrum," Forest Service Handbook 1909.12, November 1980.

11. Forage production potential calculated from average yields contained in existing allotment management plan analyses.

12. Guide for Predicting Sediment Yields from Forested Watersheds--Regions 1 and 4, Intermountain Forest and Range Experiment Station, USDA Forest Service, 1981.

13. Guide for Predicting Salmonid Response to Sediment Yields in Idaho Batholith Watersheds--Regions 1 and 4, USDA Forest Service.

14. *Central Idaho Elk Relationships.* BLM, USDA Forest Service, State of Idaho, 1981.

15. Range Analysis Data Base. FSRAMIS, 1981.

16. Salmon National Forest Five-Year Timber Action Plan, 1984.

17. Land Management Unit Plans for the Salmon National Forest, 1975 to 1978.

III. The Salmon National Forest Analysis Process

A. Overview of Salmon National Forest FORPLAN Model

Forest Planning model (FORPLAN) was the linear programming (LP) model used in the development and evaluation of benchmarks and alternatives. FORPLAN is a third-generation configuration of a series of LP models developed by the Forest Service to aid in resource management planning. Timber RAM and MUSYC, two predecessors, are single resource models designed to evaluate timber allocation problems. FORPLAN, on the other hand, is designed to evaluate problems involving "multi-resource" outputs. In general, linear programming is a mathematical optimization technique which seeks to assign values to decision variables to simultaneously satisfy a set of linear constraints and maximize or minimize a linear objective function. Linear programming has been applied to a diverse set of problems involving the allocation of scarce resources in an optimal manner. In the FORPLAN resource allocation model, management prescriptions (the decision variables) are allocated to areas of land (analysis areas) in a manner which maximizes present net value (the objective function) while satisfying certain conditions such as *minimum or maximum levels of some Forest products (constraints).* A brief description of the major components of the FORPLAN model follows.

1. Analysis Areas

As formulated, analysis areas represent noncontiguous areas of land. Analysis areas are generally representative of scattered areas of land possessing similar characteristics such as geographic location, degree of access, vegetative type, or some combinations thereof. The principal reason for this type aggregation is to group areas with uniform response functions in biological and/or financial terms.

In the model, analysis areas form the basic units on which management decisions are made. A hierarchy of analysis area identifiers categorizes these land units and provides a structure for formulating or describing resource allocation problems through the use of constraints and objective functions. The design of such a hierarchy is critical to the correct specification of production possibilities on the Forest.

Levels of analysis area identification are shown in Table B-2.

TABLE B-2

ANALYSIS AREA IDENTIFIERS
FOR SALMON NATIONAL FOREST FORPLAN MODEL

LEVEL 1 IDENTIFIERS Describe the "geographic zone" for each analysis area.

In the five watersheds the L1 identifier is the name of the watershed. A map of these areas is available in the Supervisor's Office.

1.	INOLA	Indianola	Geographic Zone A
2.	N.FORK	The North Fork drainage	Geographic Zone B
3.	BVRHD	The Beaverhead Range	Geographic Zone C
4.	LEMHI	The Lemhi Range	Geographic Zone D
5.	SALMON	The Salmon Face	Geographic Zone E
6.	COBALT	The Cobalt District	Geographic Zone F
7.	IND.CK	The Indian Creek Drainage	
8.	OWL.CK	The Owl Creek Drainage	
9.	PIN.CK	The Pine Creek Drainage	
10.	SQW.CK	The Squaw Creek Drainage	
11.	SPG.CK	The Spring Creek Drainage	

LEVEL 2 IDENTIFIERS Tells whether the acres are helo only or conventional logging systems.

1.	CONVEN	Conventional
2.	HELO	Helo only

LEVEL 3 IDENTIFIERS Describe the relative level of sediment production in each analysis area due to timber harvest. Applies only to the watershed geozones.

1.	---	Blank
2.	---	Blank
3.	---	Blank
4.	HI-SED	High sediment production
5.	MEDSED	Medium sediment production
6.	LO-SED	Low sediment production
7.	HELO-H	Helo harvest high sediment
8.	HELO-M	Helo harvest medium sediment
9.	HELO-L	Helo harvest low sediment
10.	---	Blank
11.	---	Blank

12.	---	Blank
13.	MED++	Higher than MED+
14.	HIGH+	Higher than the average high sediment production
15.	MED+	Higher than the average medium sediment production
16.	LO+	Higher than the average low sediment production

WORKING GROUP Describes the timber species.

1.	D-FIR	Douglas-fir
2.	PP-MES	Ponderosa pine and Douglas-fir mix on mesic sites
3.	LPP	Lodgepole pine and associated species
4.	MIXCON	Mixed conifer - All Douglas-fir on North Fork District and all PP-MES regenerate into this working group.
5.	---	Blank
6.	NONFOR	Noncommercial forest and nonforested lands.
7.	---	Blank
8.	UNSUIT	Lands determined to be unsuitable for regulated timber harvest; includes all riparian acres as well as technically unsuitable lands and acres mapped as old growth to be retained.
9.	PP-XRC	Ponderosa pine on xeric sites.

LAND CLASS Describes the logging method needed to harvest area.

1.	TRAC	Tractor ground
2.	STEEP	Steep ground requiring cable or skyline
3.	---	Not applicable - used with nonforest and unsuitable working groups
4.	HELO	Helicopter only

CONDITION CLASS (EXISTING) Describes the age/size class of the existing stands.

1.	MAT.SA	Mature sawtimber
2.	IMM	Immature sawtimber
3.	POLES	Poles less than 7" DBH
4.	SEEDS	Seeds and saplings
5.	SHELT	Stands that have received the first cut in a shelterwood regime
6.	NONST	Timberland currently nonstocked due to either natural causes or past harvesting
7.	---	Not applicable - used with nonforest and unsuitable working groups
8.	STAG	Stagnated LPP poles and seeds and saps
9.	OLD-GW	Acres mapped as old growth to be retained as old growth throughout the planning horizon.

CONDITION CLASS (REGEN)

1.	REGEN	All analysis areas regenerate into this REGEN condition class.

2. Management Prescriptions

Multiple use management prescriptions represent a set of management practices or activities and their associated standards and guidelines. They are designed to produce a mix of

outputs through time. Each prescription contains components of a production function for jointly produced outputs. Different analysis areas may utilize the same prescription; however, different output levels, costs, or benefits would occur due to inherent differences between analysis areas. Management prescriptions are commonly identified by two factors, management emphasis and management intensity, within the FORPLAN data set. Timing and scheduling options are defined as an integral part of each prescription.

a. FORPLAN Prescription Identifiers

Management emphasis and intensity descriptors for FORPLAN prescriptions are shown in Table B-3.

TABLE B-3

MANAGEMENT EMPHASIS AND MANAGEMENT INTENSITY DESCRIPTORS
FOR SALMON NATIONAL FOREST FORPLAN MODEL

MANAGEMENT EMPHASIS Describes whether the prescription uses conventional or helicopter logging systems.

1.	MINTIM	Minimum level for timbered analysis areas
2.	MINRNG	Minimum level for nonforested and nonproductive forestlands (NONFOR)
3.	CONVEN	Conventional (tractor and cable) logging systems
4.	HELO	Helicopter logging systems

MANAGEMENT INTENSITY Describes the level of intensity or investment for the prescription. Intensity on immature and mature existing stands describes the relative investment in getting quick regeneration. On other stands, intensity describes the investment in intermediate growth treatments. Also tells the working group so that land allocation report 4 is useful.

4.	MINRNG	Used with minimum level prescriptions on NONFOR analysis areas
5.	MINUNS	Used with minimum level prescriptions on timbered analysis areas unavailable for timber harvest (UNSUIT)
6.	MIN-OG	Used with minimum level prescriptions for old growth analysis areas
7.	RESTK	Restocking nonstocked analysis
8.	SHLMED	Medium intensity treatment of shelterwooded analysis areas
9.	STAG	Regeneration treatment of stagnated LPP stands
10.	SHLLO	Low intensity treatment of shelterwooded analysis areas
11.	MIN-DF	Minlevel on suitable Douglas-fir acres
12.	MIN-PP	Minlevel on suitable mesic p-pine acres
13.	MIN-LP	Minlevel on suitable lodgepole acres
14.	MIN-MC	Minlevel on suitable mixed conifer acres
15.-18.		(Not used)
19.	MIN-XP	Minlevel on suitable xeric p-pine acres
20.		(Not used)
21.	HI-DF	High intensity on Douglas-fir acres

22.	HI-PP	High intensity on mesic p-pine	acres
23.	HI-LP	High intensity on lodgepole	acres
24.-28.		(Not used)	
29.	HI-XP	High intensity on xeric p-pine	acres
30.		(Not used)	
31.	MED-DF	Medium intensity on Douglas-fir	acres
32.	MED-PP	Medium intensity on mesic p-pine	acres
33.	MED-LP	Medium intensity on lodgepole	acres
34.-38.		(Not used)	
39.	MED-XP	Medium intensity on xeric p-pine	acres
40.		(Not used)	
41.	LO-DF	Low intensity on Douglas-fir	acres
42.	LO-PP	Low intensity on mesic p-pine	acres
43.	LO-LP	Low intensity on lodgepole	acres
44.-48.		(Not used)	
49.	LO-XP	Low intensity on xeric p-pine	acres

b. Prescription Development

The initial set of prescriptions included numerous combinations of management emphasis (ME) and management intensity (MI). It was not possible or desirable to handle all ME/MI's in FORPLAN. Rangeland and other prescriptions were developed to be handled strictly outside the model. Some ME/MI's could be handled well by FORPLAN, but not as prescriptions. These were handled as constraints in the model. For example, for visuals a visual impact yield table was developed and the model was constrained not to exceed a given amount which varied by alternative.

The actual FORPLAN prescriptions consisted of HIGH, MEDIUM, LOW AND MIN-LEVEL intensity levels generally available for each timber type. HIGH prescriptions had a higher percentage of clearcutting and planting and higher investments in all treatments. These prescriptions showed higher costs but due to a shorter regeneration period a faster recovery of wildlife cover and other values was shown. Timber per acre yields were also higher. Due to more reliance on natural regeneration, the MEDIUM and LOW prescriptions showed longer average regeneration periods but lower costs. Prescriptions and timber yield tables varied by general area on the Forest. For instance, the Douglas-fir prescriptions reflected the longer regeneration period and slower growth in the southern portion of the Forest. Most prescriptions were given a relatively wide range of timing choices except where professional judgment indicated otherwise.

3. Production Coefficients

Production coefficients exist in the FORPLAN model as numerical values in yield tables. They are present for all scheduled outputs, as follows:

a. Timber

Yield values for existing stands were developed using the latest inventory (1973) as a base. The volume per acre by age class was determined from the inventory for each timber class or timber class group. Regression analysis was then used to smooth the curves and fill in missing data. The Regenerated tables were developed using the Inland Empire version of the PROGNOSIS model.

b. Visual Impact

The visual yield tables provide the coefficients used by FORPLAN to calculate the acres of visual openings or visual impacts from each timberland treatment prescription. These acres were used to determine the visual effect from various alternatives or levels of management.

c. Sediment

The sediment yield tables provide the coefficients used by the FORPLAN model to show the tons of sediment produced per acre treated for each prescription in selected watersheds. "Logging Sediment" tables show sediment resulting from timber harvest activities and "Road Sediment" tables show the sediment from the associated local and temporary road construction and maintenance.

d. Roads

The road yield tables show the miles of local roads built for each acre treated. Arterial or collector road miles and costs are not included in FORPLAN. These adjustments are made outside of FORPLAN. No road miles or costs are shown for regenerated stand prescriptions because roads are in place for those stands. Road maintenance costs are included in the economic yield tables.

e. Wildlife Cover and Cutover "Openings"

The wildlife yield tables provide the coefficients used by FORPLAN to show acres of forage or cover resulting from each timberland treatment prescription. Forage areas typically result from timber harvest. The areas return to cover as the regenerated stand grows. Cover is typically produced when stocking reaches 200 trees/acre and trees are 8 feet tall.

The wildlife yield tables were modified to develop another set of tables which depict the number of acres of cutover "openings."

f. Other

Certain timberland treatment prescriptions involved combinations of some activities by percent. For example, 30 percent clearcut and 70 percent shelterwood. This required special "scheduled output" yield tables for the following outputs: clearcut acres, acres planted and acres thinned.

4. Constraints

Constraints are used to ensure that the assignment of prescriptions to analysis area conforms to the emphasis of a particular alternative. FORPLAN constraints fall into four categories: (1) constraints for technical implementability, (2) constraints to ensure conformance to the minimum management requirements, (3) general timber policy constraints; i.e., nondeclining yield and harvest of timber stands generated at or beyond mean annual increment, and (4) discretionary constraints designed to achieve various levels of outputs and expenditure levels. The first three categories of constraints define production limits common to most alternatives. The fourth category completes the specification of the production surface for a particular alternative. Specification of the production surface and an objective function are sufficient conditions for the FORPLAN model to achieve an efficient assignment of prescriptions to analysis areas.

5. Objective Function

The objective function guides the linear programming algorithm to an optimal solution. In Forest planning alternatives, the objective function is "maximize present net value" of all priced outputs. Nonpriced outputs and qualitative environmental effects are portrayed with specified constraint sets. Since constraints must always be satisfied, the objective function will never locate optimal solutions outside the scope of the constraints specified for outputs and environmental effects (whether or not they are priced).

B. Management Prescriptions

Following is a list of the management prescriptions used on the Salmon National Forest.

MANAGEMENT PRESCRIPTION LIST

Prescription Number

1A - Provides for existing winter sports sites.

2A - Emphasis is on semi-primitive motorized recreation opportunities.

2B - Emphasis is on semi-primitive nonmotorized recreation in roaded or nonroaded areas.

3A - Emphasis is on aquatic habitat management for anadromous fish species.

4A - Emphasis is on key big game winter range (i.e., KBGWR).

4B - Emphasis is on key big game summer range (i.e., KESR).

4C - Emphasis is on interstate big game migration routes.

5A - Emphasis is on high level of commercial sawtimber output and high investments in timber management.

5B - Emphasis is on medium level of commercial sawtimber output and medium investments in timber management.

5C - Emphasis is on low level of commercial sawtimber output and low investments in timber management.

5D - Emphasis is on high timber outputs - current wildlife.

5E - Emphasis is on medium timber outputs - current wildlife.

5F - Emphasis is on low timber outputs - current wildlife.

6A - Provides for special interest areas.

6B - Provides for Wild and Scenic Rivers.

7A - Wilderness Prescription (implemented on proposed wilderness lands).

7B - Wilderness Prescription (implemented on existing wilderness lands).

8A - Emphasis is on range outputs.

C. Analysis

1. Analysis Prior to FORPLAN

Most of the analysis done prior to the running of the FORPLAN model was preliminary work needed to model the Salmon National Forest. Capability areas were mapped and inventoried. Similar capability areas were grouped into analysis areas. Production coefficients (costs, values and yields) were prepared for the various resources. All cost and value coefficients developed for a specific resource were formulated by a resource

specialists using historical data, research, and professional judgment. These coefficients were incorporated into management prescriptions. Resource specialists analyzed the information to ensure the prescriptions were cost effective and would accomplish the required analysis. Prescriptions were prepared to address issues and concerns (incorporating management practices, and standards and guidelines).

A socio-economic overview was prepared. This report detailed the social impact assessment area and baseline socio-economic conditions.

The Forest Wildlife Biologist identified management indicator species and their requirements. The Forest Management Team identified and mapped approximately ten percent of the suitable timber acres of each specie as old growth. The old growth areas (71,879 ac.) are removed from the timber base in all benchmark and alternative formulations. In some formulations they are withheld as old growth; in others they are withheld as wilderness.

2. FORPLAN Analysis

The linear program FORPLAN was used to formulate Forest-wide alternatives through a selection of prescriptions based on an objective function to maximize present net value. Present net value is the discounted value of all benefits over a 150-year planning horizon minus the discounted costs for the same period. By using results from the FORPLAN model, the Interdisciplinary Team was able to analyze benchmarks and alternatives. As a result of the use of FORPLAN, the difference in present net value between alternatives is due to differences in the objectives of each alternative. These objectives require the application of a unique set of constraints to the FORPLAN model with a common objective function of present net value. These constraints led to a unique set of consequences defined in terms of present net value, resource yields, and quantitatively and nonquantitatively measured effects (including the response to each issue). Variations in consequences form the basis for analysis, evaluation, and comparison of alternatives.

3. Analysis Done Outside the FORPLAN Model

FORPLAN displays designated activities and outputs for each alternative for the entire Forest. The results of FORPLAN were used in the estimation or calculation of: (a) number of acres in various Recreation Opportunity Spectrum classes, (b) number of big game produced, (c) water yield meeting state standards (in acre feet), (d) pounds of anadromous and resident fish produced, (e) wildlife user days, (f) fuelwood, (g) miles of road constructed, (h) number of acres receiving timber stand improvement, and (i) acres reforested.

4. Other Models and Processes

a. Sediment Analysis Methodology

Cumulative effects of road construction and timber harvest operations on stream sedimentation have been assessed quantitatively in the Forest Planning process on the Salmon National Forest. A sediment modeling technique, based on sedimentation research in granitic soils of Central Idaho was used to determine impacts on water quality and downstream beneficial uses in the major watersheds on the Forest.

An inter-regional work group summarized the Central Idaho research results and developed a working guide to sediment production. This guide is titled, "The Guide for Predicting Sediment Yields from Forested Watersheds", by a work group of soil scientists, hydrologists and watershed specialists from the Northern and Intermountain Region, and the Intermountain Forest and Range Experiment Station.

The guide is useful in estimating relative effects of various land management activity on sediment levels in streams. It also provides a methodology to predict the natural sediment rates of watersheds. Numerous site specific parameters were used to develop estimated natural sediment rates of the watersheds. They include, but are not limited to: parent geology, soil textures, soil depths, sidehill shapes dissection, and slopes, slump hazards, local climate including precipitation occurrence and distribution, aspect, and vegetative cover.

The effects of land management are estimated using research based coefficients. For timber harvest they include harvest methods, scheduling, area cut, location on the slope, as well as the site specific parameters mentioned above for use in estimating natural sediment rates. Road construction considerations include miles of road, road width, fillslopes and cutslopes. Numerous mitigation measures are also incorporated when appropriate, including (but not limited to) road closures, obliteration, seeding and fertilization of the cut and fill slopes, windrowing slash, mulch, buffer strips along water courses, etc.

On the Salmon National Forest, this model was used within FORPLAN analyses in a selected group of watersheds. These include five streams which are located primarily in the granitic batholith. Owl Creek, Pine Creek, Spring Creek, Squaw Creek and Indian Creek were all modeled within the FORPLAN model for all alternatives. Information gathered from these five watersheds, such as the ratio of density of activity to resultant percent over natural was used to estimate cumulative effects of projected activity on other parts of the Forest. Extrapolation to other parent

materials considered different erosion rates and responses to disturbance.

While the sediment model is designed to project yearly sediment levels, FORPLAN is based on decade outputs. The FORPLAN model was directed to limit sediment in each decade to a level that reflects two major road entries, and two resultant peaks in yearly sediment levels. The FORPLAN sediment threshold levels were calculated so that the sediment levels for individual years with major new road construction would not exceed the sediment goals.

b. Fish Response Analysis

Fish response models were developed to analyze the cumulative effects of sediment, generated from road construction and timber harvest, upon the resident and anadromous fish resources. The basic approach utilized information developed by a Forest Service inter-regional work group. This work group summarized the existing knowledge pertaining to sediment influences on fish survival and developed a working guide for predicting fish response to sediment.

The basis for the relationships outlined in the guide was the linkage of percent sediment anticipated over natural and the resulting sediment which was deposited within the spawning or rearing habitats. This relationship was based upon field analysis of percent fines in the gravels and comparing those values to estimated sediment levels. Other relationships were developed during fish research studies. In addition to using the information contained within the fish response guide, other life stage information was included into the planning models. This additional information included estimates of survival during the journey to and from the ocean, harvest estimates and dollar values associated with the harvest components.

The resident and anadromous fish response models allow for rapid assessment of effects resulting from anticipated sediment levels. The results were both watershed and geographic zone specific. Outputs were calculated for each decade and for the 50-year total.

Reliability of Fish Response Models

The fish response models were based primarily upon relationships developed from controlled research studies and field investigations. Statistical verification and additional discussion on information reliability can be found in "Guide for Predicting Salmonid Response to *Sediment Yields in Idaho Batholith Watershed*" developed by the Northern and Intermountain Regions of the Forest Service. The relationship between percent fines in the

gravels and percent sediment produced over natural was developed from granitic watersheds and this relationship may be slightly different for watersheds with other parent materials. Preliminary field evaluations using core sampling procedures indicated that percent fines observed in the streams were generally higher than what would be expected from the predicted sediment values.

c. Visual Resource Analysis Methodology

Cumulative effects of timber harvest activities on the visual resource have been assessed using the "Effective Alteration" approach to visual resource management/FORPLAN analysis.

This approach provides a means for visual resources to interact as a scheduled output with FORPLAN analysis for timber harvest scheduling. It involves durations of such visual impacts and spatial quantity of such visual impacts and can account for past impacts. It is designed to allow for variations in timber types, harvest methods, logging methods, regeneration methods and various alternative visual quality objective mixes. Maximum percentages of land that can be in an altered state at any one time are equated to visual quality objectives.

Outputs are shown in acres that can be harvested per decade and indicate the timber outputs that are attainable under a given set of visual quality objectives.

The "effective alteration" approach is based on the following hypotheses:

> The visual impacts upon lands that are being regeneration harvested will accumulate decade by decade but that regrowth will offset such increasing impacts at some point in time. Eventually, under a fully managed stand, the visual impacts will generally tend to remain constant as new areas are harvested and old harvested areas heal through regrowth. Percentages of harvest per decade can be analyzed so as to match the acceptable degrees of visual alteration defined by each visual quality objective.

There are two pieces of information that need to be determined to begin the process. The first is cumulative impact by Visual Quality Objective. Cumulative impact is the term used to describe the total amount of impact within a specified area at any one point in time. Through existing research, computer simulations and analysis of existing situations on the ground, numbers have been developed which relate to the maximum percent of a given piece of land that can be in an altered state at any point in time and meet the intent of a corresponding Visual

Quality Objective. The following percents are being used on the Salmon National Forest: Retention, 9%; Partial Retention, 15%; Modification, 21%; Maximum Modification, 27%.

The next piece of information required is the duration of impact. This is a determination of how long it takes a harvested area to reach the point of regrowth, sufficient in density and height, that it would no longer be considered a substantial visual impact. Duration of impact is entered into FORPLAN through the visual yield tables. These yield tables account for growth rate by species and geographic location on the Forest, and for regeneration method.

Finally, constraint acres are calculated by geographic area, by applying the various percents to the number of forested acres assigned to each Visual Quality Objective in that particular geographic area. The number of constraint acres, or visual impact acres allowed, changes by alternative and permits analysis based on current direction VQO's, inventory VQO's, or any mix thereof.

The end result is a guide to the intensity or amount of activity that can be placed in a specific geographic location and ensure meeting the intent of the adopted Visual Quality Objectives, if harvesting follows the visual standards and guidelines. The standards and guidelines are the heart of Visual Resource Management. This is where we move from the gross and abstract (% per decade) to the implementation of projects (size of units, shapes, dispersal, slash treatment, etc.). Standards and guidelines have been developed which relate to the various VQO/distance zone combinations. This provides the detail not possible in FORPLAN analysis. What FORPLAN analysis does provide is guidance as to the amount of activity in a particular area that will ensure that the standards and guidelines can be accomplished.

D. Economic Efficiency

1. Process and Procedures

In recent years, the Federal Government has become increasingly aware of and committed to the economic efficiency of federal actions. The NFMA regulations (36 CFR 219) and ensuing Washington Office and Department of Agriculture direction reflect that the Forest Service should consider economic efficiency in developing and choosing between Forest Plan alternatives.

NFMA regulations specify that "each alternative shall represent to the extent practicable the most cost-efficient combination of management prescriptions examined that can meet the objectives

established in the alternatives" (36 CFR 219.12 IF)(8)). An alternative or program is said to be cost efficient if it maximizes present net value subject to achieving specified levels of outputs and inputs (36 CFR 219.3).

2. Present Net Value

Present Net Value (PNV) is a means for measuring economic efficiency used in Forest planning. It represents the dollars difference between the discounted value of priced outputs and costs.

In complying with the above regulations, the Forest maximized PNV in FORPLAN. This provided the levels of priced outputs in FORPLAN at an "efficient" point, given the objectives of the alternative as reflected in the model. PNV was also used as one criteria for choosing prescriptions or activities not incorporated in the FORPLAN model (but which have an established benefit value); e.g., campground development, wildlife and fish projects, etc. Least cost was also considered as a criteria.

It should be noted that present net value (PNV) which is calculated by FORPLAN is but one of a variety of factors used to describe a benchmark or alternative. It is not possible to include all costs and benefits in the calculation of PNV for an alternative. The reason for this is due to uncertainty related to such problems as:

a. Not all outputs are explicitly valued; e.g., visual quality, protection of threatened and endangered species, etc. These outputs are often constrained to a specified level and are, therefore, achieved independent of the PNV calculation.

b. Estimation techniques for valuing goods may not be accurate.

c. Values for nonmarket goods provided by RPA often reflect national averages which may differ significantly with local values.

d. Quality differences between priced nonmarket outputs typically are not valued explicitly; e.g., congestion differentials are often not considered for recreation.

e. Demand curves for priced outputs may not be identified at the Forest level.

Due to the uncertainties of calculating PNV, this criteria should not be weighted heavily when comparing alternatives. Still, the discounted benefits and costs can be used to compare alternatives.

3. Net Public Benefit

Net public benefit is an expression used to signify the overall long-term value to the nation of all yields and positive effects (benefits), less all associated inputs and negative effects (costs) whether they can be quantitatively valued or not. Net public benefits are measured by both quantitative and qualitative criteria rather than a single measure or index, such as present net value (PNV).

Conceptually (in land and resource management planning), net public benefits are viewed as PNV plus the value of nonpriced benefits. Nonpriced benefits include items such as threatened and endangered species maintenance or enhancement, natural or scenic areas, cultural site protection, visual quality in excess of minimum management requirements and increased plant or animal diversity.

There are other benefits or effects which are related to net public benefits and the concern for National Forest policy and management. These include local income, jobs, economic developments, impact on taxpayers, price effects on consumers of forest products and other producers of forest-related products, 25 percent returns to counties and distribution of benefits to specific users of National Forest products or activities. All these are distributive welfare effects which impact National Forest production and are the object of national policy issues which have been discussed by the Administration and Congress. Because these are distributive effects, they are essentially questions of equity rather than efficiency. They involve the question of who should get benefits and who pays the costs. They cannot be assessed in the context of the efficiency criteria associated with PNV.

E. Economic Information Modeled in FORPLAN

The economic parameters include interest rate, timber demand, and timber price and cost information. Two interest rates are required for analysis, 4.0 and 7.1 percent. The timber demand curve is assumed to be horizontal for all alternatives. This means the unit price of lumber is constant over all output levels. Finally, prices and costs are not trended. Selling value and production costs are projected to remain constant over time.

The economic tables for analysis area prescriptions contain information of timber selling values, logging costs, manufacturing costs, local road construction costs and Forest Service Administrative costs. The tables vary by geographic area, management intensity level, and harvest entry. The information contained in the various cost/value centers are:

Per Acre

1.	Road	Construction and maintenance of local roads.
2.	Logging	Slash disposal costs for all types of final harvest entries.
3.	Site Preparation	Reforestation costs for all types of final harvest entries.
4.	Precommercial Thinning	Cost of precommercial thinning.
5.	Other Cultural Treatment	Cost of cultural treatments other than reforestation and precommercial thinning.

Per MBF

1.	Timber Price	SW zone collected timber values for 1971-1980, adjusted to 1978 dollars, trended to 1980, and adjusted for volume per acre and diameter. Selling values are adjusted by an historic bid up value.
2.	Logging Costs	SW zone collected logging costs for 1971-1980, adjusted to 1978 dollars, trended to 1980, and adjusted for volume per acre and diameter.
3.	Manufacturing Costs	SW zone collected logging costs for 1971-1980, adjusted to 1978 dollars, trended to 1980, and adjusted for volume per acre and diameter.
4.	Sale Preparation	All Forest Service Sale Preparation and Administration costs directly related to offering timber for sale. This also includes other activities such as: Visual Inventory, Fish and Wildlife Prescriptions, Water Resource Inventories, and Soil Resource Planning.

Economic date were used to allow the FORPLAN model to develop the most cost effective mix of prescriptions and harvest ages (based on tree diameter) that met various goals and to help develop a budget for each AMS Level and Planning alternative.

F. *Timber Valuation Process*

Costs and selling values used are from Forest Service collected values, Southwestern Zone, for the calendar years 1971-1980. These costs were deflated with GNP price deflator values and then trended over time using linear regression.

1. *Selling values and manufacturing costs*

Douglas-fir, ponderosa pine, lodgepole pine/other selling values were deflated to 1978 dollars and trended as noted above. Selling values lumber tally were computed as were selling values log scale (by adding in miscellaneous by-products and multiplying by overrun). The scale procedure was followed for manufacturing costs. Selling values log scale were computed on a quarterly basis by using Western Wood Products Association (WWPA) averages for a particular quarter in question and divided by the yearly WWPA index. All other computations were on a yearly basis.

The selling values and manufacturing costs actually used in the Forest Plan are the most recent trended values and appear in 1978 dollars (see Table B-4).

TABLE B-4

SELLING VALUES AND MANUFACTURING COSTS (Per MBF)

	PP	DF	LP/Other
Selling Values LS	412	334	297
Manufacturing Costs LS	194	191	185

2. Logging Costs

Unadjusted logging costs from the Forest Service cost collections in the Southwestern Zone were deflated and trended just as selling values and costs were. The costs trended were:

a. felling and bucking
b. skidding
c. loading
d. overhead

Costs were trended separately and as a group. Costs were computed for tractor, cable, and helicopter. Resulting values are shown in Table B-5.

TABLE B-5

LOGGING COSTS (per MBF)

Cost Center	Tractor	Skyline	Helo
Felling/bucking	16.70	16.55	18.20
Skidding	25.00	41.10	103.60
Loading	9.20	9.40	13.10
Overhead	9.40	12.25	35.50
Sum	60.30	79.30	170.40
Stump to Truck	60.30	70.70	171.20

Logging costs were adjusted for diameter according to Forest Service Southwestern Zone timber appraisal data.

3. Willingness to Bid

The cost and selling values were tested on actual sales offered between 1977 and 1981. Actual diameter (DBH) was used to obtain stump to truck cost by logging system. The appraised value obtained in this way was compared against a deflated statistical high bid. The difference between the two on deficit sales could be one indicator of industry's "willingness" to bid. An average "overbid" for these sales was used to adjust selling values in the model.

G. Economic Information Outside the FORPLAN Model

Market resources whose total market values were calculated outside of FORPLAN include: recreation, wilderness, fish, wildlife and range. Range values were developed from an economic analysis of ranching activities in the Salmon National Forest area (Colorado State University, 1982). RPA values were used for recreation, wilderness, fish, wildlife and range.

Costs and activities *not* included in the model are those costs that do not vary by timberland treatment prescription or cannot be calculated on a per treated acre basis. These include: Arterial and Collector road construction, costs shown in "Rangeland Prescriptions", costs in "Other Prescriptions", and various "Non-Prescription Activities."

These costs are added to the FORPLAN costs to develop a description of activities and costs for each AMS Level and Planning alternative.

H. Socio-Economic Analysis

Introduction

The social analysis of the alternatives is based on the requirements/guidelines of Regional Office (Ogden) and FSM 1973 along

with the following decision criteria: social variables, units of analysis, and the outputs/practices of the alternatives. The social variables as described in Social Assessment of the Current Situation (Salmon National Forest, 1982) are: symbolic meaning, self-sufficiency, certainty/uncertainty, community cohesion, job dependency, and lifestyle. The Units of Analysis are: ranchers, loggers, retired, miners, big game guides and outfitters, business people, government workers and educators, river guides and outfitters, regional people, national people, and Native Americans. These groups are also described in detail in the above mentioned Social Assessment of the Current Situation. The alternatives which represent the third decision criterion are briefly discussed below.

ALTERNATIVES 1/

Current Direction (Alternative #1)

The current management direction of the Salmon National Forest places moderate to high emphasis on visual qualities, wildlife, unroaded dispersed recreation, fish, general recreation, timber, and range. The current management direction is the basis and standard by which a positive or negative impact is declared. That is, any changes, whether negative or positive, are based on the current situation. An increase in the number of elk from the present number would be perceived as a positive benefit for those who receive enjoyment from more elk and a decrease in elk from current population would generally be considered a negative impact on those who have an amenity or economic stake in the number of elk.

Market (Alternative #2)

High emphasis would be placed on range, timber, and developed recreation. Wildlife and visual quality would receive low emphasis. This would definitely be a commodity-oriented alternative. There would be approximately a 50 percent increase in timber harvest and 19 percent increase in AUM's.

Non-Market (Alternative #3)

This alternative would emphasize nonmarket values such as wildlife, fish, water quality, visual quality, cultural resources, dispersed recreation and general amenity values. AUM's of livestock grazing and amount of timber harvested will decline from present levels.

1/ For a detailed account of the alternatives, see the Array of Alternatives document published by the Salmon National Forest in June of 1984. A comprehensive description of each alternative, along with projected outputs, is presented.

RPA 1980 (Alternative #4)

This alternative features a moderate to high emphasis on timber and range and a low to moderate emphasis on wildlife and other amenity values. There would be about the same number of AUM's as present and an increase of approximately 60 percent in timber harvest. There would be a decrease in elk and deer numbers of about 29 percent and 20 percent, respectively.

Productivity (Alternative #5)

This alternative is characterized by high emphasis on timber and range outputs, increasing outputs over present levels by about 80 percent and 16 percent, respectively. Deer and elk population would be reduced significantly. This alternative would produce high market outputs and place low emphasis on amenity values.

Constrained Budget (Alternative #6)

This alternative would be characterized by custodial management on Forest outputs because of limited funds. Wildlife levels would increase while range and timber outputs would decrease by about 4 and 14 percent, respectively. Development recreation sites would be slightly reduced, but opportunities for high quality semi-primitive recreation would be enhanced.

Capability (Alternative #7)

This alternative would be characterized by a reduction in timber harvest (compared to present management level) by about 13 percent. The number of AUM's would be increased slightly, and amenity values, including the numbers of big game animals (elk) and anadromous would be increased.

The alternative would emphasize resource or amenity development and management on the sites most productive or appropriate for a particular activity (i.e., timber production would be emphasized on the most productive areas, big game winter range improvements would be stressed in sensitive/critical areas).

Wilderness and Wildlife (Alternative #8)

The amenity values such as wilderness, semi-primitive recreation opportunities, wildlife, and visual quality are the main emphases of this alternative. Wildlife (deer, elk, bighorn sheep, and mountain goats) numbers would be increased significantly. Overall, AUM's of livestock grazing and timber harvest would decrease significantly.

Wilderness and T&E (Alternative #9)

This alternative features a high emphasis in such amenity values as development recreation, wilderness, wildlife, fish, and visual quality. Low emphasis would be placed on range and timber outputs.

Maximum Wilderness Manageability (Alternative #10)

This alternative is characterized by an increase in wilderness acres and an intense management of market outputs in areas outside of the wilderness areas. Range outputs would receive high emphasis, while timber harvest would receive moderate emphasis.

Maximum Wilderness Inventory (Alternative #11)

Under this alternative, roadless areas would be managed as wilderness based on roadless inventory lines and other resources would be managed similar to current situation. Wildlife would receive high emphasis, range would receive medium emphasis, and timber outputs would receive low emphasis.

Modified Current (Preferred) (Alternative #12)

This alternative would slightly increase emphasis on timber and range outputs and visual quality objectives. Wildlife levels would remain fairly constant except for a slight increase in elk capacity. Opportunity for high quality semi-primitive recreation would be enhanced.

For a detailed account of the alternatives, see the Array of Alternatives document published by the Salmon National Forest. A comprehensive description of each alternative, along with projected outputs, is presented.

ANALYSIS OF SOCIAL EFFECTS

The social impacts of land management planning are often difficult to estimate and quantify. However, they can be, and often are, among the most important considerations in choosing an alternative.

The social impacts or potential impacts for this analysis were basically analyzed in reference to the people (units of analysis) most likely to be impacted, how these people are or may be impacted or changed (social variables), and the provisions (outputs and practices) of the alternatives. The extent to which an alternative was commodity or amenity oriented seemed to be the major factor in determining the social effects upon the various groups or categories of people. It is unfortunate that the benefits of a land management action for one major segment (i.e., amenity) of users also results in negative impacts for the other (commodity) significant users of Forest products. The economic and lifestyle dependency on the social groups or classifications determine, to a great degree, the severity of the impacts and/or the abundance of the benefits. The more dependent a particular group is on Forest output(s), the more they tend to be positively or negatively impacted by changes in management direction and/or resource outputs.

Ranchers

Ranchers are generally in favor of and benefited by commodity-oriented Forest Plans. Many are at least somewhat dependent on the forest for grazing and pasturing of livestock. This mainstay group of people are interested in protecting their ranching way of life. Therefore, they would be benefited by alternatives which increase the current number of AUM's. The Market and Productivity alternatives would increase the amount of grazing and timber harvested on the Forest. The substantial increase in timber cut would result in a decrease in big game animals and other amenity values which would tend to lessen the overall positive benefits for ranchers. The Current, Capability, RPA-1980 Preferred alternatives would also perpetuate the ranching way of life which would help to maintain the independent and self-sufficient way of life which is so typical of ranchers. The certainty of the future of the commodity outputs (especially grazing) would be increased. These factors would indicate to ranchers that their current way of life would have a good chance of continuing, establishing a climate of economic and lifestyle stability in the area near the Salmon National Forest.

The Constrained Budget, Wilderness/Wildlife, Wildlife T&E, and Non-Market alternatives would result in a negative impact on ranchers in terms of fewer jobs and/or less income, a lessening in their ability to become or remain self-sufficient, an increase in fears about the certainty of the future and their ranching operation, and a decrease in their ability to maintain their way of life.

Loggers

Loggers are one of the groups which is highly dependent on the outputs of the Forest. This dependency is currently most manifested in terms of jobs, although the real problems are past and current local, regional, national, and international economic conditions which have slowed the demand for wood products. Under a "normal" economic climate, loggers near the Forest are very dependent upon the amount of timber available for harvest. This situation puts the Forest Service in a real "Catch 22" situation, as the jobs and lifestyle of a significant number of people depend on governmental policies and action.

Loggers are dependent on timber harvest levels (and harvest methods) in terms of jobs and lifestyle. The Productivity, 1980 RPA, and Non-Market alternatives would provide loggers with a secure future (assuming market conditions improve) because of the increased availability of timber. Additional timber would result in a greater sense of self-sufficiency, and more certainty about the future of a logging lifestyle. The Preferred alternative would also increase/enhance these same factors, although to a smaller degree, because of less harvest timber than the Market alternatives. These four alternatives would be the best for loggers, because they would provide social-economic stability.

The Wilderness, Constrained Budget, Non-Market, and Capability alternatives would result in less (than present) job/income opportunities for loggers. They would also be significantly impacted (negatively) in terms of self-sufficiency, certainty, and general lifestyle.

Retired

Retired people, for the purposes of this social analysis, are those who moved here for the lifestyle or who have remained here because of the amenity values/lifestyle of the area. These people are generally attracted to the scenery, climate, recreational, rural atmosphere, and/or other amenity and lifestyle values of the area. They would, therefore, be positively impacted by the Non-Market and Wilderness alternatives which would provide for significant increases in or protection of current amenity values of the Forest.

The Non-Market related alternatives would also have a positive influence on the lifestyle of the retired and increase or maintain the symbolic meaning values they enjoy. Many are dependent on the symbolic/amenity values (recreation, scenery, solitude, etc.) for their way of life.

The Market-related alternatives would have a negative impact on the lifestyle and amenity values of the retired. This would be especially true of the Productivity alternative which is highly commodity oriented. The 1980 RPA alternative would have some minor negative impacts on this group. These comparisons are all made in reference to the Current Situation alternative which, by definition, is a neutral or middle-of-the-road approach and represents (numerically) a middle or zero value in a negative/positive matrix scheme.

Miners

Miners would generally be positively impacted by commodity production types of land management action (Market-related alternatives). Development activities usually result in better access for mining activities. These highly independent people are better able to remain self-sufficient if a commodity-oriented approach is in operation. Also their lifestyle is dependent upon mining-related work. Amenity alternatives (Non-Market, Wilderness) would likely result in a decrease in self-sufficiency, a lessening of the certainty of a secure future, an impairment in lifestyle and a decrease in the number of available jobs and business opportunities in mining.

Big Game Guides and Outfitters

Because of their economic stake in and way of life associated with the recreation and wildlife resources of the Forest, big game guides and outfitters are definitely positively impacted by amenity alternatives and negatively impacted by commodity alternatives. This group of resource users are directly affected by management direction

of the Forest. Alternatives which protect the naturalness of an area and wildlife population are most beneficial to these resource dependent people who obtain economic (jobs, money, businesses) and lifestyle (symbolic meaning, freedom, enjoyment of the backcountry) benefits from Forest outputs.

The Non-Market and Wilderness alternatives would appear to be the most beneficial Forest manage approaches for this group, because the scenery and pristine values of the Forest would be protected and the number of big game animals would be significantly increased. The Current, Capability, Preferred and Constrained Budget alternatives would provide for relatively stable social and economic conditions for big game guides and outfitters. The Market and Productivity alternatives would be detrimental to the social and economic values of the Forest for this group of users. This is particularly true of the Productivity alternative which could have a very negative and long-term impact on guides/outfitters because of the significant loss of wildlife and other amenity values of importance.

Government Workers and Educators

This diverse and somewhat varied group of Forest users is generally interested in amenity-type activities. Because of the reduction in Government-related jobs in recent years, some of these people have moved a little closer to the middle of the road on resource issues, believing resource emphasis would result in more jobs than amenity alternatives. However, most are firmly on the amenity side of the issue, although there is usually much diverse thinking among many Federal and State agency people. This is especially true of many workers in agencies which are involved in managing the resources. This places them in a precarious situation, i.e., they cannot seem to satisfy either the commodity people or the environmentalists. Hence, there can be a morale problem at times, especially for those who live in smaller towns which are primarily logging, ranching, and/or mining-oriented.

Government workers and educators are generally positively impacted by the Non-Market and Wilderness alternatives because of the protection of scenery, pristine areas, etc., and an increase in the number of elk and deer over present levels. The Constrained Budget alternative would likely have mixed results for this group because a reduction in Forest budget would negatively impact group economic conditions while, on the other hand, providing for some additional amenity values.

Business People

As a group, business people are somewhat near the middle of the production/preservation issue, although generally they lean in the direction of commodity-oriented land management plans. Logging, ranching, and mining business people are definitely interested in additional market outputs and commodity management philosophy from the Forest. Commodity-oriented business people would likely be positively impacted by the Market-related Market and RPA alternatives

and negatively impacted by the Non-Market type alternatives. Commodity alternatives generally provides direct resource business people with a greater sense of self-sufficiency, a more secure future, an enhancement of lifestyle and job security.

Recreational-related business people are usually more interested in and positively affected by alternatives (i.e., Non-Market) which preserve/improve the recreational and symbolic values of the Forest.

River Guides and Outfitters

These people have become an important part of the social and economic fiber of the area near the Salmon National Forest, especially during the last 15 years. They, like many others living in the area, are dependent on the natural resources for jobs, income, businesses, way of life, etc. River guides and outfitters generally benefit from recreation/amenity alternatives (i.e., Non-Market, Wilderness) which protect the environment and induce people to visit the area, thereby (potentially) increasing river floating business. Commodity/ production alternatives (Market, Productivity) tend to make the area less attractive from an aesthetic/symbolic meaning aspect. Commodity alternatives would result in a degradation of recreation/amenity values which could make the area less appealing to recreationists in general and river floaters in particular.

Regional People

Most regional people who have an interest in the resources and management of the Salmon National Forest are mainly concerned about the amenity aspects of the Forest. This would not be true of some of the wood products people who import or may import timber from the Salmon, however. Regional people are generally positively impacted by amenity-oriented alternatives because of the importance of recreation/amenity values in their lifestyle. Symbolic meaning tends to provide a stabilizing influence on and/or enrichment in their lives. While the regional people are generally perceived as being better off by amenity alternatives (Non-Market, Wilderness) there remains significant differences in opinion about the weight of importance of impact on regional and national people in comparison to local people. Many feel that local people should be given a major portion or all of the consideration in making resource decisions, and some people feel that regional and national people should be given at least equal consideration.

National People

Because of the Wilderness, Primitive, Wild Rivers, and fishing and hunting attractions on or near the Salmon National Forest, there is national interest in the area. Additionally, strategic metals (i.e., cobalt) located on the Forest also have generated nationwide interest. The main interest however, is in the amenity values of the Forest, including hunting and fishing (steelhead and salmon). Consequently, national people are more favorably influenced by

amenity alternatives (Non-Market, Wilderness) and negatively impacted by the Market-related alternatives.

Minorities

Native Americans (Shoshone-Bannock) have hunting and fishing treaty rights on the Salmon, while the Nez Perce have some grazing rights on portions of the Forest. The hunting and fishing rights and accompanying resources would be best served by amenity/wildlife alternatives. Grazing activities could be enhanced or preserved equally well with either an amenity or commodity approach depending upon specific areas. Cultural, historical, and religious sites would be better able to be preserved by amenity approaches (e.g., approaches which allow areas to remain in a natural condition). Therefore, the Non-Market and Wilderness alternatives would be most beneficial to Native Americans and the Market-related alternatives would have negative impacts.

SUMMARY

To summarize the estimated negative effects and benefits of the alternatives, a short scenario was developed for each of the alternatives developed to this point (March 1985). This approach has the utility of transforming rather abstract but definable social conditions/variables into more common terms and narration. The information presented is based on projections and estimates. The scenarios focus on the target year of 1995.

Current Management Direction

Based on current and projected levels of "marker" (AUM's timber, wildlife) outputs, the future (1995) of the area in terms of socio-economic attributes would be approximately as described below. First some basic assumptions are discussed. It is assumed that economic conditions locally, regionally, and nationally will return to somewhat "normal" conditions. It is not expected that there will be the brisk increase in inflation, real earnings, consumption of resources, travel, etc., that transpired during the late 1960's and 1970's. It is anticipated that there will be a steady demand for commodity and amenity resources of the Forest, but it is not expected that there will be the tremendous increases as experienced in the 1960's and 1970's. As the nation's population grows older and more people flee from the cities, it is expected that cities like Salmon, Gibbonsville, North Fork and Darby (Montana) will continue to attract recreation-minded people who will want to live near the national forests. As this happens locally, the population will become more and more recreation/amenity oriented. Establishing these external conditions, let us now return to what it "may" be like in 1995, based on the current management direction of the Forest.

Demand for hunting, fishing, and dispersed recreation, along with developed recreation (campgrounds, ski areas, etc.) will continue to be strong. The current management direction would allow the Forest to take care of camping, fishing, etc., needs, but the wildlife

numbers may start to decrease because of the moderate to high emphasis placed on livestock grazing and timber harvest. This would result in negative impacts for the growing number of amenity-oriented Forest users who enjoy hunting-related activities.

The ranching community in the area near the Forest will continue to remain an important segment of society, but there will likely continue to be additional subdividing of ranch property into smaller parcels for recreation and investment property. A constant number of AUM's should provide the stability necessary to make ranching a viable economic operation for some time to come, however.

Loggers and related workers will be able to continue their way of life as presently constituted. The amount of timber harvested should provide loggers and mill workers with their current level of income/jobs, self-sufficiency, and way of life. There will not be much opportunity for expansion of operations unless there are fewer people engaged in the logging business.

In general, social and economic conditions by 1995 will not likely be changed much because of the current management plans of the Forest. There will continue to be (and probably even an increase) in contention between those who want the Forest preserved in a natural state and those who desire (or need) the products of the Forest for consumption purposes. This intensity of the conflicts will increase if visual qualities and number of big game animals decrease.

Market and Productivity Alternatives

These alternatives would likely result in some significant changes from conditions under current management direction. There would be a shift in the current trends of population makeup. Presently the trend is moving toward an increase in retirees and amenity people and a stable or decreasing number of commodity-oriented (i.e., loggers, miners, ranchers) people. These alternatives would result in (a likely) increase in wood products workers and more agricultural (ranching) workers. It isn't likely that there would be an increase in the number of ranches, but there would be more cows and subsequently more workers (slight increase) to take care of them.

Big game herds will be reduced significantly. The number of roads will be greatly increased because of more logging activity. The loss of big game habitat and better access will result in fewer animals and much less demand for big game guides and outfitters. Businesses that cater to hunters will suffer financial losses (from what would be projected, based on current plan). Over a period of time, it is possible that other recreational businesses would suffer also, as the area becomes less attractive as an all-around playground.

Quality of life for amenity-oriented people will suffer, as a result of the degradation of the amenity values of the Forest. Community cohesion would become weaker, as opposing groups become further polarized and individual relations become strained.

Non-Market, Wilderness/Wildlife, Wildlife T&E, and Maximum Wilderness Inventory Alternatives

These alternatives (like the Market and RPA-1985 alternatives) would likely result in some significant socio-economic changes for people living near the Salmon National Forest. There would be a reduction in the numbers and influence of people in the wood products industry. There would remain a basic core of people engaged in timber-related work and/or businesses, but there would be a significant reduction from the current level.

The reduction in AUM's would likely result in fewer ranchers, since the availability of grazing would be decreased.

In general, there would be a proliferation of the trend toward an amenity-oriented populace. More retirees and others looking for the "good life" would continue to move into the area. There would be increased contention among and further polarization of groups who have contrasting views about the "proper" management of the Forest. The Salmon River area would (and may, no matter what action the Forest Service takes) become more and more like the Bitterroot Valley of Montana. That is, a majority of people will change from production-related (logging, agricultural) to amenity-oriented (retirees, recreationist, conservationist, preservationist, etc). These alternatives could change the lifestyle of the area from a conservative, self-sufficient base to one of a more diverse social system. The results of additional people in the area (rather from mining and timber expansion or because of amenity attraction) would likely be fewer ranches, more subdivisions, water and sewage problems, people with diverse value and systems, crowding, etc.

1980 RPA Alternative

There would be some change from the present projections and predictions, if these alternatives were implemented. There would be more of a commodity approach to land management than is provided for by the present plan. This would lead to a reduction in wildlife number and visual quality and other amenity values. There would be additional community/area conflict because of the emotional furor created by any decision which is perceived as being either pro production or pro amenity in nature. There would be a perpetuation and enhancement of the traditional resource usage of the Forest. There would be negative impacts on the recreational/amenity people, but not as great as with the Market or Productivity alternatives.

Capability and Maximum Wilderness Manageability Alternatives

These alternatives would result in a mix of benefits and impacts. There would be some impetus for the establishment of a more dominant amenity-oriented population base; whereas there is now an agricultural, timber, and recreation/amenity base of population. The trend toward a stronger amenity population is already in motion, but it would become more pronounced if these alternatives were implemented. Overall, the ranching community would be positively

impacted, since there would be an increase in AUM's. Wood products workers/businesses would be significantly impacted (negatively), suffering some economic and lifestyle losses. There would be fewer loggers and other wood products workers than there are under present conditions.

Constrained Budget Alternative

There would likely be some minor social changes if this alternative were implemented. The local economy would suffer somewhat because of a reduction in the amount of timber harvested, amount of Forest budget and number of AUM's. Amenity values of the would be stable or even increase in some areas, since the number of big game animals and anadromous fish would increase. The other amenity values would be increased somewhat in general over present projections, based on current management direction. These conditions would likely result in a slight increase in the rate of recreationalization (the change from a commodity-based to an amenity-based society) of the area.

Modified Current Alternative (Preferred)

There would not likely be any overall major social impacts if this alternative were implemented. The number of jobs in resource-related occupations would remain constant, establishing a climate for stable social and economic conditions. Local ranching and logging operations would be provided with sufficient resource outputs to maintain their current economic and lifestyle patterns. Amenity values (big game animals, recreation in general, survey, etc.) would be maintained by this alternative. This alternative provides for a mix of benefits and impacts which would tend to negate the likelihood of any major negative impacts.

Estimated *Overall Social Effects

Alternatives	(1) Current	(2) Market	(3) Non-Market	(4) RPA-1980	(5) Productivity	(6) Constrained	(7) Capability	(8) Wilderness/W	(9) Wildlife T&E	(10) Max Wilderness 1	(11) Max Wilderness 2	(12) Preferr
Social Variables												
Jobs/Income	4 0	5.0	3 2	5 0	5.2	3.8	3.8	3.3	3 1	3.8	3.3	4.1
Self-Sufficiency	4.0	4.4	3.5	4.5	4.5	3.5	3 6	3.5	3.5	3 9	3 5	4.1
Certainty/ Uncertainty	4.0	3.5	3.5	3 5	3.0	3.5	3.7	3 5	3.5	3.7	3.5	4.1
Symbolic Meaning	4.0	2.5	5 2	2 6	2.2	4.7	4.7	5.1	5 1	4.6	5.3	4.0
Community Cohesion	4.0	2.8	2.4	2.8	2.6	3.7	3.7	2.5	2.5	3.0	2.4	4.1
Lifestyle	4.0	3.0	3.2	3.3	2.8	3.8	3.8	3.2	3.2	3.8	3.2	4.1
Total	24.0	21.2	21 0	21.7	20.3	23.0	23.3	21 1	20.9	22.8	21.2	24.5

* Overall = A composite of all local, regional, national, commodity and amenity groups.

Scores on this chart/table range from 1 to 7 with low scores representing negative imports, average scores indicating little or no change, and high scores representing positive impacts. All of the social impacts by social variables and alternatives are compared to the current management direction which is numerically represented by the middle value (4) of the seven-point scale.

Total scores should be viewed as tentative and a relative measure of the overall impacts. The numerical values tend to represent, in a general way, actual positive and negative impacts. Scores near 4 represent no or very little estimated change from current conditions for each social variable. See the narrative discussion in the main body of this report for additional information.

Summary of Projected Social Impacts

Current, Preferred, Capability, Constrained, and Max Wilderness Manageability alternatives appear to be the best approaches of managing the resources of the Salmon National Forest from an overall socio-economic point of view. None of these alternatives would likely result in any major negative impacts on any of the social groups. It would appear that these alternatives would provide for stable socio-economic conditions.

Market, 1980 RPA, and Productivity alternatives would produce some negative results for local, regional and national amenity groups. These alternatives would reduce amenity values from current and projected levels, resulting in negative social impacts in terms of losses in symbolic amenity values, quality of preferred lifestyle, and certainty of the future of amenity resource values.

Non-Market, Wilderness and Wildlife, Wildlife T&E and Max Wilderness Inventory alternatives, if implemented, would result in negative impacts for local commodity groups (e.g., loggers, ranchers). A reduction in timber or AUM's would negatively impact logger or ranchers, respectively, in terms of jobs/income, way of life and certainty of the future of commodity outputs from the forest.

Estimated Social Benefits**
By Groups

Commodity Groups	Amenity Groups	Overall*
1. Productivity (5)	1. Max Wilderness 1 (11)	1. Modified (12) Current
2. Market (2)	2. Wildlife T&E (9)	2. Current (1)
3. 1980 RPA (4)	3. Non-Market (3)	3. Capability (7)
4. Modified (12) Current	4. Wilderness/Wildlife (8)	4. Constrained (6) Budget
5. Current (2)	5. Capability (7)	5. Max Wilderness 1 (10)
6. Max Wilderness 1(10)	6. Constrained Budget (6)	6. 1980 RPA (4)
7. Capability (7)	7. Max Wilderness 1 (10)	7. Max Wilderness 2 (11)
8. Constrained (6) Budget	8. Modified (12) Current	8. Market (2)
9. Max Wilderness 2(11)	9. Current (1)	9. Wilderness/ (8) Wildlife
10. Wilderness/ (8) Wildlife	10. 1980 RPA (4)	10. Non-Market (3)
11. Non-Market (3)	11. Non-Market (2)	11. Wildlife T&E (9)
12. Wildlife T&E (9)	12. Productivity (5)	12. Productivity (5)

* Overall = A composite of all local, regional, national commodity and amenity groups, with local people given about 60 percent of the weight in considering benefits/impacts.

** Benefits = Alternatives are arranged from most beneficial to least beneficial for various groups.

Summary of
Social Effects
Current Direction (1)

Group/ Category	Symbolic Meaning	Self Sufficiency	Certainty/ Uncertainty	Community Cohesion	Job Dependency	Lifestyle
Ranchers	0	0	0	0	0	0
Loggers	0	0	0	0	0	0
Retired	0	0	0	0	0	0
Miners	0	0	0	0	0	0
Big Game Guides and Outfitters	0	0	0	0	0	0
Business People	0	0	0	0	0	0
Government Workers and Educators	0	0	0	0	0	0
River Guides and Outfitters	0	0	0	0	0	0
Regional People	0	X	0	X	X	0
National People	0	X	0	X	X	0
Native Americans	0	X	0	X	X	0

++ Major significant positive impact
+ Minor significant positive impact
0+ Slight positive change
0 No change
X Doesn't apply
0- Slight negative change
- Minor significant negative impact
-- Major significant negative impact
+- Mixed results, positive benefits for some segments of group and negative impacts for others.

All changes and impacts are compared to change/impacts from projected conditions under present management direction.

Summary of
Social Effects
Market Opportunities Alternative (2)

Group/ Category	Symbolic Meaning	Self Sufficiency	Certainty/ Uncertainty	Community Cohesion	Job Dependency	Lifestyle
Ranchers	0-	+	+	-	+	+
Loggers	0	+	+	-	++	+
Retired	-	0	-	-	0	-
Miners	0	0+	0+	-	0+	0+
Big Game Guides and Outfitters	--	-	--	-	--	-
Business People	0-	+-	+-	-	+-	+-
Government Workers and Educators	-	0	-	-	0	-
River Guides and Outfitters	-	-	-	-	-	-
Regional People	-	X	-	X	X	-
National People	-	X	-	X	X	-
Native Americans	-	X	-	X	X	-

++ Major significant positive impact
+ Minor significant positive impact
0+ Slight positive change
0 No change
X Doesn't apply
0- Slight negative change
- Minor significant negative impact
-- Major significant negative impact
+- Mixed results, positive benefits for some segments of group and negative impacts for others.

All changes and impacts are compared to change/impacts from projected conditions under present management direction.

Summary of
Social Effects
Non-Market Opportunities Alternative (3)

Group/ Category	Symbolic Meaning	Self Sufficiency	Certainty/ Uncertainty	Community Cohesion	Job Dependency	Lifestyle
Ranchers	0+	-	-	-	-	-
Loggers	0	--	--	-	--	-
Retired	0+	0	+	-	0	+
Miners	0	0-	0-	-	0-	0-
Big Game Guides and Outfitters	++	++	++	-	++	++
Business People	0+	+-	+-	-	+-	+-
Government Workers and Educators	+	0	+	-	0	+
River Guides and Outfitters	+	+	+	-	+	+
Regional People	+	X	+	X	X	+
National People	+	X	+	X	X	+
Native Americans	+	X	+	X	X	+

++ Major significant positive impact
+ Minor significant positive impact
0+ Slight positive change
0 No change
X Doesn't apply
0- Slight negative change
- Minor significant negative impact
-- Major significant negative impact
+- Mixed results, positive benefits for some segments of group and negative impacts for others.

All changes and impacts are compared to change/impacts from projected conditions under present management direction.

Summary of
Social Effects
RPA-1980 (4)

Group/ Category	Symbolic Meaning	Self Sufficiency	Certainty/ Uncertainty	Community Cohesion	Job Dependency	Lifestyle
Ranchers	0-	0	0	-	0	0
Loggers	0	+	+	-	+	+
Retired	0-	0+	0	-	0	0
Miners	0	0+	0	-	0	0
Big Game Guides and Outfitters	-	-	-	-	-	-
Business People	0-	+-	+-	-	+-	+-
Government Workers and Educators	0-	0	0-	-	0	0-
River Guides and Outfitters	-	0-	-	-	0-	0-
Regional People	-	X	-	X	X	0-
National People	-	X	-	X	X	0-
Native Americans	-	X	-	X	X	0-

++ Major significant positive impact
+ Minor significant positive impact
0+ Slight positive change
0 No change
X Doesn't apply
0- Slight negative change
- Minor significant negative impact
-- Major significant negative impact
+- Mixed results, positive benefits for some segments of group and negative impacts for others.

All changes and impacts are compared to change/impacts from projected conditions under present management direction.

Summary of
Social Effects
Productivity Alternative (5)

Group/ Category	Symbolic Meaning	Self Sufficiency	Certainty/ Uncertainty	Community Cohesion	Job Dependency	Lifestyle
Ranchers	0-	0+	0+	-	+	0+
Loggers	0	+	+	-	+	+
Retired	-	0	0-	-	0	-
Miners	0	0	0	-	0	0
Big Game Guides and Outfitters	--	--	--	-	--	--
Business People	0-	+-	+-	-	+-	+-
Government Workers and Educators	-	0-	0-	-	0	-
River Guides and Outfitters	--	-	-	-	-	-
Regional People	--	X	-	X	X	-
National People	--	X	-	X	X	-
Native Americans	-	X	-	X	X	-

++ Major significant positive impact
+ Minor significant positive impact
0+ Slight positive change
0 No change
X Doesn't apply
0- Slight negative change
- Minor significant negative impact
-- Major significant negative impact
+- Mixed results, positive benefits for some segments of group and negative impacts for other.

All changes and impacts are compared to change/impacts from projected conditions under present management direction.

Summary of
Social Effects
Constrained Budget Alternative (6)

Group/ Category	Symbolic Meaning	Self Sufficiency	Certainty/ Uncertainty	Community Cohesion	Job Dependency	Lifestyle
Ranchers	0	-	-	0-	-	-
Loggers	0	-	-	0-	-	-
Retired	0+	0	0	0-	0	0
Miners	0	0	0	0-	0	0
Big Game Guides and Outfitters	0+	0+	0+	0-	0+	0+
Business People	0	0-	0-	0-	0-	0-
Government Workers and Educators	0+	0	0-+	0-	-	0
River Guides and Outfitters	0+	0	0+	0-	0	0+
Regional People	0+	X	0+	X	X	0+
National People	0+	X	0+	X	X	0+
Native Americans	0+	X	0+	X	X	0+

++ Major significant positive impact
+ Minor significant positive impact
0+ Slight positive change
0 No change
X Doesn't apply
0- Slight negative change
- Minor significant negative impact
-- Major significant negative impact
+- Mixed results, positive benefits for some segments of group and negative impacts for others.

All changes and impacts are compared to change/impacts from projected conditions under present management direction.

Summary of
Social Effects
Capability Emphasis Alternative (7)

Group/ Category	Symbolic Meaning	Self Sufficiency	Certainty/ Uncertainty	Community Cohesion	Job Dependency	Lifestyle
Ranchers	0	+	0-	0-	+	0-
Loggers	0	-	-	-	-	-
Retired	0+	0	0+	0-	0	0+
Miners	0	0	0	0-	0	0
Big Game Guides and Outfitters	0+	0+	0+	0-	0+	0+
Business People	0	0	0	0-	0	0
Government Workers and Educators	0+	+-	+-	0-	+-	+-
River Guides and Outfitters	0+	0	0+	0-	0	0+
Regional People	0+	X	0+	X	X	0+
National People	0+	X	0+	X	X	0+
Native Americans	0+	X	0+	X	X	0+

++ Major significant positive impact
+ Minor significant positive impact
0+ Slight positive change
0 No change
X Doesn't apply
0- Slight negative change
- Minor significant negative impact
-- Major significant negative impact
+- Mixed results, positive benefits for some segments of group and negative impacts for others.

All changes and impacts are compared to change/impacts from projected conditions under present management direction.

Summary of
Special Effects
Wilderness and Wildlife Alternative (8)

Group/ Category	Symbolic Meaning	Self Sufficiency	Certainty/ Uncertainty	Community Cohesion	Job Dependency	Lifestyle
Ranchers	0+	-	-	-	-	-
Loggers	0	--	--	-	--	--
Retired	0+	0	0+	-	0	+
Miners	0	0-	0-	-	0-	0-
Big Game Guides and Outfitters	++	++	++	-	+	++
Business People	0+	+-	+-	-	+-	+-
Government Workers and Educators	+	0	+	-	0	+
River Guides and Outfitters	++	+	+	-	+	+
Regional People	+	X	+	X	X	+
National People	+	X	+	X	X	+
Native Americans	+	X	+	X	X	+

++ Major significant positive impact
+ Minor significant positive impact
0+ Slight positive change
0 No change
X Doesn't apply
0- Slight negative change
- Minor significant negative impact
-- Major significant negative impact
+- Mixed results, positive benefits for some segments of group and negative impacts for others.

All changes and impacts are compared to change/impacts from projected conditions under present management direction.

Summary of
Social Effects
Wilderness T&E Alternative (9)

Group/ Category	Symbolic Meaning	Self Sufficiency	Certainty/ Uncertainty	Community Cohesion	Job Dependency	Lifestyle
Ranchers	0+	0	0	-	0	0
Loggers	0	--	--	-	--	--
Retired	0+	0	0+	-	0	0+
Miners	0	0-	0-	-	0-	0-
Big Game Guides and Outfitters	+	+	+	-	+	+
Business People	0+	+-	+-	-	+-	+-
Government Workers and Educators	+	0	+	-	0	+
River Guides and Outfitters	+	+	+	-	+	+
Regional People	+	X	+	X	X	+
National People	+	X	+	X	X	+
Native Americans	+	X	+	X	X	+

++ Major significant positive impact
+ Minor significant positive impact
0+ Slight positive change
0 No change
X Doesn't apply
0- Slight negative change
- Minor significant negative impact
-- Major significant negative impact
+- Mixed results, positive benefits for some segments of group and negative impacts for others.

All changes and impacts are compared to change/impacts from projected conditions present management direction.

Summary of
Social Effects
Max Wilderness Manageability Alternative (10)

Group/ Category	Symbolic Meaning	Self Sufficiency	Certainty/ Uncertainty	Community Cohesion	Job Dependency	Lifestyle
Ranchers	0+	-	-	0-	-	-
Loggers	0	-	-	0-	--	--
Retired	0+	0	0+	0-	0	+
Miners	0	0-	0-	0-	0	0-
Big Game Guides and Outfitters	+	+	+	0-	+	+
Business People	0+	+-	+-	0-	+-	+-
Government Workers and Educators						
River Guides and Outfitters	+	+	+	0-	+	+
Regional People	+	X	+	X	X	+
National People	+	X	+	X	X	+
Native Americans	+	X	+	X	X	+

++ Major significant positive impact
+ Minor significant positive impact
0+ Slight positive change
0 No change
X Doesn't apply
0- Slight negative change
- Minor significant negative impact
-- Major significant negative impact
+- Mixed results, positive benefits for some segments of group and negative impacts for others.

All changes and impacts are compared to change/impacts from projected conditions under present management direction.

Summary of
Social Effects
Max Wilderness Inventory Alternative (11)

Group/ Category	Symbolic Meaning	Self Sufficiency	Certainty/ Uncertainty	Community Cohesion	Job Dependency	Lifestyle
Ranchers	0+	0	0	-	0	0
Loggers	0	--	--	-	--	--
Retired	0-	0	0	-	0-	0-
Miners	0	0-	0-	-	0-	0-
Big Game Guides and Outfitters	++	++	++	-	++	++
Business People	0	+-	+-	-	+-	+-
Government Workers and Educators	+	+	+	+	+	+-
River Guides and Outfitters	+	+	+	+	+	+
Regional People	+	X	+	X	X	+
National People	+	X	+	X	X	+
Native Americans	+	X	+	X	X	+

++ Major significant positive impact
+ Minor significant positive impact
0+ Slight positive change
0 No change
X Doesn't apply
0- Slight negative change
- Minor significant negative impact
-- Major significant negative impact
+- Mixed results, positive benefits for some segments of group and negative impacts for others.

All changes and impacts are compared to change/impacts from projected conditions under present management direction.

Summary of
Social Effects
Modified Current (Preferred) (12)

Group/ Category	Symbolic Meaning	Self Sufficiency	Certainty/ Uncertainty	Community Cohesion	Job Dependency	Lifestyle
Ranchers	0	0+	0+	0+	0+	0+
Loggers	0	0+	0+	0+	0+	0+
Retired	0	0	0	0	0	0
Miners	0	0+	0+	0+	0	0
Big Game Guides and Outfitters	0+	0+	0+	0+	0+	0+
Business People	0	0	0+	0+	0+	0
Government Workers and Educators	0	0	0	0+	0	0
River Guides and Outfitters	0	0	0	0	0	0
Regional People	0+	X	0	X	X	0+
National People	0+	X	0	X	X	0+
Native Americans	0+	X	0	X	X	0

++ Major significant positive impact
+ Minor significant positive impact
0+ Slight positive change
0 No change
X Doesn't apply
0- Slight negative change
- Minor significant negative impact
-- Major significant negative impact
+- Mixed results, positive benefits for some segments of group and negative impacts for others.

All changes and impacts are compared to change/impacts from projected conditions under present management direction.

I. Analysis Prior to Alternative Development

1. Overview

The Analysis of the Management Situation (AMS), the major analysis step prior to the development of management alternatives, provided the parameters for formulating a broad range of alternatives by:

a. Examining the Forest's capability of providing goods and services in a series of "Benchmarks", or minimum-maximum displays;

b. Projecting the demands for goods and services;

c. Analyzing the potential to resolve issues and concerns; and

d. Determining the need to change management direction.

The results of the AMS form the "sideboards" of framework within which viable alternatives can be formulated.

2. Minimum Management Requirements

Minimum management requirements (MMR's) are defined in NFMA Regulations (36 CFR 219.27). A summary listing of these MMR's follows:

a. Conserve soil and water resource productivity.

b. Minimize hazards from natural physical forces such as fire and flood.

c. Prevent or reduce hazards and damage from pest organisms.

d. Protect riparian areas.

e. Maintain or enhance plant and animal diversity.

f. Provide fish and wildlife habitat needed to maintain viable populations.

g. Protect threatened and endangered species habitat.

h. Provide for transportation and utility corridors.

i. Develop road design and construction guidelines and standards.

j. Provide for revegetation of temporary roads.

k. Maintain air quality.

l. Assure that harvested lands can be adequately restocked within five years.

m. Limit harvest openings to 40 acres maximum.

n. Adhere to multiple use and environmental protection laws (*Multiple-Use Sustained Yield Act of 1960 and the National* Environmental Policy Act of 1969).

Several methods were used to meet the above MMR's:

- Development of standards and guidelines for each prescription;
- Application of FORPLAN modeling constraints for individual analysis areas or zones to limit access;
- Set scheduled output levels or assign specific prescriptions;
- Development of prescriptions;
- Delineation of Analysis Areas.

Minimum management requirements will also be addressed at the time of project implementation. All benchmarks and alternatives are required to adhere to these minimum management requirements.

3. Benchmark Analysis

The purpose of benchmark analysis is the (1) exploration of maximum economic and biological resource use and development opportunities, (2) evaluation of capabilities between price and nonprices objectives, and (3) ability to respond to major issues and concerns. Four types of benchmarks were developed for the Salmon National Forest:

- Maximum physical and biological production benchmarks -- these define maximum potential (supply) for timber, big game, range, and wilderness with associated yields of other resources.
- Economic benchmarks -- these define the mix of resource yield producing maximum present net value with (1) market values, and (2) assigned and market values.
- Minimum level benchmark -- this benchmark defines costs and associated yield required to retain the Salmon National Forest in federal ownership, comply with minimum laws, prevent *significant or permanent impairment of long-term* productivity of the land, and manage uncontrollable yields and uses. This benchmark serves as the lower limit of the benchmark "decision space" for all resources (scheduled yields).

- Current level benchmark -- this benchmark defines the current Forest program with existing policies and guidelines. It specifies the management most likely to be implemented in the future if current direction is followed. This benchmark is the same as the "No Action" Alternative.

4. Benchmark Formulations

Nine benchmarks were developed by the Salmon National Forest to meet the above objectives:

(1) Minimum Level

(2) Maximum PNV using Market Values

(3) Maximum PNV using Assigned Values with Required Harvest

(4) Maximum Timber

(5) Maximum Range

(6) Maximum Big Game

(7) Current Direction (No Action Alternative)

(8) All Wilderness

(9) No Wilderness

Benchmarks 8 and 9 are required as a result of the 1983 decision to re-evaluate all inventoried roadless areas for their wilderness potential.

The Minimum Level and Maximum Range benchmarks were analyzed outside the FORPLAN model. All other benchmarks were analyzed with the aid of FORPLAN.

Assumptions common to all benchmarks:

(1) All minimum management requirements are met.

(2) Real prices and costs remain constant over time.

The remainder of this section describes benchmark formulations and associated outputs.

Benchmark 1, Minimum Level

Purpose: To estimate naturally occurring outputs and costs of maintaining the unit as part of the National Forest System so that the controllable outputs and discretionary costs can be identified.

FORPLAN Run Number: No FORPLAN run was made for this benchmark.

Constraints: Environmental constraints are limited only to those necessary to (1) prevent impairment of productivity of land, assuming no management induced outputs, and (2) to comply with laws and regulations pertaining to management of National Forest lands.

Assumptions:

(1) Minimum Level Assumptions developed for every analysis area. This includes no grazing use or timber outputs.

(2) Serve as the zero-based budget level keeping the Forest as part of the National Forest System.

(3) Protect life, health and safety of forest users.

(4) Incidental outputs include water, minerals, wildlife and fish, and dispersed recreation.

TABLE B - 6 (1)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
BENCHMARK 1

	UNIT OF MEASURE	DECADE 1	2	3	4	5	10	15
OUTPUT/ACTIVITY								
Recreation								
Dev. Rec. Use (Roaded Natural)	MRVD	0	0	0	0	0		
Disp. Rec. Use (Roaded Natural)	MRVD	233	268	293	321	348		
Disp. Rec. Use (Semi-Prim. Motor)	MRVD	50	57	62	68	74		
Disp. Rec. Use (Semi-Prim. Non-Motor)	MRVD	10	12	13	14	15		
Wilderness Use (Semi-Prim. Motor)	MRVD	33	37	41	44	48		
Wilderness Use (Semi-Prim. Non-Motor)	MRVD	11	12	13	14	16		
Wilderness Use (Primitive)	MRVD	45	51	56	61	66		
Wilderness								
Wilderness Management	MACRES	426	426	426	426	426		
Wildlife								
Structural Habitat Improvement	STRUCT	0	0	0	0	0		
Nonstructural Habitat Improvement	ACRES	0	0	0	0	0		
Wildlife and Fish Use	MWFUD	118	118	118	118	118		
Range								
Grazing Use (Livestock)	MAUM	0	0	0	0	0		
Timber								
Allowable Sale Quantity	MMCF	0	0	0	0	0	0	0
Sawtimber (Softwood)	MMCF	0	0	0	0	0	0	0
Sawtimber (Softwood)	MMBF	0	0	0	0	0	0	0
Roundwood Products	MCF	0	0	0	0	0	0	0
Fuelwood	MCF	0	0	0	0	0	0	0
TSI	ACRES	0	0	0	0	0		
Reforestation	ACRES	0	0	0	0	0		
Water								
Meeting State Standards	MACFT	1008	1039	1039	1039	1039		
Protection								
Fuelbreaks and Fuel Treatment	ACRES	0	0	0	0	0		
Minerals								
Mineral Leases and Permits	CASES	160	175	185	195	200		
HC&D								
Human Resource Programs	ENRYR	4	4	4	4	4		
Lands								
Land Pur. & Acq. (exc. Exch.)	ACRES	60	8	0	0	0		

NOTE: All values are average annual values.

TABLE B - 6 (1) (continued)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
BENCHMARK 1

		DECADE						
		1	2	3	4	5	10	15
Soils								
Soil & Water Resource Imp.	ACRES	0	0	0	0	0		
Facilities								
Trail Const./Reconst.	MILES	0	0	0	0	0		
Road Const./Reconst. (Arterial and Collector)	MILES	0	0	0	0	0		
Local Road Construction	MILES	1.0	1.0	1.0	1.0	1.0		
Local Road Reconstruction	MILES	0	0	0	0	0		
Timber Purch. Road Const.	MILES	0	0	0	0	0		
Timber Purch. Road Reconst.	MILES	0	0	0	0	0		
BENEFITS M$								
Recreation								
Developed		0	0	0	0	0		
Dispersed		1236	1422	1553	1701	1844		
Wilderness		1000	1124	1237	1337	1461		
Range		0	0	0	0	0		
Timber		0	0	0	0	0		
Wildlife (WFUD's)		3995	3995	3995	3998	3991		
Minerals		0	0	0	0	0		
COSTS M$								
Total Forest Budget	(82)	3207	3158	3151	3158	3154		
Fixed Costs	(82)	1302	1302	1302	1302	1302		
Protection	(82)	780	780	780	780	780		
General Administration	(82)	522	522	522	522	522		
Variable Costs	(82)	1905	1856	1849	1856	1852		
Investment	(82)	0	0	0	0	0		
Total Roads	(82)	0	0	0	0	0		
App. Fund Roads	(82)	0	0	0	0	0		
Purchaser Credit Roads	(82)	0	0	0	0	0		
Operational	(82)	1602	1553	1546	1553	1549		
General Administration	(82)	281	281	281	281	281		
Non-Forest Service Costs (exc. roads)	(82)	22	22	22	22	22		
Returns to Treasury		9	9	9	9	9		

Benchmark 2, Maximum Present Net Value - Market Prices

Purpose: To maximize present net value for all resources with established market values. On the Salmon National Forest the following resource outputs have market values: timber, range, developed recreation and commercially utilized fish.

FORPLAN Run Number: SAB 024

Objective Function: Maximize PNV for five decades.

Constraints:

(1) Inventory or scheduled output constraints for threatened and endangered species, maintenance of viable wildlife populations, improving habitat for selected species and protecting soil and water resources.

(2) Harvest flow: non-declining yield

(3) Harvest floor of 15 MMBF/YR in decade 1 (75% of last five year average)

(4) Ending inventory

(5) Long-term sustained yield

Assumptions: Includes values for timber, recreation, range, water, wildlife, and fish as appropriate for the Forest.

TABLE B - 6 (2)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
BENCHMARK 2

OUTPUT/ACTIVITY	UNIT OF MEASURE	DECADE 1	2	3	4	5	10	15
Recreation								
Dev. Rec. Use (Roaded Natural)	MRVD	88	103	114	126	138		
Disp. Rec. Use (Roaded Natural)	MRVD	150	177	197	219	240		
Disp. Rec. Use (Semi-Prim. Motor)	MRVD	39	46	51	57	63		
Disp. Rec. Use (Semi-Prim. Non-Motor)	MRVD	7	9	10	11	12		
Wilderness Use (Semi-Prim. Motor)	MRVD	25	29	33	36	40		
Wilderness Use (Semi-Prim. Non-Motor)	MRVD	8	9	10	11	13		
Wilderness Use (Primitive)	MRVD	34	40	45	50	55		
Wilderness								
Wilderness Management	MACRES	426	426	426	426	426		
Wildlife								
Structural Habitat Improvement	STRUCT	83	105	105	105	105		
Nonstructural Habitat Improvement	ACRES	425	430	430	430	430		
Wildlife and Fish Use	MWFUD	92	94	96	95	97		
Range								
Grazing Use (Livestock)	MAUM	56.6	63.2	63.2	63.2	63.2		
Timber								
Allowable Sale Quantity	MMCF	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Sawtimber (Softwood)	MMCF	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Sawtimber (Softwood)	MMBF	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Roundwood Products	MCF	120	120	120	120	120	120	120
Fuelwood	MCF	587	587	587	587	587	587	587
TSI	ACRES	675	675	675	675	675		
Reforestation	ACRES	1068	1068	1068	1068	1068		
Water								
Meeting State Standards	MACFT	1011	1048	1049	1050	1049		
Protection								
Fuelbreaks and Fuel Treatment	ACRES	2524	3537	3990	3301	4170		
Minerals								
Mineral Leases and Permits	CASES	160	175	185	195	200		
HC&D								
Human Resource Programs	ENRYR	4	4	4	4	4		
Lands								
Land Pur. & Acq. (exc. Exch.)	ACRES	68	0	0	0	0		

NOTE: All values are average annual values.

TABLE B - 6 (2) (continued)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
BENCHMARK 2

		DECADE						
		1	2	3	4	5	10	15
Soils								
Soil & Water Resource Imp.	ACRES	30	30	20	20	20		
Facilities								
Trail Const./Reconst.	MILES	2	2	2	2	2		
Road Const./Reconst. (Arterial and Collector)	MILES	9	6	4	3	3		
Local Road Construction	MILES	1.0	1.0	1.0	1.0	1.0		
Local Road Reconstruction	MILES	0	0	0	0	0		
Timber Purch. Road Const.	MILES	24	15	11	12	6		
Timber Purch. Road Reconst.	MILES	12	9	8	7	7		
BENEFITS M$								
Recreation								
Developed		371	435	481	532	582		
Dispersed		827	979	1089	1211	1329		
Wilderness		753	877	989	1090	1214		
Range		505	565	565	565	565		
Timber		1089	1089	1089	1089	1089		
Wildlife (WFUD's)		3296	3378	3415	3520	3562		
Minerals		0	0	0	0	0		
COSTS M$								
Total Forest Budget	(82)	6245	6155	6068	6106	6067		
Fixed Costs	(82)	1336	1317	1299	1307	1298		
Protection	(82)	814	795	777	785	776		
General Administration	(82)	522	522	522	522	522		
Variable Costs	(82)	4909	4838	4769	4799	4769		
Investment	(82)	2348	2314	2282	2296	2281		
Total Roads	(82)	851	550	391	383	233		
App. Fund Roads	(82)	297	196	134	114	91		
Purchaser Credit Roads	(82)	554	354	257	269	142		
Operational	(82)	2361	2327	2294	2308	2293		
General Administration	(82)	281	281	281	281	281		
Non-Forest Service Costs (exc. roads)	(82)	22	22	22	22	22		
Returns to Treasury		418	1130	1136	1138	1138		

Benchmark 3, Maximum Present Net Value - Assigned Values and Required Harvest

Purpose: To maximize present net value for all resources using assigned values while requiring a harvest floor.

FORPLAN Run Number: SAB 036

Objective Function: Maximize PNV for five decades.

Constraints:

(1) Inventory or scheduled output constraints for threatened and endangered species, maintenance of viable wildlife regulations, improving habitat for selected species and protecting soil and water resources.

(2) Harvest flow: nondeclining yield

(3) Harvest floor of 7.5 MMBF/YR

(4) Ending inventory

(5) Long-term sustained yield

Assumptions: Include values for timber, recreation, range, water, wildlife, and fish as appropriate for the Forest. Values are assigned through the RPA process.

TABLE B - 6 (3)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
BENCHMARK 3

	UNIT OF MEASURE	DECADE 1	2	3	4	5	10	15
OUTPUT/ACTIVITY								
Recreation								
Dev. Rec. Use (Roaded Natural)	MRVD	89	104	115	127	139		
Disp. Rec. Use (Roaded Natural)	MRVD	160	187	207	229	250		
Disp. Rec. Use (Semi-Prim. Motor)	MRVD	42	49	54	60	66		
Disp. Rec. Use (Semi-Prim. Non-Motor)	MRVD	8	10	11	12	13		
Wilderness Use (Semi-Prim. Motor)	MRVD	27	31	35	38	42		
Wilderness Use (Semi-Prim. Non-Motor)	MRVD	9	10	11	12	14		
Wilderness Use (Primitive)	MRVD	37	43	48	53	58		
Wilderness								
Wilderness Management	MACRES	426	426	426	426	426		
Wildlife								
Structural Habitat Improvement	STRUCT	83	105	105	105	105		
Nonstructural Habitat Improvement	ACRES	425	430	430	430	430		
Wildlife and Fish Use	MWFUD	102	101	102	103	101		
Range								
Grazing Use (Livestock)	MAUM	54.3	55.4	55.4	55.4	55.4		
Timber								
Allowable Sale Quantity	MMCF	2.1	2.1	2.1	2.1	2.4	2.5	2.6
Sawtimber (Softwood)	MMCF	2.0	2.0	2.0	2.0	2.3	2.4	2.5
Sawtimber (Softwood)	MMBF	7.6	7.6	7.6	7.6	8.7	9.1	9.6
Roundwood Products	MCF	61	61	61	61	70	73	77
Fuelwood	MCF	534	534	534	534	534	534	534
TSI	ACRES	342	342	342	342	392		
Reforestation	ACRES	540	540	540	540	540		
Water								
Meeting State Standards	MACFT	1009	1044	1044	1044	1045		
Protection								
Fuelbreaks and Fuel Treatment	ACRES	1238	2087	1471	2033	2580		
Minerals								
Mineral Leases and Permits	CASES	160	175	185	195	200		
HC&D								
Human Resource Programs	ENRYR	4	4	4	4	4		
Lands								
Land Pur. & Acq. (exc. Exch.)	ACRES	68	0	0	0	0		

NOTE: All values are average annual values.

TABLE B - 6 (3) (continued)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
BENCHMARK 3

		DECADE						
		1	2	3	4	5	10	15
Soils								
Soil & Water Resource Imp.	ACRES	30	30	20	20	20		
Facilities								
Trail Const./Reconst.	MILES	2	2	2	2	2		
Road Const./Reconst. (Arterial and Collector)	MILES	7	7	2	2	2		
Local Road Construction	MILES	1.0	1.0	1.0	1.0	1.0		
Local Road Reconstruction	MILES	0	0	0	0	0		
Timber Purch. Road Const.	MILES	12	8	6	4	5		
Timber Purch. Road Reconst.	MILES	9	9	6	6	6		
BENEFITS M$								
Recreation								
Developed		376	439	485	536	586		
Dispersed		886	1038	1148	1270	1388		
Wilderness		820	944	1056	1158	1281		
Range		486	495	495	495	495		
Timber		577	577	577	577	659		
Wildlife (WFUD's)		3788	3777	3792	3809	3765		
Minerals		0	0	0	0	0		
COSTS M$								
Total Forest Budget	(82)	5299	5310	5156	5144	5248		
Fixed Costs	(82)	1134	1136	1103	1101	1123		
Protection	(82)	612	614	581	579	601		
General Administration	(82)	522	522	522	522	522		
Variable Costs	(82)	4165	4174	4053	4043	4124		
Investment	(82)	1992	1997	1939	1934	1973		
Total Roads	(82)	482	414	174	157	173		
App. Fund Roads	(82)	194	194	65	61	64		
Purchaser Credit Roads	(82)	298	220	119	96	109		
Operational	(82)	2033	2077	1949	1944	1984		
General Administration	(82)	281	281	281	281	281		
Non-Forest Service Costs (exc. roads)	(82)	22	22	22	22	22		
Returns to Treasury		671	676	682	684	758		

Benchmark 4, Maximum Timber

Purpose: To estimate the maximum capability of the Salmon National Forest to provide timber.

FORPLAN Run Number: SAB 047

Objective Function: Maximize timber for five decades.

Constraints:

(1) Inventory or scheduled output constraints for threatened and endangered species, maintenance of viable populations, improving habitat for selected species, and protecting soil and water resources.

(2) Harvest flow: Sequential upper bound of 45% in first decade, 25% in later decades, lower bound of 25% in all decades.

(3) Ending inventory

(4) Long-term sustained yield.

Assumptions: Includes values for timber, recreation, range, water, wildlife and fish as appropriate. Values are assigned through RPA process.

The timber harvest outputs of this run were then used as constraints in a subsequent run. This subsequent run was then analyzed by resource specialists and displayed as the final run for this Benchmark 4.

Purpose: To achieve the same harvest levels obtained in run SAB 047, but to do it in the most cost efficient manner.

FORPLAN Number: SAB 04A

Objective Function: Maximize PNV for 15 decades.

Constraints: Same as for run SAB 047, with the addition of harvest floors resulting from harvest levels of max-timber run (SAB 047).

Assumptions: Same as for run SAB 047

TABLE B - 6 (4)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
BENCHMARK 4

	UNIT OF MEASURE	DECADE 1	2	3	4	5	10	15
OUTPUT/ACTIVITY								
Recreation								
Dev. Rec. Use (Roaded Natural)	MRVD	88	103	114	126	138		
Disp. Rec. Use (Roaded Natural)	MRVD	150	177	197	219	240		
Disp. Rec. Use (Semi-Prim. Motor)	MRVD	39	46	51	57	63		
Disp. Rec. Use (Semi-Prim. Non-Motor)	MRVD	7	9	10	11	12		
Wilderness Use (Semi-Prim. Motor)	MRVD	25	29	33	36	40		
Wilderness Use (Semi-Prim. Non-Motor)	MRVD	8	9	10	11	13		
Wilderness Use (Primitive)	MRVD	34	40	45	50	55		
Wilderness								
Wilderness Management	MACRES	426	426	426	426	426		
Wildlife								
Structural Habitat Improvement	STRUCT	84	105	105	105	105		
Nonstructural Habitat Improvement	ACRES	425	430	430	430	430		
Wildlife and Fish Use	MWFUD	93	92	94	94	92		
Range								
Grazing Use (Livestock)	MAUM	54.3	55.4	55.4	55.4	55.4		
Timber								
Allowable Sale Quantity	MMCF	8.4	9.7	12.0	15.1	18.8	7.7	13.9
Sawtimber (Softwood)	MMCF	8.2	9.4	11.7	14.7	18.3	7.5	13.5
Sawtimber (Softwood)	MMBF	28.8	33.1	41.4	51.8	64.8	26.5	47.6
Roundwood Products	MCF	227	261	326	407	509	208	376
Fuelwood	MCF	1094	1267	1574	1974	2468	1614	1828
TSI	ACRES	1296	1490	1863	2331	2916		
Reforestation	ACRES	2051	2358	2851	2136	2672		
Water								
Meeting State Standards	MACFT	1012	1054	1058	1062	1068		
Protection								
Fuelbreaks and Fuel Treatment	ACRES	5034	6919	8280	11,751	15,254		
Minerals								
Mineral Leases and Permits	CASES	160	175	185	195	200		
HC&D								
Human Resource Programs	ENRYR	4	4	4	4	4		
Lands								
Land Pur. & Acq. (exc. Exch.)	ACRES	68	0	0	0	0		

NOTE: All values are average annual values.

TABLE B - 6 (4) (continued)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
BENCHMARK 4

		DECADE						
		1	2	3	4	5	10	15
Soils								
Soil & Water Resource Imp.	ACRES	30	30	20	20	20		
Facilities								
Trail Const./Reconst.	MILES	2	2	2	2	2		
Road Const./Reconst. (Arterial and Collector)	MILES	14	13	11	13	16		
Local Road Construction	MILES	1.0	1.0	1.0	1.0	1.0		
Local Road Reconstruction	MILES	0	0	0	0	0		
Timber Purch. Road Const.	MILES	42	39	31	34	33		
Timber Purch. Road Reconst.	MILES	21	20	20	21	22		
BENEFITS M$								
Recreation								
Developed		371	435	481	532	582		
Dispersed		827	979	1089	1190	1329		
Wilderness		753	877	910	1090	1214		
Range		486	495	495	495	495		
Timber		925	1073	1342	1679	2099		
Wildlife (WFUD's)		3373	3343	3396	3425	3324		
Minerals		0	0	0	0	0		
COSTS M$								
Total Forest Budget	(82)	7839	8218	8959	9544	10746		
Fixed Costs	(82)	1698	1759	1917	2042	2300		
Protection	(82)	1156	1237	1395	1520	1778		
General Administration	(82)	522	522	522	522	522		
Variable Costs	(82)	6161	6459	7042	7502	8446		
Investment	(82)	2947	3090	3369	3589	4040		
Total Roads	(82)	1355	1241	1042	1167	1208		
App. Fund Roads	(82)	466	431	363	419	482		
Purchaser Credit Roads	(82)	889	810	679	748	726		
Operational	(82)	2963	3106	3387	36080	4062		
General Administration	(82)	281	281	281	281	281		
Non-Forest Service Costs (exc. roads)	(82)	22	22	22	22	22		
Returns to Treasury		174	183	199	212	225		

Benchmark 5, Maximum Range

Purpose: To estimate the maxiumum capability of the Salmon National Forest to produce range.

FORPLAN Run Number: No FORPLAN run was made for this benchmark.

Constraints: Inventory or output constraints for threatened and endangered species, maintaining viable populations of wildlife, improving habitat for selected species, and protecting soil and water resources.

Assumptions:

(1) Timber harvest on productive timberlands has no effect on range production.

(2) Productive timberlands retained for timber production.

TABLE B - 6 (5)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
BENCHMARK 5

	UNIT OF MEASURE	DECADE 1	2	3	4	5	10	15
OUTPUT/ACTIVITY								
Recreation								
Dev. Rec. Use (Roaded Natural)	MRVD	88	103	114	126	138		
Disp. Rec. Use (Roaded Natural)	MRVD	149	176	196	218	239		
Disp. Rec. Use (Semi-Prim. Motor)	MRVD	31	38	43	49	55		
Disp. Rec. Use (Semi-Prim. Non-Motor)	MRVD	6	8	9	10	11		
Wilderness Use (Semi-Prim. Motor)	MRVD	25	29	33	36	40		
Wilderness Use (Semi-Prim. Non-Motor)	MRVD	17	18	19	20	22		
Wilderness Use (Primitive)	MRVD	34	40	45	50	55		
Wilderness								
Wilderness Management	MACRES	503	503	503	503	503		
Wildlife								
Structural Habitat Improvement	STRUCT	84	105	112	112	112		
Nonstructural Habitat Improvement	ACRES	425	430	430	430	430		
Wildlife and Fish Use	MWFUD	91	92	92	91	94		
Range								
Grazing Use (Livestock)	MAUM	61.8	69.0	69.0	69.0	69.0		
Timber								
Allowable Sale Quantity	MMCF	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Sawtimber (Softwood)	MMCF	5.9	5.9	5.9	5.9	5.9	5.9	5.9
Sawtimber (Softwood)	MMBF	20.5	20.5	20.5	20.5	20.5	20.5	20.5
Roundwood Products	MCF	164	164	164	164	164	164	164
Fuelwood	MCF	800	800	800	800	800	800	800
TSI	ACRES	922	922	922	922	922		
Reforestation	ACRES	1460	1460	1460	1460	1388		
Water								
Meeting State Standards	MACFT	1012	1052	1054	1056	1055		
Protection								
Fuelbreaks and Fuel Treatment	ACRES	3810	4953	5507	5590	4775		
Minerals								
Mineral Leases and Permits	CASES	160	170	185	190	195		
HC&D								
Human Resource Programs	ENRYR	4	4	4	4	4		
Lands								
Land Pur. & Acq. (exc. Exch.)	ACRES	68	0	0	0	0		

NOTE: All values are average annual values.

TABLE B - 6 (5) (continued)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
BENCHMARK 5

		DECADE						
		1	2	3	4	5	10	15
Soils								
Soil & Water Resource Imp.	ACRES	30	30	20	20	20		
Facilities								
Trail Const./Reconst.	MILES	2	2	2	2	2		
Road Const./Reconst. (Arterial and Collector)	MILES	10	10	9	6	6		
Local Road Construction	MILES	1.0	1.0	1.0	1.0	1.0		
Local Road Reconstruction	MILES	0	0	0	0	0		
Timber Purch. Road Const.	MILES	35	23	20	20	8		
Timber Purch. Road Reconst.	MILES	17	18	18	14	14		
BENEFITS M$								
Recreation								
Developed		3713	435	481	532	582		
Dispersed		785	937	1047	1169	1287		
Wilderness		854	978	1090	1191	1315		
Range		552	619	617	617	617		
Timber		665	665	665	665	665		
Wildlife (WFUD's)		3515	3517	3554	3538	3611		
Minerals		0	0	0	0	0		
COSTS M$								
Total Forest Budget	(82)	6914	6883	6796	6753	6670		
Fixed Costs	(82)	1480	1473	1454	1445	1427		
Protection	(82)	958	951	932	923	905		
General Administration	(82)	522	522	522	522	522		
Variable Costs	(82)	5434	5410	5342	5308	5243		
Investment	(82)	2600	2588	2555	2539	2508		
Total Roads	(82)	1137	905	806	675	389		
App. Fund Roads	(82)	358	324	290	214	171		
Purchaser Credit Roads	(82)	779	581	516	461	218		
Operational	(82)	2613	2602	2569	2553	2521		
General Administration	(82)	281	281	281	281	281		
Non-Forest Service Costs (exc. roads)	(82)	22	22	22	22	22		
Returns to Treasury		282	294	301	303	303		

Benchmark 6, Maximum Big Game

Purpose: To estimate the maximum capability of the Salmon National Forest to produce big game.

FORPLAN Run Number: SAB 067

Objective Function: Maximize PNV for 15.

Constraints:

(1) Maintain at least current levels of threatened and endangered species, big game species, and water quality.

(2) Harvest flow: non-declining yield

(3) Harvest floor of 7.6 MMBF/YR in decade 1

(4) Ending inventory

(5) Long-term sustained yield

Assumptions:

(1) Includes values for timber, recreation, range, water, wildlife and fish, as appropriate for the Forest.

(2) Assumes maximum protection for soil and water.

TABLE B - 6 (6)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
BENCHMARK 6

OUTPUT/ACTIVITY	UNIT OF MEASURE	DECADE 1	2	3	4	5	10	15
Recreation								
Dev. Rec. Use (Roaded Natural)	MRVD	91	106	117	129	141		
Disp. Rec. Use (Roaded Natural)	MRVD	174	201	221	243	264		
Disp. Rec. Use (Semi-Prim. Motor)	MRVD	46	53	58	64	70		
Disp. Rec. Use (Semi-Prim. Non-Motor)	MRVD	9	11	12	13	14		
Wilderness Use (Semi-Prim. Motor)	MRVD	30	34	38	41	45		
Wilderness Use (Semi-Prim. Non-Motor)	MRVD	10	11	12	13	15		
Wilderness Use (Primitive)	MRVD	41	47	52	57	62		
Wilderness								
Wilderness Management	MACRES	426	426	426	426	426		
Wildlife								
Structural Habitat Improvement	STRUCT	105	105	112	112	112		
Nonstructural Habitat Improvement	ACRES	2740	2740	2740	2740	2740		
Wildlife and Fish Use	MWFUD	106	106	107	107	107		
Range								
Grazing Use (Livestock)	MAUM	44.5	42.0	42.0	42.0	42.0		
Timber								
Allowable Sale Quantity	MMCF	2.1	2.1	2.1	2.1	2.4	2.3	4.5
Sawtimber (Softwood)	MMCF	2.0	2.0	2.0	2.0	2.3	3.2	4.4
Sawtimber (Softwood)	MMBF	7.6	7.6	7.6	7.6	8.9	12.1	16.8
Roundwood Products	MCF	61	61	61	61	71	97	135
Fuelwood	MCF	534	534	534	534	534	534	654
TSI	ACRES	342	342	342	342	400		
Reforestation	ACRES	540	540	540	540	635		
Water								
Meeting State Standards	MACFT	1010	1044	1044	1045	1045		
Protection								
Fuelbreaks and Fuel Treatment	ACRES	1321	1293	2373	1938	2386		
Minerals								
Mineral Leases and Permits	CASES	160	175	185	195	200		
HC&D								
Human Resource Programs	ENRYR	4	4	4	4	4		
Lands								
Land Pur. & Acq. (exc. Exch.)	ACRES	68	0	0	0	0		

NOTE: All values are average annual values.

TABLE B - 6 (6) (continued)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
BENCHMARK 6

		DECADE						
		1	2	3	4	5	10	15
Soils								
Soil & Water Resource Imp.	ACRES	30	30	20	20	20		
Facilities								
Trail Const./Reconst.	MILES	2	2	2	2	2		
Road Const./Reconst. (Arterial and Collector)	MILES	6	8	6	7	6		
Local Road Construction	MILES	1.0	1.0	1.0	1.0	1.0		
Local Road Reconstruction	MILES	0	0	0	0	0		
Timber Purch. Road Const.	MILES	12	10	5	6	5		
Timber Purch. Road Reconst.	MILES	8	10	9	10	10		
BENEFITS M$								
Recreation								
Developed		384	447	494	544	595		
Dispersed		966	1118	1228	1350	1469		
Wilderness		910	1034	1146	1247	1372		
Range		398	376	375	375	376		
Timber		622	622	622	622	726		
Wildlife (WFUD's)		4150	4194	4230	4239	4161		
Minerals		0	0	0	0	0		
COSTS M$								
Total Forest Budget	(82)	5210	5270	5179	5224	5296		
Fixed Costs	(82)	1115	1128	1108	1118	1133		
Protection	(82)	593	606	586	596	611		
General Administration	(82)	522	522	522	522	522		
Variable Costs	(82)	4095	4142	4071	4106	4163		
Investment	(82)	1959	1982	1947	1964	1991		
Total Roads	(82)	480	504	324	404	342		
App. Fund Roads	(82)	185	226	162	192	164		
Purchaser Credit Roads	(82)	295	278	162	212	178		
Operational	(82)	1969	1992	1958	1975	2002		
General Administration	(82)	281	281	281	281	281		
Non-Forest Service Costs (exc. roads)	(82)	22	22	22	22	22		
Returns to Treasury		722	722	729	731	829		

Benchmark 7, Current Direction (No Action Alternative)

Purpose: To portray the current level of goods and services provided by the Salmon National Forest, and the most likely amount of goods and services expected to be provided in the future if current management direction continues.

FORPLAN Run Number: SAB 7R8

Objective Function: Minimize deviation from goals.

Constraints entered as goals:

(1) Produce a solution with a positive PNV (goal weight = 1.0).

(2) Provide a given species mix of timber harvested for decades 1 through 5 (goal weight = 1,000).

Other constraints:

(1) Harvest flow: nondeclining yield

(2) Ending inventory

(3) Long-term sustained yield link

(4) Harvest floor of 20.5 MMBF/YR in decade 1

(5) Meet current direction Visual Quality Objectives.

(6) Meet state goals for fisheries.

(7) Maintain current populations of wildlife.

(8) Limit final cut on existing shelterwood acres to no more than 22% of those acres.

(9) Limit the number of acres of stagnated lodgepole pine receiving the push-over prescription to the following:

Decade	Upper Limit
1	1,500 Ac.
2-5	2,000 Ac.

(10) Do not schedule timber harvests on lands considered economically unsuitable.

(11) Harvest stands of timber already harvested between 1982 -1984 that are not identified as cutover in the model.

(12) Schedule projected 1985 harvests for harvest in decade 1 (based on Land Management Unit Plans and the 1984 Five-Year Action Plan).

(13) Withhold 76,749 acres for wilderness.

(14) Withhold 201,924 acres for special wildlife considerations, roadless areas and old growth.

Assumptions:

(1) Current management direction of plans, laws, regulations and policies are applied.

(2) Prescriptions are selected to meet current management direction.

(3) First decade budget is between 5.43-5.97 million dollars per year.

(4) Includes values for timber, recreation, range, water, wildlife and fish, as appropriate for the Forest.

TABLE B - 6 (7)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
BENCHMARK 7

	UNIT OF MEASURE	DECADE 1	2	3	4	5	10	1
OUTPUT/ACTIVITY								
Recreation								
Dev. Rec. Use (Roaded Natural)	MRVD	89	104	115	127	139		
Disp. Rec. Use (Roaded Natural)	MRVD	160	187	207	229	250		
Disp. Rec. Use (Semi-Prim. Motor)	MRVD	34	41	46	52	58		
Disp. Rec. Use (Semi-Prim. Non-Motor)	MRVD	7	9	10	11	12		
Wilderness Use (Semi-Prim. Motor)	MRVD	27	31	35	38	42		
Wilderness Use (Semi-Prim. Non-Motor)	MRVD	18	19	20	21	23		
Wilderness Use (Primitive)	MRVD	37	43	48	53	58		
Wilderness								
Wilderness Management	MACRES	503	503	503	503	503		
Wildlife								
Structural Habitat Improvement	STRUCT	84	105	107	107	107		
Nonstructural Habitat Improvement	ACRES	425	430	430	430	430		
Wildlife and Fish Use	MWFUD	102	103	103	102	105		
Range								
Grazing Use (Livestock)	MAUM	54.3	55.4	55.4	55.4	55.4		
Timber								
Allowable Sale Quantity	MMCF	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Sawtimber (Softwood)	MMCF	5.9	5.9	5.9	5.9	5.9	5.9	5.9
Sawtimber (Softwood)	MMBF	20.5	20.5	20.5	20.5	20.5	20.5	20.5
Roundwood Products	MCF	164	164	164	164	164	164	164
Fuelwood	MCF	800	800	800	800	800	800	800
TSI	ACRES	922	922	922	922	922		
Reforestation	ACRES	1460	1460	1460	1460	1388		
Water								
Meeting State Standards	MACFT	1012	1052	1054	1056	1055		
Protection								
Fuelbreaks and Fuel Treatment	ACRES	3810	4953	5507	5590	4775		
Minerals								
Mineral Leases and Permits	CASES	160	170	185	190	195		
HC&D								
Human Resource Programs	ENRYR	4	4	4	4	4		
Lands								
Land Pur. & Acq. (exc. Exch.)	ACRES	68	0	0	0	0		

NOTE: All values are average annual values.

TABLE B - 6 (7) (Continued)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
BENCHMARK 7

		DECADE						
		1	2	3	4	5	10	15
Soils								
Soil & Water Resource Imp.	ACRES	30	30	20	20	20		
Facilities								
Trail Const./Reconst.	MILES	2	2	2	2	2		
Road Const./Reconst. (Arterial and Collector)	MILES	10	10	9	6	6		
Local Road Construction	MILES	1.0	1.0	1.0	1.0	1.0		
Local Road Reconstruction	MILES	0	0	0	0	0		
Timber Purch. Road Const.	MILES	40	27	23	23	10		
Timber Purch. Road Reconst.	MILES	12	14	12	12	12		
BENEFITS M$								
Recreation								
Developed		376	439	485	536	586		
Dispersed		878	1000	1110	1232	1350		
Wilderness		922	1045	1158	1259	1383		
Range		486	495	495	495	495		
Timber		665	665	665	665	665		
Wildlife (WFUD's)		3772	3776	3810	3792	3869		
Minerals		0	0	0	0	0		
COSTS M$								
Total Forest Budget	(82)	6764	6733	6645	6689	6603		
Fixed Costs	(82)	1447	1441	1422	1431	1413		
Protection	(82)	925	919	900	909	891		
General Administration	(82)	522	522	522	522	522		
Variable Costs	(82)	5317	5292	5223	5258	5190		
Investment	(82)	2543	2532	2499	2515	2483		
Total Roads	(82)	1137	905	806	675	389		
App. Fund Roads	(82)	358	324	290	214	171		
Purchaser Credit Roads	(82)	779	581	516	461	218		
Operational	(82)	2557	2545	2512	2528	2496		
General Administration	(82)	281	281	281	281	281		
Non-Forest Service Costs (exc. roads)	(82)	22	22	22	22	22		
Returns to Treasury		273	277	284	286	286		

Benchmark 8, All Wilderness

Purpose: To maximize the wilderness potential on the Forest. This benchmark assigns all roadless areas to wilderness.

FORPLAN Run Number: SAB 082

Objective Function: Maximize PNV for 15 decades.

Constraints:

(1) Inventory or scheduled output constraints for threatened or endangered species, maintenance of viable wildlife populations, improving habitat for selected species and protecting soil and water resources.

(2) Harvest flow: Non-declining yield

(3) Harvest floor of 4.6 MMBF/YR for decade 1

(4) Ending inventory

(5) Long term sustained yield

(6) All roadless lands are withheld from the timber base.

Assumptions: Includes values for timber, recreation, range, water, wildlife, and fish as appropriate for the Forest. Values are assigned through the RPA process.

TABLE B - 6 (8)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
BENCHMARK 8

OUTPUT/ACTIVITY	UNIT OF MEASURE	DECADE 1	2	3	4	5	10	15
Recreation								
Dev. Rec. Use (Roaded Natural)	MRVD	89	104	115	127	139		
Disp. Rec. Use (Roaded Natural)	MRVD	164	191	211	233	254		
Disp. Rec. Use (Semi-Prim. Motor)	MRVD	2	2	3	3	3		
Disp. Rec. Use (Semi-Prim. Non-Motor)	MRVD	1	1	1	2	2		
Wilderness Use (Semi-Prim. Motor)	MRVD	28	32	36	39	43		
Wilderness Use (Semi-Prim. Non-Motor)	MRVD	58	68	74	81	90		
Wilderness Use (Primitive)	MRVD	38	44	49	54	59		
Wilderness								
Wilderness Management	MACRES	1256	1256	1256	1256	1256		
Wildlife								
Structural Habitat Improvement	STRUCT	84	105	112	112	112		
Nonstructural Habitat Improvement	ACRES	425	430	430	430	430		
Wildlife and Fish Use	MWFUD	106	108	109	109	106		
Range								
Grazing Use (Livestock)	MAUM	54.1	54.1	54.1	54.1	54.1		
Timber								
Allowable Sale Quantity	MMCF	1.3	1.3	1.3	1.3	2.2	2.2	3.0
Sawtimber (Softwood)	MMCF	1.2	1.2	1.2	1.2	2.1	2.1	2.9
Sawtimber (Softwood)	MMBF	4.6	4.6	4.6	4.6	7.9	7.9	11.2
Roundwood Products	MCF	50	50	50	50	63	63	90
Fuelwood	MCF	534	534	534	534	534	534	534
TSI	ACRES	207	207	207	207	356		
Reforestation	ACRES	328	328	328	328	563		
Water								
Meeting State Standards	MACFT	1009	1042	1042	1042	1044		
Protection								
Fuelbreaks and Fuel Treatment	ACRES	776	1198	712	1202	2573		
Minerals								
Mineral Leases and Permits	CASES	160	170	170	175	180		
HC&D								
Human Resource Programs	ENRYR	4	4	4	4	4		
Lands								
Land Pur. & Acq. (exc. Exch.)	ACRES	68	0	0	0	0		

NOTE: All values are average annual values.

TABLE B - 6 (8) (continued)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
BENCHMARK 8

		DECADE						
		1	2	3	4	5	10	15
Soils								
Soil & Water Resource Imp.	ACRES	30	30	20	20	20		
Facilities								
Trail Const./Reconst.	MILES	2	2	2	2	2		
Road Const./Reconst. (Arterial and Collector)	MILES	4	2	2	2	3		
Local Road Construction	MILES	1.0	1.0	1.0	1.0	1.0		
Local Road Reconstruction	MILES	0	0	0	0	0		
Timber Purch. Road Const.	MILES	7	5	2	2	7		
Timber Purch. Road Reconst.	MILES	5	5	5	5	5		
BENEFITS M$								
Recreation								
Developed		376	439	485	536	586		
Dispersed		741	819	907	1004	129		
Wilderness		1394	1618	1787	1956	2158		
Range		484	484	484	484	484		
Timber		277	277	277	277	464		
Wildlife (WFUD's)		3955	4057	4015	4008	3914		
Minerals		0	0	0	0	0		
COSTS M$								
Total Forest Budget	(82)	5097	5053	5066	5024	5405		
Fixed Costs	(82)	1091	1081	1084	1075	1157		
Protection	(82)	569	559	562	553	635		
General Administration	(82)	522	522	522	522	522		
Variable Costs	(82)	4006	3972	3982	3949	4248		
Investment	(82)	1916	1900	1905	1889	2032		
Total Roads	(82)	293	169	162	155	255		
App. Fund Roads	(82)	119	81	81	80	113		
Purchaser Credit Roads	(82)	174	88	81	75	142		
Operational	(82)	1927	1910	1915	1899	2043		
General Administration	(82)	281	281	281	281	281		
Non-Forest Service Costs (exc. roads)	(82)	22	22	22	22	22		
Returns to Treasury		329	333	339	342	470		

Benchmark 9, No Wilderness

Purpose: To estimate the effects of assigning no roadless areas to wilderness.

On the Salmon National Forest, this benchmark, for all practical purposes, is identical to Benchmark 3, Maximize Present Net Value using Assigned Values. Therefore, FORPLAN outputs from Benchmark 3 were used for Benchmark 9.

TABLE B - 6 (9)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
BENCHMARK 9

	UNIT OF MEASURE	DECADE 1	2	3	4	5	10	15
OUTPUT/ACTIVITY								
Recreation								
Dev. Rec. Use (Roaded Natural)	MRVD	89	104	115	127	139		
Disp. Rec. Use (Roaded Natural)	MRVD	160	187	207	229	250		
Disp. Rec. Use (Semi-Prim. Motor)	MRVD	42	49	54	60	66		
Disp. Rec. Use (Semi-Prim. Non-Motor)	MRVD	8	10	11	12	13		
Wilderness Use (Semi-Prim. Motor)	MRVD	27	31	35	38	42		
Wilderness Use (Semi-Prim. Non-Motor)	MRVD	9	10	11	12	14		
Wilderness Use (Primitive)	MRVD	37	43	48	53	58		
Wilderness								
Wilderness Management	MACRES	426	426	426	426	426		
Wildlife								
Structural Habitat Improvement	STRUCT	84	105	112	112	112		
Nonstructural Habitat Improvement	ACRES	425	430	430	430	430		
Wildlife and Fish Use	MWFUD	102	101	102	103	101		
Range								
Grazing Use (Livestock)	MAUM	54.3	55.4	55.4	55.4	55.4		
Timber								
Allowable Sale Quantity	MMCF	2.1	2.1	2.1	2.1	2.4	2.5	2.6
Sawtimber (Softwood)	MMCF	2.0	2.0	2.0	2.0	2.3	2.4	2.5
Sawtimber (Softwood)	MMBF	7.6	7.6	7.6	7.6	8.7	9.1	9.6
Roundwood Products	MCF	61	61	61	61	70	73	77
Fuelwood	MCF	534	534	534	534	534	534	534
TSI	ACRES	342	342	342	342	392		
Reforestation	ACRES	540	540	540	540	620		
Water								
Meeting State Standards	MACFT	1009	1044	1044	1044	1045		
Protection								
Fuelbreaks and Fuel Treatment	ACRES	1238	2087	1471	2033	2580		
Minerals								
Mineral Leases and Permits	CASES	160	175	185	195	200		
HC&D								
Human Resource Programs	ENRYR	4	4	4	4	4		
Lands								
Land Pur. & Acq. (exc. Exch.)	ACRES	68	0	0	0	0		

NOTE: All values are average annual values.

TABLE B - 6 (9) (Continued)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
BENCHMARK 9

		DECADE						
		1	2	3	4	5	10	15
Soils								
Soil & Water Resource Imp.	ACRES	30	30	20	20	20		
Facilities								
Trail Const./Reconst.	MILES	2	2	2	2	2		
Road Const./Reconst. (Arterial and Collector)	MILES	7	7	2	2	2		
Local Road Construction	MILES	1.0	1.0	1.0	1.0	1.0		
Local Road Reconstruction	MILES	0	0	0	0	0		
Timber Purch. Road Const.	MILES	7	4	3	3	5		
Timber Purch. Road Reconst.	MILES	14	13	8	7	5		
BENEFITS M$								
Recreation								
Developed		376	439	485	536	586		
Dispersed		886	1038	1148	1270	1388		
Wilderness		820	944	1057	1158	1281		
Range		486	495	495	495	495		
Timber		577	577	577	577	659		
Wildlife (WFUD's)		3788	3774	3792	3809	3772		
Minerals		0	0	0	0	0		
COSTS M$								
Total Forest Budget	(82)	5213	5224	5071	5077	5181		
Fixed Costs	(82)	1116	1118	1085	1086	1109		
Protection	(82)	594	596	563	564	587		
General Administration	(82)	522	522	522	522	522		
Variable Costs	(82)	4097	4106	3986	3991	4072		
Investment	(82)	1960	1964	1907	1909	1948		
Total Roads	(82)	492	414	184	157	173		
App. Fund Roads	(82)	194	194	65	61	64		
Purchaser Credit Roads	(82)	298	220	119	96	109		
Operational	(82)	1971	1975	1917	1919	1958		
General Administration	(82)	281	281	281	281	281		
Non-Forest Service Costs (exc. roads)	(82)	22	22	22	22	22		
Returns to Treasury		671	676	682	684	758		

IV. Generating An Array of Alternatives

A. Introduction

A Forest Plan alternative can be defined as the mix of management activities and practices (prescriptions) needed to achieve a given set of management goals and objectives. It is specific as to amounts, time scheduling, and location of activities within the limits of noncontiguous management areas.

The basis for an array of alternatives to be presented in the DEIS is established in the NFMA regulations (36 CFR 219). These state:

> "Alternatives shall be distributed between the minimum resource potential and the maximum resource potential to reflect to the extent practicable the full range of major commodity and environmental resource uses and values that could be produced from the Forest."

As defined in 36 CFR 219.12(f), alternatives:

- Shall be within the land capability for the forest to produce.
- Shall be formulated to facilitate the analysis of trade-offs in resource use, opportunity costs, and environmental effects between alternatives.
- Shall be formulated to facilitate the evaluation of the effects on benefits, costs, and present net value.
- Shall provide a variety of responses to issues and concerns.
- Shall represent the most cost efficient combination of management prescriptions to meet the specific alternative's objectives.
- Shall state the condition, uses, goods and services produced, timing and flow of outputs, and associated costs and benefits.
- Shall state the alternative objective and the standards and guidelines proposed.
- At least one alternative shall reflect the current level of goods and services produced by the unit as projected over time. This alternative shall be considered the "No Action" alternative pursuant to NEPA procedures.

In addition, all alternatives shall meet the budget limitations specified in the R-4 LMP checklist dated 2/13/84 unless it is a departure.

Based on this direction, a number of required planning alternatives were identified by the Washington and Regional offices. These include:

> Current Management Direction - required by NEPA.
>
> Market Opportunity - to conform with NFMA direction to have an alternative that produced outputs at the Forest's capacity.

Non-Market Opportunities - To conform with NFMA direction to have an alternative that provides for a high level of amenity uses. In conjunction with Market Opportunities, this alternative assures a "broad range" of alternatives is being presented.

1980 RPA Program - An alternative to show what is needed to meet the Forest's share of the Region's output targets.

Draft 1985 Program Update - An alternative to show what would be needed to meet the Forest's share of the Region's output targets.

Constrained Budget - This alternative is required as an assessment of what could be achieved with a budget 25% lower than current management direction. This alternative addresses current funding realities.

Other alternatives were formulated to address specific issues, concerns and opportunities and represent a broad range of wilderness emphases. See Chapter II for a detailed explanation of the alternative formulation process.

B. Constraints

Constraints common to all alternatives are the same as those discussed in Section III-A.4. These are constraints needed to ensure technical implementability and ensure conformance with minimum management requirements and general timber policy constraints.

In addition to the above, discretionary constraints were developed specifically to define the decision space for each alternative. These constraints are displayed in Table B-7. They are also further discussed below.

TABLE B-7 OBJECTIVES OF ALTERNATIVES

ALTERNATIVE	Harvest Flow and Ending Inventory	Fisheries	Dispersion	Wildlife	Acres w/held Proposed Wilderness	Other acres Assigned Min Level Prescription 1/	Visuals	Limits on Special Treatments	LMU and 5 Yr Act Plans	Harvest Goal
1-Curr Mgmt Direction	-Nondeclining field -Link to Long Term Sustained Yield	State goals 2/ Min viable 3/	Max of 37% cutover at one time	Current population	76,749 (9%)	201 924 4/	Current directions	-Limits on exist sh-woods -Limits on LPP push-over 5/	-Projected 1985 harvest -Specie mix	30 MMBF/Yr
2-Market Opport	" "	Min viable	" "	Min viable	184,317 (22%)	119,599	Max modification	"		45 MMBF/Yr
3-Non-Market Opport	" "	State goals	" "	Id Fish & Game Obj's	348,518 (42%)	491,992	Inventory	" "		No predetermd objctv in bs rn
4-1980 RPA Program	" "	Min viable	" "	Min viable	157,718 (19%)	115 703	Max modification	" "		40 MMBF/Yr
5-1985 RPA Alt #9 - High Productivity	" "	Min viable	" "	Min viable	0	117,521	" "	" "		80 MMBF/Yr
6-Constrained Budget	" "	State goals	" "	Current populations	0	533,538	Inventory	" "		22 MMBF/Yr
7-Capability Emphasis	" "	Anad -St goals Resid -min	" "	Current populations	236,774 (29%)	282,023	Current direction	" "		20 MMBF/Yr
8-Wilderness & Wildlife Emph	" "	-Max fish in RDLS -Other State goals	" "	Id Fish & Game Obj's	470,802 (57%)	285,914	Inventory	" "	-	Mo Predetermd obj's in base run
9-Wilderness * Non-Market	" "	-Max fish in RDLS Other St goals	" "	Id Fish & Game Obj's	579,063 (70%)	282,728	Inventory	" "		" "
10-Wilderness Emph All RA's to Wilderness on Mgbl Lines	" "	-Max fish in wilderness -Other, State goals	" "	Min viable	676 925 (81%)	16,900	Max modification	" "		27 MMBF/Yr
11-All RA s Wilderness on Invent Lines	" "	-Max fish in RDLS -Other State goals	" "	Current populations outside wilderness	830,469 (100%)	9,867	Inventory	" "		20 MMBF/Yr
12-Modified Current	" "	State goals	" "	Current populations	(0%)	305 895 4/	Modified Inventory 6/	" "	-Projected 1985 harvest	21 MMBF/Yr

1/ Includes acres assigned to min-level prescriptions outside proposed wilderness areas, i e , Key Elk Summer Range, old growth, and areas featuring semi-primitive recreation opportunities

2/ State goals for fisheries
Anadromous - not more than 25% over natural sediment production
Resident - not more than 85% over natural sediment production

3/ Minimum viable population requirements for fisheries
Anadromous - not more than 54% over natural sediment production
Resident - not more than 155% over natural sediment production

4/ For Alt's #1 and #2, includes timbered acres economically unsuitable

5/ -Cut no more than 20% of existing shelterwoods in any one period
-Pushover prescriptions for stagnated LPP
-Implement on not more than 1500 acres in Dec 1e 1
-Implement on not more than 2000 acres in Decades 2-5

6/ Meeting Inventory Visual objectives in all Geozones except North Fork, Salmon Face, and Cobalt, where visual objectives may be relaxed to, but not to exceed, current directive objectives

Fisheries: Alternatives were constructed to meet either minimum viable population requirements or state goals. The FORPLAN outputs, sediment, road-sed and pseudo-seds are used mainly to calculate the amount of fines in spawning gravel, based on percent sediment over natural rates. Fisheries objectives were modeled by limiting the amounts of these outputs produced by decade and geozone. Upper limits on "percent over natural" (o.n.) sedimentation rates on lands draining into anadromous and resident fisheries are as follows:

	State Goals	Minimum Viable Populations
Anadromous	25% o.n.	54% o.n.
Resident	85% o.n.	155% o.n.

Visual Objectives:

1. A maximum number of cumulative visual impact acres is set for various portions of the Forest. This makes it possible to model various visual quality objectives, i.e., inventory, current direction or maximum modification.

2. More specific visual impact limits are set for individual analysis areas available for harvest. These limits are modeled with analysis area accessibility constraints for decades 1 and 2.

Limits on Special Treatments:

1. Cut no more than 20% of existing shelterwoods in any one period.

2. Implement pushover prescription for stagnated lodgepole pine on not more than 1,500 Ac. in decade 1, and on not more than 2,000 Ac. in decades 2-5.

Harvest Goal: First decade harvest goals were determined for each alternative. An initial max-timber FORPLAN run was made for each alternative. The predetermined harvest goal was then adjusted downward if the max-timber run so indicated. PNV rollover runs were then made using either the original or adjusted harvest goal.

Land Management Unit Plans and Five-Year Action Plans: Projected 1985 harvests and species mix constraints were developed based on current Land Use Plans and Multiple Use Plans. This brings the harvest schedule into line with the activities that occur before plan implementation.

C. Bounds Files

A unique bounds file was built for each alternative. These files required a certain number of acres in specific analysis areas to take the minimum level prescription. These acres met one of the following conditions: were mapped as economically unsuitable, were in key elk summer range managed with a special strategy, were in key big game

winter range managed with a special strategy, or were in an area withheld for wilderness or old growth.

V. Alternatives Considered in Detail

A. Introduction

For each alternative considered in detail, a FORPLAN run was made. The purpose was to help determine the most efficient mix of management prescriptions for the Forest that would meet the goals and objectives of each alternative. To meet this efficiency criteria, the final FORPLAN run for each alternative had an objective function of maximize present net value for 15 periods. This objective function was subject to a set of constraints which outlined the goals of the alternatives.

B. Alternative Descriptions

Following is a description of each alternative. The overall objective is given along with the major assumptions of each alternative. Outputs for each alternative are shown in Table B-8. The constraints used in the final FORPLAN run for each alternative are listed. These guided the model to a solution which simulated the alternative. Constraints common to all alternatives are displayed in Table B-9. Table B-10 displays constraints specific to each alternative. The status (binding or nonbinding) is also shown for each constraint.

Alternative 1, Current Direction (No Action)

This alternative is basically the same as Benchmark 7. Both were analyzed with the same FORPLAN formulation.

Purpose: To portray the current level of goods and services provided by the Salmon National Forest, and the most likely amount of goods and services expected to be provided in the future if current management direction continues and infeasibilities are resolved in favor of nontimber outputs.

FORPLAN Run Number: SAB 7R8

Objective Function: Minimize deviation from goals.

Constraints entered as goals:

(1) Produce a solution with a positive PNV (goal weight = 1.0).

(2) Provide a given species mix of timber harvested for decades 1 through 5 (goal weight = 1,000).

Other constraints:

(1) Harvest flow: nondeclining yield

(2) Ending inventory

(3) Long-term sustained yield link

(4) Harvest floor of 20.5 MMBF/YR in decade 1

(5) Meet current direction Visual Quality Objectives.

(6) Meet Idaho Department of Fish and Game goals for fisheries.

(7) Maintain current populations of wildlife.

(8) Limit final cut on existing shelterwood acres to no more than 22% of those acres.

(9) Limit the number of acres of stagnated lodgepole pine receiving the push-over prescription to the following:

Decade	Upper Limit
1	1,500 Ac.
2-5	2,000 Ac.

(10) Do not schedule timber harvests on lands considered economically unsuitable.

(11) Harvest stands of timber already harvested between 1982 -1984 that are not identified as cutover in the model.

(12) Schedule projected 1985 harvests for harvest in decade 1 (based on Land Management Unit Plans and the 1984 Five-Year Action Plan).

(13) Withhold 76,749 acres for wilderness.

(14) Withhold 201,924 acres for special wildlife considerations, roadless areas and old growth.

Assumptions:

(1) Current management direction of plans, laws, regulations and policies are applied.

(2) Prescriptions are selected to meet current management direction.

(3) First decade budget is between 5.43-5.97 million dollars per year.

(4) Includes values for timber, recreation, range, water, wildlife and fish, as appropriate for the Forest.

(5) This alternative meets minimum management requirements.

TABLE B - 8 (1)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
ALTERNATIVE 1

OUTPUT/ACTIVITY	UNIT OF MEASURE	DECADE 1	2	3	4	5	10	15
Recreation								
Dev. Rec. Use (Roaded Natural)	MRVD	89	104	115	127	139		
Disp. Rec. Use (Roaded Natural)	MRVD	160	187	207	229	250		
Disp. Rec. Use (Semi-Prim. Motor)	MRVD	34	41	46	52	58		
Disp. Rec. Use (Semi-Prim. Non-Motor)	MRVD	7	9	10	11	12		
Wilderness Use (Semi-Prim. Motor)	MRVD	27	31	35	38	42		
Wilderness Use (Semi-Prim. Non-Motor)	MRVD	20	21	22	23	25		
Wilderness Use (Primitive)	MRVD	43	49	54	59	64		
Wilderness								
Wilderness Management	MACRES	503	503	503	503	503		
Wildlife								
Structural Habitat Improvement	STRUCT	83	83	83	83	83		
Nonstructural Habitat Improvement	ACRES	785	785	785	785	785		
Wildlife and Fish Use	MWFUD	106	107	107	106	109		
Range								
Grazing Use (Livestock)	MAUM	54.3	54.7	54.7	54.7	54.7		
Timber								
Allowable Sale Quantity	MMCF	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Sawtimber (Softwood)	MMCF	5.9	5.9	5.9	5.9	5.9	5.9	5.9
Sawtimber (Softwood)	MMBF	20.5	20.5	20.5	20.5	20.5	20.5	20.5
Roundwood Products	MCF	164	164	164	164	164	164	164
Fuelwood	MCF	800	800	800	800	800	800	800
TSI	ACRES	923	923	923	923	923		
Reforestation	ACRES	1461	1461	1461	1461	1386		
Water								
Meeting State Standards	MACFT	1012	1052	1054	1056	1055		
Protection								
Fuelbreaks and Fuel Treatment	ACRES	3810	4953	5507	5590	4775		
Minerals								
Mineral Leases and Permits	CASES	160	170	185	190	195		
HC&D								
Human Resource Programs	ENRYR	4	4	4	4	4		
Lands								
Land Pur. & Acq. (exc. Exch.)	ACRES	68	0	0	0	0		

NOTE: All values are average annual values.

TABLE B - 8 (1) (continued)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
ALTERNATIVE 1

		DECADE						
		1	2	3	4	5	10	15
Soils								
Soil & Water Resource Imp.	ACRES	30	30	20	20	20		
Facilities								
Trail Const./Reconst.	MILES	2	2	2	2	2		
Road Const.(Arterial/Collector	MILES	4	5	0	0	0		
Road Reconst. (Arterial/Collector)	MILES	6	6	6	6	6		
Local Road Construction	MILES	1.0	1.0	1.0	1.0	1.0		
Timber Purch. Road Const.	MILES	42	20	24	23	11		
Timber Purch. Road Reconst.	MILES	10	10	10	10	10		
BENEFITS M$								
Recreation								
Developed		377	439	485	536	586		
Dispersed		848	1002	1110	1232	1351		
Wilderness		922	1045	1158	1259	1383		
Range		486	489	489	489	489		
Timber		665	665	665	665	665		
Wildlife (WFUD's)		3836	3848	3866	3840	3901		
Minerals		-	-	-	-	-		
COSTS M$								
Total Forest Budget	(82)	6816	6803	6714	6758	6675		
Fixed Costs	(82)	1459	1456	1437	1446	1428		
Protection	(82)	937	934	915	924	906		
General Administration	(82)	522	522	522	522	522		
Variable Costs	(82)	5357	5347	5277	5312	5247		
Investment	(82)	2563	2558	2524	2541	2510		
Total Roads	(82)	1137	905	652	652	366		
App. Fund Roads	(82)	358	342	211	211	168		
Purchaser Credit Roads	(82)	779	563	441	441	198		
Operational	(82)	2576	2572	2538	2555	2523		
General Administration	(82)	281	281	281	281	281		
Non-Forest Service Costs (exc. roads)	(82)	27	22	22	22	22		
Returns to Treasury		273	277	283	285	285		

Alternative 2, Market Opportunities

Purpose: To maximize present net value of all outputs that have the potential to produce income for the government.

FORPLAN Run Number: SAA 023

Objective Function: Maximize PNV for 15 decades.

Constraints:

(1) Harvest flow: nondeclining yield

(2) Ending inventory

(3) Long-term sustained yield link

(4) Harvest floor: 33 MMBF/YR in decade 1, 2
38 MMBF/YR in decade 3

(5) Meet maximum modification Visual Quality Objectives.

(6) Maintain minimum viable populations of fish.

(7) Maintain minimum viable populations of wildlife.

(8) Limit final cut on existing shelterwood acres to no more than 22% of those acres.

(9) Limit the number of acres of stagnated lodgepole pine receiving the push-over prescription.

(10) Harvest 1982-1984 sales.

(11) Meet spatial dispersion requirements (upper limit of 40 acres for harvest openings).

(12) Withhold 184,317 acres for wilderness.

(13) Withhold 119,599 acres for special wildlife considerations, roadless areas and old growth.

Assumptions:

(1) Estimated budget range for first decade: 5.43-8.14 million dollars per year.

(2) Includes values for timber, recreation, range, water, wildlife and fish, as appropriate for the Forest.

(3) Meets minimum management requirements.

TABLE B - 8 (2)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
ALTERNATIVE 2

	UNIT OF MEASURE	DECADE 1	2	3	4	5	10	15
OUTPUT/ACTIVITY								
Recreation								
Dev. Rec. Use (Roaded Natural)	MRVD	88	103	114	126	138		
Disp. Rec. Use (Roaded Natural)	MRVD	151	178	198	220	241		
Disp. Rec. Use (Semi-Prim. Motor)	MRVD	29	34	38	42	47		
Disp. Rec. Use (Semi-Prim. Non-Motor)	MRVD	4	6	6	7	7		
Wilderness Use (Semi-Prim. Motor)	MRVD	25	29	33	36	40		
Wilderness Use (Semi-Prim. Non-Motor)	MRVD	24	27	30	33	37		
Wilderness Use (Primitive)	MRVD	41	47	52	57	62		
Wilderness								
Wilderness Management	MACRES	610	610	610	610	610		
Wildlife								
Structural Habitat Improvement	STRUCT	68	68	68	68	68		
Nonstructural Habitat Improvement	ACRES	630	630	630	630	630		
Wildlife and Fish Use	MWFUD	95	99	100	100	101		
Range								
Grazing Use (Livestock)	MAUM	57.1	57.5	57.5	57.5	57.5		
Timber								
Allowable Sale Quantity	MMCF	9.6	9.6	11.1	11.1	11.1	11.1	
Sawtimber (Softwood)	MMCF	9.3	9.3	10.8	10.8	10.8	10.8	10.8
Sawtimber (Softwood)	MMBF	32.9	32.9	38.1	38.1	38.1	38.1	38.
Roundwood Products	MCF	264	264	305	305	305	305	305
Fuelwood	MCF	1281	1281	1481	1481	1481	1481	1481
TSI	ACRES	1481	1481	1715	1715	1715		
Reforestation	ACRES	2344	2344	2597	1571	1571		
Water								
Meeting State Standards	MACFT	1015	1060	1060	1063	1059		
Protection								
Fuelbreaks and Fuel Treatment	ACRES	6103	8366	8145	9980	7361		
Minerals								
Mineral Leases and Permits	CASES	160	170	170	175	180		
HC&D								
Human Resource Programs	ENRYR	4	4	4	4	4		
Lands								
Land Pur. & Acq. (exc. Exch.)	ACRES	68	0	0	0	0		

NOTE: All values are average annual values.

TABLE B - 8 (2) (Continued)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
ALTERNATIVE 2

		DECADE						
		1	2	3	4	5	10	15
Soils								
Soil & Water Resource Imp.	ACRES	30	30	20	20	20		
Facilities								
Trail Const./Reconst.	MILES	2	2	2	2	2		
Road Const. (Arterial/Collector)	MILES	6	5	1	0	0		
Road Reconst. (Arterial/Collector)	MILES	8	8	8	8	8		
Local Road Construction	MILES	1.0	1.0	1.0	1.0	1.0		
Timber Purch. Road Const.	MILES	67	40	36	32	17		
Timber Purch. Road Reconst.	MILES	15	15	15	15	15		
BENEFITS M$								
Recreation								
Developed		371	435	481	532	582		
Dispersed		789	920	1021	1135	1245		
Wilderness		922	1068	1203	1326	1476		
Range		510	514	514	514	514		
Timber		1067	1067	1236	1236	1236		
Wildlife (WFUD's)		3292	3379	3482	3509	3553		
Minerals		-	-	-	-	-		
COSTS M$								
Total Forest Budget	(82)	8791	8595	9025	8635	8514		
Fixed Costs	(82)	1846	1805	1895	1841	1788		
Protection	(82)	1324	1283	1373	1292	1266		
General Administration	(82)	522	522	522	522	522		
Variable Costs	(82)	6945	6790	7130	6794	6726		
Investment	(82)	3341	3266	3430	3281	3235		
Total Roads	(82)	1808	1175	1003	869	591		
App. Fund Roads	(82)	835	598	481	419	304		
Purchaser Credit Roads	(82)	973	577	522	450	237		
Operational	(82)	3249	3180	3339	3195	3150		
General Administration	(82)	281	281	281	281	281		
Non-Forest Service Costs (exc. roads)	(82)	22	22	22	22	22		
Returns to Treasury		185	191	202	204	205		

Alternative 3, Non-market Opportunities

Purpose: To maximize present net value of non-market outputs and amenities using assigned values.

FORPLAN Run Number: SAA 038

Objective Function: Maximize PNV for 15 decades.

Constraints:

(1) Harvest flow: non-declining yield

(2) Ending inventory

(3) Long-term sustained yield link

(4) Harvest floor: 8 MMBF/YR in decade 1

(5) Meet inventory Visual Quality Objectives.

(6) Meet Idaho Department of Fish and Game goals for fisheries.

(7) Meet Idaho Department of Fish and Game goals for wildlife.

(8) Limit final cut on existing shelterwood acres to no more than 22% of those acres.

(9) Limit the number of acres of stagnated lodgepole pine receiving the push-over prescription.

(10) Harvest 1982-1984 sales.

(11) Meet spatial dispersion requirements (upper limit of 40 acres for harvest openings).

(12) Withhold 348,518 acres for wilderness.

(13) Withhold 491,992 acres for special wildlife considerations, roadless areas and old growth.

Assumptions:

(1) Estimated budget range for first decade: 5.43-8.14 million dollars per year.

(2) Includes values for timber, recreation, range, water, wildlife and fish, as appropriate for the Forest.

(3) Meets minimum management requirements.

TABLE B - 8 (3)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
ALTERNATIVE 3

	UNIT OF MEASURE	DECADE 1	2	3	4	5	10	15
OUTPUT/ACTIVITY								
Recreation								
Dev. Rec. Use (Roaded Natural)	MRVD	91	106	117	129	141		
Disp. Rec. Use (Roaded Natural)	MRVD	173	200	220	242	263		
Disp. Rec. Use (Semi-Prim. Motor)	MRVD	18	21	23	25	28		
Disp. Rec. Use (Semi-Prim. Non-Motor)	MRVD	8	10	11	12	13		
Wilderness Use (Semi-Prim. Motor)	MRVD	30	34	38	41	45		
Wilderness Use (Semi-Prim. Non-Motor)	MRVD	40	45	49	54	59		
Wilderness Use (Primitive)	MRVD	47	53	58	63	68		
Wilderness								
Wilderness Management	MACRES	774	774	774	774	774		
Wildlife								
Structural Habitat Improvement	STRUCT	102	102	102	102	102		
Nonstructural Habitat Improvement	ACRES	942	942	942	942	942		
Wildlife and Fish Use	MWFUD	119	120	120	120	120		
Range								
Grazing Use (Livestock)	MAUM	48.3	47.9	47.9	47.9	47.9		
Timber								
Allowable Sale Quantity	MMCF	2.4	2.4	2.4	2.4	2.4	2.4	3.1
Sawtimber (Softwood)	MMCF	2.3	2.3	2.3	2.3	2.3	2.3	3.0
Sawtimber (Softwood)	MMBF	8.0	8.0	8.0	8.0	8.0	8.0	10.3
Roundwood Products	MCF	64	64	64	64	64	64	83
Fuelwood	MCF	534	534	534	534	534	534	534
TSI	ACRES	360	360	360	360	360		
Reforestation	ACRES	570	570	570	570	570		
Water								
Meeting State Standards	MACFT	1010	1044	1045	1046	1045		
Protection								
Fuelbreaks and Fuel Treatment	ACRES	1698	2269	2100	1845	2211		
Minerals								
Mineral Leases and Permits	CASES	160	170	170	175	180		
HC&D								
Human Resource Programs	ENRYR	4	4	4	4	4		
Lands								
Land Pur. & Acq. (exc. Exch.)	ACRES	68	0	0	0	0		

NOTE: All values are average annual values.

TABLE B - 8 (3) (Continued)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
ALTERNATIVE 3

		DECADE						
		1	2	3	4	5	10	15
Soils								
Soil & Water Resource Imp.	ACRES	30	30	20	20	20		
Facilities								
Trail Const./Reconst.	MILES	10	10	10	10	10		
Road Const. (Arterial/Collector)	MILES	3	0	0	0	0		
Road Reconst. (Arterial/Collector)		3	3	3	3	3		
Local Road Construction	MILES	1.0	1.0	1.0	1.0	1.0		
Timber Purch. Road Const.	MILES	17	10	11	10	5		
Timber Purch. Road Reconst.	MILES	5	5	5	5	5		
BENEFITS M$								
Recreation								
Developed		384	447	494	544	595		
Dispersed		840	975	1072	1177	1338		
Wilderness		1225	1394	1540	1686	1844		
Range		432	428	428	428	428		
Timber		366	366	366	366	366		
Wildlife (WFUD's)		4220	4238	4222	4237	4215		
Minerals		0	0	0	0	0		
COSTS M$								
Total Forest Budget	(82)	5682	5637	5644	5635	5598		
Fixed Costs	(82)	1193	1184	1185	1183	1176		
Protection	(82)	671	662	663	661	654		
General Administration	(82)	522	522	522	522	522		
Variable Costs	(82)	4489	4453	4459	4452	4422		
Investment	(82)	2159	2142	2145	2141	2127		
Total Roads	(82)	506	303	324	316	197		
App. Fund Roads	(82)	189	120	124	123	104		
Purchaser Credit Roads	(82)	317	183	200	193	93		
Operational	(82)	2102	2086	2088	2085	2071		
General Administration	(82)	281	281	281	281	281		
Non-Forest Service Costs (exc. roads)	(82)	22	22	22	22	22		
Returns to Treasury		369	355	361	363	363		

Alternative 4, 1980 RPA Program

Purpose: To respond to the Forest's share of the 1980 National RPA Recommended Program.

FORPLAN Run Number: SAA 046

Objective Function: Maximize PNV for 15 decades.

Constraints:

(1) Harvest flow: non-declining yield

(2) Ending inventory

(3) Long-term sustained yield link

(4) Harvest floor: 32.7 MMBF/YR in decade 1, 2
37.4 MMBF/YR in decade 3

(5) Meet maximum modification Visual Quality Objectives.

(6) Maintain minimum viable populations of fish.

(7) Maintain minimum viable populations of wildlife.

(8) Limit final cut on existing shelterwood acres to no more than 22% of those acres.

(9) Limit the number of acres of stagnated lodgepole pine receiving the push-over prescription.

(10) Harvest 1982-1984 sales.

(11) Meet spatial dispersion requirements (upper limit of 40 acres for harvest openings).

(12) Withhold 157,718 acres for wilderness.

(13) Withhold 115,703 acres for special wildlife considerations, roadless areas and old growth.

Assumptions:

(1) Estimated budget range for first decade: 5.43-8.14 million dollars per year.

(2) Includes values for timber, recreation, range, water, wildlife and fish, as appropriate for the Forest.

(3) Meets minimum management requirements.

TABLE B - 8 (4)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
ALTERNATIVE 4

	UNIT OF MEASURE	DECADE 1	2	3	4	5	10	15
OUTPUT/ACTIVITY								
Recreation								
Dev. Rec. Use (Roaded Natural)	MRVD	88	103	114	126	138		
Disp. Rec. Use (Roaded Natural)	MRVD	152	179	199	221	242		
Disp. Rec. Use (Semi-Prim. Motor)	MRVD	30	35	39	44	48		
Disp. Rec. Use (Semi-Prim. Non-Motor)	MRVD	4	6	6	7	7		
Wilderness Use (Semi-Prim. Motor)	MRVD	25	29	33	36	40		
Wilderness Use (Semi-Prim. Non-Motor)	MRVD	23	26	29	31	36		
Wilderness Use (Primitive)	MRVD	41	47	52	57	62		
Wilderness								
Wilderness Management	MACRES	584	584	584	584	584		
Wildlife								
Structural Habitat Improvement	STRUCT	102	102	102	102	102		
Nonstructural Habitat Improvement	ACRES	942	942	942	942	942		
Wildlife and Fish Use	MWFUD	98	101	101	101	102		
Range								
Grazing Use (Livestock)	MAUM	54.3	54.7	54.7	54.7	54.7		
Timber								
Allowable Sale Quantity	MMCF	10.3	10.3	11.8	11.8	11.8	11.8	11.8
Sawtimber (Softwood)	MMCF	10.0	10.0	11.5	11.5	11.5	11.5	11.5
Sawtimber (Softwood)	MMBF	32.7	32.7	37.4	37.4	37.4	37.4	37.4
Roundwood Products	MCF	262	262	300	300	300	300	300
Fuelwood	MCF	1267	1267	1454	1454	1454	1454	1454
TSI	ACRES	1472	1472	1683	1683	1683		
Reforestation	ACRES	2330	2330	2581	1543	1543		
Water								
Meeting State Standards	MACFT	1016	1061	1062	1065	1063		
Protection								
Fuelbreaks and Fuel Treatment	ACRES	6806	7988	9851	10451	9221		
Minerals								
Mineral Leases and Permits	CASES	160	170	170	175	180		
HC&D								
Human Resource Programs	ENRYR	4	4	4	4	4		
Lands								
Land Pur. & Acq. (exc. Exch.)	ACRES	68	0	0	0	0		

NOTE: All values are average annual values.

TABLE B - 8 (4) (Continued)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
ALTERNATIVE 4

		DECADE						
		1	2	3	4	5	10	15
Soils								
Soil & Water Resource Imp.	ACRES	30	30	20	20	20		
Facilities								
Trail Const./Reconst.	MILES	10	10	10	10	10		
Road Const. (Arterial/Collector)	MILES	5	4	0	0	0		
Road Reconst. (Arterial/Collector)	MILES	9	9	9	9	9		
Local Road Construction	MILES	1.0	1.0	1.0	1.0	1.0		
Timber Purch. Road Const.	MILES	72	44	39	33	20		
Timber Purch. Road Reconst.	MILES	15	15	15	15	15		
BENEFITS M$								
Recreation								
Developed		371	435	481	532	582		
Dispersed		785	929	1030	981	1253		
Wilderness		910	1057	1191	1304	1461		
Range		486	495	495	495	495		
Timber		1061	1061	1214	1214	1214		
Wildlife (WFUD's)		3427	3541	3570	3560	3615		
Minerals		0	0	0	0	0		
COSTS M$								
Total Forest Budget	(82)	8888	8628	9013	8658	8556		
Fixed Costs	(82)	1902	1846	1929	1853	1831		
Protection	(82)	1380	1324	1407	1331	1309		
General Administration	(82)	522	522	522	522	522		
Variable Costs	(82)	6986	6782	7084	6805	6725		
Investment	(82)	3342	3244	3389	3255	3217		
Total Roads	(82)	1902	1221	1031	919	633		
App. Fund Roads	(82)	867	614	490	451	351		
Purchaser Credit Roads	(82)	1035	607	541	468	282		
Operational	(82)	33360	3261	3407	3273	3234		
General Administration	(82)	281	281	281	281	281		
Non-Forest Service Costs (exc. roads)	(82)	22	22	22	22	22		
Returns to Treasury		179	184	194	197	197		

Alternative 5, High Productivity (1985 RPA Update Requirement)

Purpose: To respond to the Forest's share of the 1985 RPA Program Update.

FORPLAN Run Number: SAA 052

Objective Function: Maximize PNV for 15 decades.

Constraints:

(1) Harvest flow: non-declining yield

(2) Ending inventory

(3) Long-term sustained yield link

(4) Harvest floor: 36.7 MMBF/YR in decade 1, 2
41.5 MMBF/YR in decade 3
43.0 MMBF/YR in decade 12

(5) Meet maximum modification Visual Quality Objectives.

(6) Maintain minimum viable populations of fish.

(7) Maintain minimum viable populations of wildlife.

(8) Limit final cut on existing shelterwood acres to no more than 22% of those acres.

(9) Limit the number of acres of stagnated lodgepole pine receiving the push-over prescription.

(10) Harvest 1982-1984 sales.

(11) Meet spatial dispersion requirements (upper limit of 40 acres for harvest openings).

(12) Withhold 117,521 acres for special wildlife considerations, roadless areas and old growth.

Assumptions:

(1) Estimated budget range for first decade: 5.43-8.14 million dollars per year.

(2) Includes values for timber, recreation, range, water, wildlife and fish, as appropriate for the Forest.

(3) Meets minimum management requirements.

TABLE B - 8 (5)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
ALTERNATIVE 5

OUTPUT/ACTIVITY	UNIT OF MEASURE	DECADE 1	2	3	4	5	10	15
Recreation								
Dev. Rec. Use (Roaded Natural)	MRVD	88	103	114	126	138		
Disp. Rec. Use (Roaded Natural)	MRVD	151	178	198	220	241		
Disp. Rec. Use (Semi-Prim. Motor)	MRVD	40	47	52	58	64		
Disp. Rec. Use (Semi-Prim. Non-Motor)	MRVD	7	9	10	11	12		
Wilderness Use (Semi-Prim. Motor)	MRVD	25	29	33	36	40		
Wilderness Use (Semi-Prim. Non-Motor)	MRVD	10	11	12	13	15		
Wilderness Use (Primitive)	MRVD	41	47	52	57	62		
Wilderness								
Wilderness Management	MACRES	426	426	426	426	426		
Wildlife								
Structural Habitat Improvement	STRUCT	102	102	102	102	102		
Nonstructural Habitat Improvement	ACRES	942	942	942	942	942		
Wildlife and Fish Use	MWFUD	97	98	99	99	98		
Range								
Grazing Use (Livestock)	MAUM	63.0	64.4	64.4	64.4	64.4		
Timber								
Allowable Sale Quantity	MMCF	11.0	11.0	12.4	12.4	12.4	12.4	12.4
Sawtimber (Softwood)	MMCF	10.7	10.7	12.1	12.1	12.1	12.1	12.6
Sawtimber (Softwood)	MMBF	36.8	36.8	41.5	41.5	41.5	41.5	43.1
Roundwood Products	MCF	294	294	332	332	332	332	345
Fuelwood	MCF	1427	1427	1614	1614	1614	1614	1668
TSI	ACRES	1656	1656	1868	1868	1868		
Reforestation	ACRES	2622	2622	2504	1712	1712		
Water								
Meeting State Standards	MACFT	1016	1062	1062	1063	1060		
Protection								
Fuelbreaks and Fuel Treatment	ACRES	6944	9177	9321	11155	8074		
Minerals								
Mineral Leases and Permits	CASES	160	175	185	195	200		
HC&D								
Human Resource Programs	ENRYR	4	4	4	4	4		
Lands								
Land Pur. & Acq. (exc. Exch.)	ACRES	68	0	0	0	0		

NOTE: All values are average annual values.

TABLE B - 8 (5) (Continued)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
ALTERNATIVE 5

		DECADE						
		1	2	3	4	5	10	15
Soils								
Soil & Water Resource Imp.	ACRES	30	30	20	20	20		
Facilities								
Trail Const./Reconst.	MILES	10	10	10	10	10		
Road Const. (Arterial/Collector)	MILES	6	5	4	0	0		
Road Reconst. (Arterial/Collector)	MILES	12	12	12	12	12		
Local Road Construction	MILES	1.0	1.0	1.0	1.0	1.0		
Timber Purch. Road Const.	MILES	76	44	38	30	31		
Timber Purch. Road Reconst.	MILES	20	20	20	20	20		
BENEFITS M$								
Recreation								
Developed		371	435	481	532	582		
Dispersed		835	987	1097	1220	1338		
Wilderness		764	888	1000	1101	1225		
Range		563	576	576	576	576		
Timber		1193	1193	1347	1347	1347		
Wildlife (WFUD's)		3355	3484	3494	3508	3495		
Minerals		0	0	0	0	0		
COSTS M$								
Total Forest Budget	(82)	9101	8837	9290	9254	9184		
Fixed Costs	(82)	1948	1891	1988	1980	1965		
Protection	(82)	1426	1369	1466	1458	1443		
General Administration	(82)	522	522	522	522	522		
Variable Costs	(82)	7153	6946	7302	7274	7219		
Investment	(82)	3342	2244	3389	3255	3217		
Total Roads	(82)	2062	1281	1154	915	710		
App. Fund Roads	(82)	981	693	634	493	421		
Purchaser Credit Roads	(82)	1081	588	520	422	289		
Operational	(82)	3440	3340	3512	3498	3472		
General Administration	(82)	281	281	281	281	281		
Non-Forest Service Costs (exc. roads)	(82)	22	22	22	22	22		
Returns to Treasury		197	204	216	217	218		

Alternative 6, Constrained Budget

Purpose: To asses the level of goods and services produced by the Forest with a budget that is 25% lower than current funding levels.

FORPLAN Run Number: SAA 064

Objective Function: Maximize PNV for 15 decades.

Constraints:

(1) Harvest flow: non-declining yield

(2) Ending inventory

(3) Long-term sustained yield link

(4) Harvest floor: 17.6 MMBF/YR in decade 1, 2
22.0 MMBF/YR in decade 3

(5) Meet maximum modification Visual Quality Objectives.

(6) Meet Idaho Department of Fish and Game goals for fish.

(7) Maintain current populations of wildlife.

(8) Limit final cut on existing shelterwood acres to no more than 22% of those acres.

(9) Limit the number of acres of stagnated lodgepole pine receiving the push-over prescription.

(10) Harvest 1982-1984 sales.

(11) Meet spatial dispersion requirements (upper limit of 40 acres for harvest openings).

(13) Withhold 533,538 acres for special wildlife considerations, roadless areas and old growth.

Assumptions:

(1) Estimated budget for decades 1-15: 4.07 million dollars per year.

(2) Includes values for timber, recreation, range, water, wildlife and fish, as appropriate for the Forest.

(3) Meets minimum management requirements.

TABLE B - 8 (6)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
ALTERNATIVE 6

OUTPUT/ACTIVITY	UNIT OF MEASURE	DECADE 1	2	3	4	5	10	15
Recreation								
Dev. Rec. Use (Roaded Natural)	MRVD	90	105	116	128	140		
Disp. Rec. Use (Roaded Natural)	MRVD	165	192	212	234	255		
Disp. Rec. Use (Semi-Prim. Motor)	MRVD	43	50	55	61	67		
Disp. Rec. Use (Semi-Prim. Non-Motor)	MRVD	9	11	12	13	14		
Wilderness Use (Semi-Prim. Motor)	MRVD	28	32	36	39	43		
Wilderness Use (Semi-Prim. Non-Motor)	MRVD	12	13	14	15	17		
Wilderness Use (Primitive)	MRVD	44	50	55	60	65		
Wilderness								
Wilderness Management	MACRES	426	426	426	426	426		
Wildlife								
Structural Habitat Improvement	STRUCT	41	41	41	41	41		
Nonstructural Habitat Improvement	MACRES	392	392	392	392	392		
Wildlife and Fish Use	MWFUD	111	111	111	112	112		
Range								
Grazing Use (Livestock)	MAUM	52.2	51.0	45.4	45.4	45.4		
Timber								
Allowable Sale Quantity	MMCF	5.3	5.3	6.8	6.8	6.8	6.8	6.8
Sawtimber (Softwood)	MMCF	5.2	5.2	6.6	6.6	6.6	6.6	6.6
Sawtimber (Softwood)	MMBF	17.6	17.6	22.2	22.2	22.2	22.2	22.2
Roundwood Products	MCF	141	141	178	178	178	178	178
Fuelwood	MCF	680	680	867	867	867	867	867
TSI	ACRES	792	792	999	999	999		
Reforestation	ACRES	726	726	916	916	916		
Water								
Meeting State Standards	MACFT	1012	1050	1052	1053	1049		
Protection								
Fuelbreaks and Fuel Treatment	ACRES	3567	4156	5154	6182	5090		
Minerals								
Mineral Leases and Permits	CASES	160	175	185	195	200		
HC&D								
Human Resource Programs	ENRYR	4	4	4	4	4		
Lands								
Land Pur. & Acq. (exc. Exch.)	ACRES	60	8	0	0	0		

NOTE: All values are average annual values.

TABLE B - 8 (6) (Continued)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
ALTERNATIVE 6

		DECADE						
		1	2	3	4	5	10	15
Soils								
Soil & Water Resource Imp.	ACRES	0	0	0	0	0		
Facilities								
Trail Const./Reconst.	MILES	0	0	0	0	0		
Road Const. (Arterial/Collector)	MILES	0	0	0	0	0		
Road Reconst. (Arterial/Collector	MILES	0	0	0	0	0		
Local Road Construction	MILES	1.0	1.0	1.0	1.0	1.0		
Timber Purch. Road Const.	MILES	37	25	22	11	10		
Timber Purch. Road Reconst.	MILES	0	0	0	0	0		
BENEFITS M$								
Recreation								
Developed		380	443	490	540	590		
Dispersed		916	1068	1178	1300	1418		
Wilderness		854	979	1090	1191	1314		
Range		467	456	406	406	406		
Timber		571	571	720	720	720		
Wildlife (WFUD's)		3936	3947	3947	3968	3972		
Minerals		0	0	0	0	0		
COSTS M$								
Total Forest Budget	(82)	5744	5702	6160	6193	6439		
Fixed Costs	(82)	1299	1220	1318	1325	1378		
Protection	(82)	707	698	796	803	856		
General Administration	(82)	522	522	522	522	522		
Variable Costs	(82)	4515	4482	4843	4868	5061		
Investment	(82)	2160	2144	2316	2329	2421		
Total Roads	(82)	819	522	479	253	214		
App. Fund Roads	(82)	198	135	110	75	70		
Purchaser Credit Roads	(82)	621	387	369	178	144		
Operational	(82)	2171	2155	2328	2341	2434		
General Administration	(82)	281	281	281	281	281		
Non-Forest Service Costs (exc. roads)	(82)	22	22	22	22	22		
Returns to Treasury		159	162	164	167	167		

Alternative 7, Capability Emphasis

Purpose: To assess the level of goods and services produced by the Forest when resource management investments are emphasized on the most productive land.

FORPLAN Run Number: SAA 079

Objective Function: Maximize PNV for 15 decades.

Constraints:

(1) Harvest flow: nondeclining yield

(2) Ending inventory

(3) Long-term sustained yield link

(4) Harvest floor: 18 MMBF/YR in decade 1

(5) Meet current direction Visual Quality Objectives.

(6) Meet Idaho Department of Fish and Game goals for anadromous fish and maintain minimum viable populations of resident fish.

(7) Maintain current populations of wildlife.

(8) Limit final cut on existing shelterwood acres to no more than 22% of those acres.

(9) Limit the number of acres of stagnated lodgepole pine receiving the push-over prescription.

(10) Harvest 1982-1984 sales.

(11) Meet spatial dispersion requirements (upper limit of 40 acres for harvest openings).

(12) Withhold 236,774 acres for wilderness.

(13) Withhold 282,023 acres for special wildlife considerations, roadless areas and old growth.

Assumptions:

(1) Estimated budget range for first decade: 5.43-8.14 million dollars per year.

(2) Includes values for timber, recreation, range, water, wildlife and fish, as appropriate for the Forest.

(3) Meets minimum management requirements.

TABLE B - 8 (7)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
ALTERNATIVE 7

OUTPUT/ACTIVITY	UNIT OF MEASURE	DECADE 1	2	3	4	5	10	15
Recreation								
Dev. Rec. Use (Roaded Natural)	MRVD	90	105	116	128	140		
Disp. Rec. Use (Roaded Natural)	MRVD	163	190	210	232	253		
Disp. Rec. Use (Semi-Prim. Motor)	MRVD	31	36	40	45	49		
Disp. Rec. Use (Semi-Prim. Non-Motor)	MRVD	5	7	7	8	8		
Wilderness Use (Semi-Prim. Motor)	MRVD	28	32	36	39	43		
Wilderness Use (Semi-Prim. Non-Motor)	MRVD	26	29	32	34	39		
Wilderness Use (Primitive)	MRVD	44	50	55	60	65		
Wilderness								
Wilderness Management	MACRES	663	663	663	663	663		
Wildlife								
Structural Habitat Improvement	STRUCT	102	102	102	102	102		
Nonstructural Habitat Improvement	MACRES	942	942	942	942	942		
Wildlife and Fish Use	MWFUD	110	110	110	109	110		
Range								
Grazing Use (Livestock)	MAUM	57.2	58.1	58.1	58.1	58.1		
Timber								
Allowable Sale Quantity	MMCF	5.1	5.1	5.1	5.1	5.1	5.1	5.1
Sawtimber (Softwood)	MMCF	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Sawtimber (Softwood)	MMBF	17.9	17.9	17.9	17.9	17.9	17.9	17.9
Roundwood Products	MCF	143	143	143	143	143	143	143
Fuelwood	MCF	694	694	694	694	694	694	694
TSI	ACRES	806	806	806	806	806		
Reforestation	ACRES	1276	1276	1276	1276	1276		
Water								
Meeting State Standards	MACFT	1011	1050	1051	1053	1053		
Protection								
Fuelbreaks and Fuel Treatment	ACRES	3680	4159	4503	4913	4257		
Minerals								
Mineral Leases and Permits	CASES	160	170	170	175	180		
HC&D								
Human Resource Programs	ENRYR	4	4	4	4	4		
Lands								
Land Pur. & Acq. (exc. Exch.)	ACRES	68	0	0	0	0		

NOTE: All values are average annual values.

TABLE B - 8 (7) (Continued)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
ALTERNATIVE 7

		DECADE						
		1	2	3	4	5	10	15
Soils								
Soil & Water Resource Imp.	ACRES	30	30	20	20	20		
Facilities								
Trail Const./Reconst.	MILES	2	2	2	2	2		
Road Const. (Arterial/Collector)	MILES	4	3	0	0	0		
Road Reconst. (Arterial/Collector)	MILES	5	5	5	5	5		
Local Road Construction	MILES	1.0	1.0	1.0	1.0	1.0		
Timber Purch. Road Const.	MILES	34	22	18	18	7		
Timber Purch. Road Reconst.	MILES	5	5	5	5	5		
BENEFITS M$								
Recreation								
Developed		380	443	490	540	590		
Dispersed		840	983	1085	1203	1308		
Wilderness		1112	1158	1293	1405	1562		
Range		511	513	513	513	513		
Timber		609	609	609	609	609		
Wildlife (WFUD's)		3905	3928	3923	3889	3923		
Minerals		0	0	0	0	0		
COSTS M$								
Total Forest Budget	(82)	6631	6458	6400	6434	6145		
Fixed Costs	(82)	1419	1382	1370	1377	1315		
Protection	(82)	897	860	848	855	793		
General Administration	(82)	522	522	522	522	522		
Variable Costs	(82)	5212	5076	5030	5057	4830		
Investment	(82)	2493	2428	2406	2419	2311		
Total Roads	(82)	933	655	496	480	265		
App. Fund Roads	(82)	456	344	246	240	165		
Purchaser Credit Roads	(82)	477	311	250	240	100		
Operational	(82)	2507	2441	2419	2432	2323		
General Administration	(82)	281	281	281	281	281		
Non-Forest Service Costs (exc. roads)	(82)	22	22	22	22	22		
Returns to Treasury		341	346	352	354	354		

Alternative 8, Wilderness and Wildlife Emphasis

Purpose: To portray high big game producing portions of roadless areas and highest public interest roadless areas as wilderness. Nonwilderness management emphasis is on nonmarket and amenity outputs.

FORPLAN Run Number: SAA 083

Objective Function: Maximize PNV for 15 decades.

Constraints:

(1) Harvest flow: non-declining yield

(2) Ending inventory

(3) Long-term sustained yield link

(4) Harvest floor: 9.5 MMBF/YR in decade 1

(5) Meet inventory Visual Quality Objectives.

(6) Limit the amount of sediment produced in order to maximize fish production in roadless areas and meet Idaho Department of Fish and Game goals for fish in other areas.

(7) Meet Idaho Department of Fish and Game goals for wildlife.

(8) Limit final cut on existing shelterwood acres to no more than 22% of those acres.

(9) Limit the number of acres of stagnated lodgepole pine receiving the push-over prescription.

(10) Harvest 1982-1984 sales.

(11) Meet spatial dispersion requirements (upper limit of 40 acres for harvest openings).

(12) Withhold 470,802 acres for wilderness.

(13) Withhold 285,914 acres for special wildlife considerations, roadless areas and old growth.

Assumptions:

(1) Estimated budget range for first decade: 5.43-8.14 million dollars per year.

(2) Includes values for timber, recreation, range, water, wildlife and fish, as appropriate for the Forest.

(3) Meets minimum management requirements.

TABLE B - 8 (8)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
ALTERNATIVE 8

	UNIT OF MEASURE	DECADE 1	2	3	4	5	10	15
OUTPUT/ACTIVITY								
Recreation								
Dev. Rec. Use (Roaded Natural)	MRVD	91	106	117	129	141		
Disp. Rec. Use (Roaded Natural)	MRVD	171	198	218	240	261		
Disp. Rec. Use (Semi-Prim. Motor)	MRVD	18	21	23	25	28		
Disp. Rec. Use (Semi-Prim. Non-Motor)	MRVD	8	10	11	12	13		
Wilderness Use (Semi-Prim. Motor)	MRVD	29	33	37	40	44		
Wilderness Use (Semi-Prim. Non-Motor)	MRVD	40	45	49	54	59		
Wilderness Use (Primitive)	MRVD	46	52	57	62	67		
Wilderness								
Wilderness Management	MACRES	897	897	897	897	897		
Wildlife								
Structural Habitat Improvement	STRUCT	102	102	102	102	102		
Nonstructural Habitat Improvement	MACRES	942	942	942	942	942		
Wildlife and Fish Use	MWFUD	117	117	117	117	118		
Range								
Grazing Use (Livestock)	MAUM	48.3	48.1	48.1	48.1	48.1		
Timber								
Allowable Sale Quantity	MMCF	2.8	2.8	2.8	2.8	2.8	2.8	4.1
Sawtimber (Softwood)	MMCF	2.7	2.7	2.7	2.7	2.7	2.7	4.0
Sawtimber (Softwood)	MMBF	9.5	9.5	9.5	9.5	9.5	9.5	13.8
Roundwood Products	MCF	76	76	76	76	76	76	110
Fuelwood	MCF	534	534	534	534	534	534	534
TSI	ACRES	428	428	428	428	428		
Reforestation	ACRES	677	677	677	677	677		
Water								
Meeting State Standards	MACFT	1010	1045	1046	1047	1047		
Protection								
Fuelbreaks and Fuel Treatment	ACRES	2073	2358	2567	2514	2626		
Minerals								
Mineral Leases and Permits	CASES	160	170	170	175	180		
HC&D								
Human Resource Programs	ENRYR	4	4	4	4	4		
Lands								
Land Pur. & Acq. (exc. Exch.)	ACRES	68	0	0	0	0		

NOTE: All values are average annual values.

TABLE B - 8 (8) (Continued)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
ALTERNATIVE 8

		DECADE						
		1	2	3	4	5	10	15
Soils								
Soil & Water Resource Imp.	ACRES	30	30	20	20	20		
Facilities								
Trail Const./Reconst.	MILES	2	2	2	2	2		
Road Const. (Arterial/Collector)	MILES	3	2	0	0	0		
Road Reconst. (Arterial/Collector)	MILES	1	1	1	1	1		
Local Road Construction	MILES	1.0	1.0	1.0	1.0	1.0		
Timber Purch. Road Const.	MILES	19	10	9	11	3		
Timber Purch. Road Reconst.	MILES	5	5	5	5	5		
BENEFITS M$								
Recreation								
Developed		384	443	494	544	595		
Dispersed		831	966	1063	1169	1275		
Wilderness		1203	1371	1517	1663	1665		
Range		432	430	430	430	423		
Timber		455	455	455	455	455		
Wildlife (WFUD's)		4659	4680	4667	4663	4682		
Minerals		0	0	0	0	0		
COSTS M$								
Total Forest Budget	(82)	5523	5499	5429	5456	5412		
Fixed Costs	(82)	1160	1155	1140	1146	1137		
Protection	(82)	638	633	618	624	615		
General Administration	(82)	522	522	522	522	522		
Variable Costs	(82)	4363	4344	4289	4310	4275		
Investment	(82)	2099	2090	2063	2073	2057		
Total Roads	(82)	494	289	225	262	97		
App. Fund Roads	(82)	150	100	52	58	34		
Purchaser Credit Roads	(82)	344	189	173	204	63		
Operational	(82)	2044	2035	2009	2019	2002		
General Administration	(82)	281	281	281	281	281		
Non-Forest Service Costs (exc. roads)	(82)	22	22	22	22	22		
Returns to Treasury		423	427	433	435	435		

Alternative 9, High Wildlife and Threatened/Endangered Species Emphasis

Purpose: To portray high big game producing portions of roadless areas and roadless areas with suitable T&E species habitat as wilderness. Nonwilderness management emphasis is on nonmarket and amenity outputs.

FORPLAN Run Number: SAA 093

Objective Function: Maximize PNV for 15 decades.

Constraints:

(1) Harvest flow: non-declining yield

(2) Ending inventory

(3) Long-term sustained yield link

(4) Harvest floor: 7.7 MMBF/YR in decade 1

(5) Meet inventory Visual Quality Objectives.

(6) Limit the amount of sediment produced in order to maximize fish production in roadless areas and meet Idaho Department of Fish and Game goals for fish in other areas.

(7) Meet Idaho Department of Fish and Game goals for wildlife.

(8) Limit final cut on existing shelterwood acres to no more than 22% of those acres.

(9) Limit the number of acres of stagnated lodgepole pine receiving the push-over prescription.

(10) Harvest 1982-1984 sales.

(11) Meet spatial dispersion requirements (upper limit of 40 acres for harvest openings).

(12) Withhold 579,063 acres for wilderness.

(13) Withhold 282,728 acres for special wildlife considerations, roadless areas and old growth.

Assumptions:

(1) Estimated budget range for first decade: 5.43-8.14 million dollars per year.

(2) Includes values for timber, recreation, range, water, wildlife and fish, as appropriate for the Forest.

(3) Meets minimum management requirements.

TABLE B - 8 (9)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
ALTERNATIVE 9

	UNIT OF MEASURE	DECADE 1	2	3	4	5	10	15
OUTPUT/ACTIVITY								
Recreation								
Dev. Rec. Use (Roaded Natural)	MRVD	91	106	117	129	141		
Disp. Rec. Use (Roaded Natural)	MRVD	172	199	219	241	262		
Disp. Rec. Use (Semi-Prim. Motor)	MRVD	17	20	22	24	27		
Disp. Rec. Use (Semi-Prim. Non-Motor)	MRVD	7	9	10	11	12		
Wilderness Use (Semi-Prim. Motor)	MRVD	30	34	38	41	45		
Wilderness Use (Semi-Prim. Non-Motor)	MRVD	42	47	51	56	61		
Wilderness Use (Primitive)	MRVD	46	52	57	62	67		
Wilderness								
Wilderness Management	MACRES	1005	1005	1005	1005	1005		
Wildlife								
Structural Habitat Improvement	STRUCT	83	83	83	83	83		
Nonstructural Habitat Improvement	MACRES	785	785	785	785	785		
Wildlife and Fish Use	MWFUD	118	118	119	118	119		
Range								
Grazing Use (Livestock)	MAUM	48.3	48.1	48.1	48.1	48.1		
Timber								
Allowable Sale Quantity	MMCF	2.3	2.3	2.3	2.3	2.3	2.3	3.6
Sawtimber (Softwood)	MMCF	2.2	2.2	2.2	2.2	2.2	2.2	3.5
Sawtimber (Softwood)	MMBF	7.7	7.7	7.7	7.7	7.7	7.7	12.2
Roundwood Products	MCF	62	62	62	62	62	62	97
Fuelwood	MCF	534	534	534	534	534	534	534
TSI	ACRES	347	347	347	347	347		
Reforestation	ACRES	549	549	549	549	549		
Water								
Meeting State Standards	MACFT	1010	1044	1045	1046	1046		
Protection								
Fuelbreaks and Fuel Treatment	ACRES	1635	2159	1930	2218	2241		
Minerals								
Mineral Leases and Permits	CASES	160	170	170	175	180		
HC&D								
Human Resource Programs	ENRYR	4	4	4	4	4		
Lands								
Land Pur. & Acq. (exc. Exch.)	ACRES	68	0	0	0	0		

NOTE: All values are average annual values.

TABLE B - 8 (9) (Continued)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
ALTERNATIVE 9

		DECADE						
		1	2	3	4	5	10	15
Soils								
Soil & Water Resource Imp.	ACRES	30	30	20	20	20		
Facilities								
Trail Const./Reconst.	MILES	10	10	10	10	10		
Road Const. (Arterial/Collector)	MILES	4	1	0	0	0		
Road Reconst. (Arterial/Collector)	MILES	3	3	3	3	3		
Local Road Construction	MILES	1.0	1.0	1.0	1.0	1.0		
Timber Purch. Road Const.	MILES	17	9	10	11	5		
Timber Purch. Road Reconst.	MILES	5	5	5	5	5		
BENEFITS M$								
Recreation								
Developed		384	447	494	544	595		
Dispersed		827	962	1059	1165	1270		
Wilderness		1236	1517	1551	1869	2297		
Range		432	430	430	430	423		
Timber		369	369	369	369	369		
Wildlife (WFUD's)		4166	4187	4177	4171	4190		
Minerals		0	0	0	0	0		
COSTS M$								
Total Forest Budget	(82)	5642	5602	5584	5582	5538		
Fixed Costs	(82)	1207	1199	1195	1195	1185		
Protection	(82)	685	677	673	673	663		
General Administration	(82)	522	522	522	522	522		
Variable Costs	(82)	4435	4403	4389	4387	4353		
Investment	(82)	2121	2106	2100	2099	2082		
Total Roads	(82)	513	287	285	313	171		
App. Fund Roads	(82)	209	119	99	104	82		
Purchaser Credit Roads	(82)	304	168	186	209	89		
Operational	(82)	2133	2118	2111	2110	2093		
General Administration	(82)	281	281	281	281	281		
Non-Forest Service Costs (exc. roads)	(82)	22	22	22	22	22		
Returns to Treasury		367	370	377	378	378		

Alternative 10, All Roadless Areas Managed As Wilderness Based on Managability Lines

Purpose: To assess the level of goods and services produced when all roadless areas are managed as wilderness (on manageable lines) and nonwilderness areas are managed intensively for market outputs.

FORPLAN Run Number: SAA 104

Objective Function: Maximize PNV for 15 decades.

Constraints:

(1) Harvest flow: nondeclining yield

(2) Ending inventory

(3) Long-term sustained yield link

(4) Harvest floor: 18.1 MMBF/YR in decade 1, 2
22.0 MMBF/YR in decade 3

(5) Meet maximum modification Visual Quality Objectives.

(6) Limit the amount of sediment produced in order to maximize fish production in roadless areas and meet Idaho State Fish and Game goals for fish in other areas.

(7) Maintain minimum viable populations of wildlife.

(8) Limit final cut on existing shelterwood acres to no more than 22% of those acres.

(9) Limit the number of acres of stagnated lodgepole pine receiving the push-over prescription.

(10) Harvest 1982-1984 sales.

(11) Meet spatial dispersion requirements (upper limit of 40 acres for harvest openings).

(12) Withhold 676,925 acres for wilderness.

(13) Withhold 16,900 acres for special wildlife considerations, roadless areas and old growth.

Assumptions:

(1) Estimated budget range for first decade: 5.43-8.14 million dollars per year.

(2) Includes values for timber, recreation, range, water, wildlife and fish, as appropriate for the Forest.

(3) Meets minimum management requirements.

TABLE B - 8 (10)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
ALTERNATIVE 10

OUTPUT/ACTIVITY	UNIT OF MEASURE	DECADE 1	2	3	4	5	10	15
Recreation								
Dev. Rec. Use (Roaded Natural)	MRVD	89	104	115	127	139		
Disp. Rec. Use (Roaded Natural)	MRVD	163	190	210	232	253		
Disp. Rec. Use (Semi-Prim. Motor)	MRVD	0	0	0	0	0		
Disp. Rec. Use (Semi-Prim. Non-Motor)	MRVD	0	0	0	0	0		
Wilderness Use (Semi-Prim. Motor)	MRVD	28	32	36	39	43		
Wilderness Use (Semi-Prim. Non-Motor)	MRVD	61	71	78	86	95		
Wilderness Use (Primitive)	MRVD	43	49	54	59	64		
Wilderness								
Wilderness Management	MACRES	1103	1103	1103	1103	1103		
Wildlife								
Structural Habitat Improvement	STRUCT	42	42	42	42	42		
Nonstructural Habitat Improvement	MACRES	393	393	393	393	393		
Wildlife and Fish Use	MWFUD	108	110	108	109	109		
Range								
Grazing Use (Livestock)	MAUM	56.7	57.1	57.1	57.1	57.1		
Timber								
Allowable Sale Quantity	MMCF	6.1	6.1	7.5	7.5	7.5	7.5	7.5
Sawtimber (Softwood)	MMCF	6.0	6.0	7.3	7.3	7.3	7.3	7.3
Sawtimber (Softwood)	MMBF	18.1	18.1	22.0	22.0	22.0	22.0	22.0
Roundwood Products	MCF	145	145	176	176	176	176	176
Fuelwood	MCF	707	707	854	854	854	854	854
TSI	ACRES	815	815	990	990	990		
Reforestation	ACRES	1289	1289	1568	1568	1400		
Water								
Meeting State Standards	MACFT	1013	1053	1054	1057	1054		
Protection								
Fuelbreaks and Fuel Treatment	ACRES	4418	5168	6048	6811	5927		
Minerals								
Mineral Leases and Permits	CASES	160	170	170	175	180		
HC&D								
Human Resource Programs	ENRYR	4	4	4	4	4		
Lands								
Land Pur. & Acq. (exc. Exch.)	ACRES	68	0	0	0	0		

NOTE: All values are average annual values.

TABLE B - 8 (10) (Continued)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
ALTERNATIVE 10

		DECADE						
		1	2	3	4	5	10	15
Soils								
Soil & Water Resource Imp.	ACRES	30	30	20	20	20		
Facilities								
Trail Const./Reconst.	MILES	2	2	2	2	2		
Road Const. (Arterial/Collector)	MILES	4	0	1	0	0		
Road Reconst. (Arterial/Collector)	MILES	3	3	3	3	3		
Local Road Construction	MILES	1.0	1.0	1.0	1.0	1.0		
Timber Purch. Road Const.	MILES	45	25	26	20	11		
Timber Purch. Road Reconst.	MILES	5	5	5	5	5		
BENEFITS M$								
Recreation								
Developed		376	439	487	536	586		
Dispersed		675	789	874	967	1055		
Wilderness		1383	1607	1787	1967	2169		
Range		515	510	510	510	510		
Timber		587	587	714	714	714		
Wildlife (WFUD's)		3668	3731	3739	3759	3817		
Minerals		0	0	0	0	0		
COSTS M$								
Total Forest Budget	(82)	6821	6641	7153	7074	6989		
Fixed Costs	(82)	1432	1395	1502	1486	1468		
Protection	(82)	910	873	980	964	946		
General Administration	(82)	522	522	522	522	522		
Variable Costs	(82)	5389	5246	5651	5588	5521		
Investment	(82)	2592	2524	2718	2688	2656		
Total Roads	(82)	1110	586	634	491	310		
App. Fund Roads	(82)	298	182	170	130	103		
Purchaser Credit Roads	(82)	812	404	464	361	207		
Operational	(82)	2524	2457	2647	2617	2586		
General Administration	(82)	281	281	281	281	281		
Non-Forest Service Costs (exc. roads)	(82)	22	22	22	22	22		
Returns to Treasury		165	170	180	182	182		

TABLE B - 8 (11) (Continued)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
ALTERNATIVE 11

		DECADE						
		1	2	3	4	5	10	15
Soils								
Soil & Water Resource Imp.	ACRES	30	30	20	20	20		
Facilities								
Trail Const./Reconst.	MILES	2	2	2	2	2		
Road Const. (Arterial/Collector)	MILES	2	2	0	0	0		
Road Reconst. (Arterial/Collector)	MILES	3	3	3	3	3		
Local Road Construction	MILES	1.0	1.0	1.0	1.0	1.0		
Timber Purch. Road Const.	MILES	20	11	13	13	5		
Timber Purch. Road Reconst.	MILES	5	5	5	5	5		
BENEFITS M$								
Recreation								
Developed		384	519	494	544	595		
Dispersed		726	840	924	1017	1106		
Wilderness		1506	1731	1911	2090	2293		
Range		486	488	488	488	488		
Timber		346	346	346	346	346		
Wildlife (WFUD's)		4709	4717	4710	4707	4706		
Minerals		0	0	0	0	0		
COSTS M$								
Total Forest Budget	(82)	5702	5676	5666	5661	5621		
Fixed Costs	(82)	1197	1192	1190	1189	1180		
Protection	(82)	675	670	668	667	658		
General Administration	(82)	522	522	522	522	522		
Variable Costs	(82)	4505	4489	4476	4472	4441		
Investment	(82)	2167	2157	2153	2151	2136		
Total Roads	(82)	542	334	339	343	183		
App. Fund Roads	(82)	175	144	107	108	84		
Purchaser Credit Roads	(82)	367	190	232	235	99		
Operational	(82)	2110	2100	2096	2095	2080		
General Administration	(82)	281	281	281	281	281		
Non-Forest Service Costs (exc. roads)	(82)	22	22	22	22	22		
Returns to Treasury		287	291	298	300	300		

TABLE B - 8 (11) (Continued)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
ALTERNATIVE 11

		DECADE						
		1	2	3	4	5	10	15
Soils								
Soil & Water Resource Imp.	ACRES	30	30	20	20	20		
Facilities								
Trail Const./Reconst.	MILES	2	2	2	2	2		
Road Const. (Arterial/Collector)	MILES	2	2	0	0	0		
Road Reconst. (Arterial/Collector)	MILES	3	3	3	3	3		
Local Road Construction	MILES	1.0	1.0	1.0	1.0	1.0		
Timber Purch. Road Const.	MILES	20	11	13	13	5		
Timber Purch. Road Reconst.	MILES	5	5	5	5	5		
BENEFITS M$								
Recreation								
Developed		384	519	494	544	595		
Dispersed		726	840	924	1017	1106		
Wilderness		1506	1731	1911	2090	2293		
Range		486	488	488	488	488		
Timber		350	350	350	350	350		
Wildlife (WFUD's)		4709	4717	4710	4707	4706		
Minerals		0	0	0	0	0		
COSTS M$								
Total Forest Budget	(82)	5702	5676	5666	5661	5621		
Fixed Costs	(82)	1197	1192	1190	1189	1180		
Protection	(82)	675	670	668	667	658		
General Administration	(82)	522	522	522	522	522		
Variable Costs	(82)	4505	4489	4476	4472	4441		
Investment	(82)	2167	2157	2153	2151	2136		
Total Roads	(82)	542	334	339	343	183		
App. Fund Roads	(82)	175	144	107	108	84		
Purchaser Credit Roads	(82)	367	190	232	235	99		
Operational	(82)	2110	2100	2096	2095	2080		
General Administration	(82)	281	281	281	281	281		
Non-Forest Service Costs (exc. roads)	(82)	22	22	22	22	22		
Returns to Treasury		287	291	298	300	300		

Alternative 12, Modified Current Management Direction

Purpose: To represent a modification of the current program in response to the need for change identified during the analysis of the management situation.

FORPLAN Run Number: SAA 12B

Objective Function: Maximize PNV for 15 decades.

Constraints:

(1) Harvest flow: nondeclining yield

(2) Ending inventory

(3) Long-term sustained yield link

(4) Harvest floor: 21.0 MMBF/YR in decades 1, 2
25.7 MMBF/YR in decade 3

(5) Meet current modified inventory Visual Quality Objectives.

(6) Meet Idaho Department of Fish and Game goals for fisheries.

(7) Maintain current populations of wildlife.

(8) Limit final cut on existing shelterwood acres to no more than 22% of those acres.

(9) Limit the number of acres of stagnated lodgepole pine receiving the push-over prescription to the following:

Decade	Upper Limit
1	1,500 Ac.
2-5	2,000 Ac.

(10) Do not schedule timber harvests on lands considered economically unsuitable.

(11) Harvest stands of timber already harvested between 1982 -1984 that are not identified as cutover in the model.

(12) Schedule projected 1985 harvests for harvest in decade 1 (based on Land Management Unit Plans and the 1984 Five-Year Action Plan).

(13) Withhold 305,895 acres for special wildlife considerations, roadless areas and old growth.

Assumptions:

(1) Current management direction of plans, laws, regulations and policies are applied.

(2) Prescriptions are selected to meet or deviate only slightly from current management direction.

(3) First decade budget is between 5.43-8.14 million dollars per year.

(4) Includes values for timber, recreation, range, water, wildlife and fish, as appropriate for the Forest.

(5) This alternative meets minimum management requirements.

TABLE B - 8 (12)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
ALTERNATIVE 12

	UNIT OF MEASURE	DECADE 1	2	3	4	5	10	15
OUTPUT/ACTIVITY								
Recreation								
Dev. Rec. Use (Roaded Natural)	MRVD	89	104	115	127	139		
Disp. Rec. Use (Roaded Natural)	MRVD	160	187	207	229	250		
Disp. Rec. Use (Semi-Prim. Motor)	MRVD	42	49	54	60	66		
Disp. Rec. Use (Semi-Prim. Non-Motor)	MRVD	8	10	11	12	13		
Wilderness Use (Semi-Prim. Motor)	MRVD	27	31	35	38	42		
Wilderness Use (Semi-Prim. Non-Motor)	MRVD	11	12	13	14	16		
Wilderness Use (Primitive)	MRVD	43	49	54	59	64		
Wilderness								
Wilderness Management	MACRES	426	426	426	426	426		
Wildlife								
Structural Habitat Improvement	STRUCT	83	83	83	83	83		
Nonstructural Habitat Improvement	MACRES	785	785	785	785	785		
Wildlife and Fish Use	MWFUD	106	106	107	110	109		
Range								
Grazing Use (Livestock)	MAUM	54.8	55.0	55.0	55.0	55.0		
Timber								
Allowable Sale Quantity	MMCF	6.3	6.3	7.6	7.6	7.6	7.6	7.6
Sawtimber (Softwood)	MMCF	6.1	6.1	7.4	7.4	7.4	7.4	7.4
Sawtimber (Softwood)	MMBF	21.1	21.1	25.7	25.7	25.7	25.7	25.7
Roundwood Products	MCF	169	169	206	206	206	206	206
Fuelwood	MCF	814	814	1001	1001	1001	1001	1001
TSI	ACRES	950	950	1157	1157	1157		
Reforestation	ACRES	1870	1870	2060	1060	1060		
Water								
Meeting State Standards	MACFT	1012	1053	1054	1057	1055		
Protection								
Fuelbreaks and Fuel Treatment	ACRES	4012	5168	6099	7090	5873		
Minerals								
Mineral Leases and Permits	CASES	160	175	185	195	200		
HC&D								
Human Resource Programs	ENRYR	4	4	4	4	4		
Lands								
Land Pur. & Acq. (exc. Exch.)	ACRES	68	0	0	0	0		

NOTE: All values are average annual values.

TABLE B - 8 (12) (Continued)
RESOURCE OUTPUTS, ACTIVITIES, COSTS, AND BENEFITS FOR
ALTERNATIVE 12

		DECADE						
		1	2	3	4	5	10	15
Soils								
Soil & Water Resource Imp.	ACRES	30	30	20	20	20		
Facilities								
Trail Const./Reconst.	MILES	2	2	2	2	2		
Road Const. (Arterial/Collector)	MILES	5	4	1	0	0		
Road Reconst. (Arterial/Collector)	MILES	6	6	6	6	6		
Local Road Construction	MILES	1.0	1.0	1.0	1.0	1.0		
Timber Purch. Road Const.	MILES	44	29	26	24	13		
Timber Purch. Road Reconst.	MILES	10	10	10	10	10		
BENEFITS M$								
Recreation								
Developed		376	439	487	536	586		
Dispersed		886	1038	1148	1270	1388		
Wilderness		820	944	1057	1158	1281		
Range		490	492	492	492	492		
Timber		685	685	834	834	834		
Wildlife (WFUD's)		3790	3814	3826	3906	3857		
Minerals		0	0	0	0	0		
COSTS M$								
Total Forest Budget	(82)	7370	7238	7615	7251	7187		
Fixed Costs	(82)	1548	1520	1599	1523	1509		
Protection	(82)	1026	998	1077	1001	987		
General Administration	(82)	522	522	522	522	522		
Variable Costs	(82)	5822	5718	6016	5728	5678		
Investment	(82)	2801	2750	2894	2765	2731		
Total Roads	(82)	1202	855	726	655	423		
App. Fund Roads	(82)	454	361	281	248	196		
Purchaser Credit Roads	(82)	748	494	445	407	227		
Operational	(82)	2736	2687	2828	2692	2669		
General Administration	(82)	281	281	281	281	281		
Non-Forest Service Costs (exc. roads)	(82)	22	22	22	22	22		
Returns to Treasury		166	170	182	185	185		

TABLE B-9

CONSTRAINTS COMMON TO ALL ALTERNATIVES

Alternative	Output/ System	Type of Constraint	Constraint	Units	Binding[1]	Applicable Time Period	Rationale
All	Timber	Harvest Flow	Nondeclining Yield	MMCF/YR	(*)	1-15	To ensure that the timber harvest volume does not decline from period to period
	Timber	Harvest Flow	Nondeclining Yield-Sustained Yield Link	MMCF/YR		15	Requires that the nondeclining yield harvest level in the last period stay below the long-term sustained yield capacity associated with the management intensities and rotation ages selected in the LP solution
	Timber	Inventory	Ending Inventory Constraint	MMCF/YR		15	To ensure that the inventory volume left on the forest at conclusion of the planning horizon is at least equal to the average inventory on a forest managed with the management intensities and rotation ages selected in the linear programming solution
	Regeneration of Stagnated Lodgepole Pine	"Less Than"	1,500 2,000	Acres Acres	**	1 2-5	Implement pushover regeneration prescription for stagnated lodgepole pine on no more than a specified number of acres per period, based on economic and silvicultural practicality.
	Harvest of Existing Shelterwoods	"Less Than"	22%	Acres	***	1-5	Cut no more than a certain amount of existing shelterwoods in any one period to eliminate lumpiness through time
	Allocation/ Timber	"Greater Than"	4,750	Acres	(*)	1	Harvest sales from 1982 to 1984 in order to bring the harvest schedule into line with activities that have already occurred

TABLE B-9 (continued)

CONSTRAINTS COMMON TO ALL ALTERNATIVES

Alternative	Output/ System	Type of Constraint	Constraint	Units	Binding[1]	Applicable Time Period	Rationale
	Allocation/ Min-Level	"Greater Than"	71,879	Acres	(*)	1-15	Require a certain amount of mature acres in each species receive the minimum level prescription. The purpose is to provide an adequate amount of old growth habitat throughout the planning horizon to support minimum viable population levels of old growth dependent species
	Spatial Distribution of Cutover Acres	"Less Than"	37%	Acres	(*)	1-15	No more than 37% of a given level1/level 2/working group combination can be in a cutover condition at one time. This ensures that the harvest schedule can be implemented without requiring even-aged regeneration cuts greater than 40 acres
	Acreage	"Equal To"	Varies by Analysis Area	Acres	*	1-15	Ensure that the acreage assigned to the prescriptions for an analysis area does not exceed the total analysis area acreage

1/ An asterisk "*" in the column entitled "Binding" indicates that the constraint, or constraint group, is limiting on the objective function An asterisk enclosed in parentheses (*) indicates that the constraint is binding, but not through an entire time period range or that only certain individual constraints of the constraint group are binding At least part of the "opportunity cost" for an alternative can be attributed to each binding constraint

** Limiting in at least one period in Alternatives 1, 2, 4, 5, 6, 7, 10, 12

*** Limiting in at least one period in Alternatives 4, 5, 10

TABLE B-10

CONSTRAINTS SPECIFIC TO ALTERNATIVES

Alternative	Output/ System	Type of Constraint	Constraint	Units	Binding[1]	Applicable Time Period	Rationale
1	Timber	"Greater Than"	20.5	MMBF/YR	*	1	To achieve as much of the current Timber Management Plan production goal as possible and not preclude meeting other resource goals
	Timber/ Douglas-fir Harvest	"Less Than"	goal=13	MMBF/YR		1	To produce a species composition which reflects existing and anticipated mill capacity, product demand, and implementability of timber program.
			goal=13	MMBF/YR		2	
			goal=13	MMBF/YR	*	3	
			goal=13	MMBF/YR	*	4	
			goal=13	MMBF/YR	*	5	
	Timber/ Ponderosa Pine Harvest	"Less Than"	goal=4	MMBF/YR		1	To produce a species composition which reflects existing and anticipated mill capacity, product demand, and implementability of timber program.
			goal=4	MMBF/YR		2	
			goal=4	MMBF/YR	*	3	
			goal=4	MMBF/YR	*	4	
			goal=4	MMBF/YR	*	5	
	Timber/ Lodgepole Pine Harvest	"Less Than"	goal=10 3	MMBF/YR		1	To produce a species composition which reflects existing and anticipated mill capacity, product demand, and implementability of timber program
			goal=10.3	MMBF/YR	*	2	
			goal=10 3	MMBF/YR		3	
			goal=10 3	MMBF/YR		4	
			goal=10 3	MMBF/YR		5	
	Allocation/ Timber	"Greater Than"	744	Acres	*	1	Harvest sales planned for 1985 (based on current Land Management Unit Plans and the 1984 5-Year Action Plan)
	Timber/ Allocation	"Less Than"	Varies by Levels 1-6 Identifier Combinations	Acres	(*)	1	Limit acres harvested on various portions of the Forest in order to meet mapping criteria These are based on visual objectives and spatial dispersion objectives
					(*)	2	

1/ An asterisk "*" in the column entitled "Binding" indicates that the constraint, or constraint group, is limiting on the objective function An asterisk enclosed in parentheses (*) indicates that the constraint is not binding through an entire time period range or that only certain individual constraints of the constraint group are binding At least part of the "opportunity cost" for an alternative can be attributed to each binding constraint

TABLE B-10 (continued)

CONSTRAINTS SPECIFIC TO ALTERNATIVES

Alternative	Output/ System	Type of Constraint	Constraint	Units	Binding[1]	Applicable Time Period	Rationale
	Pseudo-sediment	"Less Than"	Varies by Level 1	Acres	(*) (*) (*)	1 2 3 4 5	Limit acres harvested outside the five major watersheds in order to meet state goals for fisheries
	Sediment	"Less Than"	Varies by Level 1	Tons	(*)	1-15	Limit the amount of sediment produced from roads and logging activity in the five major watersheds in order to meet state goals for fisheries
	Visual Impact	"Less Than"	Varies by Level 1	Acres	(*)	1-15	Limit acres harvested on various portions of the Forest in order to meet current direction visual quality objectives
2	Timber	"Greater Than"	33 38	MMBF/YR MMBF/YR	* *	1 3	To produce the maximum amount of timber volume consistent with the emphasis on market opportunities under this alternative.
	Pseudo-sediment	"Less Than"	Varies by Level 1	Acres	(*) (*)	1 2 3 4	Limit acres harvested outside the five major watersheds in order to maintain minimum viable populations of anadromous and resident fish
	Sediment	"Less Than"	Varies by Level 1	Tons	(*)	1-15	Limit the amount of sediment produced from roads and logging activity in the five major watersheds in order to maintain minimum viable populations of fish

TABLE B-10 (continued)

CONSTRAINTS SPECIFIC TO ALTERNATIVES

Alternative	Output/ System	Type of Constraint	Constraint	Units	Binding[1]	Applicable Time Period	Rationale
	Visual Impact	"Less Than"	Varies by Level 1	Acres	(*)	1-15	Limit acres harvested on various portions of the Forest in order to meet maximum modification visual quality objectives
3	Timber	"Greater Than"	8	MMBF/YR	*	1	To produce the maximum amount of timber volume consistent with the emphasis on nonmarket opportunities under this alternative.
	Pseudo-sediment	"Less Than"	Varies by Level 1	Acres	(*) (*)	1 2 3 4 5	Limit acres harvested outside the five major watersheds in order to meet state goals for fisheries
	Sediment	"Less Than"	Varies by Level 1	Tons	(*)	1-15	Limit the amount of sediment produced from roads and logging activity in the five major watersheds in order to meet state goals for fisheries
	Visual Impact	"Less Than"	Varies by Level 1	Acres	(*)	1-15	Limit acres harvested on various portions of the Forest in order to meet inventory visual quality objectives
4	Timber	"Greater Than"	32 7 37.4	MMBF/YR MMBF/YR	*	1 3	To produce as much of the 1980 RPA Goal (40 MMBF/YR) as possible while meeting other objectives of this alternative

TABLE B-10 (continued)

CONSTRAINTS SPECIFIC TO ALTERNATIVES

Alternative	Output/ System	Type of Constraint	Constraint	Units	Binding[1]	Applicable Time Period	Rationale
	Pseudo-sediment	"Less Than"	Varies by Level 1	Acres	(*) (*) (*) (*)	1 2 3 4 5	Limit acres harvested outside the five major watersheds in order to maintain minimum viable populations of anadromous and resident fish
	Sediment	"Less Than"	Varies by Level 1	Acres	(*)	1-15	Limit the amount of sediment produced from roads and logging activity in the five major watersheds in order to maintain minimum viablew populations of fish
	Visual Impact	"Less Than"	Varies by Level 1	Acres	(*)	1-15	Limit acres harvested on various portions of the Forest in order to meet maximum modification visual quality objectives
5	Timber	"Greater Than"	36 7 41.5 43 0	MMBF/YR MMBF/YR MMBF/YR	* * *	1 3 12	To produce as much of the 1985 RPA Goal (80 MMBF/YR) as possible while meeting other objectives of this alternative.
	Pseudo-sediment	"Less Than"	Varies by Level 1	Acres	(*)	1 2 3 4	Limit acres harvested outside the five major watersheds in order to maintain minimum viable populations of anadromous and resident fish
	Sediment	"Less Than"	Varies by Level 1	Tons	(*)	1-15	Limit the amount of sediment produced from roads and logging activity in the five major watersheds in order to maintain minimum viable populations of fish
	Visual Impact	"Less Than"	Varies by Level 1	Acres	(*)	1-15	Limit acres harvested on various portions of the Forest in order to meet maximum modification visual quality objectives

TABLE B-10 (continued)

CONSTRAINTS SPECIFIC TO ALTERNATIVES

Alternative	Output/ System	Type of Constraint	Constraint	Units	Binding[1]	Applicable Time Period	Rationale
6	Timber	"Greater Than"	17.6 22.0	MMBF/YR	* *	1 3	To produce timber sale offerings at a level equal to at least 75% of the original timber goal of the current direction alternative.
	Pseudo-sediment	"Less Than"	Varies by Level 1	Acres	(*) (*)	1 2 3 4 5	Limit acres harvested outside the five major watersheds in order to meet state goals for fisheries.
	Sediment	"Less Than"	Varies by Level 1	Tons	(*)	1-15	Limit the amount of sediment produced from roads and logging activity in the five major watersheds in order to meet state goals for fisheries.
	Visual Impact	"Less Than"	Varies by Level 1	Acres	(*)	1-15	Limit acres harvested on various portions of the Forest in order to meet inventory visual quality objectives.
7	Timber	"Greater Than"	18	MMBF/YR	*	1	To produce enough timber on the most productive lands to maintain a viable logging and manufacturing industry in dependent communities.
	Pseudo-sediment	"Less Than"	Varies by Level 1	Acres	(*) (*) (*) (*) (*)	1 2 3 4 5	Limit acres harvested outside the five major watersheds in order to maintain minimum viable populations of resident fish and meet Idaho state goals for anadromous fish.

TABLE B-10 (continued)

CONSTRAINTS SPECIFIC TO ALTERNATIVES

Alternative	Output/ System	Type of Constraint	Constraint	Units	Binding[1]	Applicable Time Period	Rationale
	Sediment	"Less Than"	Varies by Level 1	Tons	(*)	1-15	Limit the amount of sediment produced from logging activities and roads in the five major watersheds in order to maintain minimum viable populations of resident fish and meet Idaho state goals for anadromous fish.
	Visual Impact	"Less Than"	Varies by Level 1	Acres	(*)	1-15	Limit acres harvested on various portions of the Forest in order to meet current direction visual quality objectives.
8	Timber	"Greater Than"	9.5	MMBF/YR	*	1	To produce the highest level of timber production that does not adversely affect amenity and/or nonmarket outputs of this alternative.
	Pseudo-sediment	"Less Than"	Varies by Level 1	Acres	(*)	1	Limit acres harvested outside the five major watersheds to maximize fish production in roadless areas and meet state goals for fish in other areas.
					(*)	2	
					(*)	3	
					(*)	4	
					(*)	5	
	Sediment	"Less Than"	Varies by Level 1	Tons	(*)	1-15	Limit the amount of sediment produced from logging activities and roads in the five major watersheds in order to maximize fish production in roadless areas and meet state goals for fish in other areas.
	Visual Impact	"Less Than"	Varies by Level 1	Acres	(*)	1-15	Limit acres harvested on various portions of the Forest in order to meet inventory visual quality objectives.

TABLE B-10 (continued)

CONSTRAINTS SPECIFIC TO ALTERNATIVES

Alternative	Output/ System	Type of Constraint	Constraint	Units	Binding[1]	Applicable Time Period	Rationale
9	Timber	"Greater Than"	7 7	MMBF/YR	*	1	To produce the highest level of timber production that does not adversely affect amenity and/or nonmarket outputs of this alternative.
	Pseudo-sediment	"Less Than"	Varies by Level 1	Acres	(*)	1	Limit the acres harvested outside the five major watersheds to maximize fish production in roadless areas and meet state goals for fish in other areas
					(*)	2	
					(*)	3	
					(*)	4	
					(*)	5	
	Sediment	"Less Than"	Varies by Level 1	Tons	(*)	1-15	Limit the amount of sediment produced from logging activities and roads in the five major watersheds in order to maximize fish production in roadless areas and meet state goals for fish in other areas
	Visual Impact	"Less Than"	Varies by Level 1	Acres	(*)	1-15	Limit acres harvested on various portions of the Forest in order to meet inventory visual quality objectives
10	Timber	"Greater Than"	18 1	MMBF/YR	*	1	To achieve a level of timber production on nonwilderness areas proportionately higher than the current direction alternative [2]
			22 0	MMBF/YR	*	3	
	Pseudo-sediment	"Less Than"	Varies by Level 1	Acres	(*)	1	Limit the acres harvested outside the five major watersheds to maximize fish production in wilderness areas and maintain minimum viable populations in other areas
					(*)	2	
					(*)	3	
					(*)	4	
						5	

TABLE B-10 (continued)

CONSTRAINTS SPECIFIC TO ALTERNATIVES

Alternative	Output/ System	Type of Constraint	Constraint	Units	Binding[1]	Applicable Time Period	Rationale
	Sediment	"Less Than"	Varies by Level 1	Tons	(*)	1-15	Limit the amount of sediment produced from logging activities and roads in the five major watersheds in order to maximize fish production in roadless areas and meet state goals for fish in other areas.
	Visual Impact	"Less Than"	Varies by Level 1	Acres	(*)	1-15	Limit the acres harvested on various portions of the Forest in order to meet inventory visual quality objectives
11							
	Timber	"Greater Than"	9 1	MMBF/YR	*	1	To achieve as much of the current Timber Management Plan production goal as possible and not preclude meeting other resource goals
	Pseudo-sediment	"Less Than"	Varies by Level 1	Acres		1	Limit the acres harvested outside the five major watersheds to maximize fish production in roadless areas and meet state goals for fish in other areas
						2	
					(*)	3	
					(*)	4	
					(*)	5	
	Sediment	"Less Than"	Varies by Level 1	Tons	(*)	1-15	Limit the amount of sediment produced from logging activities and roads in the five major watersheds in order to maximize fish production in roadless areas and meet state goals for fish in other areas

TABLE B-10 (Continued)

CONSTRAINTS SPECIFIC TO ALTERNATIVES

Alternative	Output/ System	Type of Constraint	Constraint	Units	Binding[1]	Applicable Time Period	Rationale
	Visual Impact	"Less Than"	Varies by Level 1	Acres	(*)	1-15	Limit acres harvested to meet inventory visual objectives in all geozones except North Fork, Salmon Face and Cobalt geozones, where acres harvested are limited to meet current direction objectives
12	Timber	"Greater Than"	21 0 25.7	MMBF/YR MMBF/YR	* *	1 3	To achieve as much of the current Timber Management Plan production goal as possible and not preclude meeting other resource goals.
	Timber/ Allocation	"Greater Than"	744	Acres	(*)	1	Harvest sales planned for 1985 (based on current Land Management Unit Plans and the 1984 5-Year Action Plan)
	Pseudo-sediment	"Less Than"	Varies by Level 1	Acres	(*) (*)	1 2 3 4 5	Limit acres harvested outside the five major watersheds in order to meet state goals for fisheries
	Sediment	"Less Than"	Varies by Level 1	Tons	(*)	1-15	Limit the amount of sediment produced from roads and logging activity in the five major watersheds in order to meet state goals for fisheries.
	Visual Impact	"Less Than"	Varies by Level 1	Acres	(*)	1-15	Limit acres harvested to meet inventory visual objectives in all geozones except North Fork, Salmon Face and Cobalt geozones, where acres harvested are limited to meet current direction objectives

C. Constraint Adjustments

The initial sets of constraints defining each alternative were developed by the Forest ID Team. While making FORPLAN runs, infeasibilities often resulted from not being able to meet one or more constraints. When feasible runs were achieved, there occasionally surfaced a conflict between the FORPLAN results and the goals of the alternative. When these problems arose, the constraints were reexamined and adjusted to achieve feasible runs that adequately simulated the alternatives. All adjustments were documented and are on file in the Supervisor's Office.

D. Constraint Analysis (Sensitivity Analysis)

Considering marginal changes in solutions as constraint sets are adjusted can provide valuable information. However, this "sensitivity analysis" is quite expensive, both in terms of money and time. Therefore, given the scope of the Forest planning problem, this type of analysis was performed only where a major issue or concern suggested that the benefits from additional analysis would outweigh the costs of the analysis.

VI. Alternatives Considered but Eliminated From Detailed Study

All benchmarks are theoretically implementable as alternatives. They were not designed, however, to be responsive to ICO's, to be constrained by budget, or to consider multi-resource management goals. Therefore, all of the benchmarks, with the exception of current situation, were dropped from further consideration as alternatives.

Other model formulations not analyzed in detail include the following:

(1) Modified Current Direction without the nondeclining yield constraint (departure).

(2) Max PNV-Assigned Values (Benchmark 3) with Panther Creek modeled as anadromous fish habitat.

(3) Max Timber (Benchmark 4), using a 2-1/2 feet tree height to define harvested land as cutover.

(4) Modified Current Direction with inventory visual quality objectives.

Modified Current Direction Without Nondeclining Yield Constraint (Departure):

Objective Function - Maximize Timber for Decade 1.

Harvest Flow -

Sequential lower and upper bounds = 25 percent for 15 decades. This constraint ensures that the timber harvest volume does not increase or decrease more than 25 percent from period to period.

-"Equal" link to long-term sustained yield. This constraint requires that the harvest level in the last period equal the long-term sustained yield capacity associated with the management intensities and rotation ages selected in the LP solution.

Other constraints -

All other constraints were identical to those in the Modified Current Direction (Alt. 12) formulation.

The harvest flow constraints were binding throughout the planning horizon, except in decade 8.

Timber harvest for decades 1-5 were:

Decade	1	2	3	4	5	Total
Harvest	24 MMBF	18 MMBF	23 MMBF	17 MMBF	21 MMBF	103 MMBF

Using the first decade harvest of 24 MMBF/yr as a required harvest level and using a max PNV objective function would provide the most economically efficient way of obtaining this first decade harvest volume. Based on prior analysis of benchmarks and alternating, such a formulation would produce a harvest level that declined 25 percent (designated lower bound) each decade for at least three decades.

The harvest schedule of this departure is compared with the Base Sale Schedule (BSS) of Alternative 12 (Modified Current/Preferred) in Figure B-1. This departure does not help prevent mortality losses nor does it significantly improve timber age/size class distribution on the Forest. It is not reasonable to expect that overall multiple-use objectives would be better attained with this departure than with the Modified Current Alternative (Preferred Alternative).

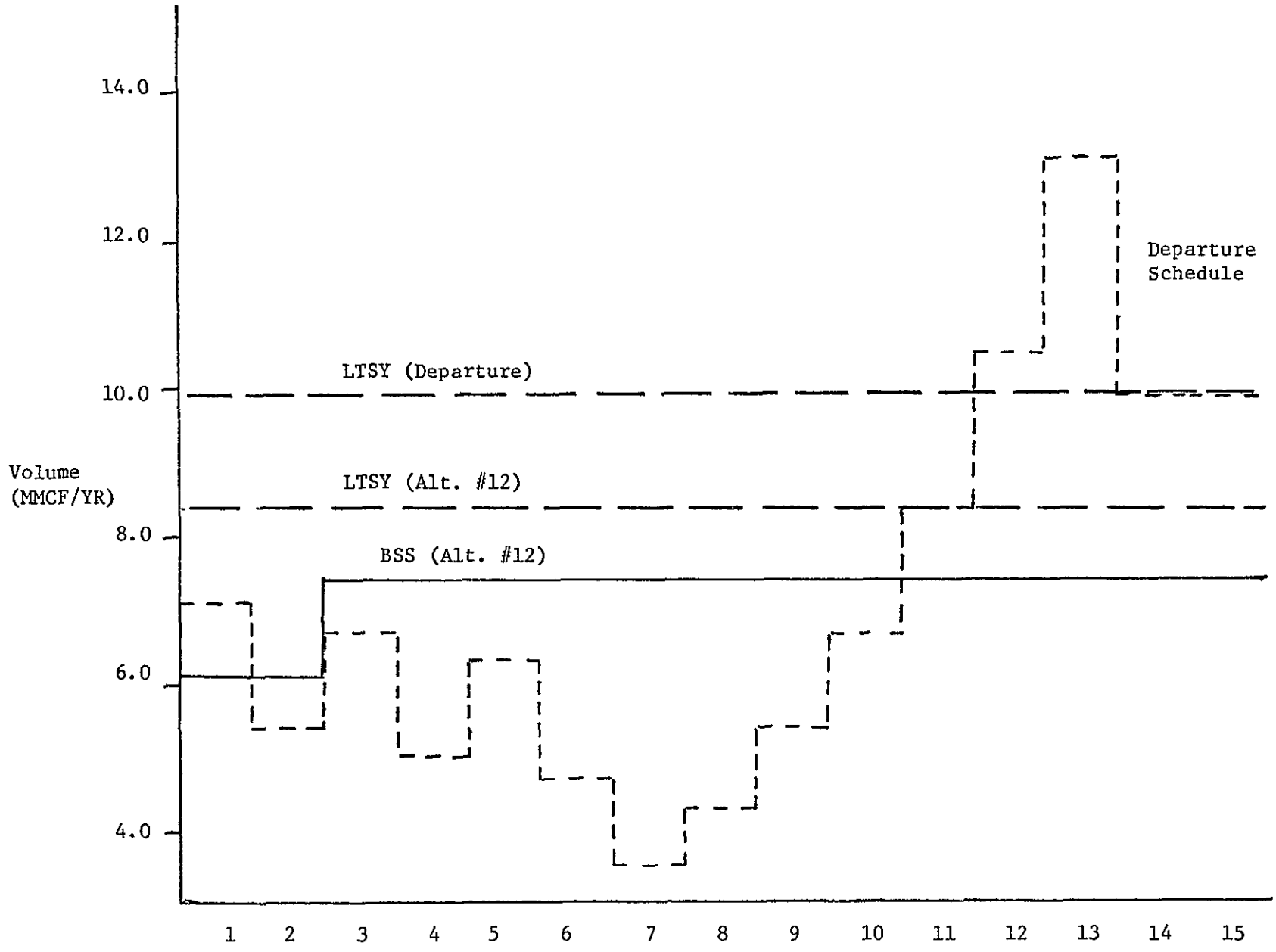


Figure B-1. Base Sale Schedule of Alt. #12 and Departure Schedule

VII. Trade-Off Analysis

A. Introduction

This discussion identifies the economic consequences of implementing the different alternatives by comparing each benchmark and each alternative to the least cost formulation (Min-Level Benchmark) and to the greatest PNV formulation (also the Min-Level Benchmark). These comparisons are displayed in Tables B-11 and B-12, respectively.

Caution should be taken in making comparisons of this nature. On the Salmon National Forest, each alternative basically addresses major issues. Comparing the benefits and costs of an alternative with the next more costly alternative does not allow us to say anything meaningful about the consequences of the additional expenditure. The additional benefit values are incommensurate unless the alternatives being compared are very similar in thrust. Connaugton and Fight ("Applying Trade-off Analysis To National Forest Planning", Journal of Forestry, Nov. 1984, pp. 680-683) state the following:

> Trade-offs between outputs can be computed with the same linear programming model of the forest used to prepare land-management alternatives. By systematically varying the objective for one of the outputs of an alternative, the resulting trade-off with the output measured by the objective function of the linear program is determined. Trade-offs cannot be reliably computed from the differences between land-management alternatives. Trade-offs may be overstated when inputs such as land are manipulated instead of outputs. A similar overstatement of trade-offs may occur when a sufficiently wide range of management regimes is not provided to the model. Since a trade-off analysis is only as good as the fundamental production relationships on which it is based, misleading trade-offs can result for alternatives producing a mix of outputs outside the range of historical experience and supporting data.

Another reason for caution in interpreting Tables B-11 and B-12 is the fact that many aspects of trade-off analysis are not captured in PNV.

Table B-11 DISCOUNTED COSTS, BENEFITS, AND PRESENT NET VALUE FOR ALTERNATIVES RANKED ACCORDING TO LEAST COST
(50-year totals, in thousands of dollars)

BENCHMARKS:	PVC	Changes in PVC	PVB	Changes in PVB	PNV	Changes in PNV
BM #1 Max PNV (Min Level)	68206	-0-	141610	-0-	73404	-0-
BM #8 Max Wilderness	109506	41300	162600	20990	53094	-20310
BM #9 Min Wilderness	111176	42970	157362	15752	46186	-27218
BM #6 Max Big Game	112368	44162	168753	27143	56385	-17019
BM #3 Max PNV Assigned	112942	44736	157802	16192	44860	-28544
BM #2 Max PNV Market	132366	64160	158298	16688	25932	-47472
BM #7 Current Direction	144372	76166	160984	19374	16611	-56793
BM #5 Max Range	147246	79040	154743	13133	7497	-65907
BM #4 Max Timber	184055	115849	159597	17987	-24458	-97862
ALTERNATIVES:						
Alt. #8 Wilderness/ Wildlife	117813	49607	180303	38693	62489	-10915
Alt. #9 Wildlife/T&E	120714	52508	170589	28979	49875	-23529
Alt. #3 Nonmarket	121406	53200	169936	28326	48529	-24875
Alt. #11 Max PNV (Max Wilderness Inventory)	121972	53766	185883	44273	63911	-9493
Alt. #6 Constrained Budget	127151	58945	162568	20958	35416	-37988
Alt. #7 Capability Emphasis	139845	71639	165984	24374	26138	-47266
Alt. #1 Current Direction	145725	77519	162289	20679	16563	-56841
Alt. #10 Max Wilderness Manageable	147528	79322	166886	25276	19358	-54046
Alt. #12 Modified Current	157904	89698	161914	20304	4010	-69394
Alt. #2 Max Market	187779	119573	161747	20137	-26033	-99437
Alt. #4 1980 RPA	188993	120787	162961	21351	-26033	-99437
Alt. #5 1985 RPA	195587	127381	163949	22339	-31638	-105042

Table B-12 DISCOUNTED COSTS, BENEFITS, AND PRESENT NET VALUE FOR ALTERNATIVES RANKED ACCORDING TO HIGHEST NET VALUE
(50-year totals, in thousands of dollars)

BENCHMARKS:	PVC	Changes in PVC	PVB	Changes in PVB	PNV	Changes in PNV
BM #1 Max PNV (Min Level)	68206	-0-	141610	-0-	73404	-0-
BM #6 Max Big Game	112368	44162	168753	27143	56385	-17019
BM #8 Max Wilderness	109506	41300	162600	20990	53094	-20310
BM #9 Min Wilderness	111176	42970	157362	15752	46186	-27218
BM #3 Max PNV Assigned	112942	44736	157802	16192	44860	-28544
BM #2 Max PNV Market	132366	64160	158298	16688	25932	-47472
BM #7 Current Direction	144372	76166	160984	19374	16611	-56793
BM #5 Max Range	147246	79040	154743	13133	7479	-65907
BM #4 Max Timber	184055	115849	159597	17987	-24458	-97862
ALTERNATIVES:						
Alt. #11 Max PNV (Max Wilderness Inventory)	121972	53766	185883	44273	63911	-9493
Alt. #8 Wilderness/ Wildlife	117813	49607	180303	38693	62489	-10915
Alt. #9 Wildlife/T&E	120714	52508	170589	28979	49875	-23529
Alt. #3 Nonmarket	121405	53200	169936	28326	48529	-24875
Alt. #6 Constrained Budget	127151	58945	162568	20958	35416	-37988
Alt. #7 Capability EMP	139845	71639	165984	24374	26138	-47266
Alt. #10 Max Wilderness	147528	79322	166886	25276	19358	-54046
Alt. #1 Current Direction	145725	77519	162289	20679	16563	-56841
Alt. #12 Modified Current	157904	89698	161914	20304	4010	-69394
Alt. #4 1980 RPA	188993	120787	162961	21351	-26033	-99437
Alt. #2 Market	187779	119573	161747	20137	-26033	-99437
Alt. #5 1985 RPA	195587	127381	163949	22339	-31638	-105042

B. Comparison of Economic Effects by Benchmark and Alternative (compared to the Maximum Present Net Value Benchmark).

1. Benchmarks

Big Game Benchmark

The present net costs of this benchmark increased $44,162 (thousand), while present net benefits increased $27,143 (thousand). Recreation and fish and wildlife benefits are maximized under this benchmark. Wilderness benefits decreased slightly while timber and range increased. The maximum cost is incurred for fish and wildlife under this benchmark. All other costs are up under this benchmark. The present net value of this benchmark showed a decrease of $17,019 (thousands) compared to the MaxPNV Benchmark (Min-Level).

Maximum Wilderness Benchmark

The present net costs of this benchmark increased $41,300 (thousand), while present net benefits increased $20,990 (thousand). Under this benchmark wilderness benefits are maximized while recreation benefits are minimized. Range and timber benefits are increased while fish and wildlife remain the same. Timber benefits are lower than in any other benchmark except the Max PNV (Min Level). All costs are up with the expenditures for wilderness being emphasized. The present net value of this benchmark decreased by $20,310 (thousand).

Minimum Wilderness Benchmark

The present net costs of this benchmark increased $42,970 (thousand), while present net benefits increased $15,752 (thousand). Wilderness and fish and wildlife benefits decreased under this benchmark, while recreation remained almost the same. Range and timber benefits increased. All costs increased. The present net value of this benchmark decreased by $27,218 (thousand).

Maximum PNV Assigned Benchmark With Required Harvest

The present net costs of this benchmark increased $44,736 (thousand) and present net benefits increased $16,192 (thousand). The wilderness and fish and wildlife benefits decreased under this benchmark while recreation remained nearly the same. All costs increased. The present net value of this benchmark decreased by $28,544 (thousand).

Maximum PNV Market Benchmark

The present net costs of this benchmark increased $64,160 (thousand) and present net benefits increased $16,688 (thousand). The wilderness benefits were minimized under this benchmark while timber benefits were maximized. Recreation

benefits remained nearly the same while range increased and fish and wildlife decreased. All costs were up with wilderness and fish and wildlife increasing slightly and recreation, timber, range, and administrative costs increasing significantly. The present net value decreased $47,472 (thousand).

Current Direction Benchmark

The present net costs of this benchmark increased $76,166 (thousand), while present net benefits increased $19,374 (thousand). Wilderness and fish-wildlife benefits decreased slightly in this benchmark while recreation benefits increased slightly. Range and timber benefits increased. All costs increased. Wilderness, fish-wildlife and range rose slightly, and recreation and timber rose significantly. The present net value decreased by $56,793 (thousand).

Maximum Range Benchmark

The present net cost of this benchmark increased $79,040 (thousand) while benefits only increased $13,133 (thousand). Recreation, wilderness and fish and wildlife benefits decreased under this benchmark while timber increased. Range benefits were maximized. All costs were up with range being higher here than under any other benchmark. The present net value decreased by $65,907 (thousand).

Maximum Timber Benchmark

The present net costs of this benchmark increased $115,849 (thousand) and benefits also increased $17,987 (thousand). The majority of this difference is due to the increased costs of timber management relative to the benefits derived, as well as reductions in wildlife and recreation outputs. The present net value decreased by $97,862 (thousand).

2. Alternatives

Alternative 11 - High Present Net Value (Maximum Wilderness Inventory)

This alternative has the highest present net value of any of the alternatives. It also has the highest present net benefits of any of the alternatives or benchmarks, an increase of $44,273 (thousand) over the Maximum PNV - Minimum Level Benchmark. It has a present net cost increase of $53,766 (thousand). The majority of the increase in benefits is due to the high values for wilderness and fish and wildlife use. Timber benefits are lowest under this alternative. The present net value for this alternative decreased $9,493 (thousands) compared to the Maximum PNV Benchmark.

Alternative 8 - Wilderness-Wildlife

The present net costs of this alternative increased $49,607 (thousand), while present net benefits increased $38,693 (thousand) relative to the Maximum PNV Benchmark. All benefits have decreased except for recreation and timber when compared with Alternative 11. Total costs are down slightly relative to Alternative 11. The high present net value of this alternative is due largely to the high value of increased amenity outputs. The present net value for this alternative decreased $10,915 (thousand) compared to the Maximum PNV Benchmark.

Alternative 9 - Wildlife T&E

The present net costs of this alternative increased $52,508 (thousand), and present net benefits increased $28,979 (thousand) relative to the Maximum PNV Benchmark. Wilderness, range and fish-wildlife benefits decreased slightly while recreation and timber increased relative to Alternative 11. Recreation and range costs increased. All other costs decreased. Timber costs are at their lowest level in this alternative. This alternative has the third highest present net value due primarily to amenity values. The present net value of this alternative decreased $23,529 (thousand) relative to the Maximum PNV Benchmark.

Alternative 3 - Non-Market

The present net costs of this alternative increased $53,200 (thousand), while present net benefits increased $28,326 (thousand) relative to the Maximum PNV Benchmark. Wilderness, fish-wildlife, and range benefits decreased relative to Alternative 11 while recreation and timber benefits increased. Recreation and range costs increased. Wilderness and timber costs decreased. Fish-wildlife costs did not change relative to Alternative 11. The present net value of this alternative decreased $24,875 (thousand) relative to the Maximum PNV Benchmark.

Alternative 6 - Constrained Budget

The present net costs of this alternative have increased only $58,945 (thousand), while present net benefits increased $20,958 (thousand) relative to the Maximum PNV Benchmark. All resources benefits have decreased relative to Alternative 11 except for recreation and timber. All costs are at a minimum compared to the other alternatives except for timber. The present net value of this alternative decreased $37,988 (thousand) relative to the Maximum PNV Benchmark.

Alternative 7 - Capability

The present net costs of this alternative increased $71,639 (thousand) while the present net benefits have increased $24,374 (thousand) relative to the Maximum PNV Benchmark. Amenity benefits decreased relative to Alternative 11 while recreation, range and timber increased. Wilderness and range costs decreased while recreation and timber costs increased relative to Alternative 11. The present net value of this alternative decreased $47,266 (thousand) relative to the Maximum PNV Benchmark.

Alternative 10 - Maximum Wilderness Manageability

The present net costs of this alternative increased $79,322 (thousand), while present net benefits have increased $25,276 (thousand) relative to the Maximum PNV Benchmark. All amenity benefits are decreased relative to the Maximum PNV Alternative while range and timber are increased. Wilderness and fish-wildlife have decreased costs under this alternative while recreation, timber and range costs have increased relative to the Maximum PNV Alternative. The present net value for this alternative decreased $54,046 (thousand) relative to the Maximum PNV Benchmark.

Alternative 1 - Current Direction

The present net costs of this alternative increased $77,519 (thousand), and present net benefits have increased $20,679 (thousand) relative to the Maximum PNV Benchmark. Wilderness and fish-wildlife benefits are decreased while range, timber, and recreation benefits are increased relative to Alternative 11. Recreation and timber costs increase while all other costs decrease under this alternative relative to Alternative 11. The present net value for this alternative decreased $56,841 (thousand) relative to the Maximum PNV Benchmark.

Alternative 12 - Modified Current

The present net costs of this alternative have increased $91,675 (thousand), while present net benefits have increased $20,304 (thousand) relative to the Maximum PNV Benchmark. Recreation, timber, and range benefits are increased while wilderness and fish-wildlife benefits are decreased relative to Alternative 11. Recreation and timber costs increased while all other costs decreased relative to Alternative 11. The present net value of this alternative decreased $69,394 (thousand) relative to the Maximum PNV Benchmark.

Alternative 4 - 1980 RPA

The present net costs of this alternative have increased $120,787 (thousand), and present net benefits have increased $21,351 (thousand) relative to the Maximum PNV Benchmark.

Wilderness and fish-wildlife benefits decreased under this alternative relative to Alternative 11, while recreation and range show slight increases. Timber benefits are significantly increased. Recreation and timber costs increased while wilderness and range costs decreased. The present net value of this alternative decreased $99,437 (thousand) relative to the Maximum PNV Benchmark.

Alternative 2 - Market

The present net costs of this alternative have increased $119,573 (thousand), while the present net benefits increased only $20,137 (thousand) relative to the Maximum PNV Benchmark. Wilderness and fish-wildlife benefits decreased significantly relative to Alternative 11. Timber benefits have increased significantly while range and recreation are up slightly relative to Alternative 11. Wilderness and fish-wildlife costs decreased, while other costs increased. Timber costs are significantly higher than under Alternative 11. The present net value for this alternative decreased $99,437 (thousand) relative to the Maximum PNV Benchmark.

Alternative 5 - 19815 RPA

The present net costs of this alternative have increased $127,381 (thousand), and present net benefits have increased $22,339 (thousand) relative to the Maximum PNV Benchmark. Wilderness and fish-wildlife benefits are decreased while commodity benefits from recreation, timber, and range increased relative to the Maximum PNV Alternative. All costs are increased except in wilderness and fish-wildlife. The latter does not change. This alternative has the highest timber and administrative costs of any alternative. The present net value for this alternative decreased $105,042 (thousand) relative to the Maximum PNV Benchmark.