APPENDIXES

United States
Department of
Agriculture

Forest
Service

Final Environmental Impact Statement

for the CHALLIS NATIONAL FOREST

Land and Resource Management Plan

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APPENDIX A

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APPENDIX A

ISSUES, CONCERNS, AND OPPORTUNITY IDENTIFICATION PROCESS

I. PROCESS

A. Identification of Issues, Concerns, and Management Opportunity (ICOs):

The pro cess of identifying issues began with a four page information insert published in the Challis Messenger and the Arco Advertiser in May, 1981. These weekly newspapers are the only local media. The insert gave a brief overview of the Forest, explained the planning process, provided an issue response form and explained how the issues would be evaluated. This insert reached approximately 6,000 homes. Articles were also published in the newspapers of southern Idaho, explaining the planning process and asking the public for their input.

Personal contacts were made with 483 individuals representing each of the numerous interest areas within the Forest primary zone of influence. These contacts generated 615 issue statements.

Forest Service employees were given the opportunity to provide comments. They identified 128 management concerns.

In October, 1981, the Forest mailed 600 information packets to various organizations and individuals not previously contacted. Fifty-six responses received from these mailings identified 106 issue statements.

Issues have been gathered from public meetings in local communities by adjacent Forests and by the Challis National Forest.

Over 850 issue and concern statements were received. Those that could be dealt with in the Forest Plan were categorized by subject matter and then condensed into 40 tentative issue statements. Those 40 tentative statements were further condensed into 12 issue statements with several primary issue areas.

The respondants who identified the original 850 issues and concerns in 1981 were contacted in August 1983 during the roadless area review process. News releases to newspapers in Southern and Central Idaho as well as publication in the Federal Register were used to contact additional publics. Additional information was requested by over 300 of these contacts who then provided 220 additional comments. Statewide news releases were made asking the public at large for their views. Issues concerning the Forest were taken from the RARE II summary, wilderness hearings conducted in Idaho by Senator McClure, and follow up with the original contacts. This resulted in the addition of two issues and concerns and several issue areas to the original 12 issues.

Each of the issues have been converted to a problem statement and a statement of resolution.

B. Screening Process

Each of the 14 final issues were evaluated and prioritized in order of importance by comparing the following analysis criteria: National and Regional issues, resolvability, duration, magnitude, scope, intensity, and NFMA Management Concerns. An explanation and discussion of this prioritization is in the planning files in the Supervisor's Office in Challis.

Each statement received from the public was evaluated and placed into one of the following five categories.

1. An issue that can be dealt with prior to the implementation of the Forest Plan. When appropriate, they were referred to the Regional Forester of the Intermountain Region, or to a Ranger District.

2. Resolution of the issue is not within the Forest's authority due to laws and regulations. The issue was therefore referred to another forest or another agency.

3. The issue cannot be resolved at present, but will be deferred for future consideration.

4. The issue will be addressed in the Forest Plan.

5. The statement is too general to deal with.

Forty-six of the 850 issues could be dealt with prior to implementation of the Plan. Fifty-four were not within the Forest authority. Twenty-seven issues concerned adjacent Forests. Twenty-nine concerned other agencies. Fourteen involved National Forest Regional issues. Ninety-one were referred to the Ranger Districts for immediate consideration. Two issues were deferred. Forty-seven statements were too general to deal with. Five hundred and forty were condensed to be dealt with in the Plan.

The screening process was not intended to discuss the meaning or importance of the issues that will not be handled in the Forest Plan. The Forest will maintain information where these issues will be addressed or to what other agency or organizational level they were referred to. Those issues will not be tracked in the Forest Plan.

II. CONSULTATION WITH OTHERS

The Federal, State, County, and local agencies listed in Chapter VI of the DEIS were contacted to provide input during the issue identification process and the review of the alternatives to see if any agency had existing land use plans that would be in conflict with the preferred alternative. These contacts are documented in the planning files at the Forest Supervisor's Office in Challis, Idaho.

There are no Indian reservations within the boundaries of the Challis National Forest. Personal contacts were made with the Fort Hall Reservation to solicit their input for the Plan and conform to conditions stated in the treaties.

Idaho Department of Fish and Game

Overall state goals, objectives, and policies, along with projected harvests, populations, and recreation days for game and fish are documented in "A Plan for the Future Management of Idaho's Fish and Wildlife Resources", Volume I, Goals, Objectives and Policies, 1975-1990 and "Species Management Plans".

The Forest and the State Fish and Game coordinated on many items, such as determining the minimum viable populations of Management Indicator Species, Threatened and Endangered Species, the number of herds, habitat types, biologically capable population levels, coordination needs on Environmental Assessments and Forest practices, and potential developments in roadless areas.

Fish and Wildlife Service

The U.S. Fish and Wildlife Service has lead agency responsibilities for the Threatened and Endangered Species. Their objective is removal of species from listing as Threatened and Endangered through encouraging improvement of habitat and species population increases. Continual contact with the U.S. Fish and Wildlife Service has been maintained to coordinate concerns about threatened, endangered, and sensitive species. Also, the Fish and Wildlife Service has identified Columbia Basin salmon and steelhead as the most important problem confronting the Service nationally. Lands administered by the Challis National Forest occupy about 15.5 percent of the Forest Service administered drainage area available to anadromous fish in Idaho. Their goal is for the Challis Forest to provide suitable habitat for increased natural production and increased smolt outplants from hatchery production.

Bureau of Land Management

Goals and objectives of the BLM affect management on the Challis National Forest because public domain lands generally border the Forest at lower elevations, mainly on the south half of the Forest.

The Idaho Falls and Salmon Districts of the BLM coordinated with the Forest on communication systems, sites, noxious weed control, protection, road maintenance and access, administrative sites, scheduling of timber sales, wildlife population objectives, and allotment management plans. The Forest has existing agreements with the BLM on fire protection and special uses.

Other Consultations

Additional contacts were made with individuals in leadership positions in the conservation and environmental community. Similar contacts were made with leaders in the business community including mining, oil and gas, livestock, farming, and local governments. Contacts with concerned members of the public were also maintained. Documentation of these contacts is on file in the Forest planning records.

The purpose of these contacts was to maintain an ongoing dialogue on planning issues, test planning options, receive continuing input, validate issues, and obtain guidance from the public.

III. PLANNING PROBLEMS

All 14 planning problems, derived from the public issues, are dealt with in the DEIS and Forest Plan. These issues are dealt with differently under each alternative. Most issues have a complementary or conflicting relationship among resources.

PLANNING PROBLEM #1 INTEGRATE RESOURCE MANAGEMENT

What is the relationship between all resource levels (timber, range, wildlife and fish, developed recreation and dispersed recreation)?

The Forest Service has been managing National Forest system lands under a multiple use concept for many years, where relationships between commodity and noncommodity use were considered. The Multiple Use and Sustained Yield Act of 1960 gave increased emphasis to this concept. However, various segments of the public feel too much emphasis has been given to commodity outputs like timber production and livestock grazing, while others feel too much emphasis has been given to noncommodity outputs like recreation and wilderness. Some publics believe that the cumulative effects of our action are not being considered or shown in our environmental documents. Other publics feel that cultural and historic resources are not being given adequate protection and the Forest Service should include the areas in wilderness.

The National Forest Management Act of 1974 re-emphasized that all National Forests will continue to be managed under a Multiple Use and Sustained Yield concept. The National Environmental Policy Act of 1969, and subsequent regulations, require that an interdisciplinary team of professionals and the public be involved in the decision making process. The public needs to be assured that this requirement will be met in identifying issues to be addressed, identifying potential impacts, resolving conflicts and identifying trade-offs and mitigation measures needed.

Resolution of this issue requires addressing the relationships between Range, Wildlife, Timber, Recreation, and other resources when developing land prescriptions and resource outputs. All users of the Forest will be affected by this issue.

PLANNING PROBLEM #2 RIPARIAN AREA MANAGEMENT

To what degree will the Forest manage for all resource uses in riparian areas to maintain or enhance overall condition?

Riparian ecosystems including aquatic ecosystems, wetlands and flood plains are among the most productive, sensitive, diverse, and geographically limited ecosystem on the Forest. They make up less than 3 percent of the land area. More resource conflicts occur in these areas than on any other areas on the Forest.

Past abuse of many of these areas from livestock grazing, mining, logging, and roading have caused gullies, lowered water tables, unstable streambanks and a change to subclimax vegetative cover. Through improved management, many are

in better condition, but continued improvement could be realized. Riparian areas are preferred grazing and camping areas. They also contain many cultural and historic sites. Threatened and endangered species of plants and animals are often in these areas.

Past and present impacts have reduced water quality, reduced fish habitat by increasing sediments, reduced shading, and reduced wildlife habitat.

Resolution of this issue will determine: 1) degree of improving knowledge and capability for managing riparian ecosystems; 2) development of specific standards, guidelines, goals and objectives for management; and 3) controlling levels of competing resource uses.

Major groups affected are ranchers, Fish and Game agencies, hunters, recreationists, fishermen, miners, and off-road vehicle users.

PLANNING PROBLEM #3 WILDLIFE AND FISHERIES MANAGEMENT

To what level will the Forest manage for wildlife, fish, and Threatened and Endangered species habitat?

The vegetative and topographic diversity on the Forest provides habitat for many species of wildlife. There are also numerous species of fish in the stream and lakes of the Forest. Streams of the Salmon River drainage provide important spawning and rearing habitat for anadromous fish. This habitat historically provided steelhead and salmon for the Columbia Basin and ocean sport and commerical fisheries.

Remnant populations of the gray wolf, a threatened and endangered species, use small portions of the Forest. Several hundred thousand acres of the Forest may be considered as important recovery habitat for this species.

The public agrees that huntable and fishable populations of wildlife should be maintained or increased. The disagreements are about the desired level of those populations. Many people want improved wildlife and fish habitat and favor wildlife and fish over other uses like livestock grazing, timber harvest, ORV use and mining. There is a lot of public emphasis on the improvement and enhancement of anadromous fish habitat. Many people also want all new timber and mining roads closed. There is also a concern about the Forest Service's ability to properly manage wildlife and fish habitat within wilderness.

There is an increasing interest by the public for more recognition of nongame and small game habitat management.

The State Fish and Game manages the consumptive fish and wildlife, the U.S. Fish and Wildlife Service is responsible for the protection and enhancement of T&E species, and the Forest Service and the adjacent Bureau of Land Management manage the habitat. Therefore it is essential to have close cooperation between these agencies to coordinate objectives and management.

Resolution of this issue will provide direction for the management of fish and wildlife habitat necessary to meet the coordinated objectives of the concerned State and Federal agencies and other resource objectives.

Major groups affected by this issue are Fish and Game agencies, hunters, fishermen, ranchers, and wildlife advocates.

PLANNING PROBLEM #4 FIREWOOD MANAGEMENT

What level of firewood will the Forest manage for to meet local demand?

With the rapid increases in cost for electricity and petroleum products, coupled with projected shortages, the demand for fuelwood is expected to increase. The demand has increased 400 percent over the past three years. People are concerned that good firewood is harder to obtain. Many people feel that better access should be provided specifically for firewood. Other factors in this issue include the types of firewood regulations, firewood conflicts with other resource objectives, and the amount of information that should be provided.

Some areas with significant amounts of dead trees exist but are inaccessible by road. There is a concern that the priority for easily accessed fuelwood areas should be for personal, rather than commercial use. There are also many areas of small diameter decadent conifer stands that are not feasible to log, but could provide a long term source of firewood. It is not known whether the public would take green wood, which is much heavier and must be split and cured at least one year before use.

Resolution of this issue will be to give direction for establishing a future fuelwood program, and a policy for personal versus commercial use.

The major group affected by this issue are local families that heat with firewood.

PLANNING PROBLEM #5 MINERALS MANAGEMENT

To what degree will the Forest continue to allow for exploration and development of the mineral resource; and to what degree should the Forest provide for the opportunity for oil and gas leasing?

Mineral discoveries in the 1860s brought about the early development of Custer County. Several towns in the area were developed and later abandoned to become ghost towns as economics of gold and silver mining changed over the years. Prospecting for locatable and leasable minerals on the Challis National Forest has intensified in recent years due to increasing mineral values. Critical and strategic minerals are known to exist in the highly mineralized zone that underlies much of the Forest. The east half of the Forest is in the overthrust belt. Most of this area is covered with leases or lease applications for oil and gas.

Many of the locatable minerals lie adjacent to or partially within the Frank Church--River of No Return Wilderness. Exploration and extraction activities were limited through the Frank Church--River of No Return Wilderness legislation. Wilderness designation of yet unclassified roadless areas could significantly conflict with proposed and future mineral activities. Mineral activities have historically incurred significant impacts on other resource values, wilderness included.

The statutory right to explore for and extract mineral deposits within the Forest and the extent of mitigation which can reasonably be required sometimes causes significant concerns. Mitigation and bonding requirements must be uniform. There is a need for uniform direction to the Forest for recommending issuance of mineral leases within the Forest's jurisdiction.

The main public areas of concern are:

.providing adequate coordination with and mitigation of impacts on other resources

.insuring mining operations are in compliance with approved operating plans

.providing necessary monitoring of operations to determine impact on potentially affected resources

.providing reasonable necessary access as required by law

.requiring reasonable surface reclamation of disturbed sites

.requiring large enough bonds to cover reclamation costs

.the Forest's ability to adequately evaluate potential mineral and energy resources of an area

.providing for existing rights in Wilderness

.coordinating with State and other Federal agencies on approval of operating plans and leases

Resolution of this issue will address the mineral and oil and gas potential of the various management areas. It will identify the areas that will be suitable for oil and gas leasing with applicable stipulations. It will provide direction for mitigation, compliance, monitoring, reclamation, bonding, and coordination with other agencies.

Major groups affected will be the oil and gas companies, miners, and wilderness advocates.

PLANNING PROBLEM #6 MOTORIZED VEHICLE MANAGEMENT

How will Off-Road Vehicle (ORV) use be managed, including roads and trails proposed for closure?

The management of off-road vehicles, on both roads and trails, has been a persistent issue on the Challis National Forest and throughout the Intermountain Region. User groups have organized on both sides of this issue. Of the 2.5 million acres on the Challis, 782,255 acres are closed to off-road vehicles because of wilderness designation. Another 450,000 acres have restrictions on ORV use. The impacts of off-road vehicles need to be addressed in the planning of the areas with and without restrictions. Impacts center around wildlife disturbance, soil erosion and lowered water quality, conflicts with non-motorized recreation, and lack of enforcement of ORV closures. There is a demand for off-road motorized recreation on the Forest.

Resolution of this issue will establish how much of the Forest should be available to ORV use and to address management of vehicles in non-roaded areas and on roads closed in order to protect other resources.

Major groups affected will be dispersed recreationists (hikers, motorcyclists, backpackers) and 4-wheel drive users.

PLANNING PROBLEM #7 ROAD, TRAIL, AND FACILITIES MANAGEMENT

To what degree are additional roads, trails, and recreational facilities planned for?

Road and trail systems on the Forest are deteriorating faster than our ability to maintain and protect these investments. Resource damage and safety hazards are increasing, reducing the public's willingness to use the facilities. Several of these facilities cross private or other public lands, and are not covered by legal rights-of-way.

The arterial and collector road system is adequate for the immediate future. New local roads will be needed primarily for timber, firewood and mining purposes. The majority of the public wants new roads built as "minimum standard" roads that will be closed to public use after their intended use is completed. These closures need to be better enforced than in the past.

Recreation facilities are not receiving sufficient maintenance to protect investments. Conditions of the developed sites are deteriorating. Water and sanitation systems which do not meet public health standards are being closed. Some publics want the developed sites reconstructed and maintained.

Resolution of this issue will identify road, trail, and facility needs, and desired levels of maintenance.

Major groups affected are ORV users, non-motorized dispersed recreationists, hunters, and developed recreationists.

PLANNING PROBLEM #8 SOIL PRODUCTIVITY, WATER QUALITY, AND INSTREAM FLOW MANAGEMENT

To what degree will the Forest maintain soil productivity, water quality, and instream flow?

The demand for water originating on the Forest is growing. These demands have not exceeded the annual Forest water yield of 2.4 million acre feet. With increased demands on the water resource, it is increasingly important to identify Forest water needs and maintain the quantity and quality of the water leaving the Forest. Priorities will have to be established for filing for Forest water uses and needs.

A program was initiated in 1977 to assess the effects of mining, grazing, recreation, and timber activities on water quality. Problem areas are identified through a Watershed Improvement Needs Inventory. Priority restoration projects will be implemented when funding is provided. Historically, funding for these projects has been limited.

Soil productivity relates primarily to erosion from mining and system roads, proposed and existing timber sales, and grazing allotments. The issue was raised because of the erosive soil types found on the Forest and the difficulty of reestablishing vegetation on steep slopes.

The Forest has one municipal watershed which provides the culinary water for the City of Challis.

Roads, mining activity and livestock grazing individually and collectively can have an adverse impact on soil productivity and water quality without proper mitigation and management.

Water rights for water originating on the Forest are issued by the State, requiring close coordination. The present management program is capable of meeting State water quality standards. Increased monitoring will be needed as activities such as mining increase. Very little soils inventorying or monitoring has been done on the Forest.

Resolution of this issue will require identifying levels and amounts of soil inventories needed, identifying water quality and soil productivity monitoring needed, identifying instream flow needs, and providing management direction for the watersheds.

Major groups affected are ranchers, City of Challis, miners, and fishermen.

PLANNING PROBLEM #9 TIMBER MANAGEMENT

What level of timber harvest will be met by the Forest, and will it meet the needs of locally dependent mills?

There is a growing controversy over timber harvest on the Forest, especially in roadless areas. The environmental coalition and others feel the timber stands on the Forest are of low quality, uneconomical to harvest and cannot be regenerated. The timber industry maintains the timber is of commercial quality and should be included in the long term timber base, thereby maintaining the regional timber industry. Although the Forest has not supplied substantial volumes to large regional mills, Challis timber may be relied upon in the future as a source, when volumes shrink on surrounding Forests or logging techniques and lumber market conditions improve.

The Forest has 340,608 acres of Forest classified as tentatively suitable commercial timber lands. Most of the stands are on low productivity sites. The majority of timber is overmature with over one-half being greater than 150 years old. Many of these overmature stands are small diameter (10 inches or less) trees. Overall growth rate of the commercial base is declining. Approximately 60 percent of the stands are on slopes greater than 45 percent. Over 40 percent of the stands are infested with dwarf mistletoe and/or spruce budworm. At present budget and harvest levels, the Forest is not providing any significant level of control on these pests. The most effective control is clearcutting and attempts to regenerate disease free stands. However, successful regeneration of Douglas-fir can be obtained by removing only a part of the tree canopy at one time. This exposes the regeneration to dwarf mistletoe until final harvest is made. Clearcutting may also conflict with other multiple use objectives, such as wildlife and scenic quality. Lodgepole pine stands can be cut in small clearcuts.

Historically, timber sales harvested larger diameter Douglas-fir on the more accessible areas where tractor/jammers could operate. The volumes harvested declined from 15 million board feet per year in 1970 to 3 million board feet in 1984. The more accessible areas were cut over first. Current sales contain moderate amounts of lodgepole pine and other species small diameter timber.

Challis' locally dependent mills are small business firms wanting 200 thousand to 1 million board foot sales that have gentle slopes capable of being logged with tractor/jammer methods. These mills cut dimension lumber and cannot efficiently handle large quantities of small diameter logs. The current sale level of 3 MMBF meets the local demand.

Regional mills within 60-100 miles from the Forest are interested in larger volume sales. These companies have cable and helicopter logging capabilities which are necessary on steeper slopes. To date there has not been a feasible cable logging sale developed on the Forest. One small helicopter sale was sold in conjunction with a large adjacent sale on the Salmon National Forest but was not logged. All sales have been logged by tractor/jammer methods.

Roading costs, even for minimum standard roads, are a significant problem on the Forest. These costs, along with logging production costs, are so high in many areas that they have made timber harvesting uneconomical. This problem is aggravated by the small size, low quality, scattered nature of the harvestable timber. Lower dollar value, therefore, exists for timber growing on the Challis National Forest. In addition, tradeoffs with other resources like soils, water, wildlife and visuals must be considered.

There is limited availability of good post and pole, or house log stands on the Forest. With the recent population increase in Challis, there is an increasing local demand for firewood and Christmas trees. Volumes of firewood harvested presently exceeds the sawtimber sale volumes.

Resolution of this issue will provide for a reasonable and economic harvest level to support the local timber industry and contributes some to the regional supply.

Major groups affected are the local timber industry, firewood gatherers, hikers, and backpackers.

PLANNING PROBLEM #10 FIRE MANAGEMENT

What level of fire protection (acres burned) would occur and what degree of prescribed fire would be used for resource management needs?

The Challis National Forest consists of a combination of topography and fuels that are conducive to large fires even during normal summers. There are many acres of decadent old growth conifer stands with a lot of dead and dying trees. There is also a lot of deadwood ground fuels. These conifer stands are surrounded or intermingled with sagebrush-grass (flash fuels). More than half of the areas are very steep. Access to most of the Forest is extremely limited. Successful suppression of fires is primarily dependent on aircraft, usually helicopters, and, therefore, is very expensive. For example, the man caused Mortar Creek Fire burned 65,300 acres and cost 5 1/2 million dollars to

suppress. The public is concerned about the high cost of suppression. Many favor a "let burn" policy in Wilderness and in timber stands that are noncommercial or that are too costly to harvest in order to improve species diversity and create wildlife habitat.

Historically, lightning caused fires are twice as frequent as man caused fires; however, man caused fires account for 95 percent of the acreage burned by wildfires.

Early detection and quick initial attack is essential to keep suppression costs low. The five lookouts that help provide early detection could be replaced.

There is a potential to regenerate decadent conifer stands, reduce heavy fuels, aid in insect and disease control, and enhance wildlife habitat through the use of prescribed fire. Fire management planning needs to be initiated and prescriptions established so extensive prescribed fire can be used. Presently, the Forest Service is prohibited from igniting prescribed fires in Wilderness.

Resolution of this issue will set the policy for prescribed burns and the level of detection and suppression activities necessary.

Major groups affected are wilderness users, ranchers, local home owners, and firefighting agencies.

PLANNING PROBLEM #11 RANGELAND MANAGEMENT

To what levels will grazing be managed in relation to maintaining the locally dependent ranching community?

The Challis National Forest has historically provided a source of summer forage for many local livestock operations. Presently there are 182 grazing permits issued to area ranchers for 20,000 cattle and 17,000 sheep. Most of these operations are small ranches that depend on National Forest system lands to provide summer grazing for their livestock. Elimination of or a drastic curtailing this grazing use would put many ranchers out of business. These ranches provide much of the stable economic base for the local communities.

There are both real and perceived conflicts between livestock and other resources and uses. Most local residents favor providing levels of livestock use to maintain local ranching ecomomy. Others feel that livestock grazing should be reduced to favor wildlife, fisheries and recreation. One of the most intense current issues is livestock impacts on riparian vegetation and the effects it has on fisheries, wildlife, soil and water, and recreation (see Planning Problem #2).

The ranchers are very concerned about how the inclusion of their allotments in recommended wilderness areas will effect continued use. There is also a concern from others that continued livestock use in recommended wilderness areas could degrade wilderness values.

Most of the livestock also graze on BLM land before and after the time they are on the Forest. This requires continual coordination with the BLM. In some areas, the agencies have combined their allotments to establish more

efficient joint management. The Stewardship Program has enhanced this coordinated management by allowing the permittees to take more responsibility for proper management of their grazing allotments.

Resolution of this issue will require identifying stocking levels for domestic livestock that will maintain local dependent community stability and reduce conflicts with other resources.

Major groups affected are ranchers, recreationists, wildlife advocates, and the local BLM agency.

PLANNING PROBLEM #12 RECREATION MANAGEMENT

Can the Forest meet the expected demand for recreation?

The Challis National Forest offers a wide variety of recreational opportunities such as camping, picnicking, hiking, hunting, fishing, white water rafting, winter sports and historical interpretive sites. Recreation use increased an average of 8 percent per year from 1973-1981.

Currently, the Custer Museum is operated primarily by volunteers supervised by the Forest Service. The Yankee Fork Dredge is administrated by the Yankee Fork Gold Dredge Interpretive Association. Use of these historic sites has been increasing by more than 10 percent per year.

The Forest administers 782,255 acres of the Frank Church--River of No Return Wilderness, plus 1,376,450 acres of roadless areas. Most of these roadless areas have relatively high wilderness values.

The Middle Fork of the Salmon Wild and Scenic River is recognized nationally as a white water river. The current use, controlled by permits, is near maximum allowable levels. It is one of the top recreation management priorities on the Forest, and is costly to administer compared to other recreation programs.

There are 38 campgrounds and 1600 miles of trails on the Forest. Two trails are included in the National Recreation Trail System.

The public would like additional campgrounds in the vicinity of Challis to meet the demands of the recent population increase, and better sanitation facilities in the heavily used dispersed areas. They have also expressed that existing campgrounds should remain open and be adequately maintained. There is both support and opposition to the campground fee system. There is support to protect the Middle Fork, but many feel it should not be given priority over other Forest recreation. Some want more trails open to motorcycles. Others want better management of off-road vehicle use (see Planning Problem #6). Trailhead facilities are needed. There is concern about the Forest's ability to manage recreation use in wilderness and to adequately monitor recreation use impacts. There is also a concern about the effects more wilderness designation will have on the non-wilderness dispersed recreation use.

Resolution of this issue will determine the management direction and allocation of funds for the management of the Middle Fork Wild and Scenic River, wilderness, other recreation, monitoring non-wilderness dispersed recreation, and ORVs.

Major groups affected by this issue are picnickers, campers, hikers, fishermen, rafters, winter sport enthusiasts, and visitors to historical interpretive sites.

PLANNING PROBLEM #13 WILDERNESS ADDITIONS

Which roadless areas should be recommended to Congress for wilderness designation?

The Challis National Forest has 1,392,135 acres of roadless areas which are being evaluated for wilderness. These areas currently support numerous resource uses and values. To answer this planning problem requires addressing issues such as resource tradeoffs, social and economic impacts, wilderness quality and the need for wilderness. Of these, need may be the most difficult to determine. There is no consensus among the Forest's publics about how to evaluate or even define the need for wilderness. Segments of the public are looking at need from a National, State or local perspective.

The recommendation of roadless areas for wilderness classification by the Forest is highly controversial. Any proposal for designation can be expected to receive opposition from significant factions of the Forest's publics. The Forest's role is to make recommendations for wilderness designation based on wilderness characteristics, activities and public need. The controversy will continue until Congressional action occurs. The major part of the controversy over wilderness will continue to be political, making resolution of Forest proposals unpredictable.

The primary issues the public are concerned about are:

.the cost of wilderness management

.maintaining commodity outputs that will meet the needs of local dependent industries and in turn maintain the local economy

.changes in diversity of the local economic base

.effects on private inholdings and adjacent private lands

.additional restrictions imposed on user groups and activities

.the Forest's ability to manage areas and boundaries

.the need for more wilderness

.the need for keeping lands in a non-wilderness status.

Resolution of this issue will be to recommend the highest quality areas for wilderness, and try to find a balance between the demands of the two opposing sides.

Major groups affected by this will be local and national wilderness advocates, local commodity users, and private land owners.

PLANNING PROBLEM #14 ROADLESS MANAGEMENT

What should be the management for roadless areas not selected for wilderness nor presently needed for commodity production?

Several large groups are not satisfied with only choices of wilderness or commodity development. While allocation to wilderness is not required for all roadless areas, neither is it acceptable to allocate them to development use with no assurance that values will be maintained to allow future assessment to meet changing needs. The Forest has the capability to allow for additional choices and development of intermediate management direction that will allow for diversity of uses while maintaining the area in an unroaded state.

Resolution of this will be to provide management direction for roadless areas that are not selected for wilderness and are not presently needed for commodity production.

Major groups affected are local and national persons desiring non-mechanized recreation experiences and local commodity users.

APPENDIX B.
DESCRIPTION OF THE ANALYSIS PROCESS

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I. INTRODUCTION

A. Planning Problem

The Forest Service is responsible for determining how best to manage National Forest System lands based on public desires and land capabilities. Public interest includes divergent viewpoints about the use of commodities such as timber, grazing, and minerals, and noncommodities such as wilderness, unroaded recreation, scenery, wildlife, old growth, and diversity. The Forest's major planning goal is to provide enough information to help decision makers determine which combination of goods, services, and land allocations will maximize net public benefit. The National Forest Management Act (NFMA) and the regulations developed under NFMA (36 CFR 219) provide the analytical framework to address this objective, and 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.

B. Planning Process

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. The NFMA regulations (36 CFR 219.12) describe a ten-step planning process to be used in the preparation of a Forest Plan. These steps are listed below for information:

1) Identification of Purpose and Need.
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.
10) Monitoring and evaluation.

Appendix B describes the analysis phase of this process including steps 3, 4, 5, and 6. The judgment 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 presented in the Proposed Forest Plan. A brief explanation of the planning steps are provided below:

Step 1: Identification of Purpose and Need:

Through public participation including contacts with other Federal agencies, State and local governments, and contacts with a local Indian tribe, the Forest interdisciplinary team identified public issues, management concerns, and resource opportunities. These were evaluated and recommended to the Forest Supervisor who determined which were the major public issues, management concerns, and resource opportunities that would be addressed in the planning process.

Step 2: Development of Planning Criteria:

Based on the selected issues, concerns, and opportunities, the Forest Management Team developed criteria to direct the collection and use of inventory data, analysis of the management situation, and the design, formulation, and evaluation of alternatives.

Step 3. Inventory Data and Information Collection

The interdisciplinary team determined what data was necessary based on the identified issues, concerns and opportunities.. Most data requirements fit into one of the following categories. resource capabilities, existing supply and demand, expected outputs, benefits, and costs. Existing data was used whenever possible but was supplemented with new data to help resolve sensitive issues and/or management concerns. Data is on file in the Forest Supervisor's Office.

Step 4. Analysis of the Management Situation:

This analysis examines resource supply and market conditions and determines suitability and feasibility for resolving issues. A land allocation model (FORPLAN-Version II) was used to assist in addressing a number of specific requirements, including benchmarks. Requirements include: (a) the projection of the Forest's current management program; (b) determining the Forest's ability to produce a range of goods and services from minimum management to maximum production; (c) evaluating the feasibility of reaching the national production goals (RPA targets) and social demands identified as issues and concerns, and (d) identifying monetary benchmarks which estimate the output mix which maximizes present net value (or minimizes the cost) of resources having an established market or assigned value and meeting other departure analysis requirements. The analysis of the management situation document is on file in the Forest Supervisor's Office.

Step 5. Formulation of Alternatives:

The AMS (Step 4) sets the stage for developing a range of alternative management plans for the Forest. This range of alternatives is within the resource capability parameters established in the benchmarks in the AMS. Public issues, management concerns and opportunities are reflected in the formulation of alternatives as well as several specific alternative requirements:

(a) alternatives were formulated to reflect a range of resource outputs and expenditure levels. The range of resource outputs, however, was restricted by their maximum and minimum potentials as determined by benchmark analysis;

(b) all alternatives were formulated to facilitate analysis of opportunity costs, environmental tradeoffs, and the effects on present net value, benefits and costs;

(c) alternatives were formulated to provide different ways to address major public issues, management concerns, and resource opportunities identified during the planning process. Also reasonable alternatives which may require a change in existing law or policy were considered;

(d) The RPA Program tentative resource objectives for the Challis National Forest were included in an alternative;

(e) each alternative was formulated so as to be the most cost efficient combination of management prescriptions examined to meet the objectives of the alternative;

(f) the current program projected through time would be used to display costs and benefits of no change, this is the No Action alternative;

(g) the current budget was used to determine the flow of goods and services under a constant budget at current levels;

(h) each area inventoried as a part of the roadless area re-evaluation would be displayed as wilderness in at least one alternative;

(i) a reduced budget alternative was developed to display the costs, the benefits, and the flow of goods and services which could be provided if the budget were held to 75 percent of current;

(j) other alternatives were included to emphasize commodity production and amenity (non-market) production.

Step 6. Estimation of Effects of Alternatives:

The physical, biological, economic and social effects of each alternative were estimated and analyzed to determine how each responds to the range of goals and objectives assigned by the RPA program. FORPLAN was used to estimate some of the economic and physical output effects while other methods were used for estimating the remaining effects. The analysis included: (a) direct effects; (b) indirect effects; (c) conflict with other Federal, State, local, and indian tribe land use plans; (d) other environmental effects; (e) energy requirements and conservation potential; (f) natural or depletable resource requirements and conservation potentia; (g) historic and cultural resources; and (h) means of mitigation.

Step 7: Evaluation of Alternatives:

Using the previously selected planning criteria, the interdisciplinary team evaluated the significant physical, biological, economic, and social effects of each of the eleven alternatives considered in detail. The evaluation was based on a comparative analysis of the Forest-wide effects of the management alternatives including present net value, social and economic effects, outputs of goods and service, and overall condition of environmental resources. The analysis was done in a systematic manner that documented each step of the evaluation.

Step 8: Preferred Alternative Recommendation·

Using the evaluation described in the previous step, the Forest Supervisor recommended a preferred alternative to the Regional Forester. This preferred alternative is identified in Chapter II of this Environmental Impact Statement, and is displayed as the proposed plan which accompanies this EIS.

Step 9: Plan Approval:

After the issuance of the Final Environmental Impact Statement, the Regional Forester shall review the proposed plan and the Final Environmental Impact Statement and shall either approve or disapprove the plan in accordance with 36 CFR 219.10(c). In the case of plan approval, a Record of Decision will be issued in accordance with NEPA procedures (40 CFR 1505.2). In addition to the NEPA procedures, the Record of Decision shall include a summarized comparison of the selected alternative with 1) any environmentally preferred alternatives and 2) any other alternatives with a higher present net value.

Step 10: Monitoring and Evaluation:

At intervals established in the plan, implementation will be evaluated on a sample basis to determine how well the objectives of the plan are being met and how closely management standards and guidelines are being followed. Based upon this evaluation the interdisciplinary team will recommend to the Forest Supervisor such changes in management direction, revisions, or amendment to the Forest Plan as are deemed necessary. The monitoring plan, which includes 1) the actions, effects, or resources to be monitored, 2) the frequency of measurement, 3) the expected precision and reliability of the monitoring process, 4) the time when the evaluation will be reported, and 5) the allowable limits of variation, is included in Chapter V of the proposed Forest Plan.

II. DOCUMENTATION OF ANALYTICAL TOOLS

A. FORPLAN Resource Allocation Model

1. General Description

FORPLAN (short for FORest PLANning model) was the Linear Programing (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 programing is a mathematical optimization technique which seeks to assign values to decision variables in such a way as to simultaneously satisfy a set of linear constraints and

maximize or minimize a linear objective function. Linear programing has been applied to a diverse set of problems involving the allocation of scarce resources in an optimal manner. In the Forest Plan 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.

a. Analysis Areas: As formulated, analysis areas represent both contiguous or noncontiguous areas of land. Noncontiguous analysis areas are generally representative of scattered areas of land possessing similar characteristics such as site productivity, cover type, degree of access, 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.

Contiguous analysis areas represent logical management units such as roadless areas or logical transportation access areas. Allocation of these areas to a specific management emphasis as represented by management prescriptions is usually on an "all or nothing" basis, which means the analysis area must be allocated to one, and only one, type of management.

In the model, analysis areas form the basic units on which management decisions are made. A hierarchy of analysis area identifiers categorize these land units and provide 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.

b. Management Prescriptions: 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 production for jointly produced outputs. Many distinct land areas and periods of production are included in the modeled choices. These choices are represented in terms of the timing and location of activities required to produce resource outputs.

c. Activities: Activities represent active or passive management of the land. Further, activities incur costs, hence, represent choices for the use of capital outlays. Activities may be specific, such as: burning one acre of sagebrush or clearcutting an acre of lodgepole pine sawtimber. Alternatively, activities may be general, such as: general administrative expense of the Forest under Alternative X or building a road system into a previously unroaded drainage. Associated with each activity or set of activities is a set of standard and guidelines.

d. Outputs and Environmental Effects: Outputs and environmental effects result from, the activities modeled. Generally, as more money is applied to a group of activities, more outputs are produced from the land. Qualitative criteria are also included in the model; hence, there may be exceptions to the above generalization. Outputs may be priced directly in the model or may be included without prices where estimation of price is not practical. Environmental effects included in the model represent differences in quality and will typically be represented through the use of constraints.

e. Constraints: Constraints are used to ensure that the assignment of prescriptions to analysis areas 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 (exceptions include departure alternatives). The fourth category completes the identification of the production choices for a particular alternative. Identification of the production choices and an objective function are sufficient conditions for the FORPLAN model to achieve an efficient assignment of prescriptions to analysis areas.

f. Objective Function: The objective function guides the linear programing 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. Constraints in modeling must always be satisfied. The objective function will never locate solutions which do not meet the constraints specified for outputs and environmental effects (whether or not they are priced). For this reason, it is desirable to consider marginal changes in solutions as constraint sets are adjusted. Analysis of these marginal changes (sensitivity analysis) is quite expensive, given the scope of the Forest planning problem, and will be performed only where a major issue or concern suggests that the benefits from the additional analysis will outweigh the costs.

2. Analysis Process and Analytical Tools

a. Analysis Prior to FORPLAN: Analysis conducted prior to FORPLAN modeling included items described throughout Section II such as: stratification of the Forest into capability and analysis areas; design or development of management prescription to fit all analysis areas; projecting cost and benefits for practices included in the management prescriptions, predicting levels for the various outputs for each resource and

prescription, and determining the linkage between the various outputs, commonly called "joint production functions."

An example of the "joint production function" or linkage between resource outputs in the relationshbip that exists between harvesting an acre of Douglas-fir that has an effect on sediment production which in turn effects coldwater or anadromous fisheries. The activity will also have an effect on firewood gathers and wildlife populations.

Major assumptions used in the above analysis include:

1. Activities will meet Minimum Management Requirements (Appendix B.IV.B.);
2. Activities will conform to standard and guidelines;
3. Riparian areas will receive special emphasis and protection;
4. Activities in commercial conifer analysis areas for wildlife and livestock would not require vegetative removal except through commercial timber sales;
5. Coordination through interdisciplinary team analysis and action will be necessary to mitigate adverse effect for most activities that modify environment conditions;
6. Range use is near Forest capacity, still having some room for expansion;
7. Total recreation opportunity supplies exceeds present and predicted demand for the 50 year planning horizon;
8. Short term timber supply presently exceeds local and regional demand;
9. Areas selected for Wilderness Management in any alternative will not be leased for oil and gas exploration and production.

b. FORPLAN Analysis: The FORPLAN model was used to determine the optimal management prescription and scheduling to each management area within each alternative. A management area (or Coordinated Allocation Zone) is a collection of analysis areas. These areas, for example, may receive the intensive grazing prescription. Not all of the acres within the area would undergo vegetative manipulation since many acres may be steep sites not suitable for livestock production. The designation only allows so much vegetative manipulation (for example). The budget may preclude the allowed area from being treated. If the zone receives a wilderness prescription then no vegetative manipulation would be allowed. This process resulted in the selection of the most cost-efficient prescriptions that meet a given set of limits (constraints) and objective function of maximizing present net value.

c. Analysis Done Outside the FORPLAN Model: The final estimations of Recreation Opportunity Spectrum (ROS) class acreages, visual quality effects, socio-economic effects, and water quality estimates were modeled outside of FORPLAN. In most cases, the FORPLAN results were used as an integral part of the final estimates. For example, FORPLAN contains estimates of

additional roading necessary to implement any alternative. Adjustments of ROS classes were made from the roading information to recalculate the ROS class acreages.

During the Alternative Analysis process, some adjustments were made by the Analysis Team to the final FORPLAN runs in an attempt to increase economic efficiency. The adjustments and rationale for these changes follow:

Alternative 1 - No Action

1. Lowered the Minerals budget because:

   a. Budget is $110,000 over FY-85. Does not reflect FY-82. Assumptions that lead to inflated Minerals figures (sustained high gold prices and 1000's of claimants) are no longer valid.

   b. Soil and Water program needs strengthening to respond minimally to the program.

2. Raised Soil and Water to meet projected outputs and be consistent with thrust of Alternative 1.

3. Road construction/reconstruction was lowered in first decade, but increased in third decade to meet overall outputs. Originally decreased in the first decade to help offset increases because we have to live with the total Forest budget amount.

4. Fire budget was increased to reflect FY-82 dollars; $480 M was a 1980 figure.

5. Property boundary location budget was increased to meet output.

6. Road maintenance budget was decreased to offset other resource increases (seemed inflated).

Alternative 2 - Market

1. Increased Range budget in second through fifth decades to sustain increased AUMs.

Alternative 3 - Non-market Roll-over

1. Increased Wildlife, Fish, Soil and Water to be more consistent with alternative description (amenity emphasis).

2. Increased the Fire budget to FY-82 level dollars.

3. Decreased road construction/reconstruction to be more reasonable and manageable.

4. Increased the Range budget in the second through fifth decades to sustain AUMs.

Alternative 4 - RPA 80

1. Increased the Fire budget to FY-82 level dollars.

2) Soil and Water budget was increased to reflect thrust in RPA 80 document.

3) Range and Wildlife budget was increased to match RPA 80 outputs.

Alternative 5 - I.C.O.

1) Increased the Fire budget to FY-82 level dollars.

2) Increased the Range budget in second through fifth decades to sustain increased AUMs.

Alternative 6 - Constrained (-25%) Budget

1) Soil and Water increased to reflect (-25%) instead of 50%.

2) Minerals reduced to constrained level ($263,000 higher than FY-85).

3) Facility Maintenance increased to show need to protect investments.

Alternative 7 - Current Budget

1) Needed to reduce the total Forest dollars by $270,000 (Model too high), so Minerals, LMP, roads constructions/reconstruction, road planning/maintenance, and GA (tried to "match" No Action) were reduced.

2) Increased the Fire budget to FY-82 level dollars.

3) Increased the Soil and Water budget to match Alternative 1.

Alternative 8 - Maximize Wilderness, Amenity Emphasis

No Change.

Alternative 9 - High Wilderness/Market

1) Increased the Fire budget to FY-82 level dollars.

Alternative 10 - Current Unconstrained

1) Increased the Fire budget to FY-82 level dollars.

2) Increased the Wildlife budget to provide variation in range of alternatives.

3) Increased the Range budget to sustain AUM outputs.

4) Decreased the Mineral budget because output was attainable with less funding.

5) Increased the road maintenance budget to include Road Planning.

Alternative 11 - RPA 80 Modified

1) Increased the Fire budget to FY'82 level dollars.

2) Decreased road construction/reconstruction budget during first two decades and spread over last three decades.

3) Increased Recreation budget to improve operations and maintenance.

4) Increased Timber budget for increased interdisciplinary support.

5) Small budget decreases were made in General Administration, Range, and Minerals.

6) Small budget increases were made in Soil & Water, road maintenance, wildlife and lands.

3. Inventory Data and Data Collection

a. Forest Stratification: To meet the site specific requirements of Forest Planning, the land base had to be stratified into areas with similar responses to a given management practice. To do this, an interdisciplinary team identified stratification criteria. The resulting factors used were: 1) political (e.g., Districts, wilderness), 2) watershed boundaries, 3) roadless area boundaries, 4) vegetative types, 5) slope groups and 6) roading cost groups. Forest personnel then mapped the Forest using 7 1/2 minute U.S.G.S. Orthophoto Quad Maps and the criteria developed above. Ten acres was the smallest unit of mapping.

b. Capability Areas: FSM 1922.21a stated in part "A capability area is an identifiable, locatable, contiguous area of land whose inherent characteristics dictate that the responses or effects of management will be relatively the same for all acres within that area...".

On the Challis National Forest, we defined capability areas as a unique description of major vegetative communities by slope group, and type and size class of timber stands. The Forest is made up of several thousand capability areas. Each of these areas were originally classified by County, Ranger District, Roadless Area, Management Area, slope, timber type, and natural hazard.

c. Analysis Areas: The NFMA regulations recognized that both the number and detail of capability areas would be difficult to plan for. Thus, the Analysis Area (AA) was created. By definition AA's can be noncontiguous and can be made up of portions of one or more capability areas. Capability areas were grouped into analysis areas with the intent to:

1) Simplify the data base.
2) Resolve issues or management concerns.
3) Retain homogeneous units with respect to prescriptions applied (inputs) and resources produced, costs, benefits, and environmental effects (outputs).
4) Make Analysis Areas locatable on the ground at least by District boundaries, to make the Plan easier to implement.
5) Give sensible answers. That is, the grouping should consider such factors as minimum manageable size standards as well as provide for a logical grouping of AA's into Management Areas.

Analysis Areas on the Challis are aggregations of acres, not necessarily contiguous, which are similar with respect to costs and outputs. Characteristics used to define analysis areas include timber type and age, class, slope, mass instability, road cost group, which Management Area it was located in, and whether or not it was located in a proposed roadless area. Each analysis area is made up of six level identifiers. They are:

LEVEL	NAME
1	Roadless Area
2	FC--RONR Wilderness & Corridors
3	Road Group
4	Sediment Groups
5	Slope
6	Timber Types

An additional layer was added to the stratification of the Forest in order to incorporate some type of contiguous boundary for which one can better coordinate the allocation and/or scheduling of management prescriptions to analysis areas. These areas were input as Coordinated Allocation Zones (CAZs) in the Version II FORPLAN Model. Incorporating CAZs into the FORPLAN Model in this manner also allows representation of yield and cost information that is a function of the juxtaposition of management prescriptions over a broad area. See the following Section II.A.3.d. Analysis Area Stratifiers, for specific area characteristics.

Variables which affect costs and values related to analysis area characteristics within FORPLAN are:

1. Activities

ACTIVITY CODE	ACTIVITY	UNIT OF MEASURE
RNR	RNR:RNR WILDERNESS	$
A2DE	A2DE:DEV REC O&M	$
A3DE	A3DE:DEV REC INVEST	$
A2DI	A2DI:DIS REC O&M	$
A3DI	A3DI:DIS REC INVEST	$
B1OM	B1OM:WILDERNESS O&M	$
B1IN	B1IN:WILDERNESS INVEST	$
A2CR	A2CR:CULTURAL RESOURCES	$
C2	C2:FISH&WILDLIFE O&M	$
C3S	C3S:WILDLIFEINVEST STR	# STR
C3NS	C3NS:WILD.INVEST NON-STR	# ACRES
C3F	C3F:FISH INVEST	$
D2	D2:RANGE O&M	$
D3	D3:RANGE INVEST	$
F2	F2:SOIL&WATER MGMT.	$
F3	F3.SOIL&WATER INVEST	$
G1	G1:MINERALS MGMT OIL&GAS	$
G2	G2:MINERALS MGMT OTHER	$

HRP	HRP:HUMAN RESOURCES MGMT	PERSON YRS
J2	J2:LAND MGMT PLANNING	$
J3A	J3A:LAND OWNERSHIP MGMT	$
JOI	JOI:SPECIAL USE/NON REC	$
L3RD	L3RD:ROAD P/R?CONST	$
L2TP	L2TP:TRANS PLANNING	$
L2RM	L2RM:ROAD MAINT	MILES
L3FA	L3FA:FA&O P/R/CONST	$
L2FA	L2FA:FA&O MAINT	$
P2P3	P2P3:FIRE PROTECT/FUELS	$
T1	T1:GA	$
A2LE	A2LE:COOP LAW/LAW ENFORC	$
J06	J06:PROPERTY BOUNDARIES	$
P5	P5:PEST MGMT	$
STPV	STPV:STATE&PVT FORESTRY	$
E00	E00:TIMBER ADMIN&INVEN	$
07E	07E:SALE ADMIN EXIST	$
04E	04E:REFOREST KV EXIST	ACRES
05EK	05EK TSI KV EXIST	ACRES
05EP	05EP:TSI P&M EXIST	ACRES
03E	03E:COMPARTMENT EXAM	$
E02	E02:PREP&ADMIN RNDWOOD	$
FUEL	FUEL:FUELWOOD PROGRAM	$
444	444:SITEPREP & PLANT	ACRES
449	449:SITEPREP NAT REGEN	ACRES
E03	E03:SILVI EXAM & RX	ACRES
E06	E06:TIMBER SALE PREP	MCF
E07	E07:TIMBERHARVEST ADMIN	MCF
E08	E08:CONE COLLECTION	BUSHELS
P11	P11:BRUSH DISPOSAL	ACRES
D$TR	D&TR:DF PRO COSTS TRA.	MCF
L$TR	L$TR:LPP PRO COSTS TRA.	MCF
D$SK	D$SK:DF PRO COSTS SKY	MCF
L$SK	L$SK:LPP PRO COSTS SKY	MCF
TPRC	TPRC·TIM PURCH ROAD CST	MCF
PWRC	PWRC:PUB WORKS ROAD CST	MCF
L29	L29:TIM PURCH ROAD RECON	MCF
L29A	L29A:TIM PURCH ROAD RECO	MCF
MLE	MLE:MILES ROAD CONST	MILES

2. Outputs [1/]

OUTPUT CODE	OUTPUT/ENVIRONMENTAL EFFECT	UNIT OF MEASURE
W07	W07:DEV REC USE	RVD
W01	W01:DIS REC USE	RVD
W33	W33:WILDERNESS REC USE	RVD
MTG	MTG:MTN GOATS	GOATS
BHS	BHS:BIG HORN SHEEP	WILD SHEEP
ELK	ELK:ELK	ELK
DEER	DEER·DEER	DEER
W56	W56:ANAD FISH COMMERCIAL	# M LBS
W55	W55:ANAD FISH SPORT	WFUD
W58	W58:COLDWATER FISH	WFUD

W414	W414:WILDLIFE O&M&INVEST	WFUD
W71	W71:PERMITTED USE	AUM
W73	W73:WILD HORSE USE	AUM
X89	X89:IMPROVED WTRSHED	ACRES
LEAS	LEAS:OIL&GAS LEASES	LEASES
OPLN	OPLN:MINERAL OPER PLANS	PLANS
X08	X08:FUELWOOD HARVEST	MCF
X07	X07:ROUNDWOOD HARVEST	MCF
DF	DF:2-STAGE SHELTERWOOD	MCF
LPP	LPP:LODGEPOLE PINE	MCF
MBF	MBF:SAWTIMBER CONVERT	MBF
SAV	SAV:STAND AVE VOL	MCF
INV	INV:INVENTORY	MCF
SHAR	SHAR:HARVEST SEDIMENT	TONS
SMNT	SMNT:RD MAINT SEDIMENT	TONS

Sediment produced from timber harvest (SHAR:HARVEST SEDIMENT) includes harvesting activities and road construction/reconstruction needs necessary for harvest. Sediment produced from roads after harvesting is complete is contained in road maintenance sediment (SMNT:RD MAINT SEDIMENT).

1/ See section II.A.4 FORPLAN DATA BASE summary for a more detailed explanation.

Analysis Areas are also identified by individual roadless areas. Roaded areas are also identified in separate Analysis Areas. Several hundred analysis areas were identified and operate within the FORPLAN model.

d. Analysis Area Stratifiers

The seven basic stratifiers of Analysis Areas within the Challis National Forest FORPLAN Model are:

(1) COORDINATED ALLOCATION ZONES

Code	Description	Tentatively Suitable Acres
01	1-FC--RONR WILDERNESS	1
02	2-SEAFOAM	15,851
03	3-MARSH CREEK	36,771
04	4-VALLEY CREEK	8,215
05	5-BASIN CREEK	17,686
06	6-YANKEE FORK	47,304
07	7-EAST FORK	12,627
08	8-THOMPSON CREEK	9,086
09	9-SQUAW CREEK	20,671
10	10-BAYHORSE/KINNIKINIC	6,281
11	11-PIONEER MTNS	19,179
12	12-ARCO HILLS	2,266
13	13-GARDEN CREEK	4,022
14	14-SOUTH LEMHIS	13,891
15	15-SOUTH LOST RIVER RANGE	17,202
16	16-BORAH PEAK	12,134
17	17-PAHSIMEROI MTNS	8,619
18	18-MACKAY FRONT	8,418

19	19-NORTH PAHSIMEROI MTNS	965
20	20-NORTH LEMHIS	21,499
21	21-CHALLIS	49,971
22	22-SAWMILL CANYON	20,261
23	23-FURNACE CREEK	6,207
24	24-WILDERNESS CORRIDORS	1
25	25-ANTELOPE CREEK	4,282

(2) LEVEL 1: ROADLESS AREAS

Code	Name	Description
00	NA	NOT ROADLESS
01	CHALLI	004-CHALLIS CREEK
02	SQUAW	005-SQUAW CREEK
03	SPRING	006-SPRING BASIN
04	GREYLO	007-GREYLOCK
05	SEAFOA	009-SEAFOAM
06	GROUSE	010-GROUSE PEAK
07	PAHSIM	011-PAHSIMEROI MTNS
08	BORAH	012-BORAH PEAK
09	KING	013-KING MTN
10	JUMPOF	014-JUMPOFF MTN
11	PORLEH	017/018-PORPHYRY PEAK & LEHMAN BASIN
12	COPPER	019-COPPER BASIN
13	WARM	024-WARM CREEK
14	KNOBS	025-WHITE KNOBS
15	COLD	026-COLD SPRINGS
16	REDHIL	027-RED HILL
17	WOOD	028-WOOD CANYON
18	DIAMON	601-DIAMOND PEAK
19	CAMAS	901-CAMAS CREEK
20	TAYLOR	902-TAYLOR MTN
21	LEMHI	903-LEMHI RANGE
22	LOON	908-LOON CREEK
23	HANSON	915-HANSON LAKES
24	REDMTN	916-RED MOUNTAIN
25	CLOUDS	920-BOULDER-WHITE CLOUDS
26	PIONEE	921-PIONEER MTNS
27	PIORII	PART OF 921 PIONEER MTNS
28	RAILRD	922-RAILROAD RIDGE
29	BLUEBU	923-BLUE BUNCH MTN
1A	1428	014,026-MZ 12
1B	1127	011,027-MZ 19
1C	171825	017,018,025-MZ 18
1D	47908	004,007,908-MZ 6
1E	2526	025,026-MZ 25
1F	56A	005,006-MZ 9
1G	901902	901,902-MZ 21
1H	9ETAL	009,903,908,915,916,923-MZ 3
1I	56B	005,006-MZ 10
1J	903908	903,908-MZ 20
1K	4901	004,901-MZ 15

(3) LEVEL 2: FC--RONR WILDERNESS & CORRIDORS

Code	Name	Description
FW	FORWD	FW-FOREST WIDE
00	ALL	00-ALL
01	RNR	01-RNR
24	COR	24-COR

(4) LEVEL 3: ROAD GROUP

Code	Name	Description
R1	LOW	LOW COST WATERSHEDS:11,15,27
R2	MODLOW	MOD LOW COST WATERSHEDS:4,7,9,17,21
R3	MOD	MOD COST WATERSHEDS:2,6,10,23,12
R4	MODHI	MOD HIGH COST WATERSHEDS:3,13,14,16,22,24,19
R5	HIGH	HIGH COST WATERSHEDS:5,8,18,25,28
R6	EXPENS	EXPENSIVE WATERSHEDS:20,29,26

(5) LEVEL 4: SEDIMENT GROUPS

Code	Name	Description
S0	NONE	S0-NO SEDIMENT YIELDS TRACKED
S1	HIGH	S1-HIGH SEDIMENT YIELDS
S2	MODHI	S2-MODHIGH SEDIMENT YIELDS
S3	MOD	S3-MOD SEDIMENT YIELDS
S4	MODLOW	S4-MODLOW SEDIMENT YIELDS
S5	LOWA	S5-LOW SEDIMENT YIELDS 1/
S6	HIGHA	S6-HIGH SEDIMENT YIELDS
S7	LOWB	S7-LOW SEDIMENT YIELDS 1/
S8	LOWC	S8-LOW SEDIMENT YIELDS 1/
S9	LOWD	S9-LOW SEDIMENT YIELDS 1/

1/ These low sediment groups are used as a modeling strategy to 1) help identify which analysis areas the sediment is originating from and 2) to control amounts being generated. There are also two "High Sediment Yield" level identifiers.

(6) SLOPE

Code	Name	Description
4	45%	45% SLOPE
4	45%	45% SLOPE

(7) TIMBER TYPE

Code	Name	Description
DB	DF OLD	DOUGLAS-FIR AND OTHER TIMBER SPECIES; EXIST AGE=165 YEARS
DA	DF SAW	DOUGLAS-FIR AND OTHER TIMBER SPECIES;

		EXIST AGE=100 YEARS
D8	DF PPS	DOUGLAS-FIR ANDOTHER TIMBER SPECIES; EXIST AGE= 50 YEARS
D7	DF S/S	DOUGLAS-FIR AND OTHER TIMBER SPECIES: EXIST AGE= 15 YEARS
D6	DF NON	DOUGLAS-FIR AND OTHER TIMBER SPECIES; EXIST AGE= 00 YEARS
LB	LP OLD	LODGEPOLE PINE;EXIST AGE=165 YEARS
LA	LP SAW	LODGEPOLE PINE;EXIST AGE=100 YEARS
L8	LP PPS	LODGEPOLE PINE;EXIST AGE= 50 YEARS
L7	LP S/S	LODGEPOLE PINE;EXIST AGE= 15 YEARS
L6	LP NON	LODGEPOLE PINE;EXIST AGE= 00 YEARS
XX	OTHER	OTHER THAN TIMBER LANDS

e. Production Coefficients: Production coefficients were developed for each output that could be modeled in FORPLAN for each analysis area. Coefficients are based on the production capability of an acre or specified group of acres of land per year or decade. Sawtimber coefficients are based on the most recent timber inventory volume data of 1976. Other wood products coefficients were derived from the most recent years data which the Forest reports. Recreation Information Management reports provided values for recreational use. Sediment coefficients were developed from the R1-R4 Sediment Model. Range values were derived from the Forest's range analysis data. Wildlife coefficients relied heavily on information from the State Fish and Game. These are general examples of the data from which the primary coefficients were developed. Cost values were also developed from this data providing the most recent figures or nationwide costing averages where local Forest data was not reliable or available. Further detail on these production coefficients and others used are available and on file at the Challis National Forest.

f. Suitability of Lands for Specified Management Activities:

Wilderness

Suitability of Forest lands for specific management activities have been identified by a variety of interdisciplinary teams over the last several years. The Forest has 782,255 acres designated and dedicated to Wilderness Management in the Frank Church--River of No Return Wilderness. In addition to this, there are twenty-eight roadless areas which comprise 1,390,135 acres which are available for wilderness classification. We, therefore, have approximately 86 percent of the Forest in or available for Wilderness Management.

Approximately 1.7 million acres are available for oil and gas leasing or locatable minerals claims. The Challis' portion of the Frank Church--River of No Return Wilderness was legislatively closed on January 1, 1984, to further oil, gas, and mineral leases or claims while recognizing approximately 18,000 acres under pre-existing claims.

Timber

Three hundred forty-one thousand, four hundred eighty-three acres have been identified as tentatively suitable for timber production. National Forest System lands were identified by three major categories in the process of determining lands capable of timber production: productive forest land, nonproductive forest land, and nonforest land. All 2,516,191 acres of land were classified into one of the three categories as follows:

Productive Forest Land: Forest land which is capable of growing industrial crops of wood at or above the minimum biological growth established by the RPA program or the Regional Plan. This classification includes both accessible and inaccessible, stocked and non-stocked land.

Nonproductive Forest Land: Forest land which was identified as not capable of growing industrial crops of wood at least at the minimum biological growth potential established in the RPA program or the Regional Plan. Nonproductive forest land is classified as land not suited for timber production.

Nonforest Land: The Challis 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.

Productive (capable) forest land which has been legislatively or administratively withdrawn from timber production by the Secretary of Agriculture or the Chief of the Forest Service, is not available. Productive not available forest land is classed as not suited for timber production.

Lands capable and available for timber production are evaluated for suitability utilizing a three stage test (FSM 2415). The following three stage test of suitability was used for all available and capable timber producing lands on the Challis National Forest:

Stage I - Physical Suitability

Stage II - Economic Suitability

Stage III - Objective and Theme of the Alternative Considering Multiple Use Values and Effects on Timber Production.

Stage I - Physical Suitability: The first test was to determine if technology is available that will ensure timber production, including harvesting, from the land without irreversible resource damage to soil productivity or watershed condition. Areas so strewn with boulders that logging is impractical were classed as unsuitable. Another test for physical suitability is whether there is reasonable assurance that such lands can be adequately restocked within five years after final harvest.

Stage I was the step used to determine tentatively suitable timber lands. For a more detailed explanation, see the Analysis of the Management Situation document.

Stage II - Economic Efficiency: The purpose of the Stage II analysis is to organize capable, available, and tentatively suitable timber producing lands into analysis areas that significantly affect timber management costs and values at various levels of management intensities (prescriptions). Capable and available forest land will be considered as economically suitable for timber production if and only if it is included in the set of lands that are efficient in meeting the timber production goals for the Alternative.

The following major elements have been determined to significantly affect Challis National Forest timber management costs or values:

Roading Costs: This includes preconstruction, reconstruction, and construction of timber access roads. Analysis areas were classified as a high, moderate, or low road cost group with an associated cost/acre of roading activity associated with each group. See Table B-13 for values used.

Slope: Logging production costs were separated into two basic costing groups by slope. Lower tractor logging costs were applied to analysis areas on slopes less than 45%. Higher aerial logging costs were applied to the remaining analysis areas with slopes greater than 45%.

Stage III - Final Suitability Test: The choice of the timber production goals for the Alternative 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 does not start with a fixed land base. If land is available and physically suitable, it is eligible for allocation to a mix of multiple uses including some intensity of timber production. The intensity of production assigned the Forest subunits will depend upon the objective of the alternatives and the comparative advantage of Forest subunits to provide mixes of multiple uses.

2. The extent to which tradeoffs are made 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 an 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 period (50 years) and to efficiently meet sustained yield criteria for the remainder of the harvest period.

4. Each alternative will probably have a different set of suitable lands, depending upon the objective of the alternative. 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 tentatively identified as not suited in Stage III is combined with the land identified as such in Stage I and becomes the land unsuited for timber production during the plan period. When a plan is revised or there is a significant amendment, this process, beginning with Stage I and continuing through Stage III, must be repeated. In other words, land classification decisions in one plan are subject to review and revision in subsequent revisions of the plan.

Range

Within allotment boundaries, 398,600 acres are suitable for domestic livestock grazing. Another 28,200 acres outside of allotments are also suitable. 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). Determination on lands lacking range analysis 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 (FSH 2209.21). Transitory range, such as timbered land made temporarily suitable for grazing through fire or as a result of timber management practices, 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.

Recreation and Wildlife

The entire Forest is considered suitable for such activities as outdoor recreation and wildlife management. The Forest has two designated Research Natural Areas and nine others presently being considered for classification.

g. Allocation and Scheduling: Multiple use management prescriptions were developed as described below. The Interdisciplinary Team then inspected these prescriptions to determine the intensity and schedule of activities called for in the prescription. These intensities and schedules were combined with the productivity of the Coordinated Allocation Zones to determine the production coefficients placed in the model. The model then allocated and scheduled the prescriptions to the zones to achieve the constraints of the model in the most cost efficient manner. In the FORPLAN Model, prescriptions with timber harvesting activities were freed to allow a wide range of scheduling and allocation opportunities. Other prescriptions were limited to implementation in the early decades of the planning horizon.

h. Sources of Data: Sources of existing inventory data used in the analysis are as follows:

1. Vegetative types were delineated on U.S. Geological Survey Orthophoto quadrangle maps. These maps helped form Analysis Areas.

2. Timber outputs were derived from the 1976 timber inventory. Timber types, size, and conditions were developed by Forest Service personnel in (a.) above.

3. Fuelwood and roundwood coefficients were obtained from past years use reports and receipts.

4. Existing timber yield information for commercial softwoods comes from an Empirical Yield Model.

5. Regenerated timber yield information for commercial softwoods comes from the stand Prognosis Model.

6. Sediment delivery rates were developed through the Forest Service Region 1 - Region 4 Sediment Model.

7. Recreation Opportunity Spectrum (ROS) was mapped on U.S. Geological Survey Orthophoto quadrangle maps.

8. Recreation Visitor Day (RVD) comes from Recreation Information Management reports.

9. Wildlife coefficients were developed from State Fish and Game population data.

10. Forage production potential was calculated from existing allotment management plans.

11. Timber costs and values were obtained from a Timber Value Computer Program.

12. Local road construction and reconstruction was developed from past road cost on the Forest.

13. Many resource values were taken from the RPA values.

14. Other resource costs and values were developed on-Forest from the best available local information.

i. Management Prescriptions: The National Forest Management Act (NFMA) Regulations define management prescription as "management practices and intensity selected and scheduled for application on a specific area to attain multiple-use and other goals and objectives" (36 CFR 219.3). In general, the management prescriptions used by the Challis in its formulation of the FORPLAN model are designed to achieve a given objective of producing some combination of outputs or some level of resource protection in a given area (analysis area).

The prescription as modeled in FORPLAN is based on two discreet factors, management emphasis and mangement intensity. Management emphasis could be defined as the objective or goal to be achieved by the prescription and management intensity is the amount of investment, skill, or concern (costs) that would be applied to achieving the objective. The Challis model commonly uses management intensity to differentiate between prescriptions with similar objectives but different projected output levels

The various combinations of management emphasis and management intensities are designed to comply with direction in 36 CFR 219.27a through 219.27g by providing a number of options (prescriptions) that will fit each analysis area.

On the Challis National Forest an Interdisciplinary team reviewed the public issues and management concerns, used professional judgment and RPA Program targets for guidance to develop multiple use management prescription goal statements. Management practices, standards and guidelines were developed and assigned to these goal statements. Practices were developed and assigned based on current research, feasibility, cost efficiency, potential for resource damage, and ability to meet minimum management requirements. The management standards and guidelines needed to accomplish the goals of a prescription, include the minimum management requirements, mitigation measures, and resource coordination that are required by existing laws, regulations, and policy.

Forest-wide standards and guidelines were developed to cover practices which are common to all prescriptions which apply the practice.

The management prescriptions are sets of coordinated management practices applied to specific analysis areas. Each analysis area in the FORPLAN Model was given a range of prescriptions from which to choose. Within the range of prescriptions were "minimum level" management, non-intensive timber management, various levels of intensive management (i.e., commercial and precommercial thinning), a 200-year span of timing choices for timber, various emphasis for current level, commodity level, non-commodity level, for wildlife, range, recreation, and minerals management, and a range of wilderness options provided by twenty-eight roadless areas (see Section II A.4 FORPLAN Data Base Summary for further details). Selection of any individual prescription, hinged on the objective and constraints of the alternative being analyzed. Prescriptions were quantified in terms of outputs, returns, activities, and costs for modeling purposes. Prescription assignments were made in the FORPLAN Model to meet goals and objectives of individual alternatives and benchmarks.

The Challis National Forest developed general management prescriptions called Goals. They cover such emphasis areas as maximizing commodity resources, maximizing non-commodity resources, minimum level management, current level management, and wilderness management. These general management prescriptions or goals are applied to each Coordinated Allocation Zone (CAZ) in the form of Coordinated Allocation Choices (CAC). The activities standards and guidelines, and the associated outputs of each goal or CAC are applied to each CAZ in its entirety. Every analysis area within the CAZ has the general management prescription assigned to it, in addition to the analysis area specific management prescriptions (i.e., management emphasis and management intensity combinations).

COORDINATED ALLOCATION CHOICES

GOAL 1: LOW LEVEL RESOURCE ACTIVITIES

Timber resources would remain in an unmanaged condition. Non-intensive silvicultural practices would occur when appropriate, to meet local demands. Fuelwood harvest would occur through unstructured public consumption. Fish and wildlife resources may benefit as a result of few negative-impacting activities occurring from other resource areas. Fish and wildlife would otherwise remain in an unmanaged condition. Range conditions would improve slowly. Investment work would be limited to improving downward trends and poor range conditions. Current grazing capacity would be maintained. The minerals program would be managed to meet only necessary legal requirements. Dispersed recreation management would be emphasized. Recreation facilities would be maintained at lowest levels. Generally, no soils or watershed activities would occur.

GOAL 2: MODERATE RANGE EMPHASIS WITH MAINTENANCE OF OTHER RESOURCES

The majority of timber stands would remain in an unmanaged condition. Intensive and non-intensive silvicultural practices would occur to meet local demand. An active fuelwood program would be maintained. Fish and wildlife habitat capabilities would improve, primarily through coordination with other resource activities. Range productivity and condition would improve. Increases in AUM's would occur through improved management techniques. The minerals program would adequately administer moderate level industry activities. Dispersed recreation opportunities would be emphasized. Developed sites would be adequately maintained to meet the demand. Soil and watershed resource needs would adequately be coordinated with other resource activities to maintain soil, watershed, and water quality conditions.

GOAL 3: MODERATE RANGE, WILDLIFE, AND RECREATION EMPHASIS WITH MAINTENANCE OF OTHER RESOURCES

Timber emphasis would be the same as Goal 2. Fish and wildlife resources would receive increased emphasis on improving habitat capability and quality through coordination with other resources and direct habitat improvement work. Range and minerals would be the same as Goal 2. Dispersed recreation opportunities would be emphasized. Developed sites and trails would receive increased emphasis with high level maintenance and improvement work occurring to meet demand. Direct soil and watershed improvement work would occur to correct problem areas.

GOAL 4: HIGHEST WILDLIFE AND RECREATION EMPHASIS. MODERATE RANGE EMPHASIS WITH MAINTENANCE OF OTHER RESOURCES

The majority of timber stands would remain in an unmanaged condition. Intensive and non-intensive silvicultural practices would occur to meet local demand. Silvicultural prescriptions would be directed to enhance fish and

wildlife habitat where possible. An active fuelwood program would be maintained. Fish and wildlife habitat improvement projects would receive high priority. Coordination of fish and wildlife needs with other resource activities would also be emphasized. Range management practices would be maintained or adjusted to provide compatibility with the increased wildlife and recreation emphasis. Minerals activity mitigation would be managed to have minimal impacts on non-commodity resource values while being consistent with mining laws. Intensive interdisciplinary response to industry requests would be made based on potential for impacting amenity resources. Dispersed and developed recreation opportunities would be emphasized. Recreation facilities and trails would be upgraded as demand increases. New facilities would be established to meet recreational demands. Direct soil and watershed improvement work would occur to correct problem areas.

GOAL 5: HIGHEST TIMBER, RANGE, DEVELOPED RECREATION AND MINERALS EMPHASIS WITH MAINTENANCE OF OTHER RESOURCES

The majority of timber stands would be scheduled for silvicultural practices to achieve a managed condition. Over time, intensive silvicultural treatments would occur on most stands. An active fuelwood program would provide for commercial and personal use sales. Fish and wildlife resources would be managed as in Goal 2. The range resources would receive high investment levels to generate increases in AUM's. Improved grazing management systems for allotments would be rapidly developed and implemented. Developed recreation would be emphasized over dispersed recreation. High quality developed sites would be constructed or reconstructed to meet recreational demands. Soil and watershed resources would be managed similar to Goal 2.

GOAL 6: WILDERNESS EMPHASIS

Emphasis would be to protect the wilderness characteristics which exist and recommend to Congress that the area be classified. The natural state would be protected and ecosystems would be allowed to play a natural role except for fire control. Recreation, mineral, and livestock activities compatible with the wildernesses resource would be permitted. Timber harvest and motorized vehicles would be prohibited. Transmission corridors would be excluded from this area. No leasing or leasing with no surface occupancy allowed. There would be maximum restriction on locatable minerals.

GOAL 7: UNDEVELOPED EMPHASIS

Emphasis would be for a semi-primitive, non-motorized recreation opportunity with development aimed at site protection rather than user comfort. Wildlife emphasis would be toward big game, and fisheries toward lake fisheries productivity. Range improvements would not detract from semi-primitive characteristics. Livestock grazing would be controlled. Timber harvesting would occur only if it maintains semi-private recreation opportunities at existing qualities. Oil and gas leases would contain stipulations to protect the semi-primitive character. Transmission corridors would be excluded from this area. No leasing or leasing with no surface occupancy would be allowed. There would be maximum restriction on locatable minerals.

J. Cost Efficiency of Coordinated Allocation Choices (CAC): The previous choices were developed into FORPLAN choices by developing scheduling and output tables to fit the standards and guidelines. Costs and benefits of producing the outputs were also based on the standards and guidelines for the prescription. The FORPLAN prescription was allowed to come into the solution against an objective function of maximum present net worth.

4. FORPLAN Data Base Summary

a. Timber Management Intensity Choices

1. Douglas-fir - Two-stage shelterwood system.
   - 60% volume harvest in initial entry decade.
   - 40% remaining volume harvest the following decade.

Initial entry of existing stands can occur as early as 110 years with the overstory removal step following in the next decade. Many of the existing stands are already older than 110 years. Therefore, harvesting can occur at any time within the planning horizon.

After overstory removal occurs, the Model has a choice of precommercially thinning the regenerated stand at 20 years, commercially thinning at 100 years, and starting a seed step at 110 years or older. The Model has the option to select only precommercial thinning or precommercial thinning and commercial thinning, or no thinning at all.

Commerical entries occur as soon as average diameter of timber reaches merchantability standards.

2. Lodgepole pine - Clearcut system.
   - 100% volume removal on mature stands.

Clearcutting of existing stands can occur as early as 110 years. Many stands are already older than this. Therefore, harvesting can occur at any time through the planning horizon.

After clearcutting occurs, the Model has the option to precommercially thin at 20 years, commercially thin at 60 years, and regenerate clearcut beginning at 110 years.

The Model can choose not to thin or select various combinations of thinning to optimize the objective function.

Commerical entries occur as soon as average diameter of timber reaches merchantability standards.

3. No Harvest Option.

A no harvest option is also available to allow analysis areas to remain unharvested through the planning horizon. Table B-1 charts the intensity choices.

TABLE B-1. TIMBER INTENSITY CHOICES

DOUGLAS-FIR

PRESCRIPTION	NO HARVEST	TWO STAGE SHELTERWOOD	PRECOMMERCIAL THINNING	COMMERCIAL THINNING	TWO STAGE SHELTERWOOD
FF		X			X
FP		X	X		X
PC		X	X	X	X
NO	X				

LODGEPOLE PINE

PRESCRIPTION	NO HARVEST	CLEARCUT	PRECOMMERCIAL THINNING	COMMERCIAL THINNING	COMMERCIAL THINNING	CLEARCUT
FF		X				X
FP		X	X			X
PC		X	X	X		X
2C		X	X	X	X	X
NO	X					

b. Timber Harvest Associated Activities and Costs.

COST 1982 DOLLARS

1.	Acres of site preparation and planting	$ 333/acre harvested
2.	Acres of site preparation for natural regeneration	46.4/acre harvested
3.	Silvicultural exams and prescriptions	2.89/acre harvested
4.	Timber sale preparation	45.5/acre harvested
5.	Timber sale administration	35.3/acre
6.	Cone collection	10.0/Bushel
7.	Brush disposal	8.17/acre harvested

8. Douglas-fir production costs:

DBH (inches)	Tractor Cost/MCF	Cable Cost/MCF
7- 9	$ 625.1	$ 747.3
9-11	959.5	1150.2
11-13	1086.8	1306.3
13-15	1087.9	1311.4
15-17	1095.4	1324.3
17-19	1099.8	1333.5
19-21	1103.3	1341.9
21-23	1103.8	1346.8

9. Lodgepole pine production costs:

DBH (inches)	Tractor Cost/MCF	Cable Cost/MCF
4- 6	$ 862.8	$ 1042.7
6- 8	855.1	1036.5
8-10	853.8	1038.2
10-12	934.5	1139.8
12-14	1024.8	1254.1
14-16	1031.8	1267.0

10. Timber purchaser road construction credit (cost) ($/acre harvested):

Low Cost Roading Groups (R1, R2)	$ 80.73
Moderate Cost Roading Groups (R3, R4)	239.38
High Cost Roading Groups (R5, R6)	537.69

11. Public works road construction cost ($/acre harvested):

Low Cost Roading Groups (R1, R2)	$ 91.22
Moderate Cost Roading Groups (R3, R4)	270.50
High Cost Roading Groups (R5, R6)	607.59

12. Timber purchaser road reconstruction credit (cost) ($/acre harvested):

Low Cost Roading Groups	$ 46.82
Moderate Cost Roading Groups	138.84
High Cost Roading Groups	311.86

13. Public works road reconstruction cost ($/acre harvested):

Low cost roading Groups	$ 48.35
Moderate Cost Roading Groups	143.37
High Cost Roading Groups	322.02

14. Miles of road construction MILES

Local road construction and reconstruction costs were developed from past sales dating back to 1970 using appraisal costs for roading and amount of roading activities necessary to harvest each sale acreage. Costs were weighted according to acres harvested in each sale, then aggregated into the road cost groups identified in FORPLAN.

c. Activities Modeled in Coordinated Allocation Choices

	Code		
1.	RNR	FC--RONR Wilderness management	Cost/CAZ
2.	A2DE	Developed Recreation O&M	Cost/CAZ
3.	A3DE	Developed Recreation Investment Work	Cost/CAZ
4.	A2DI	Dispersed Recreation O&M	Cost/CAZ
5.	A3DI	Dispersed Recreation Investment Work	Cost/CAZ
6.	B10M	Proposed Wilderness O&M	Cost/CAZ
7.	B11N	Proposed Wilderness Investment Work	Cost/CAZ
8.	A2CR	Cultural Resource Management	Cost/CAZ
9.	C2	Fisheries and Wildlife Program O&M	Cost/CAZ
10.	C3S	Structural Wildlife Improvements	$1340/structure
11.	C3NS	Nonstructural Wildlife Improvements	$20/acre
12.	C3F	Fisheries Improvement Work	Cost/CAZ
13.	D2	Range Program O&M	Cost/CAZ
14.	D3	Range Improvement Work	Cost/CAZ
15.	F2	Soil and Watershed Program Management	Cost/CAZ
16.	F3	Soil and Watershed Improvement Work	Cost/CAZ & Acres
17.	G1	Oil and Gas Lease Management	Cost/CAZ
18.	G2	Locatable Minerals Management	Cost/CAZ
19.	HRP	Human Resource Program Management	Cost/CAZ
20.	J2	Forest Land Management Planning Program	Cost/CAZ
21.	J3A	Land Ownership Management	Cost/CAZ
22.	J01	Non-Recreation Special Use Program	Cost/CAZ
23.	L3RD	Forest Transportation Planning	Cost/CAZ
24.	L2TP	Road Preconstruction/Construction/ Reconstruction	Cost/CAZ
25.	L2RM	Road Maintenance Program	Cost/CAZ
26.	L3FA	Facilities Administration and Operation	Cost/CAZ
27.	L2FA	Facilities Maintenance	Cost/CAZ
28.	P2P3	Fire Protection and Fuels Management	Cost/CAZ

29.	T1	General Administration	Cost/CAZ
30.	A2LE	Law Enforcement - Coop Law Enforcement	Cost/CAZ
31.	J06	Property Boundary Location Program	Cost/CAZ
32.	P5	Forest Pest Management	Cost/CAZ
33.	STPV	State and Private Forestry Program	Cost/CAZ
34.	E00	General Timber Administration and Inventory	Cost/CAZ
35.	07E	Existing Sale Administration	Cost/CAZ
36.	04E	Existing KV Reforestation Program	Cost/CAZ & Acres
37.	05EK	Existing KV Thinning Program	Cost/CAZ & Acres
38.	05EP	Existing PM Thinning	Cost/CAZ & Acres
39	03E	Compartment Examination Program	Cost/CAZ
40.	E02	Preparation and Administration of Post and Pole Program	Cost/CAZ
41.	FUEL	Fuelwood Program Management	Cost/CAZ

Coordinated allocation choices (CAC) are data sets of the above mentioned activities and predicted output levels associated with those activities (also see outputs section next). Data sets were developed for each Management Prescription emphasis for all management areas. Data sets were also developed for the full range of roadless to wilderness choices necessary for the wilderness evaluation. Up to twenty-five CACs were generated for each management area. A total of 254 CACs were developed and input into the FORPLAN Model.

Meeting minimum management requirements (MMRs) was considered for all CACs. Therefore, all activities and output levels from selected CAC packages will meet the Forest's MMRs. Complex constraint sets to meet MMRs were therefore not necessary for the Forest's FORPLAN Model.

d. Outputs Associated with Timber Harvesting.

1.	W07	Douglas-fir Harvest	MCF
2.	LPP	Lodgepole pine Harvest	MCF
3.	SHAR	Harvest Activities Sediment	Tons
4.	SMNT	Road Sediment	Tons

e. Outputs Modeled in Coordinated Allocation Choices.

1.	W07	Developed Recreation Use	RVDs
2.	W01	Dispersed Recreation Use	RVDs
3.	W33	Wilderness Recreation Use	RVDs
4.	MTG	Mountain Goats	Number of Animals
5.	BHS	Bighorn Sheep	Number of Animals
6.	ELK	Elk	Number of Animals
7.	DEER	Deer	Number of Animals
8.	W56	Commercial Anadromous Fishery	Lbs of Fish
9.	W55	Sport Anadromous Fishery	WFUDs
10.	W58	Coldwater Sport Fishery	WFUDs
11	W71	Permitted Use	AUMs
12.	X89	Improved Watershed	Acres
13.	LEAS	Oil and Gas Leases	Lease Return $'s
14.	OPLN	Mineral Operating Plans	Plans
15.	X08	Fuelwood Harvest	MCF
16.	X07	Roundwood Harvest	MCF

The FORPLAN Model directly displays and schedules the activities and outputs listed above for each complete run. Other activities or outputs used in the alternative analysis were developed from the FORPLAN result figures (the modeled solution) or other sources, and predicted to be compatible with the solution.

f. Planning Period: Two-hundred years were allowed for the timber harvest scheduling period. All other outputs, though extended in the Model to 200 years, are only tracked through a 50 year planning period. The Model breaks down the 50 years into five 10 year periods. Most activities and outputs values were held constant (flat lined) after the first or second period. Some were adjusted out to the fifth decade, then flat lined. This flat lining occurred as a result of data reliability beyond a given period. Most resource output predictions beyond a 10 or 20 year period would be highly suspect of error. When data was available and seemingly reliable to trend to the out decades, resource output changes were predicted.

g. Constraints: Constraints are quantifiable limits placed on the Model to ensure that the intent of a particular alternative is met. The following types of constraints were used in FORPLAN during the formulation and evaluation of alternatives:

Budget Constraints.
Timber flow constraints (e.g., nondeclining yield).
Management emphasis constraints on prescriptions.
Eroding inventory constraints.
Output constraints.
Wilderness selection constraints.

h. Demand Assumptions: For Forest outputs, it is assumed that prices do not vary with the quantity of outputs produced at various levels.

i. Trend Assumptions· It is assumed for this analysis that real prices and costs remain constant over the planning horizon. Inflation was not included in the discount rates, benefits, and costs due to the difficulty of estimating future inflation rates and because inflation would equally affect both costs and prices.

j. Interest Rate (Discounting) Assumptions: Two discount rates representing the cost of money over time were used in the FORPLAN Model. For evaluation of long-term investments in land and resource management, a 4 percent real discount rate is used. A 7-1/8 percent rate, which is consistent with the 1980 RPA, is used on all benchmarks and alternatives. This was done to determine the sensitivity of alternatives, particularly the preferred alternative to variations in the discount rate.

B. IMPLAN

1. General Description

Forest Service land management activities affect local, regional, and national economies in two ways. First, the Forest Service purchases goods and services from the local or regional economy in order to conduct National Forest System management activities. In turn, the flow of forest resource outputs resulting from these management activities influences market transactions at the local, regional, and national levels.

Implementing regulations of the National Forest Management Act and the National Environmental Policy Act require the Forest Service to consider economic efficiency and economic effects in the formulation, evaluation, and selection of National Forest system land management planning alternatives. It also requires that an estimate of social impacts of alternative management actions be made. Possibly even more important, the Forest Service must estimate changes in the distribution of wealth (costs and benefits) that would result from these alternative actions. Alternatives which may be feasible economically may redistribute the structure of local economics. The issue of who pays versus who benefits is a major concern in planning change. In response to these regulations, the Forest Service has developed a computer-based economic model referred to as IMPLAN. IMPLAN uses economic input-output analysis to develop inter-industry models that can assist in the evaluation of alternative land management programs.

Input-output analysis is an accepted economic methodology that attempts to describe the interdependencies among the productive sectors of a regional economy. The method can be used to produce detailed estimates of the direct, indirect, and induced economic impacts on a region that would result from the implementation of a resource management plan.

IMPLAN can be used to construct a matrix and a corresponding predictive model for a U.S. county or group of counties. The matrix provides a detailed description of the structure of the regional economy, identifying which industries are present and their relationship to other industries. This information is valuable in the scoping or issue identification process in Forest planning, as it can be used both to portray the Forest Service's relationship to the area economy and to discover potential opportunities to resolve public issues of management concerns.

IMPLAN uses these inter-industry relationships to predict and evaluate the changes in the level and composition of economic activity that would occur as a result of changes in demand, or, specifically, as a result of implementing various land management planning alternatives.

Industries must purchase inputs from other industries, as well as from primary sources, to produce outputs that are sold either to other industries or to final consumers. In input-output analysis, these flows of inputs and outputs are traced to show the linkages between the industries comprising an economy. These linkages create a matrix which can be transformed into a system of simultaneous equations and to predict the economic effects that would result from autonomous changes in demand. Employment, income, population, and other economic indicators that have quantifiable relationships to production can be estimated using these formulations.

In the context of Forest planning, alternate land management actions are modeled to determine the corresponding impacts to local employment, income, and population. The first step is to describe the potential management action as a change from the situation that existed in 1977. This change is then translated from Forest Service outputs to a change in the sales of affected industries. The model considers these "direct" industry changes and calculates the all-industry indirect and induced sales changes. These are then converted by the model into employment, income, and population changes. These social and economic changes can be identified for the entire multicounty region or for particular economic sectors within the region.

The model indicates the level of economic activity that would have been obtained in the multicounty economy in 1977 if the Forest Service had operated at levels equal to those of the modeled management action in 1977. In practice, the changes in economic activity indicated by the exercise are utlized as predictions of future economic impacts. The computer runs and detailed sector information are available in the Challis Forest planning files.

A certain amount of caution needs to be used in the application of the IMPLAN model data to the Challis National Forest impact area. Input-output models have several limitations. Use of information derived from this process should consider these problems. These problems include:

a. Methods of disaggregating national data to multicounty regions often gives inaccurate view of the local economic structure.

b. Use of 1977 data when very significant changes in the regional structure have occurred since that date.

c. The model treats change as instantaneous. It may take several years for the induced growth to occur.

d. Political forces forestalling change are not represented.

e. It does not consider the gain or loss of new economic sectors.

f. The model does not consider changes in technology, economics of scale, or the availability of investment capital.

g. The model is static and represents the point in time when the data was collected. It is used as a predictive model to estimate changes through time when conditions are changing.

A detailed discussion of input-output modeling can be found in "Introduction to Regional Science" by Walter Isard, Prentice Hall, 1975.

2. Area of Impact

The area of impact for socio-economic analysis via IMPLAN was derived from information included in the Human Resource Unit (HRU) Analysis conducted in 1980-1981. This analysis was part of a socio-economic overview prepared for the Forest. A description of the overview, including the HRU Analysis, definition of the Zone of Influence, description of ties between the Forest and the Zone of Influence, and the base level data and trends are located in the Forest Analysis of the Mamagement Situation (AMS) document (Forest Planning Files).

The primary Zone of Influence was set by identifying the area directly impacted by Forest outputs: timber, range, fuelwood, etc. The principle economic factors of ranching, small mining, small timber mills, and some of the outfitting have developed on site, i.e., adjacent to Forest lands. This has kept the major economic influences in the close vicinity of the Forest. The long distances from the Forest to major population centers has also served in confining the Forest's primary Zone of Influence. The two major influences on local population, culture, etc., have come from the mining and livestock industry. Mining effects have been "boom and bust". The livestock industry has formed the major stabilizing factor in the Zone of Influence. During recent years, the recreation industry has become more important.

For purposes of modeling socio-economic impacts, the region to be used for input-output analysis has been defined as Custer, Butte, and Lemhi counties. These counties contain the Human Resource Units (HRU) defined for the Forest. These are: Challis HRU, Pahsimeroi Valley HRU, Lost River HRU, and Clayton-Challis HRU.

3. Implan Data Base

The IMPLAN data base consists of two major parts: (1) estimates of final demand, final payments, gross output, and employment for 466 industrial sectors; and (2) a national-level technology matrix. The national technology matrix denotes sectoral production functions and is used to estimate local purchases and sales. This technology matrix was derived from the Commerce Department's 1972 national input-output model (The Detailed Input-Output Structure of the U.S. Economy, Volumes I and II, U.S. Department of Commerce, Bureau of Economic Analysis, 1979). The data represent 1977 country-level activity for 466 economic sectors. The data base for IMPLAN has been assembled by Engineering Economics Associates of Berkeley, California.

4. Final Demand Expenditures

The Input-Output (I-O) model translates Forest outputs and activities into employment and income impacts. An intermediate step is the translation of outputs into final demand dollars. Final demand expenditures represent the dollars spent by the exogenous final consumers of the finished products derived from Forest outputs. For instance, timber is processed into lumber which has a sale value at the mill. The sale value represents the amount of new money that will be returned from sales to purchasers outside of the modeling region.

This modeling step is accomplished by applying a final demand expenditure per unit of output to total outputs and linking the resulting dollar amount to the sectors in which the direct expenditure takes place. This process determines the change that takes place in the existing economy. Expenditure information is contained in the planning records.

The IMPLAN model generates multipliers which define the direct, indirect and induced effects of changes in final demand on the modeled economy. The multipliers developed by the Challis National Forest IMPLAN Model are given in B-2.

TABLE B-2. IMPLAN Multipliers

Forest Output	Unit	Employment Multiplier	Income Multiplier
Timber	MMBF	6.40	166
Grazing	MAUM	.55	14
Developed Recreation	MRVD	.17	2
Dispersed Recreation	MRVD	.70	7

Table IV-14, Chapter IV, DEIS, displays the employment, population, and income effects of the benchmarks and alternatives.

C. Other Models and Processes

1. ADVENT

ADVENT is a computer system used for program planning and budget. The system is designed to generate and display a large number of feasible alternative program proposals for various levels of financing and outputs. A heavy emphasis is placed on multiyear, multiple output analysis.

The ADVENT software is designed for use at Forest, Region, Area, and National levels. Organizational units are regarded as subunits at the next higher level. Components include an update program, matrix generator, and a report writer. It is possible for users to augment the system with their own reports, make revisions to the linear/goal programing model, etc.

This model was used to display long-term outputs from the various FORPLAN analyses. A detailed description of the model and its use are contained in ADVENT - A User's Guide, 4th Edition USDA Forest Service 1978 updated.

2. Sediment Yield Model Developed by Region 1 and Region 4.

Sediment yield prediction procedures were developed by watershed specialists of the Northern Region, Intermountain Region, and the Intermountain Forest and Range Experiment Station. The procedure was developed principally for watersheds in or generally associated with the Idaho Batholith, but has the capability of adaption to other Northern and Intermountain Region Forests. The model is applied on watersheds that are stratified using land systems inventory map units and quantifies estimated sediment yields prior to any management (natural sediment yield) and sediment yields in response to various management scenarios for any number of years. The types of management activities modeled are roading, logging, and fire. The model estimates on-site erosion for a given management activity modifies the amount of erosion according to general land unit characteristics, delivers the eroded material to the stream system, and routes it through the watershed to a critical stream reach where interpretations are made and where monitoring for achievement of planning objectives should take place.

Specific objectives for the sediment yield model are:

a. To provide a systematic tool to estimate the response of watershed systems with respect to erosion and sediment yields.

b. To develop a process that is conceptually usable at the project level, as well as at the land management planning level.

c. To develop a model capable of estimating sediment yields under natural conditions, present management, and proposed management alternatives.

d. To route predicted sediment yields to a key reach in a watershed system.

The model simplifies, for analysis, an extremely complex physical system and is developed from a limited data base and scientific knowledge pool. Although it produces specific quantitative values for sediment yield, the results should be treated as rather broad estimates of how real systems may respond. The validity of this model is best when the results are used to compare alternatives, not for predicting specific quantities of sediment yielded.

The model is a conceptual framework designed to be supplemented by local data and adapted by individual Forests to better reflect local conditions and observations. The Challis National Forest used the model to estimate sediment yields from roading and timber harvest activities. This yield information was incorporated into the FORPLAN model as a yield estimate. The "Guide for Predicting Sediment Yields from Forested Watersheds" is used to model sediment yields among alternatives.

3. The Guide for Predicting Salmonid Response to Sediment Yields in Idaho Batholith Watersheds (draft forms) were used to help determine the sediment standards that have been incorporated into the Forest Planning process to date. In management areas where sediment information was available it was used in conjunction with the "Guide" to determine constraints. In other areas without information the R1-R4 Sediment Model was used to predict existing sediment levels and from that the constraints. The "Guide" will also be used to predict impacts to habitat capability based on increases or decreases in sediment production over natural or existing from Forest Activities. Details on modeling are found in the Planning documents in the Forest Supervisor's Office.

4. Level II Fire Planning

This model is used by the Forest Service Nation-wide to evaluate a unit's ability to effectively respond to fire occurrence at a predetermined level. The Challis National Forest used information on frequency and size of fires occurring on Forest from 1971-1980. The initial response level analyzed used organization and resources available to the Challis National Forest and adjacent units during 1980. Additional Initial Attack resource levels of 20% less, 20% more, and 40% more than the level available in 1980 were also analyzed to determine the level of resources that would be most cost effective in responding to fires during the ten year analysis period. The analysis indicated that resources 20% higher than the 1980 level would be most cost effective for this Forest.

5. TIMBERVAL

The Challis National Forest used the TIMBERVAL program developed by James Merzenich in Region One to generate prices and logging and manufacturing costs of sawtimber net of road costs. Sale data for the past decade was entered into the program to produce estimates of actual historical values. Prices and costs by analysis area vary by species composition and logging methods.

Jack Weeks of Region Four PD&B had overall responsibility for running TIMBERVAL based on thinning assumptions, logging methods, and working group composition data provided by the Challis Timber Management group. Documentation of TIMBERVAL is available at the regional level. Results of the TIMBERVAL runs, as well as the input data files are available in Challis Plan Records.

6. Timber Yields

Timber: The analysis process leading up to FORPLAN included development of existing yield curves (Empirical), development of Prognosis unmanaged yield tables, development of Prognosis managed (regenerated) yield tables, and finally, development of FORPLAN yield tables from the Empirical and Prognosis runs (both unmanaged and managed.

a. Empirical Yield Curves

Empirical Yield Curves were developed from the 1974 timber inventory. The inventory plots form the basis for the empirical yield curves, were selected randomly, and cross the whole range of stockability from poorly stocked stands on rocky soils to well stocked stands on best sites. Thus, the volumes produced by the inventory represent an average stocking capability for the Forest.

The data also represents live volume only. The Empirical yield curves were developed from the Inventory Location Summary Tables (Challis Y-Data) which do not reflect dead. This was substantiated by checking two field location plot sheets (#4 and #130) that had dead trees and comparing the volumes on these plots with the volumes on the Inventory Location Summary Sheet (dead volume ignored on plot sheets). The volumes were identical in both cases.

A regression analysis was applied to the data using the following formula:

Douglas-fir

```
X= 70,100,130,170,190,250;
Y= 534,1372,2022,2329,2777,2293;
R= XE2;
S= XE3;
FIND REG Y,X,R; SET A = REG Y,X,R:
WRITE A; FOR THE EQUATION Y=A+B*X+C*R

A=  -.231288+04
B=   .491095+02
C=  -.122319+00
CORRELATION= .991
STD. ERROR OF ESTIMATE= .142765+03

A ARRAY IS SET TO A=A+BX+CR
FOR THE EQUATION Y=A+B*X+C*R

A= -.231288+04
B=  .491095+02
C= -.122319+00

CORRELATION=  .991
STD. ERROR OF ESTIMATE= .142765+03

ARRAY A
525.4  1375. 2204.  2501.  2602.
2320.

X= Stand Age
R= Standage Squared
```

Lodgepole Pine

```
X= 70,80,110,150,190,250
Y= 351,605,807,1335,1713,850;
R= XE2;
S= XE3;
FIND REG Y,X,R,S; SET B=REG Y,X,R,
S; WRITE B; FOR THE EQUATION
Y=A+B*X+C*R+D*S
A=   .126166+04
B=  -.335007+02
C=   .379450+00
CORRELATION= .991
STD. ERROR OF ESTIMATE= .103648+03

B ARRAY IS SET TO B=A+BX+CR+DS
FOR THE EQUATION Y=A+B*X+C*R+D*S

A=  .126166+04
B= -.335007+02
C=  .379450+00
D= -.100781-02
CORRELATION=  .991
STD. ERROR OF ESTIMATE=  .103648+03

ARRAY B
430.2  494.1   826.5  1373. 1682.
855.2

Y= Species Cubic Foot Volume
S= Stand Age Cubed
```

r^2 value (correlation) is 0.991 for Douglas-fir and lodgepole pine
A,B,C, and D= Formula veriables.

The empirical yield curves also represent net volume. A deduction for defect was made when the inventory data was compiled.

The final stand types used are:

Lodgepole Pine
Douglas Fir
Mixed Conifer - The DF empirical yield tables were used because acreage was so little and yields were very close to same.

b. Unmanaged Prognosis Yield Tables

This section describes how Prognosis (a tree growth simulation model) was used to develop unmanaged stand tables.

First, data from stand examination field sheets (individual tree data) were entered into Prognosis. The model was then calibrated by selecting several habitat types in Prognosis and running that data against ours. A correlation between 1.0 - 2.0 was considered acceptable (1.0 indicates an exact correlation, meaning stands are exactly like those in Prognosis).

Next, an unmanaged stand table was created and compared to the Challis Empirical Yield Curve. This was done for Douglas-fir and lodgepole pine. When Prognosis curves are compared to the Forest empirical curves, they were found to be higher. This is to be expected as conditions that resulted in existing (Empirical) stands are unknown and protection of the existing regenerated stands from fire, insect, and disease will result in higher yields. The Prognosis runs were constrained by using growth variables (BAI ht., mortality, etc.) until the Prognosis runs closely approximated existing stands in D.B.H., height, etc. By forcing Prognosis to grow trees similar in height and diameter to existing, we insured that all future managed runs would also represent the average situation.

A cutting cycle of 10 years was used between entries. When coordination and regeneration requirements called for removal of a stand in more than one entry, a further adjustment of the Prognosis data was necessary before it was entered into FORPLAN Yield Tables. It was assumed some additional growth would occur before the next entry. An increase in the volume remaining to be harvested was made before it was included in the FORPLAN Tables.

c. Managed Prognosis Yield Tables

Once unmanaged yield tables were developed that represented our own Forest condition, the next step was to develop managed stands. This was done by applying different combinations of precommercial and commercial thinnings, at different times, to the unmanaged stands. Obviously, the choices were almost unlimited. To reduce the possibilities, a decision was made, based on professional judgment, that only one precommercial thin would be allowed in any one management option. We felt two or more precommercial
thins would be very uneconomical. We also decided to limit the number of commercial thins (includes pole-size material) to a maximum of two. More than that would not be possible in our anticipated rotations of 110 - 140 years. Given these sideboards, the following management options were developed:

MANAGEMENT OPTIONS

Douglas-fir - Low:	Unmanaged, no treatment.
Douglas-fir - Moderate:	1 PCT at or before 20 years.
Douglas-fir - High:	1 PCT at or before 20 years; 1 CT at 100 years.

Many other options (more commercial thins) were tried in Douglas-fir and all resulted in a loss of growing stock and a lower final yield.

Lodgepole pine - Unmanaged:	Not reg. and grow.
Lodgepole pine - Low:	1 PCT at or before 20 years.
Lodgepole pine - Moderate:	1 PCT at or before 20 years; 1 CT poles at 50 years.
Lodgepole pine - High:	1 PCT at or before 20 years; 1 CT poles at 40 years; 1 CT at 60 years.

Many other options were tried such as shifting ages and intensities of thinning, and resulted in the loss of growing stock.

d. Culmination of Cubic Foot Mean Annual Increment (MAI) and Rotation Age

The National Forest Management Act of 1976 specifies that all even-aged stands scheduled to be harvested during the planning period will generally have reached the culmination of mean annual increment (FSM 2413.21).

The manual also states that minimum rotation age shall be based on the length of time required to achieve volume production equivalent to at least 95 percent of CMAI (FSM 2413.21).

Based on an analysis of the Prognisis data, "optimum" rotation ages were established as follows:

MANAGEMENT OPTIONS

	Age Years
Douglas-fir - Low:	110
Douglas-fir - Moderate:	90
Douglas-fir - High:	130
Lodgepole pine - Unmanaged:	110
Lodgepole pine - Low:	90
Lodgepole pine - Moderate:	90
Lodgepole pine - High	90

The above optimum rotation ages generally are based on harvesting the stands at the earliest possible age while minimizing the amount of unmerchantable material. The Douglas-fir moderate age of 90 years is border line as to merchantability standards. FORPLAN used 100 years as the age which merchantability is assured.

A range of rotation lengths were available for FORPLAN to select from. The range centered around the optimum rotation age, yet varied enough to provide flexibility within which to reach a solution.

e. FORPLAN Yield Tables

FORPLAN Yield Tables were developed from the Prognosis Stand Tables, both managed and unamanged.

For the initial harvest in unmanaged stands, Yield Tables were taken directly from the Empirical tables using values that represent a range of rotation ages. Where silvicultural requirements dictated the stand be removed in more than one entry, the volume was split based on the prescription. For instance, if the prescription called for a 60/40 split (remove 60% of the volume now, the remaining 40% in 10 years), and the Empirical Stand Volume was 5,000 cubic feet/acre, then 3000 cubic feet would be scheduled in the first entry and 2000 cubic feet, plus a small allowance for ingrowth, was scheduled for the second entry.

After the initial harvest in a stand, subsequent Yield Tables were based on managed Prognosis Stand Tables. As before, a range of cubic foot values were entered in the table to allow FORPLAN flexibility. This range was centered around the optimum rotation age.

D. Data Reliability

Data used in the planning process to define inputs, outputs, costs, effects, etc., are based on historic information and resource inventories. While much of this information is very site specific, use of the data to model, forecast, and estimate results of applying different management prescriptions has required grouping and averaging these data. Application of these estimates Forest-wide or to large land blocks is believed to be fairly reliable. The reader should realize that site specific application of the data may result in a significant error in some cases. During project level planning, this information will be refined and verified for specific applications.

E. Economic Efficiency Analysis

1. Role in Process and Reliability of Estimates

In recent years, the Federal government has become increasingly aware of and committed to managing for economic efficiency of Federal actions. The NFMA Regulations and national direction, reflect the idea that the Forest Service should consider economic efficiency in developing and choosing among Forest Plan alternatives.

The regulations specify that "each alternative shall represent to the extent practicable the most cost-efficient combinations of management prescriptions examined that can meet the objectives established in the alternatives." (36 CFR 219.12(f)(8). A program is said to be cost-efficient if it maximizes present net value subject to achieving specified levels of outputs and inputs (36 CFR 219.2). The Forest used the following techniques to respond to this direction:

a. Maximizing PNV in FORPLAN. This provides the levels of priced outputs in FORPLAN at an "efficient" point, given the objectives of the alternative as reflected in the model.

b. Using PNV as one criterion 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.

c. Using least cost as one criterion in choosing prescriptions or activities not incorporated in the FORPLAN Model which do not have an established benefit model; e.g., habitat improvement activities to maintain threatened and endangered species, levels of campground maintenance, etc.

The reader should recognize that economic efficiency is one of many factors used to analyze alternatives. PNV is often overstated as a decision criteria. If PNV captured costs and benefits associated with all activities, outputs, environmental effects, etc., then the alternative with the highest PNV would be the most efficient alternative. Since all of these factors are not captured in PNV analysis, use of other analysis tools is required.

In practice, we simulate a variety of alternatives, each representing a unique way to resolve identified issues and concerns. When comparing two alternatives, we should be careful to compare each as a whole and not focus our attention on any single factor, such as PNV. Even though each alternative has a different PNV, all determine the goodness or badness of an alternative in an economic sense because all are "cost efficient." Since not all outputs are valued in Forest planning, we do not have enough information to completely evaluate the economic efficiency as defined in FSM 1970.5.

We can, however, use the benefits and costs in making comparisons among alternatives.

Cost efficiency measures developed in the planning process (most notably PNV) may not be reliable. That is, there is an element of uncertainty associated with the stated PNV for any alternative. The uncertainty may be due to any of the following:

1) Not all outputs are explicity valued, e.g., visual quality, maintenance of threatened and endangered species, minimizing negative impacts on local economics, etc. These outputs are often constrained to a specified level and are therefore achieved independent of the PNV calculation.

2) Some priced outputs may also be fixed; that is, specified as constraints.

3) Estimation techniques for valuing goods may not be accurate.

4) Values for nonmarket goods provided by RPA often reflect national averages. Local values may differ substantially.

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

6) Demand curves for priced outputs may not be identifiable at the Forest level.

7) Relationships between some Forest outputs are not well understood; e.g., the relationship of anadromous fish spawning habitat capability to RVDs to value.

The uncertainty associated with the output and activity estimation is magnified by the uncertainty associated with estimating related economic parameters. This makes the PNV estimate less reliable than the estimates associated with the activities and outputs themselves. Therefore, we use discretion in weighing PNV heavily in our evaluation of alternatives.

PNV is essentially a measure of profit. It is the discounted profit of an alternative that is left after all discounted costs are satisfied. PNV is not a measure of marginality. The basis behind using PNV analysis is the assumption that a prudent person would choose the alternative which maximizes his profit. This assumes two basic ideas: 1) the prudent person has no other alternatives for investment or has examined all other alternative investments and has found them less profitable than any investment in Forest system management; 2) the prudent person is not constrained by investment capital, i.e., he has sufficient capital available to implement the most costly alternative analyzed.

In the case of Forest planning, the role of the prudent person is played by the nation, or if you would, the public and Congress. With current national concern for deficit spending and the national economic health, neither of the previous two assumptions are accurate. Allocation of funds for Forest management competes with national defense, welfare, foreign aid, agricultural development, etc. Also, current trends and predictions depict continued tightening budgets for natural resource management. Given these facts, it is important to analyze the marginal value of the alternatives as part of the economic efficiency analysis.

The Challis Forest has chosen to analyze the ratio of Present Net Value to Present Value Cost (PNV/PVC). This analysis identifies how much profit (PNV) is generated by each invested dollar (PVC). This will help the decision maker and the public understand what the invested dollar in each alternative is buying and will help simplify marginal analysis of the alternatives. In this case, one of the decision criteria used will be the highest PNV/PVC ratio. Given national competition for investment funds, the most economically efficient

alternative will be viewed as the alternative which generates the highest return per invested dollar. Table B-3 displays discounted costs, benefits, and PNV for benchmarks and alterantives ordered according to least cost. Table B-4 displays the same information ordered by PNV. Ordering of alternatives by PNV/PNC ratio is displayed in Table B-5.

2. Pricing Estimates Used

Resource prices used in the analysis were derived from the RPA-80 assigned values for most outputs and are displayed in Table B-7. Timber values were developed based on recent Forest sales and the TIMBERVAL computer model.

Further documentation of values including their use and derivation are maintained in Forest planning files. RPA values are maintained in computer files at the Fort Collins Computer Center.

Cost estimates were developed for potential activities proposed in the benchmarks and alternatives. These costs were developed by Forest personnel from historical data, activity plans, program budgets, etc. These costs approximate the minimum funds required to meet the standards and guidelines and minimum management requirements applied to the various benchmarks and alternatives.

Where sufficient data was available, costs were developed specific to particular management zones or activity sites. These costs vary by site, alternative emphasis, applicable standards and guidelines, level of intensity, etc.

Because of the application of costs to particular conditions, etc., and the variations between levels of intensity, it is difficult to display all cost values used. This information is maintained in computer files on the Challis National Forest.

Within Appendix B Section II.4.b and e. can be found the lists of categories of activity costs assigned values used in the FORPLAN Model.

III. SOCIAL AND ECONOMIC IMPACT ANALYSIS.

A. General

Implementation of particular Forest management alternatives will not result in significant change in socio-economic factors within the Forest's Zone of Influence (ZOI). Population and employment fluctuates even less as a result of implementing any alternatives.

Five indicators or variables have been selected to measure potential change created by the alternatives on the social structure of the ZOI:

-Life-styles
-Attitudes, beliefs, and values
-Population influx and land use
-Employment
-Social organizations

TABLE B-3 DISCOUNTED COSTS, BENEFITS, AND PRESENT NET VALUE FOR ALTERNATIVES RANKED ACCORDING TO LEAST COST

4% DISCOUNT RATE - (VALUES IN MILLION DOLLARS)

BENCHMARKS	PVC	CHANGE IN PVC	PVB	CHANGE IN PVB	PNV	CHANGE IN PNV
MINIMUM LEVEL	44 2		351 7		307 5	
MAX WILDERNESS	109 0	64.8	456.8	105.1	347.8	40 3
NO ACTION	124 5	80 3	446.3	94.6	321.8	14 3
MAX PNV/ASSIGNED	128 9	84 7	473 7	122 0	344 7	37 2
MAX PNV/MARKET	216 0	171 8	534 0	182 3	318 0	10 5
MIN WILDERNESS	219.9	175 7	555.4	203 7	335.5	28 0
MAX RANGE	335.0	290 8	622.4	270 7	287.4	-20 1
MAX TIMBER	427.7	383.5	687.5	335.8	259.8	-47.7

ALTERNATIVES	PVC	CHANGE IN PVC	PVB	CHANGE IN PVB	PNV	CHANGE IN PNV
ALTERNATIVE 6	78.4	34 2	429 0	77.3	350.6	43 1
ALTERNATIVE 7	94 5	50 3	416.6	64.9	322.1	14 6
ALTERNATIVE 8	99 2	55 0	450 6	98.9	351.4	43.9
ALTERNATIVE 5	110 0	65 8	450 4	98 7	340.4	32 9
ALTERNATIVE 1	124 5	80 3	446 3	94.6	321 8	14 3
ALTERNATIVE 11	126 0	81.8	443 0	91.3	317 0	9 5
ALTERNATIVE 3	126 8	82 6	438 7	87 0	311 9	4.4
ALTERNATIVE 9	132.9	88.7	447 1	95 4	314.2	6 7
ALTERNATIVE 10	151.7	107.5	467 5	115 8	315 8	8 3
ALTERNATIVE 4	183 0	138.8	487 7	136.0	304 7	-2 8
ALTERNATIVE 2	198 7	154.5	488.1	136.4	289 4	-18 1

7 1/8% DISCOUNT RATE - (VALUES IN MILLION DOLLARS)

BENCHMARKS	PVC	CHANGE IN PVC	PVB	CHANGE IN PVB	PNV	CHANGE IN PNV
MINIMUM LEVEL	28 7		195 8		167.1	
MAX WILDERNESS	71 7	43.0	268.9	73 1	197.2	30 1
NO ACTION	79 3	50 6	261.2	65.4	181 9	14 8
MAX PNV/ASSIGNED	84 3	55 6	267 5	71 7	183 2	16.1
MIN. WILDERNESS	140 7	112 0	328 6	132 8	187.9	20.8
MAX PNV/MARKET	141.4	112 7	317.2	121.4	175 8	8.7
MAX RANGE	217 2	188 5	330 6	134 8	113 4	-53 7
MAX TIMBER	278.6	249 9	411.0	215 2	132.4	-34.7

ALTERNATIVES	PVC	CHANGE IN PVC	PVB	CHANGE IN PVB	PNV	CHANGE IN PNV
ALTERNATIVE 6	51 2	22 5	250 4	54 6	299 2	32 1
ALTERNATIVE 5	61 6	32 9	263 5	67 7	201 9	34 8
ALTERNATIVE 7	62.4	33 7	241.8	46 0	179.4	12.3
ALTERNATIVE 8	65 2	36 5	264.5	68 7	199 3	32.2
ALTERNATIVE 1	79 3	50.6	261 2	65 4	181.9	14 8
ALTERNATIVE 11	80.3	51.6	257.3	61 5	177.0	9.9
ALTERNATIVE 3	86 9	58 2	256.1	60.3	169 2	2 1
ALTERNATIVE 9	87.2	58 5	263.6	67 8	176 4	9 3
ALTERNATIVE 10	94 9	66.2	270 8	75 0	175 9	8 8
ALTERNATIVE 2	118 4	89 7	281.0	85.2	162.6	-4 5
ALTERNATIVE 4	120 0	91.3	287.7	91 9	167.7	0.6

NOTE Change is measured from the base value shown for the Minimum Level Benchmark.

TABLE B-4 DISCOUNTED COSTS, BENEFITS, AND PRESENT NET VALUE FOR ALTERNATIVES RANKED ACCORDING TO HIGHEST PRESENT NET VALUE

4% DISCOUNT RATE - (VALUES IN MILLION DOLLARS)

BENCHMARKS	PNV	CHANGE IN PNV	PVC	CHANGE IN PVC	PVB	CHANGE IN PVB
MAX PNV/ASSIGNED	344 7		128 9		473 7	
MAX WILDERNESS	347 8	3.1	109 0	-19 9	456.8	-16 9
MIN. WILDERNESS	335.5	-9.2	219 9	91 0	555 4	81 7
NO ACTION	321 8	-22 9	124 5	-4 4	446.3	-27 4
MAX PNV/MARKET	318.0	-26.7	216 0	87 1	534.0	60.3
MINIMUM LEVEL	307.5	-37.2	44 2	-84 7	351.7	-122 0
MAX RANGE	287 4	-57.3	335.0	206.1	622.4	148.7
MAX TIMBER	259.8	-84 9	427 7	298 8	687.5	213 8

ALTERNATIVES	PNV	CHANGE IN PNV	PVC	CHANGE IN PVC	PVB	CHANGE IN PVB
ALTERNATIVE 8	351 4	6.7	99 2	-29 7	450.6	-23.1
ALTERNATIVE 6	350 6	5 9	78 4	-50 5	429.0	-44 7
ALTERNATIVE 5	340 4	-4 3	110.0	-18.9	450 4	-23.3
ALTERNATIVE 7	322.1	-22.6	95.4	-33.5	416.6	-57.1
ALTERNATIVE 1	321 8	-22 9	124.5	-4 4	446.3	-27 4
ALTERNATIVE 11	317 0	-27 7	126.0	-2 9	443 0	-30 7
ALTERNATIVE 10	315 8	-28 9	151 7	22 8	467 5	-6 2
ALTERNATIVE 9	314.2	-30 5	132 9	4 0	447 1	-26 6
ALTERNATIVE 3	311 9	-32 8	126.8	-2 1	438 7	-35 0
ALTERNATIVE 4	304.7	-40.0	183 0	54.1	487.7	14.0
ALTERNATIVE 2	289 4	-55.3	198.7	69.8	488.1	14.4

7 1/8% DISCOUNT RATE - (VALUES IN MILLION DOLLARS)

BENCHMARKS	PNV	CHANGE IN PNV	PVC	CHANGE IN PVC	PVB	CHANGE IN PVB
MAX PNV/ASSIGNED	183 2		84.3		267 5	
MAX WILDERNESS	197 2	14 0	71.7	-12.6	268.9	1 4
MIN. WILDERNESS	187.9	4.7	140.7	56.4	328 6	61.1
NO ACTION	181.9	-1 3	79.3	-5 0	261.2	-6 3
MAX PNV/MARKET	175 8	-7.4	141 4	57 1	317.2	49 7
MINIMUM LEVEL	167.1	-16.1	28.7	-55 6	195.8	-71 7
MAX TIMBER	132 4	-50.8	278 6	194.3	411 0	143.5
MAX RANGE	113 4	-69 8	217 2	132.9	330.6	63.1

ALTERNATIVES	PNV	CHANGE IN PNV	PVC	CHANGE IN PVC	PVB	CHANGE IN PVB
ALTERNATIVE 5	201.9	18 7	61 6	-22 7	263.5	-4.0
ALTERNATIVE 8	199 3	16 1	65 2	-19 1	264.5	-3.0
ALTERNATIVE 6	199 2	16	51 2	-33.1	250 4	-17.1
ALTERNATIVE 1	181 9	-1 3	79 3	-5.0	261 2	-6.3
ALTERNATIVE 7	179 4	-3.8	62 4	-21 9	241 8	-25.7
ALTERNATIVE 11	177.0	-6.2	80.3	-4.0	257.3	-10 2
ALTERNATIVE 10	175 9	-7 3	94 9	10.6	270.8	3.3
ALTERNATIVE 9	176 4	-6.8	87.2	2 9	263.6	-3.9
ALTERNATIVE 3	169.2	-14 0	86 9	2.6	256.1	-11.7
ALTERNATIVE 4	167 7	-15 5	120.0	35.7	287.7	20.2
ALTERNATIVE 2	162.6	-20.6	118.4	34 1	281 0	13 5

NOTE Change is measured from the base value shown for the Max PNV/Assigned Benchmark

TABLE B-5. ALTERNATIVES RANKED BY THE RATIO OF PNV/PVC.

4% INTEREST		7 1/8% INTEREST	
ALTERNATIVE	PNV/PVC	ALTERNATIVE	PNV/PVC
6	4.47	6	3.89
8	3.54	5	3.28
7	3.38	8	3.06
5	3.09	7	2.87
1	2.58	1	2.29
11	2.52	11	2.20
3	2.46	9	2.02
9	2.36	3	2.95
10	2.08	10	1.85
2	1.46	4	1.40
4	1.67	2	1.37

TABLE B-6. RANKING OF ALTERNATIVES BY OPPORTUNITY COST. (VALUES IN MILLION DOLLARS).

4% INTEREST			7 1/8% INTEREST		
ALTERNATIVE	PNV	*OPPORTUNITY COST	ALTERNATIVE	PNV	*OPPORTUNITY COST
8	351.4	0	5	201.9	0
6	350.6	0.8	8	199.3	2.6
5	340.4	11.0	6	199.2	2.7
7	322.1	29.3	1	181.9	20.0
1	321.8	29.6	7	179.4	22.5
11	317.0	34.4	11	177.0	24.9
10	315.8	35.6	9	176.4	25.5
9	314.2	37.2	10	175.9	26.0
3	311.9	39.5	3	169.2	32.7
4	307.7	46.7	4	167.7	34.2
2	289.4	62.0	2	162.6	39.3

*Opportunity Cost is generally defined as the difference between the most advantageous investment alternative and the alternative in question. This is analogous to saying how much profit would be lost by choosing a particular alternative over the alternative generating the highest profit. In this analysis, the highest PNV alternative is assumed to be the one with the highest advantage.

Table B-7

VALUES OF OUTPUTS
INCLUDED IN
ECONOMIC EFFICIENCY ANALYSIS
(1978 DOLLARS INFLATED TO 1/1/82)

SOURCE	RESOURCE	OUTPUT MEASURE	BENEFIT VALUE OR PRICE	
R-4	Lease Rentals Energy & Non-energy	Acres/Year	$ 1.00	
RPA	Livestock Use	AUM's	14.06	
RPA	Developed Recreation Use	RVD	3.99	
RPA	Dispersed Recreation Use	RVD	3.99	
RPA	Wilderness Recreation Use	RVD	10.64	
RPA	Big Game Hunting	WFUD	30.72	
RPA	Water Fowl Hunting	WFUD	42.56	
RPA	Small Game Hunting	WFUD	35.64	
RPA	Upland Game Hunting	WFUD	36.18	
RPA	Nature Study (Non-game)	WFUD	38.57	
Forest	Combined Weighted Wildlife Recreation Use 1/	WFUD	32.56 (28.57)	 2/
RPA	Cold Water Fishing	WFUD	23.75 (19.75)	 2/
RPA	Anadromous Sport Fishing	WFUD	75.48 (71.49)	 2/
RPA	Anadromous Commerical Fishing	POUND	2.45	
RPA	Fuelwood Harvest	MCF	39.90	
FOREST	Roundwood Harvest	MCF	204.58	
TIMBERVAL	Douglas-fir Sawtimber (Selling Price Log Scale):			
	7" to 9" DBH	MCF	821.28	
	9" to 11" DBH	MCF	1291.04	
	11" to 13" DBH	MCF	1475.01	
	13" to 15" DBH	MCF	1501.29	
	15" to 17" DBH	MCF	1537.43	
	17" to 19" DBH	MCF	1570.28	
	19" to 21" DBH	MCF	1603.13	
	21" to 23" DBH	MCF	1632.69	
	Lodgepole Sawtimber (Selling Price Log Scale):			
	4" to 6" DBH	MCF	1067.99	
	6" to 8" DBH	MCF	1085.55	
	8" to 10" DBH	MCF	1094.32	
	10" to 12" DBH	MCF	1103.10	
	12" to 14" DBH	MCF	1106.03	
	14" to 16" DBH	MCF	1228.92	
	16" to 18" DBH	MCF	1351.81	
	18" to 20" DBH	MCF	1372.29	

1/ A weighted value for wildlife recreation use was computed using the stated RPA values, weighted by percent of total recreation use observed for these categories in 1981. To avoid double valuation (Wildlife & Recreation) the RVD value ($3.99) was subtracted from the combined weighted Wildlife Recreation use value ($32.56-$3.99). $28.57 was used as the equivalent WFUD value in the FORPLAN Model.

2/ Calculations after recreation visit or day value is removed to avoid double valuation.

B. Life-styles

The Forest affects different groups of people in different ways. Some of these groups in the area are described in detail in the following paragraphs to show the connection between the Forest and life-styles in the area.

Young newcomers to the area are a divided group. Some would benefit from those alternatives which limit the activities related to consumptive use; examples would be young people in the recreation-related industry. Others in this group whose livelihood is dependent on mining and forestry would benefit from commodity-type alternatives.

Currently, the majority of young newcomers are associated with recent increases in mining development. The potential for employment of this group is much higher in the minerals-oil and gas sectors than in any other. Minerals development on the Forest is affected most (outside of market factors) by areas proposed for wilderness allocation. Alternatives 1, 4, 5, 6, 10, and 11 would be most beneficial to this age group.

Mill workers, laborers, and miners are extremely interested in the use of the Forest resources necessary to maintain the industry in which they are employed. Many are also interested in their private use of the Forest, in terms of recreational use, hunting, fishing, and sight-seeing.

This group of people would be most interested in those alternatives which would maintain or increase the utilization of the resource which creates their employment. Alternatives which increase the timber harvest and grazing might cause a minor influx of mill workers and laborers, or it would attract local workers.

Ranchers/farmers desire to maintain their traditional life-styles. This group would probably favor alternatives that maintain Forest grazing levels at or above present levels. Threats to their life-styles arise because of high taxes and overhead costs, and low or unstable prices for livestock and crops.

Loggers are primarily concerned about local job stability. This would be accomplished by maintaining a constant supply of timber at current or increased harvesting levels. Those alternatives then, which maintain or increase the current harvest, will be preferred. Those that will decrease the current timber harvest will probably be met with strong resistance.

Business owners know that population increases, and the increases in business that occur because of it, depend largely on increasing commodity production in the area. Those alternatives which maintain or increase the use of forage, timber, big game, mining, and recreation opportunities will be preferred by the business community. However, this group is affected differently, depending upon whether the business is oriented toward commodity or amenity outputs.

Nationally, people outside the region use the Forest directly for recreational and amenity uses. But this group also benefits from the use of finished products which were produced from commodities produced on the Forest.

Minority groups are not perceived to be affected any differently as special groups than they would as members of one of the groups previously mentioned.

Table A-IV-14, Chapter IV DEIS, shows the changes in employment and income that result from changes in selected Forest outputs by alternative and benchmark. The effects that each alternative will have on the different sectors can be estimated from this table. The sectors that will be predominately effected in the "Zone of Influence" (ZOI) are agriculture, eating and drinking establishments, hotels and motels, livestock, logging, retail trade, sawmills, services, transportation, and amusement and recreation.

These sectors have been grouped into three categories in Table IV-14, Chapter IV DEIS, in order to display effects resulting from changes in major Forest outputs between alternatives.

The changes in the recreation and wildlife outputs (RVDs) will primarily affect the eating and drinking establishments, hotels and motels, retail trade, services, and recreation sectors. The effects on these sectors are displayed in the Tourism and Retail Trade Section of Table IV-14, Chapter IV DEIS.

The changes in the range output (AUMs) will primarily affect the agriculture, livestock, transportation, and retail trade sectors. These effects are displayed in the Agriculture Section of Table IV-14, Chapter IV DEIS.

The changes in the timber output (MMBF) will primarily affect the agriculture, logging, sawmills, and retail trade sectors. These effects are displayed in the Logging and Sawmills Section of Table IV-14, Chapter IV DEIS.

The projected population increase in the ZOI and the additional increase brought on by the mining industry will combine to make additional impacts on recreation. Every alternative can accommodate the expected increases in recreation use. Alternative 4, 5, 10, and 11 appear to be the most beneficial to tourism and retail trade.

The alternatives that will be most beneficial to the agricultural sectors of the ZOI are Alternatives 1, 4, and 11.

The alternatives that will be most beneficial to the logging and sawmill sectors are Alternatives 2, 4, and 10.

C. Attitudes, Beliefs, and Values

The attitides in the ZOI can be generalized as independent and conservative. Caring about and being cared about by others in the community are cherished values. There is a strong feeling that it is desirable for young relatives to find work in the community so they will not have to live outside the ZOI in order to make a living.

Those alternatives that are high commodity and production-oriented make local employment possible on a continuing basis. Alternatives 4, 10, and 11 are estimated to be more favorable, in terms of providing additional local employment opportunities. No alternative proposed is expected to substantially change attitudes, beliefs, and values in the ZOI.

D. Population Influx and Changes in Land Use

The greatest increase in population would potentially be created by Alternative 4. This would create a possible increase of 38 jobs in 1995. Not all of the jobs would be filled by new people moving into the communities, so the total change in population would be a function of the number of jobs filled by people from outside the ZOI, the average family size of the immigrants from outside the ZOI, and the number of people required in additional support service.

No community should face substantial population growth as a result of implementation of any management alternatives. Generally, however, there is the potential for an increase in the retail trade and services sectors and a slight increase or decrease in the manufacturing sector, depending upon the alternative. This result could mean increased job opportunities for high school and college students, and women and other minorities.

It is assumed that none of the Forest management alternatives will cause any significant change in the present land use patterns in the ZOI.

E. Employment

Alternative 4 would create the highest level of potential employment and income in the ZOI. Alternatives 3 and 7 would create the greatest loss in income and employment. The projected change in potential employment and income for all the alternatives is displayed in Table IV-14, Chapter IV DEIS.

The employment and income estimates were developed through use of the IMPLAN computer model. This model simulates the economy of the ZOI as it currently exists and then simulates changes created in the ZOI by the implementation of each alternative.

While the jobs potentially affected by the Forest are relatively small when compared to the total jobs available in the ZOI, they are important in the small communities of the ZOI.

For example, the Forest sells timber to mills located in many small communities in the ZOI. This timber is necessary for the operation of these mills which, in turn, provide employment within each community.

The largest single employer in the ZOI is the Cyprus Molybdenum Mine owned by the American Oil Corporation. The mining sector has the largest potential for providing additional employment in the ZOI. The alternatives which would allow the most opportunity for mining, gas and oil develpoment, and respective employment are Alternatives 2 and 4.

Most livestock operations in the primary ZOI are dependent for summer grazing on the Forest. These livestock operations provide year-round employment in all counties of the ZOI. In addition, they support the community economies by purchasing many of their goods and services locally.

F. Changes in Social Organization

All of the alternatives would require little or no change in the size and structure of local community governments.

It is anticipated that none of the alternatives will significantly affect community stability and no community will have to gear up for any significant population influx.

The dominant industries would continue to be based on agriculture (ranching) and minerals. Ranching families will continue to provide a strong long-term core to the social structure of the ZOI. This structure will be influenced more by the National economy, market fluctuations, etc., than by implementation of alternative Forest management practices.

G. Payments to Counties

Each year, 25 percent of the value of receipts from National Forest outputs goes to the States for distribution to the counties in which the National Forest is located. The following components comprise the receipts that make up the "25 Percent Fund":

- Gross receipts from timber harvested
- Land use permits
- Recreation permits
- Power permits
- Mineral permits*
- Recreation user fees
- Grazing fees
- Knutson-Vandenberg Act funds
- Timber purchaser road credits

* From funds collected by U.S. Department of Interior for lands administered by Forest Service.

In addition to the 25 percent fund, payments in lieu of taxes are based on the number of acres of National Forest System lands within each county. In addition to these payments, additional payments in lieu of taxes are authorized for some counties where other payments are less than 75 cents an acre. This program of payments in lieu of taxes is dependent on annual congressional appropriations and is administered by the Bureau of Land Management, Department of Interior.

For purposes of analysis, payments to the counties are assumed to be constant for all alternatives and their levels will be based on future congressional appropriations. Payments listed in Table IV-14, Chapter IV DEIS, are merely an estimate of assumed price projections for the various outputs, especially stumpage. These totals are not to be construed as a contract between the Forest Service and local governments.

H. Social Effects by Alternative

1. Alternative 1 - No Action (Current Program)

As a result of the general stability of industry, Forest management will have no significant effect on life-style in the ZOI. Some increase in recreational use and demands for firewood is expected. These increases may create some additional employment in the retail trade and services sectors.

The projected average population growth of about 2 to 3 percent per year should pose no drastic change in community government, structure, or life-style.

Grazing will continue at near current levels and, therefore, should pose little threat to continued stability in the livestock industry.

The majority of the population will probably be concerned about how the Forest's resources are utilized. The residents of the ZOI counties will continue to be concerned about how the Forest Service regulates the mining operations and how much timber will be offered for sale. The newcomers will continue to place more demands on the Forest for recreational opportunities, and conflicts may arise between the industry-centered "newcomers" and the "locals" who are agriculturally based. Agricultural residents will continue to rely on the Forest to maintain their grazing needs.

2. Alternative 2 - Market Emphasis

This alternative would result in slight increases in population, employment, and income within the ZOI. These increases would occur in agriculture and logging sectors. There would be less growth in the tourism sector than in Alternative 1. If timber offerings are sufficient to attract development of additional milling capacity locally, there may be a larger increase in employment in the logging and sawmills sectors than is predicted. If this does not occur and additional timber harvested is milled outside the primary ZOI, there will be little overall effect.

There should be no changes in life-styles, attitudes, beliefs, values, or social organization resulting solely from implementing this alternative.

3. Alternative 3 - Non-Market Emphasis

This alternative would have the lowest projected population income and employment levels through 1990. The major effect would occur in the retail trade sector as a result of lower income levels in the agriculture, logging, and milling sectors.

Grazing use and timber offered for sale would be less than in Alternative 1.

While tourism may improve in this alternative, it would be offset by lower employment levels in the retail trade and logging sectors. While overall effects to the ZOI may not be significant, impacts to marginal family ranchers would probably be more significant than the predictive input/output model indicates.

4. Alternative 4 - RPA 1980 Program

This alternative shows the most beneficial effects on employment, income, and population. Greatest growth would occur in the logging and sawmills sector. Some growth would also occur in the agriculture, tourism, and retail trade sectors. This alternative has the potential to draw additional milling capacity into the ZOI. It would also strengthen and give greater stability to the ranching industry.

5. Alternative 5 - Management Response to I.C.O.

This alternative basically shows no change from Alternative 1 in any of the five socio-economic indicators.

6. Alternative 6 - Constrained (-25%) Budget

This alternative shows a very slight decrease in population, income, and employment from Alternative 1. Minor employment losses occur in the logging, sawmill, tourism, and retail trade sectors. The agriculture sector does not show any change in employment levels.

Reductions in Forest range funds would probably require that Forest grazing permittees increase their shared expenditures on Forest allotments. As a result, there would be some decline in income in the agriculture sectors also.

7. Alternative 7 - Current Program, Constrained Budget

Population, employment, and income would be 127 persons, 35 persons, and $740,000 below 1995 projected levels for Alternative 1. The agriculture sectors would be about the same as in Alternative 1. Forest grazing would increase slightly, increasing income for some ranch operations. Maintenance of

grazing and other Forest activities under this constrained budget level would be at the expense of timber activities. Lower timber outputs would lead to lower employment and income levels in the logging, sawmill, and retail trade sectors than in Alternative 1.

8. Alternative 8 - Maximize Wilderness, Amenity Emphasis

This alternative would have the third lowest population, income, and employment levels. Increases in the tourism sectors would not offset losses in the retail trade, agriculture, logging, and sawmill sectors. It would have the lowest levels of Forest grazing use. Impacts to the agriculture and retail trade sectors would drop significantly after the first decade as grazing use is decreased.

9. Alternative 9 - High Wilderness, Commodity Emphasis

This alternative would have the second lowest population level. Changes in population, income, and employment would begin later in the first decade than Alternative 8. The ranching industry would not be impacted as severely in the long run as it would in Alternative 8. Employment in the agriculture, retail trade, and tourism sectors would be below the levels projected for Alternative 1.

10. Alternative 10 - Current Program, Unconstrained Budget

This alternative shows slightly higher employment, income, and population levels than Alternative 1. These changes would be more pronounced for the logging and sawmill sectors than other sectors. Employment in the agriculture and tourism sectors would be similar to Alternative 1.

11. Alternative 11 - 1980 RPA Modified

The socio-economic indicators for this alternative are very similar to Alternative 1. Employment is slightly higher in the agriculture sector and slightly lower in the logging, sawmill, retail trade, and tourism trade sectors.

It is anticipated that there will be no significant variation between the alternatives relative to Civil Rights or effects on minorities or women. Alternatives favoring production of anadromous fish may provide additional downstream benefits to Native Americans dependent on commercial anadromous fisheries.

I. Economic Comparisons

Tables B-3 and B-4 show the discounted benefits and costs for each alternative and benchmark. Present net value is calculated as the total discounted-priced benefits minus the total discounted costs for the time period of 1986-2035. The PNV is shown using both a 4

percent and a 7 1/8 percent discount rate. The benefits attributed to each resource and the contributions to the total costs were discounted with the 4 percent rate. All the numbers are in terms of 1978 base dollars inflated to 1982 values.

The ranking of PNV for the alternatives is slightly different for the two discount rates. The reason is that an increase in discount rate places greater value on benefits and costs that occur in the first few decades.

There is minimal change in PNV ranking given a change in discount rate, when activities for a particular alternative are evenly spread over all decades. However, when activities are scheduled for early or late planning decades, there may be a change in PNV rating for the alternative.

The alternatives are listed in order of highest PNV in Table B-4. Table B-5 also ranks the alternatives by highest PNV/PVC ratio. This is an attempt to display the relative net value per invested dollar. During periods of limited budgets and reductions in Federal spending, this may be more indicative of economic efficiency than PNV alone.

In comparison of PNV/PVC ratio for both interest rates, Alternative 6 appears to be the most economically efficient. At 4 percent, Alternative 8 and at 7 1/8 percent, Alternative 5 are the highest rated by comparison of PNV.

It should be noted that the PNV analysis includes values assigned to non-market outputs, such as recreation use. These assigned values and their sources are identified in Table B-7. Other agencies, interest groups, etc., have developed and support different values for many market and non-market outputs. The magnitude and importance of these values varies across society by preference for types of uses of the Forest resources.

Consequently, this attempt to quantify economic net public benefits in terms of PNV may be less important than the description of environmental effects and levels of outputs for the alternatives analyzed.

J. Opportunity Costs

Table B-6 shows the opportunity costs of each alternative. It is calculated as the difference between the present net value of the alternative and the present net value of the highest PNV alternative, Alternative 8 (4% discount rate) or Alternative 5 (7 1/8% discount rate).

IV. ANALYSIS PRIOR TO ALTERNATIVE DEVELOPMENT

A. Introduction

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

1. Examining the Forest's capability of providing goods and services in a series of "Benchmarks", or displays;
2. Projecting the demands for goods and services;
3. Analyzing the potential to resolve issues and concerns; and
4. Determining the need to change management direction.

B. Minimum Management Requirements (MMRs)

Minimum management requirements are defined in the NFMA Regulations (36 CFR 219.27). A summary listing of these MMRs follows.

1. Conserve soil and water resource productivity.
2. Minimize hazards from natural physical forces such as fire and flood.
3. Prevent or reduce hazards and damage from pest organisms.
4. Protect riparian areas.
5. Maintain or enhance plant and animal diversity.
6. Provide fish and wildlife habitat needed to maintain viable populations.
7. Protect threatened and endangered species habitat.
8. Provide for transportation and utility corridors.
9. Develop road design and construction guidelines and standards.
10. Provide for revegetation of temporary roads.
11. Maintain air quality.
12. Assure that harvested lands can be capable of being adequately re-stocked within 5 years after final harvest.
13. Limit harvest openings to 40 acres maximum.
14. 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 listing of minimum management requirements (MMRs). These include:

- Development of standards and guidelines for each prescription;
- Developing all coordination allocation choice yield files to meet MMRs.
- Applying FORPLAN modeling constraints through various methods to insure the solution meets MMRs.

C. Modeling Constraints

Very few modeling constraints were used by the Challis in meeting MMRs. This low usage was partially due to the availability of a wide range of possible prescription assignments, but also was a result of the perceived desirability of allowing the model to freely reach optimal solutions for the objective function.

All benchmark and alternative FORPLAN runs were constrained by nondeclining timber yield and the ending inventory constraint except the *Maximize Timber Benchmark. The Max Timber Benchmark was run with both* constraints, then with only the ending inventory constraint for comparison. The highest timber output run was used as a benchmark. All runs were made with Long Term Sustained Yield-link.

The constraints commonly used for meeting MMRs were:

a. Setting output yields equal to, greater than, or less than specified levels. While this set of constraints generally does not relate directly to MMRs, it does affect such factors as creating or maintaining wildlife haitat and visual diversity. It is considered to be indirectly responsive to MMR 1, 2, 3, 4, 5, 6, 11, 13, and 14. Use of this type of constraint varied from alternative to alternative, based on the alternative objective.

b. Assigning specific prescriptions to analysis areas or groups of analysis areas (CAZs). This type of constraint was generally not directly responsive to MMR. It was used primarily for manipulation of areas assigned to wilderness in the roadless area reevaluation. However, some use of this type of constraint was also made to identify high priority areas for livestock and wildlife habitat investments. Another use was identifying and "locking in" areas such as potential Research Natural Areas. A third use of the Management *Emphasis constraints was to "lock out" or prevent prescriptions from* being applied to particular analysis areas. Indirectly, the Management Emphasis constraints were responsive to MMR 3, 5, 6, and 14.

Minimum Management Requirements 7, 8, and 12 were responded to by the development of the standards and guidelines and by the development of the wide range of prescriptions for each analysis area.

The various constraint sets listed in 1 above were used simultaneously in most or all benchmarks and alternatives. While several different combinations were used, incompatible combinations resulted in infeasible solutions or "crashed" runs when logic checks in the model prevented even infeasible solutions. The use of three different methods of meeting MMRs and the low number of modeling constraints used prevented accidental compounding of constraint effects.

D. Benchmarks

The purpose of benchmarks is to define the range within which integrated alternatives will be developed.

The Benchmark analysis:

- Complies with the minimum management requirements of 36 CFR 219.17.

- Estimates the schedule of management activities, resource outputs, effects, discounted benefits and costs, PNV, and acreages of prescription assignments appropriate to achieving the purposes of the benchmarks.

- Analyzes the implications of legal and policy constraints as specified in Section IV of the May 31, 1983 letter from the Washington Office conveying procedural advice.

- Is approximately implementable.

- Is not constrained by budget.

- Generally uses a Max PNV objective function when FORPLAN is used.

Eight benchmarks were developed to define the capability of the Challis Forest to produce goods and services, to provide some economic comparison control points for comparing various management philosophies or strategies (alternatives), and to determine the ability to be responsive to the major issues and concerns. Also see Chapter II Sections D and E for additional discussion.

The benchmarks are:

1. Minimum Level
2. Maximum Present Net Value, Assigned (all) Values
3. Maximum Present Net Value, Market Values
4. Maximum Timber for the First Decade
5. Maximum Range
6. Maximum Wilderness
7. Minimum Wilderness
8. Current Level

Objective, Constraints and Assumptions for Benchmarks

1. Minimum Level

   a. Objective: This benchmark specifies the minimum level of management which would be needed to maintain the unit as part of the National Forest System and to manage uncontrollable outputs and uses. This benchmark may ignore the transition period that would be required to move from current to minimum level management.

   b. Objective Function: This benchmark was not run in the FORPLAN Model.

   c. Constraints and Assumption: (See a. above)

   d. RUNID: NONE

TABLE B-9 BENCHMARK MINIMUM LEVEL

OUTPUT/ACTIVITY	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
RECREATION 1/									
Wilderness Use (ROS I)	MRVD	135	148	148	148	148			
Dispersed Use (ROS II & III)	MRVD	460	600	600	600	600			
Developed Use (ROS IV)	MRVD	0	0	0	0	0			
WILDERNESS									
Management	M Acres	782	782	782	782	782			
WILDLIFE AND FISH									
Structural Habitat Improve	Struct	0	0	0	0	0			
Non-Struc Habitat Improve	Acres	0	0	0	0	0			
Anad Fish Commercial	M # Lbs	156	315	474	634	704			
Anadromous Fish Sport	M WFUD	37	58	81	103	115			
Coldwater Fish	M WFUD	158	170	243	304	367			
Wildlife	M WFUD	87	95	115	143	185			
Populations									
Deer	M Animals	No Estimates							
Elk	M Animals	No Estimates							
Bighorn Sheep	M Animals	No Estimates							
Mountain Goat	M Animals	No Estimates							
Red Squirrel	M Acres	No Estimates							
RANGE									
Grazing Use (Livestock)									
Actual Use (Projected)	M AUM	0	0	0	0	0			
TIMBER									
Allowable Sale Quantity	MMCF	0	0	0	0	0	0	0	0
Roundwood Products 3/	MMCF	0	0	0	0	0	0	0	0
Reforestation	*Acres*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Timber Stand Improvement	Acres	0	0	0	0	0	0	0	0
Fuelwood (Dead & Green)	MMCF	0 42	0 42	0 42	0 42	0 42	LTSY =10 002/		
SOIL AND WATER									
Meets State Standards	M Ac Ft	2303	2303	2303	2303	2303			
Meets Water Quality Goals	M Ac Ft								
Soil & Water Resource Imp .	Acres	26	26	26	26	26			
MINERALS									
Leases	No Leases	0	0	0	0	0			
HUMAN RESOURCE PROGRAMS	Pers Yrs.	0	0	0	0	0			
FACILITIES									
Trail Const/Reconstruction	Miles	0	0	0	0	0			
Road Constr/Reconstruction (Arterial & Collector)	Miles	0	0	0	0	0			
Local Road Construction	Miles	0	0	0	0	0			
Local Road Reconstruction	Miles	0	0	0	0	0			
Timber Purch. Road Constr.	Miles	0	0	0	0	0			
Timber Purch. Road Reconstr	Miles	0	0	0	0	0			

1/ Recreation Outputs are not duplicated within the ROS Classes.
(ROS - Recreation Opportunity Spectrum)
2/ Long Term Sustained Yield for Commercial Sawtimber MMCF/MMBF
3/ Incidental amounts of roundwood products that may be offered dependent upon demand.
These volumes are not included in the allowable sale quantity.

TABLE B-9 BENCHMARK - MIMINUM LEVEL
(Continued)

BENEFITS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
Wilderness Recreation	M $	1436	1575	1575	1575	1575			
Dispersed Recreation	M $	1835	2394	2394	2394	2394			
Developed Recreation	M $	0	0	0	0	0			
Wildlife	M $	2486	2715	3286	4086	5286			
Anad. Fish Commercial	M $	382	772	1161	1553	1725			
Anadromous Fish Sport	M $	2645	4146	5790	7362	8220			
Coldwater Fish	M $	3121	3358	4799	6004	7249			
Range	M $	0	0	0	0	0			
Timber	M $	0	0	0	0	0			
Minerals	M $	0	0	0	0	0			

COSTS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035
Total Forest Budget	M $	1975	1977	1980	1984	1988
Fixed Costs						
Protection	M $	716	716	716	716	716
GA	M $	544	544	544	544	544
Variable Costs						
Investment Costs						
Timber Roads	M $	0	0	0	0	0
Other Roads	M $	0	0	0	0	0
Investment Other	M $	5	5	5	5	5
Total Investment	M $	5	5	5	5	5
Operational Costs	M $	710	712	715	719	723
Non-Forest Service Costs	M $	0	0	0	0	0
Returns to Treasury	M $	30 3	30 3	30 3	30 3	30 3

2. Maximum Present Net Value, Assigned Values

a. Objective: This benchmark specifies the management which will maximize the present net value of those outputs that have either an established market price or assigned monetary value. Assigned monetary valued outputs include: wildlife and fish dependent, and other dispersed recreation opportunities and water.

b. Objective Function: Maximize PNV for all periods.

c. Constraints and Assumptions: Non-declining yield and ending inventory. All prescriptions were allowed to come into solution. Wilderness prescriptions were allowed. There was no budget constraint.

d. RUNID: CHAPNA - Tape #F47553

TABLE B-10. BENCHMARK - MAXIMIZE PRESENT NET VALUE, ASSIGNED

OUTPUT/ACTIVITY	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
RECREATION 1/									
Wilderness Use (ROS I)	MRVD	295	356	356	356	356			
Dispersed Use (ROS II & III)	MRVD	238	348	348	348	348			
Developed Use (ROS IV)	MRVD	83	104	104	104	104			
WILDERNESS									
Management	M Acres	1551	1551	1551	1551	1551			
WILDLIFE AND FISH									
Structural Habitat Improve	Struct	4	4	4	4	4			
Non-Struc Habitat Improve	Acres	414	414	414	414	414			
Anad Fish Commercial	M # Lbs	158	320	481	642	714			
Anadromous Fish Sport	M WFUD	36	60	83	106	118			
Coldwater Fish	M WFUD	170	222	267	307	385			
Wildlife	M WFUD	87	109	132	162	197			
Populations									
Deer	M Animals	24 6	31.8	40 3	50 5	61 4			
Elk	M Animals	4 5	7.1	8.6	8 9	9.1			
Bighorn Sheep	M Animals	1 0	1 8	2.7	3 5	4.5			
Mountain Goat	M Animals	0 6	0.7	0 8	0 9	1 1			
Red Squirrel	M Acres								
RANGE									
Grazing Use (Livestock)									
Actual Use (Projected)	M AUM	113	110	110	110	110			
TIMBER									
Allowable Sale Quantity	MMCF	1 1	1.3	1 3	1 3	1.3	1 3	2.0	2.0
	MMBF	5.0	5.6	5.6	5.6	5.6	5 6	9 0	9 0
Roundwood Products 3/	MMCF	0.02	0 02	0 02	0.02	0 02	0.02	0 02	0.02
	MMBF	0 09	0 09	0 09	0 09	0.09	0 09	0.09	0 09
Reforestation	Acres	1016	1274	1036	1171	1094	968	1090	1092
Timber Stand Improvement	Acres								
Fuelwood (Dead & Green)	MMCF	0 42	0.42	0 42	0 42	0.42	LTSY = 2.22/9.99 2/		
SOIL AND WATER									
Meets State Standards	M Ac Ft	2463	2463	2463	2463	2463			
Meets Water Quality Goals	M Ac Ft								
Soil & Water Resource Imp	Acres	97	11	0	0	0			
MINERALS									
Leases	No Leases	124	156	156	156	156			
HUMAN RESOURCE PROGRAMS	Pers. Yrs.	17	17	17	17	17			
FACILITIES									
Trail Const/Reconstruction	Miles	Not Estimated							
Road Constr/Reconstruction (Arterial & Collector)	Miles	174	174	5	5	5			
Local Road Construction	Miles	3	1	7	7	8			
Local Road Reconstruction	Miles	28	28	3	3	3			
Timber Purch Road Constr	Miles	3	3	6	3	2			
Timber Purch. Road Reconstr.	Miles	1	2	2	4	2			

1/ Recreation Outputs are not duplicated within the ROS Classes. (ROS - Recreation Opportunity Spectrum)

2/ Long Term Sustained Yield for Commercial Sawtimber MMCF/MMFB

3/ Incidental amounts of roundwood products that may be offered dependent upon demand These volumes are not included in the Allowable Sale Quantity

TABLE B-10 BENCHMARK - MAXIMIZE PRESENT NET VALUE, ASSIGNED
(Continued)

BENEFITS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
Wilderness Recreation	M $	3125	3125	3125	3125	3125			
Dispersed Recreation	M $	948	1390	1390	1390	1390			
Developed Recreation	M $	329	415	415	415	415			
Wildlife	M $	2485	3110	3765	4618	5628			
Anad. Fish Commercial	M $	387	784	1179	1574	1748			
Anadromous Fish Sport	M $	2596	4268	5941	7593	8451			
Coldwater Fish	M $	3355	4379	5263	6061	7610			
Range	M $	1593	1553	1542	1541	1541			
Timber	M $	1759	2042	2042	2034	1954			
Minerals	M $	318	391	391	391	391			

COSTS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035
Total Forest Budget	M $	4689	4671	4258	4258	4258
Fixed Costs						
Protection	M $	497	497	497	497	497
GA	M $	800	800	800	800	800
Variable Costs						
Investment Costs						
Timber Roads	M $	71	128	214	174	93
Other Roads	M $	460	460	70	70	70
Investment Other	M $	540	490	478	505	516
Total Investment	M $	1071	1078	762	749	679
Operational Costs	M $	2185	2204	2204	2204	2204
Non-Forest Service Costs	M $	1217	1391	1391	1390	1417
Returns to Treasury	M $	1052 3	1230 4	1230 5	1223 7	1116 8

3. Maximize Present Net Values, Market Values

a. Objective: This benchmark specifies the management which will maximize the present net value of those outputs that have an established market price. These outputs include timber, livestock range forage, commercial fish, developed recreation opportunities, and minerals. Regardless of the price actually paid for these outputs, the full willingness-to-pay value is to be used.

b. Objective Function: Maximize PNV for all periods.

c. Constraints and Assumptions: Non-declining yield and ending inventory. All prescriptions were allowed to come into solution. Wilderness prescriptions were allowed. There was no budget constraint.

d. RUNID: CHAMKT - Tape #F47231

TABLE B-11 BENCHMARK - MAXIMIZE PRESENT NET VALUE, MARKET

OUTPUT/ACTIVITY	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
RECREATION 1/									
Wilderness Use (ROS I)	MRVD	135	148	148	148	148			
Dispersed Use (ROS II & III)	MRVD	383	478	478	478	478			
Developed Use (ROS IV)	MRVD	95	122	122	122	122			
WILDERNESS									
Management	M Acres	782	782	782	782	782			
WILDLIFE AND FISH									
Structural Habitat Improve	Struct	1	1	1	1	1			
Non-Struc Habitat Improve	Acres	119	119	119	119	119			
Anad Fish Commercial	M # Lbs	152	310	467	624	693			
Anadromous Fish Sport	M WFUD	35	58	81	103	115			
Coldwater Fish	M WFUD	162	211	255	295	372			
Wildlife	M WFUD	78	95	116	142	144			
Populations									
Deer	M Animals	24 3	30 9	37 9	46 1	54 7			
Elk	M Animals	4 9	5 9	6 3	6.4	6 5			
Bighorn Sheep	M Animals	0.7	1 1	1 5	1 8	1.9			
Mountain Goat	M Animals	0 6	0 6	0 6	0.7	0 7			
Red Squirrel	M Acres								
RANGE									
Grazing Use (Livestock)									
Actual Use (Projected)	M AUM	114	116	120	120	120			
TIMBER									
Allowable Sale Quantity	MMCF	3 7	3 7	3 7	3 7	3 7	3 7	5.5	5.6
	MMBF	16 7	16 7	16 7	16 7	16 7	16 7	24 8	25 2
Roundwood Products 3/	MMCF	0 02	0 02	0 02	0.02	0 02	0 02	0 02	0 02
	MMBF	0 09	0 09	0.09	0 09	0 09	0 09	0.09	0 09
Reforestation	Acres	3066	3882	3215	3308	2805	2960	2561	2734
Timber Stand Improvement	Acres								
Fuelwood (Dead & Green)	MMCF	0.42	0 42	0 42	0 42	0 42	LTSY = 6 06/27.27 2/		
SOIL AND WATER									
Meets State Standards	M Ac Ft	2463	2463	2463	2463	2463			
Meets Water Quality Goals	M Ac Ft								
Soil & Water Resource Imp	Acres	44	30	0	0	0			
MINERALS									
Leases	No Leases	161	207	207	207	207			
HUMAN RESOURCE PROGRAMS	Pers Yrs	17	17	17	17	17			
FACILITIES									
Trail Const/Reconstruction	Miles	Not Estimated							
Road Constr/Reconstruction (Arterial & Collector)	Miles	174	174	5	5	5			
Local Road Construction	Miles	3	1	7	7	8			
Local Road Reconstruction	Miles	28	28	3	3	3			
Timber Purch Road Constr	Miles	15	7	5	19	4			
Timber Purch Road Reconstr	Miles	5	8	2	5	2			

1/ Recreation Outputs are not duplicated within the ROS Classes (ROS - Recreation Opportunity Spectrum)
2/ Long Term Sustained Yield for Commercial Sawtimber MMCF/MMBF
3/ Incidental amounts of roundwood products that may be offered dependent upon demand These volumes are not included in the Allowable Sale Quantity

TABLE B-11. BENCHMARK - MAXIMIZE PRESENT NET VALUE, MARKET
(Continued)

BENEFITS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
Wilderness Recreation	M $	1431	1575	1575	1575	1575			
Dispersed Recreation	M $	1528	1907	1907	1907	1907			
Developed Recreation	M $	379	487	487	487	487			
Wildlife	M $	2191	2715	3322	4063	4104			
Anad. Fish Commercial	M $	372	759	1144	1528	1697			
Anadromous Fish Sport	M $	2526	4214	5771	7373	8209			
Coldwater Fish	M $	3200	4166	5033	5822	7344			
Range	M $	1600	1636	1689	1686	1686			
Timber	M $	6283	6414	6075	6083	6413			
Minerals	M $	484	619	619	619	619			

COSTS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035
Total Forest Budget	M $	4291	4245	3825	3815	3813
Fixed Costs						
Protection	M $	497	497	497	497	497
GA	M $	800	800	800	800	800
Variable Costs						
Investment Costs						
Timber Roads	M $	429	362	181	627	151
Other Roads	M $	460	460	70	70	70
Investment Other	M $	1285	1242	1160	1165	988
Total Investment	M $	2174	2064	1411	1862	1209
Operational Costs	M $	2014	2039	2039	2039	2039
Non-Forest Service Costs	M $	4343	4361	4511	4426	5024
Returns to Treasury	M $	2619 5	2872 1	2390.5	2484 4	2219 3

4. Maximize Timber for the First Decade

a. Objective: This benchmark maximizes timber outputs.

b. Objective Function: Maximize timber for the first decade; after this objective value was achieved, the run used maximum PNV, all values.

c. Constraints and Assumptions: Non-declining yield and ending inventory were used on one run, then non-declining yield was dropped and the benchmark was re-run. There was no budget constraint. All prescriptions were allowed to come into solution. Wilderness prescriptions were allowed.

d. RUNID: CHATIM - Tape #F47275

TABLE B-12. BENCHMARK - MAXIMIZE TIMBER

OUTPUT/ACTIVITY	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1	2	3	4	5	6-10	11-15	16-20
RECREATION 1/									
Wilderness Use (ROS I)	MRVD	135	148	148	148	148			
Dispersed Use (ROS II & III)	MRVD	399	497	497	497	497			
Developed Use (ROS IV)	MRVD	79	104	104	104	104			
WILDERNESS									
Management	M Acres	782	782	782	782	782			
WILDLIFE AND FISH									
Structural Habitat Improve	Struct	4	4	4	4	4			
Non-Struc Habitat Improve	Acres	353	353	353	353	353			
Anad Fish Commercial	M # Lbs.	154	314	473	632	702			
Anadromous Fish Sport	M WFUD	36	59	82	104	116			
Coldwater Fish	M WFUD	165	215	262	299	376			
Wildlife	M WFUD	82	103	122	144	155			
Populations									
Deer	M Animals	24 5	31 1	38 8	46.9	56.4			
Elk	M Animals	5.2	6 4	6 8	7.1	7.2			
Bighorn Sheep	M Animals	0 9	1.4	1 9	2 5	3.1			
Mountain Goat	M Animals	0.6	0.6	0 7	0.7	0 8			
Red Squirrel	M Acres	No Estimates							
RANGE									
Grazing Use (Livestock)									
Actual Use (Projected)	M AUM	114	114	113	113	113			
TIMBER									
Allowable Sale Quantity	MMCF	8 9	8.9	8 9	8 9	8 9	8 9	12.2	12 2
	MMBF	40.1	40 1	40 1	40 1	40.1	40.1	55 0	55.0
Roundwood Products 3/	MMCF	0.02	0.02	0 02	0.02	0 02	0 02	0 02	0.02
	MMBF	0 09	0 09	0 09	0 09	0.09	0.09	0.09	0 09
Reforestation	Acres	6594	6376	2628	6530	1838	2268	3642	2714
Timber Stand Improvement	Acres	No Estimate							
Fuelwood (Dead & Green)	MMCF	0 42	0.42	0 42	0.42	0.42	LTSY = 12.7/57.2 2/		
SOIL AND WATER									
Meets State Standards	M Ac Ft	2463	2463	2463	2463	2463			
Meets Water Quality Goals	M Ac Ft								
Soil & Water Resource Imp	Acres	87	20	0	0	0			
MINERALS									
Leases	No. Leases	161	207	207	207	207			
HUMAN RESOURCE PROGRAMS	Pers. Yrs	17	17	17	17	17			
FACILITIES									
Trail Const/Reconstruction	Miles	Not Estimated							
Road Constr/Reconstruction (Arterial & Collector)	Miles	Not Estimated							
Local Road Construction	Miles	Not Estimated							
Local Road Reconstruction	Miles	Not Estimated							
Timber Purch Road Constr.	Miles	51	50	24	45	60			
Timber Purch Road Reconstr.	Miles	Not Estimated							

1/ Recreation Outputs are not duplicated within the ROS Classes. (ROS - Recreation Opportunity Spectrum)

2/ Long Term Sustained Yield for Commercial Sawtimber MMCF/MMBF

3/ Incidental amounts of roundwood products that may be offered dependent upon demand. These volumes are not included in the Allowable Sale Quantity

TABLE B-12. BENCHMARK - MAXIMIZE TIMBER
(Continued)

BENEFITS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
Wilderness Recreation	M $	1436	1575	1575	1575	1575			
Dispersed Recreation	M $	1594	1981	1981	1981	1981			
Developed Recreation	M $	314	413	413	413	413			
Wildlife	M $	2352	2935	3494	4122	4415			
Anad Fish Commercial	M $	380	770	1159	1548	1720			
Anadromous Fish Sport	M $	2550	4196	5841	7464	8322			
Coldwater Fish	M $	3258	4236	5167	5895	7418			
Range	M $	1598	1596	1586	1582	1582			
Timber	M $	11,362	15,341	14,712	12,537	12,199			
Minerals	M $	484	619	619	619	619			

COSTS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035
Total Forest Budget	M $	4777	4770	4350	4350	4350
Fixed Costs						
Protection	M $	497	497	497	497	497
GA	M $	800	800	800	800	800
Variable Costs						
Investment Costs						
Timber Roads	M $	1447	1470	1023	1359	2085
Other Roads	M $	460	460	70	70	70
Investment Other	M $	3089	2308	2841	3151	3498
Total Investment	M $	4996	4238	3934	4580	5653
Operational Costs	M $	1990	1990	1990	1990	1990
Non-Forest Service Costs	M $	10,867	11,804	11,471	11,249	10,626
Returns to Treasury	M $	1175	4351	4056	2104	2391

5. Maximum Range

a. Objective: This benchmark maximizes range outputs.

b. Objective Function: Maximize range outputs for five decades.

c. Constraints and Assumptions: Non-declining yeild and ending inventory. All prescriptions were allowed to come into solution. Wilderness prescriptions were allowed. There was no budget constraint.

d. RUNID: CHAW71 - Tape #F47266

TABLE B-13 BENCHMARK - MAXIMIZE RANGE

OUTPUT/ACTIVITY	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
RECREATION 1/									
Wilderness Use (ROS I)	MRVD	143	143	143	143	143			
Dispersed Use (ROS II & III)	MRVD	380	474	474	474	474			
Developed Use (ROS IV)	MRVD	88	114	114	114	114			
WILDERNESS									
Management	M Acres	782	782	782	782	782			
WILDLIFE AND FISH									
Structural Habitat Improve	Struct	2	2	2	2	2			
Non-Struc Habitat Improve	Acres	162	162	162	162	162			
Anad. Fish Commercial	M # Lbs	154	313	471	629	699			
Anadromous Fish Sport	M WFUD	36	58	81	104	116			
Coldwater Fish	M WFUD	162	211	255	295	372			
Wildlife	M WFUD	80	99	119	142	147			
Populations									
Deer	M Animals	24 3	30 7	38 0	46.2	54.8			
Elk	M Animals	5 1	6.2	7.3	7.5	7 7			
Bighorn Sheep	M Animals	0 8	1 3	1 7	2 1	2 3			
Mountain Goat	M Animals	0 6	0.6	0 7	0 7	0 7			
Red Squirrel	M Acres								
RANGE									
Grazing Use (Livestock)									
Actual Use (Projected)	M AUM	114	119	126	126	126			
TIMBER									
Allowable Sale Quantity	MMCF	6.3	6 4	6.4	6.4	6 4	6.3	10 9	10.9
	MMBF	28 4	28.8	28 8	28.8	28.8	28 4	49.1	49.1
Roundwood Products 3/	MMCF	0 02	0 02	0 02	0.02	0 02	0 02	0 02	0.02
	MMBF	0 09	0.09	0 09	0 09	0.09	0.09	0 09	0 09
Reforestation	Acres	6314	6974	5834	5410	5183	5639	5652	6319
Timber Stand Improvement	Acres								
Fuelwood (Dead & Green)	MMCF	0.42	0.42	0 42	0.42	0.42	LTSY=10 94/49 23 2/		
SOIL AND WATER									
Meets State Standards	M Ac Ft	2463	2463	2463	2463	2463			
Meets Water Quality Goals	M Ac Ft								
Soil & Water Resource Imp .	Acres	100	60	0	0	0			
MINERALS									
Leases	No Leases	161	207	207	207	207			
HUMAN RESOURCE PROGRAMS	Pers Yrs.	17	17	17	17	17			
FACILITIES									
Trail Const/Reconstruction	Miles	Not Estimated							
Road Constr/Reconstruction (Arterial & Collector)	Miles	174	174	5	5	5			
Local Road Construction	Miles	3	1	7	7	8			
Local Road Reconstruction	Miles	28	28	3	3	3			
Timber Purch. Road Constr	Miles	54	16	43	35	28			
Timber Purch. Road Reconstr.	Miles	20	11	3	4	6			

1/ Recreation Outputs are not duplicated within the ROS Classes. (ROS - Recreation Opportunity Spectrum)

2/ Long Term Sustained Yield for Commercial Sawtimber MMCF/MMBF

3/ Incidental amounts of roundwood products that may be offered dependent upon demand. These volumes are not included in the Allowable Sale Quantity.

TABLE B-13 BENCHMARK - MAXIMIZE RANGE
(Continued)

BENEFITS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
Wilderness Recreation	M $	1436	1575	1575	1575	1575			
Dispersed Recreation	M $	1515	1892	1892	1892	1892			
Developed Recreation	M $	351	455	455	455	455			
Wildlife	M $	2285	2823	3410	4065	4208			
Anad Fish Commercial	M $	377	767	1155	1542	1713			
Anadromous Fish Sport	M $	2543	4174	5926	7456	8292			
Coldwater Fish	M $	3200	4177	5044	5830	7353			
Range	M $	1608	1678	1765	1765	1765			
Timber	M $	9699	10,111	9358	9861	10,541			
Minerals	M $	484	619	619	619	619			

COSTS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035
Total Forest Budget	M $	4802	4742	4299	4276	4276
Fixed Costs						
Protection	M $	497	497	497	497	497
GA	M $	800	800	800	800	800
Variable Costs						
Investment Costs						
Timber Roads	M $	310	704	1294	1090	926
Other Roads	M $	460	460	70	70	70
Investment Other	M $	2353	2277	2260	1991	1770
Total Investment	M $	3123	3441	3624	3151	2766
Operational Costs	M $	2231	2256	2256	2256	2256
Non-Forest Service Costs	M $	7990	8368	8068	8277	8257
Returns to Treasury	M $	2386 7	2562 7	2119.4	2413 6	3113 7

6. Maximum Wilderness

Same as #2, except 100% of roadless areas are assigned to wilderness.

d. RUNID: CHAWDN - Tape #F47292

TABLE B-14 BENCHMARK - MAXIMIZE WILDERNESS

OUTPUT/ACTIVITY	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
RECREATION 1/									
Wilderness Use (ROS I)	MRVD	373	448	448	448	448			
Dispersed Use (ROS II & III)	MRVD	175	215	215	215	215			
Developed Use (ROS IV)	MRVD	68	84	84	84	84			
WILDERNESS									
Management	M Acres	2174	2174	2174	2174	2174			
WILDLIFE AND FISH									
Structural Habitat Improve.	Struct.	1	1	1	1	1			
Non-Struc. Habitat Improve.	Acres	74	74	74	74	74			
Anad Fish Commercial	M # Lbs	156	315	474	634	704			
Anadromous Fish Sport	M WFUD	36	59	82	105	117			
Coldwater Fish	M WFUD	166	216	248	280	339			
Wildlife	M WFUD	87	109	129	151	174			
Populations									
Deer	M Animals	24.6	31.5	39.3	48.4	58 6			
Elk	M Animals	5.5	6.9	8 2	8 5	8.6			
Bighorn Sheep	M Animals	1.0	1 7	2.5	3.7	4.0			
Mountain Goat	M Animals	0.6	0.7	0 8	0.9	1.0			
Red Squirrel	M Acres								
RANGE									
Grazing Use (Livestock)									
Actual Use (Projected)	M AUM	112	103	96	96	96			
TIMBER									
Allowable Sale Quantity	MMCF	0 7	0 7	0 7	0.7	0 7	0 7	0.9	1.1
	MMBF	3.2	3 2	3.2	3.2	3 2	3.2	4.1	5 0
Roundwood Products 3/	MMCF	0.02	0.02	0 02	0 02	0 02	0.02	0.02	0 02
	MMBF	0.09	0 09	0.09	0 09	0 09	0.09	0.09	0.09
Reforestation	Acres	667	715	614	649	551	554	448	543
Timber Stand Improvement	Acres								
Fuelwood (Dead & Green)	MMCF	0.42	0 42	0 42	0.42	0.42	LTSY=1 15/5 18 2/		
SOIL AND WATER									
Meets State Standards	M Ac Ft	2463	2463	2463	2463	2463			
Meets Water Quality Goals	M Ac Ft								
Soil & Water Resource Imp	Acres	79	4	0	0	0			
MINERALS									
Leases	No. Leases	41	58	58	58	58			
HUMAN RESOURCE PROGRAMS	Pers Yrs.	17	17	17	17	17			
FACILITIES									
Trail Const/Reconstruction	Miles	Not Estimated							
Road Constr/Reconstruction (Arterial & Collector)	Miles	174	174	5	5	5			
Local Road Construction	Miles	3	1	7	7	8			
Local Road Reconstruction	Miles	28	28	3	3	3			
Timber Purch Road Constr	Miles	2	1	1	3	1			
Timber Purch Road Reconstr.	Miles	1	1	1	1	1			

1/ Recreation Outputs are not duplicated within the ROS Classes (ROS - Recreation Opportunity Spectrum)

2/ Long Term Sustained Yield for Commercial Sawtimber MMCF/MMBF

3/ Incidental amounts of roundwood products that may be offered dependent upon demand These volumes are not included in the Allowable Sale Quantity.

TABLE B-14 BENCHMARK - MAXIMIZE WILDERNESS
(Continued)

BENEFITS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
Wilderness Recreation	M $	3951	4767	4767	4767	4767			
Dispersed Recreation	M $	697	860	860	860	860			
Developed Recreation	M $	270	335	335	335	335			
Wildlife	M $	2494	3110	3676	4311	4971			
Anad Fish Commercial	M $	382	773	1163	1553	1725			
Anadromous Fish Sport	M $	2558	4214	5858	7474	8332			
Coldwater Fish	M $	3263	4257	4893	5529	6698			
Range	M $	1568	1456	1355	1355	1355			
Timber	M $	1174	1198	1142	1198	1198			
Minerals	M $	150	200	200	200	200			

COSTS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035
Total Forest Budget	M $	4019	4015	3578	3578	3578
Fixed Costs						
Protection	M $	497	497	497	497	497
GA	M $	800	800	800	800	800
Variable Costs						
Investment Costs						
Timber Roads	M $	66	67	33	107	30
Other Roads	M $	460	460	70	70	70
Investment Other	M $	358	338	329	323	304
Total Investment	M $	884	865	432	500	404
Operational Costs	M $	2026	2047	2047	2047	2047
Non-Forest Service Costs	M $	799	803	828	875	929
Returns to Treasury	M $	716 9	775 7	686 2	696 4	643 6

7. Minimize Wilderness

Same as #2, except 0% of roadless areas are assigned to wilderness.

d. RUNID: CHANDW - Tape #F45907

TABLE B-15 BENCHMARK - MINIMIZE WILDERNESS

OUTPUT/ACTIVITY	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
RECREATION 1/									
Wilderness Use (ROS I)	MRVD	135	148	148	148	148			
Dispersed Use (ROS II & III)	MRVD	398	496	496	496	496			
Developed Use (ROS IV)	MRVD	81	104	104	104	104			
WILDERNESS									
Management	M Acres	782	782	782	782	782			
WILDLIFE AND FISH									
Structural Habitat Improve.	Struct.	7	7	7	7	7			
Non-Struc Habitat Improve	Acres	678	678	678	678	678			
Anad Fish Commercial	M # Lbs	158	320	482	643	714			
Anadromous Fish Sport	M WFUD	37	62	85	109	121			
Coldwater Fish	M WFUD	171	222	268	309	389			
Wildlife	M WFUD	86	108	133	168	210			
Populations									
Deer	M Animals	24 6	31.9	41.5	51 9	62 9			
Elk	M Animals	4 5	7.1	8.9	9.2	9 3			
Bighorn Sheep	M Animals	1 1	1 8	2.6	3 4	4 3			
Mountain Goat	M Animals	0 6	0.7	0.8	0 9	1.1			
Red Squirrel	M Acres								
RANGE									
Grazing Use (Livestock)									
Actual Use (Projected)	M AUM	114	116	118	118	118			
TIMBER									
Allowable Sale Quantity	MMCF	3 7	3 7	3 7	3 7	3.7	3 7	5.5	5.6
	MMBF	16 7	16.7	16 7	16 7	16.7	16.7	24 8	25 2
Roundwood Products 3/	MMCF	0 02	0.02	0 02	0 02	0.02	0.02	0 02	0.02
	MMBF	0.09	0.09	0.09	0 09	0 09	0.09	0.09	0 09
Reforestation	Acres	3066	3882	3215	3308	2805	2960	2561	2734
Timber Stand Improvement	Acres								
Fuelwood (Dead & Green)	MMCF	0 42	0.42	0.42	0.42	0.42	LTSY=6.06/27.27 2/		
SOIL AND WATER									
Meets State Standards	M Ac Ft	2463	2463	2463	2463	2463			
Meets Water Quality Goals	M Ac Ft								
Soil & Water Resource Imp	Acres	119	10	0	0	0			
MINERALS									
Leases	No Leases	161	207	207	207	207			
HUMAN RESOURCE PROGRAMS	Pers Yrs.	17	17	17	17	17			
FACILITIES									
Trail Const/Reconstruction	Miles	Not Estimated							
Road Constr/Reconstruction (Arterial & Collector)	Miles	174	174	5	5	5			
Local Road Construction	Miles	3	1	7	7	8			
Local Road Reconstruction	Miles	28	28	3	3	3			
Timber Purch Road Constr	Miles	15	7	5	19	4			
Timber Purch Road Reconstr	Miles	5	8	2	5	2			

1/ Recreation Outputs are not duplicated within the ROS Classes (ROS - Recreation Opportunity Spectrum)
2/ Long Term Sustained Yield For Commercial Sawtimber MMCF/MMBF
3/ Incidental amounts of roundwood products that may be offered dependent upon demand These volumes are not included in the Allowable Sale Quantity

TABLE B-15 BENCHMARK - MINIMIZE WILDERNESS
(Continued)

BENEFITS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
Wilderness Recreation	M $	1431	1575	1575	1575	1575			
Dispersed Recreation	M $	1586	1979	1979	1979	1979			
Developed Recreation	M $	321	415	415	415	415			
Wildlife	M $	2469	3076	3790	4805	5998			
Anad Fish Commercial	M $	387	785	1180	1576	1750			
Anadromous Fish Sport	M $	2675	4417	6090	7807	8665			
Coldwater Fish	M $	3363	4388	5291	6101	7679			
Range	M $	1598	1630	1657	1656	1656			
Timber	M $	6282	6414	6075	6084	6413	6247	7920	8104
Minerals	M $	484	619	619	619	619			

COSTS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035
Total Forest Budget	M $	4532	4487	4070	4060	4058
Fixed Costs						
Protection	M $	497	497	497	497	497
GA	M $	800	800	800	800	800
Variable Costs						
Investment Costs						
Timber Roads	M $	429	362	181	627	151
Other Roads	M $	460	460	70	70	70
Investment Other	M $	1214	1280	1201	1206	1029
Total Investment	M $	2103	2102	1452	1903	1250
Operational Costs	M $	2192	2217	2217	2217	2217
Non-Forest Service Costs	M $	4343	4361	4511	4426	5024
Returns to Treasury	M $	2618 0	2871.1	2386 3	2481 7	2214 2

8. Current Level

a. Objective: This benchmark 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. For further description of this Alternative, see the following: Section 5 - Formulation of Alternatives.

E. Sensitivity Analysis For Each Benchmark By Discount Rate

This section displays major resource outputs for a comparison of the benchmarks. The effects of each discount rate can then be analyzed by the reviewer.

The PNV figure for each benchmark is provided in 1982 dollars discounted at 4% and 7 1/8%.

The nature of this type analysis requires understanding the effects of all constraints included in the model and perhaps requires making several runs to test the sensitivity of the solution to various levels of major constraints. This "sensitivity analysis" is quite expensive, given the scope of the Forest planning problem, and will be performed only where a major issue or concern suggests that the benefits from the additional analysis will outweigh the costs of the analysis.

TABLE B-16 Benchmark PNV 4% - PNV 7 1/8 %

Benchmark	PNV 4% (MM$)	PNV 7 1/8% (MM$)
1. Min Level	307.5	167.1
2. Max PNV Assigned	344.7	183.2
3. Max PNV Market	318.0	175.8
4. Max Timber	259.8	132.4
5. Max Range	287.4	113.4
6. Max Wilderness	347.8	197.2
7. Min Wilderness	335.5	187.9
8. Current Level	321.8	181.9

Tables B-9 through B-15 display a comparison of primary activities and outputs of the Benchmarks.

V. FORMULATION 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 within the limits of non-contiguous analysis areas. Processes used in formulating alternatives can be found in Appendix A and Appendix B, Section I.

As defined in 36 CFR 219.12f, 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 represent the most cost efficient combination of management prescriptions to meet the specific alternatives objectives.
- -Shall state the condition, uses, goods and services produced, timing and flow of outputs, and association costs and benefits.
- -Shall state the alternative objective and the standards and guidelines proposed.
- -At least one alternative shall reflect the current level of and goods and services produced by the unit as projected over time. This alternative shall be considered the "No Action" alternative pursuant to the NEPA procedures.

The Challis Forest has supplemented the above direction by the addition of alternative development criteria. These are:

To be viable, an alternative should meet budget limitations specified in the R-4 LMP checklist dated 2/13/84, unless it is a departure and must not violate State water quality standards.

B. Constraints

Common constraints for all alternatives are the same as those outlined in Appendix B.IV.C. Other constraints used for individual alternatives are listed under the discussion for those alternatives.

In modeling, constraints are used to ensure the outputs, effects, standards, and Forest conditions are included in proportions required to achieve the particular objective of the benchmark or alternative. Constraints must be used because the proper contribution to net public benefit cannot always be represented by a monetary value in the objective function. In linear programing analysis, constraints override values. Thus, if an output level or standard is entered as a constraint, it is always achieved, or the solution becomes unfeasible. Outputs and standards entered as constraints are assumed to have implicit values equal to or greater than the cost of their production, plus the value of any output they replace in the solution.

The nature of this type analysis requires understanding the effects of all

constraints included in the model and perhaps requires making several runs to test the sensitivity of the solution to various levels of major constraints. This "sensitivity analysis" is quite expensive, given the scope of the forest planning problem, and will be performed only where a major issue or concern suggests that the benefits from the additional analysis will outweigh the costs of the analysis.

C. Alternatives

1. Alternative 1 - No Action (Current Program)

a. Objective: The goal of this Alternative is to maximize present net value and increase net public benefits. This would be done by providing the current level of goods and services and the most likely amount of goods and services forecast if current management direction continues. Current management direction is the existing direction in approved management plans and existing policies, standards, and guidelines. Management direction toward this goal is accomplished incrementally through the first decade, regulated by the budget constraint of slightly less than a 10 percent per year increase above fiscal 1982 level.

b. Objective Function: Maximize PNV for 20 decades.

c. Assumptions and Constraints: Proposed wilderness is Borah Peak, and portions of the Lemhi and the Pioneer Roadless Areas. Most CAC's constrained to select only the Goal 2 - current level yield files. Sawtimber harvest was constrained to 3.5 MMBF/year in the first decade and 5.0 MMBF/year in all other periods. Forest-wide Goal 2 data set was used. Budget was constrained to $3.93 million per year average for the first ten years. No budget constraints on the other periods.

d. RUNID: CHA002 - Tape #F03211

TABLE B-17 ALTERNATIVE 1 - NO ACTION (CURRENT PROGRAM) PROJECTED CHALLIS NATIONAL FOREST PROGRAM OUTPUTS, ACTIVITIES, BENEFITS & COSTS

OUTPUT/ACTIVITY	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
RECREATION 1/									
Wilderness Use (ROS I)	MRVD	180 0	203 5	203 5	203 5	203.5			
Dispersed Use (ROS II & III)	MRVD	355 3	443.0	443.0	443.0	443.0			
Developed Use (ROS IV)	MRVD	77 7	100 5	100.5	100.5	100 5			
WILDERNESS									
Management	M Acres	782 2	1039 2	1039 2	1039 2	1039 2			
WILDLIFE AND FISH									
Structural Habitat Improve	Struct.	25	25	25	25	25			
Non-Struc Habitat Improve	Acres	505	505	505	505	505			
Anad Fish Commercial	M # Lbs	156	315	474	633	703			
Anadromous Fish Sport	M WFUD	36 6	60 6	83.7	107.3	119 3			
Coldwater Fish	M WFUD	165	215	247 6	279 9	339.2			
Wildlife Use	M WFUD	87 3	109 1	127.2	145.9	163 5			
Populations									
Deer	M Animals	24 6	31 4	39 3	48 2	58 6			
Elk	M Animals	5 5	6 8	7 9	8.1	8 3			
Bighorn Sheep	M Animals	0 9	1 7	2 4	3.2	3.9			
Mountain Goat	M Animals	0 6	0 7	0 7	0.8	1 0			
Red Squirrel	M Acres	342 0	341 7	335 3	331 1	325 9			
RANGE									
Grazing Use (Livestock)									
Actual Use (Projected)	M AUM	112 7	113 2	112 2	112 2	112 2			
Permitted Use (Projected)	M AUM	115	115	114	114	114			
TIMBER									
Allowable Sale Quantity	MMBF	0 8	1 1	1.1	1 1	1 1	1 1	1.1	1 1
	MMBF	3 5	4 9	4 9	4 9	4 9	5 0	5 0	5 0
Roundwood Products 2/	MMCF	0 02	0 02	0.02	0 02	0 02	0 02	0 02	0 02
	MMBF	0 09	0.09	0 09	0 09	0 09	0 09	0 09	0 09
Reforestation	Acres	747	1060	938	937	875	885	549	564
Timber Stand Improvement	Acres	69	0	0	0	0	0	0	0
Fuelwood (Dead & Green)	MCF	420	420	420	420	420	420	420	420
SOIL AND WATER									
Meets or exceeds State Stds	M Ac Ft	2463	2463	2463	2463	2463			
Meets Water Quality Goals 3/	M Ac Ft	2365	2365	2463	2463	2463			
Soil & Water Resource Imp	Acres	103	52	0	0	0			
MINERALS									
Leases	No Leases	143	184	184	184	184	184	184	184
HUMAN RESOURCE PROGRAMS	Pers Yrs	17	17	17	17	17	17	17	17
FACILITIES									
Trail Const/Reconstruction	Miles	0	0	0	0	0			
Road Reconstruction (Arterial & Collector)	Miles	10.8	16 2	8.1	1.0	1 0			
Local Road Construction 4/	Miles	0 7	0 7	0 7	0 7	0 7			
Local Road Reconstruction	Miles	1 4	2 6	1.3	8	8			
Timber Purch Road Constr	Miles	1 8	1 1	1 8	3 5	3 9			
Timber Purch Road Reconstr	Miles	0	1 1	0 7	1 1	2 2			

1/ Recreation Outputs are not duplicated within the ROS Classes (ROS - Recreation Opportunity Spectrum)

2/ Incidental amounts of roundwood products that may be offered dependent upon demand These volumes are not included in the Allowable Sale Quantity

3/ Forest water quality goals, which exceed State water quality standards consist of not exceeding total depth fines of 30%.

4/ Fuelwood roads

TABLE B-17. ALTERNATIVE 1 - NO ACTION (CURRENT PROGRAM). PROJECTED CHALLIS NATIONAL FOREST PROGRAM OUTPUTS, ACTIVITIES, (Continued)

BENEFITS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
Wilderness Recreation	M $	1908	2165	2165	2165	2165			
Dispersed Recreation	M $	1418	1768	1768	1768	1768			
Developed Recreation	M $	310	401	401	401	401			
Wildlife	M $	2496	3116	3634	4170	4670			
Anad. Fish Commercial	M $	380	771	1161	1550	1722			
Anadromous Fish Sport	M $	2620	4332	5984	7671	8529			
Coldwater Fish	M $	3261	4252	4890	5528	6699			
Range	M $	1584	1592	1577	1577	1577			
Timber	M $	1246	1784	1784	1784	1784	1784	1614	1605
Minerals	M $	388	490	490	490	490			

COSTS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1	2	3	4	5
Total Forest Budget	M $	3948	4444	4190	4000	4000
Fixed Costs						
Protection	M $	617	617	617	617	617
GA	M $	670	701	700	701	701
Variable Costs						
Investment Costs						
Timber Roads	M $	50.2	61.4	70 0	130 1	168 9
Other Roads	M $	270	460	260	70	70
Investment Other	M $	440.5	484 7	726.2	722.3	689.2
Total Investment	M $	760.9	1006.1	1056 2	922 4	928.1
Operational Costs	M $	2075	2287	2287	2287	2287
Non-Forest Service Costs	M $	857.8	1213 6	1213 6	1213.6	1213.6
Returns to Treasury	M $	967.6	1057 2	1059.3	1057 3	1053 9

2. Alternative 2 - Market Emphasis

a. Objectives: The goal of this Alternative is to maximize present net value and increase net public benefits by emphasizing opportunities to increase timber, range, minerals, developed recreation and anadromous fisheries which generate direct monetary values to the government and/or public.

Management for other resources would be at levels economically and environmentally feasible, consistent with emphasis on market-oriented outputs.

b. Objective Function: Maximize PNV for 20 decade rollover to maximize market outputs.

c. Assumptions and Constraints: No additional wilderness was proposed for this alternative. Analyzing the selected Coordinated Allocation Choices from the Maximize Market PNV Benchmark the Core Team constrained out any Goal 1 selections which were felt not to be compatible with a high commodity emphasis. This resulted in eight management areas not having a Goal 1 choice. All other choices were available for selection for all Management Areas. Timber harvest was constrained to minimums of: 1st period - 5 MMBF/yr, 2nd period - 10 MMBF/yr, 3rd through 5th period - 20 MMBF/yr, and 6th through 8th periods - 30 MMBF/yr. Forest-wide Goal 5 data set was used. A budget constraint of maximum - $5.35 million/year for the 1st decade. No budget constraint in the remaining periods.

d. RUNID: CHA012 - Tape #F41224

TABLE B-18 ALTERNATIVE 2 - MARKET EMPHASIS PROJECTED CHALLIS NATIONAL FOREST PROGRAM OUTPUTS, ACTIVITIES, BENEFITS & COSTS

OUTPUT/ACTIVITY	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
RECREATION 1/									
Wilderness Use (ROS I)	MRVD	135 0	148 0	148 0	148 0	148 0			
Dispersed Use (ROS II & III)	MRVD	374 0	465.5	465 5	465 5	465.5			
Developed Use (ROS IV)	MRVD	104 0	134 5	134 5	134.5	134 5			
WILDERNESS									
Management	M Acres	782.2	782.2	782 2	782 2	782 2			
WILDLIFE AND FISH									
Structural Habitat Improve	Struct	5	5	5	5	5			
Non-Struc Habitat Improve	Acres	195	195	195	195	195			
Anad Fish Commercial	M # Lbs	154	313	471	629	699			
Anadromous Fish Sport	M WFUD	35.5	58 4	81 4	104 2	115 8			
Coldwater Fish	M WFUD	162 6	211 8	255 7	255 7	255 7			
Wildlife Use	M WFUD	79	98	119	142	146			
Populations									
Deer	M Animals	24.3	30.7	38 0	46 3	54 8			
Elk	M Animals	5.1	6 1	6.6	6 9	7 0			
Bighorn Sheep	M Animals	0 8	1.3	1 7	2 1	2 4			
Mountain Goat	M Animals	0.6	0.6	0.7	0 7	0 7			
Red Squirrel	M Acres	696 8	678 8	660.9	693 0	625.0			
RANGE									
Grazing Use (Livestock)									
Actual Use (Projected)	M AUM	113 9	117 4	121 7	121 5	121 5			
Permitted Use (Projected)	M AUM	116	119	124	124	124			
TIMBER									
Allowable Sale Quantity	MMCF	1 1	2 2	4 4	4 4	4 4	6 7	6 7	6 7
	MMBF	5.0	10 0	20 0	20.0	20 0	30 0	30 0	30.0
Roundwood Products 2/	MMCF	0.03	0 03	0.03	0 03	0 03	0.03	0 03	0 03
	MMBF	0.14	0.14	0 14	0.14	0 14	0 14	0.14	0.14
Reforestation	Acres	1314	2112	3735	4020	3255	5104	3402	3422
Timber Stand Improvement	Acres	69	0	0	0	0	0	0	0
Fuelwood (Dead & Green)	MCF	500	500	500	500	500	500	500	500
SOIL AND WATER									
Meets or Exceeds State Stds	M Ac Ft	2463	2463	2463	2463	2463			
Meets Water Quality Goals 3/	M Ac Ft	2365	2365	2365	2365	2266			
Soil & Water Resource Imp	Acres	50	20	20	20	20			
MINERALS									
Leases	No. Leases	161	207	207	207	207			
HUMAN RESOURCE PROGRAMS	Pers Yrs	26	26	26	26	26			
FACILITIES									
Trail Const/Reconstruction	Miles	1	1	1	1	1			
Road Reconstruction (Arterial & Collector)	Miles	15 4	15 4	0	0 9	0 9			
Local Road Construction 4/	Miles	0	0	0	0	0			
Local Road Reconstruction	Miles	0 7	0.7	3 3	0 8	0.8			
Timber Purch Road Constr.	Miles	3 3	5 0	17 9	4 1	11 6			
Timber Purch. Road Reconstr	Miles	0	2 1	3.2	10 7	1 3			

1/ Recreation Outputs are not duplicated within the ROS Classes (ROS - Recreation Opportunity Spectrum)

2/ Incidental amounts of roundwood products that may be offered dependent upon demand These volumes are not included in the Allowable Sale Quantity

3/ Forest water quality goals, which exceed State water quality standards consist of not exceeding total depth fines of 30%

4/ Fuelwood roads

TABLE B-18. ALTERNATIVE 2 - MARKET EMPHASIS (Continued) PROJECTED CHALLIS NATIONAL FOREST PROGRAM OUTPUTS, ACTIVITIES, BENEFITS & COSTS

BENEFITS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
Wilderness Recreation	M $	1431	1575	1575	1575	1575			
Dispersed Recreation	M $	1492	1857	1857	1857	1857			
Developed Recreation	M $	415	537	537	537	537			
Wildlife	M $	2258	2803	3392	4050	4157			
Anad. Fish Commercial	M $	377	767	1154	1541	1712			
Anadromous Fish Sport	M $	2542	4174	5818	7448	8278			
Coldwater Fish	M $	3204	4183	5050	5838	7361			
Range	M $	1607	1651	1712	1708	1708			
Timber	M $	2331	3585	6307	5070	7125	10,070	8850	8725
Minerals	M $	484	619	619	619	619			

COSTS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1	2	3	4	5
Total Forest Budget	M $	4909	4895	4720	6029	4710
Fixed Costs						
Protection	M $	740	740	740	740	740
GA	M $	813	780	740	739	741
Variable Costs						
Investment Costs						
Timber Roads	M $	94 4	198.3	593 5	396.6	363
Other Roads	M $	400	400	70	70	70
Investment Other	M $	644 7	780 8	1308 4	2663 0	1835.6
Total Investment	M $	1139 1	1379 1	1971 9	3129 6	2268.6
Operational Costs	M $	2485	2485	2485	2485	2485
Non-Forest Service Costs	M $	1614 1	2449 3	4856.4	4971 3	5810 2
Returns to Treasury	M $	1400 1	1962 2	2287 9	939 8	2159 4

3. Alternative 3 - Non-Market Emphasis

a. Objective: The goal of this Alternative is to maximize present net value and increase net public benefits by emphasizing opportunities to improve water quality, fish and wildlife, dispersed recreation, and other amenity values. Management of other resources would be at economically and environmentally feasible levels consistent with the emphasis on values.

b. Objective Function: Maximize PNV for 20 decades rollover to maximize non-market outputs.

c. Assumptions and constraints: Proposed wilderness is Lemhi Range, Pahsimeroi Mtn., Borah Peak, King Mtn., Boulder White-Clouds, Pioneer Mts., and Diamond Peak. CAC's were open for all goal selections. Forest-wide Goal 4 data set was used. Budget constraint for $5.4 million per year average for the first ten years. No budget constraints on the other periods.

d. RUNID: CHA010 - Tape #F40435

TABLE B-19 ALTERNATIVE 3 - NON-MARKET EMPHASIS. PROJECTED CHALLIS NATIONAL FOREST PROGRAM OUTPUTS, ACTIVITIES, BENEFITS & COSTS

OUTPUT/ACTIVITY	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
RECREATION 1/									
Wilderness Use (ROS I)	MRVD	238.0	274 0	274.0	274 0	274 0			
Dispersed Use (ROS II & III)	MRVD	318 5	400 0	400.0	400 0	400.0			
Developed Use (ROS IV)	MRVD	56 5	73.0	73.0	73 0	73 0			
WILDERNESS									
Management	M Acres	1565 1	1565 1	1565.1	1565.1	1565.1			
WILDLIFE AND FISH									
Structural Habitat Improve	Struct	31	31	31	31	31			
Non-Struc Habitat Improve	Acres	1025	1025	1025	1025	1025			
Anad Fish Commercial	M # Lbs	158	320	481	642	713			
Anadromous Fish Sport	M WFUD	37 3	61 7	85 1	109.1	121.1			
Coldwater Fish	M WFUD	167 8	218 5	251 0	283.6	343 6			
Wildlife Use	M WFUD	86 6	108 1	130 9	160 7	194 2			
Populations									
Deer	M Animals	25 9	32 7	40 6	49 5	59 9			
Elk	M Animals	5 8	7.1	8 3	8 5	8 6			
Bighorn Sheep	M Animals	1 1	1 8	2.5	3 3	4 1			
Mountain Goat	M Animals	0.6	0.7	0.7	0 8	1 0			
Red Squirrel	M Acres	711.6	708 7	705.8	702 9	700 0			
RANGE									
Grazing Use (Livestock)									
Actual Use (Projected)	M AUM	112 7	109 5	106.2	106 2	106 2			
Permitted Use (Projected)	M AUM	114	111	108	108	108			
TIMBER									
Allowable Sale Quantity	MMCF	0 4	0 4	0 4	0.4	0 4	0 4	0 8	0 8
	MMBF	2 0	2 0	2 0	2 0	2 0	2 0	3.5	3.5
Roundwood Products 2/	MMCF	0 02	0 02	0 02	0 02	0 02	0.02	0 02	0 02
	MMBF	0 09	0 09	0 09	0 09	0 09	0.09	0 09	0 09
Reforestation	Acres	479 0	475 8	407 8	477 0	458 2	342 0	440 2	373.9
Timber Stand Improvement	Acres	15	0	0	0	0	0	0	0
Fuelwood (Dead & Green)	MCF	420	420	420	420	420	420	420	420
SOIL AND WATER									
Meets or exceeds State Stds	M Ac Ft	2463	2463	2463	2463	2463			
Meets Water Quality Goals 3/	M Ac Ft	2365	2463	2463	2463	2463			
Soil & Water Resource Imp	Acres	89	17	0	0	0			
MINERALS									
Leases	No Leases	61	92	92	92	92			
HUMAN RESOURCE PROGRAMS	Pers Yrs	26	26	26	26	26			
FACILITIES									
Trail Const/Reconstruction	Miles	5	5	5	5	5			
Road Reconstruction (Arterial & Collector)	Miles	16.0	9.3	9 3	2 0	2 0			
Local Road Construction 4/	Miles	0 7	0 8	0 9	1 0	1 1			
Local Road Reconstruction	Miles	2 6	2 7	2 7	8 5	8.5			
Timber Purch Road Constr	Miles	1 5	0 4	1 4	1 7	2.6			
Timber Purch Road Reconstr	Miles	0	1 1	0 3	1 0	1 2			

1/ Recreation Outputs are not duplicated within the ROS Classes (ROS - Recreation Opportunity Spectrum)

2/ Incidental amounts of roundwood products that may be offered dependent upon demand These volumes are not included in the Allowable Sale Quantity.

3/ Forest water quality goals, which exceed State water quality standards consist of not exceeding total depth fines of 30%

4/ Fuelwood roads

TABLE B-19. ALTERNATIVE 3 - NON-MARKET EMPHASIS. PROJECTED CHALLIS NATIONAL FOREST PROGRAM OUTPUTS, ACTIVITIES, (Continued) BENEFITS & COSTS

BENEFITS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
Wilderness Recreation	M $	2523	2915	2915	2915	2915			
Dispersed Recreation	M $	1271	1596	1596	1596	1596			
Developed Recreation	M $	225	291	291	291	291			
Wildlife	M $	2477	3087	3741	4590	5548			
Anad. Fish Commercial	M $	387	784	1179	1573	1748			
Anadromous Fish Sport	M $	2667	4410	6082	7799	8657			
Coldwater Fish	M $	3306	4315	4957	5601	6786			
Range	M $	1582	1539	1493	1493	1493			
Timber	M $	736	751	748	745	715	1132	1022	1022
Minerals	M $	220	302	302	302	302			

COSTS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1	2	3	4	5
Total Forest Budget	M $	4078	4665	4669	4681	4688
Fixed Costs						
Protection	M $	732	732	732	732	732
GA	M $	800	900	900	900	900
Variable Costs						
Investment Costs						
Timber Roads	M $	43.1	36 2	46.4	72 6	103 9
Other Roads	M $	500	290	290	290	290
Investment Other	M $	427	416 2	382 6	401 9	387 6
Total Investment	M $	970.1	742 4	719 0	764 5	781 5
Operational Costs	M $	2476	2469	2474	2484	2484
Non-Forest Service Costs	M $	736 9	739.2	739 2	739 2	739.2
Returns to Treasury	M $	749 1	850 6	847 6	850 0	852 4

4. Alternative 4 - RPA 1980 Program

a. Objective: The goal of this Alternative is to maximize present net value and increase net public benefits by meeting Resource Planning Act (RPA) objectives assigned to the Challis National Forest through the draft Regional guide. Specific objectives of this alternative are to attain all 1980 targets in the most cost efficient manner.

b. Objective Function: Maximize PNV for 20 decades.

c. Assumptions and Constraints: No additional wilderness was proposed for this alternative. CAC's were open for all goal selections. Timber harvest was constrained to a minimum of 8 MMBF/year in the 1st period, 10 MMBF/year in the 5th through 8th periods. Forest-wide Goal 5 data set was used. No budget constraint was used.

d. RUNID: CHA005 - Tape #F11265

TABLE B-20. ALTERNATIVE 4 - RPA 1980 PROGRAM. PROJECTED CHALLIS NATIONAL FOREST PROGRAM OUTPUTS, ACTIVITIES, BENEFITS & COSTS

OUTPUT/ACTIVITY	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
RECREATION 1/									
Wilderness Use (ROS I)	MRVD	135 0	148.0	148.0	148 0	148 0			
Dispersed Use (ROS II & III)	MRVD	392 3	487.5	487.5	487.5	487 5			
Developed Use (ROS IV)	MRVD	110.0	123.0	123 0	123.0	123.0			
WILDERNESS									
Management	M Acres	782 2	782.2	782 2	782 2	782.2			
WILDLIFE AND FISH									
Structural Habitat Improve	Struct	32	32	32	32	32			
Non-Struc Habitat Improve	Acres	1616	1316	1300	1300	1300			
Anad Fish Commercial	M # Lbs.	154	315	474	632	702			
Anadromous Fish Sport	M WFUD	36.6	60 6	83.7	107.2	119 2			
Coldwater Fish	M WFUD	165 7	215 4	262 0	299 5	376 8			
Wildlife Use	M WFUD	87 3	109.1	127 7	147.8	167.5			
Populations									
Deer	M Animals	24 6	31.4	39 3	48.2	58 6			
Elk	M Animals	5.5	6 8	8.0	8 3	8 4			
Bighorn Sheep	M Animals	1 0	1 7	2 4	3.2	4 0			
Mountain Goat	M Animals	0.6	0 7	0.7	0.8	1.0			
Red Squirrel	M Acres	704 5	694 4	684 2	674 1	664 0			
RANGE									
Grazing Use (Livestock)									
Actual Use (Projected)	M AUM	113 8	115.3	116 0	116 0	116 0			
Permitted Use (Projected)	M AUM	117	118	119	119	119			
TIMBER									
Allowable Sale Quantity	MMCF	2 0	2.5	2 5	2 5	2 5	2.5	2.5	2 5
	MMBF	9 1	11 3	11 3	11 3	11 3	11 3	11 3	11.3
Roundwood Products 2/	MMCF	0.03	0 03	0 03	0 03	0.03	0 03	0 03	0 03
	MMBF	0.14	0 14	0 14	0.14	0.14	0.14	0 14	0.14
Reforestation	Acres	1796	2489	2102	2255	1095	1839	2163	2083
Timber Stand Improvement	Acres	69	0	0	0	0	0	0	0
Fuelwood (Dead & Green)	MCF	500	500	500	500	500	500	500	500
SOIL AND WATER									
Meets or Exceeds State Stds	M Ac Ft	2463	2463	2463	2463	2463			
Meets Water Quality Goals 3/	M Ac Ft	2266	2266	2266	2266	2463			
Soil & Water Resource Imp	Acres	120	35	0	0	0			
MINERALS									
Leases	No. Leases	161	207	207	207	207			
HUMAN RESOURCE PROGRAMS	Pers. Yrs	26	26	26	26	26			
FACILITIES									
Trail Const/Reconstruction	Miles	5	5	5	5	5			
Road Reconstruction (Arterial & Collector)	Miles	15 4	15.4	0	0.9	0 9			
Local Road Construction 4/	Miles	1.0	1.0	1 0	1.0	1.0			
Local Road Reconstruction	Miles	0.7	0 7	3.3	0.8	0.8			
Timber Purch. Road Constr	Miles	4.5	7.0	10.8	3.3	2 9			
Timber Purch Road Reconstr	Miles	0	3 2	4.9	7.5	1.6			

1/ Recreation Outputs are not duplicated within the ROS Classes. (ROS - Recreation Opportunity Spectrum)

2/ Incidental amounts of roundwood products that may be offered dependent upon demand. These volumes are not included in the Allowable Sale Quantity

3/ Forest water quality goals, which exceed State water quality standards consist of not exceeding total depth fines of 30%.

4/ Fuelwood roads

TABLE B-20. ALTERNATIVE 4 - 1980 RPA PROJECTED CHALLIS NATIONAL FOREST PROGRAM OUTPUTS, ACTIVITIES, (Continued) BENEFITS & COSTS

BENEFITS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
Wilderness Recreation	M $	1431	1575	1575	1575	1575			
Dispersed Recreation	M $	1565	1945	1945	1945	1945			
Developed Recreation	M $	439	491	491	491	491			
Wildlife	M $	2496	3116	3650	4224	4786			
Anad. Fish Commercial	M $	378	771	1161	1549	1721			
Anadromous Fish Sport	M $	2620	4332	5984	7671	8529			
Coldwater Fish	M $	3274	4254	5186	5915	7442			
Range	M $	1605	1621	1631	1631	1631			
Timber	M $	3191.2	4057.4	4057 4	3007 5	2124.0	3940.2	5613.8	5154.3
Minerals	M $	484.3	619 4	619 4	619.4	619 4			

COSTS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1	2	3	4	5
Total Forest Budget	M $	5116	5090	4744	4831	4824
Fixed Costs						
Protection	M $	740	740	740	740	740
GA	M $	838	655	631	630	630
Variable Costs						
Investment Costs						
Timber Roads	M $	129 8	274.6	423.9	272 2	147.7
Other Roads	M $	400	400	70	70	70
Investment Other	M $	858 7	969.3	871.7	958.3	951.7
Total Investment	M $	1388 5	1643 9	1365.6	1300.5	1169.4
Operational Costs	M $	2565	2771	2571	2571	2571
Non-Forest Service Costs	M $	2216.8	2774 5	2774 5	2722 2	2748 2
Returns to Treasury	M $	1657 5	2104 3	2108 2	1113 2	1809 5

5. Alternative 5 - Market and Non-Market Mix

a. Objective: The goal of this Alternative is to maximize present net value and increase net public benefits by emphasizing a mixture of market and non-market outputs in response to local issues. The ICO alternative emphasizes management of the Forest's management areas based on the District Rangers and their staffs perspective of the issues, concerns, and opportunities applicable to particular areas. This includes the managers perspective of resource potential and realistic levels of management activities capable of being applied to these areas.

b. Objective Function: Maximize PNV for 20 decades.

c. Assumptions and Constraints: Proposed wilderness is Borah Peak and a portion of the Pioneer Mountains. All CAC's were forced into solution from the recommendations of the District Rangers. There were no constraints for periods 6 through 8. Forest-wide Goal 2 data set was used. No budget constraint was used.

d. RUNID: CHA001 - Tape #F40413, F45231

TABLE B-21. ALTERNATIVE 5 - MARKET & NON-MARKET MIX

PROJECTED CHALLIS NATIONAL FOREST PROGRAM OUTPUTS, ACTIVITIES, BENEFITS & COSTS

OUTPUT/ACTIVITY	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
RECREATION 1/									
Wilderness Use (ROS I)	MRVD	165 0	181.5	181 5	181 5	181 5			
Dispersed Use (ROS II & III)	MRVD	358 3	448.0	448 0	448.0	448.0			
Developed Use (ROS IV)	MRVD	89 7	114 5	114 5	114.5	114 5			
WILDERNESS									
Management	M Acres	946.2	946 2	946 2	946.2	946 2			
WILDLIFE AND FISH									
Structural Habitat Improve.	Struct	10	10	10	10	10			
Non-Struc Habitat Improve	Acres	425	425	425	425	425			
Anad Fish Commercial	M # Lbs	158	322	484	646	718			
Anadromous Fish Sport	M WFUD	36 6	60 6	83.5	106 9	119 0			
Coldwater Fish	M WFUD	168 3	209 0	252 5	291.8	367 9			
Wildlife Use	M WFUD	85 0	105 9	127 8	155 8	181 9			
Populations									
Deer	M Animals	24 4	31 1	39 1	47 3	57.2			
Elk	M Animals	5 5	6 7	7.7	7.9	8 0			
Bighorn Sheep	M Animals	1 0	1 6	2 3	3.0	3 6			
Mountain Goat	M Animals	0 6	0 7	0.7	0.8	1 0			
Red Squirrel	M Acres	724 6	714.5	704 4	694 3	689.0			
RANGE									
Grazing Use (Livestock)									
Actual Use (Projected)	M AUM	113 6	114 7	115 8	115 5	115 5			
Permitted Use (Projected)	M AUM	115	116	117	117	117			
TIMBER									
Allowable Sale Quantity	MMCF	1 1	1 1	1 1	1 1	1 1	2.6	2 6	3.8
	MMBF	4.9	4.9	4 9	4 9	4 9	11 9	11.9	16.9
Roundwood Products 2/	MMCF	0.02	0 02	0 02	0.02	0.02	0 02	0.02	0 02
	MMBF	0 09	0 09	0.09	0 09	0 09	0.09	0 09	0.09
Reforestation	Acres	908	1149	880	976	849	1993	1441	1935
Timber Stand Improvement	Acres	69	0	0	0	0	0	0	0
Fuelwood (Dead & Green)	MCF	420	420	420	420	420	420	420	420
SOIL AND WATER									
Meets or Exceeds State Stds	M Ac Ft	2463	2463	2463	2463	2463			
Meets Water Quality Goals 3/	M Ac Ft	2365	2365	2365	2365	2316			
Soil & Water Resource Imp.	Acres	0	0	0	0	0			
MINERALS									
Leases	No Leases	143	184	184	184	184			
HUMAN RESOURCE PROGRAMS	Pers. Yrs	17	17	17	17	17			
FACILITIES									
Trail Const/Reconstruction	Miles	0	0	0	0	0			
Road Reconstruction (Arterial & Collector)	Miles	17 4	17 4	0	0.9	0 9			
Local Road Construction 4/	Miles	1.0	1 0	0	0	0			
Local Road Reconstruction	Miles	1 2	1 2	3 3	0 8	0.8			
Timber Purch Road Constr	Miles	2 5	0.7	3.3	2 9	4 3			
Timber Purch. Road Reconstr	Miles	0	1 7	0 5	2 3	2 0			

1/ Recreation Outputs are not duplicated within the ROS Classes (ROS - Recreation Opportunity Spectrum)

2/ Incidental amounts of roundwood products that may be offered depeendent upon demand These volumes are not included in the Allowable Sale Quantity.

3/ Forest water quality goals, which exceed State water quality standards consist of not exceeding total depth fines of 30%.

4/ Fuelwood roads.

TABLE B-21. ALTERNATIVE 5 - MARKET & NON-MARKET MIX (Continued)

PROJECTED CHALLIS NATIONAL FOREST PROGRAM OUTPUTS, ACTIVITIES, BENEFITS & COSTS

BENEFITS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
Wilderness Recreation	M $	1749	1931	1931	1931	1931			
Dispersed Recreation	M $	1430	1788	1788	1788	1788			
Developed Recreation	M $	358	457	457	457	457			
Wildlife	M $	2430	3025	3652	4452	5198			
Anad. Fish Commercial	M $	386	788	1185	1583	1758			
Anadromous Fish Sport	M $	2618	4290	5970	7644	8510			
Coldwater Fish	M $	3324	4128	4988	5764	7267			
Range	M $	1596	1613	1628	1624	1624			
Timber	M $	1748	1784	1784	1784	1784	4093	3820	4898
Minerals	M $	388	490	490	490	490			

COSTS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1	2	3	4	5
Total Forest Budget	M $	4640	4600	4178	4178	4178
Fixed Costs						
Protection	M $	617	617	617	617	617
GA	M $	800	664	644	644	644
Variable Costs						
Investment Costs						
Timber Roads	M $	70 8	59.5	105	135 9	170 7
Other Roads	M $	460	460	70	70	70
Investment Other	M $	522.3	495.3	416 2	432 6	407.1
Total Investment	M $	1053.1	1014 8	591 2	638 5	647 8
Operational Costs	M $	2166	2156	2150	2150	2150
Non-Forest Service Costs	M $	1209 8	1213 6	1213 6	1213 6	1213 6
Returns to Treasury	M $	1121 3	1259 1	1261 8	1262 5	1263 9

6. Alternative 6 - Constrained (-25%) Budget

a. Objective: The goal of this Alternative is to maximize present net value and increase net public benefits. This alternative continues the current program emphasis modified as necessary to cover fixed costs and operation and maintenance costs at a reduced budget level. The constrained budget is $2.7 million (in 1982 base dollars).

b. Objective Function: Maximize PNV for 20 decades.

c. Assumptions and Constraints: Proposed wilderness is Borah Peak only. CAC's limited to Goal 1 or 2 in most management areas. Forest-wide Goal 1 data set was used. Budget constrained to $2.7 million per year in the 1st period. No budget constraint thereafter.

d. RUNID: CHA003 - Tape #F17930

TABLE B-22. ALTERNATIVE 6 - CONSTRAINED (-25%) BUDGET PROJECTED CHALLIS NATIONAL FOREST PROGRAM OUTPUTS, ACTIVITIES, BENEFITS & COSTS

OUTPUT/ACTIVITY	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
RECREATION 1/									
Wilderness Use (ROS I)	MRVD	149.0	164 0	164 0	164.0	164 0			
Dispersed Use (ROS II & III)	MRVD	400.3	498 5	498 5	498.5	498.5			
Developed Use (ROS IV)	MRVD	63.7	84 5	84 5	84.5	84 5			
WILDERNESS									
Management	M Acres	832 2	832.2	832.2	832 2	832.2			
WILDLIFE AND FISH									
Structural Habitat Improve.	Struct.	7	7	7	7	7			
Non-Struc. Habitat Improve	Acres	390	390	390	390	390			
Anad. Fish Commercial	M # Lbs	156	314	473	631	702			
Anadromous Fish Sport	M WFUD	36.7	60.6	83.7	107.2	119 2			
Coldwater Fish	M WFUD	165 1	214.7	261 2	297 6	373.7			
Wildlife Use	M WFUD	86.0	107.3	125 7	145.5	160.9			
Populations									
Deer	M Animals	24 4	31.1	39.1	47 3	57 2			
Elk	M Animals	5 5	6 7	7.7	7 9	8.0			
Bighorn Sheep	M Animals	1.0	1 6	2.3	3.0	3 6			
Mountain Goat	M Animals	0.6	0 7	0.7	0 8	1.0			
Red Squirrel	M Acres	712.8	710.1	707 4	704 7	702.0			
RANGE									
Grazing Use (Livestock)									
Actual Use (Projected)	M AUM	113.6	113.5	113 1	113.0	113 0			
Permitted Use (Projected)	M AUM	115	115	115	115	115			
TIMBER									
Allowable Sale Quantity	MMCF	0.6	0 6	0.6	0.6	0 6	3.1	3.1	4.3
	MMBF	2 5	2 5	2 5	2 5	2.5	13.8	13.8	19.3
Roundwood Products 2/	MMCF	0.01	0 01	0.01	0.01	0 01	0.01	0 01	0 01
	MMBF	0.07	0.07	0.07	0 07	0 07	0 07	0.07	0.07
Reforestation	Acres	462	585	448	497	432	2342	2003	2149
Timber Stand Improvement	Acres	15	0	0	0	0	0	0	0
Fuelwood (Dead & Green)	MCF	350	350	350	350	350	350	350	350
SOIL AND WATER									
Meets or Exceeds State Stds	M Ac Ft	2463	2463	2463	2463	2463			
Meets Water Quality Goals 3/	M Ac Ft	2365	2365	2365	2365	2365			
Soil & Water Resource Imp	Acres	10	6	6	6	6			
MINERALS									
Leases	No Leases	147	188	188	188	188			
HUMAN RESOURCE PROGRAMS	Pers Yrs.	6	6	6	6	6			
FACILITIES									
Trail Const/Reconstruction	Miles	0	0	0	0	0			
Road Reconstruction (Arterial & Collector)	Miles	0	0	0	0	0			
Local Road Construction 4/	Miles	0.5	0.5	0 5	0 5	0 7			
Local Road Reconstruction	Miles	0	0	0	0	0			
Timber Purch Road Constr	Miles	1.3	0 3	0.9	0 5	0.7			
Timber Purch. Road Reconstr	Miles	0	0 9	0.2	0.6	0 3			

1/ Recreation Outputs are not duplicated within the ROS Classes. (ROS - Recreation Opportunity Spectrum)

2/ Incidental amounts of roundwood products that may be offered dependent upon demand. These volumes are not included in the Allowable Sale Quantity.

3/ Forest water quality goals, which exceed State water quality standards consist of not exceeding total depth fines of 30%

4/ Fuelwood roads

TABLE B-22 ALTERNATIVE 6 - CONSTRAINED (-25%) BUDGET PROJECTED CHALLIS NATIONAL FOREST PROGRAM OUTPUTS, ACTIVITIES, BENEFITS & COSTS (Continued)

BENEFITS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
Wilderness Recreation	M $	1579	1745	1745	1745	1745			
Dispersed Recreation	M $	1597	1989	1989	1989	1989			
Developed Recreation	M $	254	337	337	337	337			
Wildlife	M $	2458	3065	3593	4156	4598			
Anad Fish Commercial	M $	380	770	1160	1547	1719			
Anadromous Fish Sport	M $	2620	4332	5984	7664	8522			
Coldwater Fish	M $	3262	4240	5159	5878	7381			
Range	M $	1598	1595	1590	1589	1589			
Timber	M $	896	915	915	915	915	4808	4622	5607
Minerals	M $	395	498	498	498	498			

COSTS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1	2	3	4	5
Total Forest Budget	M $	2780	2760	2733	2730	2730
Fixed Costs						
Protection	M $	307	307	307	307	307
GA	M $	700	700	700	700	700
Variable Costs						
Investment Costs						
Timber Roads	M $	36.0	30 3	30 8	28 0	51 7
Other Roads	M $	60.0	60 0	60 0	60 0	60 0
Investment Other	M $	278 7	257 6	203 1	209 9	192 8
Total Investment	M $	374 7	347 9	293 9	297 9	304 5
Operational Costs	M $	1551	1551	1551	1551	1551
Non-Forest Service Costs	M $	615.9	617 8	617 8	617 8	617 8
Returns to Treasury	M $	866 5	984 3	981 5	980 0	978 6

7. Alternative 7 - Current Program, Constrained Budget

a. Objective: The goal of this Alternative is to maximize present net value and increase net public benefits by providing the most likely amount of goods and services if the Fiscal Year 1982 budget level were continued into the future. Current management direction is the existing direction in approved management plans and existing policies, standards, and guidelines.

b. Objective Function: Maximize PNV for 20 decades.

c. Assumptions and Constraints: Proposed wilderness is Borah Peak only. CAC's limited to Goal 2 except management areas 1, 7, and 24, which Goal 3 was applied. Forest-wide Goal 2 data set was used. Budget constrained to $3.9 million/year in the first decade and an average of $3.9 million/year for decades 2 through 5.

d. RUNID: CHA008 - Tape #F40429, F45303

TABLE B-23. ALTERNATIVE 7 - CURRENT PROGRAM, CONSTRAINED BUDGET. PROJECTED CHALLIS NATIONAL FOREST PROGRAM OUTPUTS, ACTIVITIES, BENEFITS & COSTS.

OUTPUT/ACTIVITY	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
RECREATION 1/									
Wilderness Use (ROS I)	MRVD	135 0	148.0	148 0	148.0	148.0			
Dispersed Use (ROS II & III)	MRVD	387 3	483.5	483.5	483.5	483 5			
Developed Use (ROS IV)	MRVD	77 7	100 5	100.5	100 5	100.5			
WILDERNESS									
Management	M Acres	901 8	901.8	901.8	901.8	901.8			
WILDLIFE AND FISH									
Structural Habitat Improve	Struct	12	12	12	12	12			
Non-Struc Habitat Improve.	Acres	563	563	563	563	563			
Anad Fish Commercial	M # Lbs	156	315	474	633	703			
Anadromous Fish Sport	M WFUD	36 7	60.6	83.7	107.3	119.3			
Coldwater Fish	M WFUD	165 5	215 3	258 8	298 2	374.3			
Wildlife Use	M WFUD	87.3	109.0	127.2	145 9	163.4			
Populations									
Deer	M Animals	24 6	31.4	39.3	48 2	58 6			
Elk	M Animals	5 5	6.8	7 9	8 1	8.3			
Bighorn Sheep	M Animals	0 9	1 7	2 4	3.2	3 9			
Mountain Goat	M Animals	0 6	0 7	0 7	0.8	1 0			
Red Squirrel	M Acres	714 1	713 1	712.1	711.0	710 0			
RANGE									
Grazing Use (Livestock)									
Actual Use (Projected)	M AUM	113.8	114 8	116 1	116 1	116 1			
Permitted Use (Projected)	M AUM	115	116	117	117	117			
TIMBER									
Allowable Sale Quantity	MMCF	0 2	0 2	0 2	0 2	0 2	0 8	0 8	0 8
	MMBF	1 0	1.0	1.0	1.0	1 0	3.5	3.5	3.5
Roundwood Products 2/	MMCF	0 02	0 02	0 02	0 02	0 02	0 02	0 02	0 02
	MMBF	0 09	0 09	0 09	0.09	0.09	0.09	0.09	0.09
Reforestation	Acres	281	225	172	191	166	586	520	478
Timber Stand Improvement	Acres	69	0	0	0	0	0	0	0
Fuelwood (Dead & Green)	MCF	420	420	420	420	420	420	420	420
SOIL AND WATER									
Meets or Exceeds State Stds	M Ac Ft	2463	2463	2463	2463	2463			
Meets Water Quality Goals 3/	M Ac Ft	2365	2365	2463	2463	2463			
Soil & Water Resource Imp	Acres	103	52	0	0	0			
MINERALS									
Leases	No Leases	147	188	188	188	188			
HUMAN RESOURCE PROGRAMS	Pers. Yrs	17	17	17	17	17			
FACILITIES									
Trail Const/Reconstruction	Miles	0	0	0	0	0			
Road Reconstruction (Arterial & Collector)	Miles	10.8	16 2	8.1	0 9	0 9			
Local Road Construction 4/	Miles	1.0	1.0	1.0	1 0	1 0			
Local Road Reconstruction	Miles	1 4	2 6	1.3	0 8	0.8			
Timber Purch Road Constr	Miles	0 5	0.1	0 3	0 2	0.3			
Timber Purch Road Reconstr.	Miles	0	0 3	0 1	0.2	0 1			

1/ Recreation Outputs are not duplicated within the ROS Classes (ROS - Recreation Opportunity Spectrum)

2/ Incidental amounts of roundwood products that may be offered dependent upon demand These volumes are not included in the Allowable Sale Quantity

3/ Forest water quality goals, which exceed State water quality standards consist of not exceeding total depth fines of 30%

4/ Fuelwood roads

TABLE B-23 ALTERNATIVE 7 - CURRENT PROGRAM, CONSTRAINED BUDGET PROJECTED CHALLIS NATIONAL FORFST PROGRAM OUTPUTS, ACTIVITIES, BENEFITS & COSTS (Continued)

BENEFITS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
Wilderness Recreation	M $	1431	1574	1574	1574	1574			
Dispersed Recreation	M $	1545	1929	1929	1929	1929			
Developed Recreation	M $	310	401	401	401	401			
Wildlife	M $	2498	3116	3634	4170	4670			
Anad Fish Commercial	M $	382	771	1161	1550	1722			
Anadromous Fish Sport	M $	2621	4332	5984	7671	8529			
Coldwater Fish	M $	3261	4252	5111	5889	7392			
Range	M $	1605	1615	1633	1633	1633			
Timber	M $	359	366	366	366	366	1271	1202	1116
Minerals	M $	395	498	498	498	498			

COSTS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1	2	3	4	5
Total Forest Budget	M $	4060	4210	3930	3804	3804
Fixed Costs						
Protection	M $	617	617	617	617	617
GA	M $	700	700	700	700	700
Variable Costs						
Investment Costs						
Timber Roads	M $	13 8	11 7	11 9	10 8	10 8
Other Roads	M $	460	460	70	70	70
Investment Other	M $	306 4	251 5	220 9	224 8	219 8
Total Investment	M $	780 2	723 2	302 8	305 6	300 6
Operational Costs	M $	2068	2093	2093	2093	2093
Non-Forest Service Costs	M $	236 9	237 7	237 7	237 7	237 7
Returns to Treasury	M $	710 8	820 6	821 2	820 6	820 0

8. Alternative 8 - Maximize Wilderness, Amenity Emphasis

a. Objective: The goal of this Alternative is to maximize present net value and increase net public benefits. This alternative is designed to meet legal analysis criteria. It proposes all of the roadless areas for wilderness management. This would then become the primary resource management strategy for the Forest due to the vast amounts of roadless acreage within the Forest (86% of the total Forest would be wilderness). The remaining roaded lands would be managed primarily for amenity uses.

b. Objective Function: Maximize PNV for 20 decades rollover to maximize non-market outputs.

c. Assumptions and Constraints: All roadless areas proposed for wilderness. All CAC's open for selection. Forest-wide Goal 3 data set was used. Budget constraint of $5.4 million/year in first decade. No budget constraint on remaining periods.

d. RUNID: CHA006 - Tape #F40297, F45315

TABLE B-24 ALTERNATIVE 8 - MAXIMIZE WILDERNESS, AMENITY EMPHASIS. PROJECTED CHALLIS NATIONAL FOREST PROGRAM OUTPUTS, ACTIVITIES, BENEFITS & COSTS

OUTPUT/ACTIVITY	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
RECREATION 1/									
Wilderness Use (ROS I)	MRVD	327 7	448 0	448 0	448 0	448 0			
Dispersed Use (ROS II & III)	MRVD	174.8	215 0	215.0	215 0	215.0			
Developed Use (ROS IV)	MRVD	67 5	84 0	84 0	84.0	84.0			
WILDERNESS									
Management	M Acres	2174 3	2174 3	2174 3	2174 3	2174 3			
WILDLIFE AND FISH									
Structural Habitat Improve	Struct	4	4	4	4	4			
Non-Struc. Habitat Improve.	Acres	77	77	77	77	77			
Anad. Fish Commercial	M # Lbs.	156	315	474	634	704			
Anadromous Fish Sport	M WFUD	35.8	58 9	81 9	104 5	116.5			
Coldwater Fish	M WFUD	165 6	215 5	247 7	279 9	339 1			
Wildlife Use	M WFUD	87 2	108 8	128 7	150 9	174.0			
Populations									
Deer	M Animals	24.6	31 5	39 3	48 4	58 5			
Elk	M Animals	5 5	6 9	8 2	8 5	8.6			
Bighorn Sheep	M Animals	1 0	1 7	2 5	3 3	4 0			
Mountain Goat	M Animals	0 6	0 7	0 8	0.9	1.0			
Red Squirrel	M Acres	712 2	709 9	707 6	705 3	703 0			
RANGE									
Grazing Use (Livestock)									
Actual Use (Projected)	M AUM	111.5	103 5	96 4	96 4	96.4			
Permitted Use (Projected)	M AUM	114	106	98	98	98			
TIMBER									
Allowable Sale Quantity	MMCF	0 5	0 5	0 5	0.5	0.5	0.5	0.8	0.8
	MMBF	2.05	2.05	2.05	2.05	2 05	2 05	3.5	3 5
Roundwood Products 2/	MMCF	0.02	0 02	0.02	0.02	0 02	0 02	0 02	0.02
	MMBF	0.09	0 09	0.09	0 09	0.09	0 09	0 09	0 09
Reforestation	Acres	479	476	408	476	370	342	440	374
Timber Stand Improvement	Acres	15	0	0	0	0	0	0	0
Fuelwood (Dead & Green)	MCF	420	420	420	420	420	420	420	420
SOIL AND WATER									
Meets or Exceeds State Stds	M Ac Ft	2463	2463	2463	2463	2463			
Meets Water Quality Goals 3/	M Ac Ft	2365	2365	2365	2365	2365			
Soil & Water Resource Imp	Acres	10	4	0	0	0			
MINERALS									
Leases	No. Leases	41	58	58	58	58			
HUMAN RESOURCE PROGRAMS	Pers. Yrs	17	17	17	17	17			
FACILITIES									
Trail Const/Reconstruction	Miles	0	0	0	0	0			
Road Reconstruction (Arterial & Collector)	Miles	15 4	15.4	0	0 9	0 9			
Local Road Construction 4/	Miles	0.7	0 7	0 7	0 7	0 7			
Local Road Reconstruction	Miles	0 7	0.7	3.3	0 8	0 8			
Timber Purch. Road Constr	Miles	1 0	0 8	1 9	0.8	0 5			
Timber Purch Road Reconstr	Miles	0	0 7	0 6	1 3	0 5			

1/ Recreation Outputs are not duplicated within the ROS Classes. (ROS - Recreation Opportunity Spectrum)
2/ Incidental amounts of roundwood products that may be offered dependent upon demand. These volumes are not included in the Allowable Sale Quantity
3/ Forest water quality goals, which exceed State water quality standards consist of not exceeding total depth fines of 30%
4/ Fuelwood roads.

TABLE B-24. ALTERNATIVE 8 - MAXIMIZE WILDERNESS, AMENITY EMPHASIS (Continued) PROJECTED CHALLIS NATIONAL FOREST PROGRAM OUTPUTS, ACTIVITIES, BENEFITS & COSTS

BENEFITS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
Wilderness Recreation	M $	3951	4767	4767	4767	4767			
Dispersed Recreation	M $	697	858	858	858	858			
Developed Recreation	M $	269	335	335	335	335			
Wildlife	M $	2493	3110	3676	4311	4971			
Anad. Fish Commercial	M $	382	773	1163	1553	1725			
Anadromous Fish Sport	M $	2558	4214	5858	7474	8332			
Coldwater Fish	M $	3263	4257	4893	5529	6698			
Range	M $	1572	1456	1355	1355	1355			
Timber	M $	736	751	748	745	715	1132	1022	1022
Minerals	M $	150	200	200	200	200			

COSTS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1	2	3	4	5
Total Forest Budget	M $	3922	3860	3860	3860	3860
Fixed Costs						
Protection	M $	497	497	497	497	497
GA	M $	800	735	800	800	800
Variable Costs						
Investment Costs						
Timber Roads	M $	29 4	41 0	67 6	53 5	28 6
Other Roads	M $	400	400	70	70	70
Investment Other	M $	288 0	270 2	254 6	268 5	259 6
Total Investment	M $	717.4	711.2	392.2	392.0	358.2
Operational Costs	M $	2040	2047	2046	2046	2046
Non-Forest Service Costs	M $	501 1	502 7	502 3	502 0	529 5
Returns to Treasury	M $	577 7	633 3	622 2	621 9	566 8

9. Alternative 9 - High Wilderness, Commodity Emphasis

a. Objective: The goal of this Alternative is to maximize present net value and increase net public benefits. This Alternative is designed to meet legal analysis criteria. It proposes 73% of the Forest to be managed under wilderness prescriptions, and the remaining Forest base to be managed under an intensive commodity emphasis.

b. Objective Function: Maximize market outputs and PNV for 20 decades.

c. Assumptions and Constraints: Proposed wilderness is Camas Creek, Taylor Mountain, Lemhi Range, Challis Creek, Greylock, Loon Creek, Pahsimeroi Mountains, Borah Peak, King Mountain, Hansen Lake, Red Mountain, Boulder/White Clouds, Pioneer Mountains, Blue Bunch, and Diamond Peak. CAC's are open for selection. Forest-wide Goal 5 data set was used. Budget constraint of $5.35 million/year in the first decade. No budget constraint on remaining periods.

d. RUNID: CHA013 - Tape #F41419

TABLE B-25 ALTERNATIVE 9 - HIGH WILDERNESS/COMMODITY EMPHASIS PROJECTED CHALLIS NATIONAL FOREST PROGRAM OUTPUTS, ACTIVITIES, BENEFITS & COSTS

OUTPUT/ACTIVITY	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
RECREATION 1/									
Wilderness Use (ROS I)	MRVD	304 6	318 0	318 0	318 0	318 0			
Dispersed Use (ROS II & III)	MRVD	218 4	266 9	266.9	266 9	266 9			
Developed Use (ROS IV)	MRVD	90 0	116 0	116 0	116 0	116 0			
WILDERNESS									
Management	M Acres	1831.0	1831 0	1831 0	1831 0	1831.0			
WILDLIFE AND FISH									
Structural Habitat Improve	Struct	1	1	1	1	1			
Non-Struc Habitat Improve	Acres	2	2	2	2	2			
Anad Fish Commercial	M # Lbs	154	311	468	625	694			
Anadromous Fish Sport	M WFUD	35 3	58 0	80 9	103 2	115 1			
Coldwater Fish	M WFUD	158 1	205 6	236 8	270 0	329 2			
Wildlife Use	M WFUD	79 8	99 7	118 2	138 7	149 9			
Populations									
Deer	M Animals	22 7	28 9	36 7	46 1	56 5			
Elk	M Animals	5 2	6 4	6 8	7 0	7 2			
Bighorn Sheep	M Animals	1 0	1 6	2 3	3 0	3 8			
Mountain Goat	M Animals	0 6	0 7	0.7	0.8	1 0			
Red Squirrel	M Acres	710 0	703 9	698 2	692 9	687 0			
RANGE									
Grazing Use (Livestock)									
Actual Use (Projected)	M AUM	111 5	107 4	103 2	103 0	103 0			
Permitted Use (Projected)	M AUM	114	109	105	105	105			
TIMBER									
Allowable Sale Quantity	MMCF	1 1	1 1	1 1	1 1	1 1	1 1	1 9	1 9
	MMBF	4 9	4 9	4 9	4 9	4 9	4 9	8 6	8 6
Roundwood Products 2/	MMCF	0 03	0 03	0 03	0 03	0 03	0 03	0 03	0 03
	MMBF	0 14	0 14	0 14	0 14	0 14	0 14	0 14	0 14
Reforestation	Acres	909	1150	945	1127	877	799	1077	919
Timber Stand Improvement	Acres	69	0	0	0	0	0	0	0
Fuelwood (Dead & Green)	MCF	500	500	500	500	500	500	500	500
SOIL AND WATER									
Meets or Exceeds State Stds	M Ac Ft	2463	2463	2463	2463	2463			
Meets Water Quality Goals 3/	M Ac Ft	2365	2365	2365	2365	2340			
Soil & Water Resource Imp	Acres	31	28	0	0	0			
MINERALS									
Leases	No Leases	66	95	95	95	95			
HUMAN RESOURCE PROGRAMS	Pers Yrs	26	26	26	26	26			
FACILITIES									
Trail Const/Reconstruction	Miles	0	0	0	0	0			
Road Reconstruction (Arterial & Collector)	Miles	15 4	15 4	0	0 9	0 9			
Local Road Construction 4/	Miles	0 5	0 5	0 7	0 7	0 7			
Local Road Reconstruction	Miles	0 7	0 7	3 3	0 8	0 8			
Timber Purch Road Constr	Miles	2 5	2 0	4 9	1 2	1 5			
Timber Purch Road Reconstr	Miles	0	1 7	1 4	3 4	0 7			

1/ Recreation Outputs are not duplicated within the ROS Classes (ROS - Recreation Opportunity Spectrum)

2/ Incidental amounts of roundwood products that may be offered dependent upon demand These volumes are not included in the Allowable Sale Quantity

3/ Forest water quality goals, which exceed State water quality standards consist of not exceeding total depth fines of 30%

4/ Fuelwood roads

TABLE B-25. ALTERNATIVE 9 - HIGH WILDERNESS/COMMODITY EMPHASIS (Continued) PROJECTED CHALLIS NATIONAL FOREST PROGRAM OUTPUTS, ACTIVITIES, BENEFITS & COSTS

BENEFITS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
Wilderness Recreation	M $	3229	3371	3371	3371	3371			
Dispersed Recreation	M $	871	1065	1065	1065	1065			
Developed Recreation	M $	359	463	463	463	463			
Wildlife	M $	2282	2850	3377	3963	4283			
Anad Fish Commercial	M $	377	761	1146	1531	1700			
Anadromous Fish Sport	M $	2526	4150	5787	7381	8232			
Coldwater Fish	M $	3115	4061	4697	5333	6502			
Range	M $	1573	1510	1450	1449	1449			
Timber	M $	1756	1792	1786	1747	1669	1751	2743	2485
Minerals	M $	245	337	337	337	337			

COSTS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1	2	3	4	5
Total Forest Budget	M $	4567	4549	4201	4191	4190
Fixed Costs						
Protection	M $	740	740	740	740	740
GA	M $	815	807	816	816	816
Variable Costs						
Investment Costs						
Timber Roads	M $	70 9	99 3	173 2	113.3	57.7
Other Roads	M $	400	400	70	70	70
Investment Other	M $	459 6	469 7	410 4	448 2	429 0
Total Investment	M $	930 5	969 0	653 6	631 5	556 7
Operational Costs	M $	2264	2264	2264	2264	2264
Non-Forest Service Costs	M $	1211.3	1215 2	1214 6	1203 6	1253 9
Returns to Treasury	M $	982.0	1098 0	1087 3	1058 6	929 5

10. Alternative 10 - Current Program, Unconstrained Budget

a. Objective: The goal of this Alternative is to maximize present net value and increase net public benefits. This Alternative is designed to continue the current trend of goods and services with the exception of intensifying timber and range management. The budget is unconstrained in order to support this trend.

b. Objective Function: N/A.

c. Assumptions and Constraints: This Alternative was developed by the Forest's Management Team from an initial FORPLAN run for Alternative 7, then adjusted outside the FORPLAN model to generate desirable Forest activities and outputs. No formal FORPLAN run was made for this Alternative.

d. RUNID: NONE

TABLE B-26 ALTERNATIVE 10 - CURRENT PROGRAM, UNCONSTRAINED BUDGET PROJECTED CHALLIS NATIONAL FOREST PROGRAM OUTPUTS, ACTIVITIES, BENEFITS & COSTS

OUTPUT/ACTIVITY	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
RECREATION 1/									
Wilderness Use (ROS I)	MRVD	148	162	162	162	162			
Dispersed Use (ROS II & III)	MRVD	385	481	481	481	481			
Developed Use (ROS IV)	MRVD	81	103	103	103	103			
WILDERNESS									
Management	M Acres	942 2	942 2	942 2	942 2	942 2			
WILDLIFE AND FISH									
Structural Habitat Improve	Struct	19	19	19	19	19			
Non-Struc. Habitat Improve	Acres	659	659	659	659	659			
Anad. Fish Commercial	M # Lbs.	154	315	476	635	705			
Anadromous Fish Sport	M WFUD	37.0	61 0	84 0	108 0	120 0			
Coldwater Fish	M WFUD	166.9	216 6	245 0	280 0	340 0			
Wildlife Use	M WFUD	85 5	106 8	128 8	157.8	185 0			
Populations									
Deer	M Animals	24 6	32 0	41 2	51 1	61 2			
Elk	M Animals	5 8	7 0	8 3	8 6	8 7			
Bighorn Sheep	M Animals	1 0	1 7	2 5	3 2	3 9			
Mountain Goat	M Animals	0 6	0.7	0 7	0 8	1 0			
Red Squirrel	M Acres	806 0	796 5	787 0	777 5	668.0			
RANGE									
Grazing Use (Livestock)									
Actual Use (Projected)	M AUM	115	117	117	117	117			
Permitted Use (Projected)	M AUM	116	118	118	118	118			
TIMBER									
Allowable Sale Quantity	MMCF	0 8	2 2	2 2	2 2	2 2	2.2	2 6	3 4
	MMBF	3 6	9 9	9 9	9 9	9 9	9 9	11 6	15 2
Roundwood Products 2/	MMCF	0.02	0 02	0 02	0 02	0 02	0 02	0 02	0 02
	MMBF	0 09	0 09	0 09	0 09	0.09	0 09	0 09	0 09
Reforestation	Acres	671	1921	2175	1895	1802	1779	1296	1631
Timber Stand Improvement	Acres	69	0	0	0	0	0	0	0
Fuelwood (Dead & Green)	MCF	420	420	420	420	420	420	420	420
SOIL AND WATER									
Meets or Exceeds State Stds	M Ac Ft	2463	2463	2463	2463	2463			
Meets Water Quality Goals 3/	M Ac Ft	2365	2365	2365	2365	2414			
Soil & Water Resource Imp	Acres	100	100	10	10	10			
MINERALS									
Leases	No Leases	149	190	190	190	190			
HUMAN RESOURCE PROGRAMS	Pers Yrs	17	17	17	17	17			
FACILITIES									
Trail Const/Reconstruction	Miles	3	3	3	3	3			
Road Reconstruction (Arterial & Collector)	Miles	17 4	17 4	0	0 9	0 9			
Local Road Construction 4/	Miles	1 0	0	0	0	0			
Local Road Reconstruction	Miles	1 2	1 2	3 3	0 8	0 8			
Timber Purch Road Constr.	Miles	2 0	4 5	9 0	5 0	4 0			
Timber Purch Road Reconstr	Miles	0	1 5	2 8	1 9	2 2			

1/ Recreation Outputs are not duplicated within the ROS Classes (ROS - Recreation Opportunity Spectrum)

2/ Incidental amounts of roundwood products that may be offered dependent upon demand. These volumes are not included in the Allowable Sale Quantity

3/ Forest water quality goals, which exceed State water quality standards consist of not exceeding total depth fines of 30%

4/ Fuelwood roads

TABLE B-26 ALTERNATIVE 10 - CURRENT PROGRAM, UNCONSTRAINED BUDGET (Continued) PROJECTED CHALLIS NATIONAL FOREST PROGRAM OUTPUTS, ACTIVITIES, BENEFITS & COSTS.

BENEFITS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
Wilderness Recreation	M $	1569	1724	1724	1724	1724			
Dispersed Recreation	M $	1536	1918	1918	1918	1918			
Developed Recreation	M $	326	411	411	411	411			
Wildlife	M $	2444	3050	3682	4512	5289			
Anad Fish Commercial	M $	377	772	1166	1556	1727			
Anadromous Fish Sport	M $	2646	4362	6006	7722	8580			
Coldwater Fish	M $	3297	4278	4840	5516	6698			
Range	M $	1590	1550	1537	1536	1536			
Timber	M $	1390	3816	3553	3529	3815	3784	3780	4903
Minerals	M $	318	391	391	391	391			

COSTS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1	2	3	4	5
Total Forest Budget	M $	4587	4447	4267	4267	4267
Fixed Costs						
Protection	M $	617	617	617	617	617
GA	M $	663	645	655	655	655
Variable Costs						
Investment Costs						
Timber Roads	M $	36	291 7	171.3	334 3	96 8
Other Roads	M $	460	380	90	90	90
Investment Other	M $	505 5	811 5	865 5	810 0	777 6
Total Investment	M $	1001.5	1483.2	1126 8	1331 1	964 4
Operational Costs	M $	2165	2190	2170	2170	2170
Non-Forest Service Costs	M $	949 5	2588 7	2582 7	2740 4	2997 7
Returns to Treasury	M $	950 2	1805 3	1546 6	1364 1	1392 3

11. Alternative 11 - 1980 RPA Modified

a. Objective: The goal of this Alternative is to maximize present net value and increase net public benefits. This alternative is a modification of the Forest's share of the 1980 Resources Planning Act program direction. It included recommendations of wilderness areas and a less intensive timber management program than was proposed in the 1980 RPA program.

b. Objective Function: Maximize PNV for 20 decades.

c. Assumptions and Constraints: Proposed wilderness is Borah Peak and portions of the Boulder White-Clouds and Pioneers. CAC's were constrained to Alternative 4's solution selections. Specified budget constraints were used for each decade to achieve desired output levels.

d. RUNID: CHA030 - Tape #F22123

TABLE B-27 ALTERNATIVE 11 - 1980 RPA MODIFIED PROJECTED CHALLIS NATIONAL FOREST PROGRAM OUTPUTS, ACTIVITIES, BENEFITS & COSTS

OUTPUT/ACTIVITY	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
RECREATION 1/									
Wilderness Use (ROS I)	MRVD	148	164	164	164	164			
Dispersed Use (ROS II & III)	MRVD	379	432	432	432	432			
Developed Use (ROS IV)	MRVD	110	124	124	124	124			
WILDERNESS									
Management	M Acres	983 3	983 3	983 3	983 3	983 3			
WILDLIFE AND FISH									
Structural Habitat Improve.	Struct	20	20	20	20	20			
Non-Struc Habitat Improve	Acres	643	643	643	643	643			
Anad Fish Commercial	M # Lbs.	157	317	478	640	711			
Anadromous Fish Sport	M WFUD	36 8	60 8	84.0	108 0	120 0			
Coldwater Fish	M WFUD	166 0	216 5	249 5	281 5	341 5			
Wildlife Use	M WFUD	86.0	107.2	129 8	160.0	191 0			
Populations									
Deer	M Animals	24.6	32 5	40.0	49 5	59 9			
Elk	M Animals	5 5	7.0	8.3	8 6	8 7			
Bighorn Sheep	M Animals	1 0	1 7	2 5	3 2	4 0			
Mountain Goat	M Animals	0.6	0 7	0 8	0.9	1 0			
Red Squirrel	M Acres	342 0	341.7	333 3	331.1	325.9			
RANGE									
Grazing Use (Livestock)									
Actual Use (Projected)	M AUM	114	115	116	116	116			
Permitted Use (Projected)	M AUM	115	116	117	117	117			
TIMBER									
Allowable Sale Quantities	MMCF	0 7	0.9	1 1	1.3	1 6	2.2	2 2	2.2
	MMBF	3.0	4 0	5 0	6 0	7.0	10 0	10.0	10.0
Roundwood Products 2/	MMCF	0.02	0 02	0 02	0 02	0.02	0 02	0 02	0 02
	MMBF	0 09	0 09	0 09	0 09	0 09	0.09	0 09	0 09
Reforestation	Acres	653	867	913	1123	1217	1776	1149	1297
Timber Stand Improvement	Acres	69	0	0	0	0	0	0	0
Fuelwood (Dead & Green)	MCF	500	500	500	500	500	500	500	500
SOIL AND WATER									
Meets or Exceeds State Stds	M Ac Ft	2463	2463	2463	2463	2463			
Meets Water Quality Goals 3/	M Ac Ft	2365	2365	2365	2463	2463			
Soil & Water Resource Imp.	Acres	120	80	10	10	10			
MINERALS									
Leases	No Leases	149	190	190	190	190			
HUMAN RESOURCE PROGRAMS	Pers Yrs	17	17	17	17	17			
FACILITIES									
Trail Const/Reconstruction	Miles	6	6	6	6	6			
Road Reconstruction (Arterial & Collector)	Miles	10.8	16.2	8 1	0 9	0.9			
Local Road Construction 4/	Miles	1	1	1	0	0			
Local Road Reconstruction	Miles	1.4	2.6	1 3	0 8	0 8			
Timber Purch Road Constr	Miles	3.0	0.9	1 6	4 2	5 8			
Timber Purch Road Reconstr	Miles	0	1.1	0.7	1.1	2.2			

1/ Recreation Outputs are not duplicated within the ROS Classes (ROS - Recreation Opportunity Spectrum)

2/ Incidental amounts of roundwood products that may be offered dependent upon demand These volumes are not included in the allowable sale quantity

3/ Forest water quality goals, which exceed State water quality standards consist of not exceeding total depth fines of 30%

4/ Fuelwood roads

TABLE B-27 ALTERNATIVE 11 - 1980 RPA MODIFIED. PROJECTED CHALLIS NATIONAL FOREST PROGRAM OUTPUTS, ACTIVITIES, BENEFITS & COSTS (Continued)

BENEFITS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	2036-2085	2086-2135	2136-2185
Wilderness Recreation	M $	1569	1738	1738	1738	1738			
Dispersed Recreation	M $	1512	1724	1724	1724	1724			
Developed Recreation	M $	439	495	495	495	495			
Wildlife	M $	2459	3065	3711	4574	5461			
Anad. Fish Commercial	M $	385	777	1171	1568	1742			
Anadromous Fish Sport	M $	2631	4347	6006	7722	8580			
Coldwater Fish	M $	3270	4265	4915	5546	6728			
Range	M $	1596	1610	1624	1624	1624			
Timber	M $	1068	1446	1802	2158	2515	3578	3123	3012
Minerals	M $	395	498	498	498	498			

COSTS	UNIT OF MEASURE PER YEAR	TIME PERIODS (DECADES) 1	2	3	4	5
Total Forest Budget	M $	4410	4400	4360	4230	4240
Fixed Costs						
Protection	M $	589	589	589	589	589
GA	M $	750	750	750	750	750
Variable Costs						
Investment Costs						
Timber Roads	M $	48	76	160	186	322
Other Roads	M $	330	330	270	130	130
Investment Other	M $	608	600	645	697	746
Total Investment	M $	986	1006	1075	1013	1198
Operational Costs	M $	2216	2241	2229	2236	2236
Non-Forest Service Costs	M $	733	981	1226	1471	1716
Returns to Treasury	M $	828	1036	1151	1264	1378

D. Alternatives Considered But Rejected.

Alternatives that would result in no outputs of such resources as range, recreation, minerals, timber or wildlife were considered. These alternatives were eliminated from detailed study because they failed to meet the needs of local dependent communities or would violate legal requirements.

E. Timber Departure Analysis

A departure analysis was conducted on the Preferred Alternative in an attempt to improve the age class distribution by capturing mortality losses in the earlier decades of the Challis' timber base. Procedure for the analysis followed the guidelines and "advice" which the Region provided in the R-4 Regional Checklist, FSM 1922.31d, and other direction. The departure analysis, required by Region 4 to be performed at a minimum on the Preferred Alternative, was not considered in detail by the Forest. The reason for this follows:

1) It is presently felt that the local timber industry would not respond to significant increases in volume offered on the Challis because of their limited capabilities. The Region timber industry would not respond because of the depressed market, high operation costs, and long haul distances. Several sales in 1984 were offered with no bids received.

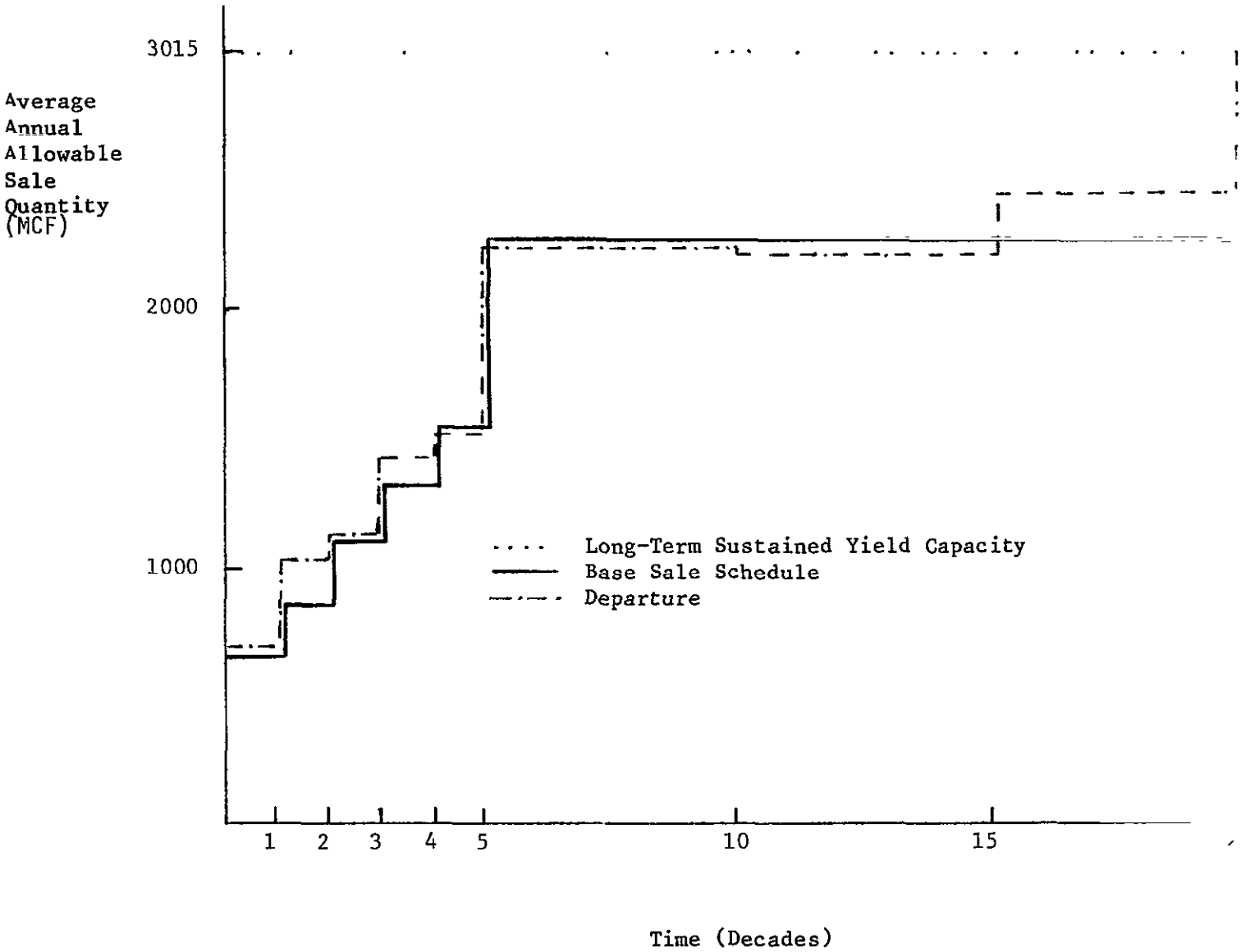
2) The FORPLAN departure runs varied little from the Base Sale Schedule (BSS) of the Preferred Alternative. The first decade variance was only 45 MBF/year. The second decade varied by 553 MBF/year, but was also not considered significant enough to develop another alternative to consider in detail. Budget constraints were partially responsible for holding the departure close to the BSS.

3) Other alternatives considered in detail provided higher BSS which were analyzed.

4) Departures may again be analyzed in future planning processes when better Forest data base is available and there is a more stable and therefore predictable timber industry.

5) An aggressive timber program to capture mortality and thus develop a better age class distribution was not considered to complement the general desired management direction for this Forest. The increases in roading and harvesting activities were considered to be potentially degrading to recreational oppportunities, fish and wildlife habitats, and visual qualities while few potential advantages to these or other resources were identified. Since the Challis National Forest is not a timber significant Forest, this is important.

DEPARTURE GRAPH



Decade	BSS MCF	Departure MCF	Difference MCF
1	667	677	+10
2	889	1012	+123
3	1111	1012	+1
4	1333	1424	+91
5	1556	1527	-29
6-10	2278	2237	-41
11-15	2278	2199	-79
16-20	2278	2446	+168

The results of the departure analysis are displayed on the Departure Graph. The age class distribution did not improve significantly from the Preferred Alternative. Slight decreases in mortality loss could be achieved, but there is not a significant change.

No display comparison of the departures environmental effects, costs, benefits, etc., and the Preferred Alternatives effects, etc., was developed. The reason is because the Forest Management Team adjusted the Preferred Alternatives FORPLAN outputs during the analysis. A substantial amount of time went into the adjustments. The FORPLAN departure runs would therefore have to be analyzed and adjusted similarly to show everything essentially the same except timber. It was felt that the time spent would result in two displays which were basically the same. It was therefore not done and further analysis of the departure was ended.

F. Alternative Development Process

Forest management alternatives were formulated in response to issues and concerns expressed by the public and Forest managers, and in response to legal requirements.

Issues and concerns were identified both nationally and locally during the planning process. Roadless area review and evaluation (RARE II), timber, range, and a variety of other resource related interests were identified as needing to be addressed.

Benchmarks and alternatives were developed from public issues and to describe Forest potentials for resource production. Evaluation at various levels defined sufficient similarity between these benchmarks and alternatives of lack of capability to meet current laws and direction while meeting some issues. This resulted in elimination and combination of alternatives leaving eleven for intensive evaluation. These eleven alternatives provide a range of responses to the issues and concerns.

Priced components or outputs that contribute to net public benefits (NPB) are those outputs which can be valued in the economic efficiency analysis. These values can be administratively determined or they can be determined in the marketplace. Examples are timber, recreation, and livestock grazing. The resource components or outputs and their contributions by alternative to the NPB are detailed in Chapter II.

Nonpriced components or outputs that contribute to NPB are those outputs which cannot be assigned a value in the economic efficiency analysis. Examples are visual quality and catchable trout. While these components do not contribute to Present Net Benefit (PNB) since they are not valued, they represent desirable attributes for which some amount of Present Net Value (PNV) is foregone in each alternative.

1. Relationship Between Qualitative and Quantitative Outputs

Each alternative represents a certain combination of quantitative and qualitative benefits. Often a qualitative benefit is decreased as a quantitative benefit is increased. An example would be loss of visual quality as the level of timber harvest is increased, while in other alternatives, the level of timber harvest is lowered to meet visual quality objectives (see Table II-7, Chapter II DEIS, for a comparison of the alternatives).

Public responses and analysis details are maintained on file at the Challis National Forest Supervisor's Office.

2. Legal Requirements

In Forest planning, an alternative is a combination of resource objectives, outputs, and constraints that achieve a certain management philosophy.

Many combinations are possible in formulating a range of alternatives for evaluation as possible Forest Plans. The alternatives described in this chapter were formulated in response to direction from the public, the Forest staff, and Federal laws as noted below.

a. Regulations developed from the National Environmental Policy Act (NEPA) and the National Forest Management Act (NFMA) provide direction for formulating alternatives. NEPA regulations (40 CFR 1502.14) require that the alternatives section of any environmental impact statement should:

--rigorously explore and objectively evaluate all reasonable alternatives, and for the alternatives that were eliminated, briefly discuss the reasons why they were eliminated.

--devote substantial treatment to each alternative considered in detail including the preferred alternative, so that reviewers may evaluate their comparative merits.

--include reasonable alternatives not within the jurisdiction of the agency.

--include a "No Action" alternative.

--identify appropriate mitigation measures not already included in the proposed action or other alternatives.

b. The Forest Service NEPA Procedures Handbook (FSH 1909.15, section 23) requires that a reasonable range of alternatives be fully and impartially developed, insuring that the range of alternatives does not prematurely close options that might protect, restore, or enhance the physical, social, economic, and biological environment.

c. NFMA regulations (36 CFR 219.12(f)) require the following be considered in formulating alternatives:

> The primary goal is to provide an adequate base for identifying the alternative that maximizes net public benefits, consistent with resource integration and management requirements stated in 36 CFR 219.13 through 219.27.
>
> Alternatives shall reflect a range of resource outputs and levels of expenditures.
>
> Alternatives shall provide different ways to address and respond to the major public issues, management concerns, and resource opportunities identified during this planning process.
>
> At least one alternative shall respond to and incorporate the 1980 RPA program displayed in the Intermountain Regional Guide.
>
> At least one alternative shall reflect the present volume of goods and level of services provided, and the most likely amount of goods and services expected to be provided in the future, if present direction continues.
>
> Each alternative shall represent the most cost-efficient combination of management prescriptions examined that can meet the objectives established in the alternatives.
>
> The beginning point for formulating alternatives is the body of data developed in response to projections of demand, and determinations of the potential to resolve public issues and management concerns (CFR 219.12(e)(3) and (4)).

d. The NFMA regulations (36 CFR 219.12(f)(9) require that each alternative state:

--the condition and use that would result from long-term application of the alternative.

--the goods and services to be produced, and the timing and flow of these resource outputs together with associated costs and benefits.

--standards and guidelines for resource management.

--the purpose of the proposed management direction.

e. The Washington Office Guidelines of Implementation dated October 14, 1981, required that an array of alternatives of the following types be considered.

--one that responds to and incorporates the RPA program goals and objectives displayed in the Intermountain Region Guide Jan. 1984. This alternative shows how best to meet the Forest's share of the 1980 RPA Program.

--one that presents the current program (no-action alternative), which is the current level of goods and services provided by the unit and the most likely amount of goods and services expected to be provided, if current management direction continues, and if current budget is updated for changing costs over time.

--one that considers outputs equal to those protrayed in Alternative 9 of the 1985 RPA DEIS.

--one that considers market opportunity outputs and emphasizes outputs that have the potential to produce income to the Government.

--one that considers non-market opportunity outputs and emphasizes the non-market and amenity values.

--other alternatives that respond to public issues, management concerns, and resource opportunities and reflect a broad range of resource outputs and levels of expenditures.

f. The Regional Land Management Planning Checklist dated February 1984 required an alternative to be developed that would be constrained by a budget 25 percent less than an average of the past 10 years. The Forest determined the management emphasis for this alternative.

G. Constraint Analysis

Table B-8 displays the specific constraints used in the FORPLAN model to develop each Alternative. Constraints which were binding (i.e., constraints which were met and limiting to the solution) are identified within each period. The rationale as to why the constraint was imposed is also present. See Section IV.C. Modeling Constraints for details on the constraints common to all runs.

VI. TRADE-OFF ANALYSIS

A. Trade-Off Among The Benchmarks.

The least cost benchmark is the Minimum Level #1, which represents a minimum level of controlled output production and least cost.

The PNV for this benchmark is not significantly different from the Maximum Range, Maximum PNV/Market, or the No Action benchmarks. This fact reflects that a significant level of non-market outputs are being produced, even at very low activity levels. They are largely independent of Forest investment. Additional investment to provide expected levels of services and increased outputs require corresponding cost increases. Therefore, differences between PNV are relatively small.

TABLE B-8 CONSTRAINTS SPECIFIC TO EACH ALTERNATIVE

ALTERNATIVE	ACTIVITY OUTPUT	TYPE OF CONSTRAINT	CONSTRAINT	UNITS	BINDING	APPLIC. TIME PERIOD	RATIONALE
Alt #1 No Action	Wilderness	Equal To	Borah Pk Lemhi Rn Pioneers	Acres Acres Acres	* * *	1 - 8 1 - 8 1 - 8	These areas are recommended Wilderness Areas for Alternative 1.
	Timber	Less Than	0 78 1.10	MMCF/YR MMCF/YR	* *	1 2 - 8	This maintains current harvest levels, allows for some expansion of the program in latter decades
	Budget	Less Than	3 93	MM$/YR		1	This conforms to budget constraint in Regional Guide, Chapter III E.5
Alt #2 Market Emphasis	Wilderness	Equal To	None	Acres		1 - 8	*No Wilderness is recommended for* Alternative 2
	Timber	Gr Than Gr Than Gr Than Gr Than	1 11 2 22 4 44 6.66	MMCF/YR MMCF/YR MMCF/YR MMCF/YR	 * * *	1 2 3 - 5 6 - 8	Set for incremental expansion of timber program to 30 MMBF/YR in 50 years Allows for harvest of significant acres on cable system lands
	Budget	Less Than	5 35	MM$/YR		1	This conforms to budget constraint in Regional Guide, Chapter III E 5
Alt #3 Non-Market Emph	Wilderness	Equal To	Lemhi Rn. Pahsim Mt Borah Pk King Mtn. Bldr/WC Pion Mt. Diam Pk.	Acres Acres Acres Acres Acres Acres Acres	* * * * * * *	1 - 8 1 - 8 1 - 8 1 - 8 1 - 8 1 - 8 1 - 8	These areas are the recommended Wilderness Areas for Alternative 3
	Timber	Less Than	0 67	MMCF/YR	*	1 - 5	To keep timber harvest at or slightly below the current level to meet the intent of the alternative
	Budget	Less Than	5 40	MM$/YR		1	This conforms to budget constraint in Regional Guide, Chapter III E 5
Alt. #4 RPA 1980 Program	Wilderness	Equal To	None	Acres	*	1 - 8	No wilderness is recommended for Alternative 4.
	Timber	*Gr Than* Gr Than Gr. Than	*1 78* 2 22 2 44	MMCF/YR MMCF/YR MMCF/YR		1 2 - 4 5 - 8	*To meet the 1980 RPA Alternative* objectives of timber harvest levels.
	Budget		None			1 - 8	This conforms to budget constraint in Regional Guide, Chapter III.E.5
Alt. #5	Wilderness	Equal To Equal To	Borah Pk Pion Mtn	Acres Acres	* *	1 - 8 1 - 8	These areas are recommended Wilderness Areas for Alternative 5
	Timber	Less Than	1 10	MMCF/YR	*	1 - 5	To meet intent of Alternative 5 to allow only slight expansion of the timber program
	Budget		None			1 - 8	This conforms to budget constraint in Regional Guide, Chapter III.E 5
Alt #6 Constrained (-75%) Budget	Wilderness	Equal To	Borah Pk	Acres	*	1 - 8	This area is recommended Wilderness Area for Alternative 6

TABLE B-8 CONSTRAINTS SPECIFIC TO EACH ALTERNATIVE

ALTERNATIVE	ACTIVITY OUTPUT	TYPE OF CONSTRAINT	CONSTRAINT	UNITS	BINDING	APPLIC TIME PERIOD	RATIONALE
	Timber	Less Than	0 56	MMCF/YR	*	1 - 5	Timber program constrained to meet only the local demand No Regional surplus in timber is available in first 5 decades This meets the intent of Alternative 6
	Budget	Less Than	2.70	MM$/YR		1	This conforms to budget constraint in Regional Guide, Chap III E. 5
Alt #7 Current Program Contrained Budget	Wilderness	Equal To	Borah Pk.	Acres	*	1 - 8	This area is recommended Wilderness Area for Alternative 7
	Timber	Less Than	0 78	MMCF/YR		1 - 5	Timber program is constrained in all decades not to exceed current harvest levels which meets the intent of the alternative.
		Less Than	0 78	MMCF/YR	*	6 - 8	
	Budget	Less Than	3.90	MM$/YR		1	This conforms to budget constraint in Regional Guide, Chap III E. 5.
		Less Than	3 90	MM$/YR	*	2 - 5	
Alt. #8 Max Wilderness Amenity Emphasis	Wilderness	Equal To	All Road-less Areas Proposed fo Wilderness	Acres	*	1 - 8	These areas recommended Wilderness Areas for Alternative 8
	Timber		None			1 - 8	To allow for some of the timber acres to come into solution It was felt that the small available timber base would not change the emphasis of the alternative
	Budget	Less Than	5 40	MM$/YR		1	This conforms to budget constraint in Regional Guide, Chap III E 5
Alt. #9 High Wilderness Commodity Emphasis	Wilderness	Equal To	Camas Cr.	Acres	*	1 - 8	These areas are recommended Wilderness Areas for Alternative 9.
			Taylor Mt.	Acres	*	1 - 8	
			Lemhi Rn	Acres	*	1 - 8	
			Challis Cr	Acres	*	1 - 8	
			Greylock	Acres	*	1 - 8	
			Loon Cr	Acres	*	1 - 8	
			Pahsim Mt	Acres	*	1 - 8	
			Borah Pk.	Acres	*	1 - 8	
			King Ntn.	Acres	*	1 - 8	
			Hansen Lk	Acres	*	1 - 8	
			Red Mtn	Acres	*	1 - 8	
			Bldr/WC	Acres	*	1 - 8	
			Pion. Mt	Acres	*	1 - 8	
			Blue Bnch	Acres	*	1 - 8	
			Diam. Pk.	Acres	*	1 - 8	
	Budget	Less Than	5 40	MM$/YR		1	This conforms to the budget constraint in the Regional Guide, Chap III E 5
Alt 10 Current Program Unconstr Budget	Wilderness	Equal To	Borah Pk	Acres	*	1 - 8	This area is recommended Wilderness Area for Alternative 10
	Timber		N/A	(See Appendix B IV C. 10 c)			
	Budget		N/A	(See Appendix B IV C. 10 c.)			This conforms to budget constraints in Regional Guide, Chap. III. E. 5.
Alt #11 1980 RPA Modified	Wilderness	Equal To	Borah Pk	Acres	*	1 - 8	These areas are recommended Wilderness Areas for Alternative 11.
			Bldr/WC	Acres	*	1 - 8	
			Pion. Mtn.	Acres	*	1 - 8	
	Budget	Less Than	3 73	MM$/YR	*	1	To meet Forest Management Team and I D. Team's desired harvest levels over the planning horizon
		Less Than	4 42	MM$/YR	*	2	
		Less Than	4 00	MM$/YR	*	3	
		Less Than	4.08	MM$/YR	*	4	
		Less Than	4.16	MM$/YR	*	5	
		Less Than	4.33	MM$/YR	*	6	
		Less Than	4.32	MM$/YR	*	6	
		Less Than	4.15	MM$/YR	*	7	
		Grtr Than	4 15	MM$/YR	*	7	
		Less Than	4 20	MM$/YR	*	8	
		Grtr Than	4 20	MM$/YR	*	8	

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The mix of outputs and activities regulates the PNV level achieved in the benchmarks. This is displayed by the Max PNV (using assigned output values). Max PNV (assigned output values) Max Wilderness and Minimum Wilderness are the three highest PNV benchmarks. In two of these, the values for wilderness recreation uses contribute to the high PNV values. In the third, the combination of non-wilderness recreation, wildlife, and minerals uses elevate the PNV.

Levels of timber harvest, and associated road construction costs, are a significant market cost factor affecting PNV. On the benefit side, trade-offs between high wilderness values and minerals (oil and gas) values are important in their effect of reducing the spread in PNV between benchmarks favoring market versus amenity outputs.

There is not an identifiable trend between costs or Forest budgets and PNV. This suggests that the marginality varies according to different combinations of costs and outputs.

Tables B-3 and B-4 display benchmarks and alternatives ranked by PVC and PNV respectively. These values provide the basis for comparing trade-offs between benchmarks and alternatives. Compared to the Maximum Present Net Value Assigned Benchmark at a 4 precent discount rate, the following relationship occurs for benchmarks and alternatives:

Maximum PNV/Market Benchmark

The present value costs of this benchmark would increase $87.1 million and present value benefits would increase $60.3 million. Most of this difference would result from putting emphasis on the revenue producing resources. Timber, range, developed recreation, mineral leases and commerical fish harvest, which would increase benefits. The costs of producing these benefits also would increase the overall cost of the alternative.

Maximum Timber Benchmark

The present value costs of this benchmark would increase $298.8 million and present value benefits would increase $213.8 million. This alternative has the highest present net cost with most of the difference resulting from increasing timber harvest to the maximum. Increase in benefits would primarily result from increases in timber harvest and grazing.

Maximum Range Benchmark

The present value costs of this benchmark would increase $206.1 million and present value benefits would increase $148.7 million. This alternative would have the second highest costs among the benchmarks primarily from increased range and timber costs. Total benefits would increase because of increased range and timber output, but these benefits would be partly off-set by decreased wildlife and fisheries benefits.

Maximum Wilderness Benchmark

The present value costs of this benchmark would decrease $19.9 million, and present values benefits would decrease $16.9 million. The decreased costs would result from most activities occurring on a much reduced land

base outside wilderness. Decreased benefits would result from low levels of most activities. Higher values for wilderness recreation compared to other recreation values would cause an increase in recreation benefits.

Minimum Wilderness Benchmark

The present value costs of this benchmark would increase $91 million, and present value benefits would increase $81.7 million. Costs and benefits are similar to the Max PNV Market Benchmark. Decreased investments, except for roads, would result in slightly lower costs. Higher wildlife and fish benefits would cause most of the increased benefits compared to the Max PNV Market Benchmark.

Minimum Level Benchmark

The present value costs of this benchmark would decrease $84.7 million, and present value benefits would decrease $122 million. This benchmark has the lower present net costs of any of the benchmarks or alternatives, since the only costs are those needed to sustain National Forest lands in public ownership. The only benefits are those that would essentially occur regardless of Forest Service programs and efforts.

B. Trade-Offs Among Alternatives.

A trade-off analysis is required for National Forest planning. Trade-offs between outputs can be computed with the same linear programming model 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. 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 (Connaughton and Fight, 1984).

This trade-off analysis uses the No-Action (Current Program) Alternative as a base for comparison. The following descriptions are based on evaluating changes from current management direction and uses the 4% discount rate. Visual comparisons of outputs, costs, values, etc., can be seen in Tables II-2, II-6, and IV-1 in the EIS and Tables B-3, B-4, and B-5 in Appendix B.

Alternatives 5, 6, and 8 all have higher PNV's than Alternative 1. Alternative 7 has relatively the same PNV, achieved at a lower investment level.

Six alternatives have higher opportunity costs than Alternative 1 (see Table B-6). Alternatives 5, 6, 7, and 8 have lower opportunity costs (are more favorable) than Alternative 1. These same alternatives, also, have higher returns per dollar invested. (see Table B-5).

The present value costs of this alternative would decrease $4.4 million and present value benefits would decrease $27.5 million. Timber costs

would greatly decrease under this alternative. Benefits from timber would also decrease along with reduced wilderness recreation benefits and slightly reduced wildlife and fish benefits.

Alternative 2 - This has a lower PNV than Alternative 1. This is due to lower benefits resulting from wilderness recreation and WFUD's. Oil and gas resources available for lease increase but not enough to off-set decreases in value of recreation and wildlife use.

The present value costs of this alternative would increase $69.8 million and present value benefits would increase $14.4 million. Timber related costs would increase greatly along with an increase in other investments. Benefits from timber, range and mienrals would increase while most other benefits would decrease.

Alternative 3 - The PNV is slightly lower than Alternative 1. Recreation and wildlife use values increase in relatively small amounts compared to timber and minerals values. There is a significant drop in oil and gas leases as a result of proposed wilderness allocation. The marginal returns for additional investment in the recreation, wilderness, and wildlife activities is not as great as marginal returns lost by reducing the level of range, timber, and mineral activities.

The present value costs of this alternative would decrease $2.1 million and present value benefits would decrease $35 million. Timber, range, road and investment costs would all decrease. Recreation, wildlife and fish costs would increase. Benefits from dispersed recreation and anadromous sport fishing would increase. Benefits from anadromous commerical fishing would be unchanged. All other benefits would decrease.

Alternative 4 - This has a lower PNV, slightly higher total returns, and significantly higher total costs than Alternative 1.

Recreation output values are slightly lower. Wildlife use values are similar to Alternative 1. Grazing AUMs increase but are off-set by nearly equivalent cost increases. Again, the significant changes occur in minerals and timber. Fewer acres proposed for wilderness increases oil and gas lease returns. Higher levels of timber harvest and outputs are accompanied by higher costs. The marginal returns for timber and grazing at these investment levels are lower than Alternative 2 and are not sufficient to maintain PNV at or above Alternative 1.

The present value costs of this alternative would increase $54.1 million and present value benefits would increase $14 million. Timber related costs would increase along with smaller increases for other activities except wilderness and non-timber roads. Benefits would increase from all activities except wilderness recreation and fisheries.

Alternative 5 - The slightly higher PNV in this alternative is the result of fairly similar programs and output values to Alternative 1. Timber and range outputs increase slightly. It appears that the higher PNV values, however, are more related to drops in fixed and investment costs relative to program activity levels.

The present value costs of this alternative would decrease $18.9 million and present value benefits would decrease $23.3 million. Generally, cost

would decrease, especially non-Forest Service timber cost. Benefits would increase from non-wilderness recreation, anadromous fisheries and range, while other benefits would decrease.

Alternative 6 - This alternative has a higher PNV than alternative 1. It maintains grazing and timber outputs at nearly the same levels as Alternative 1. Oil and gas leasing is slightly above alternative 1.

The major factor, however, is the general reduction in program activity levels (costs) to meet the lower budget constraint.

It should be noted that this alternative provides the highest PNV, but probably the lowest quality of services and the lowest level on non-valued outputs (see discussion in Chapter IV of EIS).

The present value costs of this alternative decreased $50.5 million and present value benefits decreased $44.7 million. All costs would decrease. Benefits from dispersed recreation, anadromous fisheries and range would increase, whicl other benefits would decrease.

Alternative 7 - This alternative is very similar to Alternative 1 in PNV. It has slightly lower levels of outputs and costs in most programs. The exceptions include grazing, timber, and minerals. Oil and gas leases are up slightly with a reduction in proposed wilderness. Grazing outputs are increased slightly over Alternative 1.

The most important change in emphasis comes in the timber program. This alternative displays the lowest timber harvest program. This was done to maintain current program emphasis for other Forest programs, reducing timber activities sufficiently to meet budget constraints (see discussion in EIS, Chapters II and IV). The results include a comparable over-all reduction in timber outputs and costs. Coupled with the other changes mentioned, this results in a marginally better alternative with a PNV equivalent to Alternative 1.

The present value costs of this alternative would decrease $33.5 million and present value benefits would decrease $57.1 million. Operational costs would increase while other costs would decrease. All timber costs would decrease greatly. Benefits would increase from dispersed recreation, anadromous fisheries, range and minerals, while other benefits would decrease, with timber showing the greatest decrease.

Alternative 8 - This alternative has the highest PNV of any alternative. The trade-offs can be generally described as losing commodity outputs and motorized recreation activities in exchange for proposed allocation of all roadless areas to wilderness. The lower levels of output values in timber, range, minerals, anadromous fisheries, etc., are accompanied by significant reductions in costs.

The higher value of wilderness recreation over dispersed non-wilderness recreation is the major factor in the higher PNV.

(Here, the reader should note that higher wilderness values are based on the assumption that there is a significant national demand to support this level of increased wilderness proposal. The higher values assume that the type of recreation use and individual users would change significantly.

This may not occur and current users may continue to dominate future use with similar dispersed recreation uses as at present. This would indicate that allocation of wilderness did not provide additional value over dispersed use and the PNV would be overstated. This discussion also applies to Alternative 9).

The present value costs of this alternative would decrease $29.7 million and present value benefits would decrease $23.1 million. Generally, costs would decrease, except for wilderness recreation and wildlife and fish cosst. Benefits from wilderness recreation would be at a maximum and anadromous fisheries benefits would increase, while all other benefits would decrease.

Alternative 9 - This alternative has a slightly lower PNV than Alternative 1. Major areas of change include lower levels of grazing and minerals outputs and activities, slghtly higher timber levels, and significantly higher levels of wilderness management. The lower oil and gas lease and grazing revenues are not offset by increases in net timber revenues and wilderness output values.

Increased timber activities will be concentrated in less area than Alternative 1 due to the significant proposed wilderness levels (see Table II-1 in EIS). This results in harvesting higher cost stands giving lower marginal returns than Alternative 1. Note that the discussion on wilderness use values in the Alternative 8 discussion also applies here.

The present value costs of this alternative would increase $4 million and present value benefits would decrease $26.6 million. Operating costs would increase because of increased commodity production from non-wilderness areas. Total timber costs would decrease because of greatly reduced road costs. Benefits from wilderness and developed recreation would increase, while other benefits would decrease because of the greatly reduced non-wilderness land base where most activities could occur.

Alternative 10 - This alternative is similar to Alternative 1 in general emphasis, however is not subject to the same budget constraint. PNV is 2% lower as a result of increased investment levels in timber, range, and wildlife.

The present value costs of this alternative would increase $22.8 million and present value benefits would decrease $21.2 million. Non-road investment and operating costs would increase, while other costs, especially total timber costs, would decrease. Benefits from dispersed recreation, anadromous sport fisheries, and timber would increase while benefits from other activities would decrease.

Alternative 11 - This alternative is immediately below Alternative 1 in PNV. In general, costs are higher and outputs are lower resulting in this decrease in PNV. Lower wilderness recreation outputs and increased quality of management contribute to this change.

The present value costs of this alternative would decrease $2.9 million and present value benefits would decrease $30.7 million. Timber production costs, including road costs, would decrease, while other

resource operation and investment costs would increase. Timber benefits would decrease because of relatively low timber harvest levels during the first two decades. Dispersed and developed recreation, anadromous fisheries and mineral benefits would increase. The other benefits would remain the same or would decrease.

C. Summary

This discussion, along with the descriptions of the alternatives in EIS, Chapters II, and the analysis of effects in EIS, Chapter IV, allows the reviewer to understand the trade-offs (economic, social, and environmental) between alternatives. The reader should also review Appendices A and C to understand trade-offs relevant to responding to the publics' issues and concerns (Appendix A) and to proposed classification of particular roadless areas as wilderness (Appendix C).

The enclosed maps (Appendix H) and descriptions of management emphasis by management areas are also important to understand the spatial relativity of management differences between alternatives.

It is not the intent of this section to cover all the aspects of trade-offs between alternatives. The focus has been mainly on economic trade-offs in this discussion.

Forest managers are responsible for determining the relevant importance between trade-offs (social, economic, environmental, spatial, etc.). This was done using the Trade-Off Evaluation Process (TEP).

APPENDIX C. ROADLESS AREA EVALUATION

APPENDIX C

ROADLESS AREA EVALUATION

The Forest Plan Roadless Area Evaluation was conducted in response to direction from the Secretary of Agriculture that each National Forest evaluate roadless areas within its boundaries as part of developing a Forest Plan. Earlier Nation-wide reviews of National Forest roadless areas were completed in 1974 (RARE) and 1979 (RARE II), but legal challenges to RARE II resulted in the order for the new, Forest-by-Forest review.

The State of California and various environmental organizations claimed in a lawsuit (California vs. Block) that the Final EIS for the RARE II evaluation was legally flawed. On January 8, 1980, Judge Karlton of the U.S. District Court ruled that the RARE II Final EIS designation of certain roadless areas in California was legally inadequate. The RARE II Final EIS has designated National Forest roadless areas as either: (1) Recommended Wilderness, (2) Further Planning, or (3) Non-Wilderness. Areas designated for Further Planning were to be evaluated further in the Forest planning process. Areas recommended for Wilderness would remain unchanged in Forest planning alternatives. And areas designated as Non-Wilderness would be subject to other land and resource uses.

The United States appealed the decision to the Ninth Circuit Court of Appeals, but this Court affirmed the District Court's Decision on October 22, 1982. There were no additional appeals.

In order to address the site specific concerns described in the California vs. Block decision the following evaluations were developed for each roadless area with public participation and include consideration of the items listed in 36 CFR 219.17 (a)(2)(i through v) which are:

(i) The values of the area as wilderness;

(ii) The values foregone and effects on management of adjacent lands as a consequence of wilderness designations;

(iii) Feasibility of management as wilderness, in respect to size, nonconforming use, land ownership patterns, and existing contractual agreements or statutory rights;

(iv) Proximity to other designated wilderness and relative contribution to the National Wilderness Preservation System; and

(v) The anticipated long-term changes in plant and animal species diversity, including the diversity of natural plant and animal communities of the Forest planning area and the effects of such changes on the values for which wilderness areas were created.

A state-wide news release on August 15, 1983 explained the reevaluation being done by Idaho Forests. The Challis National Forest sought input through newspaper releases, mailings to identified contacts and one-on-one personal contacts. An August 9 Wilderness meetings chaired by Senator James McClure and the Senator's Wilderness Survey provided further information which was analyzed by the Challis National Forest Planning team. Information and public input received during RARE and RARE II was reviewed and incorporated into the reevaluation.

The Challis National Forest Plan evaluation began with the remapping of the RARE II roadless areas to correct errors made in the original mapping and to show development that had taken place since RARE II.

As a result of public input, the boundaries and descriptions of the roadless areas were revised. The adjustments in acreage totals for each roadless area and the reason for the adjustments are provided in the text of the NEED write up for each roadless areas.

This appendix identifies direct and indirect impacts and potential environmental changes with or without wilderness designation and some mitigating measures.

The direct and indirect impacts and environmental consequences of wilderness or nonwilderness designation are also portrayed in Chapter III, Affected Environment, and Chapter IV, Environmental Consequences, of the Forest Plan FEIS.

Economics are considered in Appendix C, along with other resource values. Wilderness use is given a monetary value, with its related management costs. The monetary value of nonwilderness uses are also considered to determine if significant tradeoffs are involved. In most cases, the resource tradeoff is not a significant factor, which is often the reason an area remains undeveloped. An unknown on many areas is the value of the mineral resource and potential for mineral development.

Appendix C presents a detailed description and evaluation of each of the 28 roadless acres on the Challis National Forest. The evaluation factors were defined as follows:

Capability: Measures of the presence of wilderness characteristics in each area. These include manageable boundaries, natural integrity, natural appearance, opportunities for solitude, primitive recreation, and challenging experiences, and special features such as threatened and endangered species.

Availability: Describes the quality, quantity, and management needs of resources including recreation, wildlife, water, livestock, timber, minerals, etc.

Need: Identifies existing, nearby wilderness areas, distance of the roadless area from population centers, interest by proponents (including Congress), public input, and the need for ecosystem representation. The Challis National Forest was assigned three ecosystems for representation (Kuchler 1966)in the Wilderness Preservation System. They were:

1. Sagebrush Steppe
2. Grand fir/Douglas-fir
3. Western spruce/fir

Selected Alternative: States whether Wilderness or non-wilderness has been assigned to that roadless area under the Selected Alternative. If the area has been assigned wilderness designation, the social and economical values enhanced and/or foregone are discussed as well as the need for maintaining the area as Wilderness. If assigned to non-wilderness uses, then the irretrievable/irreversible effects on the wilderness resource are discussed as well as the specific effects of the management prescriptions.

Effect of Alternatives (First Decade Only)

Table A. Management Prescription assigned to each roadless area by Forest Plan Alternative in acres.

Table B. Impacts on Wilderness Character.

Table C. Environmental Consequences of Wilderness/Non-Wilderness Designations on the Physical and Biologist Environment.

Table C-1. Areas Identified as Roadless on the Challis National Forest.

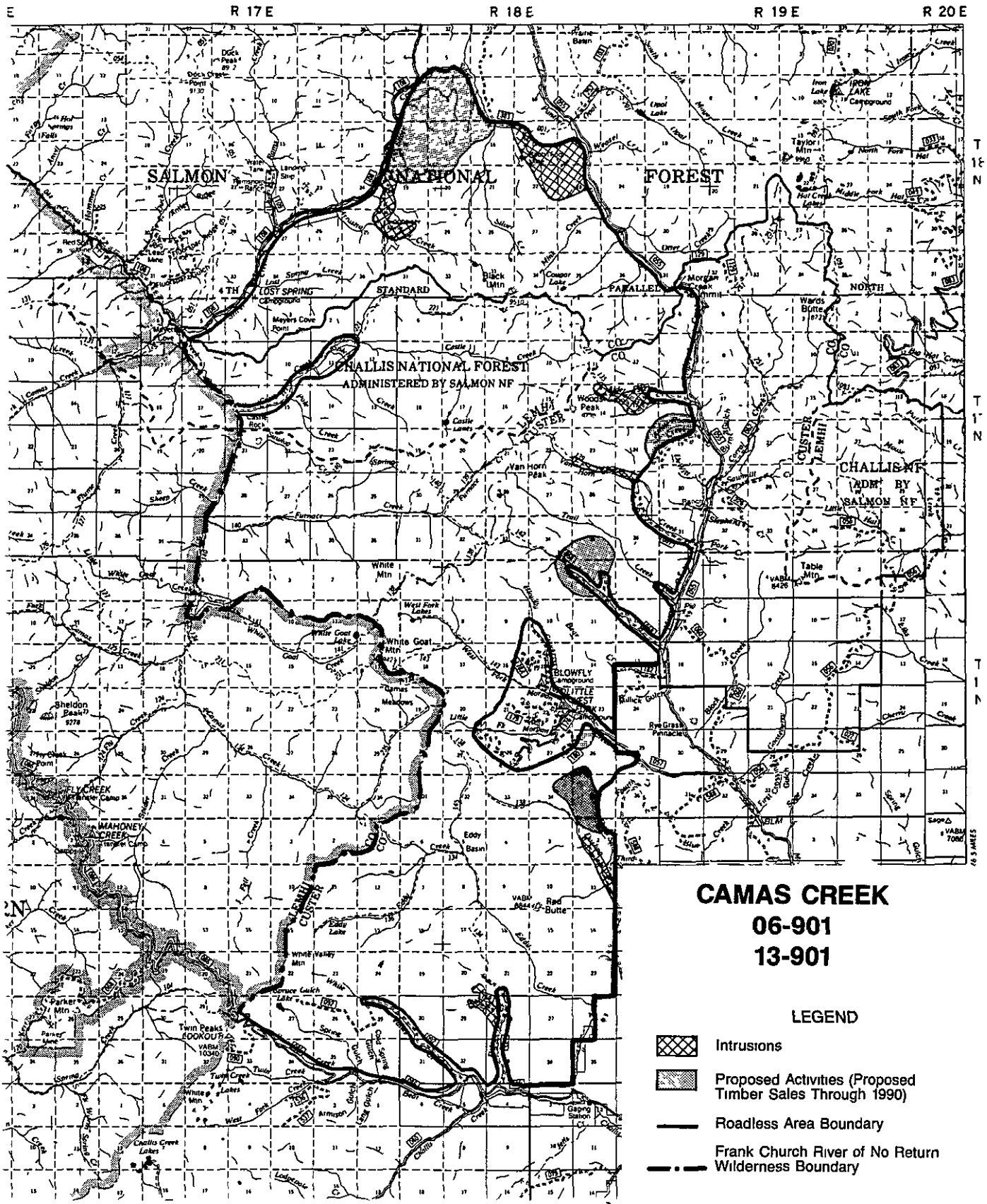
Roadless Area Number	Roadless Area Name	Challis NF Acres	Page No.
06-901	Camas Creek 1/	63,949	C-5
06-902	Taylor Mountain 1/	14,940	C-13
06-903	Lemhi Range 1/	149,629	C-20
06-004	Challis Creek	41,354	C-29
06-005	Squaw Creek	96,987	C-35
06-006	Spring Basin	5,000	C-41
06-007	Greylock	12,605	C-47
06-908	Loon Creek 1/	106,758	C-53
06-009	Seafoam	28,442	C-60
06-010	Grouse Peak	7,985	C-66
06-011	Pahsimeroi Mountains	72,107	C-71
06-012	Borah Peak	129,581	C-77
06-013	King Mountains	82,695	C-83
06-014	Jumpoff Mountains	13,337	C-89
06-915	Hanson Lakes 1/	13,719	C-95
06-916	Red Mountain 1/	5,189	C-102
06-017	Porphyry Peak	45,273	C-109
06-019	Copper Basin	10,402	C-115
06-920	Boulder/White Clouds 1/	134,754	C-120
06-921	Pioneer Mountains 1/	169,420	C-128
06-922	Railroad Ridge 1/	7,532	C-136
06-923	Blue Bunch 1/	7,472	C-142
06-024	Warm Creek	7,516	C-148
06-025	White Knob	62,416	C-154
06-026	Cold Springs	8,934	C-160
06-027	Red Hill	14,274	C-165
06-028	Wood Canyon	7,626	C-171
06-601	Diamond Peak 1/	72,239	C-177
	TOTAL	1,392,135	

1/ Roadless acres with contiguous areas on adjacent Forests. Table C-2 displays contiguous acres on adjacent Forests.

Eleven roadless areas are shared with adjacent Forests. Regional direction is that roadless areas will be studied and evaluated in their entirety in one Forest Plan/EIS, if they are located on two or more Forests. The Regional Forester also assigned lead re-evaluation responsibility for roadless areas administered by more than one forest. Table C-2 lists the eleven shared roadless areas, acreage on each Forest and the identity of the Forest assigned lead responsibility.

Table C-2. Contiguous Roadless Acres

Roadless Area Name	Roadless Area No.	Forest	Acres	Lead Forest
Camas Creek	06-901	Challis	63,949	Challis
	13-901	Salmon	34,887	
Taylor Mountain	06-902	Challis	14,940	Salmon
	13-902	Salmon	49,872	
Lemhi Range	06-903	Challis	149,629	Salmon
	13-903	Salmon	177,076	
Loon Creek	06-908	Challis	106,758	Challis
	14-908	Sawtooth	3,237	
Hanson Lakes	06-915	Challis	13,719	Sawtooth
	02-915	Boise	18,980	
	14-915	Sawtooth	35,594	
Red Mountains	06-916	Challis	5,189	Boise
	02-916	Boise	111,136	
Boulder/White Clouds	06-920	Challis	134,754	Sawtooth
	14-920	Sawtooth	297,591	
Pioneer Mountains	06-921	Challis	169,420	Challis
	14-921	Sawtooth	116,350	
Railroad Ridge	06-922	Challis	7,532	Sawtooth
	14-922	Sawtooth	32,045	
Blue Bunch	06-923	Challis	7,472	Challis
	02-923	Boise	5,085	
Diamond Peak	06-601	Challis	72,239	Challis
	04-601	Targhee	94,400	


R 17 E
R 18 E
R 19 E
R 20 E
SALMON
NATIONAL
FOREST
CHALLIS NATIONAL FOREST
ADMINISTERED BY SALMON NF
CHALLIS NF
ADM BY
SALMON NF
CAMAS CREEK
06-901
13-901
LEGEND
Intrusions
Proposed Activities (Proposed Timber Sales Through 1990)
Roadless Area Boundary
Frank Church River of No Return Wilderness Boundary

CAMAS CREEK

ROADLESS AREA EVALUATION

No. 06-901 Challis National Forest
No. 13-901 Salmon National Forest

(Formerly RARE II Area No. 04-202; also includes part of past RARE I Area No. 288)

Challis Acres:	63,949
Salmon Acres:	34,887
	98,836

Description

The area is approximately 35 air miles southwest of Salmon, Idaho and 7 air miles northwest of Challis, Idaho. The area is bounded on the west by the Frank Church--River of No Return Wilderness, on the northwest by the Silver Creek Road (108), on the northeast by the Panther Creek Road (055), and on the north by an area that has been roaded for removal of timber.

The Silver Creek Roadless Area (RARE II 288), which was a part of the Red Rock Peak Planning Unit, has been included with the Camas Creek RARE II Area Number 04-202. A portion of the Silver Creek area, the Black Mountain Management Unit, was recommended for roadless area management in the unit plan. A large part of the western portion of the original RARE II Area 04-202 was included in the Frank Church--River of No Return Wilderness. The Challis National Forest is the lead Forest on the evaluation of the entire area.

Access to the area can be gained from the roads along Silver Creek, Panther Creek, Morgan Creek, Challis Creek and Camas Creek.

The area is dissected by numerous drainages flowing into Panther Creek, Silver Creek, Camas Creek, Morgan Creek and Challis Creek. Elevations range from approximately 5,200 feet on Silver Creek to 10,196 feet on East Twin Peak. The topography ranges from gentle slopes of benches and bottomlands to near vertical headwalls in cirque basins. Much of the high country above 7,000 feet has been glaciated, with lakes formed in the glacial cirque basins. This high country is typical of alpine glaciated country. Average annual precipitation is in the 15 to 20 inch range. The majority of the precipitation occurs as snow, and spring and fall rains. Temperatures range from summer highs of 80 to 90 degrees at the lower elevations to winter lows of 35 degrees below zero at the higher elevations.

Much of the area is covered by lodgepole pine and Douglas-fir. Subalpine fir occurs in the higher elevations. Ponderosa pine occurs on some of the warmer sites. Scattered throughout the lower elevations are patches of sage and grass. The ecosystem found in the area is western spruce/fir and grand fir/Douglas-fir.

Current recreation uses include hunting, fishing, backpacking, and horseback riding. Use is estimated at approximately 6,700 Recreation Visitor Days. A portion of the area is currently grazed by livestock where approximately 2,800 Animal Unit Months grazing use takes place annually.

The area is separated by road corridors from roadless area #06-004 on the Challis National Forest, roadless area #13-902 on the Challis amd Salmon National Forests, and #13-518 on the Salmon National Forest. It is bordered by a roaded area on the north and is contiguous with the Frank Church--River of No Return Wilderness on the west. Area attractions include scenics, anadromous fish spawning streams, and big game, including elk, deer, bear, bighorn sheep, goats, and cougar.

Capability

The area's east side is bordered by improved roads and timber sales, some of which penetrate the unit; the west side follows the Frank Church--River of No Return Wilderness boundary. Several four-wheel drive roads exist in the unit. In much of the unit, steep terrain makes access difficult. Administration of this unit is shared between the Challis and Salmon National Forests.

One option to manage the Camas Creek drainage would be to add it to the Frank Church--River of No Return Wilderness. The eastern boundary is very unmanageable due to road intrusions and timber sales. Any adjustments would cross numerous drainages and would be very unmanageable.

Logical and manageable boundaries could be developed for the northern part of the unit. A boundary change could be made along the north edge to delete intrusions related to mining.

There are no special features in the area. Some portions of the unit have a lack of visual features on which to orient oneself. Extended back country trips by foot or horse are possible. The unit is large enough, even if reduced substantially to elimminate intrusions, to qualify and be managed as wilderness.

Table B addresses the natural integrity of the unit, and the opportunities for solitude, primitive recreation, and challenging experiences.

Availability

Recreation activities consist of hunting, fishing, backpacking, trail riding, and trailbike use. Most recreation use occurs during the fall hunting season. Patterns, types, and amounts of recreation use are not expected to significantly change in the near future. The area's greatest recreation potential is for primitive recreation activities. Current use is significantly below present capacity.

A large portion of the area has good vegetative diversity, providing classic high elevation big game summer habitat. Elk, bighorn sheep, and mule deer are found in this area, as are black bear and many species of small birds and mammals. Spruce grouse are particularly abundant. The area also contains important big game winter habitat. There is good potential for big game population increases within existing habitat.

Several lakes provide excellent habitat for resident trout, and others have the potential to support fish but have not been stocked. Most streams are characterized as small, high gradient headwaters. The lower reaches most likely support small numbers of fish. Streams in the Castle Creek, Furnace Creek, and Silver Creek drainges influence anadromous fish production in Camas and Silver Creeks. Most of the fishing opportunity in the area is provided by high mountain lakes.

The area is located within tributaries of the Middle Fork and main Salmon Rivers. The predominant geology of the area is volcanic and is highly erosive. This results in high sedimentation rates in streams during spring runoff. The area produces a moderate water yield, resulting from precipitation levels as high as 40 inches a year in localized areas. There is potential to improve water quality in localized areas through sediment reduction and streambank stabilization.

Portions of the Camas Creek, Eddy Creek, and Morgan Creek-Prairie Basin cattle and horse allotments are within the roadless area. About 2,800 Animal Unit Months (AUM) grazing use are permitted on this roadless area. With the exception of a few heavy use sites, the suitable range is in good condition. There are numerous structural range improvements within the roadless area portion of the allotment. There is potential to improve range conditions and increase grazing use by about 200 AUMs with additional development and continued intensive management.

There are an estimated 370 million board feet (MBF) of sawtimber volume growing within the unit, with an estimated annual potential yield of 3.9 million board feet per year. Extensive high cost roading through steep terrain would be required to support this harvest level. Annual harvest would be further reduced when management objectives by other resources are applied.

Intrusions which might alter the roadless area boundary include timber activities and roads near Van Horn Creek, Annie Rooney Creek, Lick Creek, White Valley Creek, and Panther Creek. There are also roads in the Pats Creek, Alder Creek, and Spruce Gulch Lake areas.

Two intrusions totaling 849 acres were identified within the inventoried boundaries. One is a mining related access road which provides access to mining claims north of Arrastra Creek. The other resulted from timber sale activities in the northeast corner of the area. The areas directly impacted by these activities no longer meet roadless area criteria and those portions of the roadless area will not be considered further for wilderness.

On the Challis National Forest, there have been several proposed timber sales: 300 MBF at Van Horn Creek in 1985 (damage sale), 900 MBF at Annie Rooney Creek in 1986, 500 MBF at Blowfly Creek and Two Draws in 1987, 700 MBF at Lick and Trail Creeks in 1990, 800 MBF at Eddy Creek in 1995, and possible post and pole sales. The acreages of these timber sales are partly in roaded and partly in the Camas Creek roadless area. There is a proposal for a 1,600 MBF timber sale to be sold in Fiscal Year 1985 near Silver Creek on the Salmon National Forest.

The hardrock mineral potential of the northern part of the area was rated high in the RARE II evaluation. Subsequent work by the U.S. Geological Survey has reaffirmed this rating. Past mineral production from the area included gold and silver. In addition, there is a high potential for gold, silver, and fluorspar associated with volcanic rocks of the Twin Peak and Van Horn Peak Cauldron Complexes. There are three patented mining claims in the area. The rest of the area is believed to have little potential for mineral development. There is little potential for leasable minerals such as oil and gas.

Several prehistoric archeological sites have been identified and more are likely to be found in the roadless area. More information is needed to determine the significance of the archeological resource in the area. There are some mine structures located at the north edge of the unit that may have historical interest.

There are several system trails in the area. Many of these need increased levels of maintenance. A large portion of the area is used by outfitters and guides, specifically during the big game hunting season.

There have been several man-caused and lightning-caused fires during the last decade. Most of these were very small; however, fuels and large acreages of old growth timber provide potential for large wildfires. There is potential for using prescribed fire to improve livestock range and wildlife habitat.

The Douglas-fir in several parts of the area has been repeatedly defoliated by western spruce budworm. Budworm periodically reduces Douglas-fir growth and kills understory seedlings and saplings. There are endemic levels of mountain pine beetle, and Douglas-fir beetles in the area. The mountain pine beetle appears to be increasing in the lodgepole pine and a major outbreak is a future possibility.

This area includes 79.8 acres of private land (patented mining claims) in Arrastra Creek and 60 acres of private land near the mouth of Eddy Creek. The Eddy Creek property could be excluded by a slight boundary modification.

Need

The roadless area is contiguous to the Frank Church--River of No Return Wilderness. In the wilderness, the majority of existing uses is associated with the Middle Fork of the Salmon River, the Bighorn Crags, and the Soldier Lakes area. Outside of these areas, recreation and hunting use are relatively light and are well below existing capacity.

The area is within one day's travel from the population centers of Missoula, Idaho Falls, Pocatello, Twin Falls, and Boise.

The western spruce/fir forest ecosystem has been identified as one needing representation in the National Wilderness System, it is included and adequately represented in the Frank Church River of No Return Wilderness. The Camas Creek roadless area does not represent any unique ecosystems.

The area has potential for recovery of the Endangered gray wolf. This area could serve as a buffer zone or travel corridor for colonizing wolves inhabiting the adjacent Frank Church--River of No Return Wilderness.

During RARE I this area was inventoried as Silver Creek #288, Camas Creek #120, and Eddy Creek #137 Roadless Areas. The decision in the RARE I FEIS was to manage these areas for non-wilderness resource development. Public opinion received on these areas during RARE I, on the wilderness/non-wilderness, was divided. The area was not considered highly controversial during RARE I.

Other public involvement efforts, including RARE II and Senator McClure's hearing in 1983, showed only limited support for this area as a wilderness, with 35% in favor during RARE II and no serious consideration during the hearings. It was recommended for wilderness by Idaho Environmental groups in their RARE II Idaho Citizens Alternative "W". The present Camas Creek Roadless Area was not included in Senator McClure's Idaho Forest Management Act.

The western portion of this original area, #04-202, was included as part of the original RARE II proposal to Congress. Through Congressional action creating the Frank Church--River of No Return Wilderness, the western part was included in the wilderness, and the eastern portion was released to non-wilderness management.

A portion of this roadless area (RARE I #288 Silver Creek) was not part of the RARE II evaluation. It was evaluated in the Red Rock Peak Unit Plan (1975) where approximately 7,500 acres were to be managed for roadless recreation. The remaining area covered by the plan was to be managed for modified timber harvest and other uses.

The following numbers show the acreage adjustments since the RARE II inventory.

Challis N.F.	74,673	Part of RARE II #004-202
	-10,724	Boundary adjustments for timber sales & intrusions
	63,949	Total Challis NF Roadless Acres
Salmon N.F.	35,875	
	988	Intrusions and private
	34,887	Total Salmon NF Roadless Acres
	98,949	Total Roadless Acreage

Selected Alternative Recommendation

This area is not proposed for Wilderness designation in the Preferred Alternative.

Timber sales and their accompanying roads may reduce the acreage available for wilderness evaluation during the next plan revision. Wildlife habitat improvements and range improvements may lower the natural integrity in certain locations. Fuelwood gathering may increase in certain areas. Most of the unit will retain its wilderness attributes and be available for wilderness evaluation during the next plan revision.

TABLE A MANAGEMENT PRESCRIPTION (GOAL) BY ACRES 1/
ROADLESS AREA 901
CAMAS CREEK

PRESCRIPTION (GOAL)	ALT 1 NO ACTION (CURRENT PROGRAM) (1)	ALT 2 MARKET EMPHASIS (2)	ALT 3 NON-MARKET EMPHASIS (3)	ALT 4 RPA 1980 PROGRAM (4)	ALT 5 MARKET AND NON-MARKET MIX (7)	ALT 6 CONSTRAINED (-25%) BUDGET (6)	ALT 7 CURRENT PROGRAM CONSTRAINED BUDGET	ALT 8 MAXIMIZE WILDERNESS, AMENITY EMPHASIS (11)	ALT 9 HIGH WILDERNESS COMMODITY EMPHASIS (10)	ALT 10 CURRENT PROGRAM, UNCONSTR BUDGET	ALT 11 1980 RPA MODIFIED (PREFERRED) (12)
LOW LEVEL MANAGEMENT					66,740						
CURRENT TREND	98,836			21,599		21,599	63,949				98,836
CURRENT TREND AMENITY				77,237		77,237					
HIGH LEVEL AMENITY			66,740							63,949	
HIGH LEVEL COMMODITY		98,836									
WILDERNESS			32,096		32,096			98,836	98,836		

1/ The Salmon NF is considering 12 alternatives The nine alternatives that are compatible with the Challis NF's are indicated in parentheses No data are available at this time (12/84) on the other three alternatives, except that in two of them, Wilderness is the chosen prescription

TABLE B IMPACTS ON WILDERNESS CHARACTER 1/
ROADLESS AREA 901
CAMAS CREEK

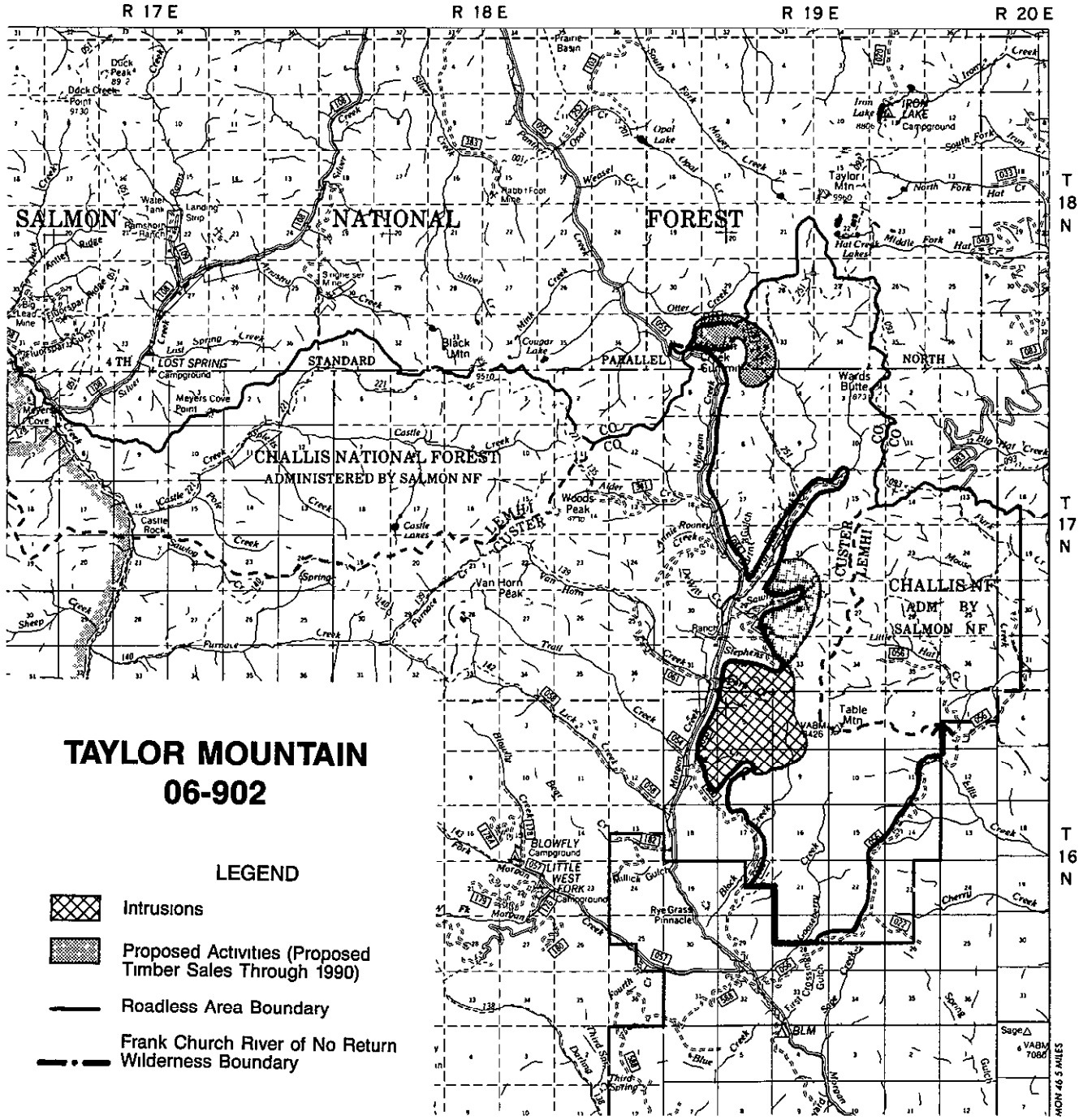
WILDERNESS CHARACTERISTICS	ALT 1 NO ACTION (CURRENT PROGRAM)	ALT 2 MARKET EMPHASIS	ALT 3 NON-MARKET EMPHASIS	ALT 4 RPA 1980 PROGRAM	ALT 5 MARKET AND NON-MARKET MIX	ALT 6 CONSTRAINED (-25%) BUDGET	ALT 7 CURRENT PROGRAM CONSTRAINED BUDGET	ALT 8 MAXIMIZE WILDERNESS, AMENITY EMPHASIS	ALT 9 HIGH WILDERNESS COMMODITY EMPHASIS	ALT 10 CURRENT PROGRAM, UNCONSTR BUDGET	ALT 11 1980 RPA MODIFIED (PREFERRED)
NATURAL INTEGRITY APPARENT NATURALNESS	High	Fairly high	High	High	High	High	High	Very high.	Very high	High	Fairly high
SOLITUDE	Good opportunity	Fairly good opportunity	Good opportunity	Good opportunity	Good opportunity	Good opportunity	Good opportunity	Excellent opportunity	Excellent opportunity	Good opportunity	Fairly good opportunity
PRIMITIVE RECREATION	Good opportunity	Fairly good opportunity	Good opportunity	Good opportunity	Good opportunity	Good opportunity	Good opportunity	Excellent opportunity	Excellent opportunity	Good opportunity	Fairly good opportunity
CHALLENGING EXPERIENCES	Cross-country travel and winter sports	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1
SPECIAL FEATURES	Mountain peaks and lakes and rock formations remain unaffected	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1

1/ Challis N F only

TABLE C ENVIRONMENTAL CONSEQUENCES OF WILDERNESS/NON-WILDERNESS DESIGNATIONS ON THE PHYSICAL AND BIOLOGICAL ENVIRONMENT 1/
ROADLESS AREA 901
CAMAS CREEK

ENVIRONMENT		ALT 1 NO ACTION (CURRENT PROGRAM)	ALT 2 MARKET EMPHASIS	ALT 3 NON-MARKET EMPHASIS,	ALT 4 RPA 1980 PROGRAM	ALT 5 MARKET AND NON-MARKET MIX	ALT 6 CONSTRAINED (-25%) BUDGET	ALT 7 CURRENT PROGRAM CONSTRAINED BUDGET	ALT 8 MAXIMIZE WILDERNESS, AMENITY EMPHASIS	ALT 9 HIGH WILDERNESS COMMODITY EMPHASIS	ALT 10 CURRENT PROGRAM, UNCONSTR. BUDGET	ALT 11 1980 RPA MODIFIED (PREFERRED)
ACTIVITIES IN PLANT COMMUNITIES		173 acres of wildlife habitat improvement	None	791 acres of wildlife habitat improvement	453 acres of wildlife habitat improvement	None	165 acres of wildlife habitat improvement	187 acres of wildlife habitat improvement	None	None	323 acres of wildlife habitat improvement.	228 acres of wildlife habitat imprvmt, 855 acres of old-growth Douglas-fir harvested
POTENTIAL ADVERSE EFFECTS ON SOIL PRODUCTIVITY		Slight on 173 acres, none on rest of unit	Very slight throughout the unit	Very slight on 791 acres, none on rest of unit	Slight on 453 acres, none on rest of unit	Very slight throughout the unit	Slight on 165 acres, none on rest of unit est of unit	Slight on 187 acres, none on rest of unit	None	None	Very slight on 323 acres; none on rest of unit.	Moderate on 855 acres, slight on 228 acres, none on rest of unit
POTENTIAL EFFECTS ON WATER QUALITY		Very slightly adverse	None	Very slightly beneficial	Very slightly adverse	Very slightly adverse	Very slightly adverse.	Very slightly adverse	None	None	Very slightly beneficial.	Slightly adverse
AIR QUALITY		Class II State Standards met	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Class I. State standards met	Same as Alt 8	Same as Alt 1	Same as Alt. 1
WILDLIFE HABITAT CAPABILITY 2/	DEER	Insignificant change	Insignificant change	Moderate improvement	Slight improvement	Same as Alt 2	Insignificant change	Same as Alt 1	Same as Alt 2	Same as Alt 2	Insignificant change	Same as Alt 1
	ELK	Moderate improvement	Insignificant change	Substantial improvement	Significant improvement		Slight improvement				Significant improvement	
POTENTIAL EFFECTS ON FISH HABITAT CAPABILITY		None	None	None	None	None	None	None	None	None	None	Very slightly adverse

1/ Challis N F. only.
2/ Insignificant change 0-2 9% acres improved, Slight improvement 3 0-4 9% acres improved, Moderate improvement 5 0-9.9% acres improved, Significant improvement 10 0-24 9% acres improved, Substantial improvement 25 0% + acres improved


R 17 E
R 18 E
R 19 E
R 20 E
T 18 N
T 17 N
T 16 N
SALMON NATIONAL FOREST
CHALLIS NATIONAL FOREST
ADMINISTERED BY SALMON NF
CHALLIS NF
ADM BY
SALMON NF
LOST SPRING
STANDARD
PARALLEL
NORTH
LEMHI
CUSTER
IRON LAKE
BLOWFLY
LITTLE WEST FORK
BLM
TAYLOR MOUNTAIN
06-902
LEGEND
Intrusions
Proposed Activities (Proposed Timber Sales Through 1990)
Roadless Area Boundary
Frank Church River of No Return Wilderness Boundary

TAYLOR MOUNTAIN
ROADLESS AREA EVALUATION

No. 06-902 Challis National Forest (Formerly RARE II No. 4-502)
No. 13-902 Salmon National Forest (Formerly RARE II No. 4-502)

Challis Acres:	14,940
Salmon Acres:	49,872
	67,352

Description

The Taylor Mountain Roadless Area is approximately 16 air miles southwest of Salmon, Idaho. The area is bounded on the southwest by the Panther Creek Road (055), and on the northeast by the Copper Creek-Swan Peak Road (099). The east boundary cuts across the Iron Creek and Hat Creek drainages. The west boundary cuts across the Iron Creek and Hat Creek drainages. The west boundary cuts across the drainages of Opal Creek, Moyer Creek, Salt Creek, and Woodtick Creek. Access to the area can be gained from roads along Panther Creek, Moyer Creek, and Copper Creek, from the Salmon River Mountain road to Iron Lake, and from roads in the Hat Creek and Iron Creek drainages.

Dissected by the headwaters of Moyer Creek, Woodtick Creek, Hat Creek, and Iron Creek, elevations of the area range from 5,500 feet along Panther Creek to over 9,000 feet at Taylor Mountain. Low elevation slopes are between 20 and 50 percent. Middle elevation slopes are from 50 to 70 percent, and the upper elevation slopes are up to and over 70 percent. Much of the country above 7,000 feet is typical of alpine glaciated topography, with lakes formed in the cirque basins. Rains occurring in the spring and fall, together with winter snows, brings average annual precipitation to 40 inches. Summer highs of 80 to 90 degrees are contrasted by winter lows of 35 degrees below zero.

Much of the middle to high elevation country is covered with stands of Douglas-fir, lodgepole pine, with some subalpine fir at the higher elevations. The vegetation on the lower slopes is sagebrush and grass, with scattered stands of Douglas-fir. The ecosystems occurring in this area are sagebrush steppe, grand fir/Douglas-fir, and western spruce/fir.

Recreation uses estimated at 2,700 recreation visitor days in 1982 include hunting, fishing, backpacking, and horseback riding.

The area contains structural improvements such as fences, water developments, and terraces.

Taylor Mountain is separated from roadless area 901 on its western boundary by the Morgan Creek/Panther Creek road corridor and is bordered on the north and east boundaries by lands of the Challis and Salmon National Forests. The southern boundary abuts against BLM administered lands.

The highly scenic Hat Creek Lakes area in the southern portion of the area receives the heaviest use.

Capability

Logical and manageable boundaries could be developed for this unit. Roadless Area size is not a factor, existing and proposed intrusions related to timber harvest could easily be deleted by boundary changes.

Table B addresses the natural integrity of the Challis National Forest portion unit, and the opportunities for solitude, primitive recreation, and challenging experiences.

Availability

Patterns, types, and amounts of recreation use are not expected to change, regardless of the classification of the unit. The greatest potential for recreation opportunities occurs in the vicinity of the Hat Creek Lakes.

This area contains both key elk summer and winter range for the 200-250 animals in the Moyer Creek elk herd. Mule deer and black bear are commonly observed, and mountain goats are present within the area.

There are several lakes within this area that provide suitable habitat for resident trout. One lake contains a population of Arctic grayling which are unique and found in only one other area on the Salmon National Forest. Several streams within the area provide habitat for trout. Habitat conditions within the lakes and streams are generally excellent. Fishing use in the lakes is moderate to light. Opal Lake and the Hat Creek Lakes receive the major portion of recreational use. The quality of lake fishing is excellent. Stream use is light and quality is fair.

The area lies within the headwaters of several streams tributary to Panther Creek, as well as the headwaters of two large drainages which are directly tributary to the Main Salmon River. Landforms in much of the area are typical of glaciated terrain and several small glacial lakes are found in the area. Water yield is moderate in the area. Watershed conditions in the area are generally excellent, as is water quality.

Portions of five cattle and horse grazing allotments occur within the boundary of the roadless area, including Deer/Iron, Hat Creek, Morgan Creek/Prairie Basin, Forney, and Williams Basin/Napias Creek. Approximately 3,000 AUMs of use are permitted within the boundary of the roadless area. Fifteen water developments and 18.4 miles of fence are within the area. The majority of the suitable range is rated as good, with small amounts of excellent, fair, and poor condition range.

An estimated 122 million board feet of sawtimber growing stock volume within the area has an estimated potential annual yield of 1.6 million board feet per year.

This potential timber harvest would be modified by management objectives of other resource needs, such as wildlife habitat, watershed, recreation, etc.; and reduced because of the cost of harvesting timber on steep slopes, the marginal quality of the sawtimber and the high cost of road access.

There is an existing intrusion on the northern boundary of the unit resulting from timber sales in 1972 and 1976, which harvested approximately two million board feet of timber from within the area. A small intrusion exists in the

southwest resulting from a small lodgepole pine timber sale in 1978. Two small intrusions on the eastern border are a result of timber harvest in 1965 that was erroneously included in the original roadless area review. The final acreage calculated for this roadless unit was adjusted to exclude these intrusions. A timber sale of approximately six million board feet is planned for 1985 in the northern portion and one million board feet at Sawmill/Corral Creek in 1989.

The hardrock mineral potential of this area was rated as moderate in the RARE II evaluation. Subsequent work puts this area into a low potential category. There has been no mineral production from this area; however, mining claim owners are continuing assessment work. There is a high potential for gold and silver deposits associated with the volcanics of the Van Horn Peak cauldron complex. The Blackbird cobalt-copper trend passes through the northernmost portion of the area. There is no known potential for currently leasable minerals.

Little is known about the existence of prehistoric cultural resources. The potential would be considered moderate in major drainage bottoms and along the Salmon River Mountain road, and low elsewhere. The potential for the existence of historic cultural resources is unknown, though the Thunder Mountain Trail (mining related) passes along the north edge of this unit.

This area includes seven system trails for a total of 18.9 miles, and two system roads within intrusion areas for a total of 5.3 miles. There also is 0.6 mile of non-system road, and a Special Use Ditch permit of 0.5 mile within the intrusion area. Part of the area has previously been (but is not now) under permit for outfitter/guide purposes.

Management Considerations

Fire occurrence is light in the area.

The area is predominantly a lodgepole pine type. There was a mountain pine beetle epidemic in the lodgepole pine and whitebark pine about 50 years ago, and conditions are developing which favor another outbreak. Douglas-fir stands in Little Hat Creek are deteriorating due to dwarf mistletoe.

There are no private lands within the area.

Need

The Taylor Mountain Roadless Area is located approximately 12 air miles from the Frank Church River of No Return Wilderness. The portion of the wilderness nearest this area generally receives light use.

The roadless area is located approximately 25 road miles from Salmon, Idaho, 165 miles from Idaho Falls, Idaho, and 155 miles from Missoula, Montana.

During RARE I, this area was inventoried as the Hat Creek #309, Moyer Peak #278, and Table Mountain #140 Roadless Areas. The decision in the RARE I FEIS was to manage these areas for non-wilderness resource development. Public opinion received on these areas during RARE I, on the wilderness/ nonwilderness issue, was divided. The area was not considered highly controversial during RARE I.

The Hat Creek #309, Moyer Peak #278, and Table Mountain #140 Roadless Areas were inventoried and evaluated in RARE II as the Taylor Mountain #04-502 Roadless Areas. The decision in the RARE II FEIS was to manage these lands for non-wilderness resource development. The public opinion was for non-wilderness uses for the area. The wilderness/non-wilderness issue was not highly controversial.

The area does not appear to represent any unique ecosystems.

During the development and passage of the Central Idaho Wilderness Act establishing the River of No Return Wilderness (Public Law 996-312 - July 23, 1980), the House/Senate Joint Committee in consideration of S.2009 did express an opinion on page PS-9 of their Conference Report that the area will "remain subject to sustained yield multiple use management under the statutes and regulations generally applicable to all non-wilderness National Forest system lands".

Senator McClure held "Idaho Forest Management Act" hearings in Coeur d'Alene, Lewiston, Boise, and Idaho Falls during August 1983. Prior to these meetings, the Senator sent out a constituent letter with four proposals, i.e., the Forest Service RARE II, Forest Industries, other commodity user groups, and the 1979 Idaho Wildlife Federation proposal. Following the hearings, Senator McClure has received additional input from environmental groups and the Governor of Idaho. The environmental groups and Governor Evans have included these areas in their wilderness proposals. The Idaho Fish and Game Commission provided input to Governor Evans for both wilderness and roadless management areas over the State. They did not include this area in their proposal. Additional input from individuals favored either wilderness or non-wilderness designation for this roadless unit.

The following numbers show acreage adjustments made since the RARE II inventory for the Challis National Forest.

17,480 RARE II acreage
16,941 Acreage recalculation
-2,001 Timber sale intrusions
14,940 Present roadless acreage

Selected Alternative Recommendation

This area is not proposed for Wilderness designation in the Selected Alterative on the Challis N.F. portion.

On the Challis N.F. portion, timber sales, range improvements, and wildlife habitat improvements may reduce the natural integrity in parts of the area and impact wilderness attributes in part of the area. Some areas may not be available for wilderness evaluation during the next plan revision.

The entire roadless area is evaluated in Appendix C of the Salmon N.F. Draft Environmental Impact Statement. The Challis N.F. Preferred Alternative is a recommendation until the final decision is approved in the Salmon N.F. Final Environmental Impact Statement.

TABLE A MANAGEMENT PRESCRIPTION (GOAL) BY ACRES 1/
ROADLESS AREA 902
TAYLOR MOUNTAIN

PRESCRIPTION (GOAL)	ALT 1 NO ACTION (CURRENT PROGRAM)	ALT 2 MARKET EMPHASIS	ALT 3 NON-MARKET EMPHASIS	ALT 4 RPA 1980 PROGRAM	ALT 5 MARKET AND NON-MARKET MIX	ALT 6 CONSTRAINED (-25%) BUDGET	ALT 7 CURRENT PROGRAM CONSTRAINED BUDGET	ALT 8 MAXIMIZE WILDERNESS, AMENITY EMPHASIS	ALT 9 HIGH WILDERNESS COMMODITY EMPHASIS	ALT 10 CURRENT PROGRAM, UNCONSTR BUDGET	ALT 11 1980 RPA MODIFIED (PREFERRED)
LOW LEVEL MANAGEMENT											
CURRENT TREND	14,940						14,940				14,940
CURRENT TREND AMENITY				14,940		14,940					
HIGH LEVEL AMENITY			14,940							14,940	
HIGH LEVEL COMMODITY		14,940			14,940						
WILDERNESS								14,940	14,940		

1/ Challis NF only

TABLE B IMPACTS ON WILDERNESS CHARACTER 1/
ROADLESS AREA 902
TAYLOR MOUNTAIN

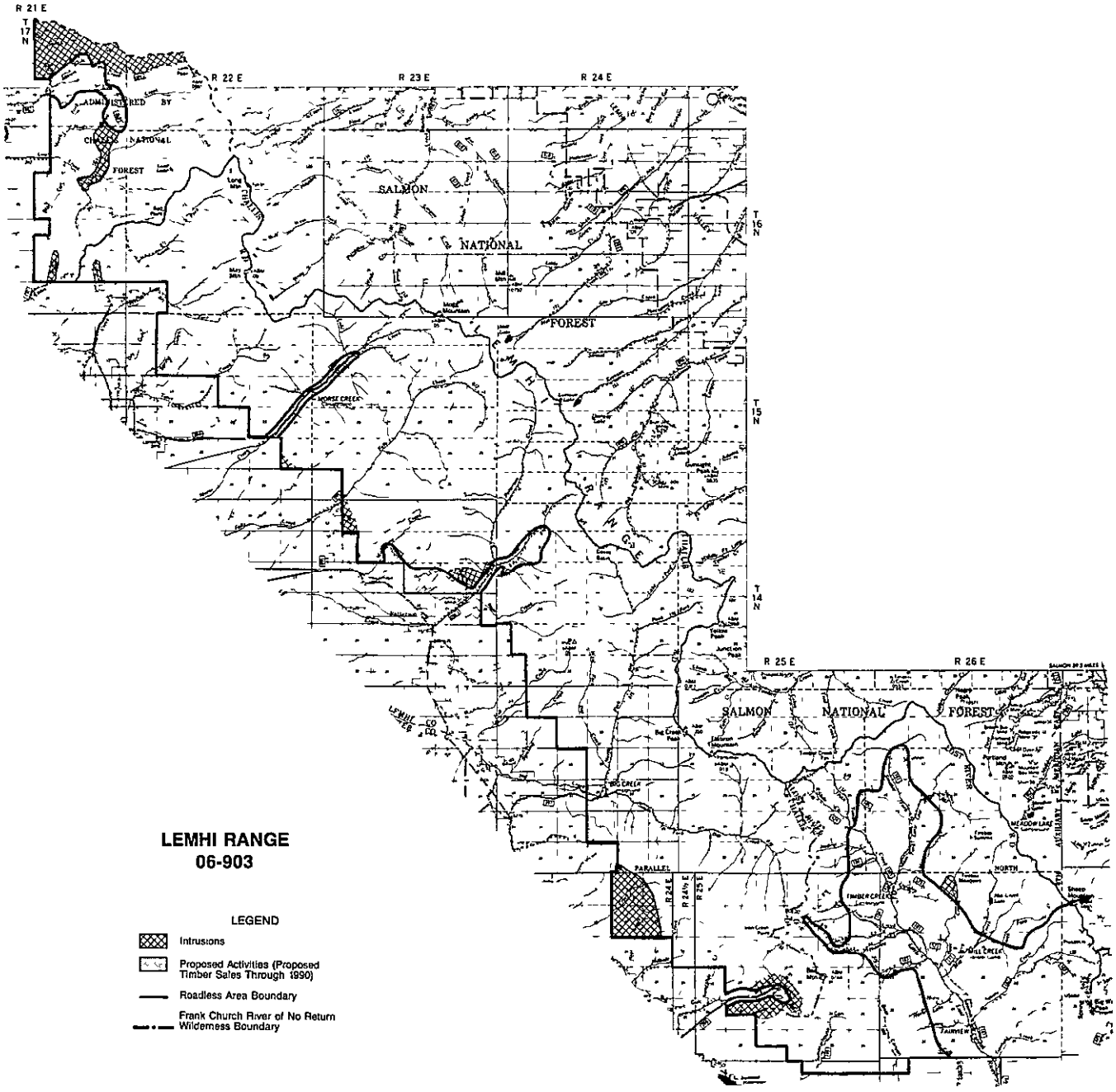
WILDERNESS CHARACTERISTICS	ALT 1 NO ACTION (CURRENT PROGRAM)	ALT 2 MARKET EMPHASIS	ALT 3 NON-MARKET EMPHASIS	ALT 4 RPA 1980 PROGRAM	ALT 5 MARKET AND NON-MARKET MIX	ALT 6 CONSTRAINED (-25%) BUDGET	ALT 7 CURRENT PROGRAM CONSTRAINED BUDGET	ALT 8 MAXIMIZE WILDERNESS, AMENITY EMPHASIS	ALT 9 HIGH WILDERNESS COMMODITY EMPHASIS	ALT 10 CURRENT PROGRAM, UNCONSTR BUDGET	ALT 11 1980 RPA MODIFIED (PREFERRED)
NATURAL INTEGRITY APPARENT NATURALNESS	Fairly low because of range improvements	Low because of roading and range improvements	Same as Alt 1	Same as Alt 1	Same as Alt 2	Same as Alt 1	Same as Alt 1	Moderate	Moderate	Same as Alt 1	Low because of timber sale
SOLITUDE	Limited opportunity in south half, some opportunity in north half	Very little opportunity in south half, limited opportunity in north half	Same as Alt 1	Same as Alt 1	Same as Alt 2	Same as Alt 1	Same as Alt 1	Some opportunity in south half, good opportunity in north half	Same as Alt 8	Same as Alt 1	Limited opportunity
PRIMITIVE RECREATION	Some opportunity	Limited opportunity	Fairly good opportunity	Fairly good opportunity	Limited opportunity	Fairly good opportunity	Some opportunity	Good opportunity	Good opportunity	Fairly good opportunity	Limited opportunity
CHALLENGING EXPERIENCES	Winter sports	Winter sports	Winter sports	Winter sports	Winter sports	Winter sports	Winter sports	Winter sports	Winter sports	Winter sports	Winter sports
SPECIAL FEATURES	Rock features remain unaffected	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1

1/ Challis N F only

TABLE C ENVIRONMENTAL CONSEQUENCES OF WILDERNESS/NON-WILDERNESS DESIGNATIONS ON THE PHYSICAL AND BIOLOGICAL ENVIRONMENT 1/
ROADLESS AREA 902
TAYLOR MOUNTAIN

ENVIRONMENT	ALT 1 NO ACTION (CURRENT PROGRAM)	ALT 2 MARKET EMPHASIS	ALT 3 NON-MARKET EMPHASIS	ALT 4 RPA 1980 PROGRAM	ALT 5 MARKET AND NON-MARKET MIX	ALT 6 CONSTRAINED (-25%) BUDGET	ALT 7 CURRENT PROGRAM CONSTRAINED BUDGET	ALT 8 MAXIMIZE WILDERNESS, AMENITY EMPHASIS	ALT 9 HIGH WILDERNESS COMMODITY EMPHASIS	ALT 10 CURRENT PROGRAM, UNCONSTR BUDGET	ALT 11 1980 RPA MODIFIED (PREFERRED)
ACTIVITIES IN PLANT COMMUNITIES	44 acres of wildlife habitat improvement	None	202 acres of wildlife habitat improvement	115acres of wildlife habitat improvement	None	42 acres of wildlife habitat improvement	48 acres of wildlife habitat improvement	None	None	83 acres of wildlife habitat improvement	50 acres of wildlife habitat imprvmt, 625 acres of old-growth Douglas-fir harvested
POTENTIAL ADVERSE EFFECTS ON SOIL PRODUCTIVITY	Slight on 44 acres, none on rest of unit	Very slight throughout the unit	Very slight on 202 acres, none on rest of unit	Slight on 115 acres, none on rest of unit	Same as Alt 2	Slight on 42 acres, none on rest of unit est of unit	Slight on 48 acres, none on rest of unit	None	None	Very slight on 83 acres, none on rest of unit	Slight to moderate on 625 acres, slight on 50 acres
POTENTIAL EFFECTS ON WATER QUALITY	None	Very slightly adverse	None	None	Very slightly adverse	None	None	None	None	None	Niderately adverse
AIR QUALITY	Class II State Standards met	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Class I State standards met	Same as Alt 8	Same as Alt 1	Same as Alt 1
WILDLIFE HABITAT CAPABILITY 2/ DEER	Insignificant change	Insignificant change	Moderate improvement	Slight improvement	Same as Alt 2	Insignificant change	Same as Alt 1	Same as Alt 2	Same as Alt 2	Insignificant change	Same as Alt 1
ELK	Moderate improvement	Insignificant change	Substantial improvement	Significant improvement.		Slight improvement				Significant improvement	
POTENTIAL EFFECTS ON FISH HABITAT CAPABILITY	None	None	None	None	None	None	None	None	None	None	Very slight adverse

1/ Challis N F only
2/ Insignificant change 0-2 9% acres improved, Slight improvement 3 0-4 9% acres improved, Moderate improvement 5 0-9 9% acres improved, Significant improvement 10 0-24 9% acres improved, Substantial improvement 25 0% + acres improved


R 21 E
R 22 E
R 23 E
R 24 E
R 25 E
R 26 E
T 17 N
T 16 N
T 15 N
T 14 N
SALMON
NATIONAL
FOREST
SALMON
NATIONAL
FOREST
LEMHI RANGE
06-903
LEGEND
Intrusions
Proposed Activities (Proposed Timber Sales Through 1990)
Roadless Area Boundary
Frank Church River of No Return Wilderness Boundary

LEMHI RANGE

ROADLESS AREA EVALUATION

No. 06-903 Challis National Forest (Formerly RARE I 4-503)
No. 13-903 Salmon National Forest (Formerly RARE I 4-503)

Challis Acres:	149,629
Salmon Acres:	177,076
	314,026

Description

The northern portion of the area is approximately 15 air miles south of Salmon, Idaho, and 20 air miles east of Challis, Idaho. The area continues in a southeasterly direction for a distance of 45 miles. This area lies within the Challis and Salmon National Forests. The area extends for approximately 50 miles along the Lemhi Mountain Range, and varies from three to ten miles wide. Except for a large area in Hayden Creek/Mill Creek, and smaller areas in Big Eightmile Creek and Little Timber Creek, the east boundary generally follows the Salmon National Forest boundary. The west boundary generally follows the Challis National Forest boundary and adjoins the BLM Goldburg Wilderness Study Area. Access to the area can be gained by Forest roads originating in the Lemhi and Pahsimeroi Valleys.

The area is dissected by numerous small streams that drain into the Lemhi and Pahsimeroi Rivers. The streams in the northern portion drain into the Main Salmon River. Elevations range from 5,000 feet to 11,300 feet. The area is the northern extension of basin and range topography found in Utah and Nevada. The range is oriented northwest-southest. Much of the high country has been glaciated, and lakes have formed in the glacial cirque basins at the heads of many of the major drainages. The high country is typical of alpine glaciated country. Barren, rocky peaks and ridges occur throughout the area. Annual precipitation ranges from 15 to 25 inches, most of which occurs as snow. Temperatures range from summer highs of 80 to 90 degrees, and winter lows of 45 degrees below zero. Lodgepole pine, Douglas-fir, and subalpine fir are the tree species that occur in the area. Sage-grass communities are interspersed throughout the area. This area is classified as a western spruce/fir ecosystem type.

Current uses include livestock grazing, mineral exploration, firewood harvest, and recreation uses which include hunting, fishing, backpacking, horseback riding, and trailbike riding. Use was estimated at 20,100 Recreation Visitor Days in 1982.

The unit is substantially natural appearing.

The entire area is a special attraction due to the fine scenery provided by the Lemhi Range. Several unconfirmed sightings in 1976-78 indicate the probable presence of the gray wolf. Mountain goat and bighorn sheep are also found in the area.

Capability

The roadless area boundary generally follows the Forest boundaries. These boundaries do not follow natural topographical features. Logical and manageable boundaries could be developed but would require eliminating large acreages from the roadless area. The effects of existing intrusions could be mitigated by boundary changes. Size is not a factor with this unit, as it is over 300,000 acres.

Table B addresses the natural integrity of the Challis National Forest portion of the unit, and the opportunities for solitude, primitive recreation, and challenging experiences.

The Idaho Natural Area Coordinating Committee has recommended Federal Threatened status for a plant (Cymopterus douglassii) found in the proposed Sheep Mountain Research Natural Area, which is in this roadless area.

Availability

Resource Potentials and Use

Patterns, types, and amounts of recreation use could be expected to change should this unit be designated wilderness. Current motorized uses would not be permitted. The amount of use could increase with the added interest of designated wilderness. The area contains fine scenery and excellent opportunities for hunting and fishing, all of which would become better known with the increased publicity accompanying designation.

This portion of the Lemhi Range is a large area with excellent vegetation and topographic diversity. Low timber productivity and ruggedness have kept the area roadless and big game numbers reflect this condition. Key summer big game habitat in the form of abundant meadows, and large blocks of dense lodgepole pine and subalpine fir timber exists throughout this area. Elk numbers are particularly high. Goats are common along the crest of the area. Excellent black bear habitat and populations exist in the major canyons and lower timber fringe areas. Antelope inhabit the lower elevation sagebrush slopes in the area and key big game winter range is present in the lower elevations of several major drainages. A wide variety of small birds and mammals ranging from sage grouse to snowshoe hares inhabit the area.

Numerous lakes and streams provide habitat for fish. Habitat conditions within the lake are excellent. One lake provides habitat for Arctic grayling. Many of the streams support fish populations. The major resource coordination need at present is between livestock grazing and riparian management. Fishing use on the lakes is moderate to light with Basin, Bear Valley, and Buck Lakes receiving the most use. Fishing quality in the lakes is excellent. Fishing use of the streams is generally light. Big Timber Creek receives the heaviest use and supports the highest quality fishing. Fishing quality on area streams ranges from fair to excellent.

The area contains headwaters of many moderate sized parallel drainages, which are tributary to the Lemhi River along the east, the Pahsimeroi River along the west, and to the Salmon River on the north. Precipitation amounts range from low to moderate throughout the area. Much of the water yield is used

extensively for irrigation on downstream ranches. Many of the headwaters are in glaciated basins and contain small basin lakes. Watershed conditions are generally excellent, as is the quality of water produced.

There are portions of 2 sheep and goat, and 15 cattle and horse, allotments within the roadless area. Sheep and goat allotments include Flat Iron and Gilmore. The two sheep allotments are currently grazed by 2,000 sheep and contribute approximately 800 AUM of livestock use. The majority of the suitable sheep range is classified as fair. The Gilmore sheep allotment is expected to be converted to cattle use in 1984, resulting in a decrease of 1200 sheep contributing 687 AUMs of use on the sheep allotments. Upon conversion, all sheep use will be within the roadless area. The fifteen cattle allotments are grazed by approximately 4,370 cattle and contributed approximately 9,920 AUMs of livestock use within the roadless area. Cattle use will be increased by about 300 AUMs with the conversion of the Gilmore allotment from sheep use. Range condition on the suitable cattle range is approximately 10 percent-excellent, 40 percent-fair, and 10 percent-poor. Range improvements within the roadless area boundary amount to 31 water developments, 82.4 miles of fence, and one stock bridge on McKim Creek.

Two proposed research natural areas (RNA), Mill Lake and Bear Valley, are within the roadless area and a third proposed RNA, Sheep Mountain, is partially within the roadless area. Due to the large size and diversity of the roadless area, it is likely there are other areas of ecological significance.

There is an estimated 526 million board feet (MBF) of sawtimber growing stock volume within the unit with an estimated potential annual yield of approximately 3.3 MMBF per year. This potential annual timber yield would be reduced due to the cost of roads and constraints by other resource needs, such as visuals, wildlife habitat, recreation, watershed, etc.

One intrusion in the extreme north end of the unit resulted from a 1978 timber sale which harvested one MMBF from within the unit. Portions of the intrusions in the Hayden Creek area are a result of timber harvest in 1960 to 1970 which were erroneously included in the original roadless area review. An additional estimated one MMBF were harvested from these areas in two timber sales in 1974 and 1977. Approximately one MMBF were harvested from a 1971 timber sale in the Big Timber drainage. There has been a significant amount of post, pole, and firewood harvest along the Allison Creek Road. Timber sales are proposed in 1984 in the Mill Creek area for 2.3 MMBF, which will result in approximately 4.6 miles of roads. In 1985 a timber sale in the Big Eightmile Creek are for 1.5 MMBF will result in approximately 2.7 miles of roads. In 1986, a timber sale in the Hayden Creek area for 1.5 MMBF will result in approximately four miles of roads. In addition, a one MMBF sale is proposed in the Alder Creek area, a 100 MBF sale in Cow Creek for 1987, and a 300 MBF sale in Sagebrush Creek and a 1.5 MMBF sale is proposed in the Basin Creek area for 1988. The latter sales are not shown on the map due to lack of definite information as to their final locations.

The hardrock mineral potential of this area was rated as high in the RARE II evaluation. New data has lowered the rating to low in most the area. The area near Patterson is now rated high and very high. Mineral production of record includes gold, silver, copper, lead, zinc, and

molybdenum. There is one producing mine within the roadless area. There are also a number of patented mining claims. Mining claim owners continue to do assessment work in this roadless area, with some expanding their claim activity. The area currently contains no active mining operations. Roads in Ennis Gulch, Fred and Mary Draw, and Allison Creek access mining claims and mineral exploration activity. There are lands prospectively valuable for geothermal resources in the northern portion of the area. There is currently one pending geothermal lease application for 640 acres in the Warm Springs Creek drainage. Oil and gas potential for the area varies from none to moderate. There are currently six pending oil and gas lease applications and eight oil and gas leases within the area. There is no potential for other currently leasable minerals.

Numerous prehistoric and historic cultural resources are known to exist in this unit. It is likely that several of the historic sites would warrant further investigation for their suitability for inclusion on the National Register.

There are several mining access roads within the area. Dairy Lake, Mill Creek, and Basin Lake are under Special Use Permit for irrigation water storage purposes. Parts of the area are used by four Outfitter and Guide permittees.

Management Considerations

Known fire occurrence is light in the area. Understory fuels are generally sparse and there is little potential for large fires.

Western spruce budworm is periodically killing understory Douglas-fir seedlings and saplings and occasionally killing the tops of larger trees in portions of the area. The larger diameter stands of lodgepole at lower elevations run the risk of another mountain pine beetle epidemic. Dwarf mistletoe is common in lodgepole pine.

The area includes 12 tracts of private land totaling 2,088 acres.

Preliminary studies by Bonneville Power Administration have identified the possibility of future requests for a utility corridor that may be proposed to cross part of this roadless area.

Need

The nearest existing wilderness is the Frank Church--River of No Return Wilderness located approximately 90 road miles to the west. Use throughout that wilderness area ranges from high to low, depending on the particular location. Use generally has not exceeded capacity, however.

The Lemhi Range roadless area is located approximately 30 miles from Salmon, Idaho, 110 miles from Idaho Falls, Idaho, and 160 miles from Missoula, Montana.

During RARE I this area was inventoried as the Lemhi Range #293, and Goldbug Ridge #308 roadless areas. The decision in the RARE I FEIS was to manage these areas for non-wilderness resource development. Public opinion received on the areas during RARE I, on the wilderness/nonwilderness issue, was divided. The area was not considered highly controversial during RARE I.

The Goldburg Ridge Roadless Area #308 was further evaluated in the Twelvemile Unit Land Management Plan (LMP). The decision in the LMP was to manage this area for non-wilderness resource development with a portion of the area being managed in a roadless condition. Again, public opinion was divided, but the wilderness/nonwilderness issue was not highly controversial in the LMP process.

The Lemhi Range Roadless Area #308 was further evaluated in the Twelvemile Unit Land Management Plan (LMP). The decision in the LMP was to manage this area for non-wilderness resource development with a portion of the area being managed in a roadless condition. Again, public opinion was divided, but the wilderness/non-wilderness issue was not highly controversial in the LMP process.

The Lemhi Range Roadless Area #293, Mogg Mountain #123, Big Creek #117, and Firebox #139 were inventoried and evaluated in RARE II as the Lemhi Range #04503. During the evaluation, the area was "split" into two units - East and West. The decision in the RARE II FEIS for the eastern unit was for non-wilderness resource management and further planning for the western unit. However, during the Carter Administration, the RARE II proposals were reviewed, and the further planning proposal was changed to a wilderness proposal. During RARE II, public opinion was again divided but the wilderness/non-wilderness issue was highly controversial. The environmental groups included the area for wilderness in their RARE II Idaho Citizens' Alternative "W". The environmental groups have strongly supported the Carter Administration recommendation for 168,456 acres of wilderness.

Senator McClure held "Idaho Forest Mangement Act" hearings in Coeur d'Alene, Lewiston, Boise, and Idaho Falls during August 1983. Prior to these meetings, the Senator sent out a constituent letter with four proposals, i.e., the Forest Service RARE II, Forest Industries, other commodity user groups, and the 1979 Idaho Wilderness Federation proposal. Following the hearings, Senator McClure has received additional input from the environmental groups and the Governor of Idaho. The environmental groups have recommended wilderness for approximately 180,000 acres on the "North Lemhis". Governor Evans recommended roadless management for 280,660 acres on the "West Lemhi" area (the RARE II Forest Service Further Planning recommendation with no boundary adjustments for manageability).

The Idaho Fish and Game Commission provided input to Governor Evans for both wilderness and roadless management areas over the State. They did not make any recommendations on the Lemhi Range.

This roadless area serves to contribute to stream and river water quality maintenance. As a result of this river quality, a salmonid fishery is sustained. This fishery is a part of an integral food chain which ultimately supports the endangered bald eagle as well as other unlisted mammalian and avian predators.

Public opinion continues to be divided on this area and the wilderness/non-wilderness/roadless management issue is considered highly controversial on the Lemhi Range Roadless Areas.

The following numbers show adjustments made since the RARE II inventory for the Challis National Forest.

146,950	RARE II acreage
150,743	Acreage recalculation
-1,114	Timber sale intrusion
149,629	Present roadless acreage

Selected Alternative Recommendation

This roadless area is not recommended for Wilderness designation in the Selected Alternative on the Challis N.F. portion.

On the Challis N.F. portion, the natural integrity will be impacted only slightly in certain areas from wildlife habitat improvements and range improvements. Approximately 75,000 acres of the roadless area on the Challis National Forest will be managed to provide a semi-primitive non-motorized recreation experience. Most of the area will retain its wilderness attributes and be available for wilderness evaluation during the next plan revision.

The entire roadless area is evaluated in Appendix C of the Salmon N.F. Draft Environmental Impact Statement. The Challis N.F. Preferred Alternative is a recommendation until the final decision is approved in the Salmon N.F. Final Environmental Impact Statement.

TABLE A MANAGEMENT PRESCRIPTION (GOAL) BY ACRES 1/
ROADLESS AREA 903
LEMHI RANGE

PRESCRIPTION (GOAL)	ALT 1 NO ACTION (CURRENT PROGRAM)	ALT 2 MARKET EMPHASIS	ALT 3 NON-MARKET EMPHASIS	ALT 4 RPA 1980 PROGRAM	ALT 5 MARKET AND NON-MARKET MIX	ALT 6 CONSTRAINED (-25%) BUDGET	ALT 7 CURRENT PROGRAM CONSTRAINED BUDGET	ALT 8 MAXIMIZE WILDERNESS, AMENITY EMPHASIS	ALT 9 HIGH WILDERNESS COMMODITY EMPHASIS	ALT 10 CURRENT PROGRAM, UNCONSTR BUDGET	ALT 11 1980 RPA MODIFIED (PREFERRED)
LOW LEVEL MANAGEMENT						116,850				116,850	
CURRENT TREND	56,629			149,629	116,850	32,779	149,629				149,629
CURRENT TREND AMENITY		32,779									
HIGH LEVEL AMENITY										32,779	
HIGH LEVEL COMMODITY		116,850			32,779						
WILDERNESS	93,000		149,629					149,629	149,629		

1/ Challis NF only

TABLE B IMPACTS ON WILDERNESS CHARACTER 1/
ROADLESS AREA 903
LEMHI RANGE

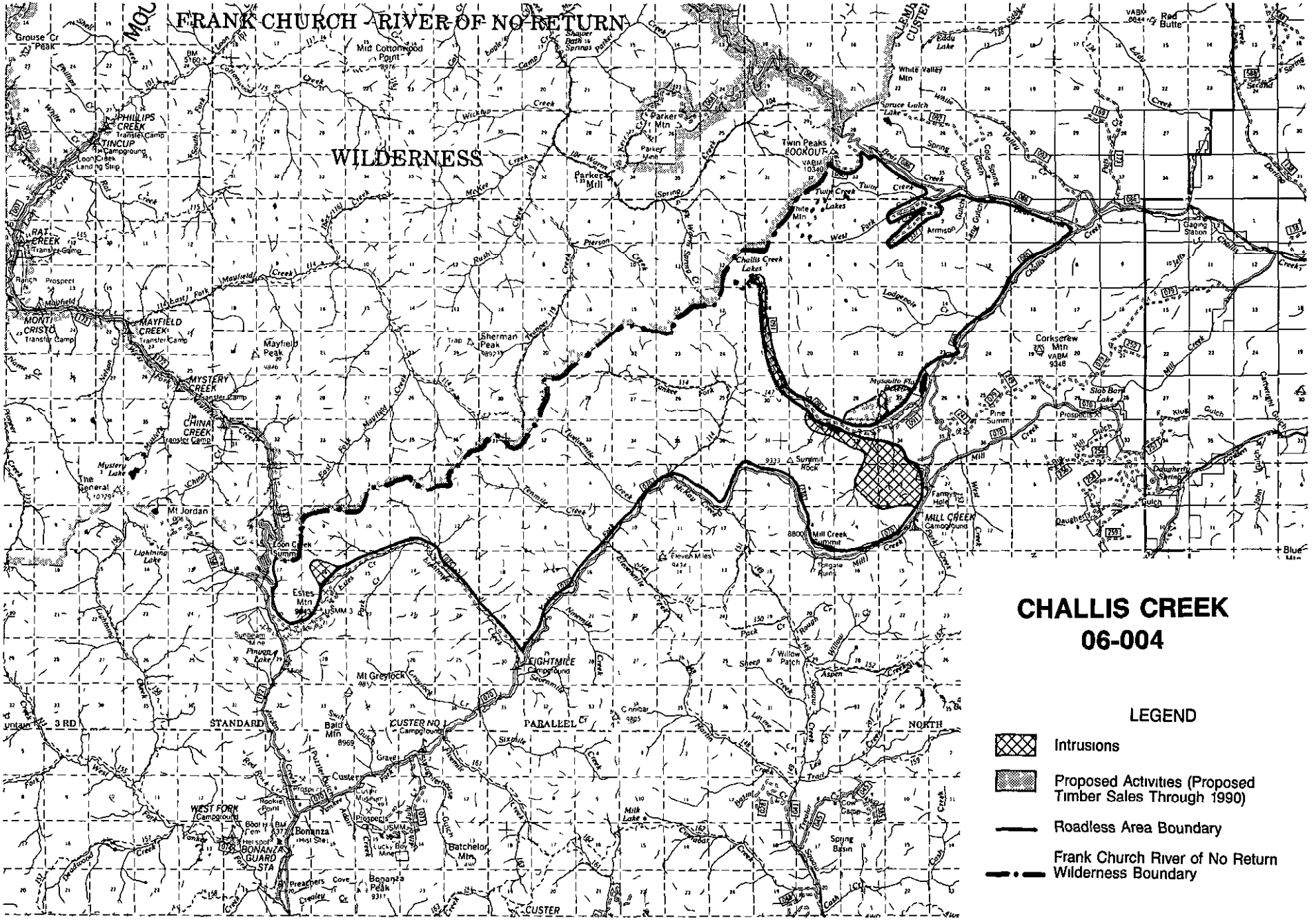
WILDERNESS CHARACTERISTICS	ALT 1 NO ACTION (CURRENT PROGRAM)	ALT 2 MARKET EMPHASIS	ALT 3 NON-MARKET EMPHASIS	ALT 4 RPA 1980 PROGRAM	ALT 5 MARKET AND NON-MARKET MIX	ALT 6 CONSTRAINED (-25%) BUDGET	ALT 7 CURRENT PROGRAM CONSTRAINED BUDGET	ALT 8 MAXIMIZE WILDERNESS, AMENITY EMPHASIS	ALT 9 HIGH WILDERNESS COMMODITY EMPHASIS	ALT 10 CURRENT PROGRAM, UNCONSTR BUDGET	ALT 11 1980 RPA MODIFIED (PREFERRED)
NATURAL INTEGRITY APPARENT NATURALNESS	High, few intrusions	Fairly high at higher elevations, intrusions at lower elevations	Very high, reduced intrusions	Same as Alt 2	Same as Alt 2	Same as Alt 1	Same as Alt 1	Same as Alt 3	Same as Alt 3	Same as Alt 1	Same as Alt 1
SOLITUDE	Good opportunity	Fairly good opportunity at higher elevations	Excellent opportunity	Same as Alt 2	Same as Alt 2	Same as Alt 2	Good opportunity	Excellent opportunity	Excellent opportunity	Good opportunity	Good opportunity
PRIMITIVE RECREATION	Very good opportunity	Good opportunity	Excellent opportunity	Good opportunity	Good opportunity	Good opportunity	Very good opportunity	Excellent opportunity	Excellent opportunity	Very good opportunity	Very good opportunity
CHALLENGING EXPERIENCES	Technical and non-technical climbing, cross-country travel, and long distance trail hiking	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1
SPECIAL FEATURES	Mountain peaks, mountain lakes, alpine country, and rock formations remain unaffected	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1

1/ Challis N F only

TABLE C ENVIRONMENTAL CONSEQUENCES OF WILDERNESS/NON-WILDERNESS DESIGNATIONS ON THE PHYSICAL AND BIOLOGICAL ENVIRONMENT 1/
ROADLESS AREA 903
LEMHI RANGE

ENVIRONMENT	ALT 1 NO ACTION (CURRENT PROGRAM)	ALT 2 MARKET EMPHASIS	ALT 3 NON-MARKET EMPHASIS	ALT 4 RPA 1980 PROGRAM	ALT 5 MARKET AND NON-MARKET MIX	ALT 6 CONSTRAINED (-25%) BUDGET	ALT 7 CURRENT PROGRAM CONSTRAINED BUDGET	ALT 8 MAXIMIZE WILDERNESS, AMENITY EMPHASIS	ALT 9 HIGH WILDERNESS COMMODITY EMPHASIS	ALT 10 CURRENT PROGRAM, UNCONSTR. BUDGET	ALT 11 1980 RPA MODIFIED (PREFERRED)
ACTIVITIES IN PLANT COMMUNITIES	291 acres of wildlife habitat improvement	257 acres of wildlife habitat imprvmt, 1595 acres of old-growth Douglas-fir harvested	None	1465acres of wildlife habitat imprvmt, 1595 acres of old-growth Douglas-fir harvested	325 acres of wildlife habitat imprvmt, 1595 acres of old-growth Douglas-fir harvested	122 acres of wildlife habitat imprvmt, 1595 acres of old-growth Douglas-fir harvested	605 acres of wildlife habitat improvement	None.	None	240 acres of wildlife habitat improvement.	639 acres of wildlife habitat improvement
POTENTIAL ADVERSE EFFECTS ON SOIL PRODUCTIVITY	Slight on 291 acres, none on rest of unit	Slight to moderate on 1595 acres, slight on rest of unit	None	Slight to moderate on 1595 acres, slight on 1465 acres, none on rest of unit.	Slight to moderate on 1595 acres, slight on 325 acres, very slight on rest of unit	Slight to moderate on 1595 acres, slight on 122 acres, very slight on rest of unit	Slight on 605 acres, none on rest of unit	None	None	Very slight on throughout the unit	Slight on 639 acres, none on rest of unit
POTENTIAL EFFECTS ON WATER QUALITY	None	Moderately adverse.	None	Moderately adverse	Moderately adverse.	Moderately adverse	None	None	None	Very slightly adverse.	None
AIR QUALITY	Class II State Standards met	Same as Alt 1	Class I State standards met	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt. 1	Same as Alt 3	Same as Alt 3	Same as Alt 1	Same as Alt. 1
WILDLIFE HABITAT CAPABILITY 2/ DEER	Insignificant change	Insignificant change	Same as Alt 2	Slight improvement	Same as Alt 2	Same as Alt 1	Insignificant Change	Same as Alt 2	Same as Alt 2	Same as Alt 2	Same as Alt 7
ELK	Slight improvement.	Insignificant change		Significant improvement			Moderate improvement				
POTENTIAL EFFECTS ON FISH HABITAT CAPABILITY	None	Moderately adverse	None	Moderately adverse	Moderately adverse.	Moderately adverse	None	None	None	None	None

1/ Challis N F. only
2/ Insignificant change 0-2 9% acres improved, Slight improvement 3 0-4.9% acres improved, Moderate improvement 5 0-9 9% acres improved, Significant improvement 10 0-24 9% acres improved, Substantial improvement 25.0% + acres improved


FRANK CHURCH - RIVER OF NO RETURN
WILDERNESS
CHALLIS CREEK
06-004
LEGEND
Intrusions
Proposed Activities (Proposed Timber Sales Through 1990)
Roadless Area Boundary
Frank Church River of No Return Wilderness Boundary

CHALLIS CREEK

ROADLESS AREA EVALUATION

No. 06-004 Challis National Forest (Formerly RARE II, No. 4-066)

Challis Acres: 41,354

Description

The Challis Creek roadless area lies ten air miles west of Challis, Idaho. It is contiguous with the Frank Church--River of No Return Wilderness on the north, and runs from Estes Mountain northeast to Twin Peaks.

The roadless area is accessed by the Challis Creek Road and Custer Motorway. Both of these roads are adjacent to the area. They are well traveled and maintained for two-wheel drive use. Access to the interior of the area is by four-wheel drive and Forest trails.

The area is characterized by steep slopes, bench lands, high rocky peaks and ledges, V-shaped valleys and glacial cirque basins. Elevation ranges from 6,000 to over 10,000 feet.

Vegetation varies by elevation and aspect with open sagebrush/grass areas, heavy stands of Douglas-fir, lodgepole pine and subalpine fir; subalpine meadows and riparian communities around lakes, springs, and streams. Timber productivity is relatively low. The area is classified in the western spruce/fir Forest Ecosystem.

Uses in the area include mineral exploration, timber harvest, grazing, roaded and primitive recreation, hunting and fishing. The area has a natural appearance and is surrounded by Forest areas which also generally contribute to a feeling of being in the backcountry.

Forest management activities have been conducted which created intrusions on the roadless nature of the area. These include: the Twin Creek firewood harvest area with roads, and a timber sale near Mosquito Flat Reservoir. In addition, two existing intrusions were not identified in the RARE II process. These are: the Estes Mountain road, built for mineral exploration and development, as well as the Challis Creek Lakes Reservoir and road. The existing Challis Creek Lakes were raised through construction of a retention dam and inter-connecting channel.

Water from the reservoir is used for irrigation of private land near Mosquito Flat Reservoir. The dam is regulated by a special use permit to the irrigation user. The road was constructed to allow development and maintenance of the dam. It is accessible by four-wheel drive vehicles. The road effectively divides the roadless area. Most of the intrusions are in the northeast part of the area.

There are a few four-wheel drive roads outside of the exclusions shown. The area receives heavy hunting use due to its good summer habitat for deer and elk. These herds have moderate potential for increasing and are expected to do so under present management and harvest activities. Bighorn sheep, mountain goat, and black bear also inhabit the area.

Challis Creek Lakes, Twin Creek Lakes and several streams in the area provide a popular cold water resident fisheries resource.

The area provides a diversity of scenic values.

Capability

The roadless area boundaries follow drainage divides and roaded areas. It could be managed with the Frank Church--River of No Return Wilderness. It would be difficult to manage the areas adjacent to the Challis Creek Road and Custer Motorway because of the amount of traffic and traditional recreation, firewood harvest, trailbike uses, etc., presently occurring.

Table B addresses the natural integrity of the unit, and the opportunities for solitude, primitive recreation, and challenging experiences.

Availability

There are approximately 25,000 acres of potentially harvestable timber with a standing volume estimated at 125 million board feet. This would support a sustained yield of 890 thousand board feet annually, if all stands were accessed and managed for maximum production. Actual harvests would be significantly less because of other resource management objectives and management costs. There are two proposed timber sales totaling 1.8 MMBF at the upper Yankee Fork beginning in 1992. There is potential for increasing populations of game animals and for improving existing habitat. Wilderness classification would limit options for habitat improvements, but would not stop population growth. Water quantity yield could be increased through timber harvest. Water quality protection for resident and anadromous fisheries probably overrides need for quantity increases. The roadless area includes portions of two cattle grazing allotments with approximately 500 Animal Unit Months grazing use. Wilderness classification could preclude a major portion of this use.

Part of the area has been identified as having good or high mineral potential. Exploration and mining activities in adjacent areas support this analysis. There are no known oil or gas values.

The cultural resources of the area are largely unknown. It is an area of historic mining, trapping and grazing activity. Prehistoric sites probably exist. More information is needed to identify the value and significance of the cultural resources of this area.

There are several system trails in the area. Many of these need better maintenance. A large portion of the area is used by outfitters and guides, specifically during the big game hunting season. The dam and road at Challis Creek Lakes are authorized by special use permit for irrigation storage.

The Endangered Rocky Mountain gray wolf may use this area.

Management Considerations

There have been few man-caused fires or lightning-caused fires during the last decade. The fuels and large acreages of overmature timber provide potential for large wildfires. There is potential for using prescribed fire to improve livestock range and wildlife habitat.

The Douglas-fir in several parts of the area have been repeatedly defoliated by western spruce budworm. Budworm periodically reduces Douglas-fir growth and kills understory seedlings and saplings. There are infestations of mountain pine beetle and Douglas-fir beetles in the area. The mountain pine beetle appears to be increasing in the lodgepole pine and a major outbreak is a future possibility.

There are no private lands in the area. However, there are numerous mining claims.

Need

The roadless area is contiguous to the Frank Church--River of No Return Wilderness. In the Wilderness, the majority of existing uses is associated with the Middle Fork of the Salmon River, the Bighorn Crags, and the Soldier Lakes area. Outside of these areas, recreation and hunting use is relatively light and well below existing capacity.

The area is within one day's travel from the population centers of Missoula, Idaho Falls, Pocatello, Twin Falls, and Boise.

The western spruce/fir Forest Ecosystem has been identified as one needing representation in the National Wilderness System; it is included and adequately represented in the Frank Church--River of No Return Wilderness. This area does not represent any unique ecosystems.

The area has potential for recovery of Endangered northern Rocky Mountain gray wolf. This area could serve as a buffer zone or travel corridor for colonizing wolves inhabiting the adjacent Frank Church--River of No Return Wilderness.

Past public involvement efforts, including RARE II and Senator McClure's hearing in August 1983 showed little support for this area as a wilderness and recieved no serious consideration during the hearings.

This was part of a larger area that was considered for the Frank Church--River of No Return Wilderness. Through Congressional action creating the Frank Church--River of No Return Wilderness, this portion was excluded.

The following numbers show the adjustments made since the RARE II inventory for the Challis National Forest.

42,032	Part of Sulphur RARE II area #04-066
- 678	Intrusions
41,354	Present roadless acreage

Selected Alternative Recommendation

This area is not proposed for wilderness designation in the Selected Alternative.

Timber harvesting, fuelwood gathering, wildlife habitat improvements, range improvements, and roading will reduce the natural integrity in certain locations. Wilderness attributes will be retained in most of the area. A large part of the area will be available for wilderness evaluation during the next plan revision.

TABLE A MANAGEMENT PRESCRIPTION (GOAL) BY ACRES
ROADLESS AREA 004
CHALLIS CREEK

PRESCRIPTION (GOAL)	ALT 1 NO ACTION (CURRENT PROGRAM)	ALT 2 MARKET EMPHASIS	ALT 3 NON-MARKET EMPHASIS	ALT 4 RPA 1980 PROGRAM	ALT 5 MARKET AND NON-MARKET MIX	ALT 6 CONSTRAINED (-25%) BUDGET	ALT 7 CURRENT PROGRAM CONSTRAINED BUDGET	ALT 8 MAXIMIZE WILDERNESS, AMENITY EMPHASIS	ALT 9 HIGH WILDERNESS COMMODITY EMPHASIS	ALT 10 CURRENT PROGRAM, UNCONSTR BUDGET	ALT 11 1980 RPA MODIFIED (PREFERRED)
LOW LEVEL MANAGEMENT											
CURRENT TREND	41,354	20,907	20,907	20,907		20,907	41,354				41,354
CURRENT TREND AMENITY				20,447		20,447					
HIGH LEVEL AMENITY			20,447		20,907					41,354	
HIGH LEVEL COMMODITY		20,447			20,447						
WILDERNESS								41,354	41,354		

TABLE B IMPACTS ON WILDERNESS CHARACTER
ROADLESS AREA 004
CHALLIS CREEK

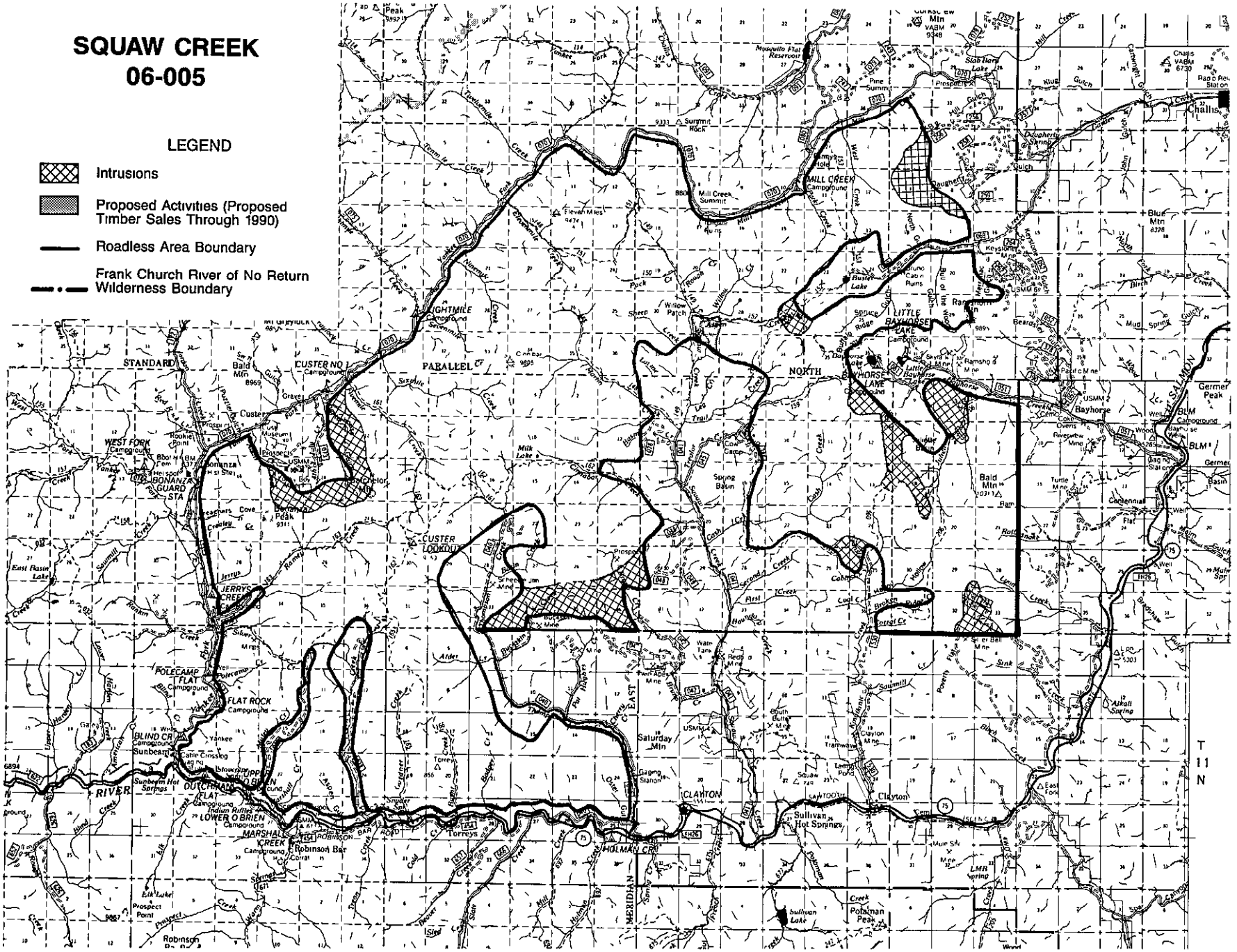
WILDERNESS CHARACTERISTICS	ALT 1 NO ACTION (CURRENT PROGRAM)	ALT 2 MARKET EMPHASIS	ALT 3 NON-MARKET EMPHASIS	ALT 4 RPA 1980 PROGRAM	ALT 5 MARKET AND NON-MARKET MIX	ALT 6 CONSTRAINED (-25%) BUDGET	ALT 7 CURRENT PROGRAM CONSTRAINED BUDGET	ALT 8 MAXIMIZE WILDERNESS, AMENITY EMPHASIS	ALT 9 HIGH WILDERNESS COMMODITY EMPHASIS	ALT 10 CURRENT PROGRAM, UNCONSTR BUDGET	ALT 11 1980 RPA MODIFIED (PREFERRED)
NATURAL INTEGRITY APPARENT NATURALNESS	High	Moderate	High	Moderate	Fairly high	High	High	Very high	Very high	High	Fairly high
SOLITUDE	Good opportunity	Fairly good opportunity	Good opportunity	Fairly good opportunity	Fairly good opportunity	Good opportunity	Good opportunity	Very good opportunity	Very good opportunity	Good opportunity	Fairly good opportunity
PRIMITIVE RECREATION	Good opportunity	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Excellent opportunity	Excellent opportunity	Same as Alt 1	Same as Alt 1
CHALLENGING EXPERIENCES	Cross-country travel	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1
SPECIAL FEATURES	Mountain lakes and peaks remain unaffected	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1

TABLE C ENVIRONMENTAL CONSEQUENCES OF WILDERNESS/NON-WILDERNESS DESIGNATIONS ON THE PHYSICAL AND BIOLOGICAL ENVIRONMENT
ROADLESS AREA 004
CHALLIS CREEK

ENVIRONMENT		ALT 1 NO ACTION (CURRENT PROGRAM)	ALT 2 MARKET EMPHASIS	ALT 3 NON-MARKET EMPHASIS	ALT 4 RPA 1980 PROGRAM	ALT 5 MARKET AND NON-MARKET MIX	ALT 6 CONSTRAINED (-25%) BUDGET	ALT 7 CURRENT PROGRAM CONSTRAINED BUDGET	ALT 8 MAXIMIZE WILDERNESS, AMENITY EMPHASIS	ALT 9 HIGH WILDERNESS COMMODITY EMPHASIS	ALT 10 CURRENT PROGRAM, UNCONSTR BUDGET	ALT 11 1980 RPA MODIFIED (PREFERRED)
ACTIVITIES IN PLANT COMMUNITIES		118 acres of wildlife habitat improvement	119 acres of wildlife habitat imprvmt, 330 acres of old-growth Douglas-fir *harvested*	450 acres of wildlife habitat improvement	309 acres of wildlife habitat imprvmt, 330 acres of old-growth Douglas-fir harvested	67 acres of wildlife habitat imprvmt, 101 acres of old-growth Douglas-fir harvested	112 acres of wildlife habitat improvement	128 acres of wildlife habitat improvement	None	None	221 acres of wildlife habitat improvement	133 acres of wildlife habitat imprvmt, 320 acres of old-growth Douglas-fir harvested
POTENTIAL ADVERSE EFFECTS ON SOIL PRODUCTIVITY		Slight on 118 acres, none on rest of unit	Slight to moderate on 330 acres, slight on rest of unit	Slight on 450 acres, none on rest of unit	Slight to moderate on 330 acres, none on rest of unit	Slight to moderate on 101 acres, slight on rest of unit	Slight on 112 acres, none on rest of unit est of unit	Slight on 128 acres, none on rest of unit	None	None	Slight on 221 acres, none on rest of unit	Slight to moderate on 320 acres, slight on 133 acres, none on rest of unit
POTENTIAL EFFECTS ON WATER QUALITY		None	Moderately adverse	None	Moderately adverse	Slightly adverse	None	None	None	None	None	Moderately adverse
AIR QUALITY		Class II State *Standards* met.	Same as Alt 1	Same as Alt 1	Same as Alt. 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	Class I State standards met	Same as Alt 8	Same as Alt 1	Same as Alt 1
WILDLIFE HABITAT CAPABILITY 1/	DEER	Insignificant change	Insignificant change	Slight improvement	Same as Alt 3	Insignificant change	Same as Alt 2	Same as Alt 1	Same as Alt 5	Same as Alt 5	Same as Alt 3	Same as Alt 1
	ELK	Moderate *improvement*	Slight *improvement.*	Significant improvement		Insignificant improvement.						
POTENTIAL EFFECTS ON FISH HABITAT CAPABILITY		None	Slightly adverse	None	Slightly	Slightly adverse	None	None	None	None	None	Slightly adverse

1/ Insignificant change 0-2.9% acres improved, Slight improvement 3 0-4 9% acres improved, *Moderate improvement* 5 0-9 9% acres improved, Significant improvement 10.0-24 9% acres improved, Substantial improvement 25 0% + acres improved

SQUAW CREEK
06-005



SQUAW CREEK

ROADLESS AREA EVALUATION

No. 06-005 Challis National Forest (Formerly RARE II No. 4-217)

Challis Acres: 96,987

Description

This area lies 10 miles southwest from Challis. The area is borderd on the west and northwest by the Yankee Fork drainage, on the north by Mill Creek, and on the east and south by the Bureau of Land Mangement lands and the Salmon River. It is readily accessible by trails, jeep roads, and numerous constructed and maintained roads. These roads can be reached from Highway 93 along the Salmon River and Forest roads in the Garden Creek drainage.

The area contains 10,000 foot peaks, cirque basins, steep, rocky slopes and generally narrow canyon bottoms and broad benches. The scattered timber slopes have many openings of sage/grass and wet meadows. The major vegetation components are lodgepole, Douglas-fir, spruce, and sagebrush plant communities. The area has western spruce/fir forest and Grand fir/Douglas fir ecosystems.

Current uses include grazing, mineral exploration, timber and fuelwood harvest, hunting, fishing, hiking and camping.

A good population of elk, mountain goat, bighorn sheep and mule deer graze the area during the summer months. The area also provides habitat for a multitude of small game and nongame species.

The area is not visible from U.S. Highway 93 except for the southern most portion from Thompson Creek west to Sunbeam and Yankee Fork. The surrounding areas include irrigated pastures and riparian/willow plant communities. Due to the topographical boundaries of this roadless area, it provides little scenic backdrop to the valley ranches and communities, because of the steepness of the main Salmon River drainage.

There are no major scenic attractions, at least of national significance. There are no Threatened or Endangered Species in the area.

Capability

This is a large area of approximately 96,987 acres of National Forest System Lands. The roadless area boundary does not follow distinct natural topographic features and it would be difficult to manage and enforce as wilderness boundary. There is very little opportunity to change the boundaries to coincide with distinctive landmarks without eliminating large acreages of the roadless area.

There are numerous intrusions in the Squaw Creek roadless area. Mining roads in Buckskin/Pat Hughes Creek, Bruno Creek, Bayhorse/Juliette Creek, Crealy Creek, Silver Creek, and timber roads in Thompson/Basin Creek, Cinnabar Creek, Transfer Creek and Big Hill Gulch. These intrusions detract from the natural integrity of the area. Most are a result of recent mining activity, or were not identified in the original RARE II process.

Table B addresses the natural integrity of the unit, and the opportunities for primitive recreation and challenging experiences.

Availability

The Squaw Creek Roadless Area receives approximately 3,000 recreation visitor days of dispersed recreation use annually. The area has the capacity for more than double this amount, depending on future development of trails and campsites.

The greatest portion of dispersed use occurs with hunting and fishing. Existing big game populations are 50% below current carrying capacity. Populations are presently viewed as increasing under current habitat management and harvest practices. As populations increase and hunting opportunities are enhanced, dispersed recreation is expected to increase proportionately. Fishing recreation visitor days are currently not expected to increase substantially. Most streams and lakes capable of producing a fishery are stocked, or are self-sustaining under natural reproduction.

There is good potential to increase water yield. The watersheds within this roadless area are contributing sediment to critical anadromous stream reaches in Squaw Creek and the Yankee Fork of the Salmon River.

Current grazing use is approximately 2,051 Animal Unit Months with the potential to increase an estimated 100 Animal Unit Months.

There are approximately 200 million board feet of commercial timber volume in the roadless area. A harvestable annual sustained yield is estimated at less than 1.1 million board feet. There are several proposed timber sales; 2.8 MMBF in Squaw Creek starting in 1990 and 1.0 MMBF in West Creek in 1992. Topography and roading costs make harvesting most of the timber in this area difficult and uneconomical using current techniques. Actual timber available for harvest would be modified by the management objectives of other resource needs, such as visuals, wildlife habitat, watershed, recreation, etc.

Part of this roadless area has high mineral potential. Within the fringes of the area, mining and exploration activities have occurred in the past and continue today. Most of the human impacts already inflicted upon the area are as a result of hardrock mining activity. The potential for oil and gas development is low.

Cultural resources are largely unknown. Within the past few years, most of the cultural resources that have been discovered have been related to mining activities during the early 1900s. With current available data, it is not possible to determine the archaeological significance of this roadless area.

From 1970-1979, there were 25 fires in the Squaw Creek roadless area. Fifteen were lightning-caused and 10 were man-caused (average size about one-half acre). Understory fuels were generally light to medium, and there is a potential for large fires. There are some possibilities for improving livestock and wildlife habitat through the use of prescribed fires. Most of the timber is overmature and there is potential for insect and disease problems. Much of the Douglas-fir stands have mistletoe infestations, and the spruce budworm infestations vary from year to year.

Preliminary studies by Bonneville Power Administration have identified the possibility of future requests for a utility corridor that may be proposed to cross part of this roadless area.

TABLE C ENVIRONMENTAL CONSEQUENCES OF WILDERNESS/NON-WILDERNESS DESIGNATIONS ON THE PHYSICAL AND BIOLOGICAL ENVIRONMENT
ROADLESS AREA 005
SQUAW CREEK

ENVIRONMENT		ALT 1 NO ACTION (CURRENT PROGRAM)	ALT 2 MARKET EMPHASIS	ALT 3 NON-MARKET EMPHASIS	ALT 4 RPA 1980 PROGRAM	ALT 5 MARKET AND NON-MARKET MIX	ALT 6 CONSTRAINED (-25%) BUDGET	ALT 7 CURRENT PROGRAM *CONSTRAINED* BUDGET	ALT 8 MAXIMIZE WILDERNESS, *AMENITY* EMPHASIS	ALT 9 HIGH WILDERNESS *COMMODITY* EMPHASIS	ALT 10 CURRENT PROGRAM, UNCONSTR. BUDGET	ALT 11 1980 RPA MODIFIED (PREFERRED)
ACTIVITIES IN PLANT COMMUNITIES		305 acres of wildlife habitat imprvmt, 3702 acres of old-growth Douglas-fir harvested	480 acres of wildlife habitat imprvmt, 1993 acres of old-growth Douglas-fir harvested	764 acres of wildlife habitat imprvmt, 2867 acres of old-growth Douglas-fir harvested	798 acres of wildlife habitat imprvmt, 4838 acres of old-growth Douglas-fir harvested	270 acres of wildlife habitat imprvmt, 4246 acres of old-growth Douglas-fir harvested	125 acres of wildlife habitat imprvmt, 1213 acres of old-growth Douglas-fir harvested	331 acres of wildlife habitat imprvmt, 1777 acres of old-growth Douglas-fir harvested	None	3439 acres of old-growth Douglas-fir harvested	246 acres of wildlife habitat imprvmt, 3916 acres of old-growth Douglas-fir harvested	422 acres of wildlife habitat imprvmt, *225 acres of old-*growth Douglas-fir
POTENTIAL ADVERSE EFFECTS ON SOIL PRODUCTIVITY		Moderate on 3702 acres, slight on 305 acres, none on rest of unit	Moderate on 1993 acres, *slight* on 480 acres, none on rest of unit	Moderate on 2867 acres *slight* on 764 acres, none on rest of unit	Moderate on 4838 acres, *slight* on 798 acres, none on rest of unit	Moderate on 4246 acres, *slight* on 270 acres, none on rest of unit	Moderate on 1213 acres, *slight* on 125 acres, none on rest of unit	Moderate on 1777 acres, slight on 331 acres, none on rest of unit	None	Moderate on 3439 acres, very slight on rest of unit	Moderate on 3916 acres, slight on rest of unit	Moderate on 225 acres, slight on 422 acres, none on rest of unit
POTENTIAL EFFECTS ON WATER QUALITY		Severe	Moderately adverse	Severe	Severe	Severe	Moderately adverse	Moderately adverse	None	Severe	Moderately adverse	Moderately adverse
AIR QUALITY		Class II State Standards met	Same as Alt 1	Same as Alt 1	Same as Alt 1	Same as Alt 1	*Same as* Alt 1	*Same as* Alt 1	Class I. State standards met	Same as Alt 1	Same as Alt 1	Same as Alt 1
WILDLIFE HABITAT CAPABILITY 1/	DEER	Insignificant change	Same as Alt 1	Same as Alt 1	Slight improvement	Insignificant change	Insignificant change	Same as Alt 1	Same as Alt 6	Same as Alt 6	Same as Alt 6	Same as Alt. 1
	ELK	Moderate improvement			Significant improvement	Slight improvement	Insignificant change					
POTENTIAL EFFECTS ON FISH HABITAT CAPABILITY		Severe	Moderately adverse	Severe	Severe	Severe	Moderately adverse	Moderately adverse	None	Severe	Severe	Slightly adverse

1/ Insignificant change 0-2 9% acres improved, Slight improvement 3 0-4 9% acres improved, Moderate improvement 5 0-9 9% acres improved, Significant improvement 10 0-24.9% acres improved, Substantial improvement 25 0% + acres improved